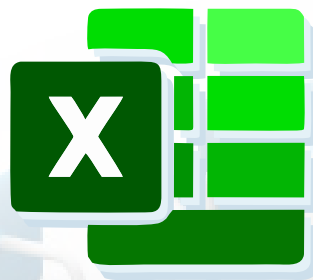# Office Automation Tools

Windows

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Office Automation Tools

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Office Automation Tools

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BSCIT-103

Office Automation Tools

Block-1: Basics of Computer

Block-2: Word Processing

Block-3: Spreadsheet and Presentation

Block-4: Internet and Networking

Block-5: Practical Exercise and Best Practices

Block-1

Basics of Computer

Unit 1: Basics of Computer

<div style="text-align:right">**1**</div>

Unit Structure

1.1 LEARNING OBJECTIVE

Students will get the basic knowledge of computer after learning this chapter. As computer is developed as a multipurpose machine; we will get the information about its components, methods, generations and its types in this discussion. Computer is working as a model, hence we will also understand about characteristics, working of different components and its fundamental knowledge. We will discuss about different parts of physical components like Processor; Input devices and Output devices along with their usage and limitations. In short, students will be familiar with all types of primary information about computer at the end of this chapter.

1.2 INTRODUCTION OF COMPUTER

Human being is an amazing animal. He does fantastic inventions. He always tries to make his life easy. This journey of making life easy started from the ancient era and has reached to a digital information era. Digital Information is an electronics information system which is based on computer processing.

Each type of work is dependent on gathering of information, usage of information; management of information and providing information to others. Computer is capable to do proper processing & storage of information. As decades are passing; computers are becoming smaller in size with increase in the data storage. Embedded computers without keyboard and mouse are also invented which are used in our day to day instruments like VCR, Automobiles, Aeroplane, Train, Power Plant, Library, Bank, Cinema, Space Centre , toys etc. These embedded computers are very small in sizes which entertain each & every moments of our life. They are affecting so much that they are controlling traffic light; metro train; aeroplane and big ships.

The human nature of inventing new things lead to the invention of a machine: computer, which performs the calculations easily and is easy to handle.

1.3 CLASSIFICATION OF COMPUTER'S GENERATIONS

Computer's generations can be classified in two types:-Hardware based generations and Program/ Software based generations.

1.3.1 Classification of Computer's generations (Hardware Based)

Hardware and Technology based computers can be divided into five categories depending on their characteristics.

Generation	Time Period	Technology	Characteristics	Example	Figure
First	1945 AD to 1955 AD	Vacuum Tubes	Less speed, Less efficient, Less useful or not useful, Big in size.	IBM UNIVAC– 1, ENIAC	
Second	1955 AD to 1965 AD	Transistor	Small in size compare to previous generation, Use of coded (Assembly) Language, More fast	IBM 1620	
Third	1965 AD to 1980 AD	Integrated Circuits (ICs)	Small in size, Easy to use, Useful in business, one type of small computers	IBM 360,PDP 8, PDP 11	
Fourth	1980 AD to 1989 AD	VLSI (Very Large Scale Integration)	Useful in personal work,Useful for Business,fast in action & reaction,Computer which can give very fast output	IBM PC, Apple II, Cray Series Computers	
Fifth	1989 AD - till date	Latest Software Technology & Artificial Intelligence (AI)	Very Modern,Simple network connection, Portable,Very fast, User Friendly	IBM Notebook, Pentium Series, PARAM 10000 etc.	

1.3.2 Classification of Computer's generations (Programming/ Software Based)

Computer's generations can be classified based on programming or software technologies.

Generation	Characteristics
First	First generation's programming language is called a Machine language or Binary language. Only 0's and 1's are used in this type of language. It is very difficult to provide data and information using this language. As computer is an electronics device, it can understand this type of two (bi) digit languages.
Second	This generation's language is called an *Assembly Language*. This language was written using coded symbols. This was very cumbersome.
Third	These programming languages are called Higher languages. It was very cumbersome to exchange information in the previous generations. Hence, considering this fact, Higher level languages were developed as a part of English language. Translator (Compiler or interpreter) was used to convert this English language into machine language. Translator's main work is to convert instructions written in English language into machine language.
Fourth	In this generation's programming language; "What to do" method was adopted instead of "How to do" to reduce coding or programming work and process was made faster. SQL (Structured Query Language) is an example of this generation.
Fifth	"*Artificial Intelligence*" was used in this generation's programming languages. Hence programming languages were developed in such a way that computer started to solve the given problems without the help of a programmer. As these programming languages are useful to find mistakes, to work, to understand and recognize audio or video and for complex calculations, *Artificial Intelligence* was used in this generation of computers. Gradually with the use of artificial intelligence; computer is becoming like a human.

1.4 TYPES OF COMPUTER

Famous computers using different technologies are as under.

Figure 1.1 Digital Computer

Digital Computers: Computers, which are using the binary method, i.e. two digits: 0 and 1 are called as digital computers. They describe information like words and symbols in binary form. These types of computers are useful in industrial process and to control machinery work. They also do management, analysis or copying of huge business data.

Figure 1.2 Analog Computer

Analog Computers: These types of computers use linear composition of voltage, current and frequency. Hence this machine represents continuously changing physical properties in terms of numbers.

Figure 1.3 Hybrid Computer

Hybrid Computers: These types of commuters use 0 and 1 i.e. binary method as well as linear composition of voltage; current and frequency method. Hence computer which uses both digital and analog technologies is known as Hybrid Computer.

Figure 1.4 Mainframe Computers

Mainframe Computers: These types of computers are large in size and can store huge information. Multiple users can do multiple jobs simultaneously. Generally many terminals are connected with Mainframe Computer. They look like small computer but they are devices only. They transmit and receive information to main computer through cable. Big companies, government agencies and universities use such type of computers.

Figure 1.5 Mini Computer

Mini Computers: These computers are small in size and less expensive compared to mainframe computers. They can store huge amount of information. Medium or small scale business units use such computers.

Figure 1.6 Personal Computer

Micro Computers/ Personal Computers/ Desktop Computers: These types of computers are very famous. They are user friendly and affordable. Normally, they are used in routine work, personal work and business work. These types of computers are also used in doing routine transactions. Keyboard, Monitor and Mouse are used in such type of computer systems.

Figure 1.7 Laptop

Laptops: Such types of computers have thin display. They are light in weight and portable enough to move easily. Laptop computers are personal computers which can be used in a mobile manner. As they are small in size; they are also known as Notebook computers. Single unit of laptop computer consists of Screen, Keyboard, Touchpad, Pointing stick and speakers.

Nowadays, a thin version of laptop computer is very famous and is known as Ultrabook computer. Ultrabook is small in size and light in weight. Battery life is also very long in this computer. Very strong and low voltage processor is used in such computers.

Figure 1.8 Hand held Computer

Handheld Computer: Such type of computers can be accommodated in our palm, are also known as Personal Digital Assistants (PDAs). They are smaller in size compared to laptops and are easily portable. In this type of computers, the commands can be given directly on the screen through hand. Touchscreens are used in Such types of computers. They are very useful to store personal information like name, address, appointments etc.

Figure 1.9 Tablet

Tablet Computer: Computers which are wireless and portable in nature are called Tablet computers.This is a mobile computer having touch screen facility. In such computers, keyboard is not required. Instead of an actual keyboard, an image of the keyboard is kept. It is used with a finger or a digital pen. With the help of such kind of computers, users can send or receive messages, use internet, can upload or download audio and video files, can play or see movie, can do photography or listen music.

Like mobile phones, in some tablets making phone calls is also possible. Computers which can work like phone as well as tablet are known as Tablets.

Figure 1.10Wearable Computer

Wearable Computer: Computer that can be worn by humans is known as a Wearable computer. As they are wearable on human body, they are small in size and light in weight. These computers are available in the form of Belts, Spectacles or Rings etc. Using them, it is possible to interact being in touch with the calculating system. They are turned on and off less frequently. They can do many works simultaneously. One programmed chip is installed on one part of human body using which wearablecomputer is connected. They are useful for the activities in our daily chores, for some specific movements, observations and also as a complement to the human brain.

1.5 CHARACTERISTICS OF COMPUTER

Characteristics	Details
Speed	Computer calculates very fast. E.g. - A Professor or a Mathematician needs minimum one minute to multiply some numbers and in comparison to that, being an electronic device, it can do the same calculation within fractions of seconds. As electronic signal moves very fast, calculations can be done very fast. In fact speed of computers can be measured in second or milliseconds, rather in Micro, Nano or Pico seconds.
Accuracy	Generally computers never mistake. There is no chance of mistakes, if it has been given the correct information. Computers do not only mathematical calculations, but also logical calculations very easily.
Versatility	Computer is capable of doing different types of work. Nowadays, computers are used everywhere- in hospitals, schools, factories, shops, banks, weather

Characteristics	Details
	department, for various reservations and also at home.
Storage Capacity	Storage capacity is one of the most important characteristics of a computer through which we can store and retrieve important information as and when required. It is easy to store any information in computer. Large data accommodates in a small space of computer. Thousands of pages can be stored in a small disc and computer can find a single word or data from a large data base within seconds.
Reliability	Computers are reliable. Each and every component of computers is made in such a way that it fails rarely. .
Repeatability (Can do repetitive tasks efficiently)	We feel bored if we have to do one job repeatedly. Our efficiency will decrease and more mistakes will happen. Whereas computers do the same job repeatedly with same accuracy, lightness and concentration. As computer is a machine, it is never affected by feelings like sadness or boredom.
Automation	Computer work on its own. Computer implements all instructions one by one which are given to it and keep on working until it is instructed to stop the work.

1.6 THEORATICAL UNDERSTANDING OF COMPUTER

We know that computer is a machine. Now, it is also necessary to know on which principle it works. We know that a mother uses Mixer or food processor in the kitchen for preparing food. Suppose, if we want to prepare a sauce, we put all ingredients in a mixer for crushing and the mixer would crush them and prepare the sauce. This theory is required to understand how a computer works. Computer can be known as an Information processor as it processes data and provides the information. Prior to that, we need to understand what the data are and what the information is.

DATA: Numbers, figures, alphabets or other facts are called as Data. For example: Marks of students, distance between two places, time and name of a place are not useful in their original form. But after processing this data, they become useful. If we compare these data with other data, they will be useful. Data will become more useful if we compare marks of two students. Such as,

- Akshar scored 450 marks out of 500.

Now after comparison, we can understand that Yogi scored more marks compared to Akshar. If we have marks of all students then we could have known about Yogi's rank in the entire class.

Information: The result which we get after processing data is referred as Information. Information is useful in its original form itself. Thus, we get information from data.

Common Examples of Information:

- Akshar got more marks than Yogi.
- Train is late by 40 minutes.
- Distance between Bhavnagar and Ahmedabad if 180 kms.

Processing: Work done on data is Process. Ex: Summation: subtraction or comparison. Data is converted into information by processing. So let us now define computer.

A machine which processes data and provides information is known as a Computer.

Computers provide information as follows:
- Instruction and data are fed into the computer.
- Computer processes the data as per the given instructions.
- Thus gives us the information after processing data.

Input→Processing→Output

Data→Processing→Information

The difference between data and information can be represented in a tabular form as follows:

DATA	INFORMATION
A set of statistics and facts	Organized Data
Less Useful	More Useful
Can be converted into information	Can be used to take decisions

Considering all the above factors, computer is a simple model which functions with its basic components input, memory, processor and output.

Input Unit: To perform any kind of task, computer has to be given commands. Arrangement has been made such that computer can accept commands and instructions given by the user for processing, and is known as the input or import unit. For example: Mouse, Key-board, Scanner etc.

Memory: Information entered through input devices is stored in computer memory.

Processor: Processing unit or Processor does various types of processing on information stored in computer memory.

Output Unit: Results generated by the processing unit is presented to the users by the Output unit. Examples of Output Devices: Monitor, Printer, Plotter etc.

After looking at four main components, let us concentrate on where these components are connected in computer.
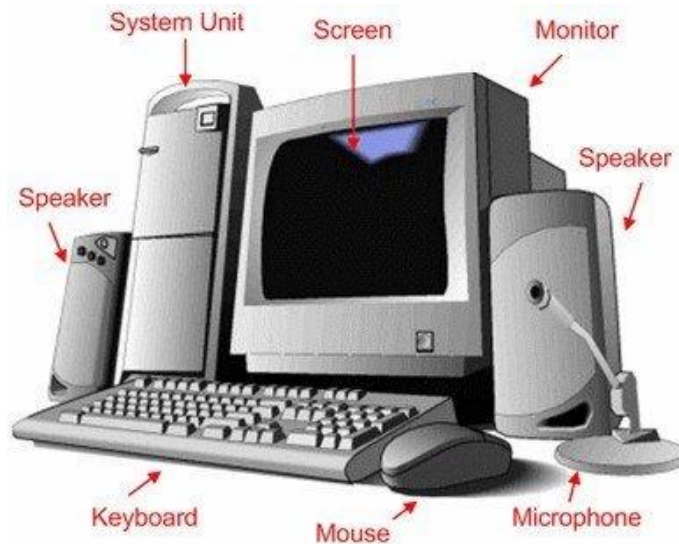
Figure 1.11 Different parts of Computer

Figure 1.11 shows different parts of a computer. Thus computer is a collection of different parts.
Let's study them in detail.

System Unit: System unit is an internal part of a computer system. Normally, you will find one rectangle box below your desk is the CPU, with many useful electronic sections. They are useful in data processing. CPU is the main component among all components which works as the brain of a computer. There is a second component which is the memory unit, which stores the information for short time until the CPU is ON. When the computer is turned off; all the stored information will be erased. Besides this, there are some disc devices which store the data permanently, retain it even when the computer is turned off.

Now let us see the functioning of computer's brain which is the Central Processing unit.

Function of CPU: CPU is the main part of a computer system, is divided into three parts.

Control Unit: Control unit is a part of CPU. Function of CU is to bring out the information stored in memory and to monitor the execution of commands after decoding. It also takes the help of ALU (Arithmetic and Logical Unit) for doing calculations.

Functions of Control Unit: Control unit controls and does proper management of data flow sent by the processor through electrical paths. It manages different activities done by the unit:
- To get the command from memory, to decide the type of it, to implement it and to store the result in memory at the end.
- Directs the information flow of different parts.
- Interprets the commands.
- Controls the processor time.
- To transmit control signals to variety of devices and to receive the same.

1. **Arithmetic Logic Unit (ALU):** ALU is a part of computer which does different logical works and mathematical calculations like addition, subtraction, multiplication and division. It is a high speed digital circuit which solves puzzles and does comparison too.

   Functions of Arithmetic Logical Unit: It executes almost all mathematical and logical functions done by the computer. For this, it takes required information from a fixed computer memory which is known as the Processor Register. After getting the information; the ALU processes it and the result is stored in the ALU Output register. It does addition and subtraction kinds of activities too. Complex calculations are also carried out in this unit only.

2. **Register:** These are high speed storage components. Each datum is recorded in registers before it is processed. For Example: While multiplying two numbers, both the numbers will be recorded in register as well as their results will also be recorded in register. (Apart from actual information, information about the location where information is stored is also recorded in the register)

1.7 STORAGE DEVICES

Human beings are capable of storing data in brain and can recollect it when required. Likewise computer can store both data and information in the storage devices.

There are two types of computer memory: Primary Memory and Secondary Memory. Let us see both these memories in detail.

1.7.1 Primary Storage

Primary storage is also called as the Main storage or Memory.
Primary memory is a memory that remains in touch with CPU constantly. It stores information, gives proper commands and takes care of them as per requirement. All types of information, data and applications are stored here systematically. Primary storage is of three types as shown below.

Primary Storage

RAM	ROM	Cache Memory
(Random Access Memory)	(Read-Only Memory)	
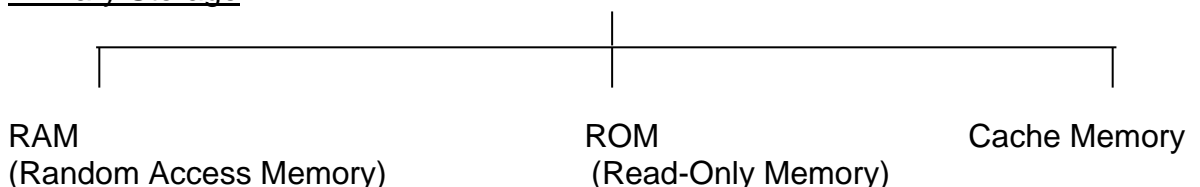
RAM (Random Access Memory)

RAM is a storage place where information is stored and can be accessed fast. RAM is one kind of volatile memory. Volatile memory is a memory in which electricity power is required to access a memory. If electricity is not available during that time, then stored data cannot be retrieved.

There are two main types of RAM:

1. **Dynamic RAM:** Dynamic RAM stores information for fraction of a second. It has to be refreshed thousands of time per second. It is slower and cheaper than static RAM.

2. **Static RAM:** Static RAM uses a completely different technology. Static RAM stores information till the power is on. It is expensive and consumes more power and is faster than Dynamic RAM.

1.7.1.2 ROM (Read Only Memory)

It gives a facility to read only from a computer. Data and commands are stored in it when it is being manufactured. It is a kind of static memory. Data can be stored here permanently. The information is retained in it even if the computer is turned off. Data in ROM is not modifiable. ROM is suitable to store the data which are not required to be modified. Even during power cut, it is capable to store them, thus it is permanent and Non-volatile in nature.

Non-Volatile Memory: There are various types of ROM available as:

- Programmable Read Only Memory (PROM)
- Erasable Programmable Read Only Memory (EPROM)
- Electrically Erasable Programmable Read Only Memory (EEPROM or Flash ROM)
- Electric Alterable Read Only Memory (EAROM)

Some ROM are Non-Volatile but can be reprogrammed.

- **Programmable Read Only Memory (PROM):** In this ROM, data program is written on empty chip using a special unit named PROM writer.

- **Erasable Programmable Read Only Memory (EPROM):** It is the kind of ROM, where data written on it can be erased by exposing it to Ultraviolet light.
- **Electrically Erasable Programmable Read Only Memory (EEPROM):** In this PROM, electrical signals are used to erase information instead of ultraviolet light.
- **Ultraviolet Erasable Programmable Read Only Memory (UVEPROM):** This memory can be erased and reprogrammed using ultraviolet light.

1.7.1.3 Cache Memory

Cache: Cache is a high speed memory which is between the CPU and the Main memory. In this, data which are in use at present and data which have been used recently used can be stored. It is effective because it is faster than the main memory but its storage capacity is less as it is more expensive than the main memory.

1.7.2 Secondary Storage

Secondary storage technology is related to storage devices and storage media that are not directly accessible through computer. Hard disk, CD, DVD is examples of

secondary storage media. It is generally used for storage and backup purposes. When computer stops working, secondary storage devices are used to restore the backup in the new system. Hard disk and magnetic tape works on magnet principle whereas CD, DVD and Blue Ray Disk work on the principle of light. Let us see some of the examples of secondary storage of computer.

Secondary Storage	Description
Figure1.12Magnetic Tape	**Magnetic Tape:** Magnetic tape is a very thin plastic strip on which Iron Oxide has been coated. In this storage, information can be written and read sequentially. Storage capacity of tape is from Kilobytes to Megabytes.
Figure 1.13 Floppy Disk	**Floppy Disk:** Floppy disk is also used to store information permanently. Floppy disks are available in various sizes such as in 2", 5.25" and 3.5". Storage capacity of floppy disk is 1.44 MB.
Figure 1.14 Compact Disk	**Compact Disc:** Compact discs (CD) are used to store Audio, Video, text or any other information in digital format. 120mm CD has a storage capacity of 700 MB.

Types of Compact Disks:

Disk Type	Description
CD-ROM	CD-ROM data can only be read. Data is recorded on this disk from the beginning and stored information cannot be changed. It is mostly used for audio CD recording.
WORM/CD-R	WORM (Write Once Read Many) is meant to be written once and read many times. Using CD-R drive connected to computer, computer gives permission to make their own CD-ROM disk to WORM users.
CD-RW	CD-RW Compact disk is used to re-write the data in the CD. Here the data can be written on a CD through a CD Burner. Unlike CD-R (CD-Record), data on the CD-RW can be re-written.
Figure 1.15DVD	DVD is called as Digital Versatile Disk or Digital Video Disk. It is useful for storing information permanently. DVD has minimum storage capacity of 4.7 GB. DVDs are one sided or two sided and every side can have two layers. Two layer DVDs are capable to accommodate video, audio and other information up to 17 Gigabytes.

Let's give a look on different types of DVDs.

DVD Type	Description
DVD-R	Information's can be recorded for one time only on DVD-R and data is retained permanently on the disk. This disk cannot be recorded for second time. DVD-R has a storage capacity of 4.71 GB generally.
DVD-RW	DVD-RW is suitable to re-write the data. Information's written on DVD-RWcan be removed without any problem and can be recorded for number of times.
DVD-ROM	DVD-ROM Digital disk is useful mainly for storing huge software programs only. It is just like a compact disc (CD-ROM) but has more capacity. Storage capacity of DVD- ROM is approximately 4.38 GB.
Blu-Ray Disk:	Blu-Ray disk is known as BD. It is a new Optical disk format, jointly created by Blu-Ray Disk Association and world leader consumer electronics group. Blu-Ray disk has been developed for mass storage of high quality videos (HD video playback) and recording. Its storage capacity is five times more than a DVD. Storage capacity of one BD is 25 to 50 GB. Blu-Ray disk having storage capacity of 500 GB is under development.
Figure 1.16 Hard Drive	Hard Drive: Hard Disk is a magnetic disk, is set in a sturdy box which is known as a Hard Drive. The hard drive is configured in CPU box. According to the instructions, computer can read and write the content from the Hard Disk. Hard disk stores all the information in its magnetic area. So even if there is power failure or computer is turned off by mistake, stored information will not be erased. Hence it is known as Local Storage device.Hard disks are faster than the floppy disks. To transfer large amount of data, external hard drives are available in the market which can be connected externally to the CPU through USB port.
Figure 1.17 Pen Drive	Pen Drive:Pen drvie is able to store the data for long time. It is solid and is a highly durable storage device. It does not need any extra software and is compatible to connect with most computers..
	A pen drive can be used easily by students, professionals and academicians being small and handy device.Currenlty it is available with storage capacities of 8GB, 32GB and even more. Graphics, heavy documents, photographs, music, videos and movies can be stored in a pen drive. A pen drive is plugged into computer's USB port and is a plug-and-play device. It comes with a USB port. Using pen drive data can be transferred easily from one machine to another machine. Moreover being small in size, it can be handled easily, and can be kept in pockets or purse.

1.8 INPUT DEVICES

The unit that puts or feeds data into the computer is known as the input device, through which the data or informations are entered into the computer. Computer input devices are used to provide data as well as control signals. Here we will get information about some import101nt input devices of computer.

Figure 1.18 keyboard

Keyboard: The most common and popular inpur device is the keyboard. The keyboard is used the input of data into the computer. keyboard has 82 or 102 keys. Keyboard with 104 keys are available for internet and windows.

The utilities of various keys on the keyboard is shown in the following table:

Key	Description
Alphanumeric Key	These keys include characters (A-Z,a-z) and numbers(0-9)
Numeric Keypad	It is used for inputting the statistical data or for cursor movement. In general, it has a 17 key set
Function Key	These keys are used to control cursor and screen. Keys F1 to F12 are the function keys.
Special Key	These include "Enter, Shift, Caps Lock, Num Lock, Space bar, Tab, and Print Screen" keys. Each key is used for a particular purpose. It also includes Home, End, Insert, Delete, Page Up, Page Down, Control(Ctrl), Alternate(Alt), Escape(Esc) and four directional arrow key.

Mouse: The mouse is the most popular pointing device. It is very famous cursor control device. In general, a mouse contains two buttons – left button and a right button and a scroll bar in the center. Mouse can be used to control the position of the cursor on the screen.

Figure 1.19 Mouse

Joystick: Joystick is used to move the cursor on the screen of the monitor. It is a directive device. Joystick can be moved in all the four directions. The function of the joystick is similar to the mouse. It is primarily used for Computer Aided Design (CAD) and playing computer games.

Figure 1.20 Joysick

Light Pen: Light pen is a pen like pointing device.It is useful to display the selected menu item. It is an optical system that is placed in a small tube, which sends corresponding signals to the CPU.

Figure 1.21 Light Pen

Track Ball: Track ball is mostly used in laptops or notebooks. It is a semi-rounded ball where in the indications are given by the movement of the fingers on the ball. The track ball takes up less space than the mouse. The track ball is available in different shapes like ball, button or square.

Figure 1.22 Track Ball

Scanner : Scanner is a device which is used to copy the information from paper to hard disk. The copied data can be edited using the softwares.

Figue 1.23 Scanner

Digitalizer: The Digitalizer converts the analog data into digital form. It can be used by computers to create pictures. It converts the graphical and pictorial informations into binary form. It is also known as digital tablet or a graphics tablet.

Figure 1.24 Digitalizer

Touch Screen: The users of the touch screen interact with the computer by touching the pictures or words on the screen. The Touch screen is sensitive to human touch. Touch screen kit includes a touch screen panel, controller and hardware driver. Touch screen can be used by moving the hand or fingers on the screen. Touch screens are the most popular device for tablets and smart phones.

Figure 1.25: Touch Screen

Microphone: The use of microphone is to store the input voice into digital format. Microphone is used to add sound and mix music for multimedia presentations.

Figure 1.26: Microphone

Magnetic Ink Character Reader (MICR) : MICR is useful in a large number of banks to process check. Bank code numbers and cheque numbers can be read into this machine. This process of reading is referred as Magnetic Ink Character Recognition (MICR). The main advantage of MICR is that it is fast.

Figure 1.27 MICR

Optical Character Reader (OCR): OCR is useful for reading printed text. OCR optically scans the characters and stores the text in memory.

Bar code Reader: Bar code reader is a useful tool for reading bar-coded information (the information in the form of light and dark lines). Bar-coded data usually found on books and some other products also, is being scanned by the Bar code reader and is converted into alphanumeric value.

Figure 1.29Bar code reader

Optical Mark Reader (OMR): OMR pen or pencil is useful to identify the type of account. OMR is used to check marked answers of MCQ exams by verifying against the correct options for answers.

Figure 1.30 OMR

16

1.9 OUTPUT DEVICES

Output devices are those parts of the computer, that provide information processed by the compouter as output. Lets take a look on some of the output devices listed below.

1. Monitor **2**. Printer **3**. Plotter **4**. Projector **5**. Speakers
Monitor: Monitor is the most popular and commonly used output device. The output by Monitors is similar to telvesion screens and is intanigable in nature. However the output can be printed on paper. Various types of monitors like Cathod Ray Tube (CRT), Light Emiting Diode (LED)/ Liquid Crystal Display (LCD) are available. These types of monitors are thin in size, light-weighted and occupy less space.

Figure 1.31 Monitor

Printer: Printer is a very useful output device. Prinnter is used to print the infomration on a paper.Printers are of various types. Followng is the classification of printers:

Types of Printers:

1. Impact Printer
    a. Character printer
        • Dot Matrix printer
        • Daisy Wheel printer
    b. Line printer
        • Drum printer
        • Chain printer
2. Non-Impact Printer
        • Laser printer
        • Inkjet printer

1. Impact Printer: In this type of printer, ribbon is used to print the characters. The characters hammered on the ribbons are printed on the paper.The paper and the head (head like part of hammer) containing the characters are in physical contact with each other.

Characteristics:
    • Very low consumption cost
    • Produces too much noise
    • Useful for low cost bulk printing
    • To print, it gets in physical contact with the paper

1.1   Character Printer: This printer prints one character at a time.

1.1.1 Dot-matrix Printer: In dot-matrix printer, for character formation, a specific pattern of matrix of pins is used where-in the size is pre-decided (5*7, 7*9, 9*7 or 9*9).

Advantages:
- Reasonable in price
- Used very widely
- Characters of other languages can also be printed.

Figure 1.32Dot Matrix Printer

Disadvantages:
- Only text can be printed.
- Speed is slow.
- Poor printing quality

2. **Non-Impact Printer:** This printer prints one line at a time. In this type of printer, there is no physical contact between the printer and the paper.
   Characteristics:
   - Faster than other printers.
   - Does not produce noise.
   - High quality printing
   - Printing facility with various sizes and font.

2.1 **Laser Printer:** In this printer, printing is done by the laser beam.

Advantages:
- Faster.
- Text and graphics output with excellent quality.
- Characters with different size and font.

Disadvantages:
- Expensive.
- Cannot be used to produce multiple copies of a single page.

Figure 1.33 Laser Printer

2.2 Inkjet Printer   : Inkjet printer is a non impact printer based on relatively new technology. This printer prints the characters by spraying tiny drops of ink on the paper. Inkjet printer offers high quality output with better facilities.

Advantages:
- High quality printing.

Disadvantages :
- Costlier.
- Slow in compared to laser printing.

Figure 1.34 Inkjet Printer

3. Plotter Is a graphics printer, that makes the graphs, diagrams, line drawings and images with one or more automated pen. Plotters are used to print very high resolution point-to-point lines.

Engineers use plotters because they are larger in size and are very precise. It is mainly used to print maps.

Figure 1.35 Plotter

4. Projector Projector is an output device that can display the computer screen and can project the bigger version of the same on a flat surface. Projectors are used in meetings so that the presentations

Figure 1.36 Projector

could be seen by all, present in the room.

Types of Projector:

- Cathod Ray Tube (CRT)
- Liquid Crystal Display (LCD)
- Digital Light Processing (DLP)

5. Speakers

Figure: 1.37 Speaker

The speaker is used to listen the audio file and the files recorded in a computer. It is convenient to reduce and increase the volume of sound. It produces the sound by converting the digital data of the computer into analog data.

1.10 TYPES OF SOFTWARE

Software means set of instructions. Physical devices which can be seen and touched, e.g. Keyboard, monitor, CPU, etc. are known as hardware whereas that part which can only be seen but can't be touched, is known as the software, for e.g. Operating system. Software can be divided as:

Computer Software

System Software   Application Software
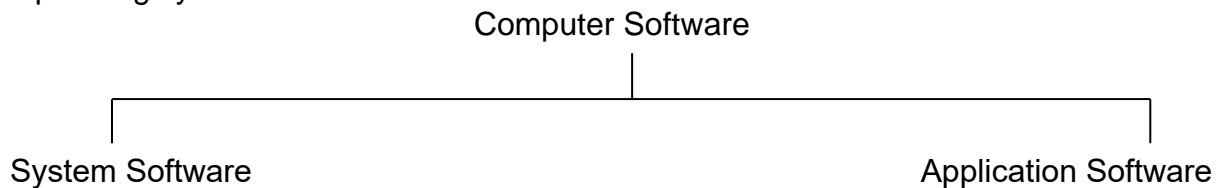
System Software:
- System software is a collection of one or more programs.
  It controls the computer hardware and provides a platform to run the application software.
- The programs that are the part of System software are assembler, compiler, file management programs, system utility and debugger etc..
- When you install the operating system on your computer, the system software gets installed
- Examples of system software are Operating systems like windows, Macintosh, Linux, Compiler, Scan disk, backup utility.

Application Software:
- It is a collection of one or more programs.
- It helps the user to solve real problems and to perform specific functions.
- The programs containing the actual work of the user are the application software
- Examples of application software: word processor, spreadsheet, database, entertainment softwares.

Relationship between system software and application software: (Figure 1.38**)**
- System software provides an interface by which application software can run.

- System software provides an interface between the hardware and application programs.
- Application software can be executed only if the system software is present.
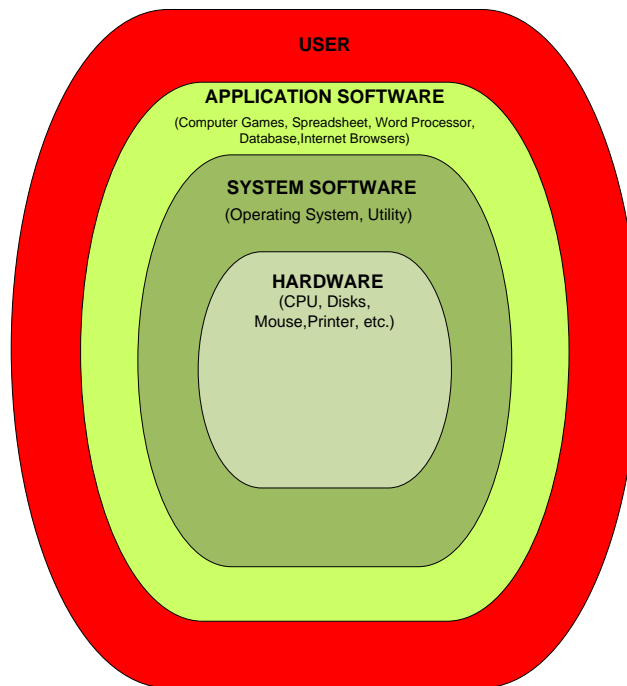
Figure 1.38 The relation between application software and system software
Open Source Software:
- The software whose source code (Basic program code) is available,is an Open source software
- The source code could be modified by the user.
- With the open source software, the source code is readily available to the user.
- Open source software, provides all the controls to the user.
- Example of Open source: MySQL, LAMP, VLC Media Player, PostgreSQL
- Open source software could be shared and integerated.

1.11 USES OF COMPUTER IN VARIOUS DOMAIN

Because of the human's quatlity of inventing new things, he invented computer, a device which can perform calculationsfast and easily and is ease to use. List of some of the domains or areas where it is playing its major role are :
Areas where computer have stepped in :
- Monthly light bill and telephone bill that we receive are prepared by computer.
- Reservations of airways or railway tickets to travel to different places can be done from any place through computer.
- Payment of various bills also could be done through computer.
- Complaints regarding any part of the computer are also fed in computers only. This will help to have a better control on the complaint. The status of the complaint like whether the complaint is resolved or not can also be tracked easily.
- The markseheet of the university that we obtain, is also prepared by computers.
- Computer is also widely used to exchange and share the information.
- Accounts, large bills and ledgers are maintained through computer.

- The information about the products that are available and sold by the large departmental stores is stored in computers.
- News readers keep terminals on their desk. This helps them to deliver the news quickly and with diversity.
- Computer are used for providing security in shopping malls, banks, schools, colleges, public or private hospitals, railway stations, airports etc. These days computers are also used for reservations on the roads with heavy traffic.
- Now a days computers are also required for gaming, applications and using softwares.
- Commercial organizations, public agencies etc use computers to enhance their business.

1.12 LIMITATIONS OF COMPUTER

- **Lack of thinking ability:** Computer is not capable to think on its own. It only follows the instructions being given to it irrespective of whether the information is right or wrong.
- **Inability to learns from the mistakes:** Human mind learns from his past mistakes, but computer repeats the same mistake again and again due to lack of thinking ability.
- **Dependent on electricity:** Computer is an electronic machine. So it is not able to work without the source of electricity. On the other hand it is possible that file may get corrupted or damaged due to sudden power cut while working. However the work can be saved by using Uninterrupted Power Supply (UPS).

1.13 CHECK YOUR PROGRESS – POSSIBLE ANSWERS

Q1. Choose the correct option .

1   Which of the following is an example of input device?
    A) Keyboard, mouse B) Scanner, joystick C) Electronic card reader, MICR D) All of the above
2   Which type of data could be fed by a keyboard?

    A) Alphabets   B) Numbers   C) Special characters   D) All of the above
3   When was ENIAC invented?
    A) 1945   B) 1946   C) 1947   D) 1948
4   What is the full form of AI?
    A) Arithmetic Intelligence B) American Intelligence C) Artificial Intelligence D) None of these
5   Computer memory which can only be read is called what?
    A) RAM   B) ROM   C) Static memory   D) Dynamic memory

Q2. Fill in the blanks with appropriate words.

1. The computer that uses the binary methods i.e 0 and 1is known as

_____. (Digital Computer, Analog Computer, Mobile phone)

2. Numbers, group of digits, alphabets or other facts are known as _____. (Information, Data, Facts)

3. The machine that process the data and converts into information is called _____. (Calculator, Computer, Mobile)

4. _____, works as the brain of the computer. (Monitor, keyboard, CPU)

5. _____ is a storage that stores the information and can be accessed fast. (Control unit, RAM,Monitor)

Q3. State whether the following statements are true or false.

1. A special software is required to use a pen drive.
2. In a keyboard the keys from F1 to F12 are called the function keys.
3. Joystick is mostly used for Computer Aided Designs (CAD) and playing computer games.
4. The users of the touch screen communicates to the computer by touching the pictures and words on the screen.
5. Mike converts the waves of sound into electromagnetic waves.

Q4. Match the following :

Column A	Column B
1. First Generation	a. Transistor
2. Second Generation	b. Vacuum tube
3. Third Generation	c. Artificial Intelligence
4. Fourth Generation	d. Very Large Scale Integration
5. Fifth Generation	e. Integrated Circuit

Answer:

Q1. 1. D
2. D   3.A
4.C   5. B
Q2. 1. Digital Computer 2. Data   3. Computer 4. CPU5.RAM

Q3. 1. False 2. True   3. True   4.True 5. False

Q4.
First Generation - vaccum tube
Second Generation - Transistor
Third Generation - Integrated circuit
Forth Generation - Very Large Scale Integration
Fifth Generation - Artificial Intelligence

Unit 2: Introduction to Windows Operating System

2

Unit Structure

2.1 LEARNING OBJECTIVE

After studying this unit, the following topics will be familiar.

- Basic understanding of how Windows came into existence and how many versions it has.
- Various components of Windows operating system like: Taskbar, Start menu, Toolbar, Notification area, dialog box etc.
- Changing background of Windows 7 Desktop, creating shortcut, how to display toolbar.
- New features like aero pick and gadgets in Windows 7.
- Utility programs like paint and WordPad available in Windows 7.
- Security system.

2.2 INTRODUCTION TO WINDOWS 7 OPERATING SYSTEM

Windows 7 is developed by Microsoft for personal computers and it is in use since 2009. It provides many new facilities as compared to previous versions of Windows. There are mainly three editions of Windows 7.

i. Ultimate
ii. Professional
iii. Home

Windows 7 does not have some features like data security, management and networking. These features are available in Windows Professional and Ultimate editions. Home edition contains games like chess, which is not available in Professional edition. Ultimate edition have all features.

To install Windows 7, it is necessary to have the following hardware's.

- 32-bit or 64-bit processor with 1 GHz or more speed.
- Minimum 1 GB RAM for 32-bit and 2 GB RAM for 64-bit processor.
- Minimum 16 GB hard disk for 32-bit and 20 GB hard disk for 64-bit processor.
- DirectX 9 graphics device and WDDM 1.0 or later.
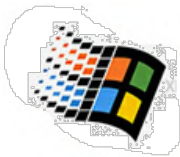
2.3 HISTORY OF WINDOWS

Bill Gates and Paul Allen jointly started Microsoft Company in 1975. Thereafter following versions of Windows 7 were released in different years.

Logo	Year	Version	Main Features

Logo	Year	Version	Main Features
	1985	1.0	To do any work in MS-DOS, it require to type the command. Whereas Microsoft WIndows 1.0 has the facility to do tasks easily by just cliking icons or options and moving the mouse on the screen . Additionally, it was simpler to learn and use Windows through drop-down menus, scroll bars and dialog boxes. It was easier to switch between two windows. Moreover, It included facilities like file management, paint, window writer, notepad, calculator, calander, clock and games.
	1992	3.1	This version was significantly better than the previous version. It contains advanced graphics with 16-bit colour and improved icons. It included programs like program manager, file manager, print manager and was having more games. It also provided network support.
	1995	95	WIndows-95 was a 32-bit operating system with facilities like internet, dial-up networking, plug-and-play fetaure to install hardware and software, multimedia, mobile computing and networking. Fot the first time, facility was provided for menu, taskbar, start button and minimize-maximize-close buttons for windows.
	1998	98	Using Windows-98, it was easier to get information using computer and internet. It facilitates the use of DVD disk and Universal Serail Bus (USB). It included quick launch bar to open the programs quickly.
	2001	XP	Windows 2001-XP was a speedy and better operating system having simple visual design containing start menu, taskbar, control panel, network wizard, media player, movie maker and digital photo, remote desktop, file encryption system, advanced and wireless network, windows messanger, remote assistance facilities.
	2006	Vista	Windows-Vista provided powerful security, user account control, bit locker drive encryption, new start botton. Moreover, it sopported 35 languages.
	2009	7	Windows-7 includes more themes, desktop slide show, gadgets and slide bar, federated serach, jump list, touch screen, shake and snap features. One can pin the application in taskbar, have better thumbnail view of open application. It provides notification area and aero pick button.
	2012	8	Windows-8 is totally in a new look. One can work using mouse and touch-screen. It includes window store, cloud storage, new task manager, anti-virus defender etc..

2.4 WINDOWS 7 DESKTOP

After Windows 7 start up, the first screen seen is called the Desktop. It is shown in figure 2.1. It contains taskbar, background image or colour, icons or shortcuts, various gadgets selected by the user etc. Now let us understand these various components.
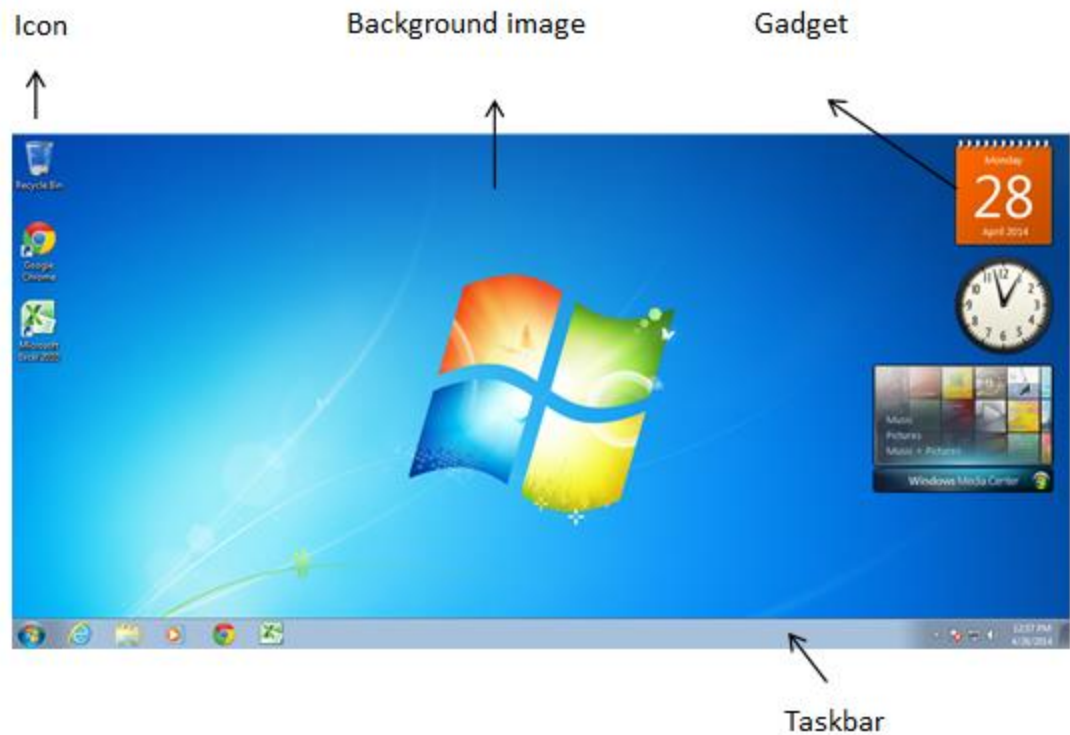
Figure 2.1 Desktop

2.4.1 Icon

When right button of mouse is clicked anywhere on the desktop, short cut menu is opened as shown in the figure 2.2. On selection of the "Personalize" option, a window is opened as seen in figure 2.3. When "Change Desktop Icons" is selected from this window, a dialog box is opened as seen in figure 2.4. Required icons can be selected by checking the boxes and unwanted icons can be removed by non-selection of check boxes. On pressing OK button, icons are added or removed as per user's choice.
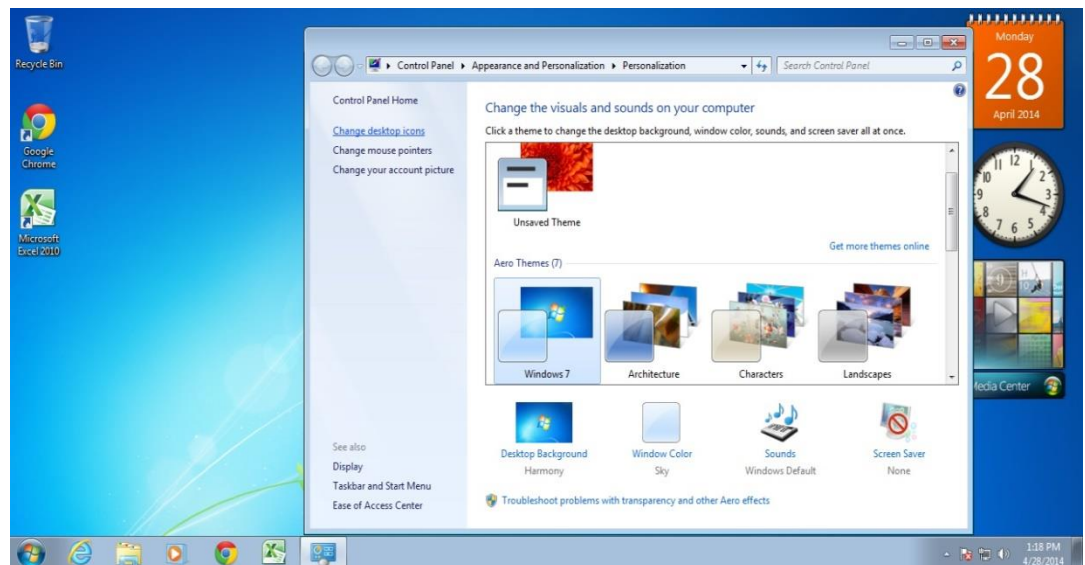
Figure 2.3 Change Desktop icons
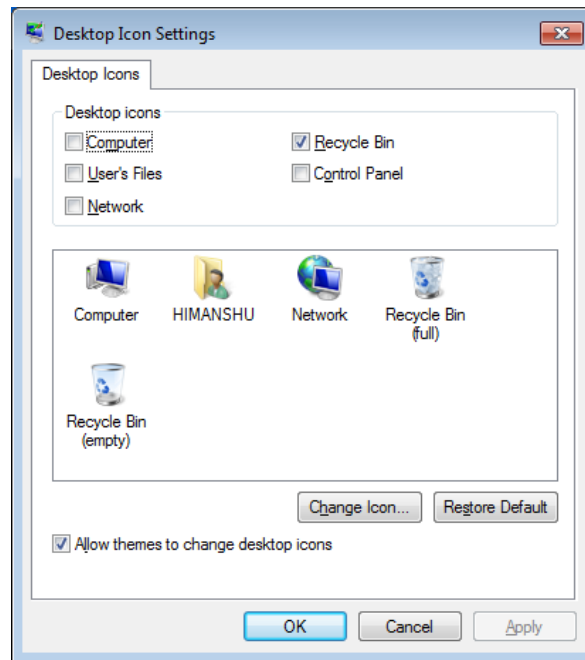
Figure 2.4 Setting desktop icon

To create other icons, the following method can be used. For example, if you want to create a shortcut for Microsoft Excel, then select Microsoft Excel 2010 program form start menu, right click the mouse and select "Send To"➔"Desktop (create shortcut)". Shortcut icon of Microsoft Excel 2010 program will be created on the desktop. In this way, shortcut can be created for other programs.
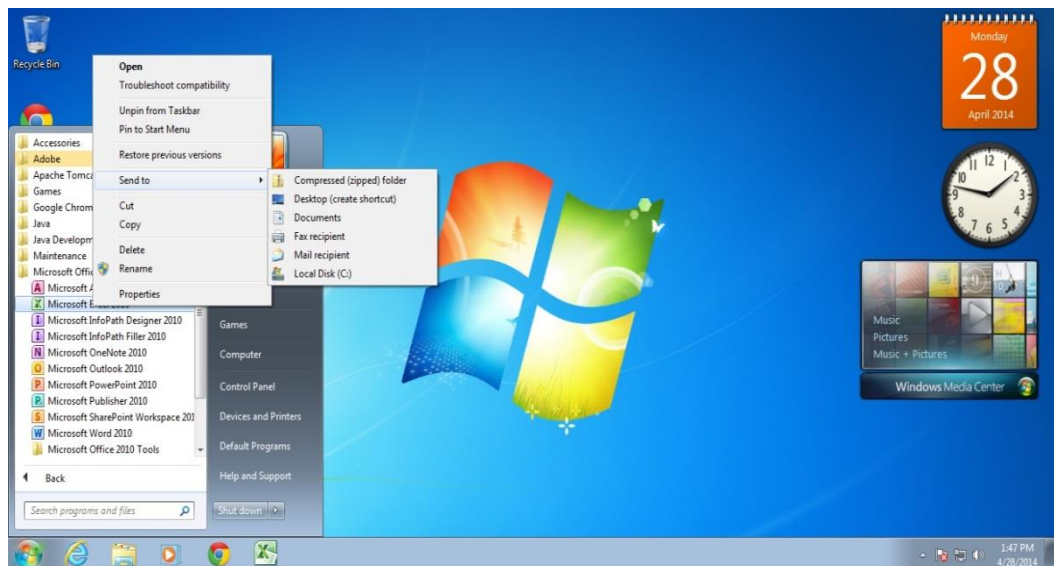
Figure 2.5 Create a shortcut

2.4.2 Background Image

To change the background image on the desktop, right click anywhere on the desktop to get shortcut menu as seen in figure 2.2. Select "Personalize" option to get the screen as shown in the figure 2.3. On the selection of "Desktop Background", a window is opened as shown in the figure 2.6. It has the following options.

Picture Location : When "Browse" button is pressed, it opens folders. You can select the folder where pictures are stored and see the list of pictures in this folder.

Select All : To select all pictures in the folder.
Clear All : To unselect all pictures in the folder.
Picture Position : To select the view of the picture.
Change Picture Every : To select the time (seconds, minutes or hours) for changing a picture in case of multiple picture selection.
Shuffle: To specify repeated display of multiple selected pictures

After selecting above options, press "Save" button. It will change the background and images as per the selected options.
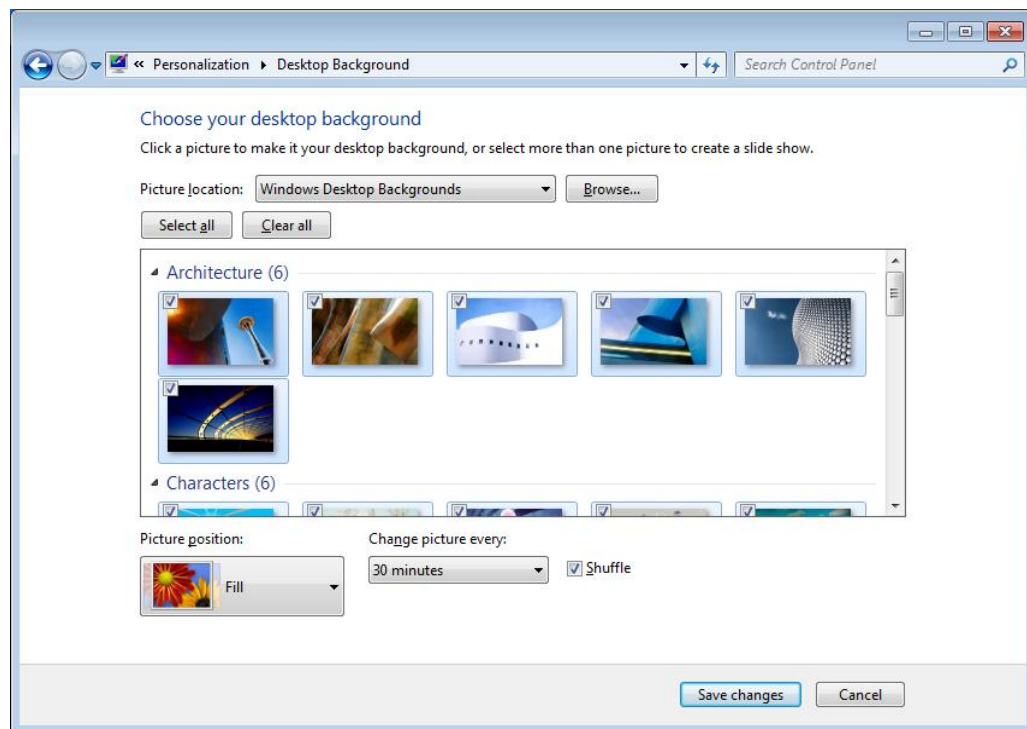
Figure 2.6 Change Desktop background

2.5 GADGET

In Windows 7, gadget is a small application which provides the facility to know frequently changing information like time, usage of computer, news, whether etc. Manytimes, it is also called the Applet. Figure 2.7 shows "Clock" gadget.

To close gadget

For gadget settings

To move gadget

Figure 2.7 Clock gadget

Figure 2.8 Gadgets

To have gadget on the desktop, right click anywhere on it and select "Gadgets" to get the dialog box as shown in figure 2.8. Double click the required gadget and it will be added on the desktop.

2.6 TASKBAR

Usually taskbar is located at the bottom (Refer Figure 2.1). Taskbar always remains present on the screen. Taskbar is divided as follows:

(1) **Start button**: On clicking the start button, we can choose the application from menu as per our choice and can execute it.

(2) **Quick Launch or Middle Toolbar**: Here it shows small icons for all open applications. Applications can be quickly closed from here. Usually, when WIndows is installed, applications like browser and media player are launched in the taskbar.

(3) At the right end, it shows system time and date. Nearer to this, it shows various tools for computer settings which enables to perform certain tasks very easily. For example, increase or decrease the volume.

(4) **Minimize or maximize applications using taskbar**:The icon of the application which we are using currently is seen on the taskbar. On single clicking of the icon, the application can be minimized.. clicking it again will maximize the application.

There is another way to minimize or maximize an application. In the title bar of the application, three buttons are available on the right side at the top. On clicking minimize or maximize button, application will get minimized or maximized.

2.7 AERO PEEK

With the help of Aero Peek feature, you can see the desktop whenever you want. To do so, press "Show Desktop" button (refer figure 2.9) available at the rightmost end of the taskbar. It will minimize all the application windows and will show the desktop. When pressed "Show Desktop" button again, all application windows will be seen as before.
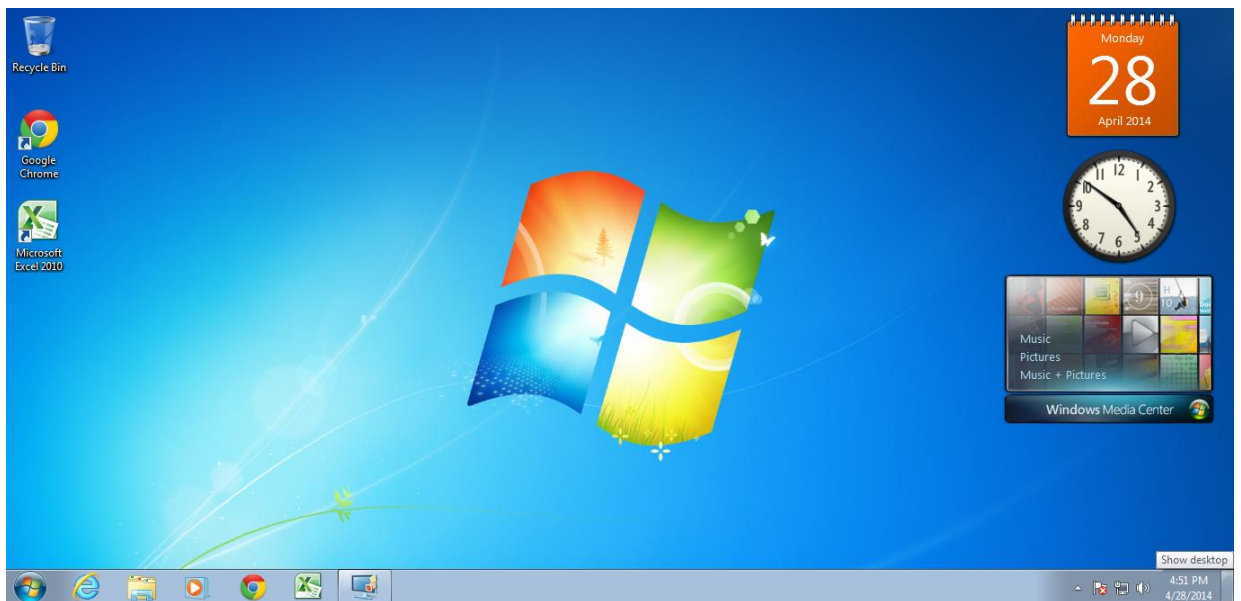
Figure 2.9 "Show Desktop" button

Preview open window: when more than one windows are open, you can see the thumbnail (refer figure 2.10) of the window by clicking the application window icon in taskbar. Thumbnail view will help to know what is going on in an application window and can select it by clicking.
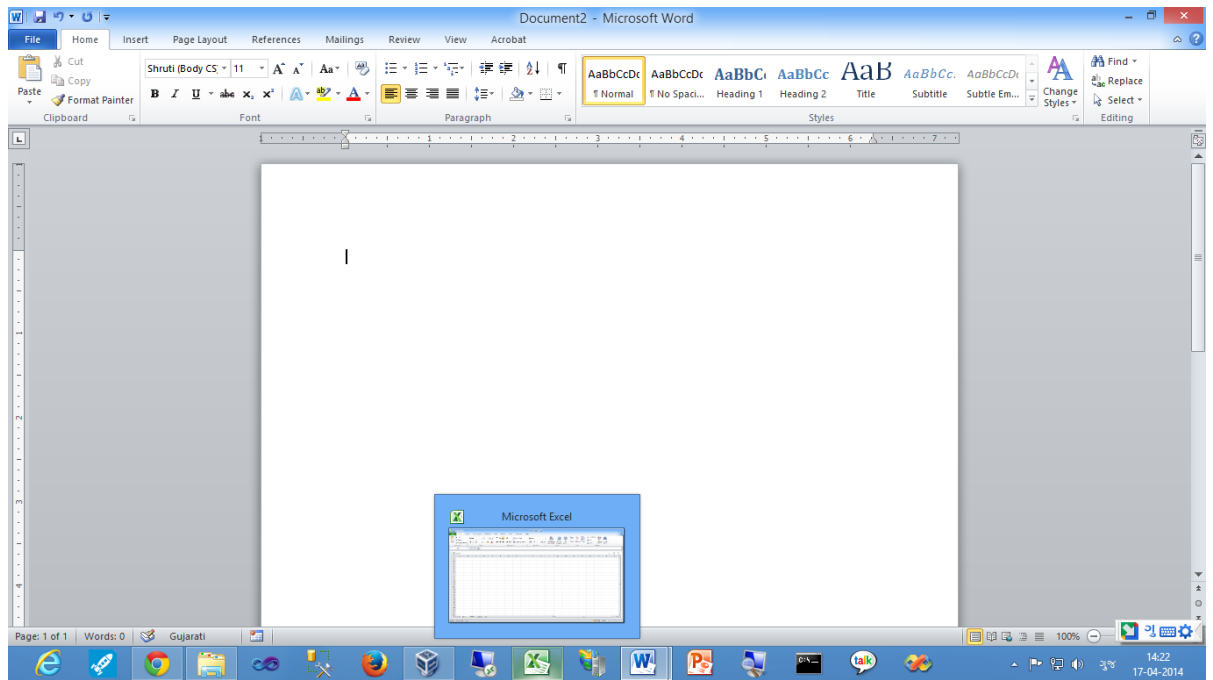
Figure 2.10 Thumbnail preview of an Application

For example, as per figure 2.10, task bar contains icons of many open applications like word, excel, PowerPoint. We are working in word. Now it will preview excel when a mouse is moved on excel application icon and it will open when clicked.

Check your progress

1. Add icon of Control Panel on desktop.
2. Set the background picture using any picture from your folder such that it is changed after 1 minute.
3. Add CPU Meter gadget on desktop and then remove it.
4. Add shortcut of Microsoft Word application on desktop.
5. Change system date and time.
6. Set volume to 80%.

2.8 START MENU

With the use of start button, one canopen computer programs, files, directories (folders), settings, installation etc. Using start menu, we can easily open the application of our choice, shut down the computer, search any file or directory, install new fonts etc. Start menu can be activated or opened in three ways.

1. By clicking the start button available on the desktop.
2. By pressing the start key from the keyboard.
3. By pressing ESC key (on the left-top of the keyboard) and CTRL key together.
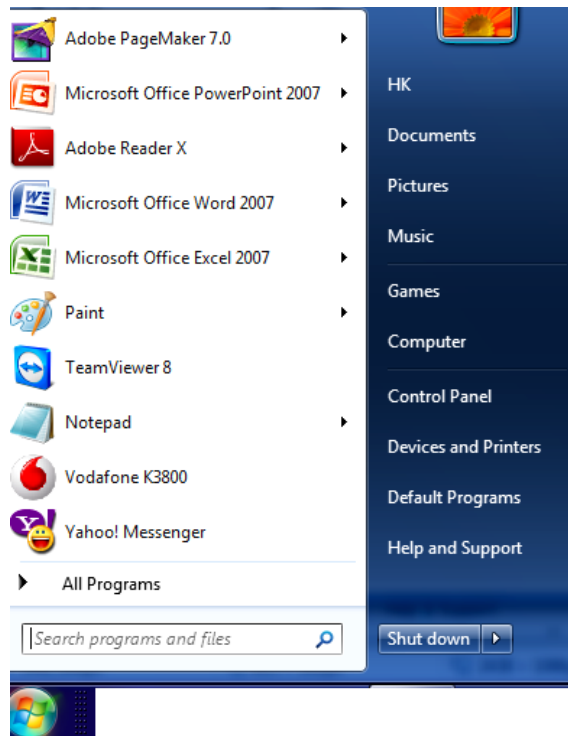
Figure 2.11 Start menu

As soon as the start menu is activated, we can see various components as shown in the figure 2.11.

1. "Search Programs and Files" option is seen just above the start button. Whatever files or directories are to be searched, we can enter here and system will display the corresponding list of files or directories.
2. When "All Programs" option in start menu is clicked, it will show the list of all applications being installed. To open the application, we should either move the mouse on it and click or select the application using arrow key and then press ENTER key. Thus we can open required application from "All Programs" and start working.
3. In the start menu, various utilities are shown on the right side in blue colored portion. It includes options like Documents, Pictures, Music, Games, Computer, Control Panel, Devices and Printing, Default Programs, Help and Support, Shut down etc. These options are explained below.

Documents: By default, the saved files are stored in the folder named "Documents". If we have specified a fixed path, then only it is stored at different place. Required file can be directly opened from the list of files shown in the Documents folder.

Music: By default, downloaded audio files are stored in a folder named "Music".

Games: When we install Windows 7 operating system, specific games are stored in the folder named "Games" by default.

Computer: "Computer" is very important utility. In previous versions of Windows, this utility was known as "My Computer". On clicking "Computer" from start menu, a

window is opened as shown in figure 2.12. "Computer" icon is available on the desktop also.
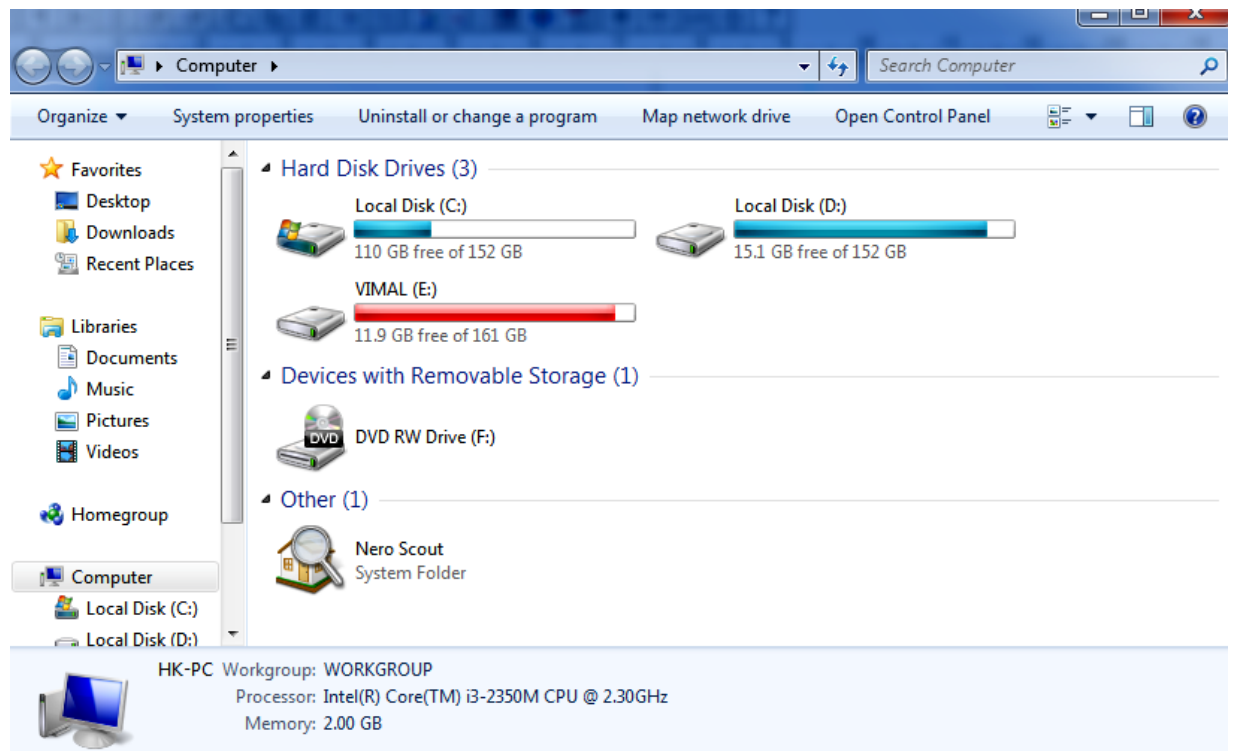
Figure 2.12 Computer

- "Computer" is used to quickly see what is available in the computer.
- On double-clicking it, will open window showing files and folders.
- In status bar, it shows number of objects (files and folders) and the amount of consumed memory space.
- By double-clicking the folder, its content is shown.
- When file is double-clicked, it will open the file and will show its contents.
- One can see the number of divisions made in the hard disk.
- One can see total number of files and folders on each disk.
- One can see free space and used space on each disk.
- File or directory from one disk can be easily copied to another disk or folder.
- One can change the name of file or folder.
- One can easily delete file or folder.

Control Panel: As seen in figure 2.13, changes can be made in computer system using "Control Panel" utility. We can install new fonts, install printer, install or uninstall programs, change the background of desktop etc. To get the window given in figure 2.13, press right arrow in "Control Panel" window and then select "All Control Panel Items".
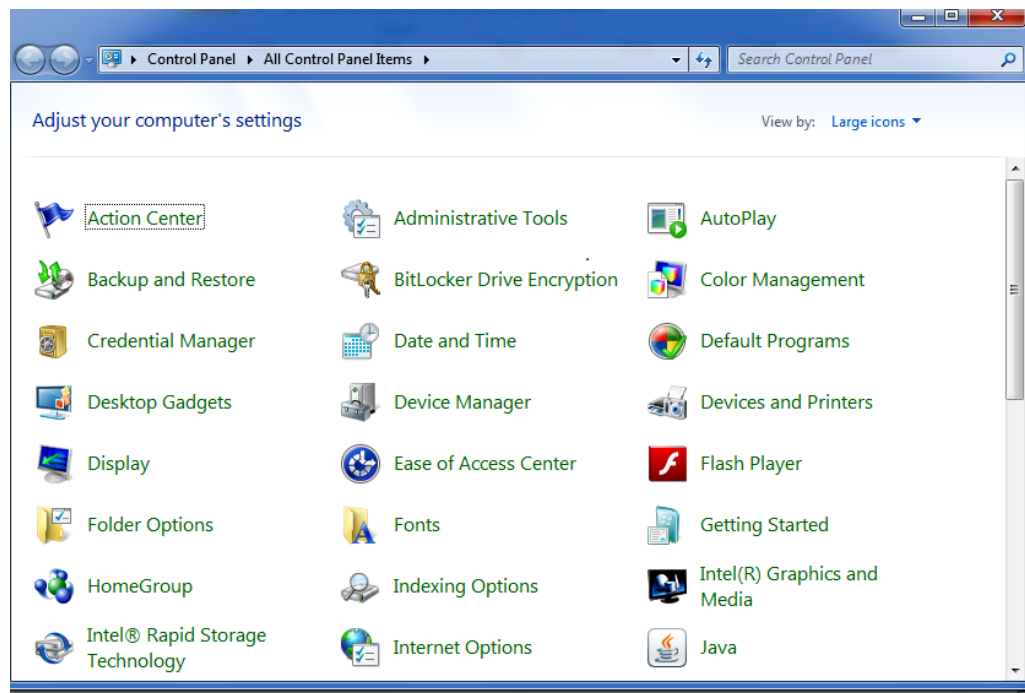
Figure 2.13 Control Panel

(a) Fonts: "Fonts" icon is available in control panel. Select "Fonts" to install new fonts. Some fonts automatically get installed at the time of installing the operating system. When we click on "Fonts", it asks for the path from where new fonts are to be installed. When the path is entered, new fonts get installed.

(b) Display: We can change the background of the desktop very easily with this utility. Moreover, we can also set some message or picture to appear on the desktop screen when the computer is on and it is idle for some time.

(c) Backup and Restore: With the use of "Backup and Restore" option available in the control panel, a backup of all the data stored in the computer can be taken to some other place and necessary data can be restored back from this place to the computer again.

(d) Date and Time: "Date and Time" option is used to set the system date and time.

(e) Devices and Printers: Using this option, we can install devices like printer, fax, scanner etc. which are connected to the computer. See figure 2.14.

(f) Default Programs: We need different applications to perform different tasks. For example, web browser, photo editor, music-video player, email etc. For this, we can specify certain settings so that each such task can be performed using the application as per our settings.

(g) Help and Support: This option is used to get all information related to Windows 7 operating system.

(h) Shut down: When mouse is moved or clicked on the arrow appearing near the "Shut down" button, a box appears as seen in figure 2.15. It displays options as: Switch user, Log off, Lock, Restart, Sleep, and Hibernate.

When more users are working on a single computer, then the user should select "Log off" option after completing their work. Once a user completes log off, another user can login using his/her user identification and password.

"Restart" option enables to restart the computer. Computer can also be restarted by pressing ALT+CTRL+DEL keys altogether twice.

34
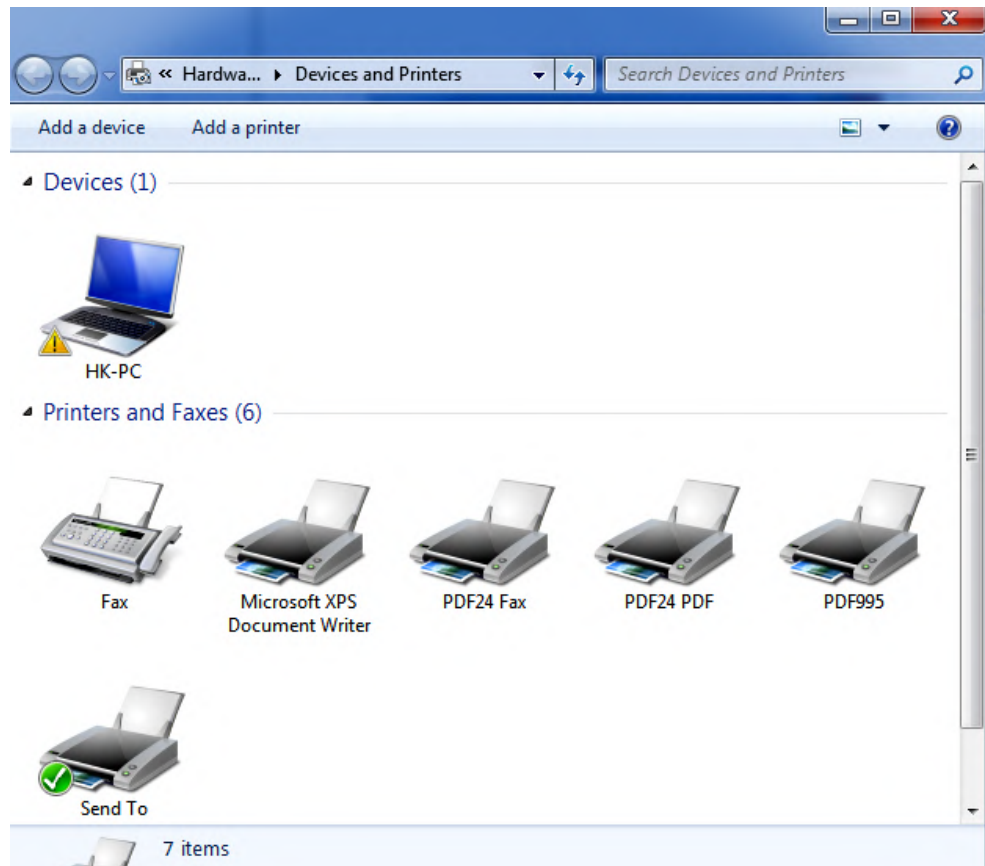
Figure 2.14 Devices and Printers
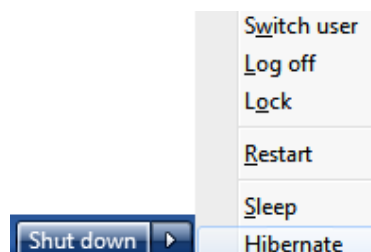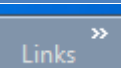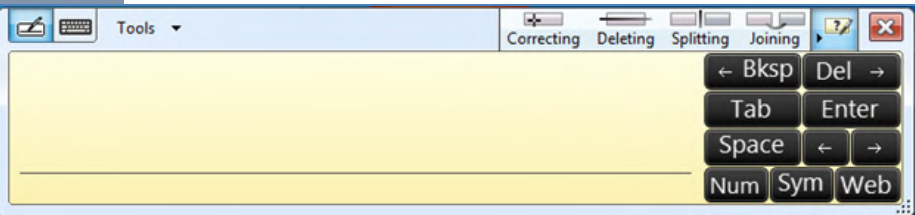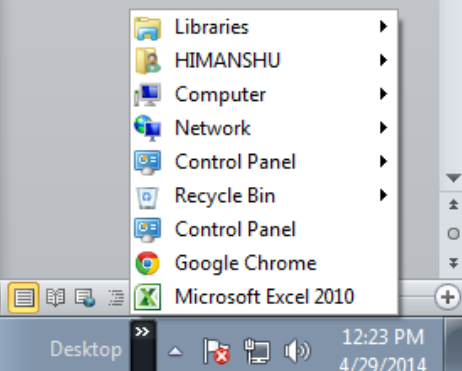
Figure 2.15 shutdown button

2.9 TOOLBAR

By right clicking on the windows taskbar, a shortcut menu is opened as seen on the lefthand side of the figure 2.16. Selecting "Toolbars" option from this menu, will show various toolbars available on the taskbar. . You can create new toolbar by clicking New toolbar option.
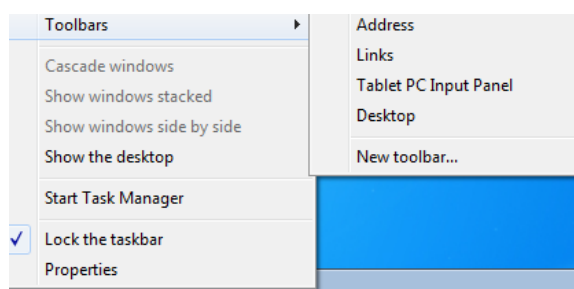
Figure 2.16 Toolbars

Toolbar	Use
Address	
	This toolbar is used to open any website. When address of some website is enterd here, website is opened in your browser.
Links	This toolbar gives the list of your favorite websites. A website can be opened in the browser by just clicking it.
Tablet PC Input Panel	
	This toolbar displays a panel as shown in above figure. Without using keyboard, one can do free-hand writing by dragging a mouse. Free-hand writing gets converted to text.
Desktop	This toolbar displays the list of shortcuts available on desktop. A progem can be opened by clicking on the shortcut from the list.
New Toolbar	This option can be used to quickly open the file in your folder. Here it displays the list of files in the selected folder. You can click on any file to open it.

2.10 PRINTING AN APPLICATION

When windows is opened for the first time, icons of programs like Internet Explorer, Windows Media Player, Windows Explorer are available on the taskbar. When clicked on this icon, the program gets opened. You can pin the frequently used programs on the right side of start button in the taskbar area. Programs can be pinned in taskbar in any of the following ways.

1. Select the program from start menu or desktop. Right click the mouse to have shortcut menu as shown in figure 2.17a. Select option "Pin to Taskbar" from shortcut menu.
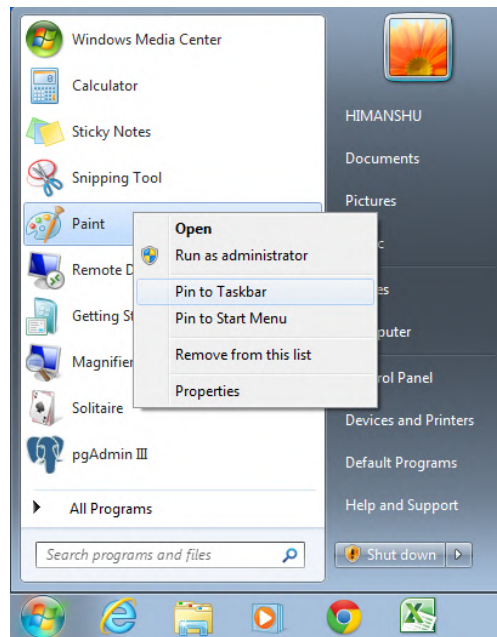
Figure 2.17- A To pin an application

2. Drag program shortcut on taskbar as shown in figure 2.17b.'
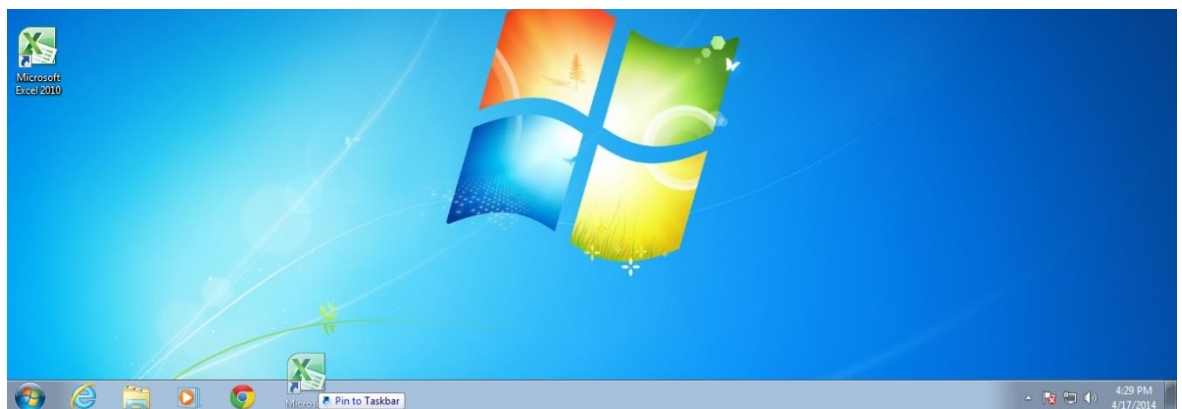
Figure 2.17-b To pin an application

2.11 NOTIFICATION AREA

The collection of icons in the area on the right end of the taskbar is known as the "Notification Area". These icons display details about the status of the computer or enable to do certain settings. When mouse is moved on these icons, will display their names and related information. For example, when mouse is moved on "Volume" icon, it displays "Speakers: 10%" as shown in the figure 2.18. It shows that the speaker's volume is 10%.
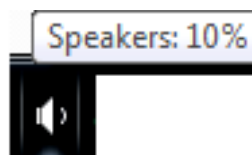
Figure 2.18 Volume

When a tool in notification area is double-clicked, a program and its associated settings are opened. For example, double clicking "volume" icon will open volume control. When there is an increase in number of programs or applications in the

notification area, '<' symbol is observed. It shows that notification area is small to accomodate all these applications, so some applications are hidden. To see hidden applications, click on '<' symbol.

About Taskbar: We can move the taskbar anywhere on the desktop i.e. towards left, right, top or bottom. Using mouse, we can even widen the taskbar.

Default arrangement of windows: We know that windows can be moved and its size can be changed. For automatic arrangement of windows, there are three types of arrangement. (i) Cascading (ii) Vertically stacked (iii) Side by side

2.12 DIALOG BOX

Dialog box is a feature of Windows. When we try to delete any file or folder, it asks for confirmation. When we install any application, then it gives message with the options Next, OK, and Finish buttons. Thus computer proceeds ahead only after getting the confirmation from the user through the dialog boxes... Dialog box cannot be minimized or maximized, but it can be positioned elsewhere by dragging.

Check your progress
1. Prepare a list of names and size of hard drives available on your computer.
2. Add "Address" toolbar in the taskbar.
3. Create a folder with your name in "Documents" folder. Copy it in C:\ drive and name it temp. Now delete this temp folder. Remove it from recycle bin also.
4. Using "Search Program and Files", search Microsoft PowerPoint and open it.

2.13 WINDOWS ACCESSORIES

There were four important Directories when Windows was first introduced in the market. This includes "Accessories" and "Main" apart from two other directories. Since then the applications like Paint, Notepad, WordPad, Calculator and Systems Tools which are used in everyday work, were included in the group named "Accessories". As the operating system gets advanced with time, it updates the existing applications as well as includes new applications in the Accessories group. Accessories group in Windows 7 is shown in figure 2.19.

Here we will study about four applications: (1) Paint (2) WordPad (3) Calculator (4) Sticky Notes.
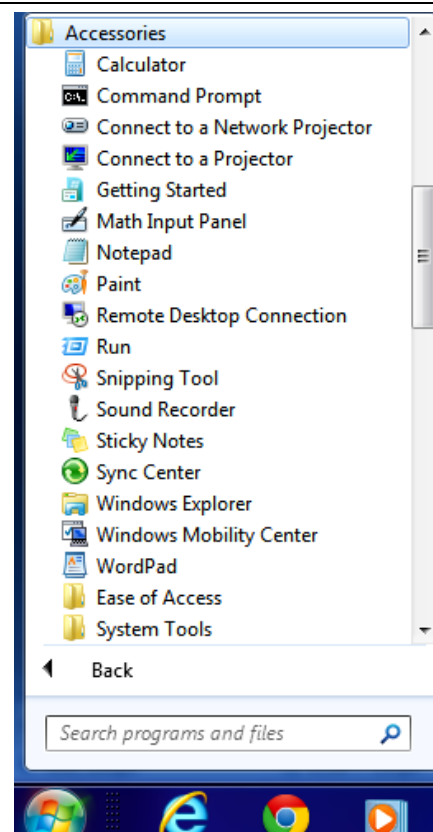
Figure 2.19 Windows Accessories

2.13.1 MS PAINT

MS Paint application is used usually to draw any kind of picture or to write text as per the requirement and to edit or make small corrections in any photograph / picture... This application is known as Paint.

To start the Paint application, we have to first click on the Start button, then "All Programs" using mouse or with the help of navigation keys. By right-clicking on "All Programs", many folders can be seen. Accessories group is one of them, clicking on which will show all the applications included in this group. "Paint" is one of these applications... Thus to open paint the flow is Start ➔ All Programs ➔ Accessories ➔paint.

Shown below is the layout of paint.
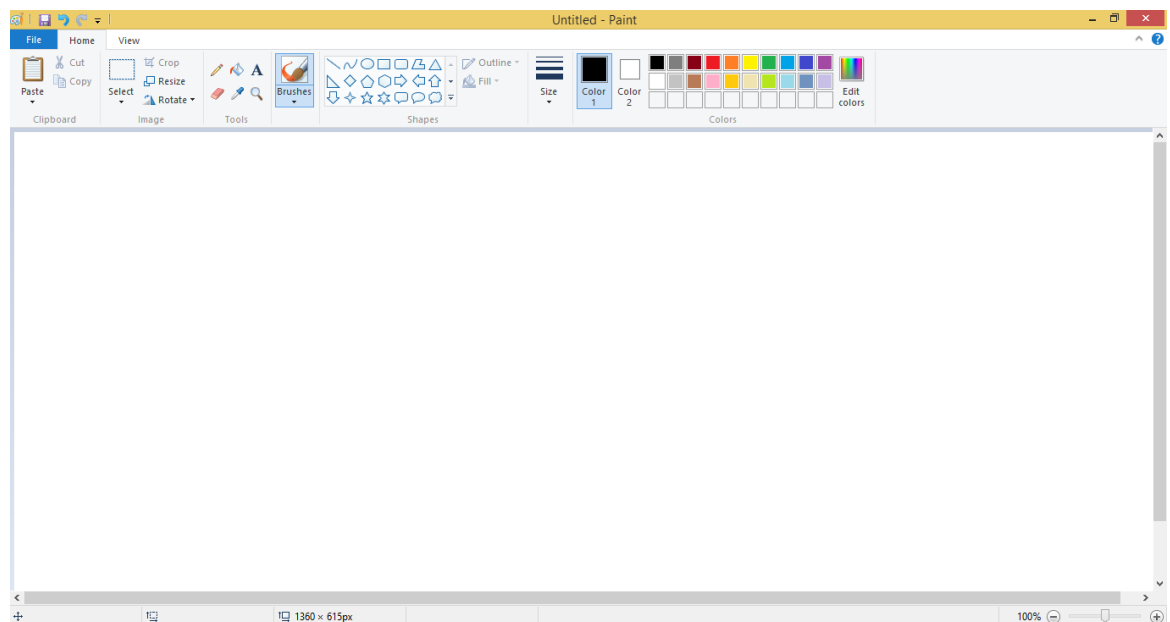
Figure 2.20 Screen lay-out of Paint

The first line where Untitled-Paint is written is called The Title bar.

The second line where we see different options like Home, View etc. is called the Menu bar.

In Windows 7, the appearance of the application is different. The group of different tools in it is known as the Tab. This includes Clipboard, Image, Tools, Shapes, Size, and Colors etc. Below this is the Working area and at the bottom of the screen is the Task bar.

Let us study about different tabs and menus. Here, File menu is not seen on the screen, but it can be seen with the options as shown in the figure 2.21 by pressing ALT+F.
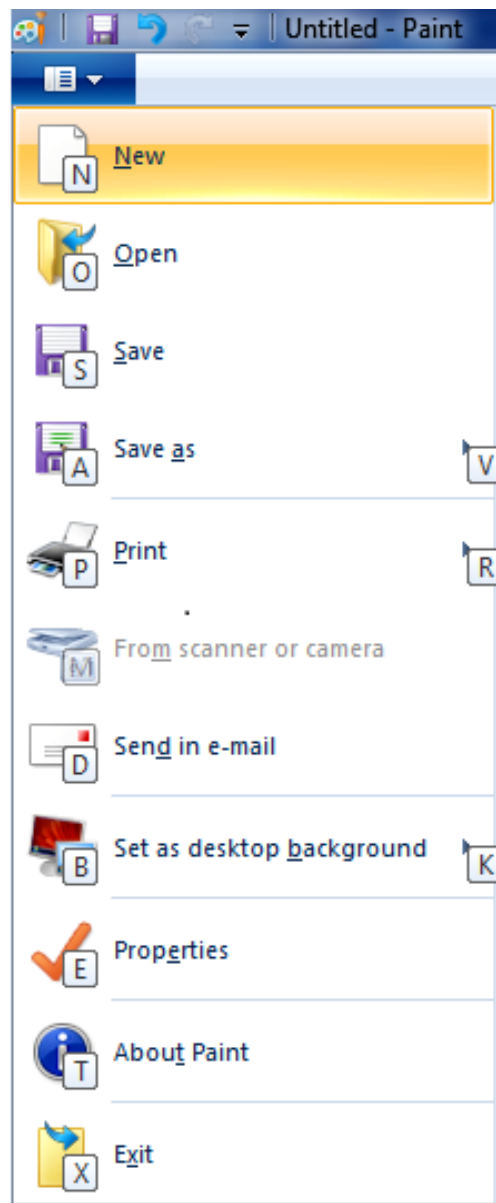
Figure 2.21 Paint menu

Following are the uses of the options shown in the Figure 2.21

New: We use this option to create a new file in Paint.

Open: This option is used to open an existing file that is created in Paint application. A dialogue box appears on the screen as shown in figure 2.22. Select the required file and it will be opened when OPEN button is clicked.
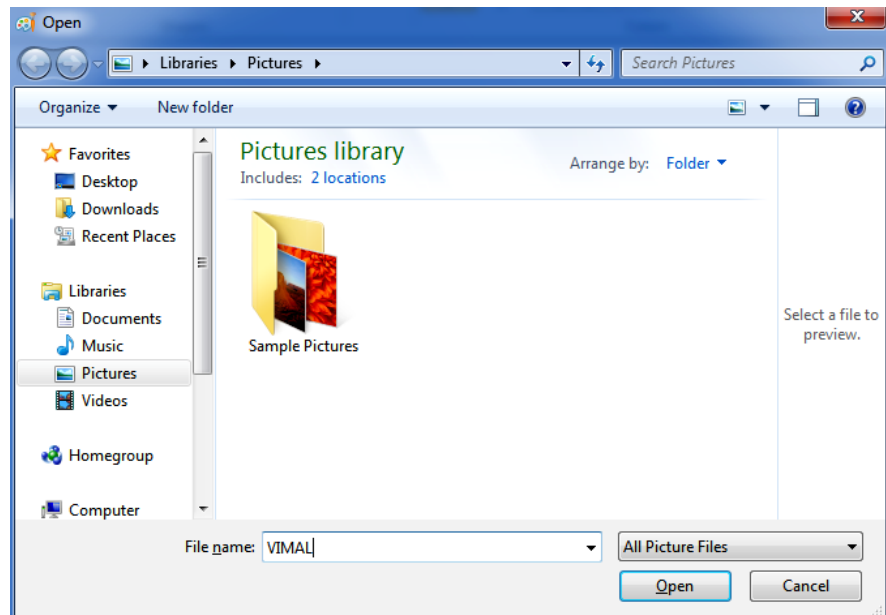
Figure 2.22 Open dialog box

Save: We use this option to store our work done in Paint application. Selecting this opens a dialogue box as seen in figure 2.23. The file created here has an extension ".bmp" (Bitmap image).
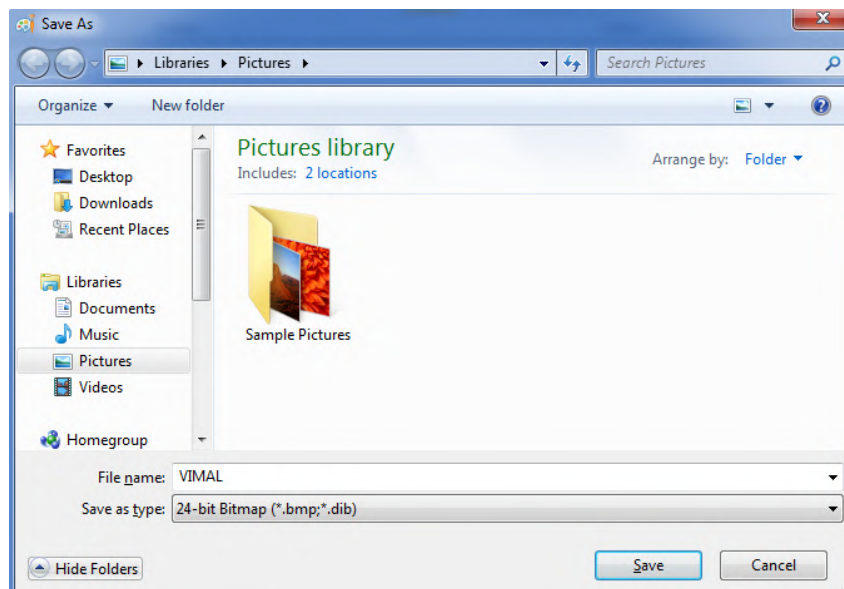
Figure 2.23 **Save Dialogue box**

Save as: If we want to store the file opened in Paint application in a different format or want to store it with a different name, then this option is used. Here, we can save the file in formats like png, jpeg, gif etc.
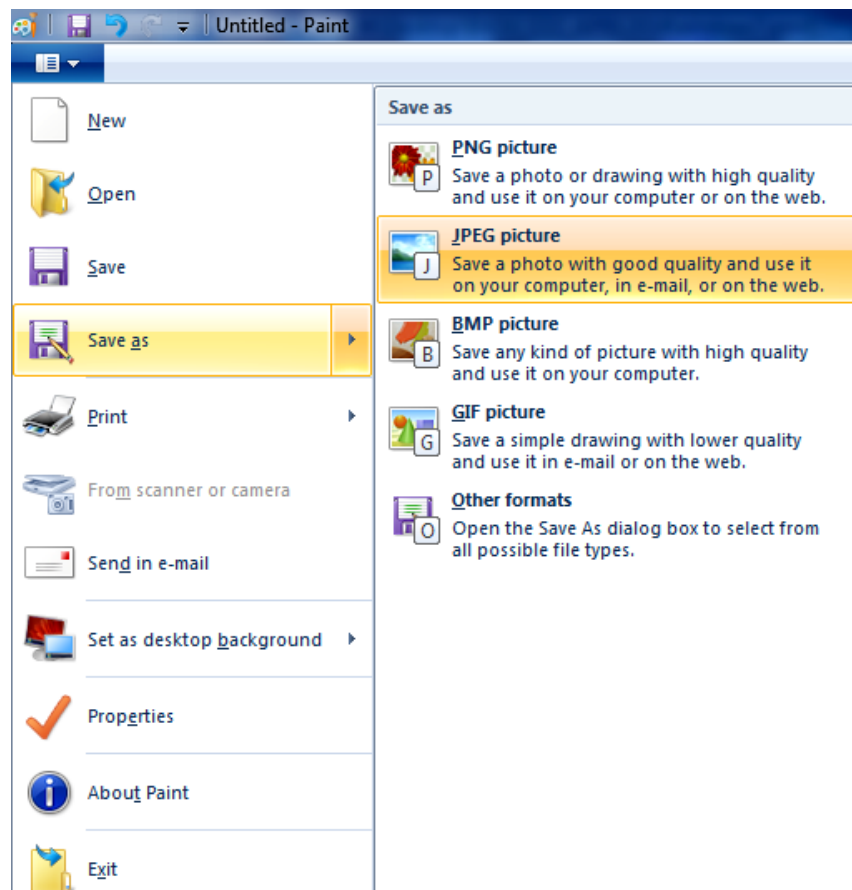
Figure 2.24 Save As option

Print: This option is used to take print out of a file created in Paint application.

From Scanner or Camera: This option is used to bring a photograph in a Paint application from a scanner or digital camera attached to the computer.

Send in Email: This option is used to send any file opened in Paint application to a person through email.

Set as Desktop Background: If we have created a picture and want to keep it as a desktop background, this option is used.

Properties: This option is used to change the length or width of a screen in Paint application.

Exit: This option is used to exit from the Paint application.

TITLE BAR

We see following different tools in the Title bar.

Save: The file created in Paint application is saved by clicking on this tool.

Redo: By clicking this tool, we can redo an undone change.

Undo: On clicking this tool, will show all the operations performed that can be undone.

Customize Quick Access Toolbar: This option can be used to insert or remove the menus to be shown in the Title bar. Avialble tools are to create new file, open existing file, save file, print file, see the print preview of file before printing. Refer figure 2.25.

In addition to this, it contains tools to send an open file in email, undo as well as redo last operation, to show quick access tools below the ribbon and to hide the ribbon. The line of group of tabs below menu bar is known as ribbon.
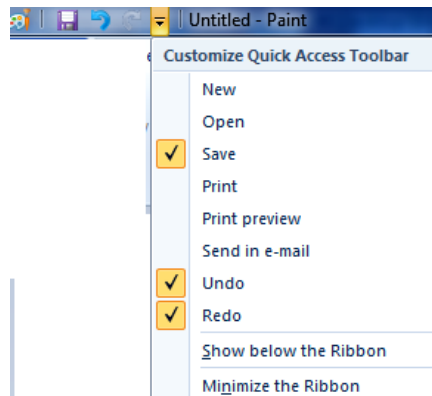
Figure 2.25 Quick access toolbar

Now let us study about tabs.

Tabs:
Here, one can see two options: Home and View. Let us first study about Home tab. It contains groups like Clipboard, Image, Brushes, Shapes, and Size etc.
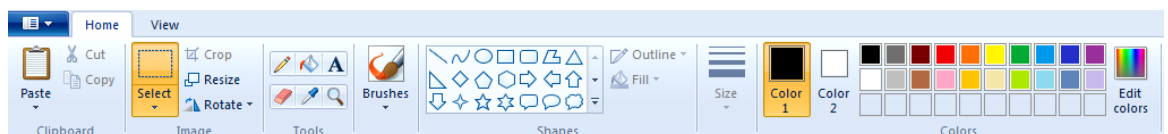
Figure 2.26 Paint tab

Home Tab:

Clipboard: When we cut or copy a selected object in Paint application, generally it is first stored in the Clipboard. Then only, it is moved elsewhere. If we want to delete any information, we can use cut option available in the clipboard group. If we want to have a second copy of the same object, we can use the copy option. After copy, place the cursor to the place where the copied information is to be inserted. Then clicking on the "paste" option will bring that information to the cursor position.

Image: We can see Select, Resize, Rotate, and Crop options in this tab. In general, Image tab is used to copy the object, to remove the object, to change the size of the object, to rotate the object to a specific degree or to remove some portion of an object. To perform any of these actions, first it requires an object to be selected.

Select: Using the Select option, we can select the required section of any object. Various Rotation options are available as seen in the Figure 2.27 which can be applied to the selected object. The available Rotation options have been shown. However the effects can be observed only when the data/object is selected.
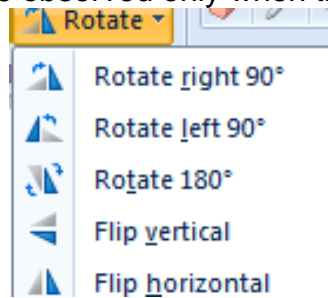
Figure 2.27 Options to rotate

Resize and skew: This option is used to increase or decrease the size of an object or to skew an object at some degree. As seen in figure 2.28, object can be stretched horizontally or vertically. In the same manner, an object can be skewed at certain degree horizontally or vertically.
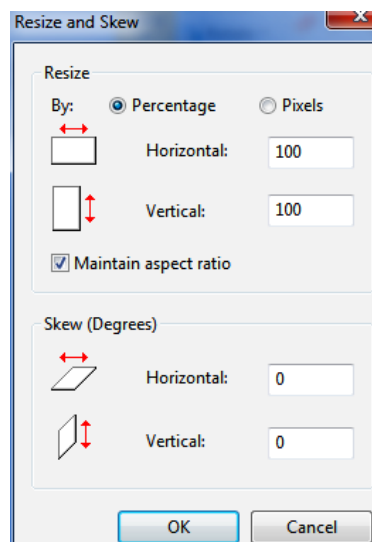
Figure 2.28 Resize and Skew dialog box

Crop: This option is used to select specific potion of an image and to create a new image.

Tools: This group includes options that can be considered to be the core part of Paint application.

Pencil: We can draw a picture of any shape using Pencil tool. We can use different colors to draw lines from Colors group available in the Home tab.

Fill with Color: We can use this option to fill color in the created shape.

Text: This option is used to write some text content in Paint application. A new tool (text tool) appears when we start typing text. This tool provides the options to change the style and size of font, , 'B' option to make the text to bold, 'I' option for italics,

'U' option to underline and strike-through option to draw a horizontal line in the middle of the text.

As soon as we click outside text object, the text tool disappear Different color options can be used change the color of the text. The text tab has been shown in the Figure 2.29.
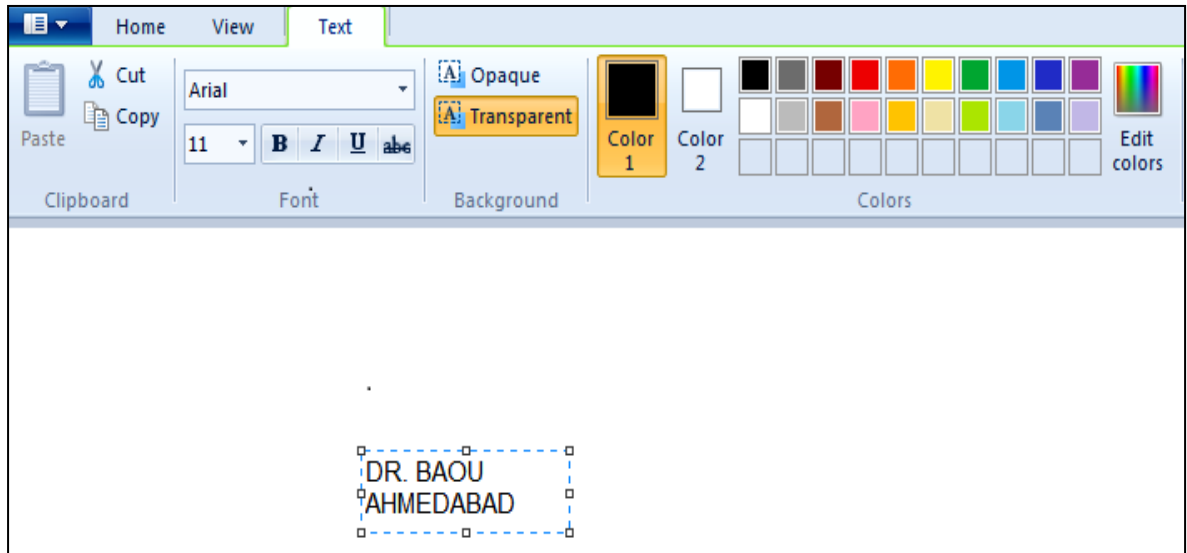
Figure 2.29 Text Option

Brushes: Brushes option is useful in Paint to create pictures using brush of various sizes or to shade around the object. Brushes tool has been shown in the Figure 2.30.
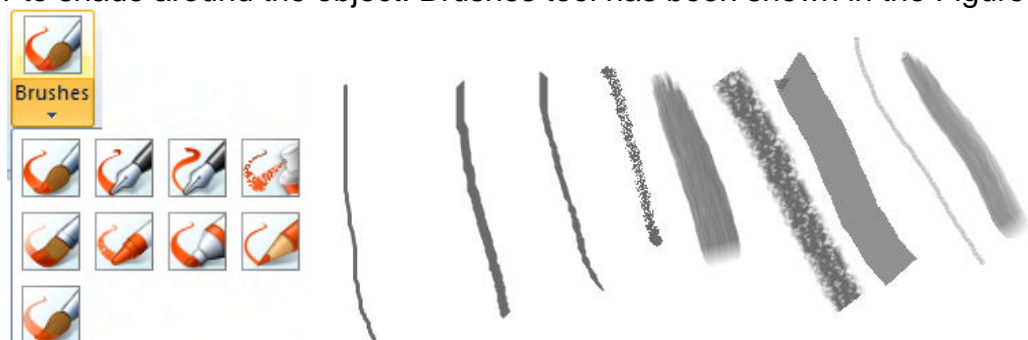
Figure 2.30 Brushes option

In the Paint application, different shapes are available in the Home tab. Thus different shapes can be drawn as shown in the Figure 2.31.We can type anything in these shapes.

Some other features are also available as seen in the Figure 2.31 to color the border and to change the thickness of these shapes. Further they can be filled with selected colors using the 'Fill' option.
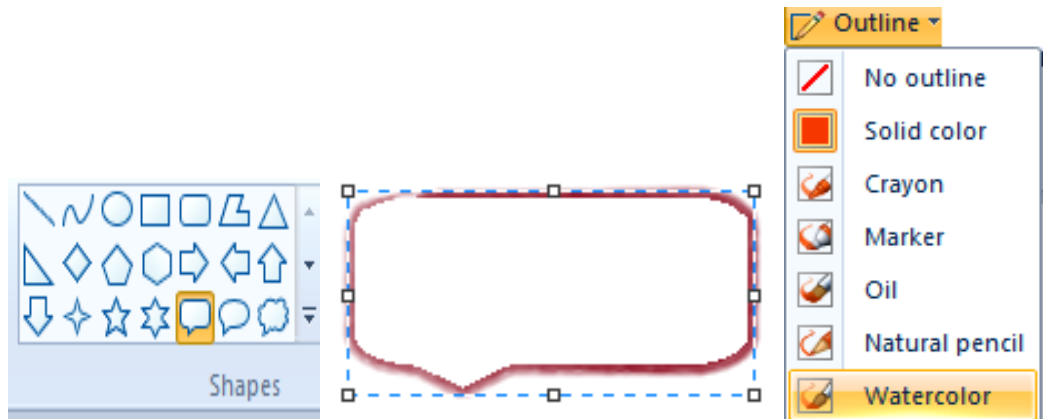
Figure 2.31 Shape option

Sizes: Using the 'Size' option, we can change the thickness of the border or line of the object being created as seen in figure 2.32.

Figure 2.32 Size option

Colors → Edit Colors: When this option is clicked, it opens a dialog box as seen in figure 2.33. Using this, we can select any color of our choice, Further any new color can be created and added to the Custom color.
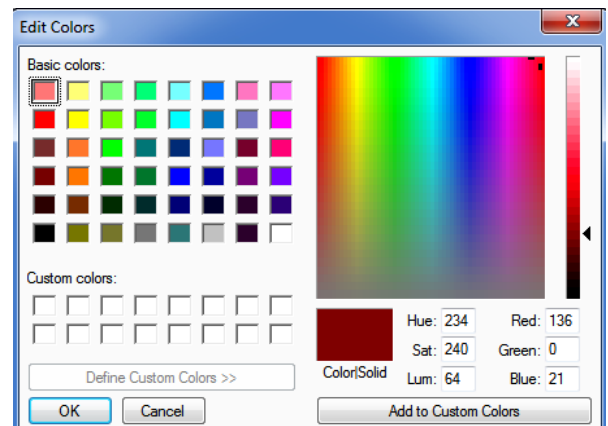
Figure 2.33Color option

View Tab: As shown in figure 2.34, Zoom, Show or Hide and Display groups are available in this tab.
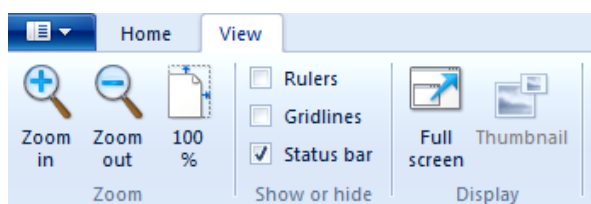
Figure 2.34 View Tab

Zoom: The Zoom in and Zoom out options can be used to view the objects in the increased or decreased size. To see the real appearance of any object, we can use 100%.

Show or Hide: This group is used to show or hide the rulers and grid lines on the screen as shown in figure 2.35. Thus objects can be created with specific measurements as per our need for better quality.
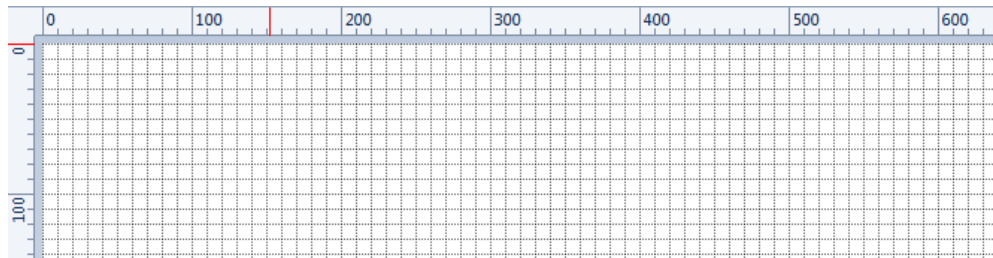
Figure 2.35 Grid Line

Display: To see only the object on the screen, we can use Full Screen option. It will not display any of the tabs, menus or taskbar. . On pressing ESC key, we can return back to the normal view.

Check your progress

1. Start Paint and create a picture as shown below. Save this file with the name 'smile.jpeg'.

2. Change the background of the picture. Create black border around the picture.
3. Set your picture as the desktop background.

2.13.2 Wordpad

WordPad application is generally used to write draft letters or to create documents. The name 'WordPad' itself implies a word processing application.. WordPad is the first application where use of Toolbar was started. The layout of WordPad screen has been shown in the Figure 2.36.
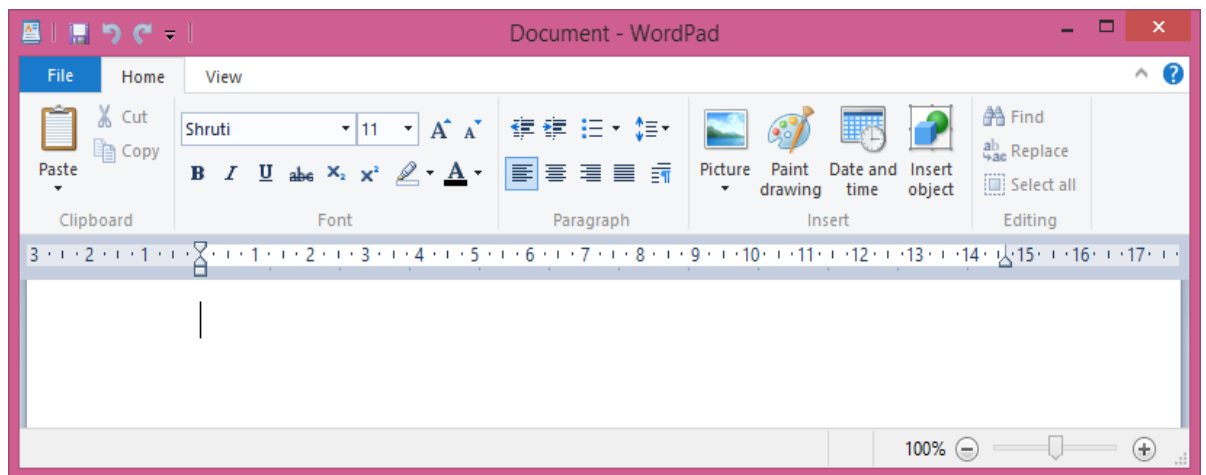
Figure 2.36 WordPad Screen layout

Let us see different tabs and menus available in wordPad. The File menu is not visible , but can appearwhen ALT+F is presssed. The options avialble in it have been shown in the Figure 2.37.

Figure 2.37 WordMenu

New: We use this option to create new file in WordPad.

Open: This option is used to open a file created in WordPad. A dialog box is shown when Open option is selected. When the required file is selected, it opens the file.

Save: This option is used to store the work done using WordPad application. The file created in WordPad has an extension .rtf (Rich Text Format), but we can also specify the extension to be .doc also.

Save as: This option is used to save a file opened in WordPad in different format or with different name. A file can be saved in different formats like txt, rtf, doc etc.

Print: Once the file is created in WordPad, It can be printed using this option.**Page setup:** On selecting Print option, it opens a dialog box as shown in figure 2.38 for set up. It provides facilities for setting paper, margins, orientation etc. which have been explained below :
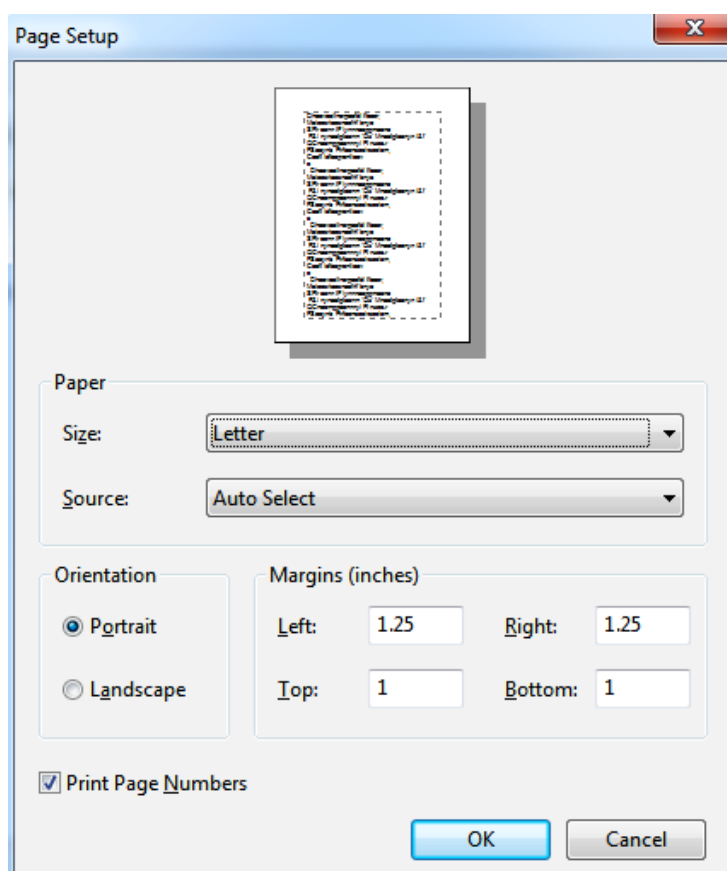
Figure 2.38 Page Setup Dialog Box

Paper:
- **Size:** As shown in figure 2.39, different sizes of page are available here. Page size can be Letter, A4, legal, Postcard etc. By default, page size is set to be of letter type.
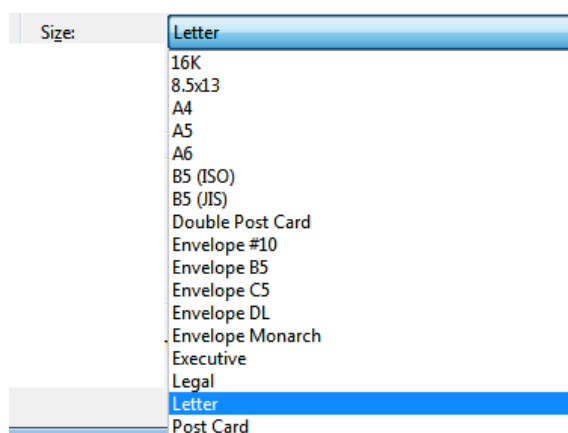
Figure 2.39 Paper Size

- **Source:** It has two options, 'Manual feed' and 'Automatic Select'.We should keep 'Automatic Select' as the default option so that we need not to feed pages one by one at the time of printing.
- **Orientation:** Here, the options are avialble for landscape or portrait printing. Default option is 'Portrait'. If the content is not fitting in the portrait option, 'Landscape' option can be used.
- **Margins:** Using Marigin option, we can set the margins for left, right, top and bottom. Finally, on pressing the OK button, page will be opened with the applied settings.

Send in Email: A file opend in WordPad can be sent to any email address using this option.

Exit: This option is sued to exit from WordPad application.

TITLE BAR

We can see various tools in the title bar.

Save: It is used to save the file created in WordPad.

Redo: On clicking Redo, all the editing effects can be reapplied back.

Undo: On clicking this tool, all the operations performed t can be undone.

Customize Quick Access Toolbar: As shown in figure 2.40, this option can be used to insert or remove the menus to be shown in toolbar. Tools are to create new file, open existing file, save file, print file, see the printview of file before printing etc.
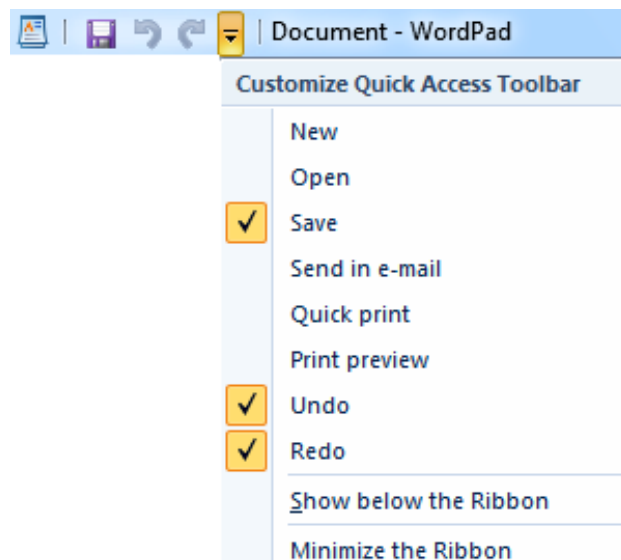
Figure 2.40 Quick-Access Toolbar

Tools can be selected or unselected so as to appear or not in the Title bar.. Ribbon is a row that shows the collection of tabs. The 'Show below the Ribbon' option can

be selected to show the Title bar below the ribbon and the 'Minimize the ribbon' option to minimize the ribbon.

About Tabs: In WordPad, two types of tabs are available in WordPad as shown in figure 2.41.These tab types are Home and View. Let us first see the Home tab.
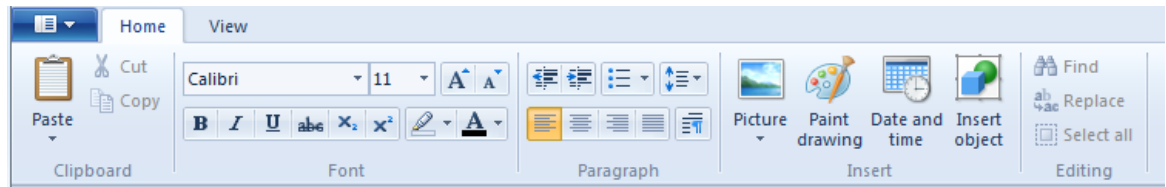
Figure 2.41 Home Tab

Home Tab contains groups like Clipboard, Font, Paragraph, Insert, Editing etc.

Clipboard: In general, when we cut or copy some object from a file in WordPad, the object is first stored in the clipboard. Thereafter only, it is copied or moved elsewhere.   To remove the selected content from any file, the Cut option is used. To copy the selected content, Copy option is used. Thereafter, to insert such cut or copied content to other place, take the cursor to that appropriate position and choose the Paste option.

Font: This group gives the options: Font Style, Font Size, Font Color, Bold, Italic, Underline, Strikethrough etc.
- **Font Style:** Whatever we write or draft, the font style can be selected using this option. Font styles can be like Calibri, Times New Roman etc.
- **Font Size:** Using this option, we can incraese or decrease the font size of the selected content.
- **Grow Font:** Font size of the selected content can be increased using this option.
- **Shrink Font:** Font size of the selected content can be decreased using this option.
- **B, I, U, ~~abc~~:** Using these tools, the fonts of selected contents can be given the effects like Bold, *Italics*, Underline and strike-through.
- **X_2:** Using this subscript tool, selected content can be displayed as subscipt.
- **X^2:** Using this superscrip tool, selected content can be displayed as superscipt.
- **Text Highlight Color:** This option is used to highlight the content. After selceting the content, and clicking on the highlight tool, the content is shown with the selected background colour to differentiate it from the other contents.
- **Text Color:** Using this tool, the colour of the text can be changed.

Paragraph: Using this tab, we can easily format paragraphs with bullets, numbering, line spacing, alignment etc. as explained below:
- **Decrease Indent and Increase Indent** : We can increase or decrease the indention of any paragraph using these tools. (Tools with right arrow and left arrow).

- **Start a list** **:** If the content contains points, usually some symbol is used before the beginning of the point so as to differentiate it from the other points. We use symbols like * or + etc. The List tool can be used to fulfill this purpose. . To do so, first the content is to be selected and then clicking on the List tool, will open a box with list options as shown in figure 2.42. This tool contains numbers, symbols and alphabets which can be used to list the points.
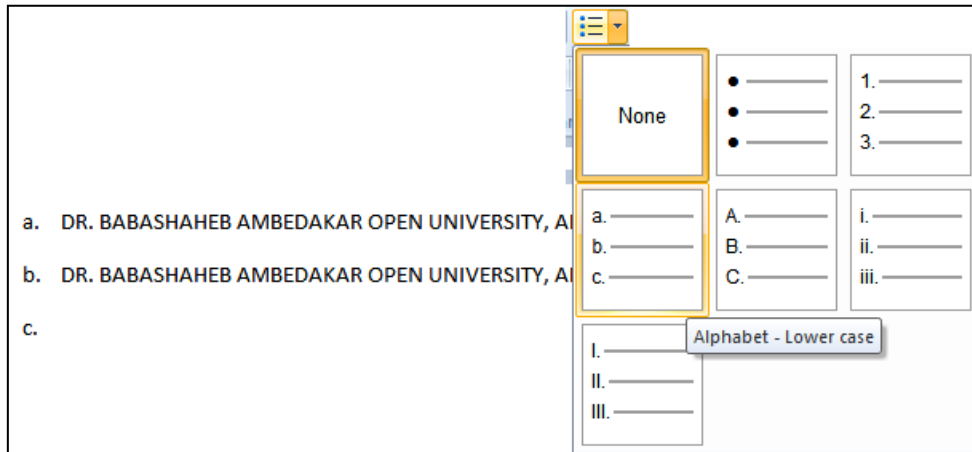

Figure 2.42 List Options

- **Line Spacing:** Line Spacing tool is used to set the distance between two lines in a paragraph. If the paragraph is already written, it needs to be selected first and then clicking this tool, opens a box as shown in figure 2.43. Here, one can specify the value for distance between two lines. Generally, distance between two lines is 1.15. We can also specify the distance to be kept before and after the paragraph. We can set line spacing from the beginning.
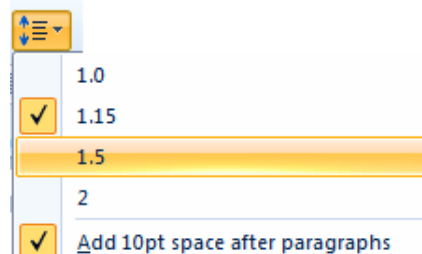
Figure 2.43 Line Spacing

- **Alignment:** Four types of alignments are available in WordPad. They are Left, Centre, Right and Justify will do the following when selected
  - **Left:** Content is aligned towards left.
  - **Right:** Content is aligned towards right.
  - **Centre:** Content is center aligned.
  - **Justify:** Content is aligned along both left and right side by inserting extra spaces as needed**.**

If the content is already written, it first needs to be selected and then alignment is applied.

- **Paragraph:** This tool can be used to specify all above settings from a single dialog box as seen in the Figure 2.44. One can specify the space to be left on the left side (left indentation) and right side (right indentation), distance on the left for the first line, distance between two lines and alignment using Paragraph tool.
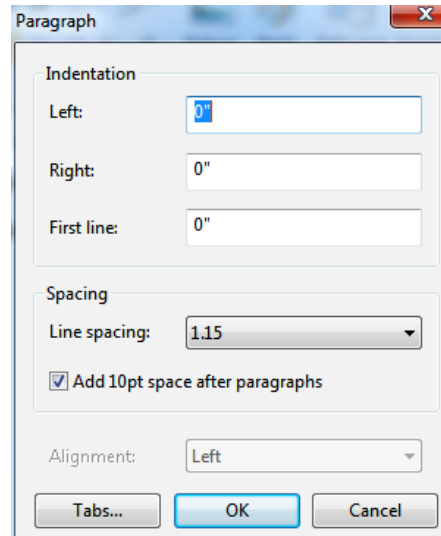
Figure 2.44 Paragraph Dialog Box

These settings can be specified before writing the content. If the content is already written, it is to be selected first and then the settings can be applied. we can specify the values for all these settings. The Alignment option given at the end, has the options left, right, and justify.

Insert Tab: This group is used to insert picture, change picture or change the size of the picture in a file. It also enables to insert date, time and other objects.as explained below:

- **Picture:** Picture tool is used to insert an image stored anywhere in the computer, floppy, CD, pen drive etc. in WordPad. As shown in the Figure 2.45, clicking on Picture tool shows three options: Picture, Change picture and Resize picture. On selection of Picture option, it asks to specify the path where an image or picture is stored. After selecting the required file and pressing OK button, the image will be inserted in the document at the specified location.
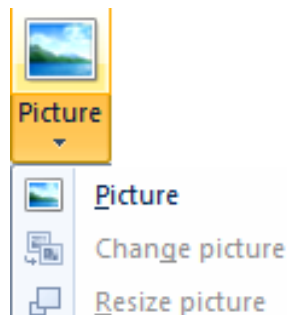
Figure 2.45 Picture Tool

The inserted image can be changed by using Change Picture option.

We can change the size of the image using Resize Picture option. To do so, select image first and then choose Resize Picture option. It will open dialog box to specify the size. Also, one can resize the image by stretching the mouse from the corners or sides of the selected image.

- **Paint Drawing:** While working in the WordPad application, if we want to insert some object created in the Paint application, then this tool can be used. On clicking it, opens the Paint application in the WordPad file, with the provision to draw an object, when the mouse is clicked in the working area of the WordPad, the object created in the Paint application will be inserted in the WordPad file.

Date and Time: This tool is used to insert date and time at the position of the cursor in the WordPad file.
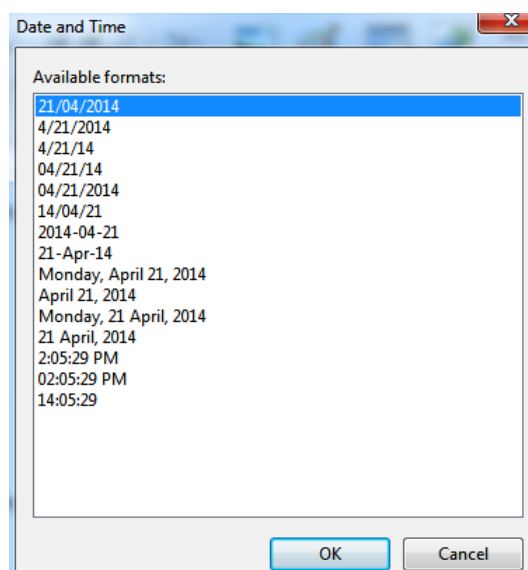
Figure 2.46 Date and Time dialog box

On clicking it, opens a dialog box with various available formats as shown in the Figure 2.46. It inserts the date and time, at the cursor positionusing the selected format.

Insert Object: This tool is used to work with Word, Excel, PowerPoint and some other applications while working with WordPad. On clicking this, it shows most of the applications available in the computer. . After completion of the work in the selected application, the created object can be inserted in the WordPad file when clicked on the WordPad application.

Editing Group: With the help of this group, it is possible to select any word or phrase, find any specified phrase and to replace it with another phrase.

Find:Without using any tool, if we want to find any word in a file, delete any word, or to substitute all the occurrences of specific word with another word, we need to read the file content one line at a time very carefully. and it is a time taking task also . . But using the tool 'Find' it is very easy to do such tasks irrespective of the number of pages in the file.

On selecting the 'Find' option, a dialog box is opened as shown in the Figure 2.47. Specify the word to be searched in the box appearing near 'Find What:'. On clicking the 'Find Next' button, first occurrence of this word is highlighted. To search another occurrence, click the 'Find Next' button again and so on. In this manner, we can find all the occurrences of any specified word one after the other. At the end , a message will appear saying that wordpad has finished searching the document.
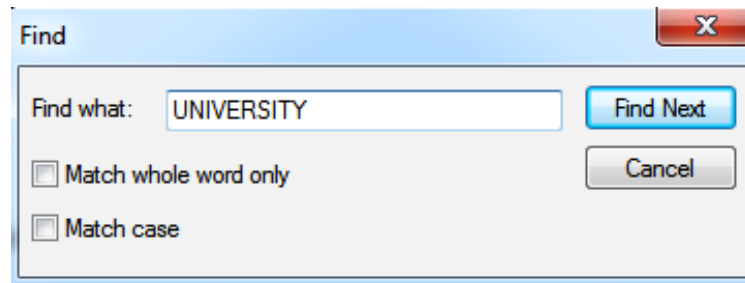
Figure 2.47 Find dialog box

Replace: This option is used to replace any word with another. For example, if we want to replace the word 'UNIVERSITY' with 'DRBAOU' in the WordPad file, first click on the Replace option from Editing group. A dialog box will appear as shown in the Figure 2.48. Write UNIVERSITY in the 'from what:' box and DRBAOU in the 'Replace with:' box. Now click on the 'Replace All' button, to replace all the occurrences of the word 'UNIVERSITY' with 'DRBAOU'. To replace only specific occurrence, we need to use 'Find Next' and 'Replace' button.
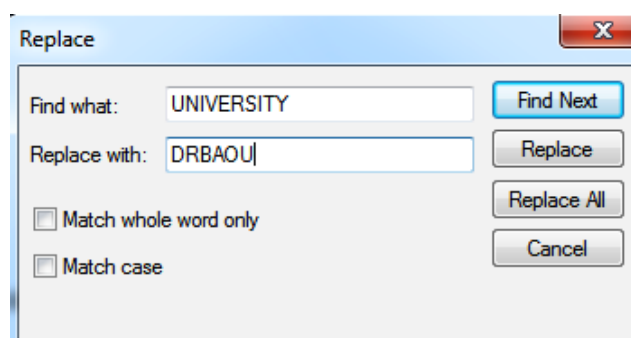
Figure 2.48 Find and Replace dialog box

Select All: This tool is used to select the entire content of the file. On clicking the 'Select All' option, the entire content is highlighted showing the selection. To come to the normal view from selected view, the arrow keys or the mouse can be clicked.

VIEW TAB: View Tab contains three groups: Zoom, Show or Hide and Settings as shown below.
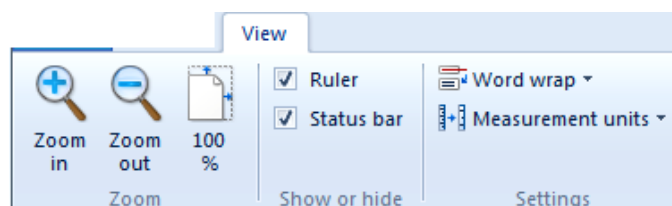
Figure 2.49 View Tab

Zoom Group: Using the 'Zoom In' and 'Zoom Out' options, we can have the increased or decreased view of any object. Option '100 %' can be used to see the real view of an object.

Show or Hide: This group is used to enable or disable the 'Ruler' and the 'Status bar' in the WordPad application. (Refer Figure 2.49). Using Ruler, we can create objects with specific measurement to have better quality objects. Status bar is shown at the bottom of the window.

Settings: Using this group, we can set our content inside or outside the ruler. When 'Word wrap' is clicked, it gives three options as seen in the Figure 2.50. If 'No wrap' option is selected, the content is not wrapped in the window. If window size is changed, the look of the content does not change. Activating 'Wrap to window' shows the content wrapped as per the window size. Enabling 'Wrap to ruler' ensures the content to be wrapped within the rule.
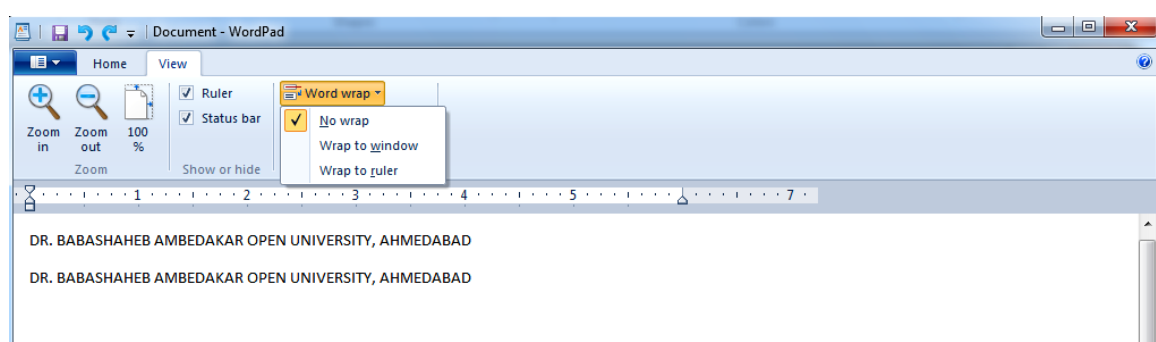
Figure 2.50 Word Wrap

Measurement Units: This is the second option in 'Settings' group. It provides the options for unit of measurement to be used in the Ruler. Available units are Inches, Centimeters, Points and Picas as shown in the Figure 2.51. The scale on ruler is changed according to the selected option. Figure 2.52 shows the ruler line in various units.
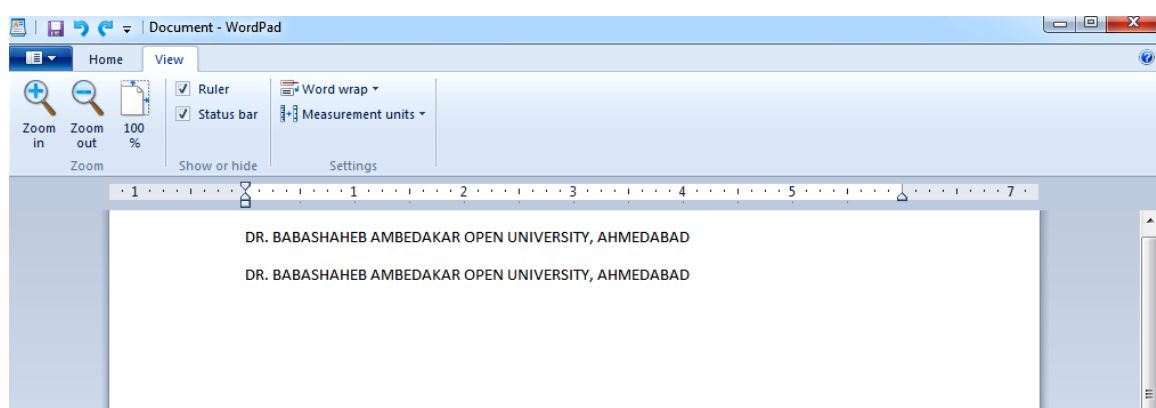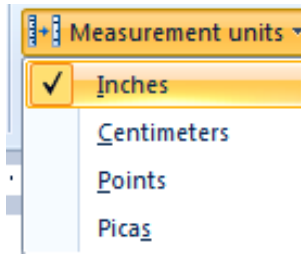
Figure 2.51 Measurement Units
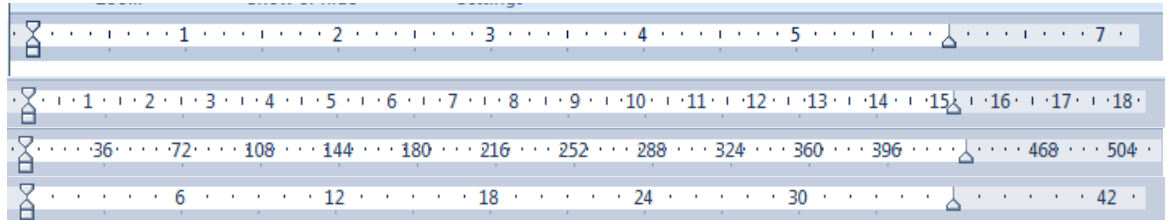
Figure 2.52 Ruler in different units

Check your progress

1. Open WordPad and type your bio data. Save the file with the name 'mybiodata.rtf'.
2. Set the line spacing to 1.5 and show your hobbies using bullets.
3. Insert today's date and time at the end of the file.
4. Insert some picture in the file.
5. Replace specific word with another word.

2.13.3 Calculator

Nowadays, calculator is the most needful device everywhere. With the use of calculator, mathematical and scientific calculations can be performed very quickly and easily. Calculator in Windows 7 provides more functionality.

To open Calculator, first of all we should go to Start button. On activating Start button, Accessories group is seen when All Programs option is selected. In this group, Calculator is available. [Thus the sequence of applications for opening calculator is Start ➔ All Programs ➔ Accessories ➔ Calculator]

On clicking Calculator option, it gets opened as in the Figure 2.53a. Here, we can easily perform addition, multiplication, division and multiplication. If we require performing some specific type of calculations, we can see different types of views in Calculator and can do such calculations easily.

Here, select View (ALT+V) option to see different types of calculators available as shown in the Figure 2.53b.we can quickly get the correct result by selecting the option as per need. We can select any of these calculators as per our need and can do the calculations.
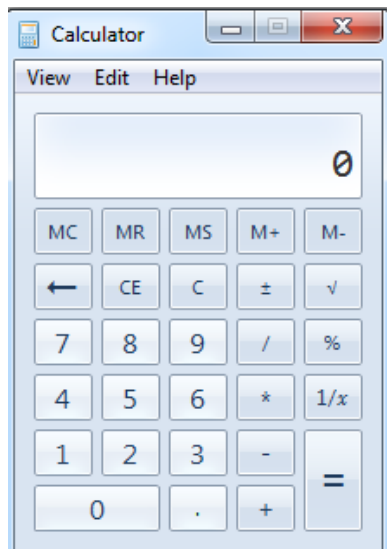
Figure 2.53-a
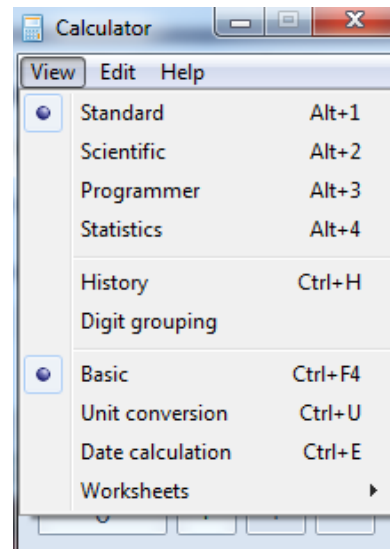
Figure 2.53-b

When we click on scientific option, the scientific calculator is opened which has been shown in the Figure 2.53c. Using scientific calculator, we can easily perform scientific calculations like Sine, Cosine, Tan, Int, Degree, Logarithm etc. very fast.

The third option is Programmer in the View menu, for the programmer calculator. In this calculator various functions like Mod, RoR, And, Not, Byte etc. are available to be used by the programmers as shown in the Figure 2.53d.

Statistics option available in View menu opens Statistical calculator for performing statistical calculations as in the Figure 2.53e.
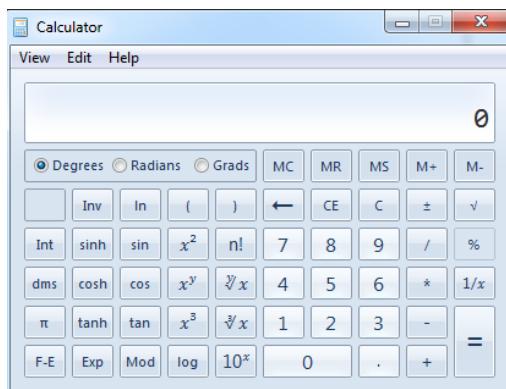
Figure 2.53-c
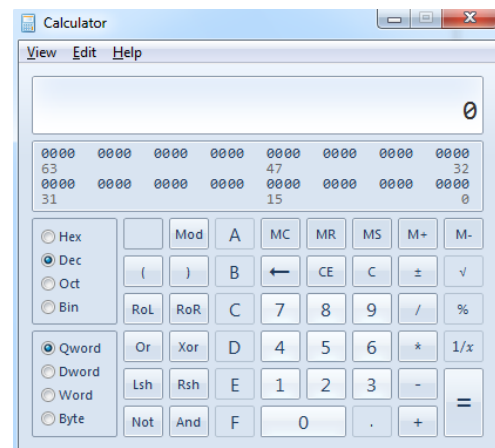
Figure 2.53-d
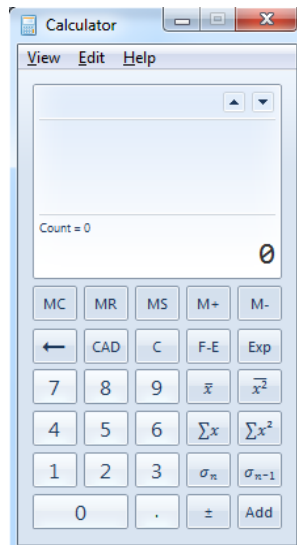
Figure 2.53-e
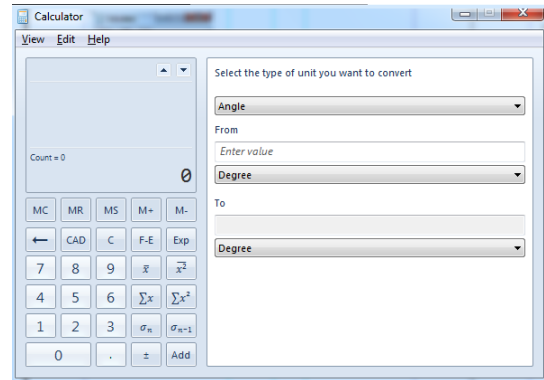
Figure 2.53-f

On selection of Unit Conversion option from View menu, a window is seen as in the Figure 2.53f. On the right side pan, the first drop-down menu is for the type of unit we want to convert. . Now suppose we want to convert area from acre to square meter. Then select Area from the unit option. Now enter value in acres and select the option Acres from the second drop-down list "From". Select '*Square meter*' in the last line of "To" drop-down menu. It will show the converted value immediately in the text box above the "To" drop-down menu as in shown the Figure 2.53g.

When the Date Calculation option is selected from the View menu, a screen appears as seen in the Figure 2.53h. On the right hand side, the first option is to select the type of calculation to be performed on date. To find the difference between two dates, select the respective option from it. As shown in figure 2.53h, the two dates entered are 1/05/2014 in from date and 15/05/2014 in to date. On clicking on the Calculate button, it   shows the difference in weeks and days.
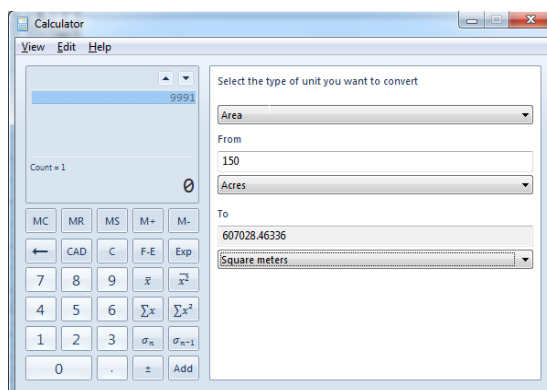
Figure 2.53-g
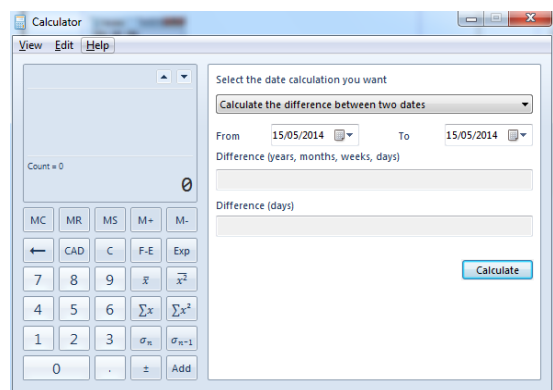
Figure 2.53-h
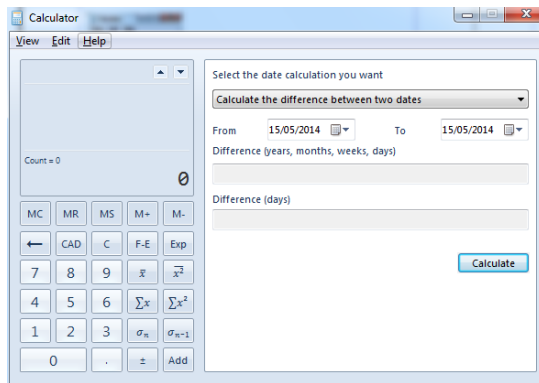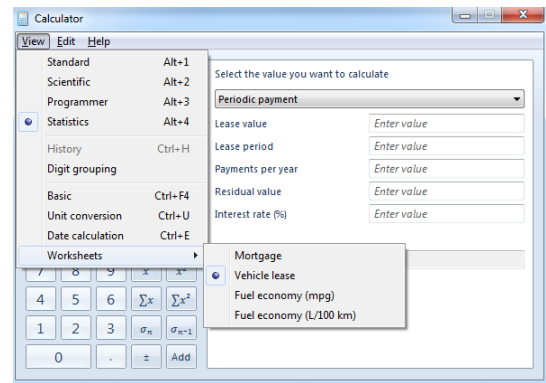
Figure 2.53-i   **Figure 2.53-j**

On selection of the option Worksheets from View menu, a screen appears as shown in figure 2.53j. Financial calculations related to mortgage, vehicle lease etc. can be easily performed using this option.

At the end, Help menu is given in the Calculator. If we have any difficulty in understanding the available options, we can easily take the help and can complete our work.
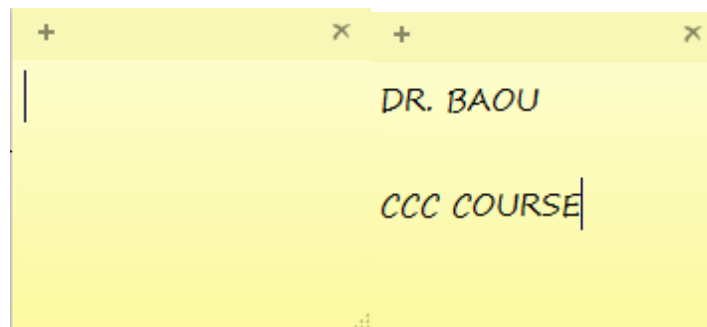
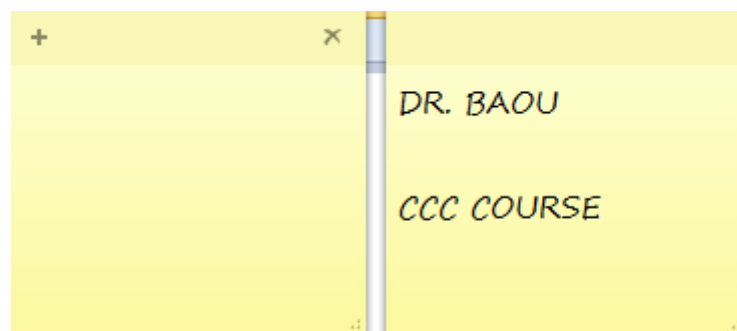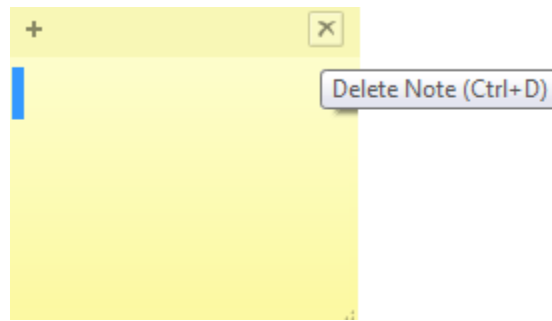## 2.13.4 Sticky Notes

Figure 2.54-a   **Figure 2.54-b**

Figure 2.54-cFigure 2.54-d

Figure 2.54-e

In general, Sticky Notes becomes useful when we want to rememebr something at the time of working with computer or when we need to follow certain instructions while working with specific application.

To open Sticky Notes, first click on Start button and go to All Programs. Now click on Accessories group and the Sticky Notes option is available here. Thus the sequence to open it is: Start ➔ All Programs ➔ Accessories ➔ Sticky Notes.

On clicking Sticky Notes, a yellow slip (note) is seen as shown in the Figure 2.54a. In figure 2.54a, three items can be seen in the sticky note. On the top, two buttons '+' and 'X' are seen. Symbol '+' informs that a new sticky note (as seen in the Figure 2.54c) can be inserted by clicking it. Symbol 'X' is used to delete or remove unwanted sticky notes. When we click on button X, it asks for confirmation to remove the sticky note. If 'Yes' is selected, then the sticky note is immediately removed from the computer.

Third item is a blank area where we can write any information in sticky notes as shown in the Figure 2.54d. There can be as many sticky notes as we want. Thus, 'sticky notes' is helpful to remind certain things in our day-to-day work.

2.14 SECURITY SETTINGS AND SOFTWARE

Action Center: Action centers are used to run Windows operating system without any problem. To run Windows smoothly, action center is a place which takes necessary action as soon as a security related problem occurs.

Windows Defender: When Windows is installed, an anti-spyware software named 'Windows Defender' gets automatically installed. Windows Defender is used to protect our computer from spyware. Spyware enters our computer through internet, Cd or DVD with our knowledge. At this time, anti-spyware software 'Windows Defender' is proved to be very useful in protecting the computer.

Windows Defender protects the computer in two ways:

(1) By providing real time protection.
(2) Scanning through Windows defender.

User Account Control: Whenever a need is raised for changes in the program, the User Account Control (UAC) informs or instructs at the administrator level. Changes are made only after the permission granted by the user. We can use only those

rights which are granted to us. For example, check email, listen music, create new documents etc. If access rights are not granted on these applications, neither the application can be opened nor can it be executed.

Windows Update: In Windows operating system, everyday new features are being added or utilities are getting modified to add or improve some features. In licensed operating system, "Windows Update" option should be kept ON so as to automatically update the system. When this option is ON, updates are automatically accepted and installed so that the computer remains updated with the new system.

Windows Firewall: Windows Firewall is helpful in protecting our computer when it is connected to any network. It protects the data and information stored in our computer from other computers or other programs.

Parental Controls: Nowadays, **children** are wasting lot of time in playing computer games. Thus Parental Controls can be used to control such activities.

To activate Parental controls, click on the start menu, type "Parental Search" in the search box as shown in the Figure 2.54. On pressing ENTER key, it will open dialog box as shown in the Figure 2.55.
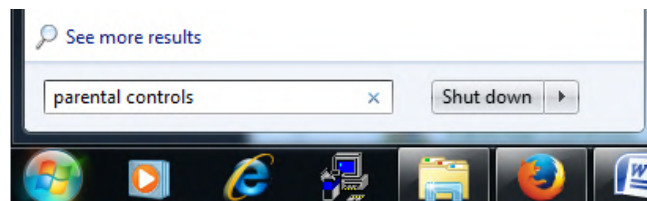
Figure 2.54

Figure 2.55
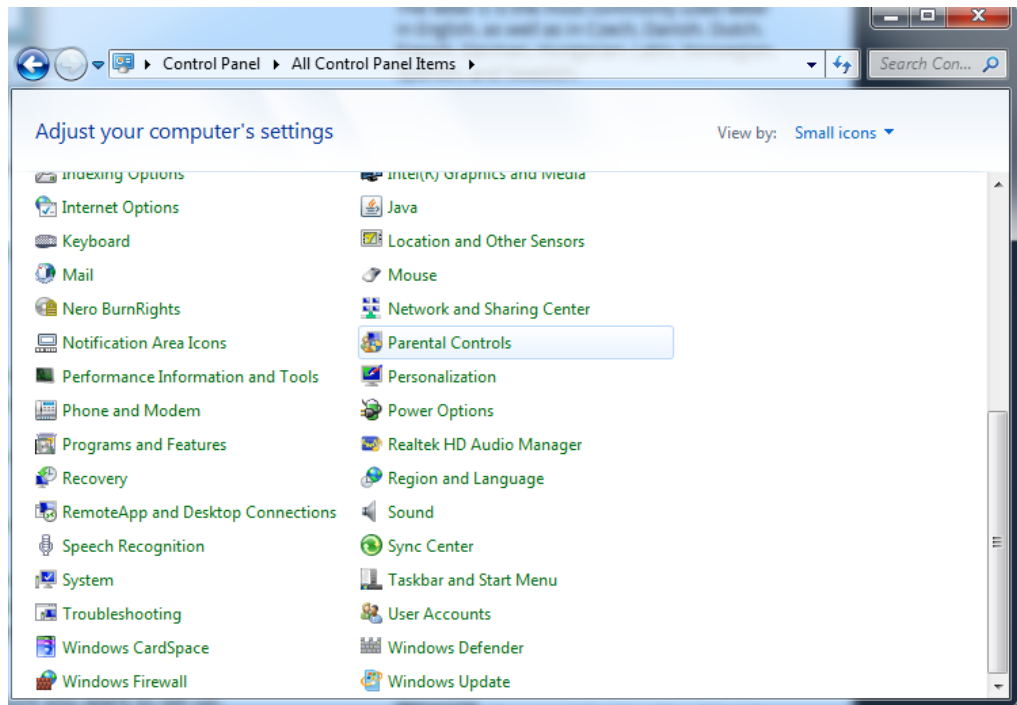
Figure 2.56

The option "Parental Controls" is available in Control Panel also as in the Figure 2.56. On selecting this option, a new window is opened as seen in the Figure 2.57.
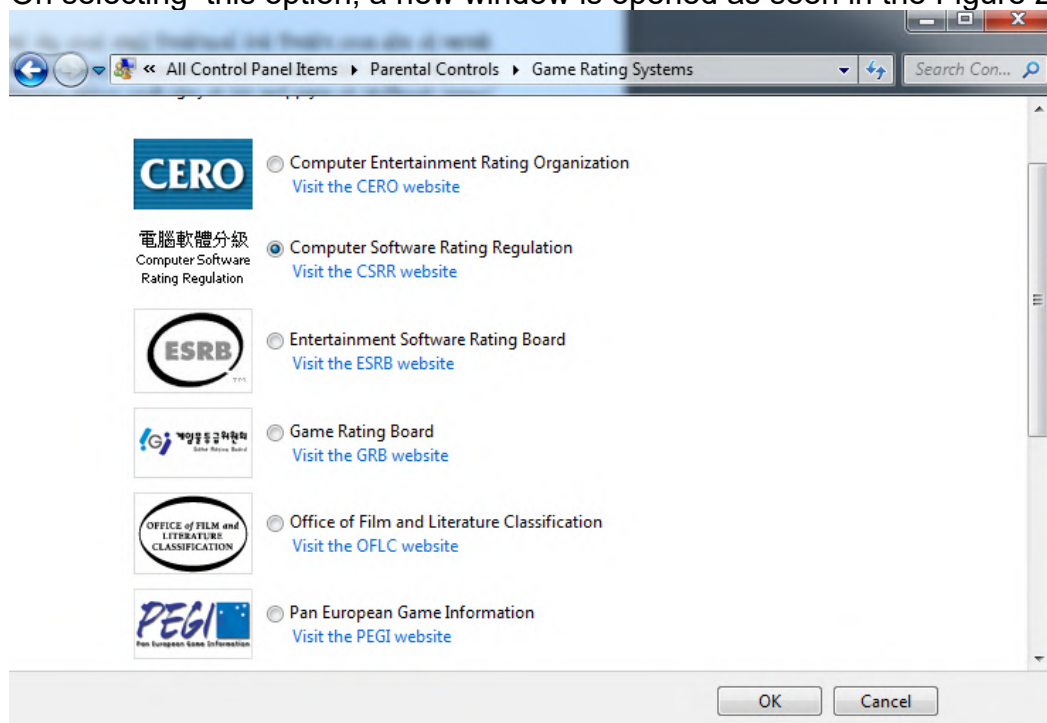

Figure 2.57

When a computer is used by more than one users, normally users are assigned separate user ids and passwords. If we do not want to allow some user to access particular application, we need to have admin password. Admin password should be kept secured or should be changed at times. If the system is not secured with password, any user can change Parental Controls. To secure 'Parental Controls',

password can be set for "Ensure Administrator Passwords". A window will be seen where we can set the time, games and other programs.

Here we can set the time such that computer will shut down after a specific time. We can decide the rating of games. We can block some applications such that it can be seen but cannot be executed.

Check your progress

1. Prepare a list of your important work using sticky Note.
2. Decide the time of playing video game for children using parental control.
3. Convert a value given in one unit to another unit using calculator.

2.15 CHECK YOUR PROGRSS: POSSIBLE ANSWERS

Q1. Select the appropriate option.

1. In how many ways can a Start button be activated?
   A) 3   B) 4
   C) 1   D) 2
2. Which option is used to uninstall or remove a program installed in computer?

   A) Control Panel   B) System Panel
   C) File panel   D) None of these
3. In which group a calculator is included?

   A) Accessories   B) Control Panel
   C) System panel   D) None of these
4. What is the full form of UAC?
   A) User Account Control   B) Uses Account Circle
   C) Utility Account Control   D) User Account Concern
5. Which of the following is required to secure computer when it is connected to network?
   A) Firewall   B) Internet
   C) Word application   D) None of these

Q2. Fill in the blanks with appropriate word/words.

1. Sticky notes is included in ____ group.
2. An image seen in the background of desktop is also known as _____.
3. Taskbar is divided in main ____ components. Taskbar is divided into _____ main components.
4. Tabs ____ and _____ are available in the paint application.
5. The collection of icons on the right side of taskbar is known as _____.

Q3. State whether following statements are true or false.

1. Windows is an operating system developed by Sun Java company.
2. Printer or scanner can be installed in the computer with the help of control panel.
3. The file created in Paint application has file extension ".bmp".

4. WordPad application does not provide a facility to search word.
5. Action center provides help to run Windows operating system smoothly without any hindrance.

Q4. Match the following.

1	Paint	**a**	Find
2	Fonts	**b**	Save
3	Ctrl+S	**c**	Start button
4	Esc+Ctrl key	**d**	Control panel
5	Ctrl+F	**e**	Accessories

Answers

Q-1. 1-A (3), 2-A (Control Panel), 3-A (Accessories), 4-A (User Account Control), 5-A (Firewall)

Q-2. 1-Accessories, 2-Wallpaper, 3-3, 4-Home ,view, 5-Notification area

Q-3. 1-False, 2-True, 3-False, 4-False, 5-True

Q-4. 1-e, 2-d, 3-b, 4-c, 5-a.

Block-2

Word Processing

Unit 1: Introduction to Word Processing   1

Unit Structure

1.1 LEARNING OBJECTIVES

After studying this chapter student will be able to:
- Create a file in Word 2010 and format it.
- Understand the functions of different Word 2010 Tabs.

1.2 INTRODUCTION TO WORD PROCESSING

Paper and pen have been used to create documents from ages. It is undisputable that our life style has changed in today's electronic era due to the arrival of technology in every aspect of our lives. The process of storing, editing and printing letters, report or book with the help of computers is known as Word Processing.

Word processing program primarily uses text. The current Word Processors though besides the text, make efficient use of pictures, images, figures, diagrams, graphs, etc. A computer program that uses all these mediums for the purpose of documentation is known as a Word Processor. We can create high quality document by using the work capabilities of today's Word Processor.

Some benefits of the document created using Word Processing instead of handwritten or typewritten documents are as under:

- **Simplicity:** Word Processor facilitates WYSIWYG, which means, "What You See Is What You Get." The word processor provides a user with simple GUI (Graphical User Interface) to create a document. After adding the details, the user can easily create very attractive and informative documents by giving just a few clicks and commands. Furthermore, today's computer is equipped with modern keyboard, using which textual and numerical data can be added quickly and easily. In addition, many word processors provide templates of different type of documents. By replacing the sample details given in the templates with the appropriate information, it is easy to create a document in a short span of time.

- **Editing:** Once a handwritten or typewritten document is prepared, it is difficult to change it. If there is a need to change such a document then updating such a document makes it look unattractive or efforts have to be put in to create the document once again which is boring as well as time consuming.

  Before storing and printing a document created using word processor, it can be checked and corrected one or more times. Editing the text and other details is as simple as adding the details. The errors occurring during typing or changes occurring real time can be accommodated in the document very easily. It is possible to add details in-between the existing details. Also if the added details seem unnecessary, they can be removed from the document. It is also easy to update the details by using various keys available on the keyboard.

- **Replication:** Sometimes we need to create a new document by changing a small portion of an existing document. For example, the birthday invitation card created for your younger brother or sister needs to be sent to more than one friend or relative. Majority of the text in the invitation card being sent to these people will remain the same, only the name of the person and address need to be changed. In such cases, more than one copy of the same letter with name and address of different persons is required. Word processor can be very useful in such situations.

A word processor is equipped with features using which we can produce multiple copies of the same document. It is possible to incorporate the required changes in copies so created. Once the document is ready, it is possible to make required copies, do the necessary changes, store and print each copy.

- **Storage of document:** Word Processor stores document in digital form. Normally the information is stored on magnetic disk medium like hard disk or optical medium like CD/DVD. These mediums guarantee long storage duration of the information. After a period of time the information stored on physical medium like paper is affected by environment. Also there is a possibility of the information being lost as the paper becomes worn-out after a long period of time.

  Moreover, storing information in form of a paper or book occupies much physical space, while the plenty of information saved in digital form requires much less space. Data card used in a mobile phone is an example of such digital storage. It is possible to store many GBs of data in an extremely small-sized data card. Thousands or millions of pages of documents can be stored on few DVDs; this also resolves the storage problem.

- **Rearranging Sections:** Once the documents have been prepared, a word processor provides the facility to rearrange sections within it. It often happens that the order of the details being entered is not determined or due to some real time requirement the order of the sections needs to be changed. Word Processor provides features of 'Cut' and 'Copy', using which a section can be removed (cut) from its original place and put (paste) into another place very easily. Also sometimes it is required to put a section as it is or with minimal changes in a new place, and in such cases the 'Copy' and 'Paste' feature of the word processor can be used. Using this feature, a user may replicate a sentence, a paragraph or a section many times, and thus can be spared out from the task of repeated typing.

- **Formation:** After adding details in the word document it is possible to set Font type, Style, Color, Alignment, Border, Background or other such formation quickly and easily. Such formation increases the attractiveness and legibility of the document considerably.

- **Spelling and Grammar Check:** Word processor provides a feature to find and correct the spellings and grammar of the text keyed into the documents. With the help of this feature, a document can be made error-free very easily.

- Currently, word processors created by a number of different organizations are available, often the features provided by every Word Processors and its working mechanism is almost same. A list of some popular word processors is given below:

Figure 1.1 Different Word Processors

- Word available in Office package developed by Microsoft Corporation.
- Writer available in Open Office developed by Oracle Corporation.
- Quick office available on Android and iOS.
- Word Pad one of the accessories in Microsoft Windows.
- Word Perfect developed by Coral.
- Apple Pages developed for Mac system.
- Online Google Docs provided by Google.

1.3 INTRODUCTION TO MICROSOFT WORD

Microsoft Word is the most popular word processor developed by Microsoft Corporation. Microsoft Word was first launched by Microsoft in 1983 for the Xenix system by the name of Multi-Tool Word. Over a period of time, several versions of Word were released, which were available not only for the Windows operating system but also for other operating systems like Mac.

Currently, Microsoft Word is available as a part of the Microsoft Office 2010 software package. In addition to Microsoft Office Word, the package also contains other software such as Excel, PowerPoint and Outlook; we will study them in later chapters. Microsoft Office is proprietary software; hence it is essential to take a license before using it.

1.3.1 Microsoft Word Window

If Microsoft Office program is installed on a computer, any of the following methods can be used to open the Microsoft Word application:

- Select the option Start → All Programs → Microsoft Office →Microsoft World 2010.
- Open a Run dialog box by selecting the option Start → Run, type WinWord command in the dialog box and click on OK button.
- If icon for Microsoft Word 2010 is available on the desktop then double-click on it.

Figure 1.2 Icon of Microsoft Word

When Microsoft Word application is started using any of the methods mentioned above, the window shown in Figure 1.3 is provided to the user.
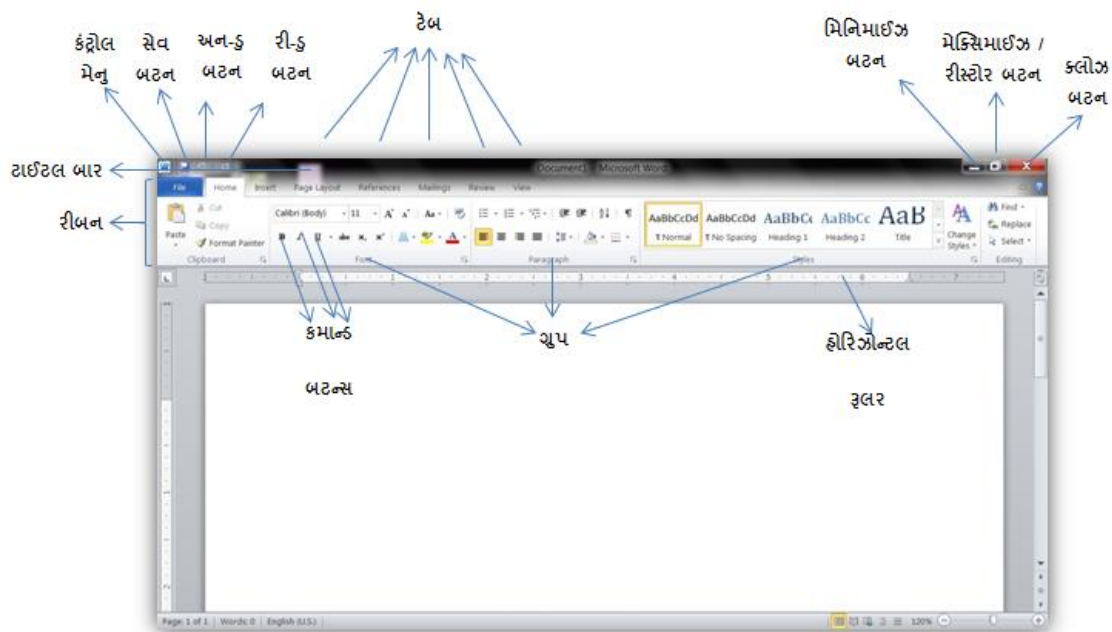
Figure 1.3 Initial window of Microsoft Word 2010

When Microsoft Word 2010 is started, the components as shown in the figure are presented on the screen. Let us get the introduction of different components used to create a document.

- **Title Bar:**
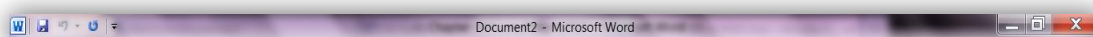
Figure 1.4 Title Bar

The vertical bar on the top of the Microsoft Word 2010 window is known as Title Bar. The name of the program Microsoft Word along with the name of currently open document is shown in the middle of the title bar. In case the document is yet to be saved then Document1, Document… appears on the title bar. In addition to this, the title bar also provides few simple buttons that can be used to create a document. The tool bar appearing to the left of the title bar is called Quick Access Toolbar. The functions of the buttons present on this toolbar are mentioned below:

- **Control Menu:** The Control Menu appearing on the left side of the title bar has options that allow us to show the window in a particular portion (Restore), move the window from one place to another (Move), change the size of the window (Size), minimize the window and make it appear as a task button on the task bar (Minimize) and close the window (Close).

- **Save Button:** As learnt in the previous chapter, when information is added to the computer, it is stored temporarily in the primary memory. To store the information permanently, it needs to be put on permanent storage place like a hard disk. This activity is known as 'To Save'. When this button is clicked the information added to the document is saved in form of a file. Alternatively, a shortcut key 'Ctrl + S' on the keyboard can also be used. If the user is saving the document for the first time,a 'Save As' dialog box is displayed. The information can now be stored as a file by entering the name of the document in this dialog box. We will learn about the other options of this dialog box later.

- **Undo Button:** We know that word processing software provides a feature to correct the information added within the document. The Undo button is used to cancel the effect of last change done in the document. If the Undo button is used more than once, all the actions performed by us to add or edit the document are cancelled in the reverse chronological order. Alternatively, a shortcut key 'Ctrl + Z' on the keyboard can also be used.

- **Repeat Button:** This button is used to repeat the last action. For example, if a user needs to add similar text or perform similar adjustments, he can perform the desired action by using this feature, but unlike the undo feature, this feature can be used only once at a time. Alternatively, a shortcut key 'Ctrl + Y' on the keyboard can also be used.

- **Customize Quick Access Toolbar Menu:** Thismenu is used to add or remove buttons from theQuick Access Toolbar. A tick sign is visible in front of the tool buttons that are already selected. By clicking on the desired option, it can be made visible or invisible from the toolbar. Just like the other open Windows in the Windows operating system, the Microsoft Word 2010 window's title bar also has three buttons on the right side a shown below:
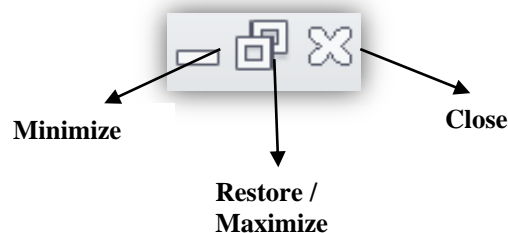
Figure 1.5: Control Buttons

- **Minimize Button:** When this button is clicked, the active windows of Microsoft Word get minimized and are visible in form of a task button on the task bar. These windows can be brought back to their original size by clicking the task button present on the task bar. While working with a word document, if we need to work with some other software program or need some details, this button is very useful. By using this button, a document can be temporarily removed from the screen which saves time taken for closing and reopening a file.

- **Restore/Maximize Button:** Microsoft Word window is usually presented as a full screen (maximized). But sometimes, a need arises to open different software programs and work in them along with Word. During such times, clicking on the restore button arranges the Word window in some specific part of the screen. The restore button changes to Maximize button during this period. Clicking again on the same button shows the window in full screen.

- **Close Button:** This button is used to close the active window of Microsoft Word. An alternative to this button is 'Alt + F4'shortcut key. If only one window of Microsoft Word has been opened and close button is clicked, Microsoft Word program also gets closed along with the open document.

- **Ribbon:**
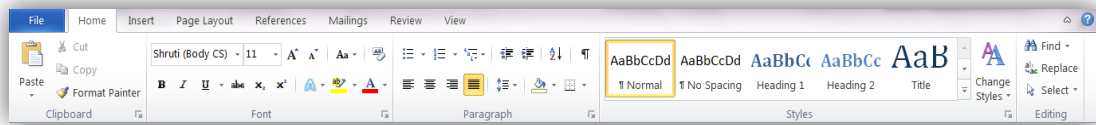
Figure 1.6 Ribbon

The menu and toolbars used in previous versions of Microsoft Word have been replaced as Ribbon in Windows 2010. The Ribbon has many tabs used to perform different tasks. The ribbon has eight tabs as shown below: File, Home, Insert, Page Layout, References, Mailings, Review and View.

Let us now learn about different facilities provided by each tab of the ribbon in brief. We will look into the details of the important options later.

1.3.2 Tabs of Microsoft Word

1. **File tab:** Clicking on the File tab, opens the screen as shown in Figure 1.7.
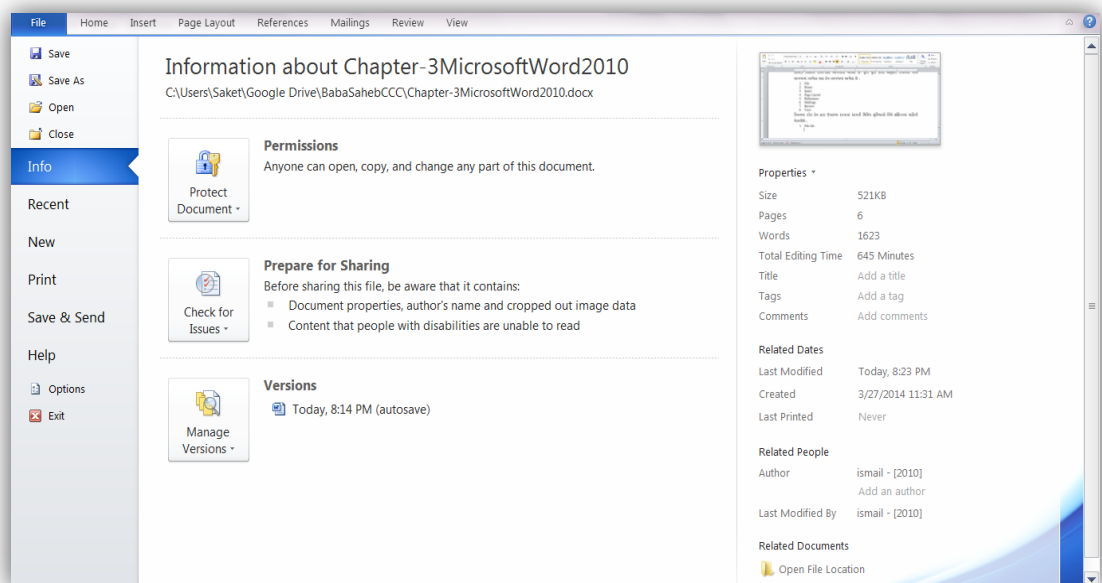
Figure 1.7 File Tab on the Ribbon

This Tab is used to perform some basic functions associated with the document such as creating a new document (New), opening existing documents (Open), storing document (Save), storing a document with another name or at another location in the hard disk (Save As), closing a document (Close), obtaining information about a document (Info), listing of documents recently opened by the user and opening a document (Recent), printing a document (Print), storing a document and sending it via e-mail or web (Save and Send), getting help with document preparation (Help), etc., Figure 1.7 shows the Info section of this Tab.

2. **Home Tab:**

Figure 1.8 Home Tab on the Ribbon

Several options to adjust the text inserted in document (Formatting) such as changing font style (Font), changing size of the fonts (Font size), changing the character style (Bold / Italic / Underline), applying different effects to the text (Text effect), highlighting text (Highlight), changing position of the text (Cut / Copy / Paste), aligning the text (Left / Center / Right / Justify), applying border to the text (Border), searching text and replacing it with another text (Find / Replace) are included in this Tab.

3. **Insert Tab:**
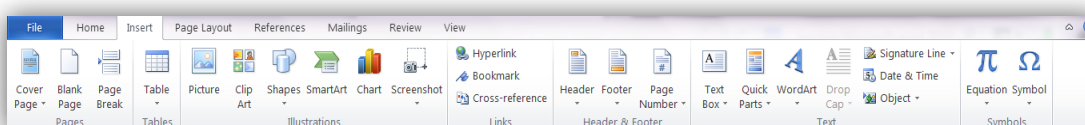
Figure 1.9 Insert Tab on the Ribbon

This tab is used to add some supporting features to the contents of the document. Using this tab an initial page (Cover page), an empty page (Blank page), a table (Table), an illustration /clip art (Image / ClipArt), various shapes (Shapes), a graph (Chart), screen appearance (Screenshot), hyperlinks (Hyperlink), header and footer (Header and Footer), text boxes (Text box), text decoration (WordArt), equation (Equation), signs (Symbol) and many other features can be added.

4. **Page Layout:**
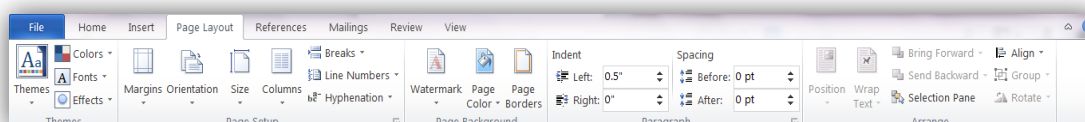
Figure 1.10 Page Layout Tab on the Ribbon

This Tab is useful for adjusting the pages within a document. This Tab is required to make changes in a predetermined arrangement of the pages. The Page Layout tab is used to change many properties like the theme of the page (Themes), margins (Margins), orientation (Orientation), page size (Size), page numbering (Page numbers), watermark (Watermark), page color (Page color), page border (Page Borders), indent and space (Indent and Spacing), etc.

5. **References Tab:**
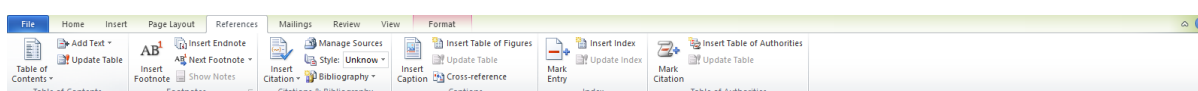
Figure 1.11 References Tab on the Ribbon

Once the document is prepared, this tab is used to perform various activities like inserting a table of contents, updating the index as per changes done in the document (Update table), adding Footnote / Endnote, showing Bibliography, adding Caption, etc.

6. **Mailings Tab:**
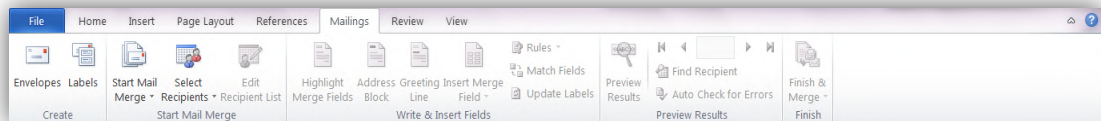
Figure 1.12 Mailings tab on the Ribbon

This tab is used to create envelopes, create labels that have addresses, as well as prepare a table that contains list of recipient. Sometimes a letter needs to be sent to more than one person with few changes. The feature of adding names and addresses of individuals in the original contents of a letter is known as Mail Merge. The Mail Merge feature is also provided in this Tab.

7. **Review Tab:**
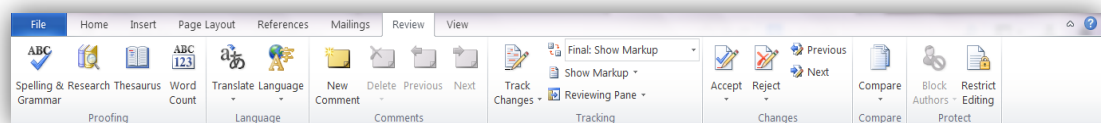
Figure 1.13 Review Tab on the Ribbon

To make a document free from spelling and grammatical errors, this tab provides an option of Spelling & Grammar. In addition this, it also provides the feature of Thesaurus which is used to replace a given word with its synonym or antonym. Word count feature gives us the count of total number of pages, paragraphs, lines, words, and characters within a document. Translate feature allows us to translate the document to another language. Language feature allows us to change the language of data entry. New Comment feature allows us to add notes. Compare feature allows us to compare two or more documents. Accept/Reject features allow acceptance or rejections made to the document.

8. **View Tab:**
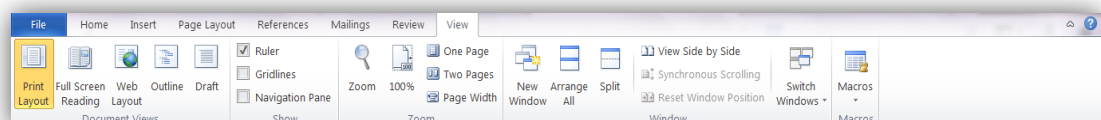
Figure 1.14 View Tab on the Ribbon

This Tab facilitates viewing of document in various ways (Views). It provides the option to view the document layout before printing (Print Layout), view the document in full screen (Full Screen Reading), view the document as web page (Web Layout), display the text within the document as title and subtitle (Outline), enlarge or shrink the document (Zoom), view one or more pages on one screen (One page / Two Pages), organize multiple open documents on the screen in different ways in a window (New Window / Arrange All), go to another window (switch Windows) and perform any action by issuing series of instructions once (Macros).

- **Ruler:** At times need arises to work as per fixed measurements within a document. The feature of vertical and horizontal ruler is provided for the same. The default unit of the ruler is Inch. It can be changed as per the requirement of the user. The Tab stops are provided at a distance of half inch in the ruler. It is possible to move half inch every time a Tab key on the keyboard is pressed. The default setting of half inch Tab stop can be modified by applying mouse click at the desired interval on the ruler. The default Tab

stop is shown as L. When a Tab key is pressed the cursor directly jumps to this place. The figure below shows a horizontal ruler along with different Tab stops.

Figure 1.15 Horizontal Ruler with Tab stop

- **Work Area:** The white area (initially blank) shown after the Word window is opened is known as Word's word area. All the information to be added in the document is shown here. The work area can be divided into one or more pages. The Print Layout view allows us to see the space between these pages.

- **Scroll Bar:** It is not possible to display all the information within a document on a single screen. If the information in a document is more than the screen size, some information becomes invisible. To see this information the document needs to be scrolled up/down or left/right. To perform this operation, a feature of vertical and horizontal scroll bar is provided in Word. The document can be moved on the screen by clicking the arrow-shaped button at both ends of the scroll bar. To perform this operation faster, the scroll button on the scroll bar can be dragged using the mouse pointer. The figure below shows the horizontal scroll bar.

Figure 1.16 Horizontal Scroll Bar

- **Status Bar:** The horizontal bar shown at the bottom of the Word window is known as a Status bar. Brief details of the active document are shown on this bar. The figure 1.17 shows the status bar and some of its components.
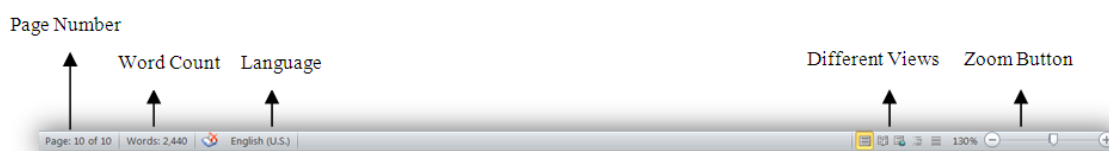
Figure 1.17 Status Bar

The Status bar displays following details in the Microsoft Word 2010:
- Current page number and total number of pages.
- Total number of words in the document.
- Proofing Icon to check Spelling and Grammar.
- Current Language.
- Button to change the layout of the document (Print Layout, Full Screen reading, Web Layout, Outline, Draft).
- Zoom control button of the document.

It is possible to change all this information by clicking the options available on the status bar. After getting introduced to the main screen of Microsoft Word 2010, let us obtain some basic knowledge about how to create a word document.

1.4 DOCUMENT CREATION

1.4.1 Open and Save a Microsoft Word File

To open a new file: As seen previously, when a user opens Microsoft Word 2010, he is presented with a blank file. A user can start adding information into this blank file without using any other options. Following methods can be used to create a new file in Word.

- Click on the File Tab on the Ribbon. This will open a back stage view as shown in Figure 1.7.
- Click on the 'New' option on the left side. This will provide options to create a new file as shown in Figure 1.18.
- As shown in Figure 1.18, there are many templates available to create documents with predefined structure. From all these templates, the default blank template is the most popularly used.
- Select the desired template icon and click on the Create button visible on the right side.
- A document as per the selected template will be visible on the screen.
- Alternatively, a shortcut key CTRL+N can also be used to perform this operation. Using CTRL+N key option will open a blank document on the screen.
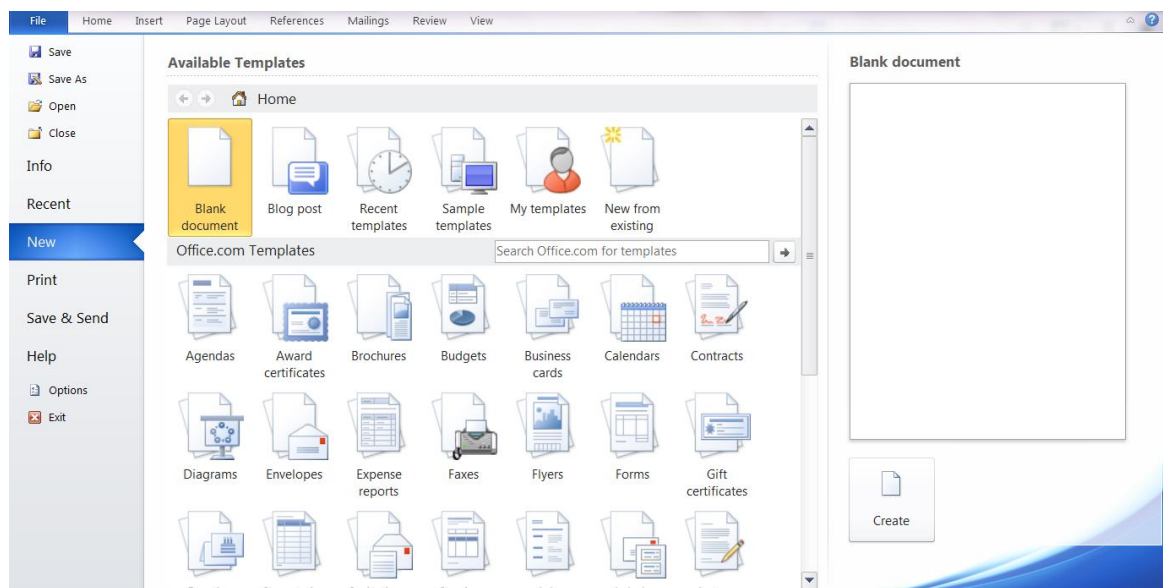
Figure 1.18 Options to create a new file

Add some text to the new document opened using the keyboard. To perform this action we simply need to start typing the text. For example, Figure 1.19 shows a document that contains information about different parts of computer.
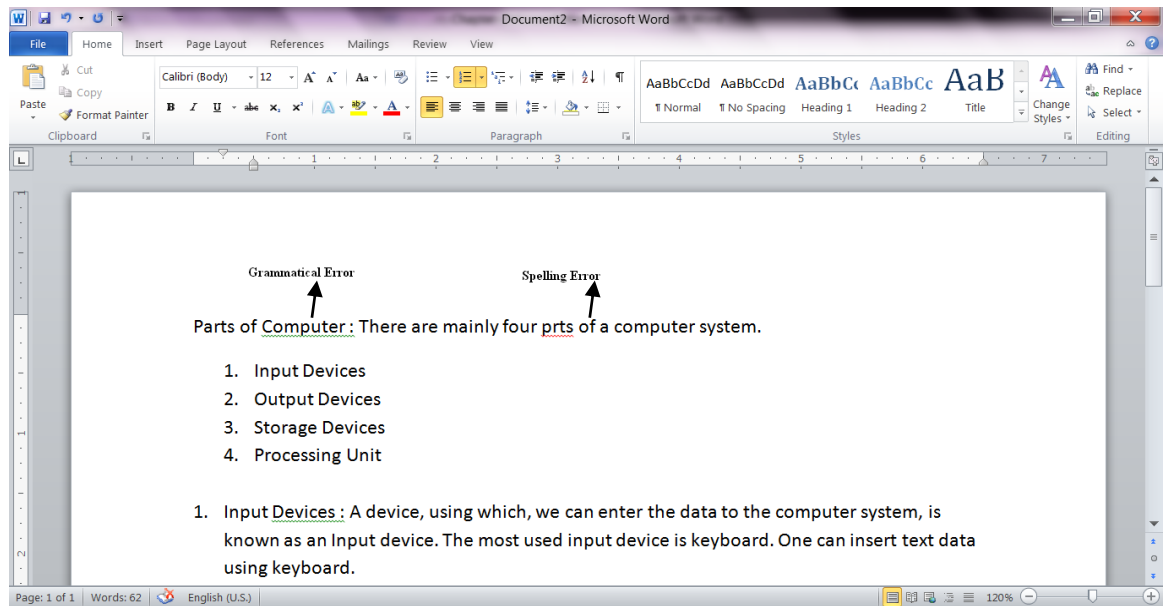
Figure 1.19 Data Entry done in New Word Document

Adding information within a Word document is a very simple task. While adding text within a document, Microsoft Word 2010 verifies the spelling and grammar of the added text. As shown in Figure 1.19, wrong spellings are displayed using a red underline and grammatical mistakes are displayed using a green underline. To get instructions and options to correct the erroneous text, you can put the mouse pointer on the erroneous text and right click. Many alternatives will be displayed on the screen. An option which suits your requirement can be selected to correct the mistake or this option can also be ignored.

To Save a File: We know that when any information is added to a word document, it is stored in temporary memory called Random Access Memory (RAM). Before closing the program or turning off the computer, it is necessary to store this information on permanent storage places like hard disk drive. Save command is used to perform this operation.

Let us use the steps shown below to save a file:

- Click on the File Tab and select 'Save' option. Performing this operation will present a 'Save As' dialog box as shown in Figure 1.20. As an alternate, 'CTRL + S' shortcut key on the keyboard can also be used.

- As shown in figure 1.20, using the features shown in the 'Save As' dialog box, a file can be saved easily.
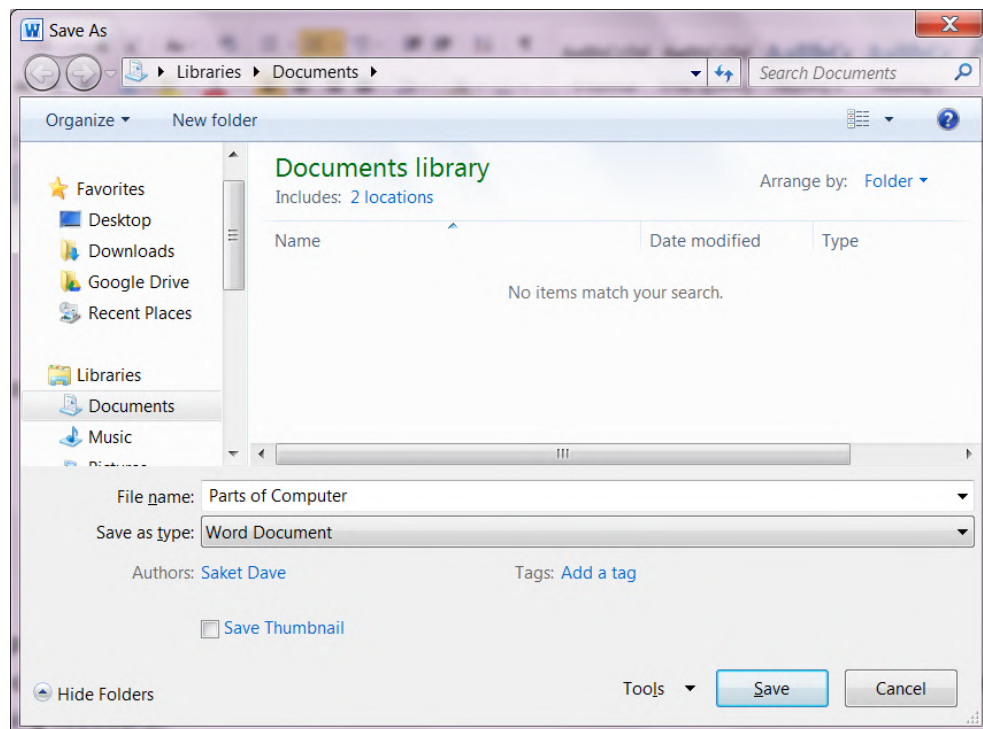
Figure 1.20 Save As dialog box

- Decide the place to store the file from the section visible on the left side of dialog box. By default a word file will be stored in the folder called Documents.

- Desired file name can be selected from the 'File name:' drop down menu or a new name can be assigned to the file.

- By default a file is stored as a Word document. With the help of 'Save As type:' drop down menu, the file can be saved in different formats (for example, old format of Microsoft Word).

- Using the options given in the Tools menu, the images in the file can be compressed or security can be added to a document.

- After adding all the required details, click on the Save button to save the document in the form of a file. The dialog box can be closed without saving the file by using the Cancel button.

To Open Existing Document: We saw how Microsoft Word saves a document in form of a file. Now perform the steps mentioned below to open and view the file on the screen.

- Click on the File tab and select 'Open' option. Performing this operation will present 'Open' dialog box as shown in Figure 1.21. Alternatively, 'CTRL + O' shortcut key on the keyboard can also be used.
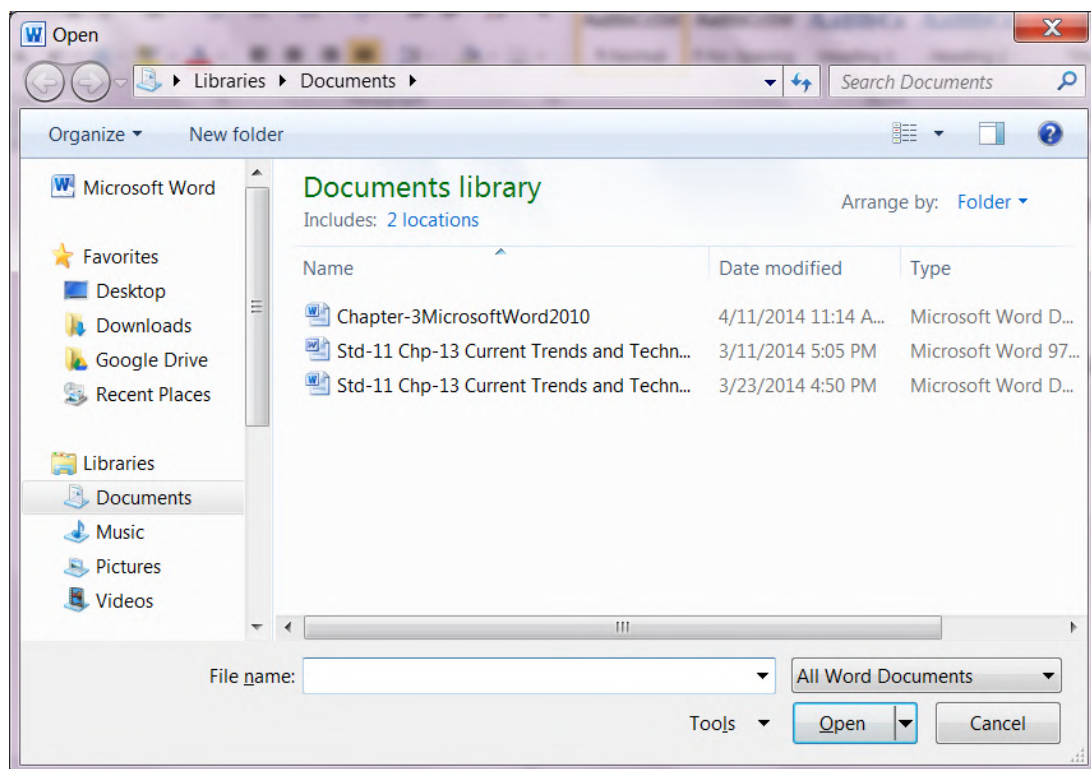
Figure 1.21 Open Dialog Box

- This dialog box lists the files that have been saved. Select the desired file and click on Open button, the information in the file will be displayed on the screen.

- Using the left section of the Open dialog box, the file stored in the different folders can be opened.

- Clicking on the arrow button visible near the Open button, a file can be opened with some more options. For example, a file can be opened as Read Only. To repair a damaged file choose Open and Repair.

Shortcut Key: Microsoft Word provides many different features. To use these features, the option given on Ribbon or commands within the menu can be used. The Word program provides shortcut keys for many of these features. The time taken to search a button or option for performing a required action can be reduced by using shortcut keys. Word provides shortcut keys for most of the features used regularly. Table 1.1 lists the shortcut keys used in Microsoft Word 2010 along with its command and use.

Shortcut Key	Command	Use
Ctrl+F1	Show/Hide Ribbon	To make the Ribbon invisible or visible.
Shift+F10	Show shortcut menu	To display a shortcut menu for the active component.
F12	Save As	To store the file with another name or at another location.
F7	Spelling and Grammar	To find and correct spelling and grammatical errors.
Shift+F7	Thesaurus	To find the synonyms and antonyms of a word and to change the original word.
Ctrl+A	Select All	To select all the information in the document.

Shortcut Key	Command	Use
Ctrl+B	Bold	To make the selected text bold.
Ctrl+C	Copy	To copy the selected data to the clipboard (memory).
Ctrl+D	Font	To open the Font dialog box having several options for letters.
Ctrl+E	Align Center	To align a paragraph in the center of the page.
Ctrl+F	Find	To find specific text in a document.
Ctrl+G	Go to	To reach directly to a specific location (page) in the document.
Ctrl+H	Replace	To replace a text with another text.
Ctrl+I	Italic	To skew (italics) the selected text.
Ctrl+J	Align Justify	To align a paragraph on both sides of the page.
Ctrl+K	Insert Hyperlink	To add hyperlink.
Ctrl+L	Align Left	To align a paragraph on the left side of the page.
Ctrl+M	Increase Indent	To increase the indent of the paragraph.
Ctrl+N	New File	To create a new file.
Ctrl+O	Open File	To open a saved file.
Ctrl+P	Print File	To print a file.
Ctrl+Q	Remove Indent	To remove the indent of a paragraph.
Ctrl+R	Align Right	To align a paragraph on the right side of the page.
Ctrl+S	Save File	To save a file.
Ctrl+T	Hanging Indent	To increase the hanging indent of the paragraph.
Ctrl+U	Underline	To underline a selected text.
Ctrl+V	Paste	To add data stored in clipboard (memory) at the current cursor position.
Ctrl+W	Close Window	To close the window.
Ctrl+X	Cut	To remove the selected text from the document and place it in the clipboard (memory).
Ctrl+Y	Redo	To re implement the last given command.
Ctrl+Z	Undo	To remove the effect of the last given command.
Ctrl+→	One word right	To move the cursor one word towards its right.
Ctrl+←	One word left	To move the cursor one word towards its left.
PgUp	Page Up	To move document up by one screen.
PgDn	Page Down	To move document down by one screen.
Home	Beginning of line	To move the cursor to the beginning of the current line.sa
End	End of line	To move the cursor to the end of the current line.
Ctrl+Home	Top of document	To move the cursor to the beginning of the document.
Ctrl+End	End of document	To move the cursor to the end of the document.
Ctrl+Shift+D	Double Underline	To create double lines at the bottom of the selected text.
Ctrl+Shift+W	Word Underline	To underline a word.
Ctrl+Shift+A	All Caps	To convert the selected text to uppercase (capital).
Ctrl+Shift+K	Small Caps	To convert the selected text to small caps. (example: HELLO WORLD)
Ctrl+Shift	Superscript	To convert the selected text to superscript (example: X^2).
Ctrl+=	Subscript	To convert the selected text to subscript (example: H_2O).
Ctrl+ Spacebar	Erase formatting	To remove the formatting of the selected text.
Ctrl+Shift+>	Increase font size	To increase the font size of selected text.
Ctrl+Shift+<	Decrease font size	To decrease the font size of selected text.
Ctrl+1	Single line spacing	To keep one line spacing between the lines of a selected paragraph.
Ctrl+5	One and half line spacing	To keep one and half line spacing between the lines of a selected paragraph.
Ctrl+2	Double line spacing	To keep double line spacing between the lines of a selected paragraph.
Ctrl+Enter	Page Break	To start a new page at the cursor position.

Shortcut Key	Command	Use
Ctrl+Shift+8	Show/Hide	To make the formatting of characters visible or invisible.
Ctrl+Alt+I	Print Preview	To see the view of the document before taking a print.
Ctrl+Shift+G	Word Count	To count the number of characters, words, lines and paragraphs inserted in the document.
Alt+Shift+D	Today's Date	To add today's date to the document.
Alt+Shift+T	Current Time	To add current time to the document.
Alt+Ctrl+V	Paste Special	To use the paste command with additional options.
Alt+Ctrl+F	Footnote	To add a footnote to the document.
Alt+Ctrl+D	Endnote	To add an endnote to the document.
Alt+Ctrl+M	Comment	To add comment to the selected text.

Table 1.1 Shortcut keys available in Microsoft Word 2010

After discussing the basic functions and shortcut-keys used while creating a document, let us now learn about some special features provided by Microsoft Word.

1.5 CHECK YOUR PROGRSS: POSSIBLE ANSWERS

1. Create a word document that gives information about your village/city and save it with the name of your village/city.

Unit 2: Formatting in Microsoft Word File

<div style="float:right">**2**</div>

Unit Structure

2.1 LEARNING OBJECTIVES

After studying this unit student should be able to understand:

- Add a cover page in Word 2010 file and change Page Layout.
- Customize Word 2010 Ribbon.
- Arrange Word 2010 file as per column.
- Add a watermark to Word 2010 file.
- Print Word 2010 file.
- Add images and chart to Word 2010 file.

2.2 INTRODUCTION

In this part we are going to discuss how Formatting can be applied on a word file. Microsoft Word provides many options to do so. The document can be made attractive using different available options. Let us discuss it in detail.

2.3 FORMATTING IN MICROSOFT WORD FILE

Word Wrap: Microsoft Word provides the facility to add an image along with the text. Word wrap command can be used to arrange the image in different ways. Let us learn Word Wrap facility using an example.

- Open a new file and add two three paragraphs of text to it. Now, click the Insert option on the Ribbon and select Picture option from it. Performing this operation will present 'Insert Picture' dialog box as shown in Figure 2.1.
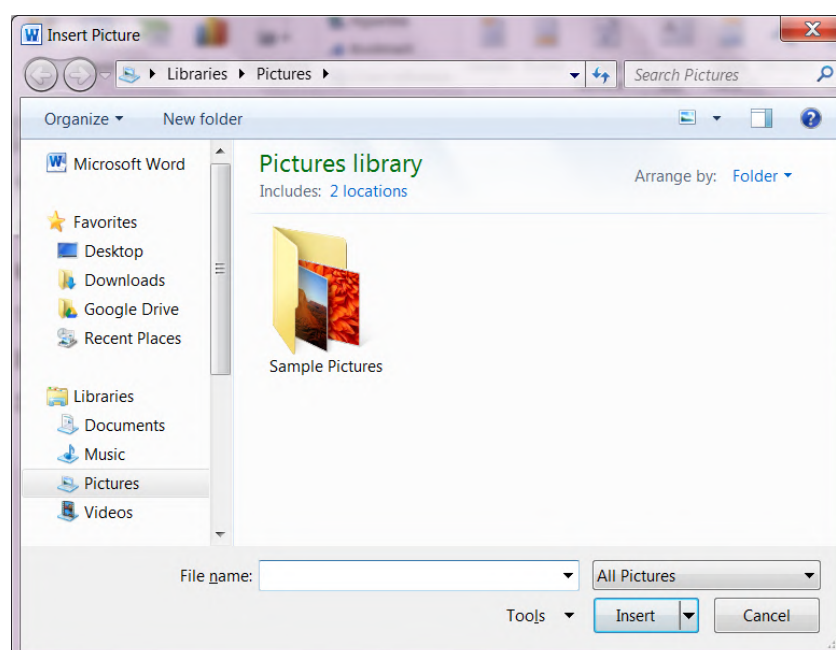
Figure 2.1 Adding Image using Insert Picture Dialog box

- Select the desired image file and click on the Insert button. The image will be added to the document. Figure 2.2 shows a screen in which an image has been added to a document.
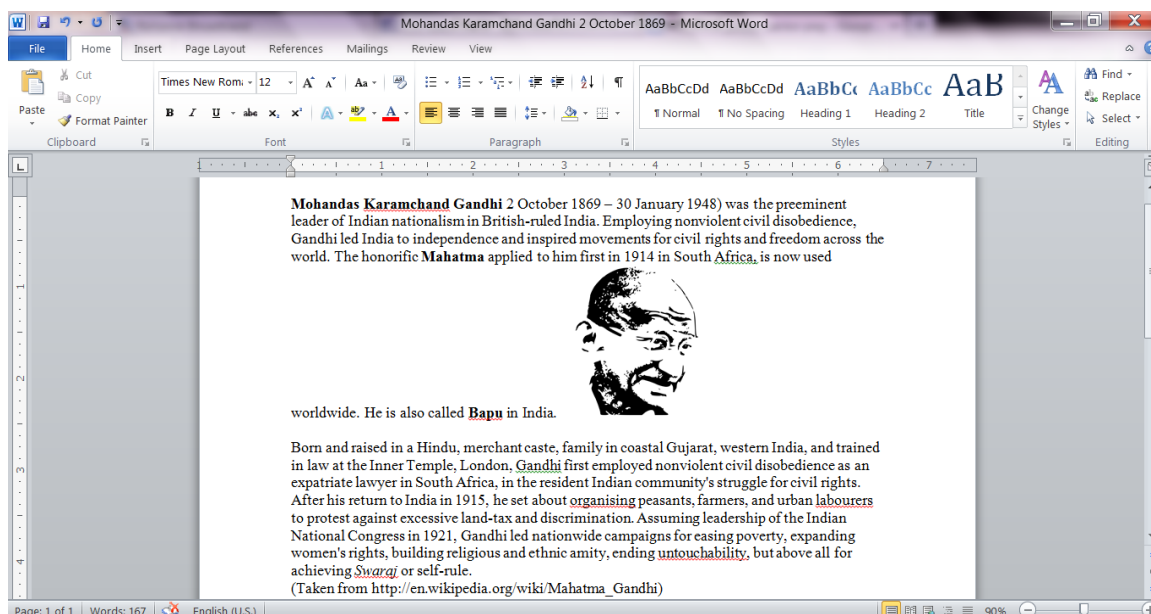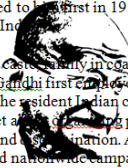
Figure 2.2 Adding Image within a Text in a document

- The process of arranging the text around the image is known as Word Wrap. The default word wrap setting of an image is 'In Line with Text'.

- By selecting the image, the Picture Tab on the Ribbon will be enabled, and Wrap Text button will now be visible. Using this button, other options of Word Wrap feature can be used. Alternatively, the Word Wrap submenu of the context menu that is obtained by right clicking on the image can also be used.

- Table 2.1 below shows how to arrange an image around the text along with its different options, usage and example.

Option	Use	Example
In Line with Text	To align the image in the line of text	See Figure 2.2
Square	To align text around an image	

| Option	Use	Example
Tight	To align text tightly around an image	**Mohandas Karamchand Gandhi** 2 October 1869 – 30 January 1948) was the preeminent leader of Indian nationalism in British-ruled India. Employing nonviolent civil disobedience, Gandhi led India to independence and inspired movements for civil rights and freedom across the world. The honorific **Mahatma** applied to him first in 1914 in South Africa, is now used worldwide. He is also called **Bapu** in India. Born and raised in a Hindu, merchant caste, family in coastal Gujarat, western India, and trained Gandhi first employed nonviolent in law at the Inner Temple, London, lawyer in South Africa, in the civil disobedience as an expatriate for civil rights. After his return to resident Indian community's struggle peasants, farmers, and urban labourers India in 1915, he set about organising discrimination. Assuming leadership of the Indian National Congress in 1921, Gandhi led nationwide campaigns for easing poverty, expanding women's rights, building religious and ethnic amity, ending untouchability, but above all for achieving *Swaraj* or self-rule. (Taken from http://en.wikipedia.org/wiki/Mahatma_Gandhi)
Through	To leave small amount of white space between the text around the image	**Mohandas Karamchand Gandhi** 2 October 1869 – 30 January 1948) was the preeminent leader of Indian nationalism in British-ruled India. Employing nonviolent civil disobedience, Gandhi led India to independence and inspired movements for civil rights and freedom across the world. The honorific **Mahatma** applied to him first in 1914 in South Africa, is now used worldwide. He is also called **Bapu** in India. Born and raised in a Hindu, merchant caste, family in coastal Gujarat, western India, and trained in law at the Inner Temple, London, Gandhi first employed nonviolent civil disobedience as an expatriate lawyer in South Africa, in the resident Indian community's struggle for civil rights. After his return to India in 1915, he set about organising peasants, farmers, and urban labourers to protest against excessive land-tax and discrimination. Assuming leadership of the Indian National Congress in 1921, Gandhi led nationwide campaigns for easing poverty, expanding women's rights, building religious and ethnic amity, ending untouchability, but above all for achieving *Swaraj* or self-rule. (Taken from http://en.wikipedia.org/wiki/Mahatma_Gandhi)
Top and Bottom	To align the text above and below the image	**Mohandas Karamchand Gandhi** 2 October 1869 – 30 January 1948) was the preeminent leader of Indian nationalism in British-ruled India. Employing nonviolent civil disobedience, Gandhi led India to independence and inspired movements for civil rights and freedom across the world. The honorific **Mahatma** applied to him first in 1914 in South Africa, is now used worldwide. He is also called **Bapu** in India. Born and raised in a Hindu, merchant caste, family in coastal Gujarat, western India, and trained in law at the Inner Temple, London, Gandhi first employed nonviolent civil disobedience as an expatriate lawyer in South Africa, in the resident Indian community's struggle for civil rights. After his return to India in 1915, he set about organising peasants, farmers, and urban labourers to protest against excessive land-tax and discrimination. Assuming leadership of the Indian National Congress in 1921, Gandhi led nationwide campaigns for easing poverty, expanding women's rights, building religious and ethnic amity, ending untouchability, but above all for achieving *Swaraj* or self-rule. (Taken from http://en.wikipedia.org/wiki/Mahatma_Gandhi)
Behind Text	To align image behind the text	**Mohandas Karamchand Gandhi** 2 October 1869 – 30 January 1948) was the preeminent leader of Indian nationalism in British-ruled India. Employing nonviolent civil disobedience, Gandhi led India to independence and inspired movements for civil rights and freedom across the world. The honorific **Mahatma** applied to him first in 1914 in South Africa, is now used worldwide. He is also called **Bapu** in India. Born and raised in a Hindu, merchant caste, family in coastal Gujarat, western India, and trained in law at the Inner Temple, London, Gandhi first employed nonviolent civil disobedience as an expatriate lawyer in South Africa, in the resident Indian community's struggle for civil rights. After his return to India in 1915, he set about organising peasants, farmers, and urban labourers to protest against excessive land-tax and discrimination. Assuming leadership of the Indian National Congress in 1921, Gandhi led nationwide campaigns for easing poverty, expanding women's rights, building religious and ethnic amity, ending untouchability, but above all for achieving *Swaraj* or self-rule. (Taken from http://en.wikipedia.org/wiki/Mahatma_Gandhi)
In front of Text	To align image in front of the text	**Mohandas Karamchand Gandhi** 2 October 1869 – 30 January 1948) was the preeminent leader of Indian nationalism in British-ruled India. Employing nonviolent civil disobedience, Gandhi led India to independence and inspired movements for civil rights and freedom across the world. The honorific **Mahatma** applied to him first in 1914 in South Africa, is now used worldwide. He is also called **Bap** Born and raised in a Hindu, mer coastal Gujarat, western India, and trained in law at the Inner Temple, Lond ed nonviolent civil disobedience as an expatriate lawyer in South Afric community's struggle for civil rights. After his return to India in 1915, peasants, farmers, and urban labourers to protest against excessive land Assuming leadership of the Indian National Congress in 1921, Gan aigns for easing poverty, expanding women's rights, building religious and ethnic amity, ending untouchability, but above all for achieving *Swaraj* or self-rule. (Taken from http://en.wikipedia.org/wiki/Mahatma_Gandhi)

Option	Use	Example
Edit Wrap Points	To change the wrap points by using mouse clicks and aligning the image as per this wrap points	Mohandas Karamchand Gandhi 2 October 1869 – 30 January 1948) was the preeminent leader of Indian nationalism in British-ruled India. Employing nonviolent civil disobedience, Gandhi led India to independence and inspired movements for civil rights and freedom across the world. The honorific **Mahatma** applied to him first in 1914 in South Africa, is now used worldwide. He is also called **Bapu** in India. Born and raised in a Hindu, merchant caste, family in coastal Gujarat, western India, and trained in law at the Inner Temple, London, Gandhi first employed nonviolent civil disobedience as an expatriate lawyer in South Africa, in the resident Indian community's struggle for civil rights. After his return to India in 1915, he set about organising peasants, farmers, and urban labourers to protest against excessive land-tax and discrimination. Assuming leadership of the Indian National Congress in 1921, Gandhi led nationwide campaigns for easing poverty, expanding women's rights, building religious and ethnic amity, ending untouchability, but above all for achieving *Swaraj* or self-rule. (Taken from http://en.wikipedia.org/wiki/Mahatma_Gandhi)

Table 2.1 Options of Wrap Text

- To use more settings of word wrap, the 'Layout' dialog box provides 'More Layout Options' which can also be used. It contains additional options of wrap text.

Toggle Switches: Microsoft Word provides several other options for formatting which provide two states for the tool button-On and off. A button that can have 'On' or 'Off' state is known as a toggle switch. The 'On' state shows the indication of the effect that has been applied, while the 'Off' state displays the lack of the said effect. Table 2.2 below shows some of the important toggle switches available in Microsoft Word 2010 and their usage.

| Icon	Name	Use
	Format Painter	To copy the formatting of a selected text and apply it to another text.
B	Bold	To make the selected text bold.
I	Italic	To make the selected text italic.
<u>U</u>	Underline	To underline the selected text.
abc	Strikethrough	To strike the selected text.
x_2	Subscript	To write the selected text slightly below the line.
x^2	Superscript	To write the selected text slightly above the line.
ab	Highlight text	To highlight the selected text.
:=	Bullets	To apply bullets to the selected text.
:=	Numbering	To apply numbering to the selected text.
¶	Show/Hide	To make formatting characters visible or invisible.
	Border	To apply borders to selected paragraph.

Table 2.2 Toggle Switch

2.4 PAGE BREAK & COVER PAGE IN MICROSOFT WORD FILE

Page Break: Microsoft Word 2010 allows us to add information in more than one page. When a new Word document is opened, we get a page of predetermined size (usually A4) on the screen. Sometimes it so happens that instead of using the whole page, we may leave some portion of the page blank and intend to add a new page at this pointer we may want to move the text added to the next page. The Page Break command can be very useful in such cases. To use this command following steps are required:

- Set the cursor to the location where Page break (i.e., all the text is to be moved to the next page) in the document is to be added.
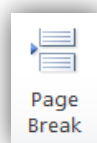
Figure 2.3 Page Break Command

- Select the Insert Tab on the Ribbon. Click on the Page Break option in it. A new page will be found added to the document. The text (if any) after the cursor will be seen positioned on the next page.

Cover Page: Usually, the first page of any document is typically decorated. This page usually includes title of the document and author information. Microsoft Word 2010 provides special facility to create a Cover Page. To add a cover page to a document you can perform the steps mentioned below:

- Open the document in which the cover page is to be added.

- Click on the Insert tab on the Ribbon and select the Cover Page option. This will open a menu as shown in Figure 2.4.
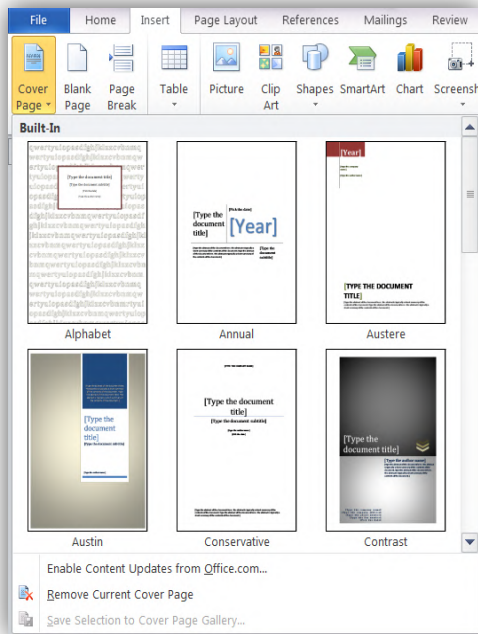
Figure 2.4 Cover Page

- Select an appropriate template from the different templates displayed in the menu. By performing this operation, a new page with sample information can be found added in the beginning of the document. Figure 2.5 shows one such cover page.
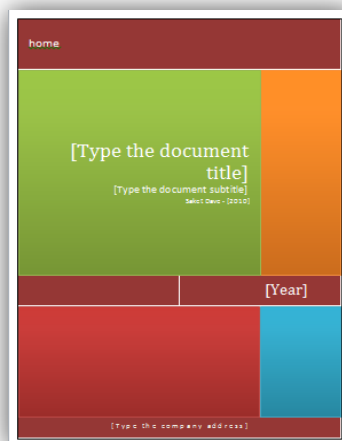
Figure 2.5 Cover Page Template

- Sample data can be seen on the cover page as shown in Figure 2.5. This sample data is replaced with the actual data to prepare a cover page. A cover page designed with actual data is shown in Figure 2.6.
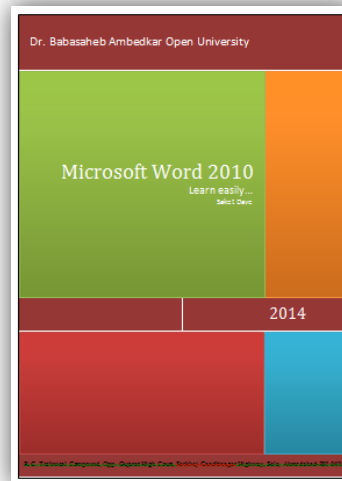
Figure 2.6 Cover Page after adding actual data

2.5 CUSTOMIZING THE WORD

The users can change or arrange most of the Microsoft Word 2010 options according to their needs. The look of the Word window that is favorable to us provides easy and quick access to our work. The next section discusses how to configure some options of Word program.

- **Customizing Quick Access Toolbar:** As we already know, the toolbar on the left side of the topmost title bar in Microsoft Word 2010 window is known as the Quick Access Toolbar. By default it contains Save, Undo and Redo buttons. Perform the following steps to add or remove a button from the Quick Access toolbar.

  - Click on the Customize Quick Access Toolbar button visible on the right side of the Quick Access toolbar. By performing this, the menu as shown in Figure 2.7 will be presented.
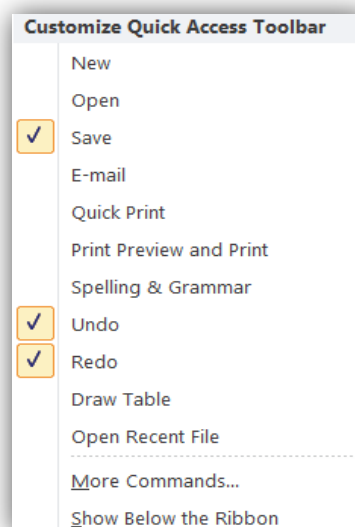
Figure 2.7 Customize Quick Access Toolbar

- The options that can be shown on the Quick Access toolbar can be seen in the menu shown in Figure 2.7. The options that have a tick mark in front are the currently available options on the Quick Access Toolbar.
- By clicking on any of the options, they can be added or removed from the Quick Access Toolbar.

- **Customizing Ribbon:** During the introduction of Word window, we saw that for creation of documents various options are available as buttons on different tabs, and the ribbon has been created with a group of such tabs. We can now add desired tab on the ribbon according to our convenience and can also add tool buttons for different options on this tab. The customized tab created by the user can make document creation easier and faster. The steps to add a new tab on the ribbon are mentioned below:

  - Click on the File tab and select 'option'. Word Options dialog box shown in Figure 2.8 will appear on the screen.

  - Several options for organizing the Microsoft Word program are given in the Word Options dialog box. Click on the Customize Ribbon option seen in the left panel. All options available to change the ribbon are displayed on the right side section of the dialog box as shown in figure 2.9.

  - To add a new tab to the ribbon click on the New Tab button at the bottom of the dialog box. By doing so, two new elements named New Tab (Custom) and New Group (Custom) will be added to the list on the button.

  - The name of the newly added tab can be changed using the Rename button. Here we have assigned My Tab as a new tab name.
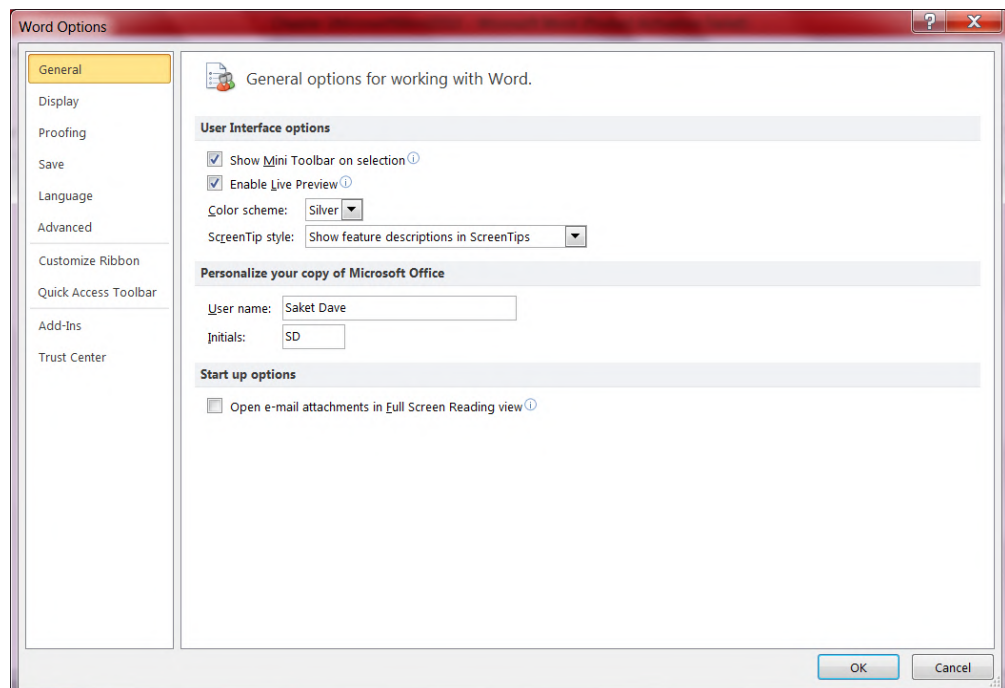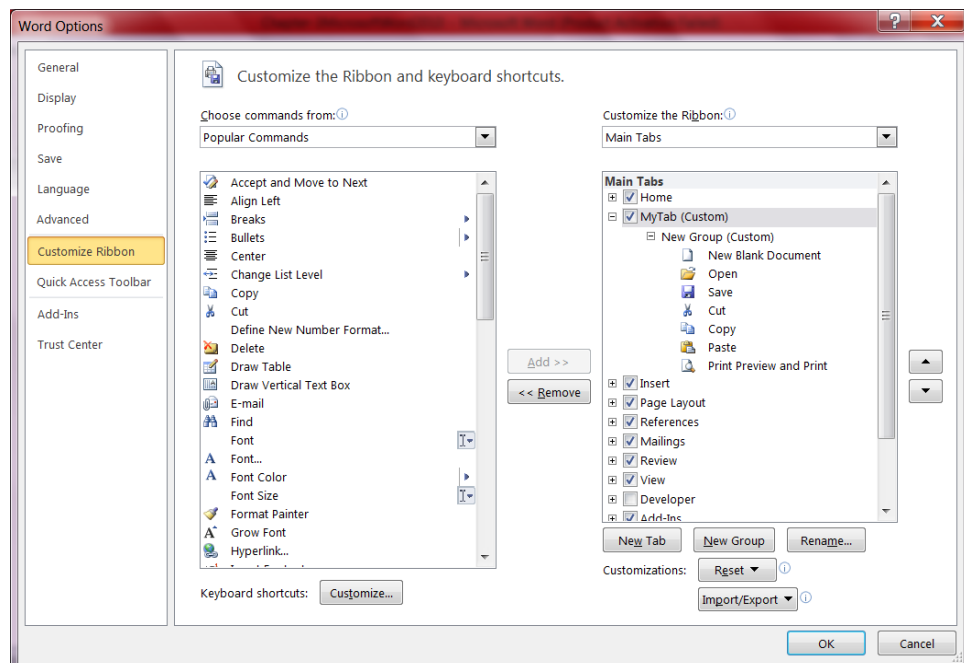
**Figure 2.8 Word options dialog box**
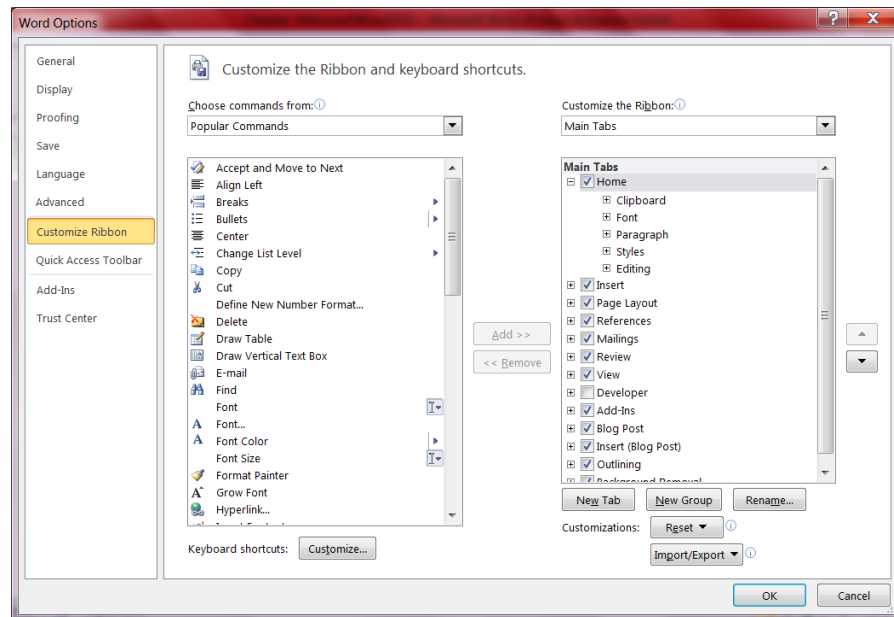
Figure 2.9 Customize Ribbon

- Any option shown on the left side section of the dialog box can be added to the new tab. For this, choose the option that is to be added on the new tab and click on the Add button between the two lists. Here we have added New, Open, Save, and Cut Copy, Paste, Print Preview and Print options to a new tab named MyTab.

- After adding a new tab, the Word Options dialog box will appear as shown in Figure 2.10.


Figure 2.10 Word Option Dialog Box after Adding Desired Options

- Click on the OK button to close the dialog box. A new tab with name MyTab will now appear on the Ribbon of the Word window. By clicking on it, we will see the tool buttons for the selected options, which can be used

when working with the document. The tab-MyTab and the tool buttons added by us are shown in Figure 2.11.
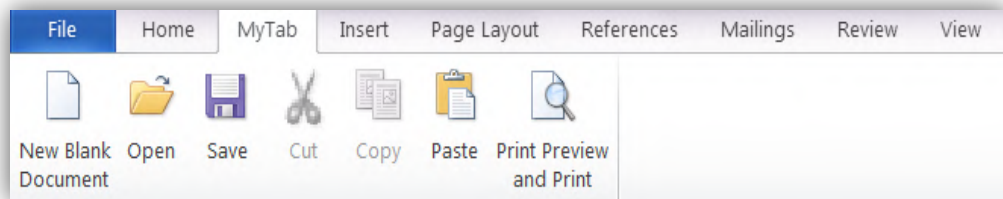
Figure 2.11 The tab-Mytab with Tool Buttons

- **Page Options:** Sometimes while creating a document, a need arises to change the options such as size, margins, orientation, etc., of the page. To perform any such action, Microsoft Word 2010 has been given the facility of Page Layout Tab. Various options to change document available in the Page Layout tab are mentioned below:

- **Themes:** This option can be used to select different themes for the document. "Theme" is a kind of template for the document that has arrangement for different colors and style. Figure 2.12 shows various themes available in Word 2010. By clicking on a theme, the document can be displayed according to the selected theme. To change the color, font and effect of the selected theme the Colors, Fonts and Effects menu adjacent to the theme can be used.
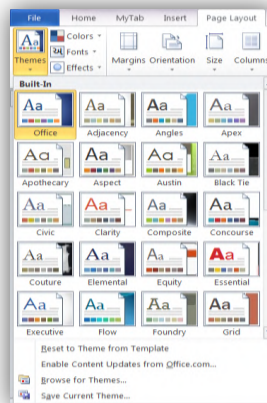

Figure 2.12 Themes

- **Margins:** This menu is used to change the size of the margins of the page in a document. The Margins menu contains several predefined margin names like Normal, Narrow, Moderate, Wide, etc. These are shown in Figure 2.13. By clicking on these names, required margins can be selected.
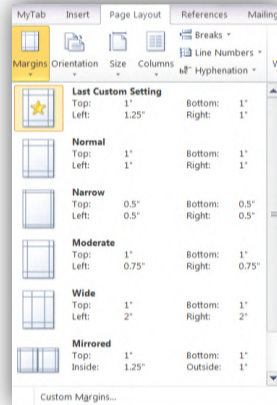
Figure 2.13 Margin Menu

If a user wants to give margins as per his/her requirement then he/she can choose Custom Margins option given at the end of this menu. By doing this, a Page Setup dialog box is presented to the user. User can change the size of the margins as per the need. The Page Setup dialog box is shown in Figure 2.14.

- **Orientation:** By default the pages are arranged in a vertical manner. But if the width of the contents being added to the document is more, the page can also be arranged in a horizontal manner. To perform this operation, Orientation menu is used. Orientation menu as shown in Figure 2.15 provides two options: Portrait and Landscape which arrange the page in vertical or horizontal manner respectively.
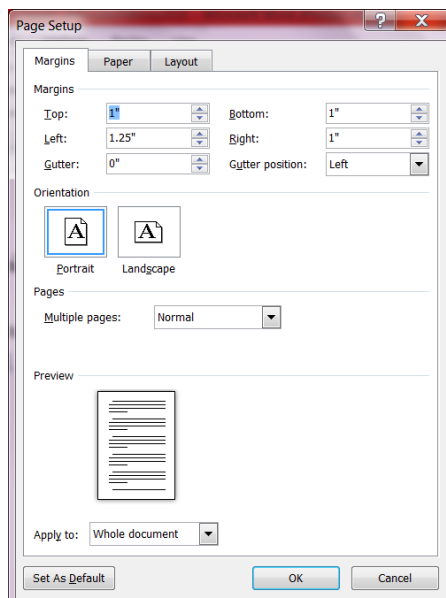
Figure 2.14 Page Setup Dialog Box
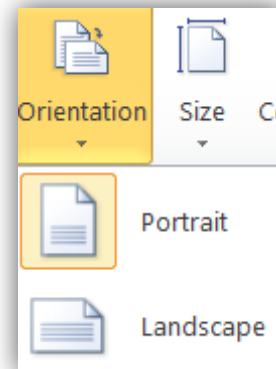
Figure 2.15 Orientation

- **Size:** This menu is used to determine the size of pages in the documents. By default the size of the page is defined as A4. This menu as shown in Figure 2.16 provides other options to change the page size.
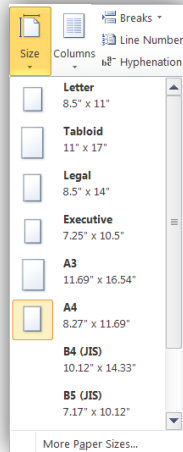
Figure 2.16 Size

- **Columns:** Sometimes the user needs to arrange the information added to the document into more than one vertical row. You must have seen more than one vertical rows in the newspapers. This vertical row is called Column. The Columns menu option available in the Page Layout tab can be used to arraange the data in more than one column. The options available in Column menu are shown in Figure 2.17. Figure 2.18 shows a document view in which the information is divided in three columns.
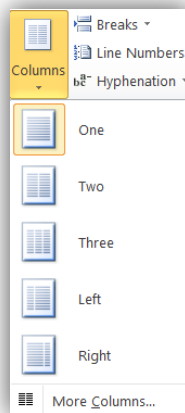

Figure 2.17 Columns
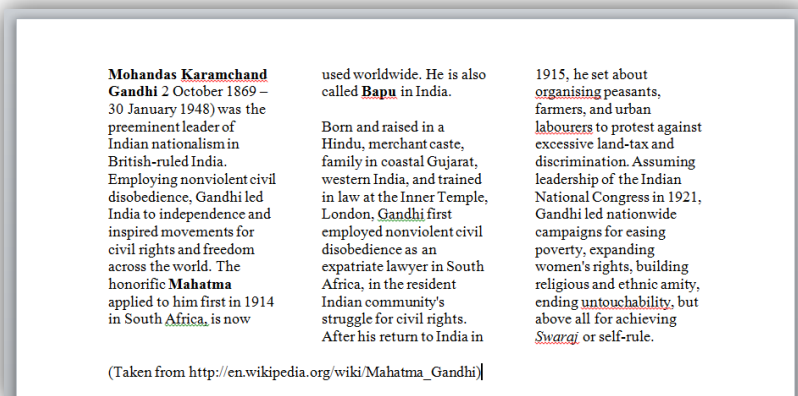
Figure 2.18 Information divided in three columns

- **Breaks:** The options like Page Break, Column Break, etc., used to take information on one page or column to another page or column are given in this menu.

- **Line Numbers:** Using this option the pages in the document can be given numbers.

- **Hyphenation:** This option is used to decide whether the word at the end of the line is to be broken or moved to a new line.

- **Page Color:** This option is used to change the color of the page.

- **Page Border:** This option is used to add borders to all the pages in a document. By clicking this option, a Border dialog box as shown in Figure 2.19 will be seen. A page can be given different types of borders by using the options in this dialog box.
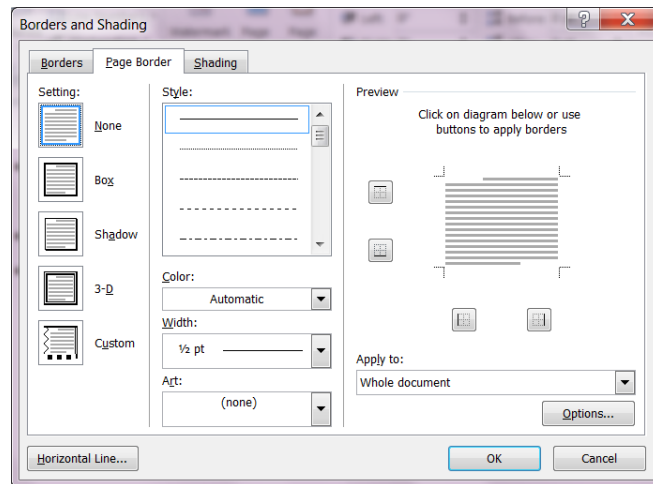

Figure 2.19 Page Border dialog box

- **Watermark:** The watermark effect is used to add distinct text or image as a background in the information added to all the pages of a document. At times, this effect is also known as Hologram. Generally, the watermark is used to show the ownership of the information in the document. Use of watermark stops unauthorized user from copying the document.

  Microsoft Word 2010 not only provides the feature of page with predefined watermark but also allows a user to create a watermark and add it to a document. The steps to use the watermark are mentioned below:

  - Open the document in which the watermark is to be added. The document may be blank or it is possible that it has text in it.
  - Click on the Watermark menu available in Page Layout tab. The options shown in Figure 2.20 will be visible after performing this operation.
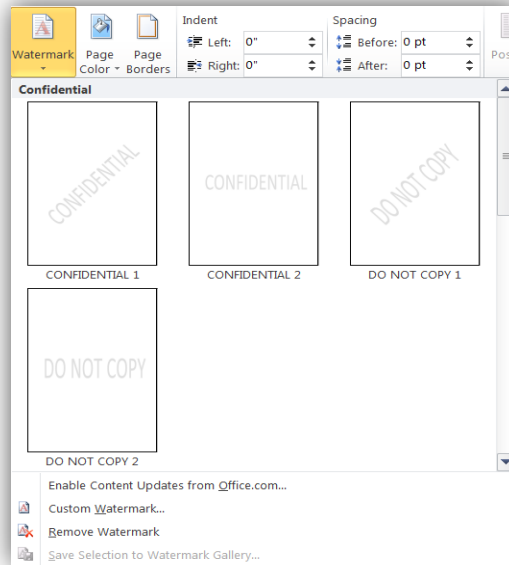
Figure 2.20 Watermark Menu

- Selecting any of the options given in the watermark menu will add the effect of that watermark in the current document.
- It is possible to change the watermark as per our requirements. To perform this operation click on the Custom Watermark... option in the Watermark menu. This option presents a Printed Watermark dialog box.
- Two options namely Picture Watermark and Text Watermark are available in this dialog box. For example, to add a text Dr. Babasaheb Ambedkar as a Watermark in our new document, the options as shown in Figure 2.21 can be selected.
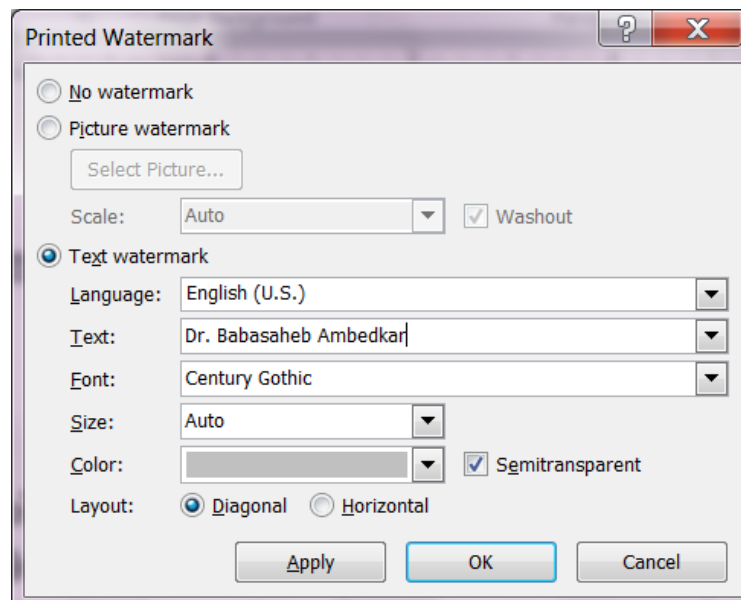
Figure 2.21 Printed Watermark Dialog Box

- Once all the information is added, click on the OK button. The watermark added in the new document is as shown in Figure 2.22.

Figure 2.22 New documents with watermark

Spelling and Grammar: It is always desired that the contents of a document should be free from spelling and grammatical mistakes. Microsoft Word 2010 provides the feature to identify and correct the spelling and grammatical mistakes in a document. This feature is enabled as soon as the document creation starts, and every word that is typed as well as every sentence that is formed is checked for spelling and grammar mistakes. For performing this operation, Word uses its predefined Dictionary. The spelling mistakes are shown using a red underline and the grammatical mistakes are shown using a green underline.

The mistake found by Word can be easily corrected. Word gives suggestions for the mistakes that it has found. To see the suggestions, right click on the text. Performing this action opens a context menu as shown in Figure 2.23.
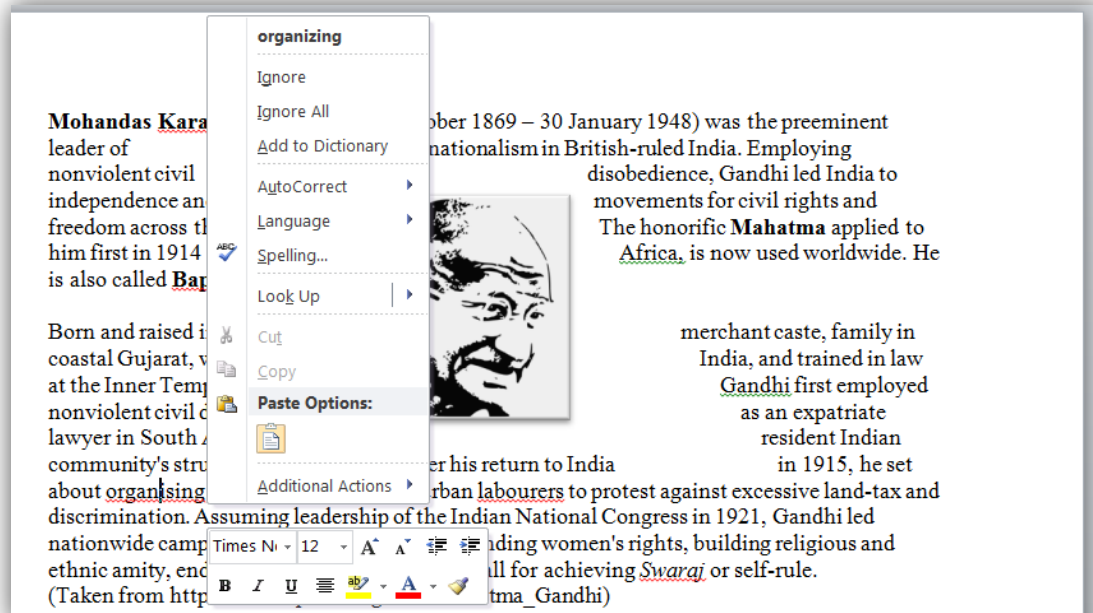

Figure 2.23 Spelling Correction

As can be seen in the figure, there is a red underline under the word 'organizing'. This indicates a spelling mistake. The context menu opened by right clicking on the text suggests the correct spelling 'organizing' available in Word dictionary. The following tasks can be performed by using this menu:

- The correct suggestion is accepted by clicking on it. Thus the text in the document is replaced with this text.

- By selecting the Ignore option, the mistake identified by Word can be ignored.

- By selecting Ignore All option, mistakes due to a particular word in the entire word document are ignored and the red underline under each occurrence of that word disappears.

- By selecting Add to Dictionary option, the text can be added into the dictionary of Word. Then on, Word considers this text as correct.

Once the document is ready the Spelling & Grammar option on the Review tab can be selected to check and correct all the spelling and grammar mistakes. Alternatively, a shortcut key F7 can also be used to perform this action. This command finds the spelling and grammar mistakes in the document one by one and opens the Spelling & Grammar dialog box as shown in Figure 2.24 to correct it.
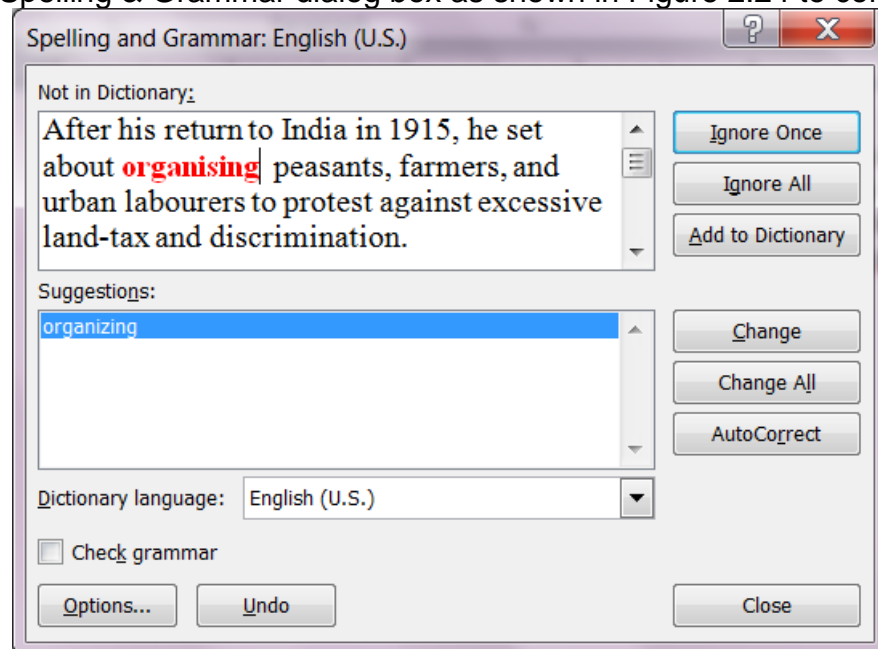
Figure 2.24 Spelling & Grammar dialog box

Using the options shown in the dialog box, the mistake can be corrected or ignored and new words can be added into the dictionary.

Document Views: Microsoft Word 2010 provides facility to view a document with different viewing options. This feature is known as Document Views. The document views along with its features provided by the Word are mentioned below:

- **Print Layout:** This view shows the look of the document when it is going to be printed. This view shows the real-time appearance of the document. In this view the margins, page break and other components of the document are displayed on the screen.

- **Full Screen Reading:** This view becomes important when only details of document are to be read. In this view, whole document is displayed on the screen and title bar, ribbon, margins, ruler and other such components are made invisible from the screen. Esc key can be used to close this view.

- **Web Layout:** Word also provides a feature of saving a document as a web page. This file is stored in form of HTML. But while creating the document if a need arises to see how this page is going to look on a web browser then this view is used.

- **Outline:** This view is used to display only text that has been added to the document. In this the titles of the document (Headings) and its subtitle (Subheadings) are displayed as a list, and pictures within the document are not displayed. This view is best used to change the order of details added to the document. To perform this operation, the bullet point before the detail to be rearranged is clicked and dragged to a new location.

- **Draft:** This view is used to show the document after removing images, column, header, page break and other such components.

All these views can be used in two ways:
1. By using View tab available on the Ribbon. (See Figure 1.14)

2. By using the icon at the bottom right side of the Word window. (See Figure 1.17)

Zoom: The zoom command is used to see the information within a document with different resolutions. The effect of this command is applicable only on that particular screen and the same effect cannot be obtained on the printed version of that document. To use the zoom command, the Zoom button on the View tab needs to be clicked. By performing this action, a Zoom dialog box as shown in Figure 2.25 will be displayed.
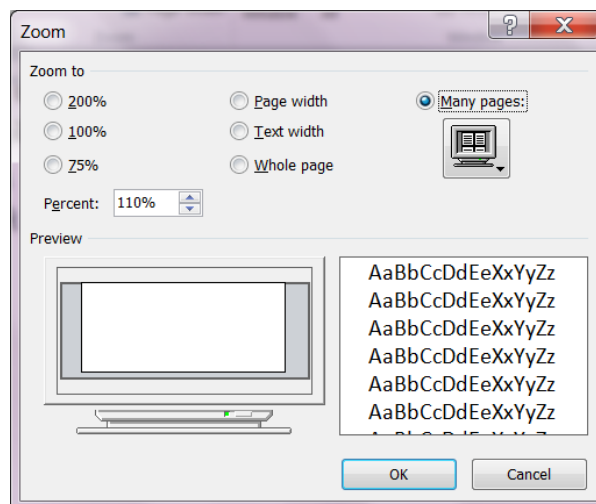
Figure 2.25 Zoom dialog box

The Zoom dialog box shows the current zoom level of the document. If needed, this can be changed as per our requirement. The zoom level is shown in percentage. As shown in the figure, zoom level of 200%, 100% or 75% can be chosen. For all other levels a number needs to be entered in the Percentage text box. It is also possible to increase or decrease the percentage level.

- **Page width** option when selected sets the zoom level of the document as per the width of the page.
- **Text width** option when selected sets the zoom level of the document as per the text width within the document.

- **Whole page** option displays the entire document along with all its information on a screen.
- When more than one page is to be displayed on a screen, the Many Pages button is clicked. From the menu that opens up the number of pages are selected.   For example, if three pages are selected then the view of the document is as shown in Figure 2.26.
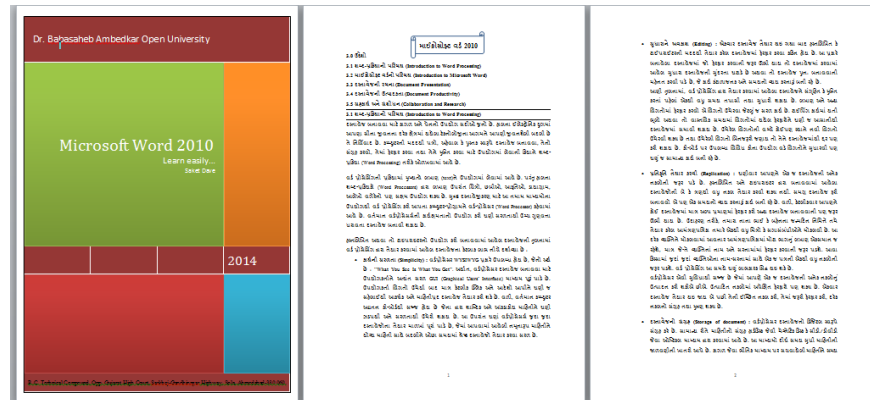

Figure 2.26 Zoom level that shows three pages

Compatibility Mode: The files created in the older version of Microsoft Word can be opened in Microsoft Word 2010. When a file saved in the older version of Word is opened in the latest version of Word, some special features available in this version are not applicable to the information stored in that file. Microsoft Word 2010 displays [Compatibility Mode] on the title bar of such documents, which enables the user to realize that the currently opened file was saved in the older version of Word.

Backup options: When the information is stored in a digital format, its security becomes a very important aspect. If the saved file cannot be opened due to some reasons, there is a major loss of data. At times, there is a possibility that the saved file is harmed either accidently or deliberately. If the file stored on the computer cannot be retrieved, one might have to face many difficulties.

This type of problem can be solved by using the backup feature available in Microsoft Word 2010. The process of storing the information in the traditional storage medium as well as some another safe place is known as 'backup'. The backup feature available in Microsoft Word stores the file created by the user at some predefined place without the knowledge of the user. Accidentally if the original document gets damaged, the copy of the document stored in this place can help getting the original information back. The location of the backup can be changed by using the steps mentioned below:
- Click on the Option button of File tab.
- Click on the 'Advanced' option available in the left panel of the Word Options dialog box. Scroll down the options visible in the right panel till 'Save' section is visible on the screen. See Figure 2.27.
- Select the check box in front of the option 'Always create a backup copy' in this dialog box. By performing this action, whenever a file is saved its backup copy is automatically created.
- If the file has been opened from network, its backup can also be created by selecting the check box in front of the option 'Copy the remotely stored file

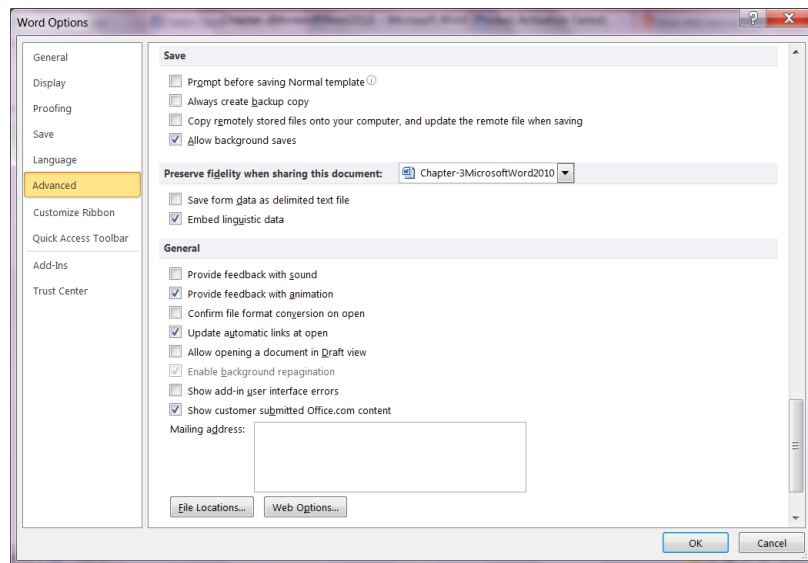onto your computer, and update the remote file when saving'.

Figure 2.27 Advanced Save Options

Document Inspector: By using the Document Inspector feature provided by Microsoft Word 2010, the hidden contents and personal information in a document can be checked. As a document can be used by more than one author, generally it is better to perform this check before sending it to another place electronically. The steps mentioned below need to be followed to get the document checked by the Document Inspector. It is advisable to take a backup of the original document before using this command.

- Open the document that is to be inspected.
- Click on the 'Check for Issues' button of Info menu available on File tab.
- Click on the Inspect Document option from the menu opened using previous action. A dialog box as shown in Figure 2.28 will be displayed on the screen.
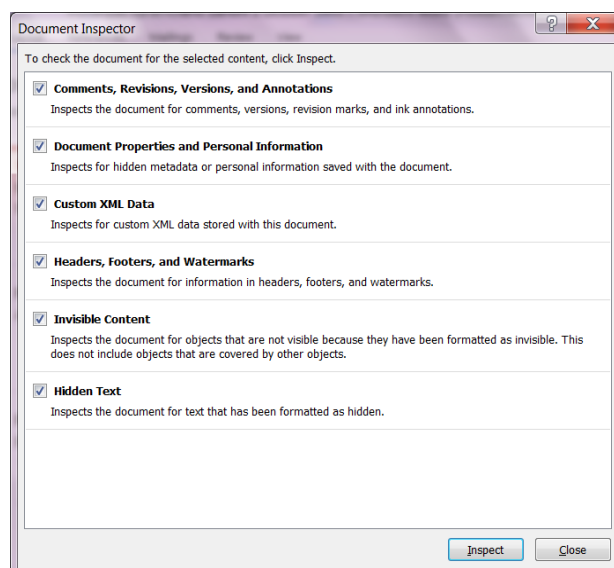
Figure 2.28 Document Inspector dialog box

- As shown in the figure Document Inspector allows checking of six different

aspects.
- To start the inspection click on the Inspect button.
- Word inspects the document and shows the result which can be similar to the one shown in Figure 2.29.
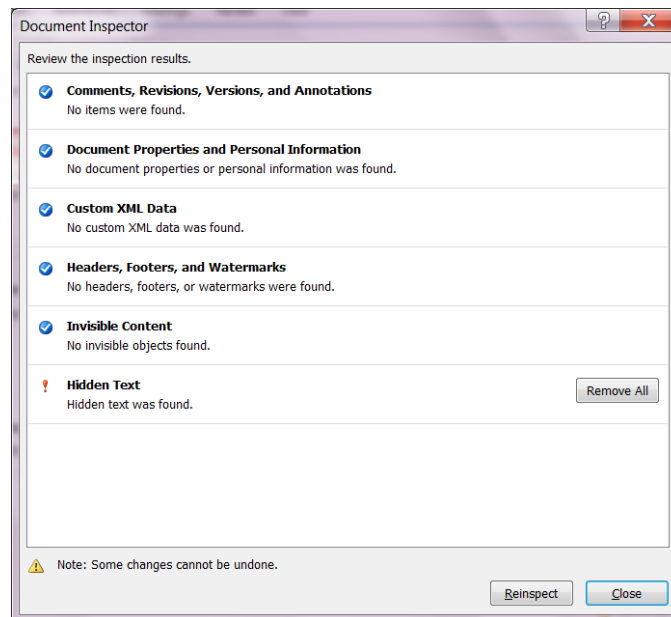
Figure 2.29 Result shown by Document Inspector

- The result shows that the document contains hidden text. By clicking on the Remove All button this text can be removed from the document.

2.6 PRINTING OF DOCUMENT IN MICROSOFT WORD

Printing of Document: When the document is saved, it is stored on hard disk or some electronic storage similar to it. Most of the documents after being stored need to be printed on paper. The document printed on paper is known as a hardcopy. To print a document an output device named printer is used. Once the document is ready, the steps mentioned below will enable you to take a printout of the document.
- After the document is created, click on the Print option in the File tab alternatively, the shortcut key CTRL + P on the keyboard can also be used. The Print dialog box as shown in Figure 2.30 will be displayed on the screen.
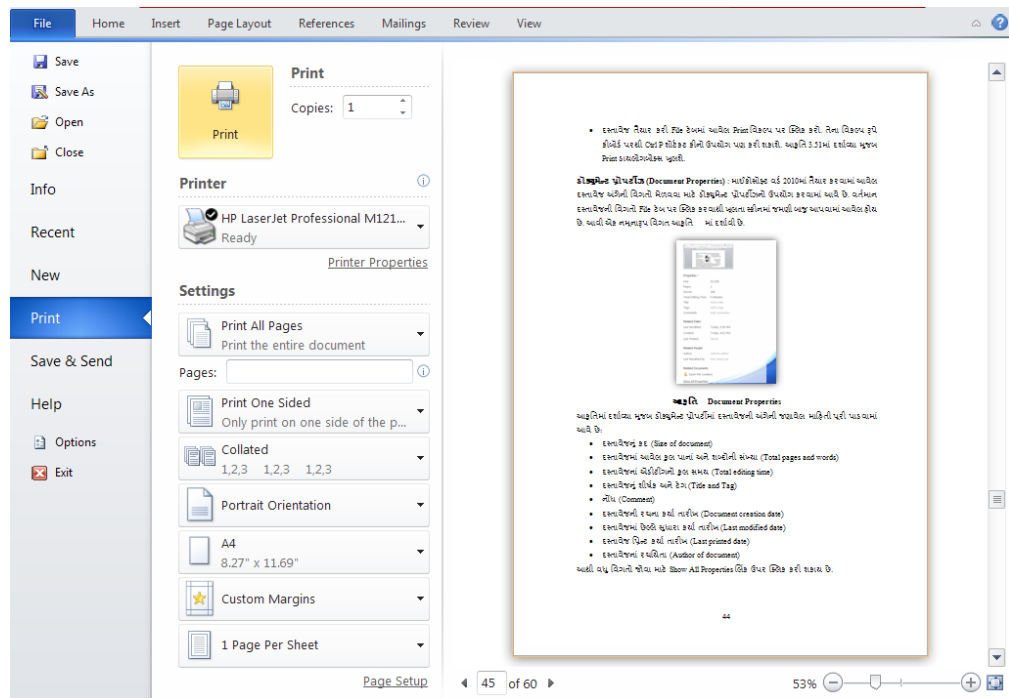
Figure 2.30 Print dialog box

- By clicking on the Print button available in the Print dialog box, printing of the document will get started as per the predefined settings of the document and the printer.
- A list of the printers installed on the computer system is shown in the Printer section visible below the Print button. Desired printer can be selected from this list.
- To change the properties of the installed printer, the Printer Properties link can be used. Figure 2.31 shows the dialog box with Printer Properties. Note that this dialog box may vary as per the printers installed in the computer system.
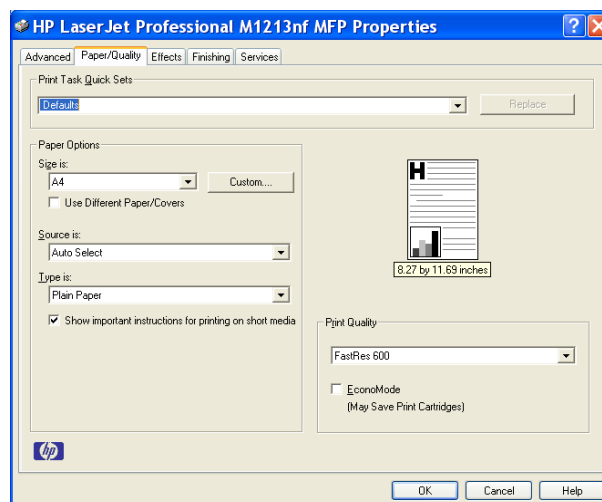
Figure 2.31 Printer Properties dialog box

- This dialog box is used to set the page size, source, printing quality, and other effects of printing.
- Page numbers are entered in the Pages textbox of the Settings section within

104

the Print dialog box to instruct which pages of the documents are to be printed. The Print All Pages button can be used to print all the pages of the given document.

Document Properties: '**Document** properties' option is used to get details of properties of the document prepared in Microsoft Word 2010. The details of the current document are given on the right side of the screen opened by clicking on the File tab. Figure 2.32 shows one such sample.
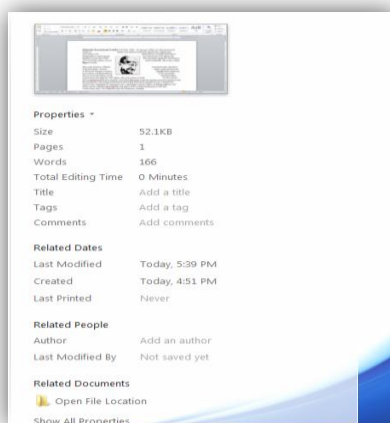
Figure 2.23 Document Properties

As shown in the figure the following document information is shown in the Document Properties:

- Size of the document.
- Total pages and words in the document.
- Total editing time of the document.
- Title and Tag of the document.
- Comment.
- Document creation date.
- Last modified date of the document.
- Last printed date of the document.
- Author of the document.
- To get more information you can click on the All Properties link.

2.7 TYPOGRAPHY IN MICROSOFT WORD FILE

Typography: When a word processor such as Microsoft Word is used, the text inserted in the documents can be displayed with different types of characters. Characters can be represented by different typeface, font and size.

A set of characters such as Times, Arial, Courier, etc., with same appearance is known as typeface. This typeface is called 'font' and has styles and sizes. Italics, Bold and Underlined characters may be included in the font style. The size of character is represented by the unit called Point.

Font typefaces can be divided into two categories: Serif and Sans Serif. The characters in Serif type font have little decoration at the ends. Times, Bookman, Century, etc., are Serif type fonts. If document is to be printed, such fonts are easier to read. In French language Sans means 'without'. Sans Serif fonts are without

decoration. Arial, Verdana, Helvetica, etc., are the examples of Sans Serif font types. Usually these type of fonts are used in the title of the documents. Figure 2.33 shows an example of Serif and Sans Serif font types.
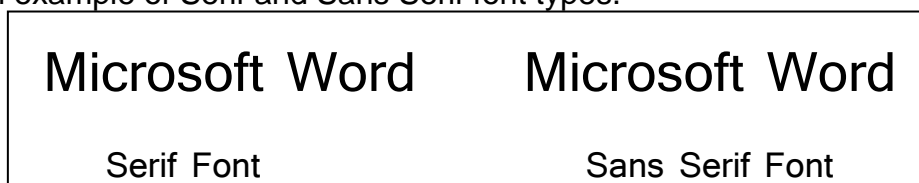
Microsoft Word	Microsoft Word
Serif Font	Sans Serif Font

Figure 2.33 Serif and Sans Serif fonts

Font Attributes: It is possible to make the document attractive by changing different characteristics of the fonts. Many features of font are provided on the Home tab of the ribbon. To obtain all the features of fonts at once the Font dialog box is used. The steps mentioned below can be used to open the Font dialog box.
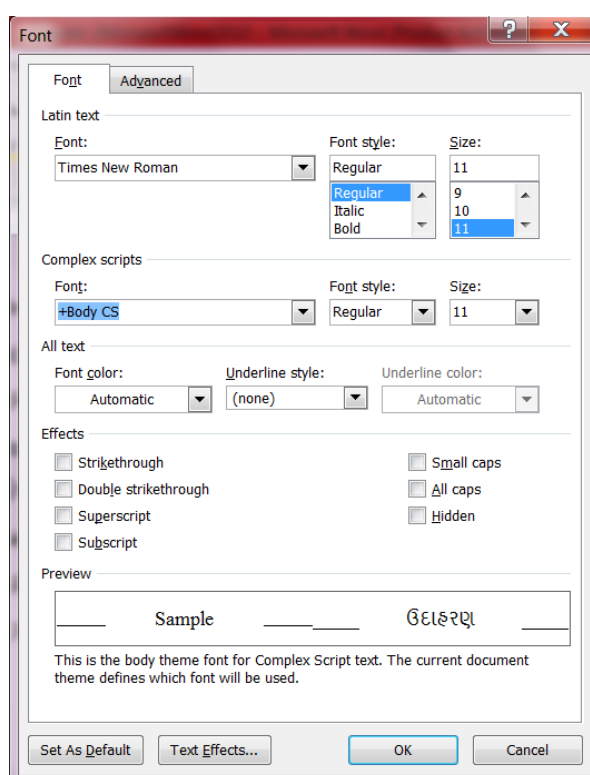
Figure 2.34 Font dialog box

- Click on the buttons besides the Font group on the Home tab.
- Press Ctrl+Shift+F on the keyboard.
- The Font dialog box as shown in Figure 2.34 will be displayed on the screen.

The facilities provided in this dialog box are listed below. Before applying any of the effects from this dialog box, one should remember that the text in the document needs to be selected first.

- **Font:** The names of all the fonts available in the Windows Operating System are shown in this drop style down menu. When any font is selected, a sample text is shown using characters of this font within the Preview section. Times New Roman, Arial, Calibri, Verdana, etc., are few commonly used fonts that can be selected from this section.

- **Font Style:** This selection box is used to change the style of fonts in the selected text. In this if bold style is selected, the characters become dark, and if Italic style is selected the characters get slightly skewed. The characters become more eyes catching when font style is used. Hence, generally its effect is applied to text added as title.

- **Size:** This option is used to decide the size of the characters. Generally to differentiate the title and the normal text from each other different text sizes are used.

- **Font Color:** The font color option is used to change the colors of the selected characters. Different font colors can be selected by clicking on the Font Color drop down menu. To get the shades other than the ones given in the palette, click on the More Colors link. It should be noted that a printout taken with the help of a color printer will only show the effect of different colors used. So, a color printer is required to take out such a printout.

- **Underline Style:** This option is used to create different types of underlines under the selected text. Different underline styles like Words only, single, double, dash, etc., can be selected from this drop down menu.

- **Underline Color:** This palette provides a variety of colors which can be used to underline the text.

- **Effects:** The selected text can be given the effects as mentioned below:
    - **Strikethrough:** To draw a horizontal line on the characters.
      Example: ~~Microsoft Word~~
    - **Double strikethrough:** To draw two horizontal lines on the characters.
      Example: **~~Microsoft Word~~**
    - **Superscript:** To write the characters slightly above the line.
      Example: 1st, 2nd, 3rd, X^2
    - **Subscript:** To write the characters slightly below the line.
      Example: H_2O, X_2
    - **Small caps:** To write all characters in capital letters, with the first character of the word being slightly bigger than others.
      Example: MICROSOFT WORD
    - **All caps:** To write all characters in capital letter.
      Example: MICROSOFT WORD
    - **Hidden:** To make the selected characters invisible.

The above options are available under Font tab in the Font Dialog Box. By clicking on the nearby advanced tab, the look of the dialog box will appear as shown in Figure 2.35.
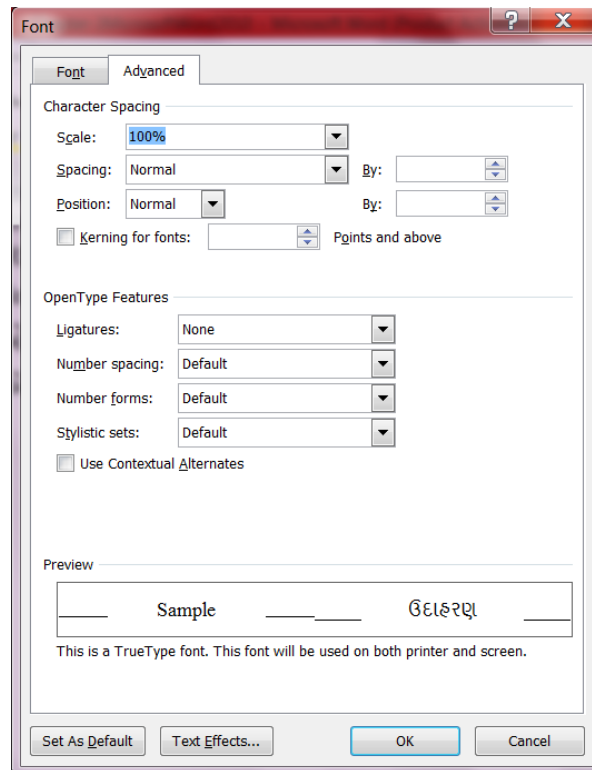
Figure 2.35: Advanced tab of Font dialog box

- **Scale:** This option is used to change the width of the selected characters. By default the scale value is set to 100%. The value greater than default increases the width of the characters while value less than the default narrows down the width of the characters.
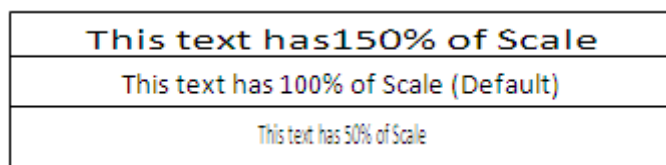

Figure 2.36 Scales applied to characters

- **Character Spacing:** This option is used to control the space between the characters of selected text. Three sub options are available in this drop down menu:
  - **Normal:** Indicates default space between characters.
  - **Expanded:** Indicates slightly more space than default between characters.
  - **Condensed:** Indicates slightly less space than default between characters.

Figure 2.37 shows an example of all the three different types of spacing.
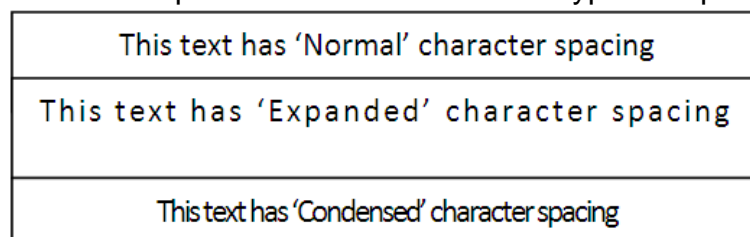
Figure 2.37 Spacing applied to characters

108

Change Text Case: At times there is a need to change the case (capital/small) of the text after it has been inserted in the document. Microsoft Word 2010 provides a feature called Change Case to perform such action; it saves the effort of removing and rewriting the entire text again. The Change Case menu is available in Home tab. Figure 2.38 below shows five options available to change the case of the text inserted in a document.
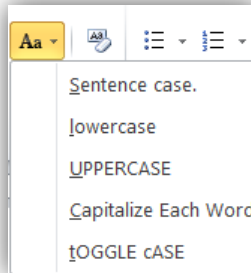
Figure 2.38 Options of Change Case menu

- **Sentence case:** To make the first character of the selected text capital.
- **Lowercase:** To make all the characters of the selected text small.
- **UPPERCASE:** To make all the characters of the selected text capital.
- **Capitalize Each Word:** To make the first character of all the words in the selected text capital. (It is also known as Title Case.)
- **TOOGLE CASE:** To invert the case of all the characters in a selected text, that is used to change capital letters to small and small letters to capital.

Figure 2.39 shows example of the five cases.
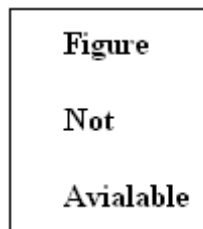
Figure 2.39 Change Case

Text Highlighting: At times certain text being important needs to be highlighted within a document. The highlighted text becomes more eye-catching within a document. Microsoft Word 2010 provides a feature of highlighting text with different colors. Perform the steps mentioned below to highlight the desired text:
- Select the text within the document.
- Click on the Text Highlight Tool available on the Home tab. This opens a menu with different colors. See Figure 2.40.
- Select a color in the menu and click on tithe selected text will now be highlighted with this color.
- To remove the effect of the highlight, select the No Color option from the menu.
- If Highlight Color is selected without selecting the text, all the text that is selected later is highlighted with the said color. To stop this process, Esc key can be pressed or Stop Highlighting option can be selected from the highlight
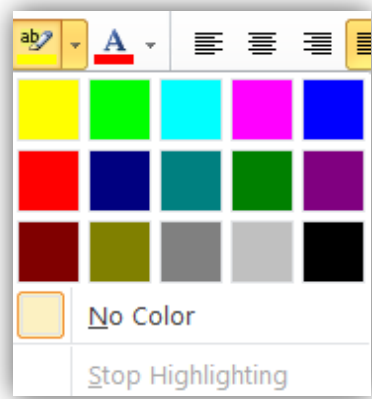
menu.

Figure 2.40 Text Highlight Color
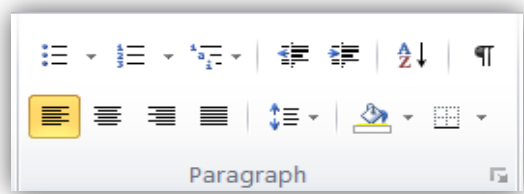
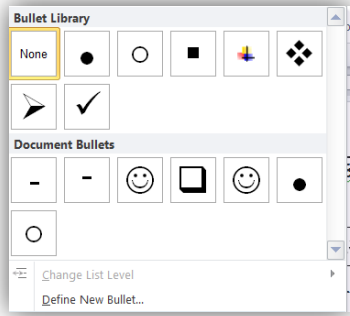## 2.8 PARAGRAPH FORMATTING IN MS WORD

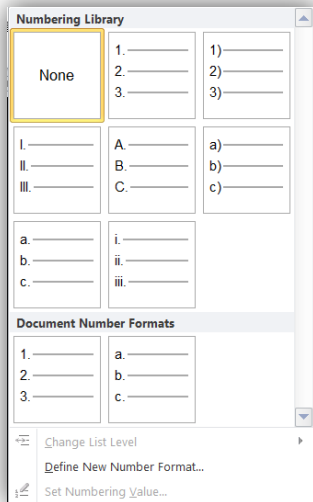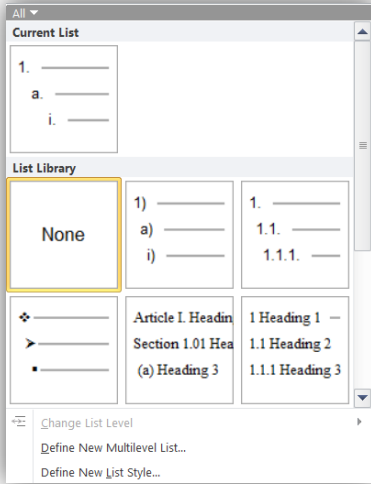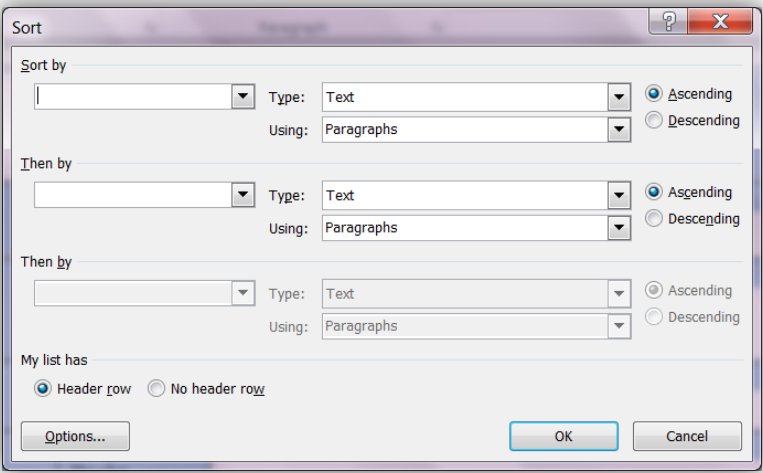**Figure 2.41 Paragraph Formatting**
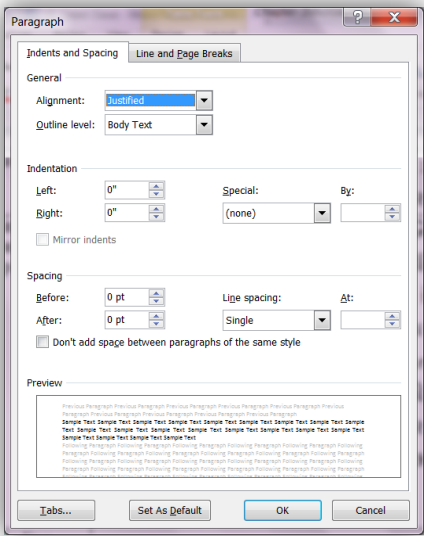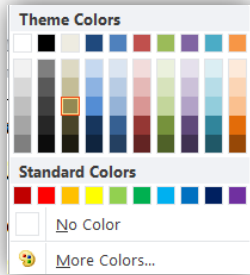
The names and usage of all the tools available in the Paragraph Group are shown in Table 2.3.

Icon	Name	Use
	Bullets	This option is used add an unordered list. It is possible to select the bullet sign that is to be displayed in front of the list by clicking on the arrow sign besides this tool button. See Figure 2.42 **Figure 2.42 Bullets**
	Numbering	This option is used add an ordered list. It is possible to select the number style that is to be displayed in front of the list by clicking on the arrow sign besides this tool button. See Figure 2.43

Icon	Name	Use
		Figure 2.43 Numbering
	Multilevel list	This option is used to add a multilevel list to a document. This tool plays an important role when adding Hierarchical lists that contain points and sub points. To select the number style that is to be displayed in front of the points and sub points in the list, click on the arrow sign besides this tool button. See Figure 2.44 **Figure 2.44 Multilevel List**
	Decrease Indent	This option is used to move all the contents of the paragraph to a predefined distance on the left side.
	Increase Indent	This option is used to move all the contents of the paragraph to a predefined distance on the right side.
	Sort	This option is used to arrange the tabular information in a sequential order. When this tool button is clicked a Sort dialog box as shown in Figure 2.45 gets displayed on the screen.

Icon	Name	Use
		Figure 2.45 Sort Dialog Box Using the Sort by drop down menu of this dialog box, the field name of the information that is to be arranged sequentially is selected. Selecting the Ascending option arranges the information in an increasing order whereas Descending option arranges the information in a decreasing order. A multilevel sorting can be obtained by selecting the Then by option. It means that for the similar first fields the sorting is done based on the information in field that follows it.
¶	Show/Hide	While formatting the document as per our requirement, Microsoft Word program inserts some white spaces in between the text. Using this button, it becomes possible to view different white spaces inserted between the texts. For example, normal space is represented by a dot and a tab space is represented by an arrow sign. It is necessary to note that while printing the document they are not displayed on the paper.
	Align Text Left	This button is used to arrange all text toward the left side with respect to the ruler.
	Centre	This button is used to arrange all text in the centre with respect to the ruler.
	Align Text Right	This button is used to arrange all text towards the right side with respect to the ruler.
	Justify	This button is used to arrange all text with equal spacing towards left and right side with respect to the ruler.
	Line and Paragraph Spacing	This option is used to control the spacing of lines in-between the lines of the paragraph. By default the line spacing value is set to 1.15. This is known as single line spacing. To increase the spacing between the lines, values such as 1.5, 2.0 or greater are chosen. To get more paragraph arrangement options click on the Line Spacing Options... given in the menu. The Paragraph dialog box as shown in Figure 2.46 will displayed on the screen.

Icon	Name	Use

Figure 2.46 Paragraph dialog box

With the help of Indentation section provided in this dialog box following paragraph arrangements can be selected:

Left Indent: To move all the lines in the paragraph towards right side from the left side ruler.

Right Indent: To move all the lines in the paragraph towards left side from the right side ruler.

Special:
First line: To move only the first line of the paragraph towards right side from the left side ruler.

Hanging: To move all the lines of the paragraph accept the first towards the right side from the left side ruler. |
| | Shading | This option is used to fill the background Colour in the paragraph. Many colours are shown in the menu that can be selected by clicking on the arrow sign besides this button. See Figure 2.47

Figure 2.47 Shading Menu

When any colour is selected from the menu, it becomes applicable as a background to the current paragraph. By |
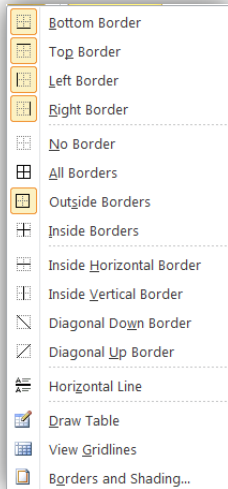
Icon	Name	Use
		selecting More Colours... option additional colour shades can be obtained, and by selecting No Colour option, it is possible to remove the background colour applied to the paragraph.
	Border	This option is used to apply borders around the selected paragraph. The menu displayed by using this tool button is shown in Figure 2.48.
		As shown in the figure, it is possible to apply different types of borders to a selected paragraph or table. The No Border option removes the border applied to the paragraph. To apply border around all the four sides of the paragraph, the All Borders options is used.

Figure 2.48 Border Menu

Table 2.3 Paragraph Formatting

2.9 TAB FORMATTING IN WORD

Set Tabs: The word 'tab' has been derived from the word 'table'. The tab facility is used when the information in the document needs to be arranged in a columnar form similar to tables. We have already seen that when a tab is arranged on ruler, it is possible to make the cursor directly jump on it by pressing the tab key on the keyboard. (See Figure 1.15)

Microsoft Word 2010 provides five types of tab facilities. To change the type of tab, a mouse click needs to be pressed on the left hand side of the Horizontal ruler available in the Word window. The names, usage and examples of tabs available in the Microsoft Word are as shown below:

1. Left Tab: By using this tab, the text is arranged towards the right side of the tab stop.

For example,

Hello Friends
This is a demonstration of
Left tab stop.

2. Right Tab: By using this tab, the text is arranged towards the left side of the tab stop.

For example,

<div align="center">
Hello Friends

This is a demonstration of

Right tab stop.
</div>

3. Center Tab: By using this tab, the text is arranged in a manner that it remains in the center of the tab stop. For example,

<div align="center">
Hello Friends

This is a demonstration of

Center tab stop.
</div>

4. Decimal Tab: This tab is used especially to add decimal numbers. By using this tab, all the decimal numbers that are added are arranged as per the decimal point. For example,

<div align="center">
12.34

12345.67

0.1234

-5.234
</div>

5. Bar Tab: By using this tab, a vertical line is inserted between two columns in a document. This tab is used to separate text using a vertical line. For example,
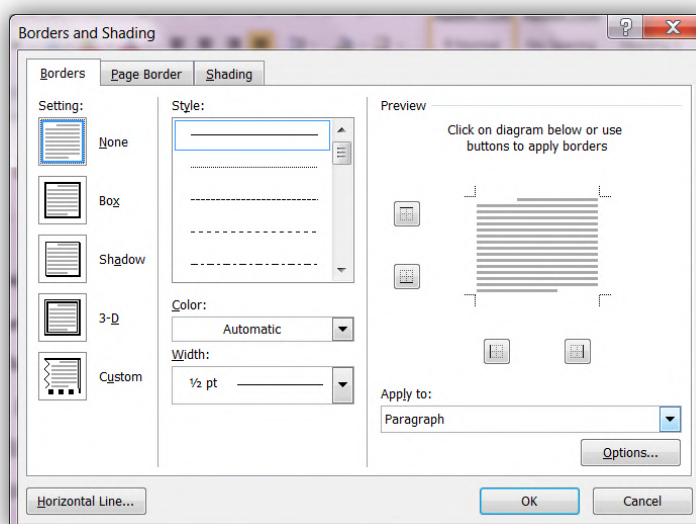
This is	this is
First column.	Second column.

To remove any kind of Tab, the Tab sign on the ruler line is dragged using the ruler.

2.10 BORDERS AND SHADING IN WORD

Figure 2.49 Border and Shading dialog box

Borders and Shading: In the previous discussion we have already seen how to apply border and background color to the selected paragraph. To perform this action, the Border and Shading menus on Home tab are used. To get more options about border as well as shading, click on the Border and Shading... option available in the

Border menu on Home tab. On performing this action, a Border and Shading dialog box will be displayed on the screen as shown in Figure 2.49.

The Border and Shading dialog box is divided into three sections:

- **Borders:** Using this section Box, Shadow and 3D type of borders can be applied to a paragraph. To select different styles of borders the Style box is used. To select color and width of the border the Color and Width menu is used respectively. The look of the selected border can be seen in the Preview section.
- **Page Border:** The Page border section is used to apply borders to the entire page. The Page Border tab has been shown in Figure 2.50.
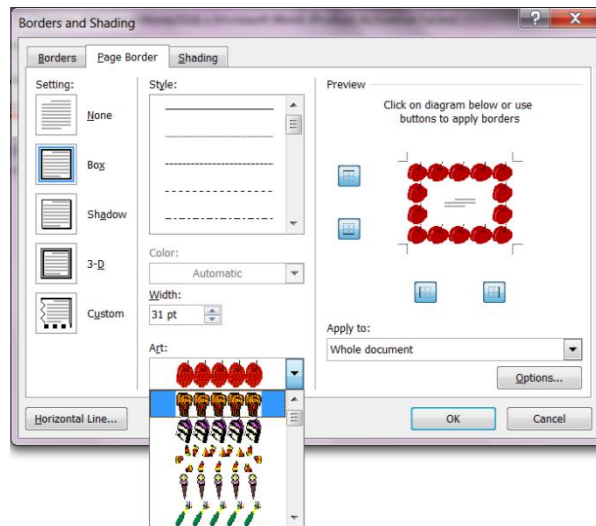

Figure 2.50 Page Border Tab

As seen from the figure, the options given in Page Border tab are similar to the options given in the Border tab, but the effect of the options given in this tab are applicable to the entire page. Over and above, an Art border option is also given in this section, using which some attractive borders can be given to a page.

- **Shading:** The third section of the Border and Shading dialog box is shading, using which background color can be applied to a page. Figure 2.51 shows the Shading tab.
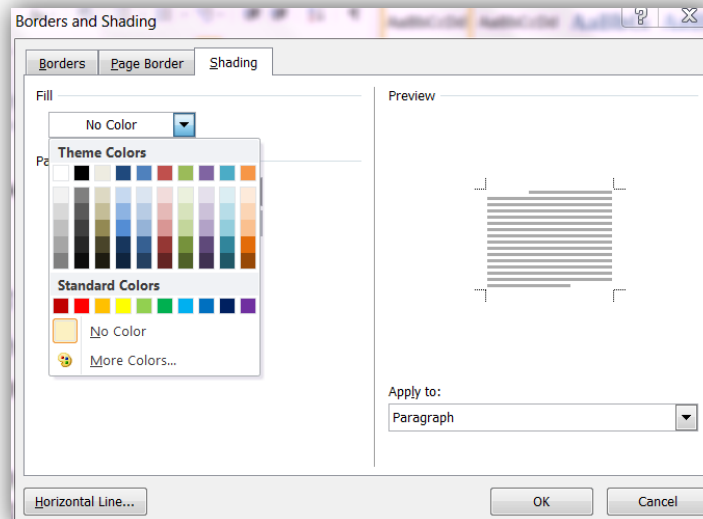
Figure 2.51 Shading Tab

2.11 BULLETS AND STYLES IN WORD

Bullets and Numbering: Creation of a list is a normal process while creating a document. Microsoft Word 2010 provides features to create two types of lists: Unordered (Bulleted) and Ordered (Numbered).The information about both the lists are given in Table 2.3.

The unordered list can be created using the Bullet menu available in the Home tab as shown in Figure 2.42. To get additional bullets, other than those available in the menu, click on the Define New Bullets... link. This action will open a Define New Bullet dialog box as shown in Figure 2.52.
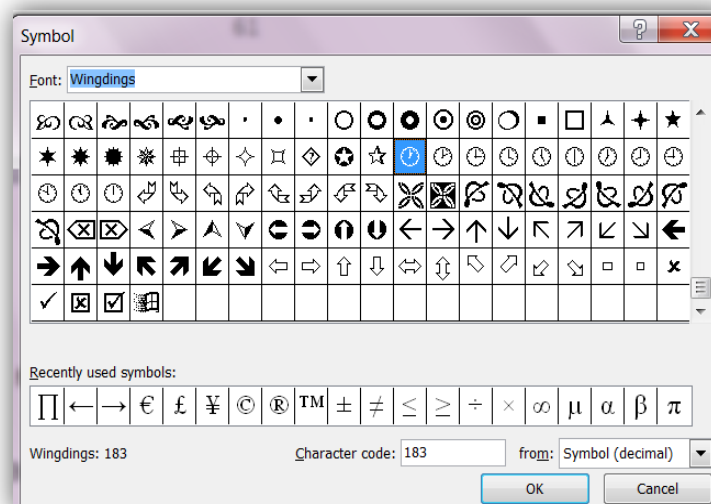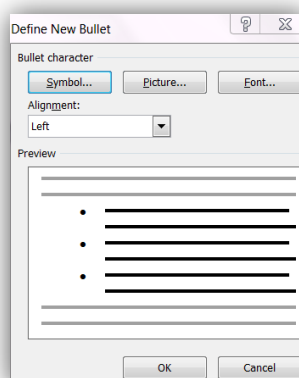

Figure 2.52 Define New Bullet dialog box

Click on the Symbol button of this dialog box to get additional signs as bullet options. A Symbol dialog box as shown in Figure 2.53 will be displayed, wherein different

fonts can be selected and an appropriate symbol from the available symbols can be chosen as a bullet symbol.

Figure 2.53 Symbol dialog box

The ordered list can be created using the Numbering menu available in the Home tab. Generally, the order of all the components given in the ordered list is of utmost importance. The method to add an ordered list is shown in Table 2.3. (See Figure 2.43)

In Microsoft Word, it is possible to change the default numbers of an ordered list in a document. To do this a Define New Number Format dialog box as shown in Figure 2.54 can be opened by clicking on the Define New Number Format... link in the Numbering menu. This dialog box can be used to prepare an ordered list with different number styles.
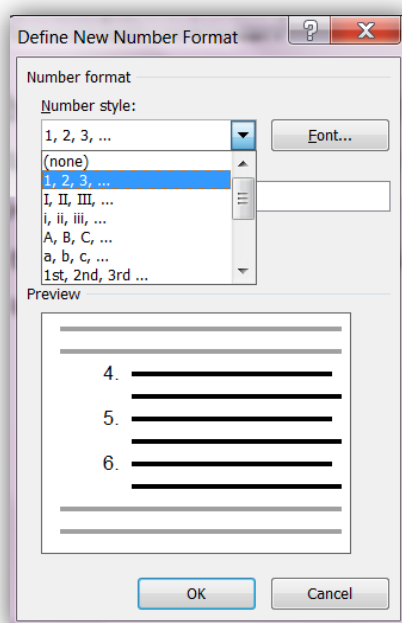
Figure 2.54 Define New Number dialog box

Another list can also be added within an ordered list which is known as a multilevel list. The method to create a multilevel list is shown in Figure 2.54.

Style: We have already learnt about the different ways used to apply formatting to the text in Microsoft Word 2010. For faster creation of professional documents, Word provides some predefined formatting known as 'Styles'. Using styles the text in a

document can be uniformly formatted using lesser efforts. The different styles that can be applied to text are available in Home tab. This is shown in Figure 2.55.
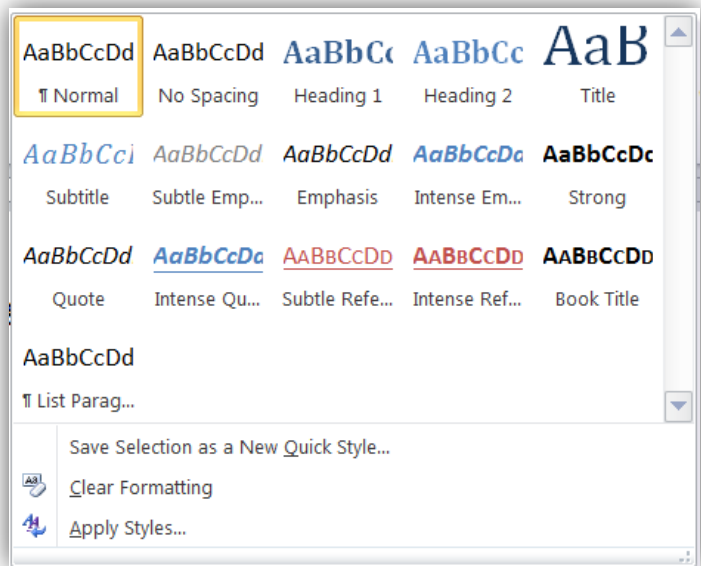
Figure 2.55 Style

Users can also create a new style as per their requirement. The Change Style menu available in the Home tab can be used to change the selected style. Table 2.4 shows examples of some predefined styles.

| Style	Example
Normal	The quick brown fox jumps over the lazy dog.
Heading 1	**The quick brown fox jumps over the lazy dog.**
Heading 2	**The quick brown fox jumps over the lazy dog.**
Heading 3	**The quick brown fox jumps over the lazy dog.**
Heading 4	**The quick brown fox jumps over the lazy dog.**
Heading 5	The quick brown fox jumps over the lazy dog.
Title	The quick brown fox jumps over the lazy dog.
Subtitle	*The quick brown fox jumps over the lazy dog.*
Subtitle emphasis	*The quick brown fox jumps over the lazy dog.*
Emphasis	*The quick brown fox jumps over the lazy dog.*
Intense emphasis	***The quick brown fox jumps over the lazy dog.***
Strong	**The quick brown fox jumps over the lazy dog.**
Quote	*The quick brown fox jumps over the lazy dog.*
Intense quote	***The quick brown fox jumps over the lazy dog.***
Subtle reference	THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG.
Intense reference	**THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG.**
Book title	**THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG.**
List paragraph	The quick brown fox jumps over the lazy dog.

Table 2.4 Different Styles

2.12 GRAPHICAL OBJECTS AND CHARTS IN MAS WORD

Graphical Objects: The adage 'A picture is worth thousand words' refers to the notion that a complex idea can be easily conveyed by a single image. People always prefer to view images instead of reading long text. The document's informative capability and attractiveness can be increased by adding information in form of an image. It is possible to add many different types of graphical objects in Microsoft Word 2010.The section below introduce them.

- **Picture:** Using this option the images that have been stored in a form of a file can be added to a document. By clicking on the Picture button, available in Insert tab, an image that has been stored as a file can be added. As shown in Figure 2.1, by clicking on the Insert button the selected image can be inserted in a document.
- **Clip Art:** Microsoft Word 2010 contains a library of some predefined images known as ClipArt Gallery. The ClipArt Gallery can be opened by clicking on the Clip Art button available on Insert tab. performing this action a ClipArt

Gallery as shown in Figure 2.56 will be displayed on the right side of Word window.
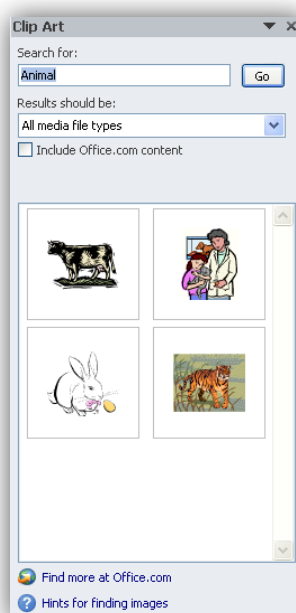
Figure 2.56 ClipArt Gallery

To search an image of a particular subject, type the keyword in the Search for text box of the ClipArt Gallery. For example, here we have used Animals as keyword and pressed Enter key. The images related to animals can be seen in the ClipArt Gallery. Any image can be inserted in a document by clicking on it.

* **Shapes:** Microsoft Word 2010 has a facility to add different type of shapes in a document. Place the cursor at the position where the shape is to be inserted in the document and click on the Shapes button available in the Insert tab. Many shape options in form of different menus will be visible as shown in Figure 2.57.

The steps to add different shapes in the document are as mentioned below:
  * From the menu shown in Figure 2.57 click on the desired shape.
  * Drag the mouse pointer on the position where the shape is to be inserted in the document.
  * Release the click to stop the process of inserting the shape. The shape will be inserted in the document as shown in Figure 2.58.
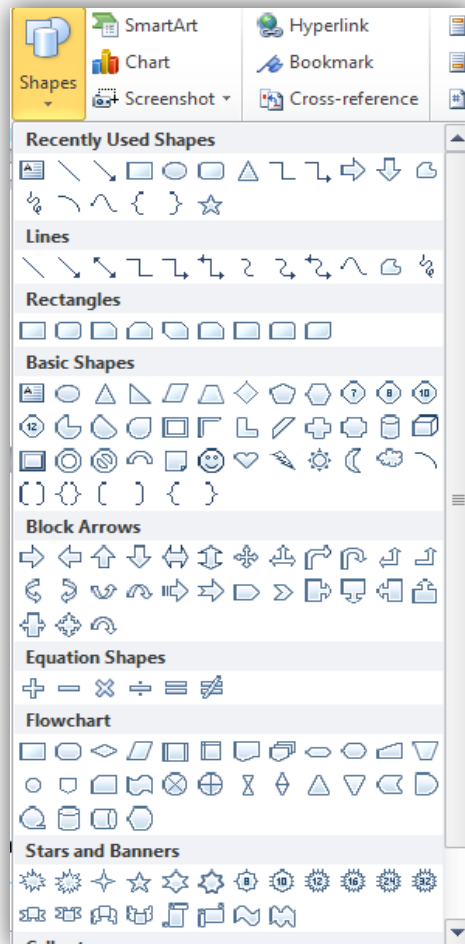
Figure 2.57 Different Shapes

- To change the size of the inserted shape, the white edit points on the boundary can be dragged using the mouse pointer, and with the help of yellow-colored edit points, the style of the shape can be changed. The green-colored edit point is used to rotate the shape.

Figure 2.58 Edit Points
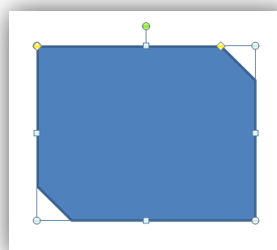
- **SmartArt:** To add non sequential components in a document, Microsoft Word 2010 provides shapes known as Smart Art. It is possible to add text within this shape. The dialog box that shows different types of Smart Art can be opened with the help of SmartArt button available in the Insert tab. As shown in Figure 2.59, the desired SmartArt can be selected and inserted in a document.
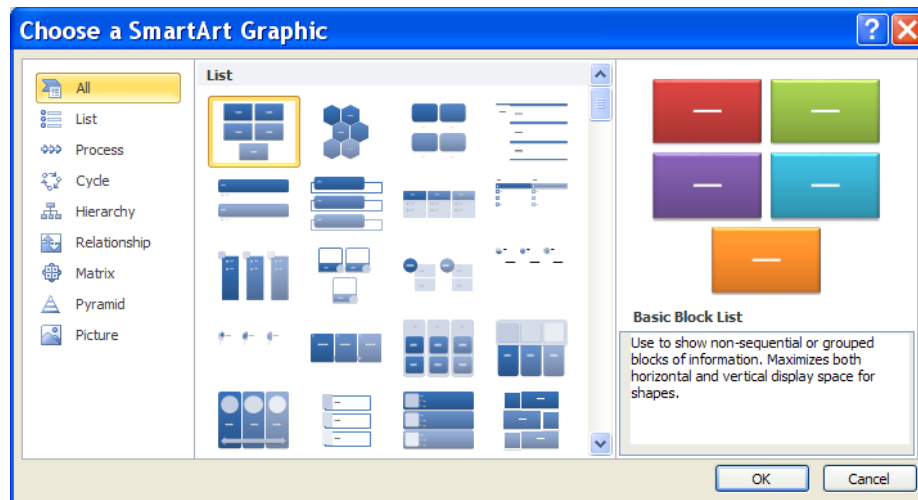
Figure 2.59 Smart Art

4. **Chart:** Sometimes a graph is used to compare the information stored as text. To add a chart in the document, the Chart button available in the Insert tab needs to be clicked. On performing this action, Insert Chart dialog box will be displayed on the screen, which contains different graphs as shown in Figure 2.60.
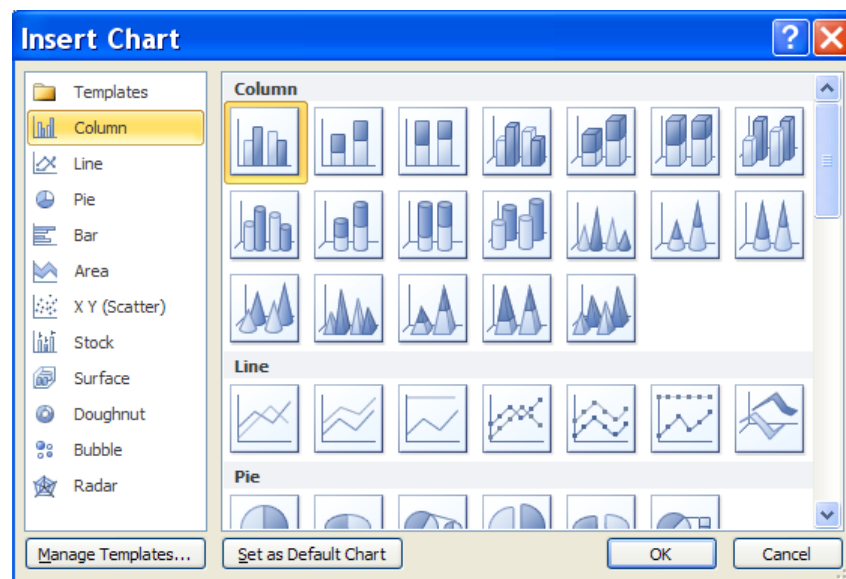
Figure 2.60 Insert Chart dialog box with different graphs

By selecting the desired graph and clicking the OK button, Microsoft Excel 2010 program is opened   for a temporary period, and it is possible to see sample information needed to create a graph. This information can be replaced with our original information. For example, here we have created a graph that shows the sales of hardware items for a period of three months as can be seen in Figure 2.61.
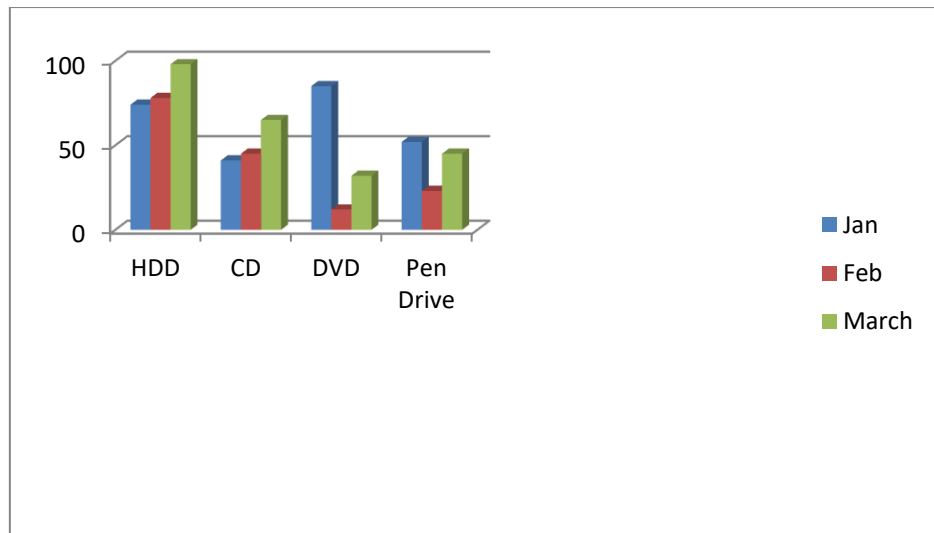
Figure 2.61 Graph showing sales of hardware items in three months

2.13 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

1. Add an image of your village or city in the previously created file.
2. Arrange the image using different Wrap Text options.
3. Add a cover page to your file.
4. Change the look of your previously created file by applying different themes to it.
5. Add page border to your file.
6. Add your name as watermark in the previously created file.
7. Correct the spelling mistakes in the file.
8. Set your file in a manner such that its backup copy is created.
9. Take the printout of the file created by you.
10. Convert the fonts of the file created by you to 'Tahoma'.
11. Change the Color of one of the paragraphs to red.
12. In the file created by you, add a list of sightseeing places of your village using Bullets.
13. Align the text in your file as Justify.
14. Use a symbol as a bullet and create the list of sightseeing places of your village.

Unit 3: Advance Formatting in Microsoft Word File

3

Unit Structure

3.1 LEARNING OBJECTIVES

After studying this unit student should be able to understand:

- How to use a table,
- How to add or update a table,
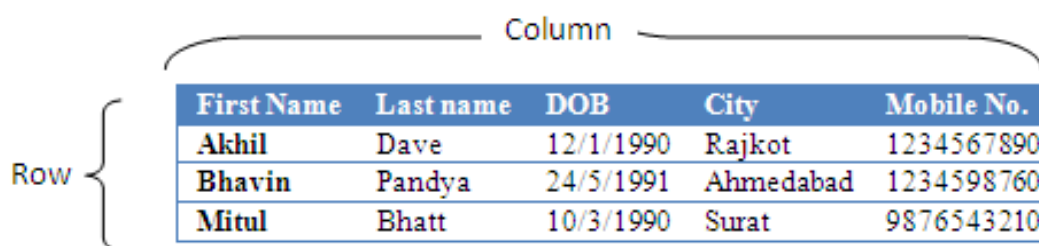- How to arrange the table data in a specific order and
- How to use mail merge.

3.2 INTRODUCTION TO TABLE IN WORD

Table is a 2-dimensional structure. Width and height are the two dimensions of the table. The data can be arranged in a tabular format within the table. This tabular format can be details of employees in an organization, credit and debit details of an event, mobile numbers and email ids of friends, etc. The data present in the tables is easily readable. Hence it also improves the look of the document.

The horizontal lines in the tables are known as Rows whereas the vertical lines are known as Columns. Blocks formed by intersection of row and column are known as Cells. To enter data in a table, it is to be written in the Cell. The figure below shows a table.

First Name	Last name	DOB	City	Mobile No.
Akhil	Dave	12/1/1990	Rajkot	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	1234598760
Mitul	Bhatt	10/3/1990	Surat	9876543210

Figure 3.1 Table

In Table 3.1, First Name is the first column, Last Name is the second column, DOB (short form of Date of Birth) is the third column, City is the fourth column and Mobile No. is the fifth column.

Akhil Dave 12/1/1990 Rajkot 1234567890 is the first row. Similarly,

Bhavin Pandya 24/5/1991 Ahmedabad 1234598760 is the second row.

The student name Akhil is written in the intersection of first column (First Name) and first row.

Hence, it can be said that Akhil is written in the first cell. Generally, the cell is recognized by its cell address. The column name is generally written using alphabets while a row name is written using numbers.

Hence, column names can be A, B, C, etc., and row names can be 1, 2, 3, etc. In Table 3.1, Akhil can thus be considered as written in cell A1. Only one type of information should be entered in the cell so that the table can be used effectively for counting and analysis.

3.3 CREATING A NEW TABLE IN WORD

To add a table in the word document, the Insert tab available on the Ribbon is used. By clicking on the Insert tab, options shown below are obtained.
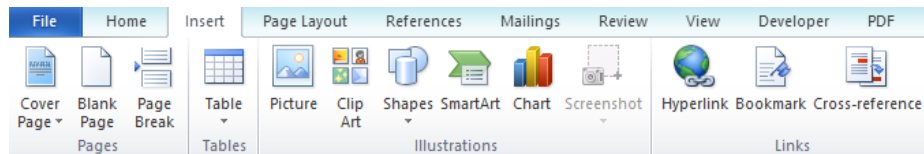
Figure 3.2 Insert tab

The Table icon arrow is clicked to insert a table. Word gives us the following options to create a table:
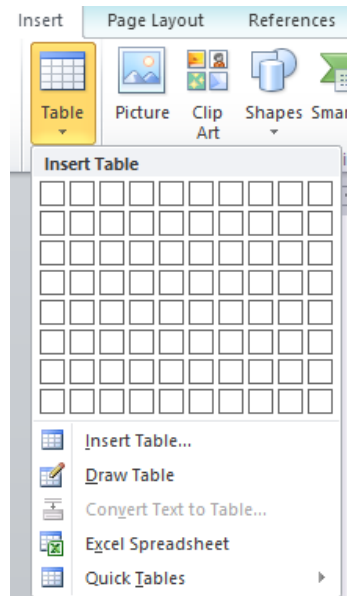
Figure 3.3 Table options of Insert tab

To create a table, the Insert Table... option can be clicked or rows and columns under the Insert Table option can be selected.

If the table is selected using the mouse movement then it will be visible as shown in Figure 3.4.
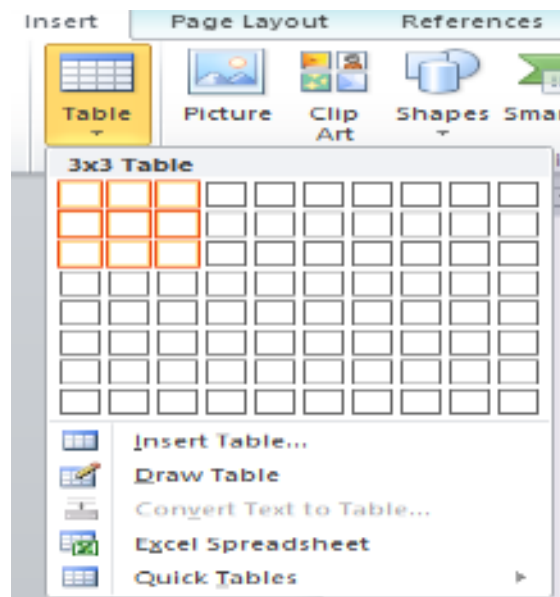
Figure 3.4 3×3 Table

When the Insert Table... option of Insert tab is used, it opens an Insert Table dialog box. This dialog box is used to decide the number of columns and rows that will be a part of the table. It is also possible to increase or decrease the number of rows or

columns once the table is created. To decide the table size, it is possible to enter the number of columns required in the Number of Columns text box. The spinner control can also be used to decide number of rows and columns in a table.

Figure 3.5 Adding Table

Insert Table dialog box has two main sections. The two main sections are:

1. Table size

2. AutoFit behavior

With the help of Table size, it is possible to create a table with number of rows and columns depending on our needs. Once the table is created, the rows and columns can be increased or decreased as per our needs.

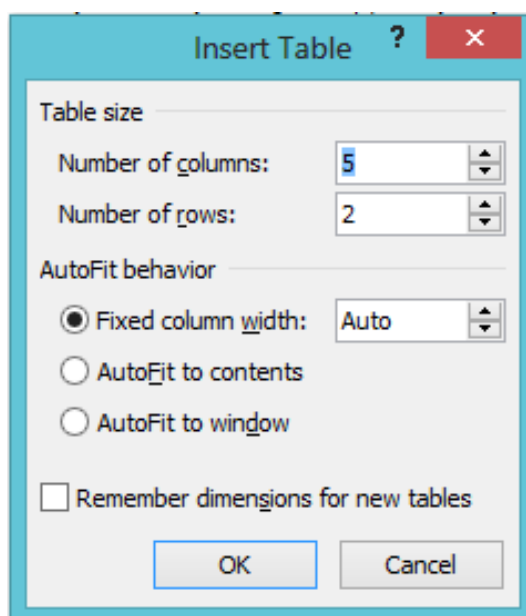AutoFit behavior provides the feature of arranging the text within the cells. Fixed column width means that the column width is predefined. With the help of spinner control given besides the Fixed Column Width text box, it is possible to set a fixed column width, or we can also enter the value of the width in the spinner control. If the Fixed Column Width is set to auto, the width of the column can increase or decrease as per the contents of the text. Auto usually means that the width of all the columns will not be the same. It is possible that the width of all the columns may be the same or different. The column width does not change until we change the values in the Fixed Column Width.

AutoFit to contents option changes the cell width automatically as per the contents of the text.

AutoFit to window option increases or decreases the column width and fits the table in the Window. The AutoFit to window option is a good choice when multiple users are going to view the table, as the screen size of the users may vary.

Additionally, there is one check box. If this checkbox is checked and OK button is clicked, Word will remember the size (in form of row and column) and when a new table is created, it will be created with number of rows and columns.

Once a table is created, the text can be added to a cell. Any object like number, text, picture, etc., can be inserted in a cell. It is possible to the apply formatting to the contents of a cell. The formatting to the text in the cell can be done in the manner similar to the formatting applied on Font and Paragraph without tables. For this, the text in the cell is selected and desired formatting option is clicked; this applies the

selected formatting to the contents of the cell. Formatting can be applied to a single cell or more than one cells together. To apply formatting to more than one cell at a time, all the cells should be selected. To select more than one cell at the same time, press the left mouse button and move it across the cells to be selected. Once all the cells are selected release the mouse button. This technique is known as drag and drop. To select more than one cell using keyboard keep Shift key pressed and move the arrow keys, the cells will be selected as per the arrow key movement.

The Tab key can be used to move from one cell to another within a table. Whenever a Tab key is pressed the cursor moves towards right by one cell position. If the cursor is in the last column of some row and the Tab key is pressed, the cursor will move to the first column of the next row. If the cursor is in the last column of last row and Tab key is pressed, a new row is added to the table. To move from the right cell to the left cell within the table press Shift and Tab key together. When a cell is selected, it gets highlighted as shown in figure 3.6.

First Name	Lastname	DOB	City	Mobile No.
Akhil	Dave	12/1/1990	Rajkot	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	1234598760
Mitul	Bhatt	10/3/1990	Surat	9876543210

Figure 3.6 Moving from one cell to another

3.4 FORMATTING A TABLE IN WORD

Once a table has been created, the entire table can be selected. Generally, entire table is selected when it needs to be formatted in a specific way or it needs to be moved from one place in a document to another.

It is necessary to select the entire table to apply predefined style on the table. To select the entire table, click on the symbol with four arrows. The four-headed arrow is visible near the left top corner of the first column whenever the mouse is moved over the table.

First Name	Lastname	DOB	City	Mobile No.
Akhil	Dave	12/1/1990	Rajkot	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	1234598760
Mitul	Bhatt	10/3/1990	Surat	9876543210

Figure 3.7 Table selection

As soon as you click on the four-headed arrow, entire table will be selected. The selected table will be highlighted.

| First Name	Lastname	DOB	City	Mobile No.
Akhil	Dave	12/1/1990	Rajkot	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	1234598760
Mitul	Bhatt	10/3/1990	Surat	9876543210

Figure 3.8 Selected table

As soon as the table is selected, Table tools will be added to the title bar and a Design and Layout tab will also be added to the Ribbon.
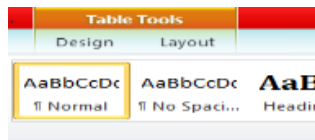
Figure 3.9 Design and Layout Tab

Table style and other options will be visible on the Ribbon as soon as you click on the Design tab of Table tools. As the mouse will move on different style options, the selected table will be previewed with the effect of that style.
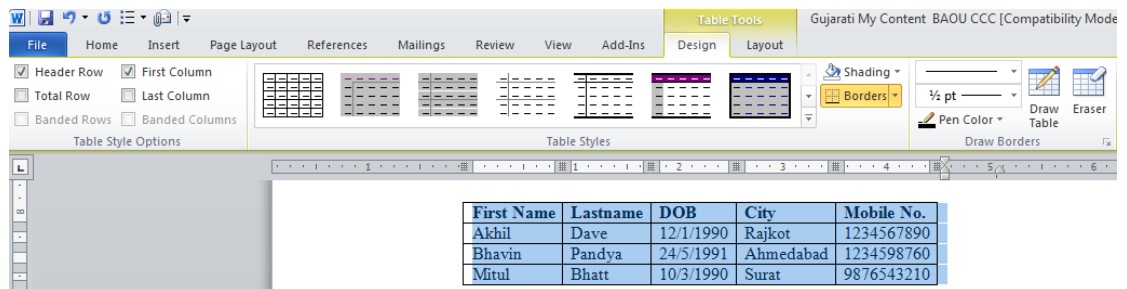

Figure 3.10 Table design

We can also decide the border width of the table as well as its design. To see this effect, select the table and choose different options of border.

3.5 INSERT AND DELETE ROW/COLUMN IN TABLE IN WORD

The Layout tab of the table allows us to select different layout options such as add new row or column, merge two or more cells of table (convert two or more cells into a single cell), AutoFit behavior, change the cell size, align the text within the cell and options for performing operation on the data stored in the table.
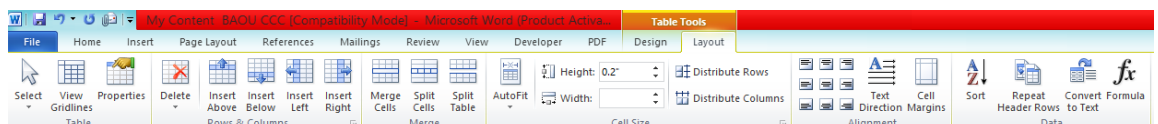
Figure 3.11-a Table Layout

To add a row or column in a table, select a row or column and from the Layout tab given in the Table tools on Ribbon select appropriate option. For example, assume that we want to add a column between the City and Mobile No. columns. To perform this operation select the column Mobile No. as shown in Figure 3.11-b. To select the Mobile No. column go to the top of this column and click on the mouse. When the mouse is moved to the top of the column, the cursor gets converted to a solid shaped arrow, and now when the left mouse button is clicked, the entire column gets selected.
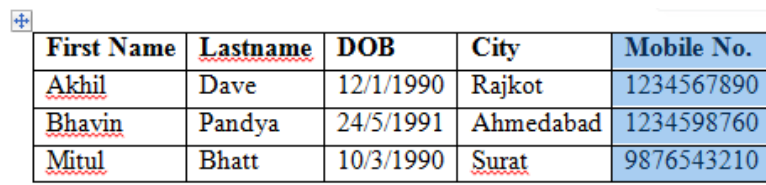
Figure 3.11-b Selection of single column

Now as shown in Figure 3.12 by clicking on the Insert Left button given in the Layout tab, a new column will be inserted to the left of Mobile No. column as shown in Figure 3.13.
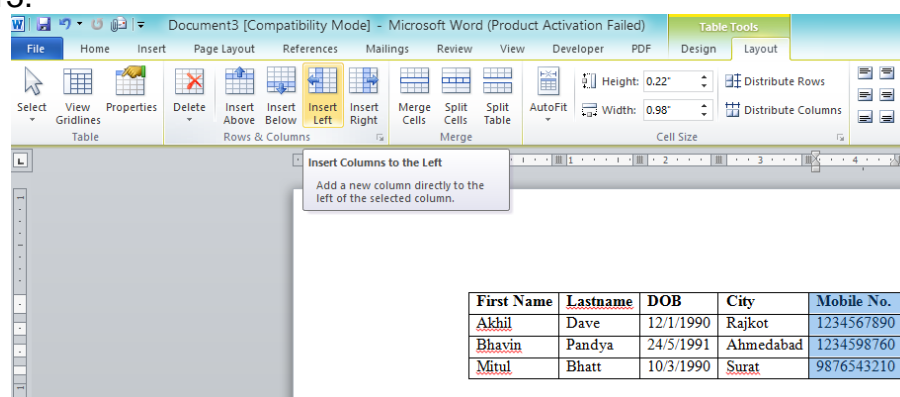

Figure 3.12 Adding new column to the left of selected column

Figure 3.13 New columns inserted to the left of selected column

Data can now be added into this newly inserted column. For example, we will give the title of this new column as E-mail. As shown in Figure 3.96, student's E-Mail ID can be stored in this column.

First Name	Last name	DOB	City	E-mail	Mobile No.
Akhil	Dave	12/1/1990	Rajkot	adave12@yahoo.com	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	Bhavinp1991@gmail.com	1234598760
Mitul	Bhatt	10/3/1990	Surat	Mbb10@yahoo.co.in	9876543210

Figure 3.14 New columns E-mail inserted to the left of column Mobile No.

Similarly, we can add a new row between two rows. We can also add more than one row or column at a time. For this, we need to select more than one row or column. For example, assume that we want to add three rows after the last row. We need to select all rows and then click on the Insert Below option in the Layout tab as shown in Figure 3.15.
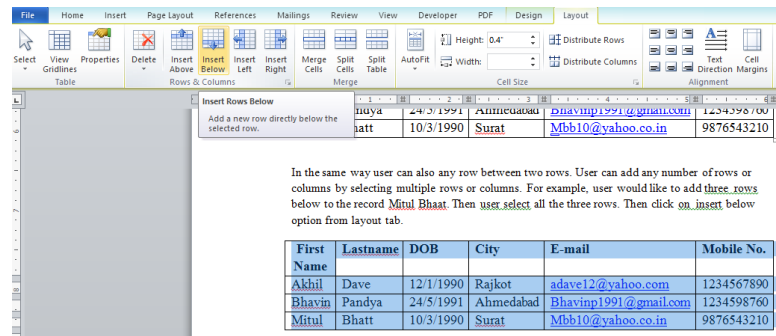
Figure 3.15 Adding three rows below the last row

First Name	Last Name	DOB	City	E-mail	Mobile No.
Akhil	Dave	12/1/1990	Rajkot	adave12@yahoo.com	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	Bhavinp1991@gmail.com	1234598760
Mitul	Bhatt	10/3/1990	Surat	Mbb10@yahoo.co.in	9876543210

Figure 3.16 Three rows added below the last row

Similarly, it is possible to delete one or more than one rows or columns. To delete a row, select the row to be deleted. As shown in Figure 3.17 from the Delete tab of the Table layout, click on the Delete Rows option.
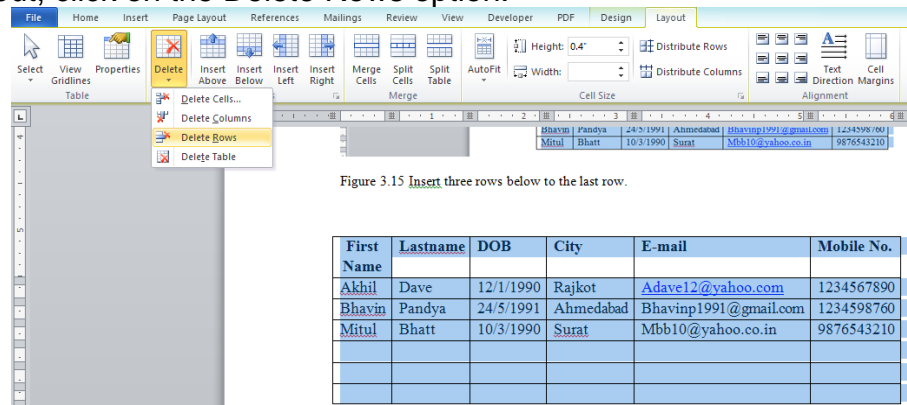
Figure 3.17 Deleting last three rows

First Name	Last name	DOB	City	E-mail	Mobile No.
Akhil	Dave	12/1/1990	Rajkot	Adave12@yahoo.com	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	Bhavinp1991@gmail.com	1234598760
Mitul	Bhatt	10/3/1990	Surat	Mbb10@yahoo.co.in	9876543210

Figure 3.18 Table after deleting the last three rows

132

Similarly, one or more columns can also be deleted. For example, to delete the E-mail column, select the E-mail column, and then as shown in Figure 3.19 from the Delete tab of the Table layout, click on the Delete Columns option. Figure 3.20 shows the table with E-mail column deleted.
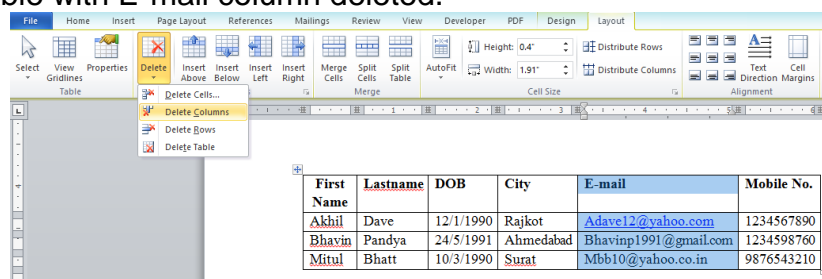

Figure 3.19 Deleting E-mail column

First Name	Last name	DOB	City	Mobile No.
Akhil	Dave	12/1/1990	Rajkot	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	1234598760
Mitul	Bhatt	10/3/1990	Surat	9876543210

Figure 3.20 Table after deleting E-mail column

3.6 MERGE AND SPLIT CELL IN TABLE IN WORD

We can merge (convert two or more cells into a single cell) or split (convert a single cell into two or more cells) the cells in the table as per our needs. Assume that a row has been added before the first row of the table as shown in Figure 3.21. The text in the first column is ABC and in the second column is School.

ABC	School			
First Name	Last name	DOB	City	Mobile No.
Akhil	Dave	12/1/1990	Rajkot	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	1234598760
Mitul	Bhatt	10/3/1990	Surat	9876543210

Figure 3.21 Before cell merge operation

As ABC School is a title, we want to align it in the center of all the columns in the table. It means that we want to merge the text ABC School and put it in center of the table. As shown in Figure 3.22, select the first row.

Figure 3.22 the cells selected before being merged

After this as shown in Figure 3.23, by clicking on the Merge Cells option from the Layout tab, all the selected cells will get merged and become one cell as shown in Figure 3.24.

Now if you wish the text in this cell can also be aligned in the center, and as shown in Figure 3.25, the additional spaces can be removed using delete or backspace keys.
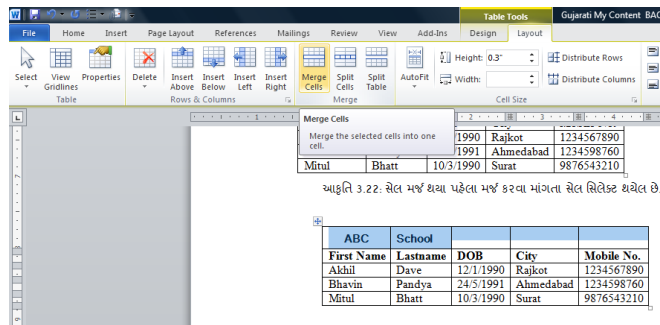
Figure 3.23 Selecting Merge Cells option from layout for merging the selected cells

ABC				
School				
First Name	**Last name**	**DOB**	**City**	**Mobile No.**
Akhil	Dave	12/1/1990	Rajkot	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	1234598760
Mitul	Bhatt	10/3/1990	Surat	9876543210

Figure 3.24 Display of table after merging the cells

ABC School				
First Name	**Last name**	**DOB**	**City**	**Mobile No.**
Akhil	Dave	12/1/1990	Rajkot	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	1234598760
Mitul	Bhatt	10/3/1990	Surat	9876543210

Figure 3.25 Display of table after merging the cells and removal of extra spaces

Similarly, a cell can also be split. For example, to split the text ABC School as shown in Figure 3.26 again in two cells, select the text ABC School and click on the Split Cells option on the Layout tab. This will open a Split Cell dialog box as shown in Figure 3.26. In this dialog box, you are supposed to enter the details of number of rows and columns in which we want to split the cell and click the OK button. The cell will now be split.
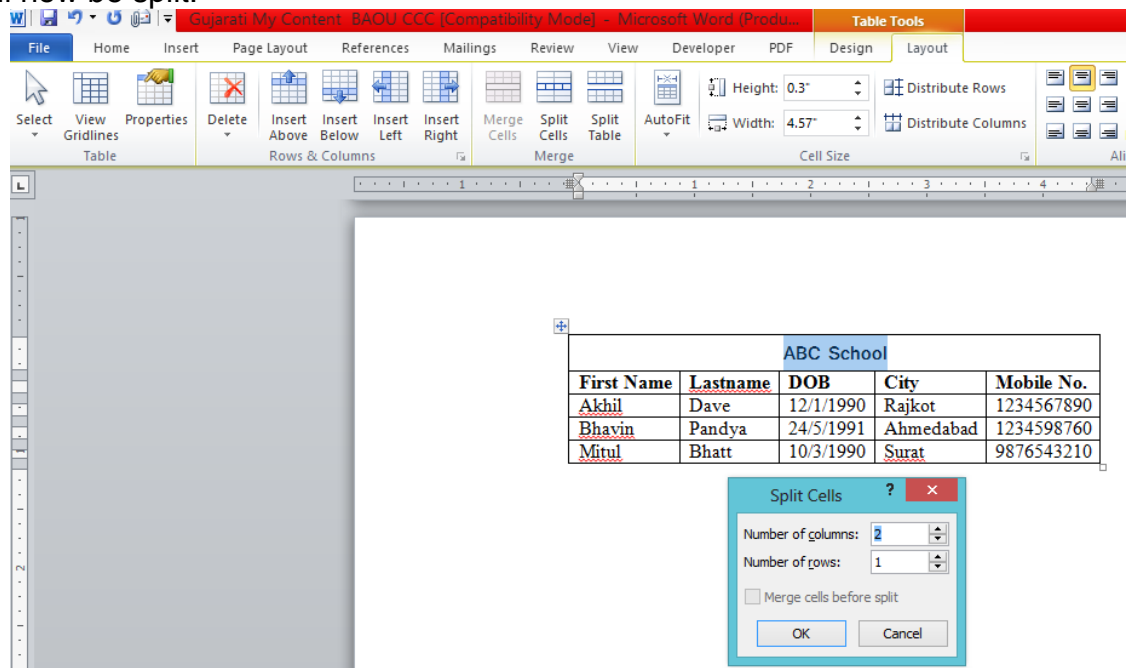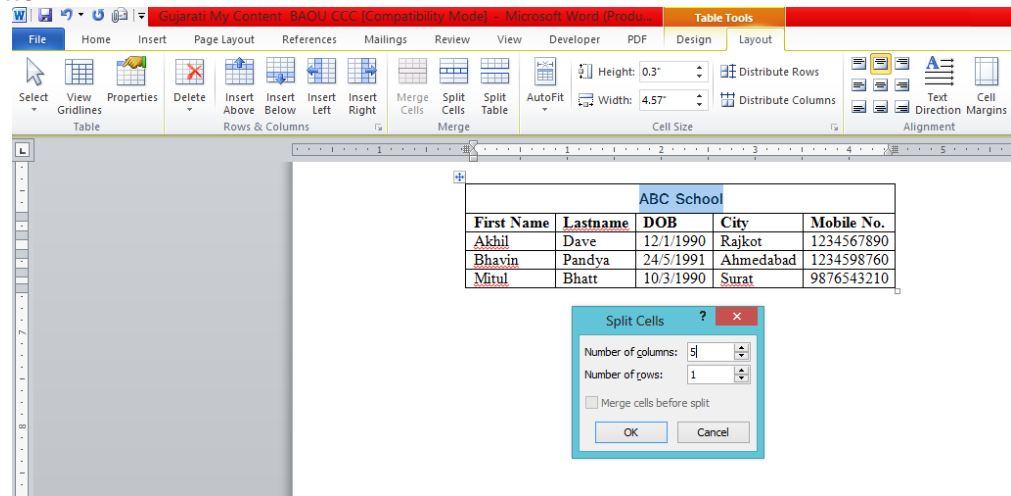

Figure 3.26 Clicking the Split Cell button to split the cell

134

If we want to split the cell in 5 columns and 1 row, as shown in Figure 3.27, enter 5 in the Number of columns field and 1 in the Number of rows field and then click on the OK button.


Figure 3.27 Details of number of rows and columns for splitting the cell

Clicking on OK button will split the cell in 5 columns and 1 row. This is shown in Figure 3.28 below.

ABC School				
First Name	Last name	DOB	City	Mobile No.
Akhil	Dave	12/1/1990	Rajkot	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	1234598760
Mitul	Bhatt	10/3/1990	Surat	9876543210

Figure 3.28 Cells after splitting

By using the Split Table option it is possible to split the tables. For example, for splitting our existing table into two tables, select the last two rows of the table and as shown in Figure 3.29.As soon as the Split Table option of the Layout tab is clicked, the table will be split from one table to two tables as shown in Figure 3.30.
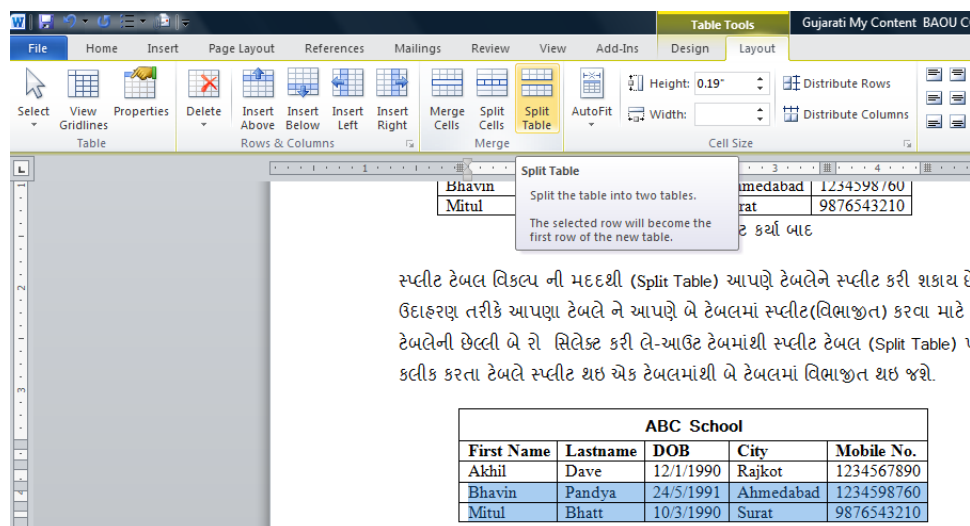
Figure 3.29 Split Table option for dividing the tables

ABC School				
First Name	Last name	DOB	City	Mobile No.
Akhil	Dave	12/1/1990	Rajkot	1234567890

Bhavin	Pandya	24/5/1991	Ahmedabad	1234598760

Mitul	Bhatt	10/3/1990	Surat	9876543210

Figure 3.30 Tables after splitting

3.7 MODIFY HEIGHT AND WIDTH OF ROW AND COLUMN IN TABLE

It is possible to change the row height and column width after the table is created. The row height and column width of the table can be changed by selecting the Cell Size option of the Layout tab. For changing the row height, select the row and in the Height: text box of the Cell Size option, enter the value for row height. The height of the selected row will now change. For example, by setting the height of the second row shown in Figure 3.31 to 0.5", its height will be changed to 0.5" from 0.2".This has been shown in Figure 3.32. Similarly, it is possible to change the width of the column.
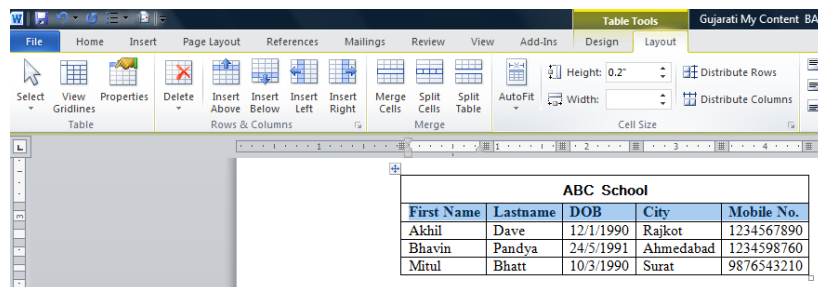

Figure 3.31 Changing the row height of table

ABC School				
First Name	**Last name**	**DOB**	**City**	**Mobile No.**
Akhil	Dave	12/1/1990	Rajkot	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	1234598760
Mitul	Bhatt	10/3/1990	Surat	9876543210

Figure 3.32 View after change in table's row height

Other option is also available to change the row height and column width after creation of the table. For using this option, select the table and right click on the mouse, from the context menu, click on Table Properties. This will display a Table Properties dialog box. Many options like Table, Row, Column, Cell, etc., will be visible in the Table Properties dialog box. For example, we will change the width of the City column. For performing this operation, select the table and right click on the mouse button. Click on Table Properties from the context menu. This will open a Table Properties dialog box as shown in Figure 3.33. Click on the Column tab in the Table Properties dialog box. This will give the option for changing the column width as shown in Figure 3.34.
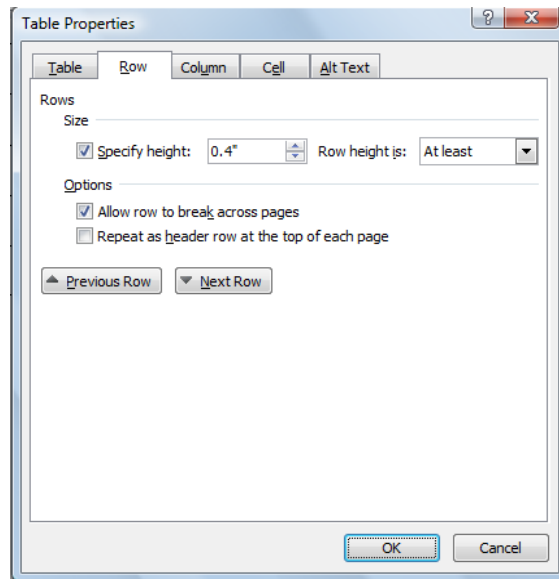
Figure 3.33 Table Properties dialog box
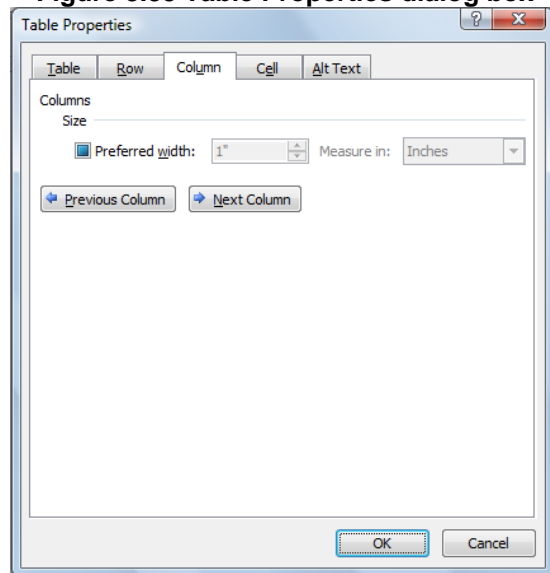
Figure 3.34 Column tab of Table Properties dialog box

Now to select the column whose width is to be changed, click on Previous Column or Next Column button. This will select the left or right column as per the click. If we want to change the width of City column then by clicking the Next Column four times, the City column will get selected. Now as shown in Figure 3.35, in the Preferred Width text box, enter the value of the desired width. Using the Measures in combo box, decide whether the unit is to be kept in Inches or in Percentage. Now by clicking on OK button, the width of the selected column will be changed as shown in Figure 3.36.
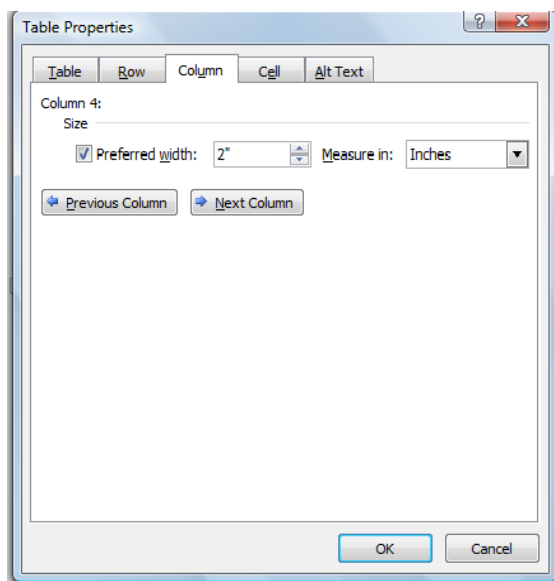
Figure 3.35 Options to change the column width in the Table Properties dialog box

ABC School				
First Name	**Last name**	**DOB**	**City**	**Mobile No.**
Akhil	Dave	12/1/1990	Rajkot	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	1234598760
Mitul	Bhatt	10/3/1990	Surat	9876543210

Figure 3.36 Table after changing the column width using Table Properties dialog box

3.8 POSITION AND ALIGNMENT OF A TABLE IN MS WORD

The position of the text in the table and the space (Margin) between the two cells of table can be changed as per our needs. To change the position of the text, select the cells whose text position is to be changed and then from the Layout tab select the desired position alignment and click on it. By doing this, the position of all the selected text will change. For example, we want to align the column headings in the center of the columns. To perform this action, select the row with column heading. As shown in Figure 3.37, click on the Align Center option of the Layout tab. The selected column headings will now be aligned in the center as shown in Figure 3.38.
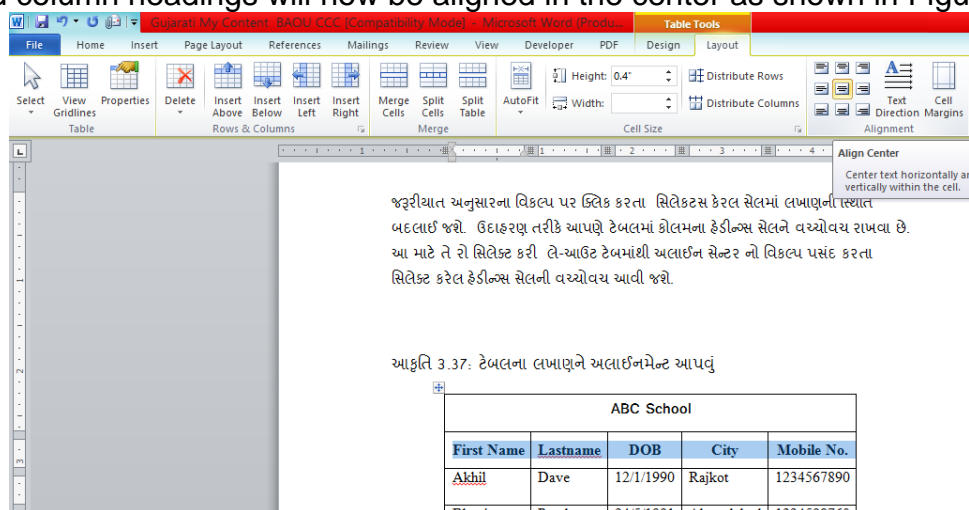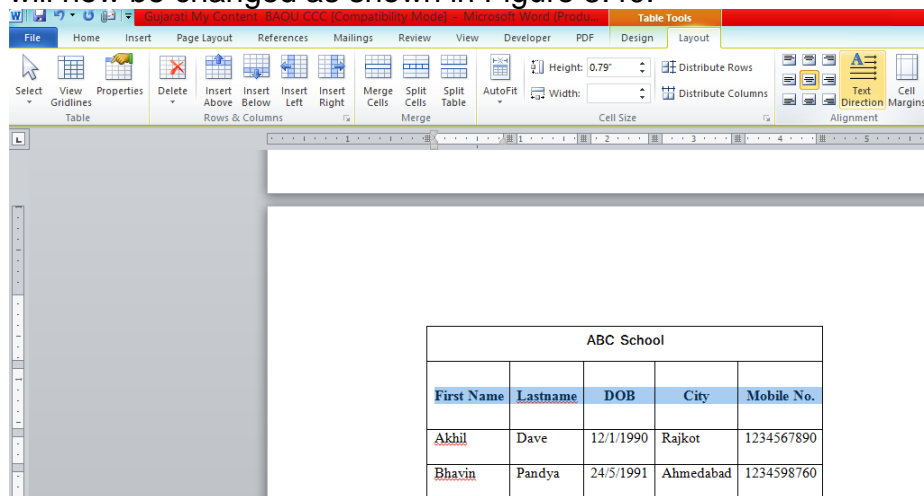

Figure 3.37 Aligning the text in table

138

ABC School				
First Name	**Last name**	**DOB**	**City**	**Mobile No.**
Akhil	Dave	12/1/1990	Rajkot	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	1234598760
Mitul	Bhatt	10/3/1990	Surat	9876543210

Figure 3.38 Table text after alignment

Additionally, the Alignment tab can also be used to change the direction of the text written in the cell. For example, to change the text direction of the column headings in our table, select the column heading row. As shown in Figure 3.39, click on the Text Direction option of the Layout tab. The direction of the selected column headings will now be changed as shown in Figure 3.40.


Figure 3.39 To change the direction of the text

ABC School				
First Name	**Last name**	**DOB**	**City**	**Mobile No.**
Akhil	Dave	12/1/1990	Rajkot	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	1234598760
Mitul	Bhatt	10/3/1990	Surat	9876543210

Figure 3.40 Table text after change in text direction

Margin: The space between two cells of the table can be changed using the Cell Margin option available in the Layout tab. For example, to increase or decrease the spacing between the cells of second row in the table, select the row as shown in Figure 3.41. A Table Option dialog box will be displayed by clicking on the Cell Margin option of the Layout tab. By using this dialog box the Top, Bottom, Left and Right spacing of cell can be decided.

First Name	Lastname	DOB	City	Mobile No.
Akhil	Dave	12/1/1990	Rajkot	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	1234598760
Mitul	Bhatt	10/3/1990	Surat	9876543210
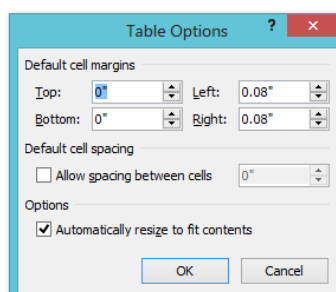
**Figure 3.41 Options to change the cell spacing between cells**

Now enter the value of the cell spacing, and by clicking on the OK button, the new spacing will be applicable on the selected cells. For example, select the second row and set the values of Top, Bottom, Left and Right. Figure 3.42 shows the application of new spacing after clicking on the OK button.
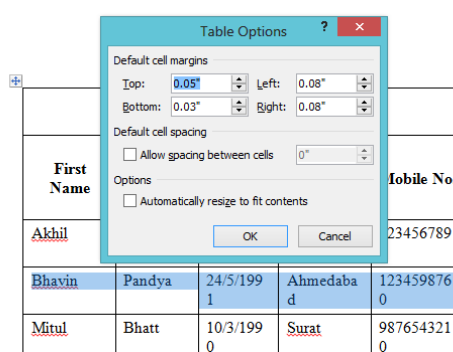
Figure 3.42 Look of table after changing the cell spacing

3.9 SORTING OF A TABLE DATA IN MS WORD

The data stored in the table can be sorted in Ascending or Descending order. To do this, select the column and click on the Sort option available in the Layout tab. This will open a dialog box as shown in Figure 3.43. Using the Sort dialog box, the column on which the data is to be sorted and the order (ascending or descending) of sort can be decided. For example, by selecting the Last Name column and clicking on the Sort option, a Sort dialog box is displayed. In the Sort dialog box, the Sort by text has Column 2 selected and as Last Name is a field that contains textual data, in Type: text box 'Text' is selected. We have selected the Sort order to be Ascending.

Now by clicking the OK button, the data stored in the Last name column will be arranged in ascending order. It can be observed here that although the sorting was applied on the Last name column, the entire table gets sorted. This does not change the details of any student.
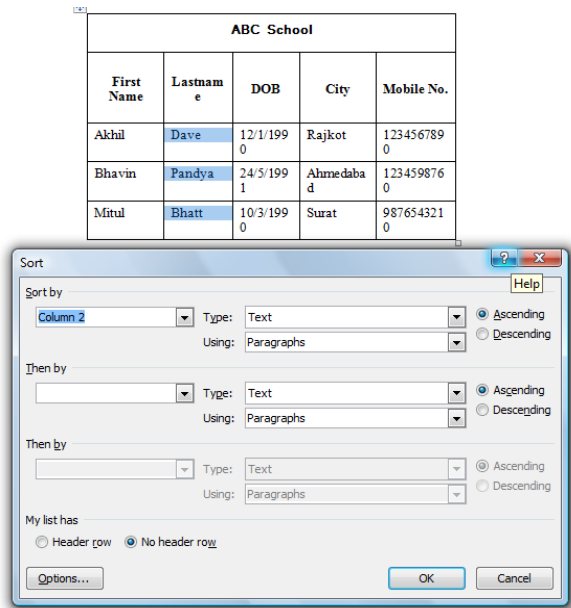
Figure 3.43 To arrange the Last name column in ascending order

ABC School				
First Name	**Last name**	**DOB**	**City**	**Mobile No.**
Mitul	Bhatt	10/3/1990	Surat	9876543210
Akhil	Dave	12/1/1990	Rajkot	1234567890
Bhavin	Pandya	24/5/1991	Ahmedabad	1234598760

Figure 3.44 after arranging the Last name column in ascending order

In Microsoft Word 2010, the data can be sorted on maximum three columns.

Check Your Progress
1. Crate cricket score board in word using table
2. Display name of the cricket team on the top of the score board after inserting the raw and merging the cells.

3.10 FORMULA FOR TABLE DATA IN WORD
It is possible to perform calculations on table data by applying formulas. Let us create a new table to learn the concept of calculations in table.

Sr.No.	Item Name	Unit Price	Quantity	Net Price
1	Ball Pen	25	4	
2	Pencil	10	5	
3	Eraser	4	3	
4	Sharpener	3	5	
	Total			

To calculate the Net Price in this table, multiply the Unit Price and Quantity fields of the table. To perform this operation, keep the cursor on the Net Price field. Click on the 'Formula' option on the 'Layout' tab. This will open a Formula dialog box as

shown in Figure 3.45. Using this dialog box, formula to be used, number format and the function to be used can be decided.
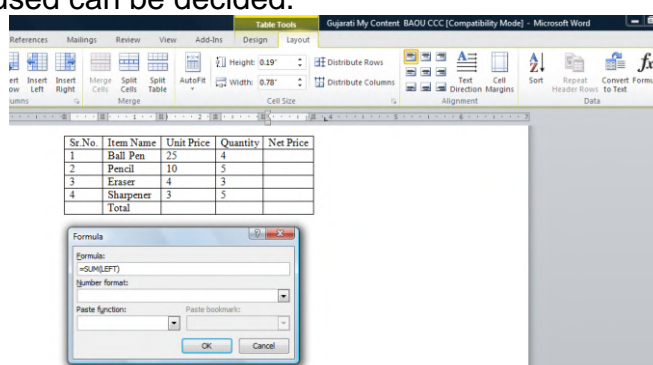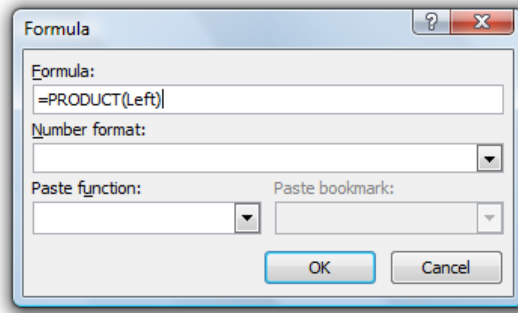

Figure 3.45 Formula dialog box

Sr.No.	Item Name	Unit Price	Quantity	Net Price
1	Ball Pen	25	4	
2	Pencil	10	5	
3	Eraser	4	3	
4	Sharpener	3	5	
	Total			

In the above table to calculate Net Price, keep the cursor in the first row under the Net Price column. Now click on the Formula option in Layout tab. This will open the Formula dialog box. In the Formula dialog box we need to multiply the Unit Price and Quantity. Hence from the Paste Function combo box choose Product as can be seen in Figure 3.46.
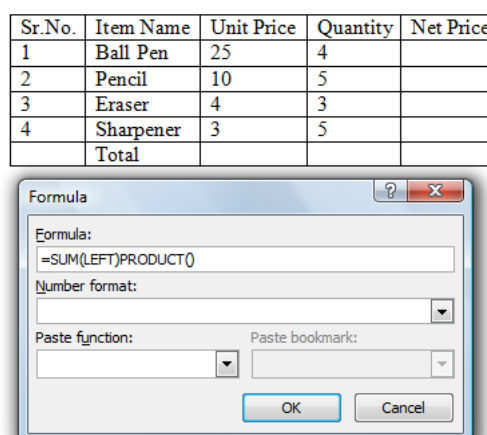
Figure 3.46 Formula in Table

As both the left side columns are to be multiplied, write Left in parenthesis besides PRODUCT and delete SUM (LEFT). The = sign is compulsory. Thus, now the formula will look like the one shown in Figure 3.47.

Figure 3.47 Product

This formula is not case sensitive. Hence product and left if written in small letters will not have any effect on the formula. The Net Price will be calculated as the OK button in clicked as can be seen in Figure 3.48.

Sr.No.	Item Name	Unit Price	Quantity	Net Price
1	Ball Pen	25	4	100
2	Pencil	10	5	
3	Eraser	4	3	
4	Sharpener	3	5	
	Total			

Figure 3.48 Calculation of Net Price

Similarly, the Net Price for all rows can be calculated. Now to add all these Net Price values, again the Formula option will be used and in that Sum function is used. Here as the Total row will store addition of all the rows, the function written should be SUM (Above) as shown in Figure 3.49.

Sr.No.	Item Name	Unit Price	Quantity	Net Price
1	Ball Pen	25	4	100
2	Pencil	10	5	50
3	Eraser	4	3	12
4	Sharpener	3	5	15
	Total			
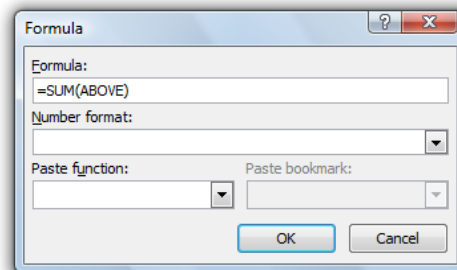
Figure 3.49 Sum Function

As can be seen in Figure 3.50, when OK button is clicked the values of all the above rows is added and we get the value of Total.

Sr.No.	Item Name	Unit Price	Quantity	Net Price
1	Ball Pen	25	4	100
2	Pencil	10	5	50
3	Eraser	4	3	12
4	Sharpener	3	5	15
	Total			177

Figure 3.50 Output of Sum Function

It is possible to calculate the product even if there is one column between Unit Price and Quantity. For example, assume that there is a column Description between columns Unit Price and Quantity. Now to calculate Net Price, Unit Price and Quantity are to be multiplied. When calculation is done in such a manner, it is desirable to give a name to each row and column. Consider Sr. No. column as A, Item Name column as B, Unit Price column as C, Description column as D, Quantity column as E and Net Price column as F. Similarly consider first row as 1, second row as 2, etc. Keep the cursor in F2 row, and by clicking on Formula, a Formula dialog box will be displayed. Here write the formula C2*E2 and the Net Price will be calculated when OK button is clicked. As the Net Price here is multiplication of Unit Price and Quantity, in Figure 3.51, we have written C2*E2. To calculate Net Price of Pencil C3*E3 has to be written. The Net Price of all the records can be calculated similarly.
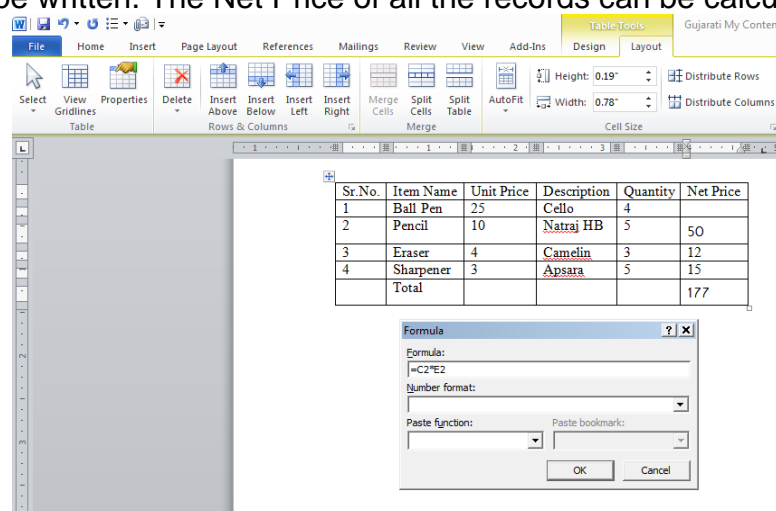

Figure 3.51 Calculation of Net Price

Sr.No.	Item Name	Unit Price	Description	Quantity	Net Price
1	Ball Pen	25	Cello	4	100
2	Pencil	10	Natraj HB	5	5
3	Eraser	4	Camlin	3	3
4	Sharpener	3	Apsara	5	5
	Total				113

Figure 3.52 Final Calculation of Net Price

3.11 CONVERT TABLE TO TEXT IN WORD

We can convert a text to table and a table can also be converted to text. For example to convert the table shown in Figure 3.53 to text, select the table and from Layout tab select the Convert to Text option. This will open a Convert Table to Text dialog box.
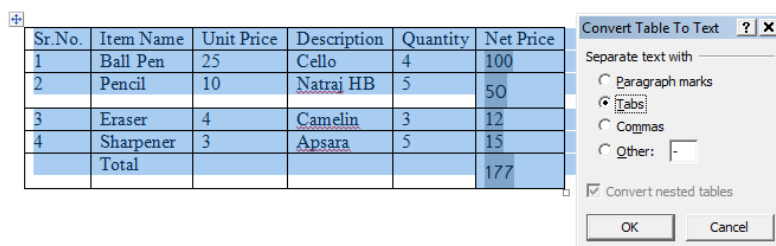

Figure 3.53 Convert Table to Text dialog box

144

By selecting desired option in this dialog box and clicking on OK button the table will be converted to text as shown in Figure 3.54.

Sr.No. Item Name, Unit Price, Description, Quantity, Net Price
1, Ball Pen, 25, Cello, 4, 0
2, Pencil, 10, Natraj HB, 5
3, Eraser, 4, Camlin, 3
4, Sharpener, 3, Apsara, 5
, Total, 177

Figure 3.54 Convert Table to Text dialog box using comma option

<u>Check Your Progress</u>
1. Display total score of the team using formula in the table created for score board.
2. Display average run scored by the player of the team using formula in the table created for the score board.
3. Convert the table created for the score board into text with the help of the tab separator.

3.12 MAIL MERGE IN MS WORD

Mail merge can be used when we have a document that contain similar text and needs to be sent to multiple people. For example, if we need to write a letter for meeting, the text of this letter will be the same but the name and address of the officers receiving this letter will be different. If this letter is to be sent to all the officers, first a letter needs to be created with the name of one officer, then the letter needs to be copied and new letters need to be created by changing the name and address of the officers. If mail merge is used, the need of doing such copy-paste does not arise. Additionally if we have name, address, phone numbers, etc., details in the database then by using mail merge we can filter on name, address or phone number and send the letter to the specific officers. Assume that we want to mail merge a document that contains the following message:
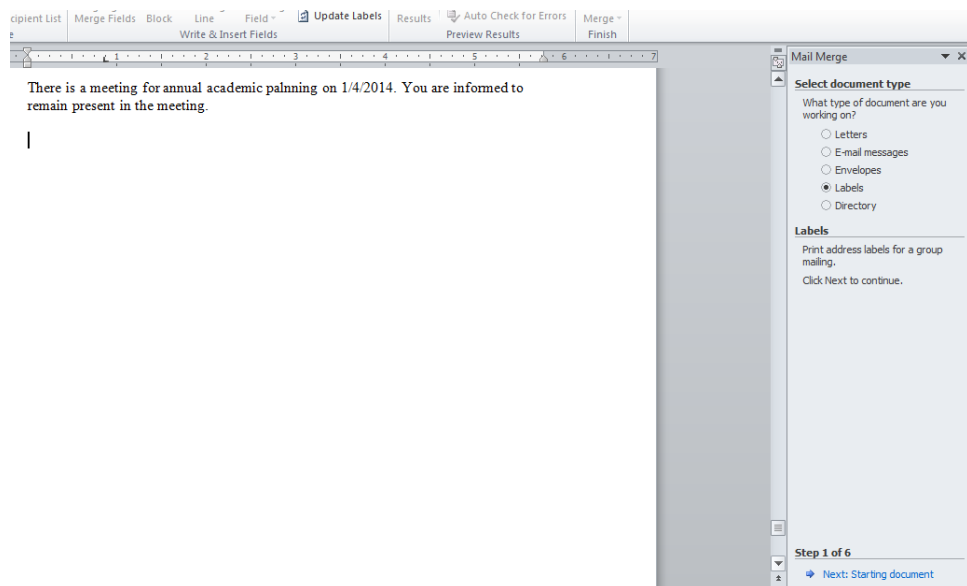
"There is a meeting for annual academic planning on 1/4/2014. You are informed to remain present in the meeting."

Now on clicking the Mailings tab, options for mailing will be available. Click on the Start Mail Merge option. This will open mail merge options as shown in Figure 3.55. From the available options, click on Step by Step Mail Merge Wizard. This will open a wizard to perform mail merge. There are six steps in the mail merge wizard.

By clicking the Step by Step Mail Merge Wizard, we will get the first step of the wizard as shown in Figure 3.56.It will open a mail merge pane on the right side of the document. In this pane, we need to select the type of document that we are working on. We will click on Letters option as we are writing a letter here.
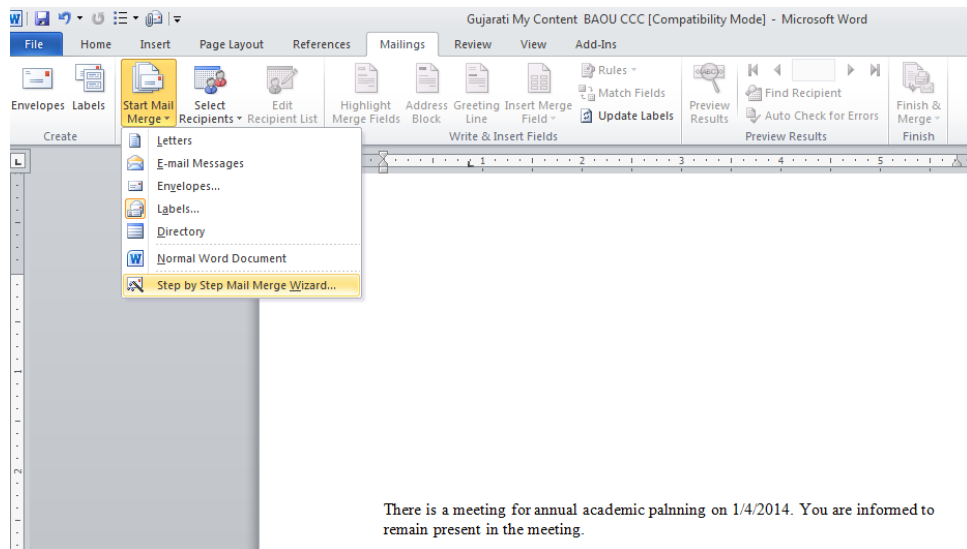
Figure 3.55 Step-by-Step Mail Merge Wizard

Figure 3.56 First step of Mail Merge

Now when the Next button is clicked, it provides an option to select a document for mail merge as shown in Figure 3.57-a. As we are going to use the same document, select the first option 'Use the current document' and click on the Next button.

There is a meeting for annual academic palnning on 1/4/2014. You are informed to remain present in the meeting.

Figure 3.57-a Second step of Mail Merge

There is a meeting for annual academic palnning on 1/4/2014. You are informed to remain present in the meeting.

Figure 3.57-b Third step of Mail Merge

As can be seen in Figure 3.57-b, in the third step mail merge provides an option to create a list of people to whom this letter is to be sent. The list can be selected from Outlook also. Here we will select the option to create a new list. The Create option is available under the section Type a new list. By clicking on the Create option, a New Address List dialog box as shown in Figure 3.58 will be displayed. In this dialog box, we will enter the details of the person to whom the letter is to be sent.
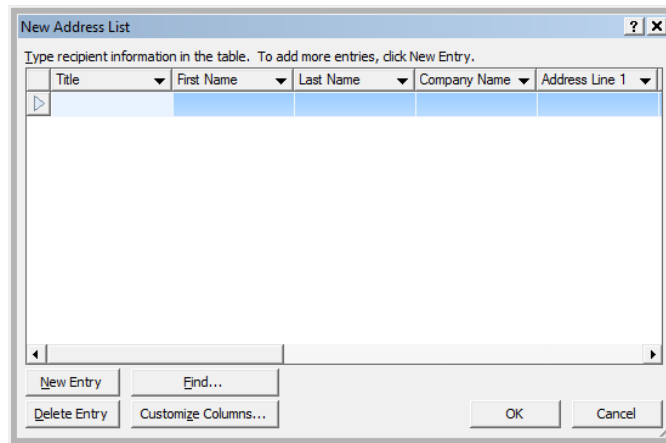
Figure 3.58 New Address List of Mail Merge

In this dialog box with the help of Customize Columns, a column can be deleted, column name can be changed and order of columns can also be changed. By using the New Entry button a new record can be added and by using the Delete Entry button a record can be deleted. Here we will use the Customize Columns... button and use the fields Title, First Name, Last Name, Address Line 1, Address Line 2, City and Pin Code. The Zip Code field has been renamed to Pin Code. Now we will add records in it and save the list.
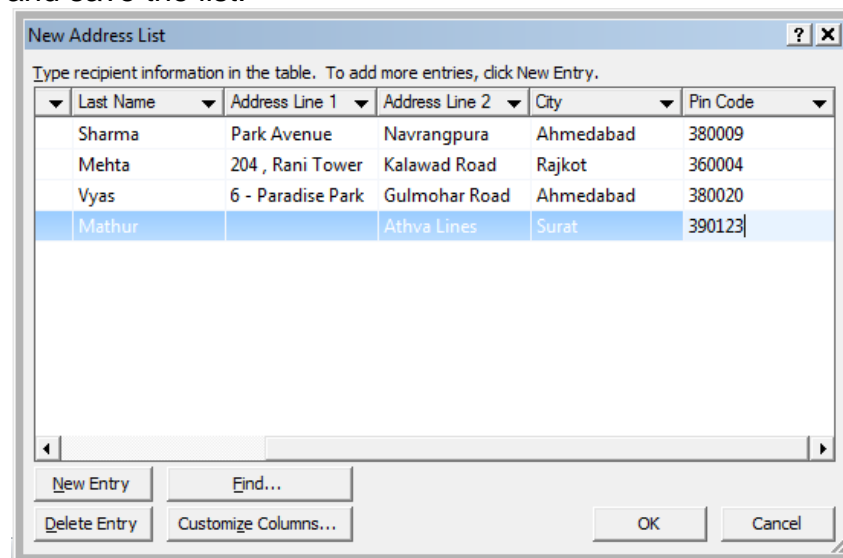
Figure 3.59 New address list of mail merge

We will now be able to see Recipients list in the Mail Merge Recipients dialog box as shown in Figure 3.60. Using this dialog box, the records can be sorted or filtered.
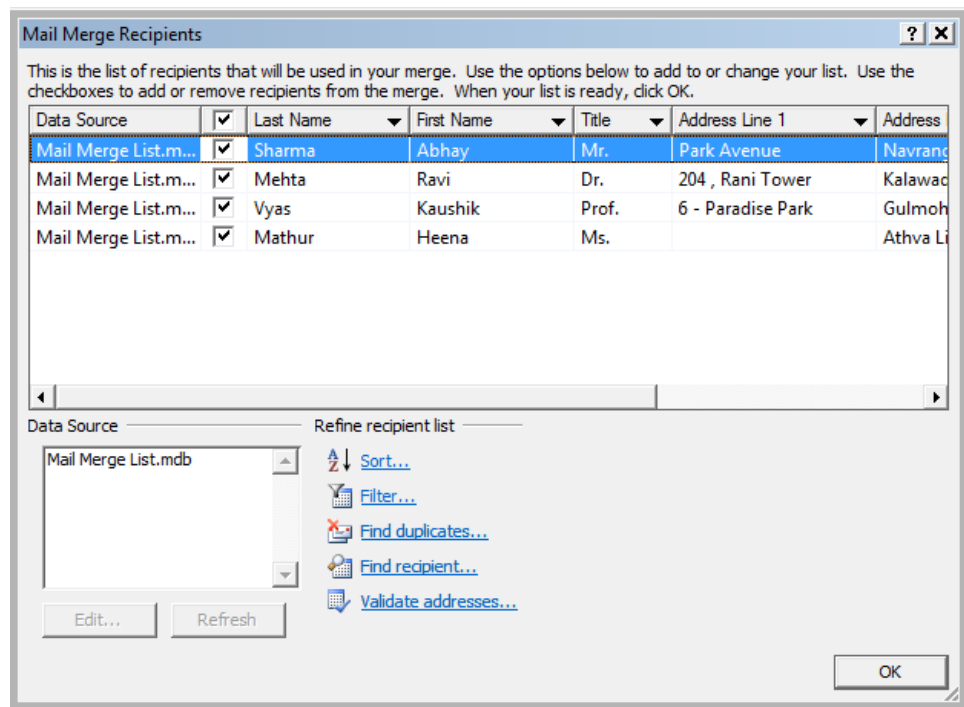
Figure 3.60 Mail Merge Recipients

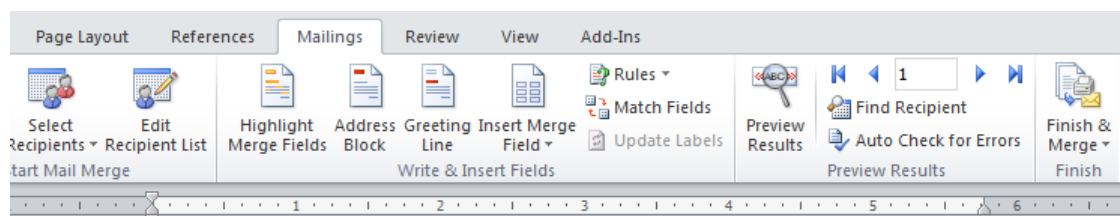In Figure 3.57-b when Next option is clicked, step four is displayed. It has an option 'Write your letter'. In Figure 3.61 from Mailings tab, click on the Field option of the Insert Merge Field. Thus the selected fields will be inserted in the document. Now we can insert the merge field by giving desired space and center alignment.

«Title»
«First_Name» «Last_Name»
«Address_Line_1»

«Address_Line_2»

«City» - «Pin_Code»

There is a meeting for annual academic palnning on 1/4/2014. You are informed to remain present in the meeting.

Figure 3.61 After the fields are inserted in Mail Merge

We can now preview the mail merged document by clicking on the Next button. The Preview of the Mail Merge can be seen as shown in Figure 3.62 by clicking on the button besides the Recipient: option under the Preview your letters section.
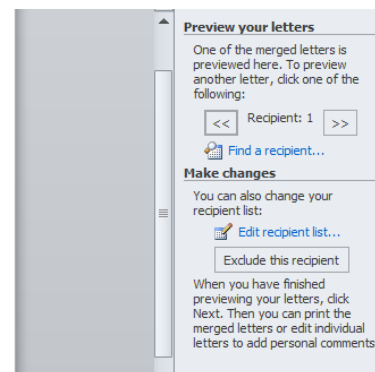
Figure 3.62 Preview letter in Mail Merge

Now by clicking on Next button, our letter can be printed or it is possible to edit each of them as shown in Figure 3.63.
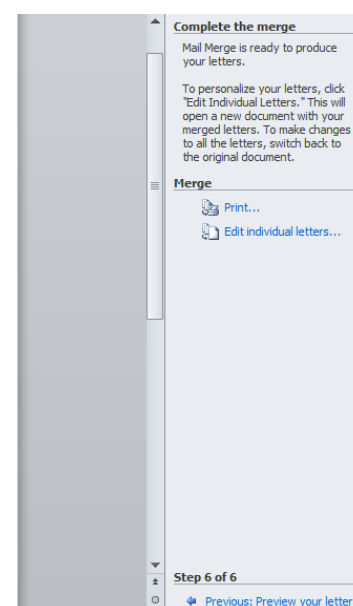
Figure 3.63 Print letter in Mail Merge

Check Your Progress

1. Create an invitation letter using mail merge inviting your five friends on your child's birthday party.

3.13 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

Q1. Choose the correct option.
1. Using which of the following a Word application cannot be closed?
A) Exit option in File tab   B) By pressing Alt + F4
C) By clicking on X button on Title bar   D) By clicking on Close Sub Menu option on File tab
2. What are the fonts without decoration known as?
A) Serif type fonts   B) Sans Serif type fonts C) Scientific type fonts D) All of these
3. Portrait and Landscape is _____.

A) Page Orientation   B) Paper Size   C) Page Layout   D) All of these

4. Which of the following option is a type of page margin?

A) Left   B) Right   C) Center   D) Top

5. Which of the following option is not available in the table's AutoFit behavior?

A) Fixed Column Width   B) AutoFit to Contents   C) AutoFit to Window   D) AutoFit to Column

Q2. Fill in the blanks using correct option.

1. _____ is not a font style. (Bold, Regular, Superscript)
2. A character that is little below and smaller than other characters is known as _____. (Raised, Superscript, Subscript)
3. The extension of Word 2010 file is _____. (.doc, .docx, .txt)
4. Shimmer, Sparkle text, Blinking Background, etc., are known as _____. (Font styles, Font effects, Text effects)
5. The intersection of row and column in table is known as _____. (cell, border, tab)

Q3. Say whether following statements are true or false.

1. You can set different header and footer for odd and even pages in Word 2010.
2. The Left Indent Marker controls the indent of all the lines except for the first line.
3. The ClipArt cannot be added through the Insert tab.
4. A new column cannot be added once a table is created in Word 2010.
5. The table data can be arranged in ascending or descending order of some column.

Q4. Match the following

A	B
1. Saving a Word file	a. Ctrl + S
2. To save the file with another name or in a new location	b. Ctrl + V
3. To darken the selected text	c. F12
4. To paste the copied text	d. Ctrl + F
5. To find a desired text in the document	e. Ctrl + B

Answers

Q1

1. D [By clicking on Close Sub Menu option on File tab]
2. B [Sans Serif type fonts]
3. A [Page Orientation]
4. C [Center]
5. D [AutoFit to Column]

Q2   1. Superscript   2. Subscript   3. .docx   4. Text effects   5. Cell

Q3   1. True   2. True   3. False   4. False   5. True

Q4

1. Saving a Word file - Ctrl + S
2. To save the file with another name or in a new location - F12
3. To darken the selected text - Ctrl + B

4. To paste the copied text - Ctrl + V
5. To find a desired text in the document - Ctrl + F

Block-3

Spreadsheet and Presentation

Unit 1: Introduction to Microsoft Excel 2010 {1}

Unit Structure

1.1 LEARNING OBJECTIVES

After studying this unit student should be able to:

- Enter data in Excel-2010 .
- Arrange data .
- Format data .
- Can use the Workbook and Worksheet efficiently.
- Save an Excel-2010 Workbook in different Formats.
- Print an Excel-2010 Workbook

1.2 INTRODUCTION TO EXCEL 2010

Generally we use Microsoft Word to create project reports, letters and   other documents. Microsoft Word can also be used to put information in the form of rows and columns which is known as the table., But in order to deal with high volume of data involving   huge amount of calculations, where lots of changes and rearrangements are required , charts are plotted for better analysis of data, Microsoft Excel works better under such circumstances. This section we will give a detailed overview about Excel-2010. Excel is a spreadsheet program which helps in storing big collection of data in the form of large tables, and to arrange and analyze them for better decision making.

Excel-2010 is a useful spreadsheet program that is part of Microsoft Office Suite. Excel-2010 is used to perform the operations as mentioned below:

- Perform different types of calculations easily.
- Create Charts.
- Create Lists.
- Use previously created information.
- Create Graphics and Diagrams.
- Perform complex tasks with the help of Macro etc.

Additional facilities have been added in Excel-2010 as compared to its previous versions. Some of them are as follows:

- Sparkline.
- Slicer.
- Formatting option in Pivot Table.
- Back stage view instead of Office button .
- Changes can be done in better ways in Conditional Formatting, Functions and Image.
- Screen Capture Tool to convert a part of a screen to image or picture.
- Paste Preview option which shows   how the data will look like before being pasted
- Ribbon Customization option which allows to customize the Ribbon
  Equation Editor so as to write and edit equations

Starting Excel-2010

Method 1: To start Excel-2010 click on the Start button of Windows-7, Microsoft Office Program Group will be opened. Clicking Excel-2010 will start it (Figure 1.1).

Method 2: First select the Start Button followed by Run, and then type Excel, press the Enter key. Under Programs, clicking Microsoft Excel 2010 will open Excel-2010 (Figure 1.2).

The simplest way to start Excel is to double-click on the Excel shortcut available on the desktop, but to perform this action the shortcut must be available on the desktop.
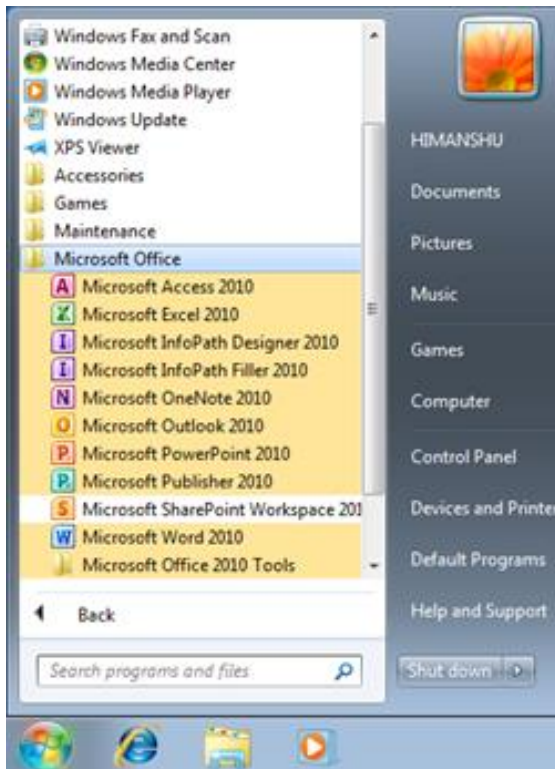

<div style="display:flex">
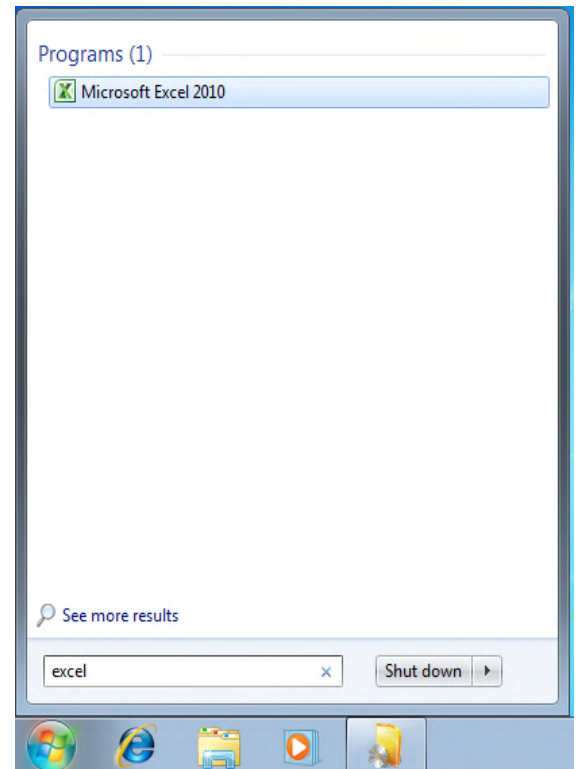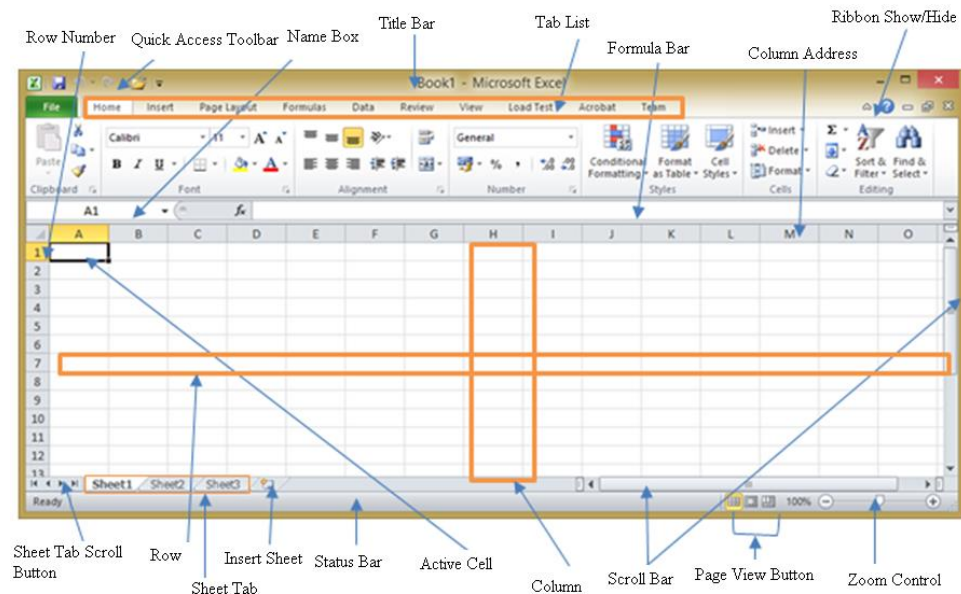
Figure 1.1 Starting Excel

Figure 1.2 Starting Excel

</div>

Introduction to important parts of Excel-2010

Figure 1.3 Important parts of Excel-2010 screen

Once Excel-2010 is started the screen, we can see different parts as in the Figure 1.3. Table 1.1 gives us the introduction to the important parts of this screen.

| Name of the Part	Description
Title bar	Shows the name of the software and the file, also has minimize, maximize and the restore button that helps in handling the window.
Quick Access Toolbar	This toolbar shows the commonly used commands. It can be customized to make visible the selected tabs. .
Ribbon	Collection of tabs is the Ribbon, is a place for Excel commands. Clicking a tab, changes the look of the ribbon.
Tab List	Various tabs show different type of commands.
File Button	Clicking on this button opens a back stage view, providing options to print, open, close, save or to perform some other operation on a file.
Name box	It shows the address of the active cell, range or name of the selected cells.
Formula bar	The information or equations entered in a cell are visible here.
Sheet Tab Scroll Buttons	These buttons are used to navigate between different sheets in a workbook.
Status bar	Shows different messages along with the status of the Num Lock, Caps Lock, Scroll Lock keys etc.
Scrollbars	Used to move the sheets in the horizontal or vertical directions.
Page View Buttons	Used to view the worksheets in different forms.
Zoom Control	Zoom Control is used to shrink or grow the worksheets.
Insert Sheet Button	This button is used to insert a new worksheet.
Ribbon Show/Hide Button	This button is used to show or hide the ribbon.
Column Character	The worksheet has 16384 columns, having column index A to XFD.
Row Number	Each row in a worksheet has number starting from 1 to 1,048,576.
Active Cell	Shows the active cell in which data is being entered, usually

Name of the Part	Description
	shown with dark borders.

Table 1.1 Different parts of Excel

Back Stage View / File Tab

File Tab Microsoft Office button is provided in Microsoft Office 2010 instead of the File menu used in the previous versions of Microsoft Office, clicking on this button opens a back stage view (Figure 1.4)

File Tab is the only colored button present on the top left corner of Microsoft Office 2010 and is shown as a green colored tab. With the help of the Back Stage View we can create, save, open, close or print a file, can see the properties of a file, can see the list of the last opened files, , and also can send a file as an Email too.
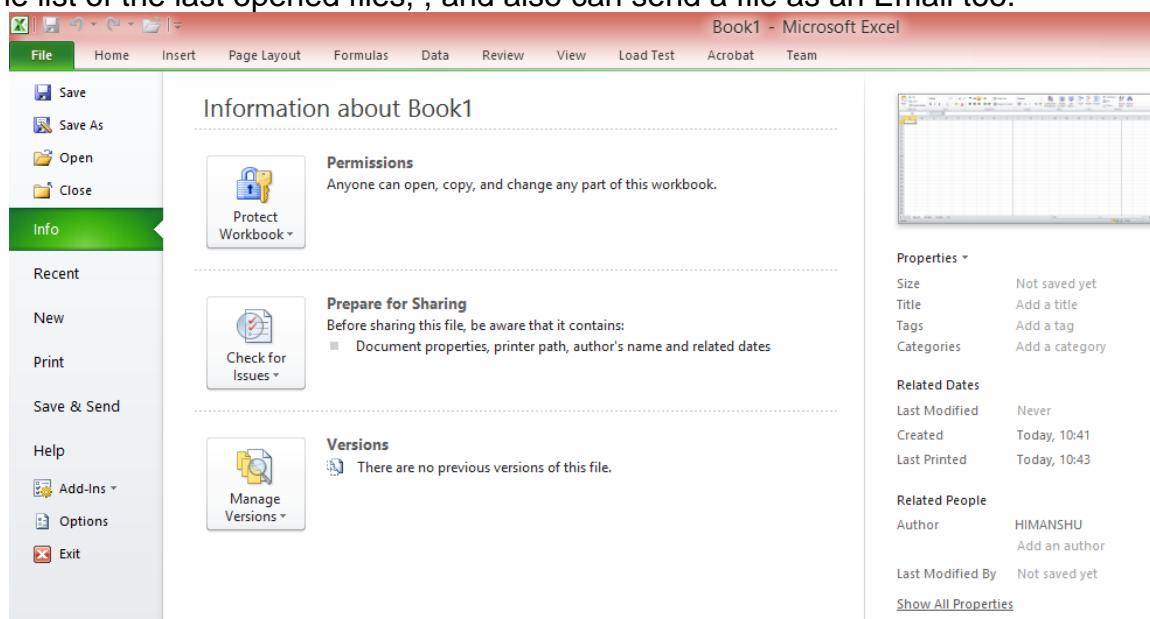
Figure 1.4 Back Stage View

Ribbon

The traditional menu has been replaced by the Ribbon in Office 2010, grouping the related commands separately. The brief idea about different tabs available in Excel has been described below.

Tab	Usage
Home	This tab includes the commands for Clipboard, Formatting, Style, Deleting rows or columns and changes in worksheet.
Insert	This tab is used when we need to insert table, picture, clip art, diagram, chart, symbol, equation etc. in a worksheet.
Page Layout	This tab has the commands that affect the entire look of a worksheet; it includes commands like print settings.
Formula	This tab is used to enter equation, assign name to a cell or range of cells and to enter functions.
Data	This tab allows to get data from outside the Excel file, to arrange them in ascending or descending order, to separate the important data, to group and ungroup them etc.
Review	This tab provides commands that allow checking the spellings, find synonyms,

Tab	Usage
	add comments, and protect the worksheet or workbook with password.
View	The view tab provides commands that allow us to control different views of the worksheet. Some of the commands of this tab are also available in the Status bar.

Table 1.2 Tabs available in ribbon

Contextual Tab

In addition to the Standard Tab, Excel-2010 also includes a Contextual Tab. Whenever a Chart, Table or a Smart chart is selected, a desired set of operations can be performed on it using a specific set of tools available in the ribbon, known as the Contextual Tab.
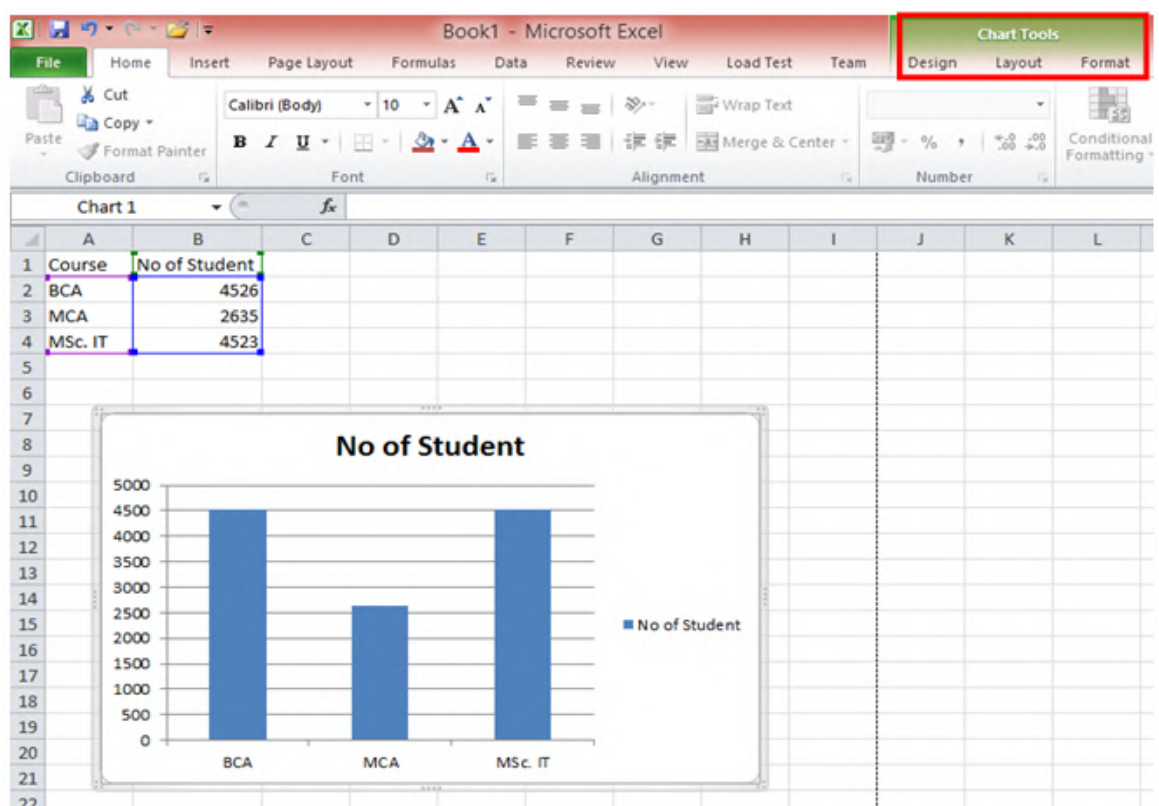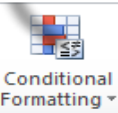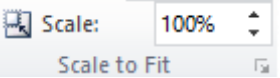
Figure 1.5 Contextual Tab for Chart

The red box in figure 1.5 shows the Contextual Tab when Chart is selected. Design, Layout and Format are the three contextual tabs in it. The details of this Contextual Tab are shown in Chart Tools title bar. We can also use other tabs when Contextual Tab is visible.

Types of Commands present on the ribbon

Command Type	Example	Usage
Simple Button	A⁺ A˅	Clicking on it an action is taken immediately.

Command Type	Example	Usage
Toggle Button	**B** *I*	This works as On/Off.
Drop Downs	Conditional Formatting ▾	Clicking on it shows additional options.
Split Button	Merge & Center ▾ / Merge & Center / Merge Across / Merge Cells / Unmerge Cells	Split button is a combination of Simple button and Drop Down button.
Check Box	☑ Ruler ☑ Formula Bar / ☑ Gridlines ☑ Headings / Show	Works as ''On'' when checked and ''Off'' when unchecked.
Spinner	Scale: 100% ▲▼ / Scale to Fit	Used to increase or decrease a value.

Table 1.3 Different types of commands present on the ribbon

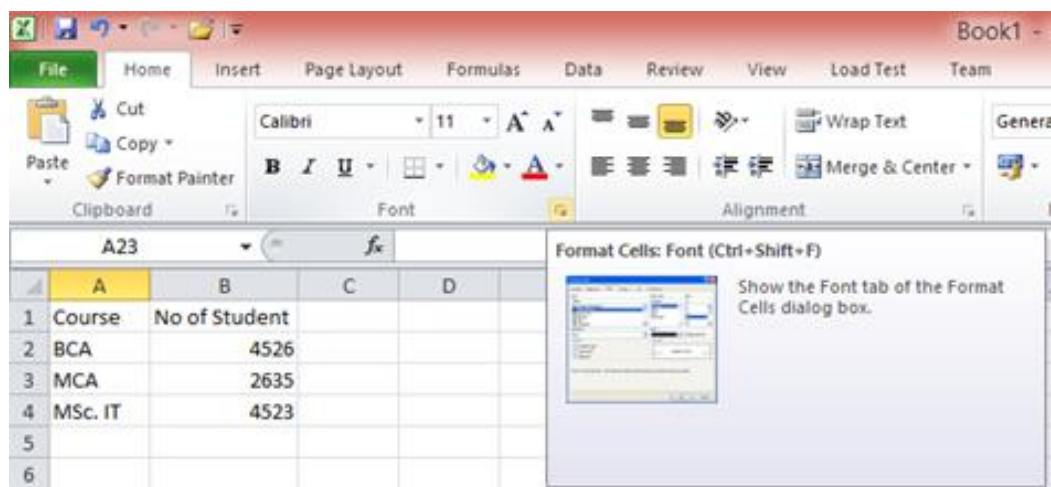Many command groups in the ribbon contain a small symbol on its right hand side known as the "dialog box launcher". For example see the symbol in the Home → Font Group (Figure 1.6). On clicking this symbol, shows an Excel Font dialog box, t listing the font options generally not present on the ribbon.

Figure 1.6 Dialog box launcher button

Shortcut Menu

Along with the ribbon Excel provides us many Shortcut menus that can be seen by clicking the right mouse button. Shortcut menu shows the commands that are normally used for a selected object. For example, figure 1.7-a, shows a shortcut menu that is available when we right click in a cell. This shortcut menu is visible at the position of the mouse cursor thus allowing us to select the command quickly and easily. .

The displayed shortcut menu depends on what work is being done at the moment of clicking. For example, if you are working with charts then the shortcut menu will look like the one being shown in the figure 1.7-b.
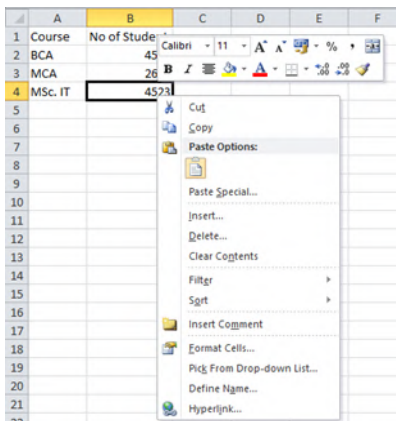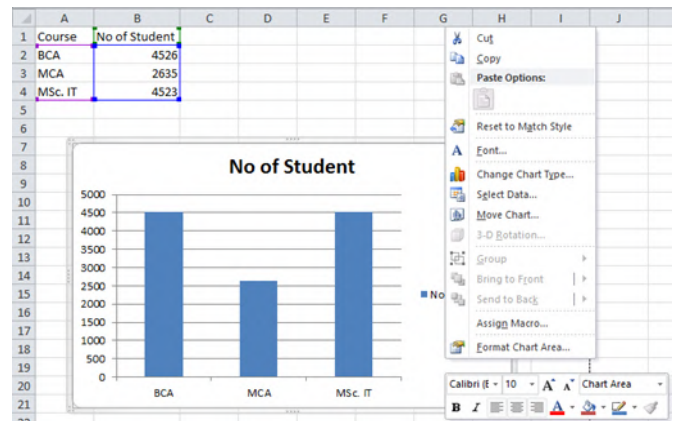
Figure 1.7-a Shortcut menu for cell

Figure 1.7-b Shortcut menu for Chart

Quick Access Toolbar

Normally the Quick Access Toolbar is visible above the ribbon on the left side of the title bar. However it can also be displayed below the ribbon also. To perform this action right click on the Quick Access Toolbar, this will open a shortcut menu as shown in the Figure 1.8 below. Here selecting the highlighted option will show the Quick Access Toolbar below the ribbon.
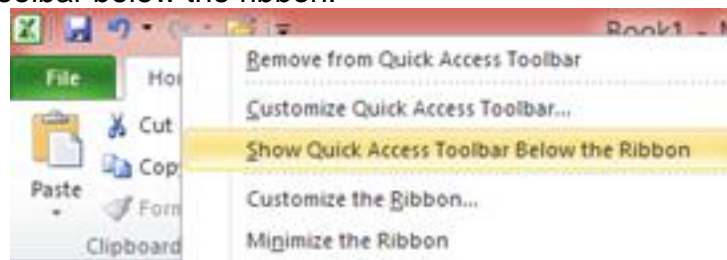
Figure 1.8 To show Quick Access Toolbar below ribbon

The ribbon is very much useful for keeping and using preferable commands to be visible always instead of selecting them from various tabs. Initially the Quick Access Toolbar shows three commands: Save, Undo and Redo.
Additionally you can add frequently used commands to Quick Access toolbar. To add a new command, right click on the desired command and select the option Add to Quick Access Toolbar, this will add the command to the Quick Access toolbar. Thus you can show commands from different tabs at one place and can avoid moving between tabs. (See figure 1.9: Adding Column Chart to Quick Access Toolbar).
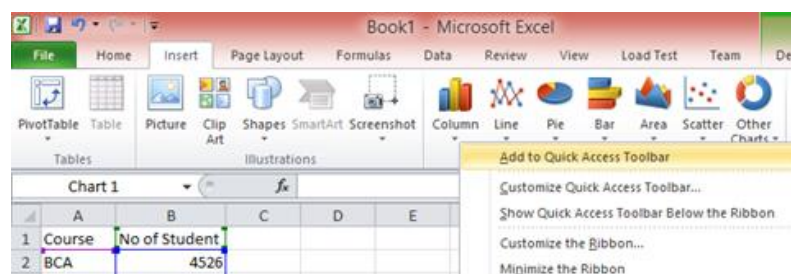
Figure 1.9 Adding Command to the Quick Access Toolbar

Alternatively clicking the down arrow key on the right hand side of the Quick Access Toolbar, you will be able to see a drop down menu with additional commands. By

putting a check in front of the desired command, it can be added to the Quick Access toolbar. (Figure 1.10)

Figure 1.10 Adding commands to the Quick Access Toolbar

Workbook and Worksheet

The file that you work with in Excel is known as the Workbook. The extension of a file in Excel-2010 is .lax. Each workbook consists of one or more Worksheets. The worksheet is made up of group of cells. In each cell a number, text or equation can be entered. A picture, diagram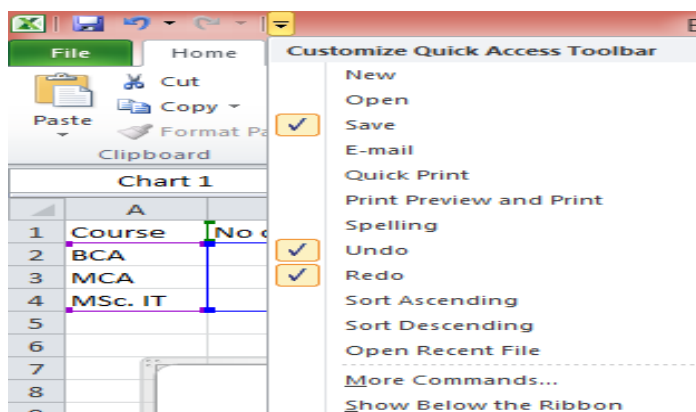 or chart can also be inserted in a worksheet. A worksheet helps us in arranging information properly and allows us to use it easily.

Every worksheet is a collection of rows and columns. The rows range from 1 to 1,048,576, while the columns are named as A, B. Z, AA, and AB…, AZ, BA, BB …. And so on and is continued up to XFD. Thus it has 16384 columns in total. The intersection of the row and column is known as the cell. At any given moment of time, one cell is active and is highlighted by dark borders as shown in the Figure 1.11. A single worksheet contains more than 17 billion cells. In a single cell, maximum of 32,767 characters can be entered.

Note

You cannot undo all type of activities. Normally the activities done using the File button cannot be undone. For example, if you save a new file, then the old file cannot be brought back using the undo command.

1.3 ENTERING DATA AND FORMATTING

The Excel workbook consists of worksheets which inturn consists of cells. In every cell we can enter three types of data. 1) Number 2) Text and 3) Formula.

Entering Data

To enter data:
- Select the desired cell by using the mouse or arrow keys.
- Type the data in the selected cell.
- Press the Enter or arrow key.

Excel interprets Date and Time as a number. Thus, 1-January-1900 is considered as 1, 2-January-1900 as 2, and so on. . By this, calculations can be done more easily on dates, for example: to know the number of days between two dates it can be subtracted.

Changing the data

Once data has been entered in a cell, it can be changed in many ways:
- By deleting the data.
- Replacing the data with another data.
- Changing the data in the desired way.

To delete data from the desired cell or cells, select one or more cells and then press the Delete key. More than one cell (Range) can be selected by pressing the Shift + Arrow keys or using the mouse (Keep the left mouse button clicked and drag it on the desired cells).
You will get five options as shown in figure 1.11 to delete data by selecting Home → Editing → Clear. With the help of this we can delete data and formatting, only format, only data, comment or hyperlink.
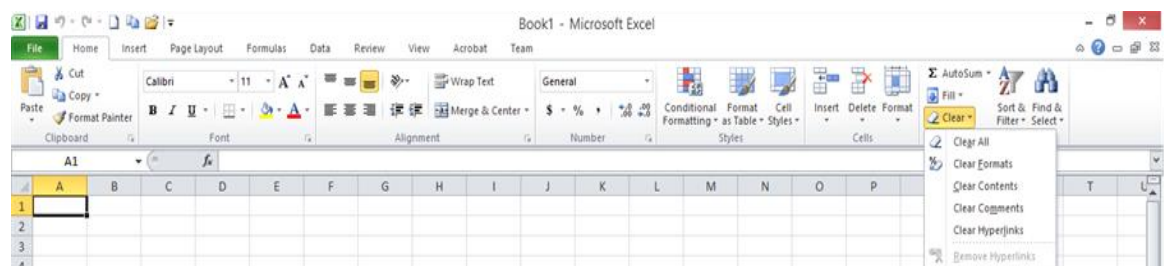
Figure 1.11 Clear command available on Home tab

To change the data within in a cell with new data, select the cell and type the new data, the old data will be replaced with the new one.
The edit mode of Excel gives us following options to change any specific data in a cell:
- Double click on the cell
- Select the cell and press F2 key or
- When the cell is selected its contents are visible in formula bar, change the contents in the formula bar and the change will be reflected in the cell. (See figure 1.12)
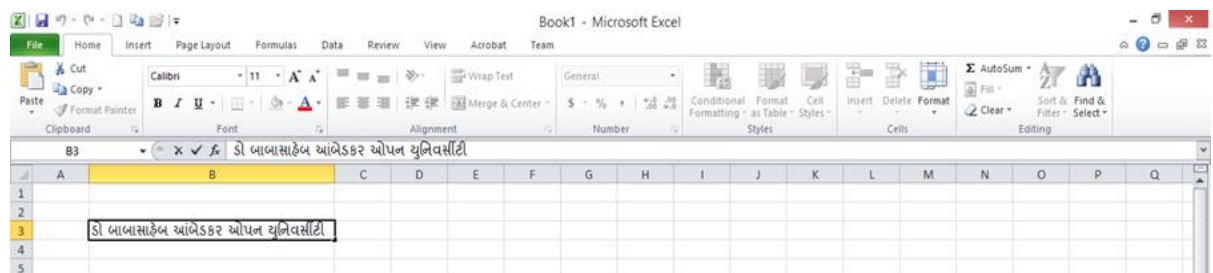
Figure 1.12 Changing the data in the cell with the help of formula bar

Filling data series using Autofill

When the data comes in the form of series like 1, 2, 3… 10 or Sunday, Monday… Saturday or January, February…, December or 01- Mar – 2014 to 31- Mar – 2014 etc. then we can use the Autofill option of Excel. Other than this we can also fill data as per any desired order. To use the Autofill fill option, enter the initial value and select the number of cells that are to be filled as shown in figure 1.13, then choose Home → Editing → Fill➔Series, which will open a dialog box as shown in figure 3.14.
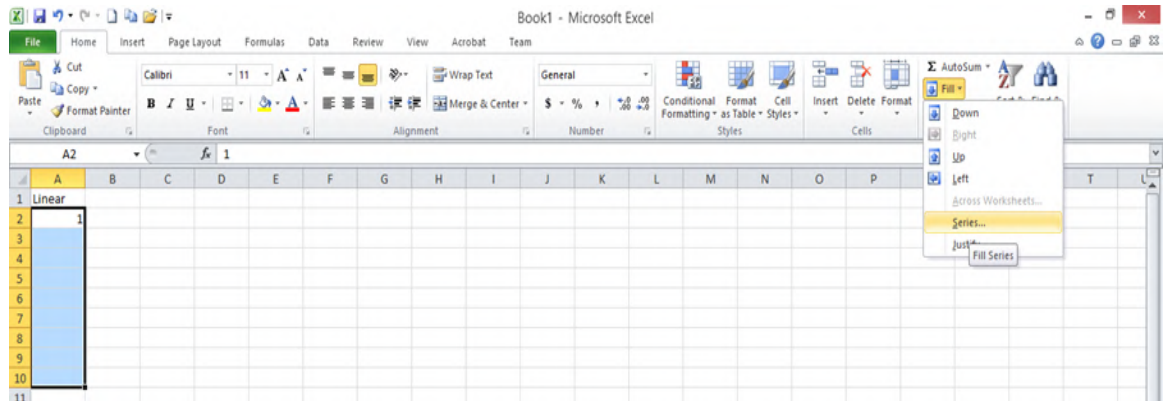
Figure 1.13 Filling data
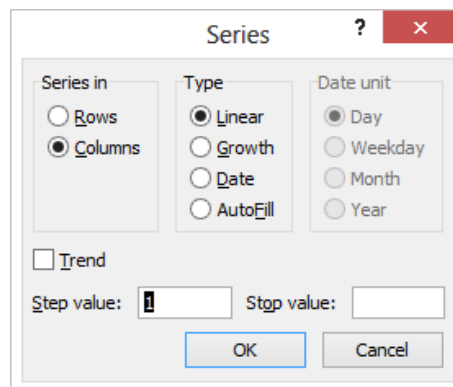
Figure 1.14 Fill Series dialog box

**Series In:** If you want to fill in horizontal direction then select Rows, or if a vertical fill is to be done as shown in figure 1.13 then select Columns.

Type: To fill in series select Linear, to fill date select date, to multiply select Growth.

Date Unit: If Date is selected only then this last option will be visible.

Step Value: It shows the incremental value from initial value, while **Stop Value** displays the last value.

Alternatively enter first two values in the first and second cell, select both these cells, a small plus sign (+) will be visible near the bottom right corner, this is known as fill handle. Drag the mouse by keeping it on the handle, Excel will automatically fill values based on the initial values.

Figure 1.15 An Example of Fill Series

Number Format

Excel provides us facility to store data in different formats. List of formats provided by Excel is as follows:

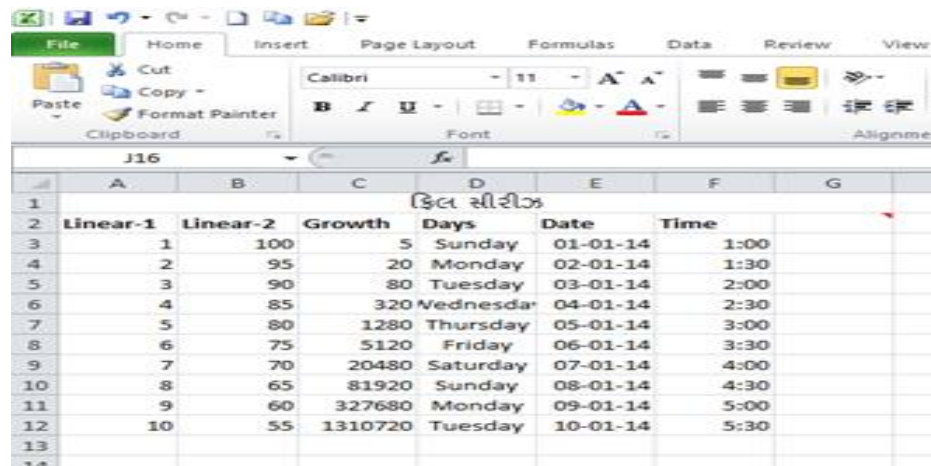| Format	Usage
General	This is a default format. It is used to show an integer, fraction or a large value using scientific form.
Number	It gives options to display number of digits after decimal place, whether a coma is to be used to separate thousand values and to show negative values.
Currency	Used to show currency. It give options to display number of digits after decimal place, whether a coma is to be used to separate thousand values, which currency symbol is to be used and to show negative values.
Date	Used to show date in different formats.
Time	Used to show time in different formats.
Percentage	Used to Show % symbol as wells as how many digits to be displayed after decimal place.
Fraction	A fraction can be displayed in 9 different ways.
Scientific	Shows a number in Scientific form. For example, 205,000 is shown as 2.05E+05.
Text	A number is also considered as text in this format by Excel.
Special	Displays additional number formats.
Custom	Used to define your own format that is not available in any other format.

Table 1.4 Number Format

Formatting a number with the help of ribbon

As shown in figure 1.16, the Home → Number group provides you the facility to format a number. When a mouse pointer is kept on the desired option it shows a brief description about it.
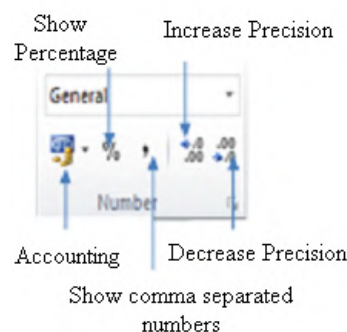
Figure 1.16 Number group available in Home Tab

165

Formatting Number with the help of Format Dialog Box

We can also do formatting with the help of Format Dialog box. To open the Format Dialog box, click on the button in the bottom right corner of the Number Group in the Home Tab, as shown in the Figure 1.17. You can see different formatting options here.
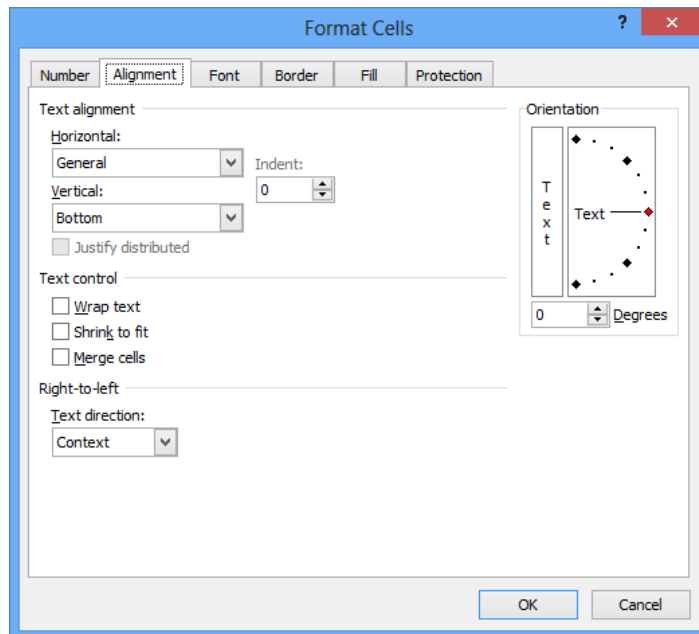
Figure 1.17 Format Dialog box

Formatting Text

As shown in the Figure 1.18, the Home → Font group give options to apply formatting to the selected text in a cell such as changing the font and style, to make it bold, italics, or to underline, to apply border, to increase or decrease the font size, to change the font color of the cell as well as to fill the cell with different color.
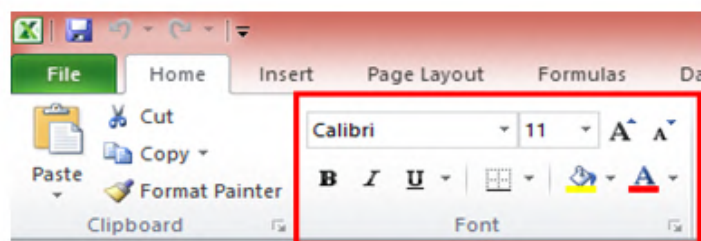
Figure 1.18 Font group in the Home tab

To get more options of formatting, click on the button at the bottom right corner of the Font group, as shown in the Figure 1.19.
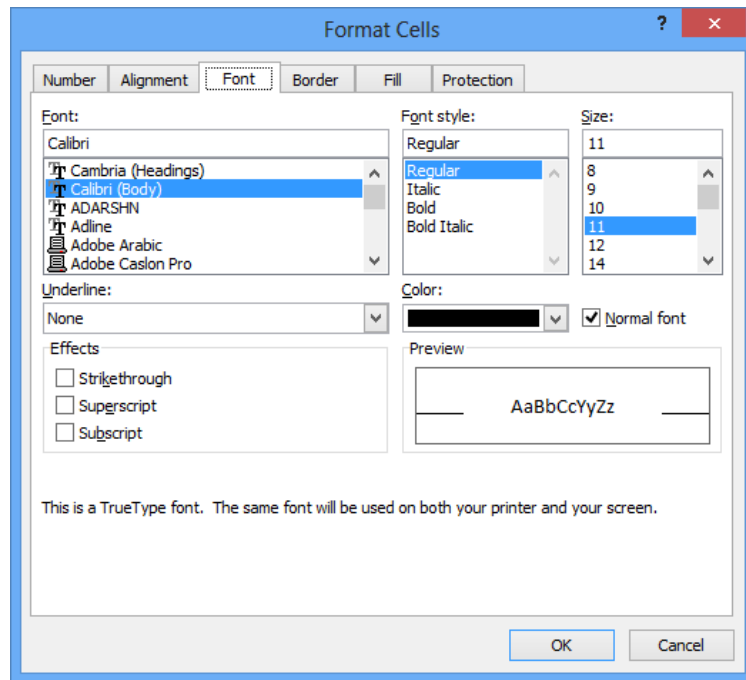
Figure 1.19 Font Tab of Format Dialog Box

As shown in the Figure 1.20, the Home → Alignment group has options that allows the selected text to be aligned horizontally (Alignment) and vertically, to move the text within a cell (Indent), to show the text at a specific angle (Orientation), to merge or separate more than one cell in different ways (Merge & Center), and to move the text to a new line so that it does not move out of the cell (Wrap Text).
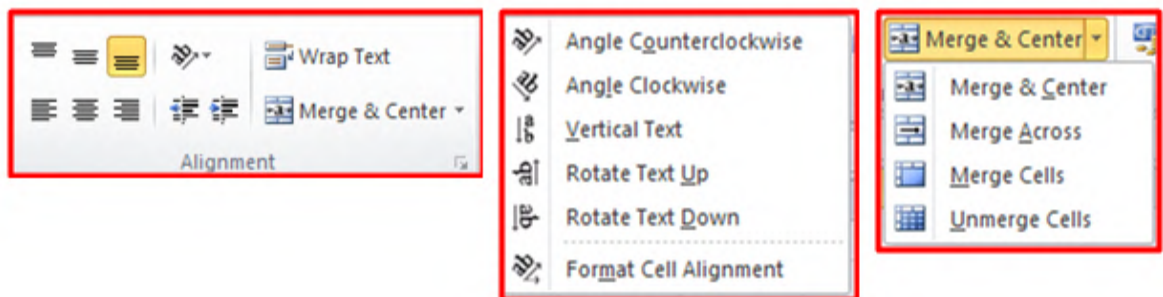
Figure 1.20 Alignment Group and its options available in Home Tab

Clicking on the button at the bottom of right hand corner of the Alignment group, will open a Format dialog box as shown in the Figure 1.21.It gives additional options for cell formatting.

167
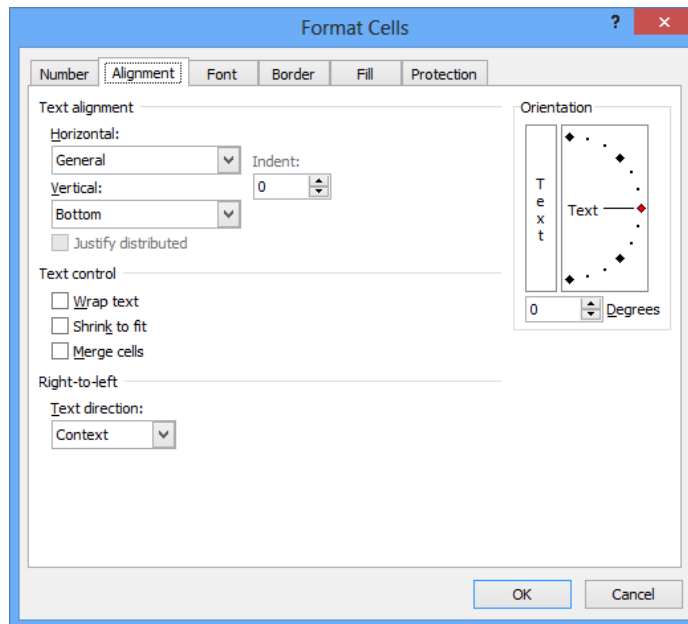
Figure 1.21 Alignment tab of Format Dialog Box

1.4 SAVING FILE IN MS EXCEL

Once an Excel worksheet is ready, it can be saved permanently and is stored in the hard disk in the form of a file. Further it can be opened again to see the contents and required changes can be done when needed. . When Excel file is saved, by default it is assigned with the extension name .xlsx. However it can be but stored in other formats also. List of some of the commonly used file format is shown in the table 1.5. To save a file the Save or Save As command available in the Back Stage View as shown in the Figure 1.22 is used, when this command is clicked the Save dialog box as shown in the Figure 1.23 is opened, where the filename , file format, and the path of the file is to be entered .

Figure 1.22 Save Options on the Back Stage View
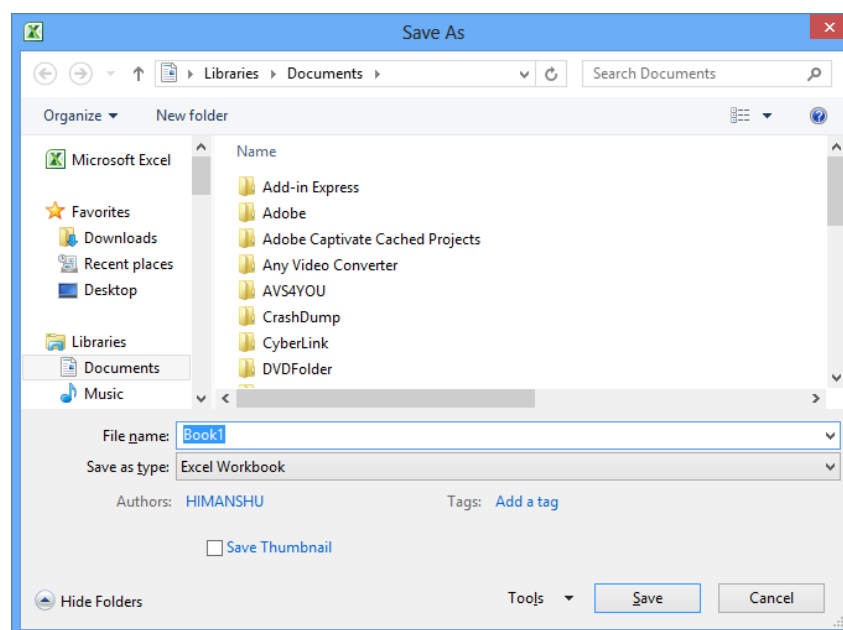
Figure 1.23 Save dialog box

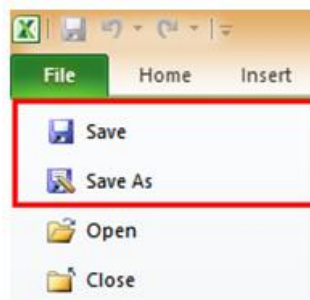| File Format	Extension Name	Usage
Excel Workbook	.xlsx	A default file format for Excel-2010 and Excel-2007 based on XML.
Macro Enabled Excel Workbook	.xlsm	A file format for Excel-2010 and Excel-2007 based on XML that also stores Macro code.
Excel-97 and Excel-2003 Workbook	.xls	A binary file format that opens in Excel-97 and Excel-2003.
Template	.xltx	A file format to store Excel-2010 and Excel-2007 file as template.
XML Data	.xml	Data is stored in XML format.
Text	.txt	In this format Excel stores data as tab or comma separated simple text file, it can be opened in DOS, Macintosh, and Linux operating system.
DBF 3, DBF 4	.dbf	You can open this file in Excel but cannot save with this format in Excel.
Open Document Spreadsheet	.ods	The file saved in this format can be opened in Google Document or Open Office CALC program as well as in any other program that supports this format.
Portable Document Format	.pdf	This format is popular for web.
Hyper Text Markup Language	.html	This format is used to save file as web page.

Table 1.5 Excel File Formats

1.5 PRINTING FILE IN MS EXCEL

As shown in the Figure 1.24, to print an Excel workbook the Print command available on the Back Stage view is used, giving different print options. Page Setup link is the last entry available in the Print option, clicking on this option opens a Page Setup dialog box as shown in Figure 1.26, proving additional options to set page, margin, header and footer. By clicking on the Print button, the default printer prints the document as per the desired settings.

The document can be viewed before printing it in the right side of Back Stage view but the view cannot be changed. To make changes in the view, View → Workbook Views → Page Layout View is to be selected as shown in the Figure 1.25.
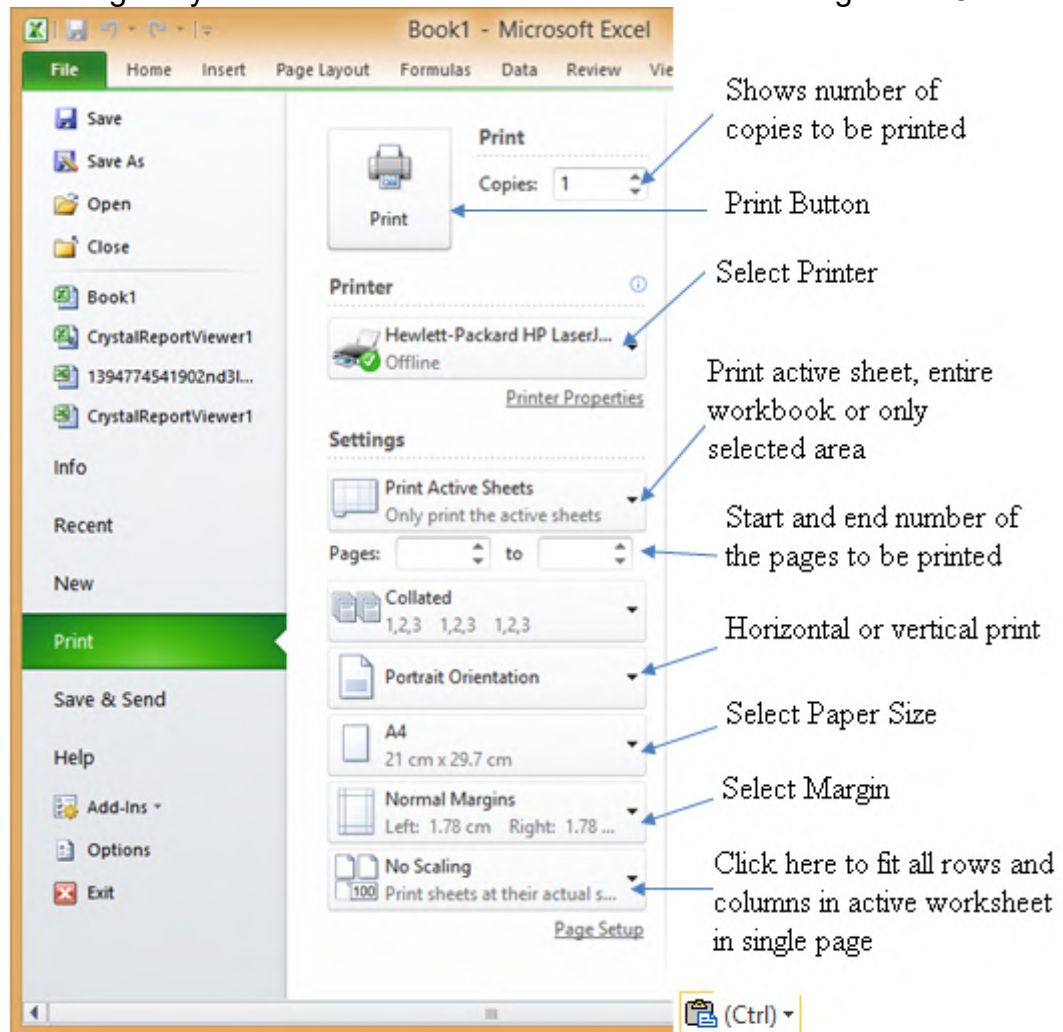
Figure 1.24 Options for the Print Command

If you want to see from where the pages will be separated during printing, then the View → Workbook Views → Page Break Preview as shown in **Figure 1.25** can be used.
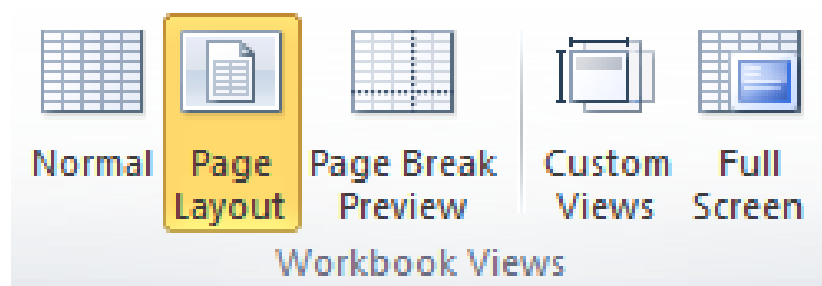
Figure 1.25 The Page Layout View
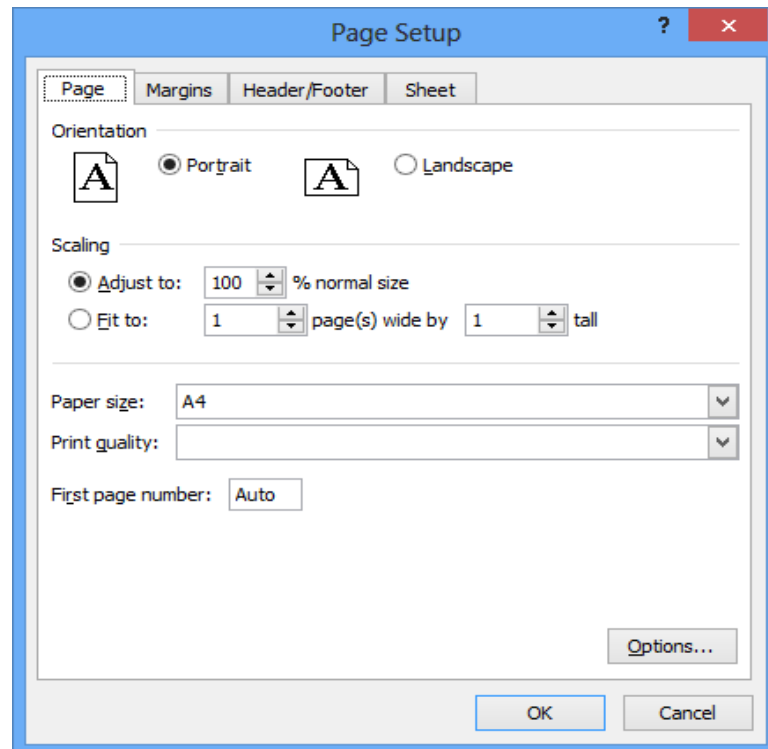
Figure 1.26 The Page Setup Dialog Box

1.6 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

1. Different type of data is filed in the data given below that you try to enter in excel using fill series.
2. Apply different text colour and fill colour to the column of the series you filled before.
3. Give two decimal points to the data of column A.
4. Give accounting symbol to the data of column B.
5. Apply 45° rotation to the column heading text.
6. Save the file you created and create it's pdf file.
7. Take printout of the file you created.

Unit 2: Formulas and Functions in MS Excel 2010

2

Unit Structure

2.1 LEARNING OBJECTIVES

After studying this unit student should be able to:

- Understand how to perform different calculations.
- How to use various functions for performing fast and specific calculations.
- Arrange information in Ascending, Descending or in a specific order.
- Filter important information, sort information based on groups and to bring data in different formats to Excel.

2.2 INTRODUCTION

As we have seen the introduction of Microsoft Excel 2010 in previous chapter that gives us idea of how to enter data and how to format it, how the file is saved and how to get print of excel file. In this chapter we are going to see the use of functions and formulas as well as we will also understand how calculations are performed using it. This chapter explains the concept of sorting in Excel as well as how filtering of data is done using different filter options available. Use of different Data Tools and Outlines is also explained in this chapter.

2.3 CALCULATING WITH THE HELP OF FORMULAS AND FUNCTIONS

As mentioned earlier Excel is used extensively for calculations. Formula is used to perform calculations on the data entered within the cells in the Excel worksheet. The advantage of the formula is that, Excel automatically calculates the new value of the cell in which formula is written, when value of the cell used in this formula changes. Formula mainly consists of the following components:

1. Arithmetic operators like + , -, *, /, %, ^
2. Cell address, for example A1
3. Value, for example 10 and
4. Function, for example sum(A1:A10)

A formula always starts with an = operator. Example of some formulas is given in **Table 2.1**.

Formula	Meaning
=5*6	Multiplication of 5 and 6
=A1+B1	Addition of the values in cells A1 and B1
=A1^3	The value in cell A1 raised to the power of 3

Table 2.1 Example of Formula

Operator

Table 2.2 below shows the operators used in a formula based on their precedence. If a formula contains more than one operator, then the operators are evaluated based on their precedence. If you need to change the precedence of an operator

then it needs to be written in brackets. The formula written in the brackets will be evaluated first.

Operator	Example	Meaning	Precedence
^	A1 ^ B1	Power of	1
*	A1 * B1	Multiplication	2
/	A1 / B1	Division	2
+	A1 + B1	Addition	3
-	A1 – B1	Subtraction	3
&	A1 & A2	To concatenate two text values	4
=	A1 = B1	True if values in A1 and B1 are same, else false	5
<	A1 < B1	True if value of A1 is less than B1, else false	5
>	A1 > B1	True if value of A1 is greater than B1, else false	5
<=	A1 <= B1	True if value of A1 is less than or equal to B1, else false	5
>=	A1 >= B1	True if value of A1 is greater than or equal to B1, else false	5
<>	A1 <> B1	True if value of A1 is not equal to B1, else false	5

Table 2.2 Precedence of operators used in formula
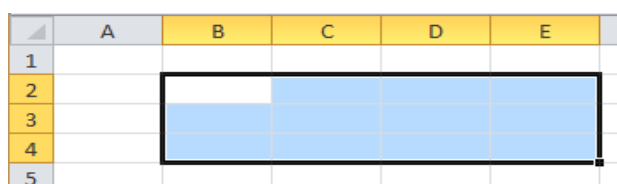
For example the formula (3 + 5) / 4 * 5 ^ 3 – 2 will be evaluated as shown below:

(3+5) / 4 * 5 ^ 3 – 2	**Given Formula**
8 / 4 * 5 ^ 3 – 2	As brackets will be evaluated first, 5 + 3 = 8 will be calculated first.
8 / 4 * 125 – 2	The power sign will be evaluated hence 5 ^ 3 = 125 will be calculated
2 * 125 – 2	Now as precedence of / and * are same, as division comes first 8/4=2 is calculated, then * will be evaluated and 2*125=250 is obtained
250 – 2	Finally subtraction will be done and the final result 248 is obtained
248	Answer

Cell reference and Cell range

Cell is the basic unit in which data can be entered. A cell is identified by its address. A cell address is the combination of column character and row number. When a formula is to be applied on a consecutive set of cells (more than one cells), all these cells need to be selected. These set of cells is known as the range.

More than one cell can be selected with the help of Shift + Arrow keys or by clicking on the first cell and then dragging the mouse. For example, the range of the cells selected in the **Figure 2.1–a:** is B2:E4 (Address of the first cell: Address of the last cell).

Figure 2.1-a The Cell range B2:E4

Looking at the data of the workbook shown in the **Figure 2.1-b**, to find the total marks of Ajay, formula needs to be written in the cell F4, and the formula will be =C4 + D4 + E4 as C4, D4 and E4 contains Marks-1, Marks-2 and Marks-3 respectively. You can type the cell address in the formula or it can be automatically added in the formula by clicking the desired cell whose value need to be used in the formula. Perform the actions mentioned below to write any formula:

1. Select the cell in which answer is desired
2. Type "=" sign
3. Type the desired formula
4. Press the Enter key

You can copy a formula, which helps to avoid writing it again and again. To calculate total marks of other students, select cell F4, drag the fill handle using mouse.

Figure 2.1-b Example of Formula

Cell references are of two types, 1) Relative and 2) Absolute. By default the cell references are defined as relative. The position of the rows and the columns changes as per the situation when you copy a cell. For example, if you copy the formula (=C4+D4+E4) in the fourth row, and paste it in the fifth row, then the formula will be changed to =C5+D5+E5.

When an absolute reference is used and a cell is copied or filled then the formula does not change, it is used when the value need not to be changed. To make an address absolute "$" sign is used. **Table 2.3** explains how a value of row and/or column can be fixed.

Formula	Meaning
A2	Row and column both will not change when the formula is copied
A$2	Row will not change when the formula is copied
$A2	Column will not change when the formula is copied

Table 2.3 Absolute reference

Figure 2.1-c shows a formula to calculate Mass, using the formula mass = density * volume. Here the value of the density(Value in the cell E2) does not change while the value of the volume changes, hence the formula to calculate mass in second row within cell C2 is =B2*E2, when this formula is copied to cell C3 using fill handle the new formula will be = B3*E2. Thus if the value of any cell is not to be changed within a formula then absolute reference is used.

Figure 2.1-c Example of Absolute reference

Function

Excel has a library of predefined formulas (functions) that can be used to do things faster or to do calculations. It can be used for adding, multiplying, finding average, or to find the maximum or minimum of a range of cells. Excel gives hundreds of functions for text formatting, cell references, financial calculations, and to analyze numbers.

It is necessary to follow a predefined syntax for each function, to-do the intended work properly. To use a function in a formula, an "= "sign, name of the function followed by the list of arguments/parameters need to be provided. Arguments are to be written in brackets. A value or cell reference range can be given as an argument, and is separated by ',' or ':' sign. **Figure 2.2** shows how to calculate the total marks using the SUM function.

Figure 2.2 Example of function

Auto Sum Command

To enter a function in a cell we can use Home → editing → AutoSum command as shown in the **Figure 2.3**. AutoSum automatically selects the cell range to add, to calculate the average or to perform other operations. In the above example by selecting cell F4 and clicking on AutoSum, Excel automatically shows the function, we only need to check whether it is correct or not.
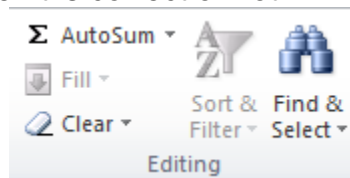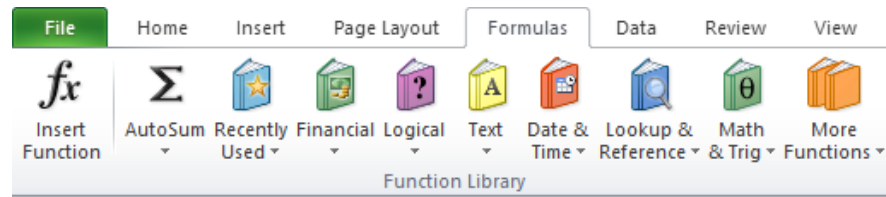

Figure 2.3 AutoSum command

Function Library

As shown in **the Figure 2.4**, Function Library group available on the Formulas tab can be used to enter financial, logical, text, date, time and other functions.

Figure 2.4 Function Library

Some very useful functions and their uses are listed in the **Table 2.4**.

Function	Usage
ABS	Gives Absolute/positive value if the given number is negative.
AND	Gives true if all the arguments are true, else false.
AVERAGE	Used to find the average from the argument list.
CHAR	Gives a character value for the given integer code.
CODE	Gives integer code value for the given character.
COUNT	Counts total values in the argument list.
COUNTIF	Counts total values in the argument list if some given condition is true.
DATE	Shows the numeric value (order) of a given argument starting from 1 January 1900.
EXACT	Checks whether two texts are same or not.
EXP	Used to find exponent e (2.71828182845904) of a given number till the specified value.
FACT	Used to find the factorial of given number.
IF	Used to perform a logical operation.
LEFT	Used to separate number of characters from the left side of the given text in the argument.
LEN	Used to find out the number of characters in a given argument.
MAX	Used to find out the maximum number from a given argument list.
MID	Used to separate number of characters from the middle of the given text in the argument.
MIN	Used to find out the minimum number from a given argument list.
MOD	Used to find the remainder when a number is divided by another number.
NOW	Used to display the current date and time.
PI	Shows the value of pi π (3.14159).
PROPER	Capitalizes the first character of each word in the argument.
RAND	Generates a random number between 0 and 1.
RIGHT	Used to separate number of characters from the right side of the given text in the argument.
ROUND	Used to round off a number after a specific decimal digit.
SQRT	Used to find the square root of a given number.
SUM	Used to add numeric values of an argument list.
SUMIF	Used to add numeric values of an argument list if some given condition is true.
TODAY	Used to show today's date.
UPPER	Used to convert text to upper case/ capital.
LOWER	Used to convert text to lower case.

Table 2.4 List of some useful functions

Insert Function Command

You can find out any function as well as select the arguments for a function using the Insert Function command. The steps to use the Insert Function command are as shown below:
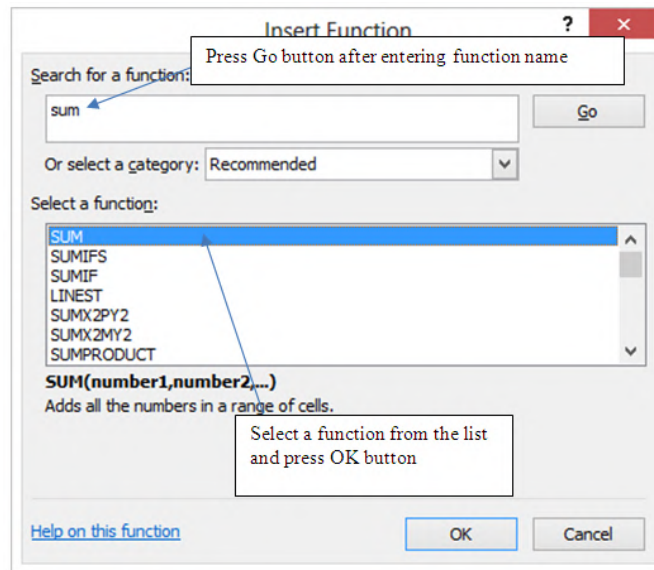
Figure 2.5 The Insert Function Dialog Box

1. Select the cell in which function is to be entered.

2. An Insert Function dialog box as shown in the **Figure 2.6** will be opened. When a function name is typed followed by the pressing of the Go button, the function or a list of similar functions will appear.

3. Select the desired function from the list and press the OK button, an Argument dialog box as shown in the **Figure 2.6** is opened so as to pass the required arguments for the function. The arguments shown here will change based on the function being selected.

4. The function will be written in the active cell when an argument is selected from the worksheet or manually typed and the OK button is pressed.
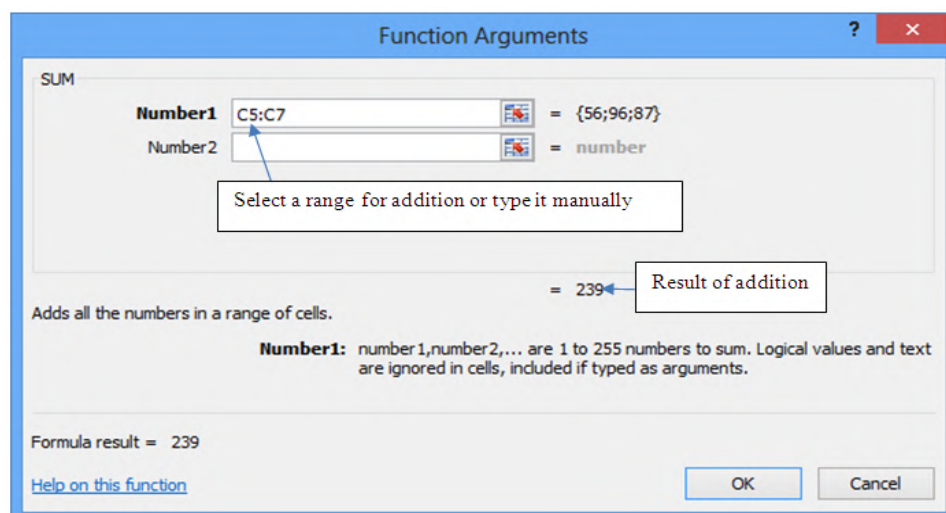
Figure 2.6 The Argument Dialog Box

178

2.4 WORKING WITH WORKSHEET, ROWS, COLUMNS AND CELLS

When you start Microsoft Excel 2010 you will be presented with an empty Workbook that has three Worksheets by default. You may add or delete desired number of worksheets in a workbook. Also it is possible to hide as well as change the order of the worksheets, copy or move a worksheet. Additionally a worksheet can be grouped and un-grouped, the rows and columns can be freeze such that they are visible even when scroll button is used.

You can add or delete rows and columns, can hide or un-hide it, as well as change the height and width of the cells.

A new worksheet can be inserted in three ways (Insert)

1. As shown in the **Figure 2.7**, by clicking on an Insert Worksheet button a new worksheet is added.
2. By right clicking the mouse button on the sheet tab, an Insert option in the shortcut menu is visible; selecting this option opens an Insert Dialog box. Now from the General tab select worksheet and press OK button, a new worksheet is inserted.
3. By pressing Shift + F11 a new worksheet is inserted before an active worksheet.

A worksheet can be deleted in two ways (Delete)

1. Right click the mouse button on the worksheet to be deleted on the sheet tab, a shortcut menu as in the **Figure 2.7** will be visible. Selecting the Delete option from it will delete the worksheet.

2. The active sheet can be deleted by selecting Home → Cell → Delete → Delete Sheet.

In both cases if the worksheet contains data, Excel seeks your permission before deleting the data.

A worksheet can be renamed in two ways (Rename)

1. Right click the mouse button on the worksheet to be renamed on the sheet tab. A shortcut menu, as shown in the **Figure 2.7** will appear. Selecting the Rename option will highlight the worksheet name. By typing the new name and pressing the Enter key the new name will be assigned to the worksheet.
2. Double click on the worksheet whose name is to be changed on the sheet tab, which will highlight the worksheet name. By typing the new name and pressing the Enter key, will assign the new name to the worksheet.

Change the colour of the worksheet tab

To differentiate a worksheet from other sheets, the tab color can be changed.

Right click the mouse button on the worksheet tab; a shortcut menu as shown in the **Figure 2.7** will be displayed. Selecting the Tab Color option provides a choice to select any color.
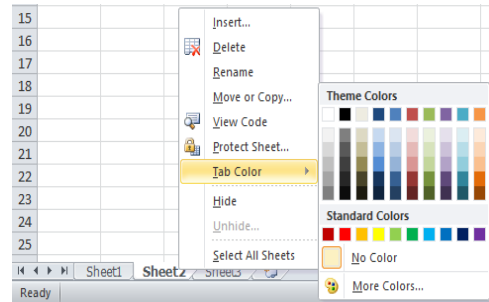
Figure 2.7 The Shortcut menu in sheet tab

Move or Copy a worksheet

You can move a worksheet in a specific order or copy a worksheet as desired. Right clicking on the worksheet on the sheet tab which we wish to move or copy, will open a shortcut menu as shown in the **Figure 2.7.**Select the Move or Copy option from it. This will open a dialog box as in the **Figure 2.8**, with the help of which it can be decided whether the selected worksheet is to be moved to a new workbook, to put it before a desired worksheet or to be moved or copied. By clicking the OK button the desired task can be done.
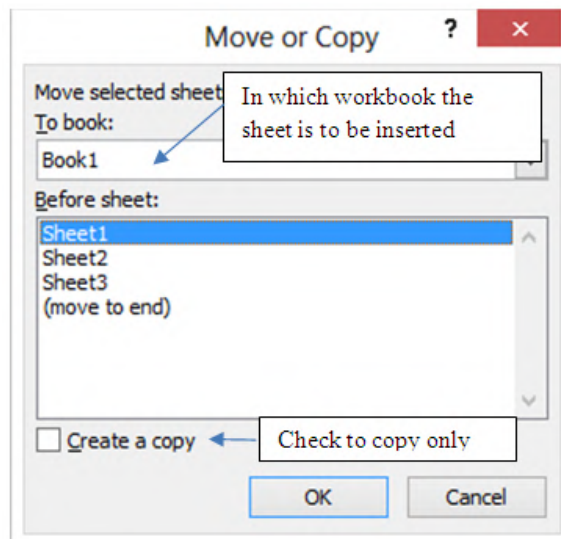

Figure 2.8 The Move or Copy Dialog box

Hide or UnHide the worksheet

If you do not want to show the worksheet to someone else, then you can hide the worksheet and can be made visible again, when needed. Right clicking the mouse button on the worksheet on the sheet tab that is to be hidden, a shortcut menu will appear as shown in the **Figure 2.7**. Selecting the Hide option the worksheet will be invisible.

To make the hidden worksheet visible again, right click the mouse button on the worksheet, a shortcut menu will be appeared as before. Now selecting the Unhide option will display a list of the hidden worksheets in a dialog box. Select the sheet that is to be unhidden and click on the OK button, it will be visible again.

Viewing more than one worksheet of a workbook in multiple windows

To view more than one worksheet you can create a new Window for the workbook. To do this select View → Window → New Window option, which opens a workbook in a new Window. As shown in the **Figure 2.9** the windows then can be viewed as tile, horizontal, vertical, cascaded or other way with the help of View → Window → Arrange All option. In the **Figure 2.10,** a workbook is viewed with vertical option and is seen as two different worksheets.
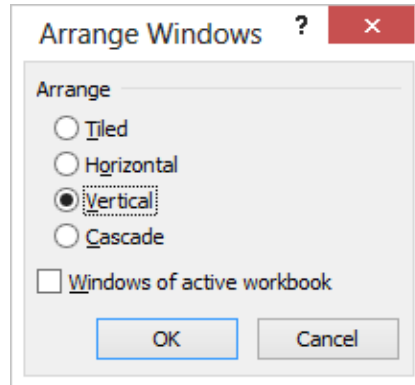
Figure 2.9 Arrange Windows Dialog box
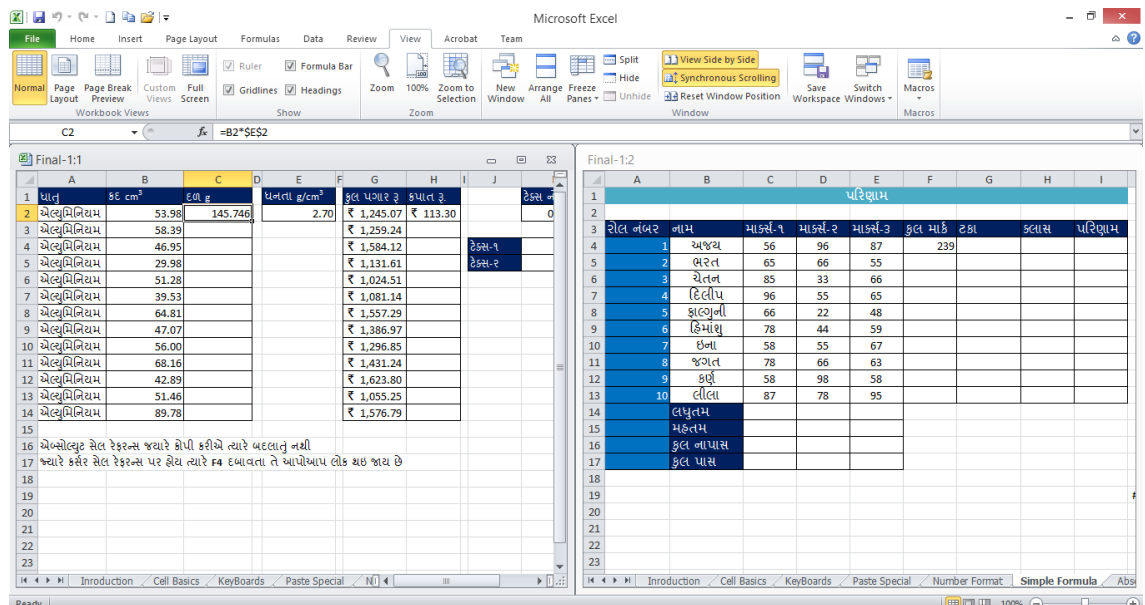
Figure 2.10 Two worksheets of a single workbook shown in two different Windows

Viewing two different parts of a worksheet in different panes at the same time

The option View → Window → Freeze Panes when selected divides the workbook into four parts as shown in the **Figure 2.11**.When one of the parts is scrolled the others parts are still visible. Then we need a single worksheet, it can be seen again by selecting View → Window → Unfreeze Panes.

Figure 2.11 Freeze Panes option

Working with rows and columns

In Excel you can add or delete data in a single cell, entire row or column, hide and unhide rows or columns, can change the height of the rows and width of the columns.
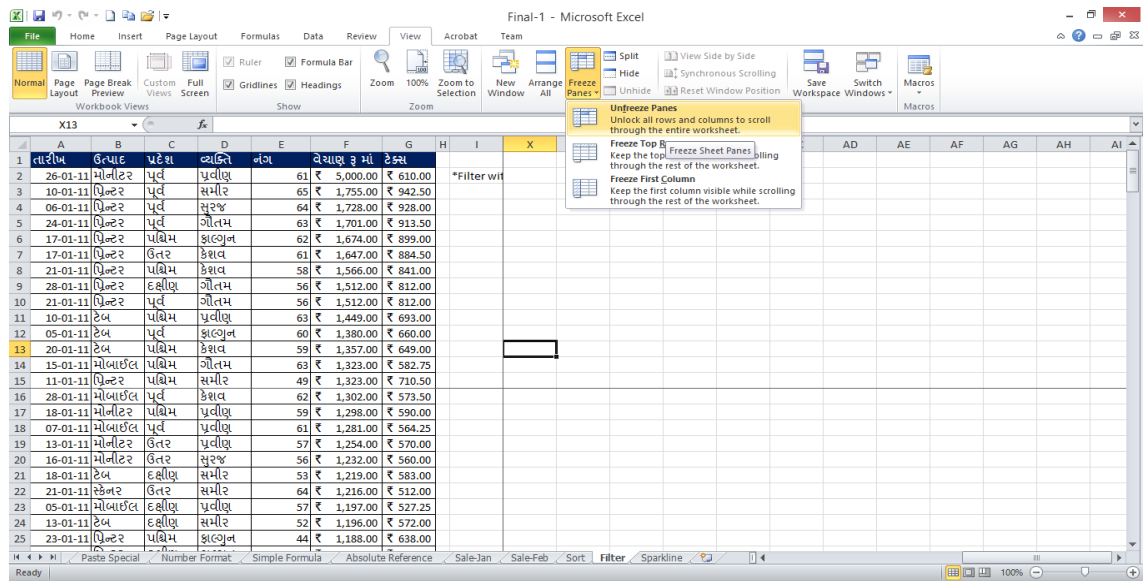
Adding rows and columns

As mentioned earlier the number of rows and columns in Excel are fixed, hence when you add a row, the last row is removed while all the rows after the new row are shifted down. Similarly when a column is added all the columns move towards the right side. If the last row or column contains data then you cannot add an additional row or column.

New row can be added in two ways.
1. Right click on the row number above which the new row is to be inserted. This opens a shortcut menu, from which select the Insert option.
2. A row is inserted above the active cell by selecting Home → Cells → Insert → Insert Sheet Rows.

New column can be added in two ways.
1. Right click on the column name before which the new column is to be inserted. A shortcut menu will be displayed. Select the Insert option from it so as to insert columns in the left side.
2. A column is inserted in the left side of the active cell by selecting Home → Cells → Insert → Insert Sheet Columns.

Deleting rows and columns

If a row or column is not needed, it can be deleted. If a row or column gets deleted by mistake then it can be brought back using Ctrl + Z or the undo command.

Row can be deleted in two ways.
1. Right click on the row number that is to be deleted, this opens a shortcut menu. Select the Delete option from it, the row will be deleted.

2. A row of an active cell can be deleted by selecting Home → Cells → Delete → Delete Sheet Rows.

Column can be deleted in two ways.
1. Right click on the column name that is to be deleted so as to open the shortcut menu. Now select the Delete option from it, the column will be deleted.

2. A column of an active cell is deleted by selecting Home → Cells → Delete → Delete Sheet Columns.

Hide or Unhide a row or column

To hide a row/column select it, click the right mouse button. Select the Hide option from the displayed menu, the row/column will be hidden.

To show the row/column again, click the right mouse button on the nearby row/column. Select the Unhide option from the displayed menu, the corresponding row/column will be visible again.

Changing the column width and row height

The width of the column is measured in points. By default the width of each column is 64 pixels (PX) or 8.43 points.

The column width can be changed by using any one of the following methods:
1. Bring the mouse pointer towards the right side border of the column. Now drag the handle (✛).
2. Enter the value of the width in the dialog box by selecting Home → Cell → Format → Column Width.
3. The column width can be adjusted according to the longest text contents by selecting Home → Cell → Format → AutoFit Column Width.
4. The column width can also be adjusted as per the longest text contents by just double-clicking on the right border of the column.

The row height can be changed by using any one of the methods shown below:
1) Bring the mouse pointer towards the top border of row. Now drag the handle (✛).
2) Enter the value of height in the dialog box by selecting Home → Cell → Format → Row Height.
3) The row height will be automatically set to the largest text content by selecting Home → Cell → Format → AutoFit Row Height.
4) The row height will be automatically set to the largest text contents by double-clicking on the top border of the row.

Copy and Paste a Cell

Select the cell that is to be copied with the help of a mouse or arrow keys (see cell reference and cell range). Copy the cell by using any of the methods shown below:

- Press Ctrl + C

- Right click the mouse button on the selected cell, select Copy option from the shortcut menu.
- Click on Home → Clipboard → Copy

Paste the cell where ever desired by using any of the methods shown below:

- Press Ctrl + V
- Right click the mouse button on the selected cell, select Paste option from the shortcut menu.
- Click on Home → Clipboard → Paste, Excel will show you how the contents are going to look before pasting.
- Click on Home → Clipboard → Paste, Excel will give you different paste options as shown in the following table :

Option	Usage
Paste	To paste data, format and validation of the cell.
Formulas	Only formula is pasted but not the formatting.
Formula & Number Formatting	Only formula and number formatting is pasted.
Keep Source Formatting	Formula as well as all formatting is pasted.
No Borders	Everything except border is pasted.
Keep Source Column Width	Formula and the column width from where the data is copied are pasted.
Transpose	Interchanges row and column data.
Values	Only the value of the data is pasted.
Values & Number Formatting	Value of the data and number formatting is pasted.
Values & Source Formatting	Value of the data and all formatting is pasted.
Formatting	Only formatting is pasted.
Paste Link	Exact formula (not relative) as in the copied cell is pasted.
Picture	Pastes data as picture.
Linked Picture	Pastes data as picture but when the data in the cell from where copy was done changes the picture also changes.

Table 2.5 Paste Options

Moving the Cell

A cell can be moved by first selecting the cell, cutting it and then pasting it. Alternatively a selected cell can also be moved by dragging the mouse. Remember that when a cell is moved if it contains data then that data is removed and new data comes in its place.
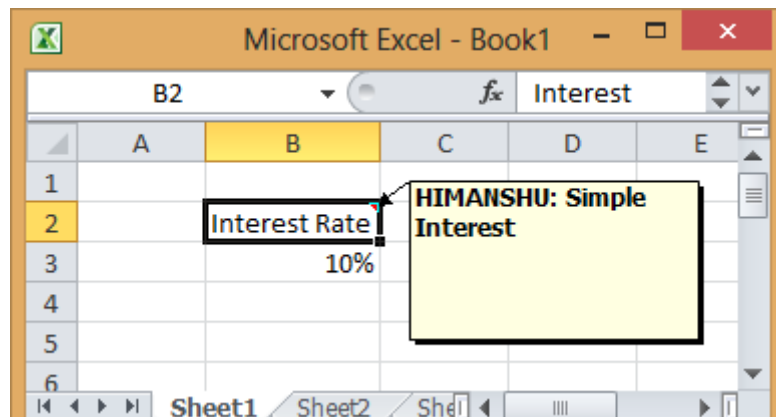
Cell Comment

Cell comment is used to give additional information about the cell contents. To assign comment first of all select the cell and can apply any of the following ways:
- Select Review → Comments –> New Comment

- Right click the mouse button on the selected cell, select Insert Comment option from the shortcut menu.
- Press Shift + F2

Then type the comment. **Figure 2.12** shows a comment (already assign) that is visible when a mouse pointer is moved to that cell.

Figure 2.12 The Cell Comment

In Excel to remove the comment, Review → Comments → Delete option is used. Also to hide or show the comment, Review → Comments → Show/Hide Comment option is used.

2.5 TABLE FORMAT

To work easily on data ranges, you can convert it to a table format, which provides the following benefits:

- To apply predefined formatting.
- Allows filtering and sorting the data.
- Calculations can be done easily on rows and columns.
- Duplicate rows can be automatically removed.
- The size of the data can be easily changed.

To create a table, first select all the cells that need to be converted to table, and then select Insert → Tables → Table, which will open the **CreateTable** dialog box. Clicking on the OK button will create a table as shown in the **Figure 2.13**(ribbon: in Design tab→Tools).
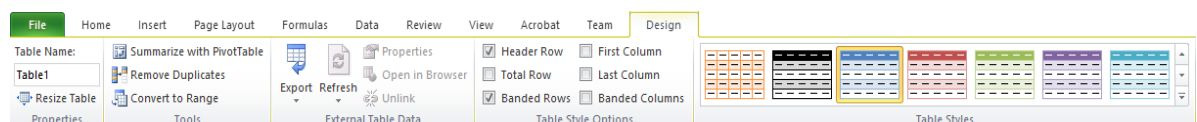
Figure 2.13 Table Design Tab

The Style group in the Table Design tab provides facilities to change the look of the table as shown in **Figure 2.14**. The Table Styles option in Table Design tab provides

options to show/change Header Row, Total Row, First Column, Last Column, Banded Row and Banded Column as shown below.

Figure 2.14 Table Format

If a table has duplicate rows as shown in the **Figure 2.14**, the Remove Duplicates option can be selected to remove them as in the **Figure 2.15**. It is required to identify the duplicate entries to be removed and then clicking the OK button will make the necessary changes to the table.

The row header gives option to sort and filter, we will understand about sort and filter in detail later. To remove the table format and convert the data to a normal cell range, Convert to Range option can be selected as shown in the **Figure 2.13**.
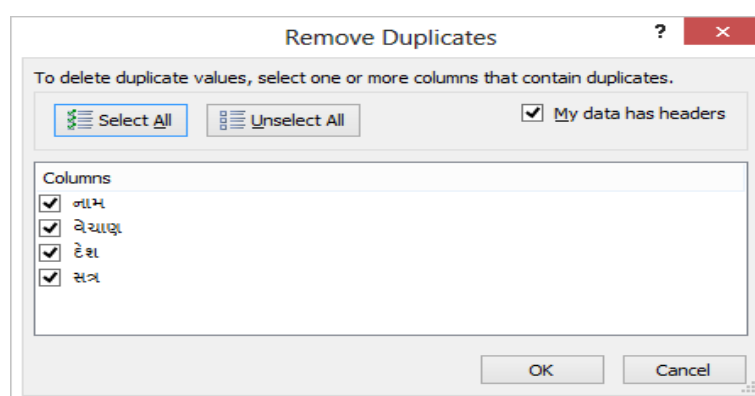

Figure 2.15 Remove Duplicates Dialog Box

2.6 SORTING

Sorting allows you to arrange the data in ascending or descending order or to separate the data as per the requirement. By sorting, data (text, number or Date and

Time) can be arranged as per the required order of choice. data can be sorted on more than one level in the custom sort, for example you can arrange employee data first based on the Department, then by Name and then by Age.

To sort data based on single column, select any cell of the column on which data is to be sorted, then use any of the following method:

1. Home → Editing → Sort & Filter → Sort Smallest to Largest/Sort Largest to Smallest
2. Data → Sort & Filter → $\overset{A}{Z}\downarrow$ or $\overset{Z}{A}\downarrow$

To sort data based on more than one column, select any cell then use any of the methods mentioned below:

1. Home → Editing → Sort & Filter → Custom Sorting
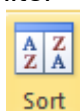
2. Data → Sort & Filter → Sort

By selecting any of these methods a sort dialog box as shown in the **Figure 2.16** will opened and Excel will automatically select all the data. Then the required column and sort order can be chosen and then by pressing Add Level button the next column on which sorting to be done can be added.
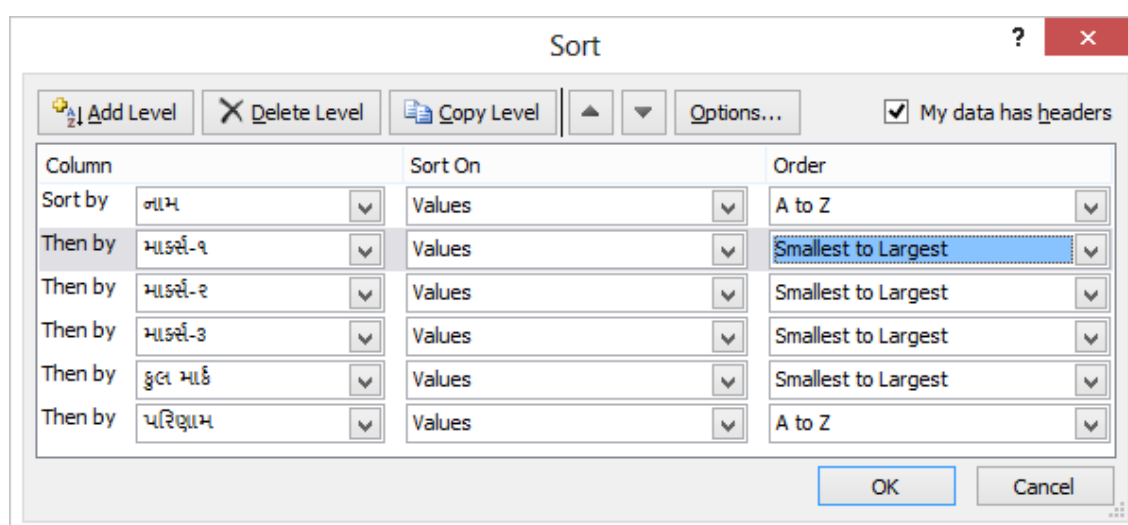
Figure 2.16 The Sort Dialog Box

2.7 FILTER

Filter shows only those rows that satisfy a predefined condition. The use of the filter thus provides facility to reduce data, and shows only the important data and hides the unnecessary data. You can apply more than one filter and if not needed the filter can be removed and the entire data can be displayed back. You can filter the data based on number, date, text or color. Select any cell of the data that is to be filtered, then use any of the below mentioned methods to apply the filter.
1. Home → Editing → Sort & Filter → Filter

2. Data → Sort & Filter → Filter

The Figure 2.17 shows the data before being filtered and the **Figure 2.18** is after the filter has been applied. As shown in the **Figure 2.19** clicking any of the check boxes including the Select All the corresponding filter can be applied

Figure 2.17 Before Applying Filter

Figure 2.18 After selecting filter
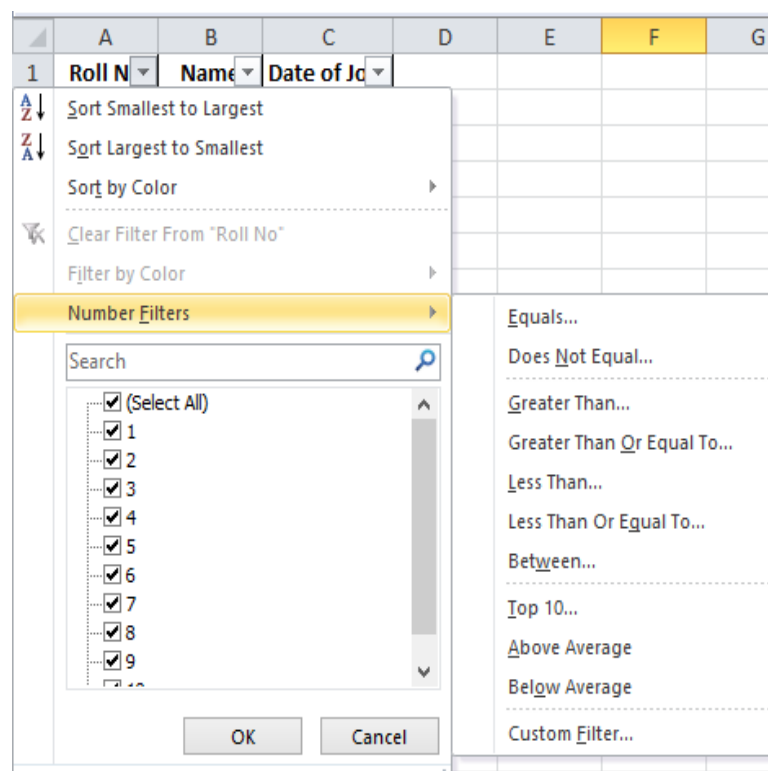
Figure 2.19 The Number Filter
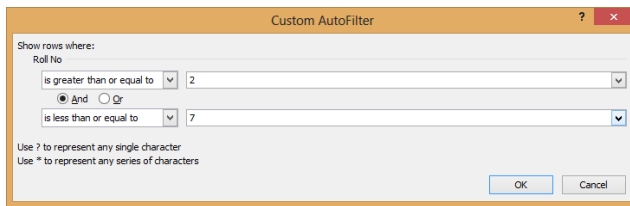
Figure 2.20 Data to be given for filter

Figure 2.21 Filtered Data

Excel filters data based on its type (number, date or text).The **Figure 2.19** shows a number filter for Roll No., selecting an option from the available list, will open a dialog box as shown in the **Figure 2.20**.Now entering the desired conditions and clicking on the OK button will filter the data as shown in the **Figure 2.21**.

2.8 DATA TOOLS

The following options are available in Data Tools.
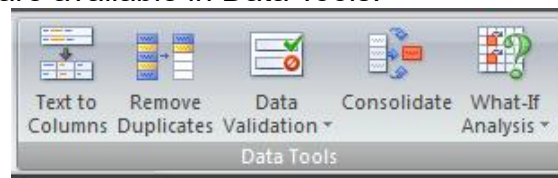
Figure 2.22 Data Tools

Data ➜Data Tools ➜Text To Columns

Depending on the data, the cell content can be splinted based on a delimiter, such as a space or a comma, or based on a specific column break location within the data. To implement this option first select the data that has been entered. As shown in the Figure **2.23**.Selecting Data Tools and clicking on Text to Columns, will open a dialog box as shown in the **Figure 2.24**. Converting text to columns uses three steps.

Figure 2.23 The Data

189

Let us understand by taking an example. Enter the data as shown in the **Figure 2.23**. It displays column headings NAME, AREA, SELLING. Both the column headings and the data entered thereafter are separated by comma (,). Here there is one record in one row and 10 such records are there. Now select this data (to select the data we can use mouse or use the Shift and the arrow keys from the keyboard). After selecting the data we have to separate it in three different columns, by clicking on the Text to Columns options shown in the **Figure 2.24**.

In this dialog box we can see the range of the selected data. Then we are asked two options,

Delimited: If the data selected is separated by comma or tab key then click on this option.

Fixed width: If there is space in the data that is being selected then this option is used or if we want the data to be separated automatically based on the width of the column then click on this option. Here we have clicked on the Delimited option. Then click on the Next button to open a new dialog box as seen in the **Figure 2.25**.
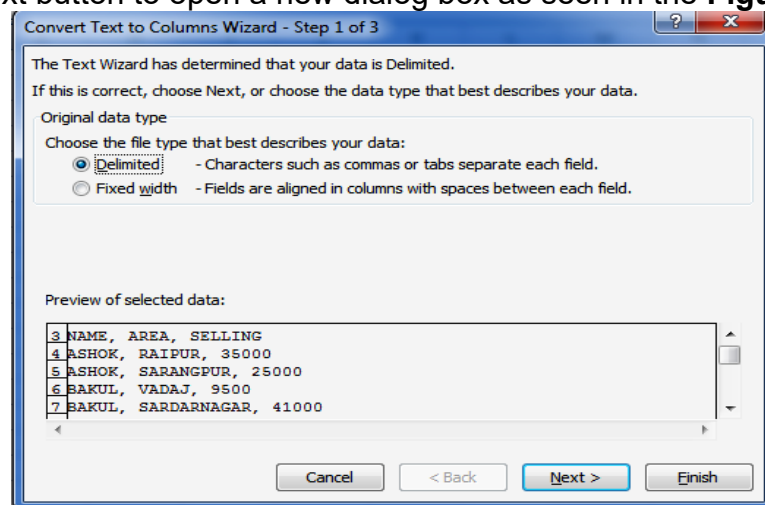
Figure 2.24 Step 1

After clicking on next button a dialog box as shown in the **Figure 2.25** will be opened. Here in the left hand side we are asked for the Delimiters. Click on the comma option, because the data has been separated using comma. Here as soon as we click on the comma option, the data is displayed in the form of columns immediately in the bottom part of the dialog box. Now clicking on Next button will show another dialog box, as seen in the **t**.
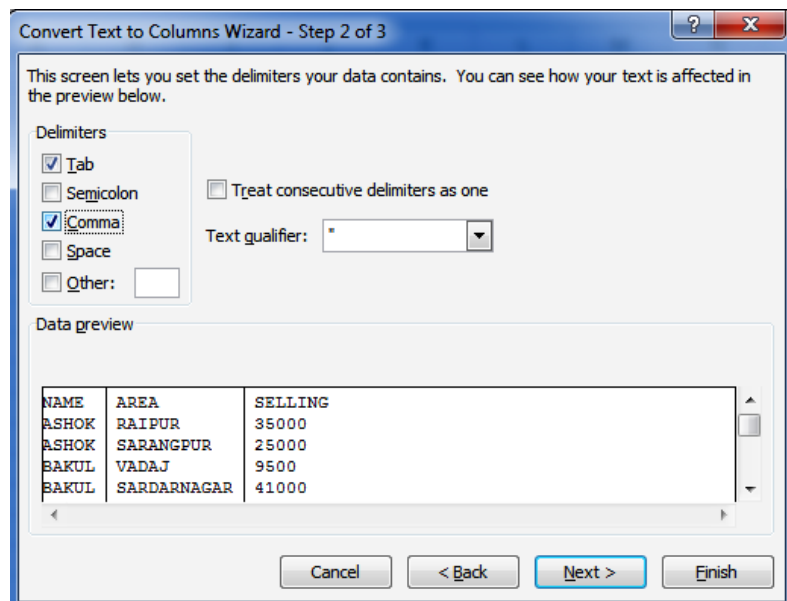
Figure 2.25 Step 2
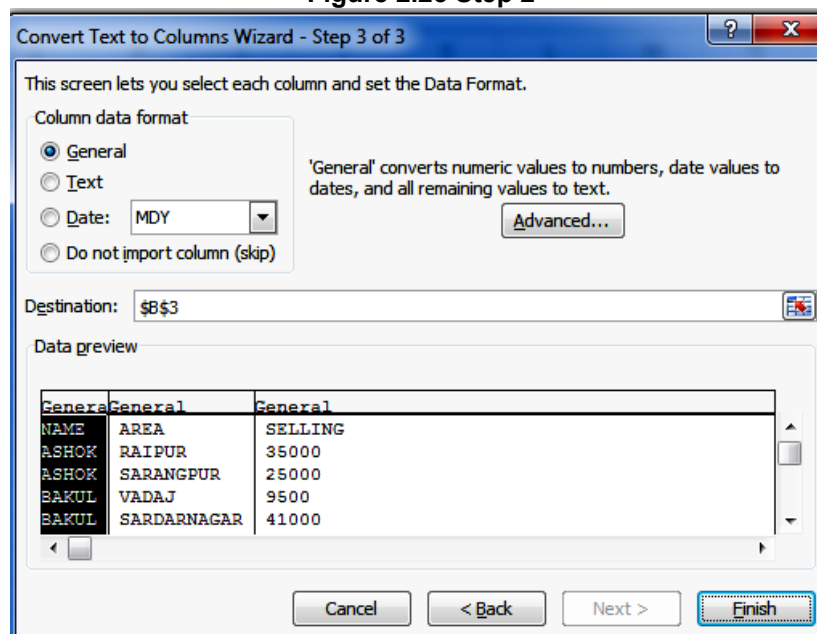
Figure 2.26 Step 3

Here we are asked the format of the data like General, Text, and Date. Clicking on the General option, followed by clicking the Finish button, the result will be displayed as shown in the **Figure 2.27**.

Figure 2.27 The Final Result

Data ➔Data Tools ➔Remove Duplicates

At times when we enter data, there can some records being entered multiple times accidentally, leading to the duplicity of data. Such records are known as the duplicate records. The Remove Duplicates option can used to remove such duplicate records. Let us understand by taking an example, enter some records as shown in the **Figure 2.28**. Then select the data and click on the Remove Duplicates option available in Data Tools. This will open a dialog box as shown in the **Figure 2.29**.

Figure 2.28 The Data

Figure 2.29 The Remove Duplicates Dialog Box

This will give the option either to remove the duplicate from the current selection or to expand the selection. If the selection needs to be increased then Expand the selection option is to be chosen.

Since we want to remove the duplicates only for the selected area, here we click on the Continue with the current selection option. Then clicking on the Remove Duplicates, it will show another new dialog box as in the **Figure 2.30**
.
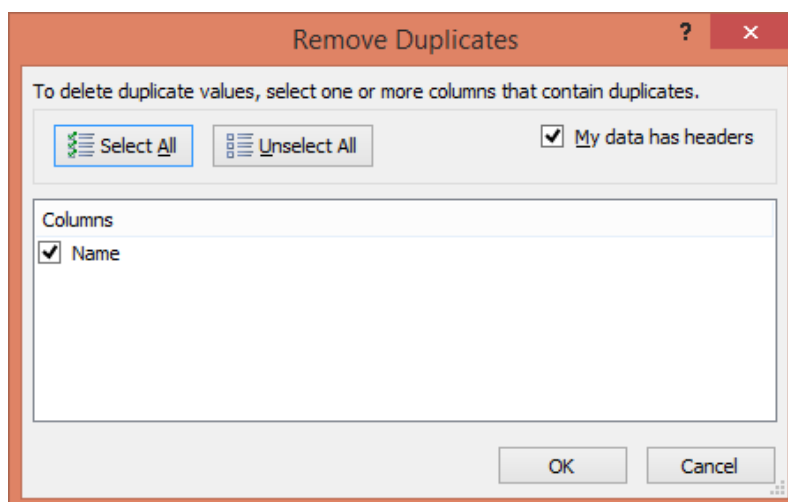
Figure 2.30 The Remove Duplicates Dialog box

If we had selected more than one column then their names would have been also visible here. Additionally if needed a column from the selected set of columns can be unlisted (unselected). Finally clicking on the OK button a final result as shown in the **Figure 2.31** is visible. Here we can see that there is a difference in the number of records shown in the **Figure 2.28** and **2.31**.i.e.the number of records are less in the **Figure 2.31.** Finally **Figure 2.32** shows the number of duplicate records that have been removed.

Name
Nayan
Rekha
Ajit
Vijay
Kamlesh
Priya
Bhavesh
Brijesh
Samir

Figure 2.31 Final List
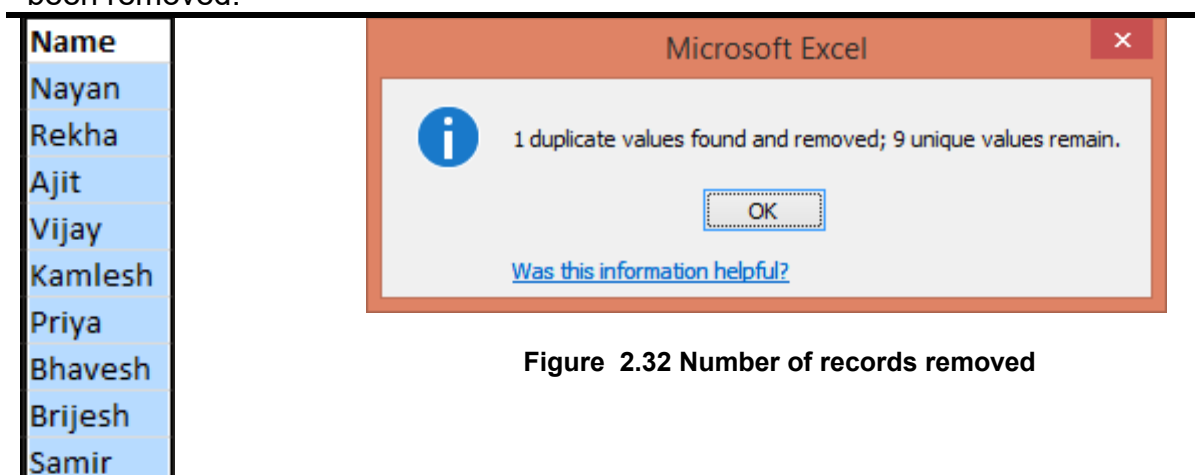
Figure 2.32 Number of records removed

Data ➔ Data Tools ➔ Data Validation

Data Validation is used when we need to enter the data in a specific manner, thus restricting the entry of the invalid entries. For example, the selling price should be between 15000 and 35000. Let us understand by taking an example.

As shown in the **Figure 2.32** Name, Area, Selling Amount, etc. data is already entered. Let us now see how to make a circle around values that are greater than 15000 and less than 35000 so that they can be differentiated.
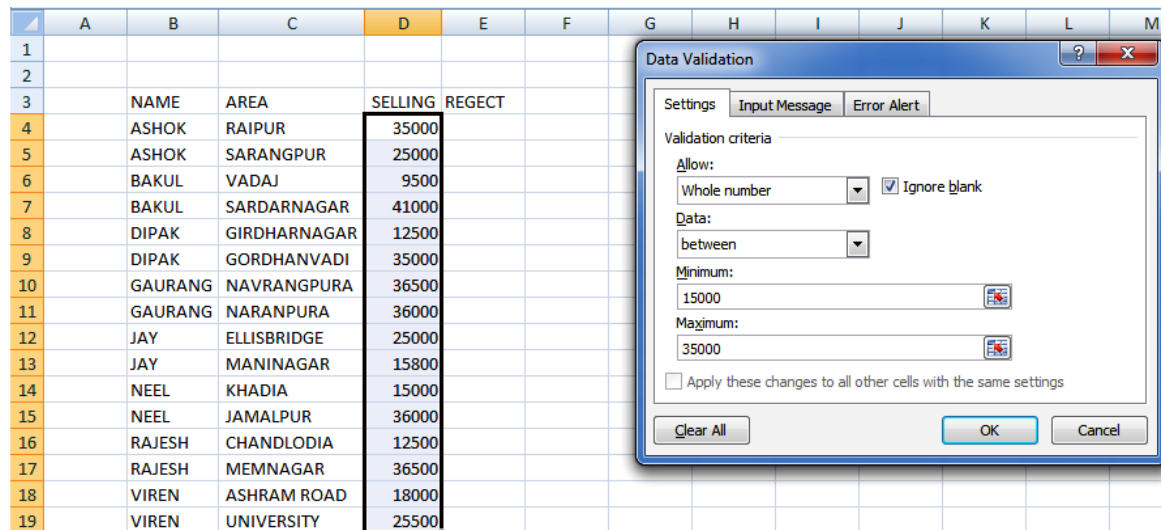
Figure 2.32 Data Validation

First select selling amount. After the amount is selected click on the Data Validation option in Data Tools. A dialog box as shown in the **Figure 2.33 and 2.34** will appear. Three tabs can be seen in this Data Validation dialog box, Settings, Input Message and Error Alert.

Settings: In this tab we are asked about validation. In the Allow: option the acceptable data format is chosen. Here we are talking about selling amount, hence select Whole Number. If in case a value has not been entered in a cell, then to ignore entries in such cells check on the Ignore Blank option.

Based on the option selected under the Data, list the options below and it will change. Here we need the values greater than 15000 and less than 35000, hence select Between option, thus we are asked the Maximum and Minimum value. Here we need to enter the decided values. After entering these pre-decided values, move to the Input Message tab.
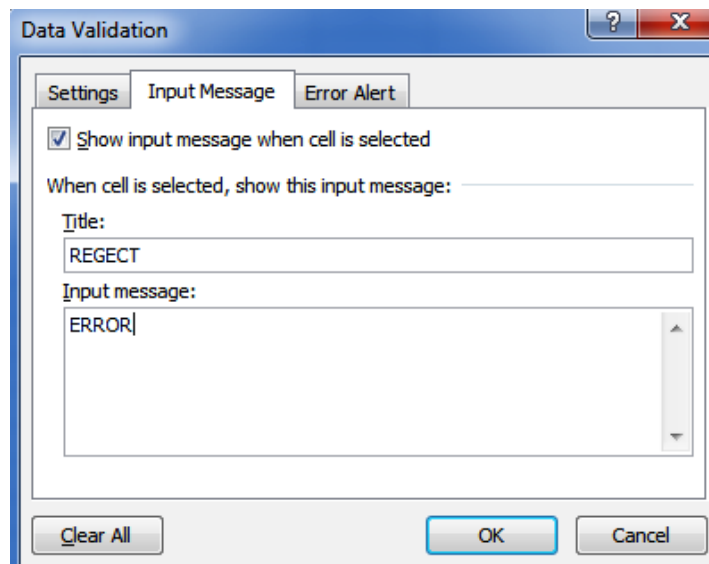
Figure 2.33 Input Message tab

Input Message: This option is used so that the user does not enter wrong information. The input message written by us will be visible in a box near the selected cell in which validation is applied.

Error Alert: Normally the user enters correct data after giving an Input Message. But if any mistake happens, then to show such mistakes in a dialog box this option is used. Three styles Stop, Warning and Information can be used to show the mistakes. We can select any of these styles as per our choice. We will see different symbols based on the style being selected. The steps of data validation will be finished, after entering the Title as well as the Error Message and finally clicking on the OK button.

Now if the output of the data validation is to be seen then in Data Tools a Data Validation option is available named Circle Invalid Data. As soon as this option is clicked an output as shown in **Figure 2.35** comes on the screen. It shows a red colored circle on the data with wrong selling amount.

We can clear the red colored circles on the wrong dataset, by clicking on the Clear Circle Validation option in the Data Tab of the Data Validation group.
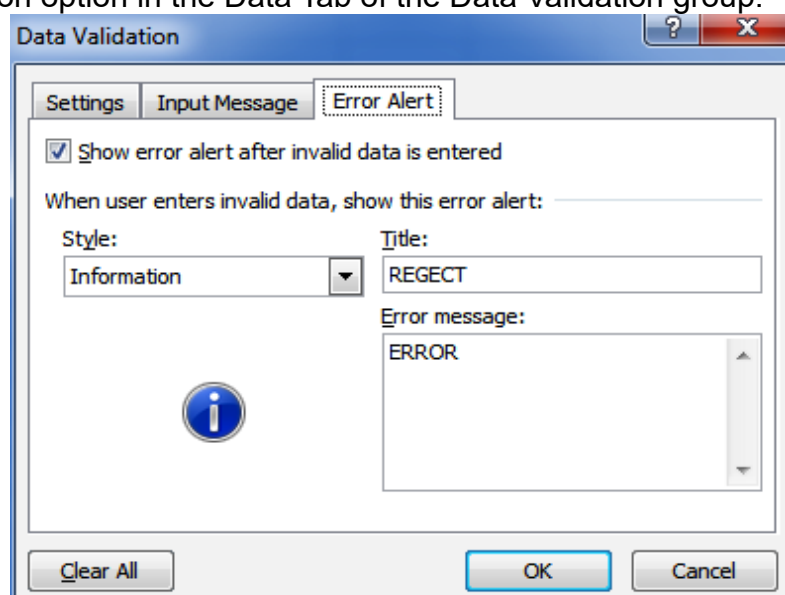
Figure 2.34 Data Validation Dialog box

Figure 2.35 Result of Data Validation

Data ➔ Data Tools ➔ Consolidate

This option is used to summarize and consolidate the results of the data available in different worksheets into a single master worksheet. The worksheet in which you consolidate the data can be stored in the same workbook as master worksheet or in another workbook. With the help of Consolidate option you can store information in a single worksheet and update it easily. Different status of data, type of data can be consolidated in some another format in a single worksheet. Let us take an example to understand this.

Figure 2.36 Data

As shown in the **Figure 2.36**, the sales details are stored in two different worksheets. Then go to the worksheet in which data is to be consolidated and click on the Consolidate option in Data Tools group. A dialog box will be opened as shown in the **Figure 2.37**. Here we need to specify the function that is to be applied on the data to be consolidated, then go to both the worksheets one by one, and select the data and add its cell references to All References by clicking on the Add button. Clicking on

196

the OK button will show the consolidated data of both the worksheets in the third worksheet as shown in the **Figure 2.37-a, 2.37-b**.
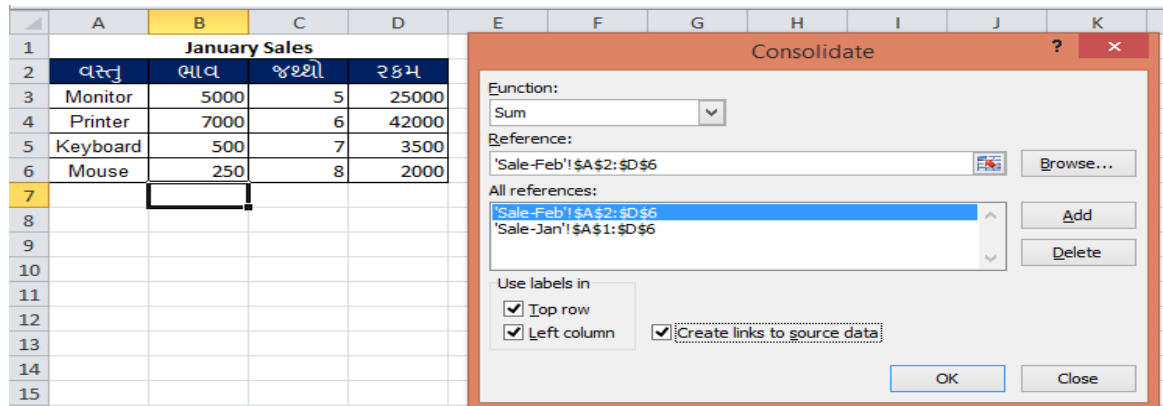
Figure 2.37 Consolidate Dialog Box

Figure 2.37-a Output of Consolidate

Figure 2.37-b Detailed output of Consolidate

Figure 2.37-b shows the addition of the rate, quantity and amount of all the items from both the worksheets. Lecture-2 is the name of the file.

Data ➔Data Tools➔What-If Analysis ➔Scenario Manager
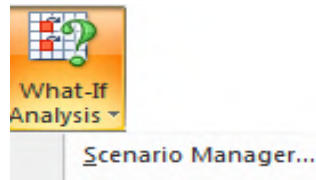
Figure 2.38 Scenario Manager

Scenario Manager: This option provides you the facility to see different values (scenarios) of a formula result. Let us try to understand this with an example.

Enter data as shown in the **Figure 2.39**, containing values for the Principal Amount, Rate of Interest, No of Years, and Interest Amount. Under the Interest Amount, the value in first row is calculated using the formula of simple interest, while in the second row formula of the compound interest is used.

	A	B	C	D
1	Principal Amount	Rate of Interest	No of Years	Interest Amount
2	10000	10	2	2000
3	10000	10	2	2100

Figure 2.39 Data
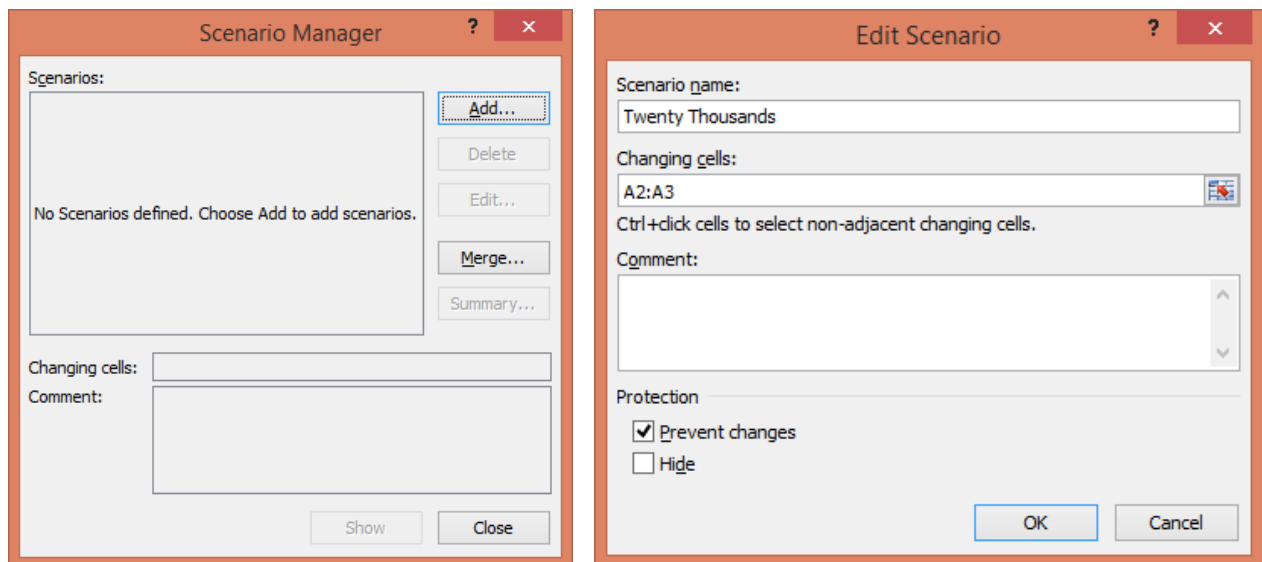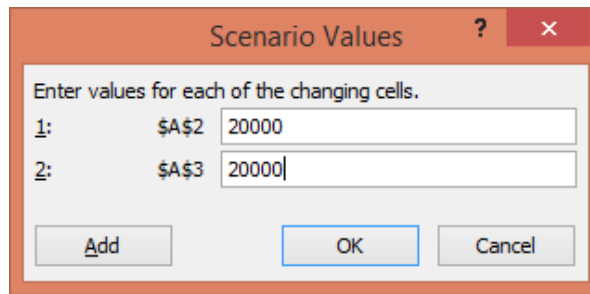
Figure 2.40 Scenario Manager

Let us now think of the scenarios in which simple interest and compound interest need to be calculated on the Principal amounts of 20000, 30000, 40000 and 50000. To create these scenarios, select the data and click on What-If-Analysis in the Data Tools. Clicking on the sub option of Scenario Manager a dialog box as shown in the **Figure 2.40** will appear. On clicking the Add button in it, will open the Edit Scenario dialog box as shown in the above figure.

In this dialog box, Scenario Name is to be given. The scenario name can be any name of our choice. Here we want to see what an Interest amount will be, when the Principal Amount is 20000.Hence in the Changing Cell type A2:A3 and on clicking the OK button, will open a dialog box as shown in the **Figure 2.41**. In this dialog box enter the values of A2 and A3 as 20000 and click on the Add button, thus adding a new scenario. Similarly other scenarios can be added for 30000, 40000 and 50000as shown in the **Figure 2.42**.
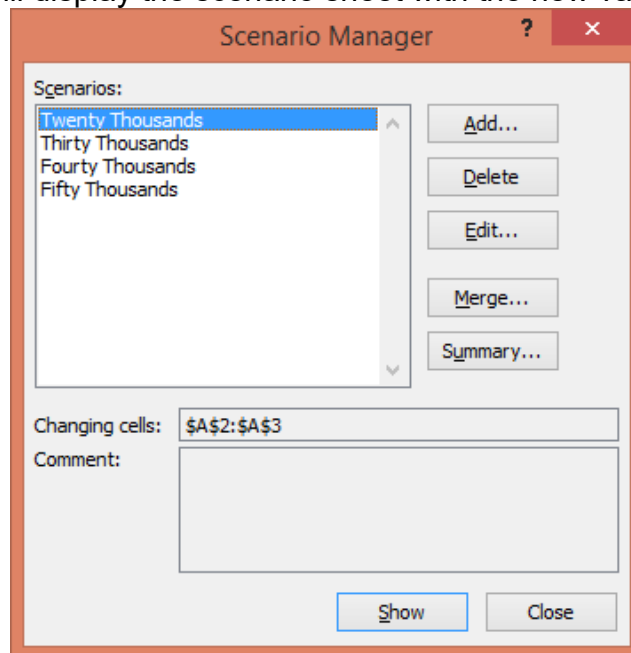
Figure 2.41 Scenario Values

Name of all the scenarios created will be shown as below. To remove a scenario, select its name and click on Delete button, similarly the scenario can be changed using the Edit button. To see the output of the scenario, select it and click on the Show button, this will display the scenario sheet with the new values.
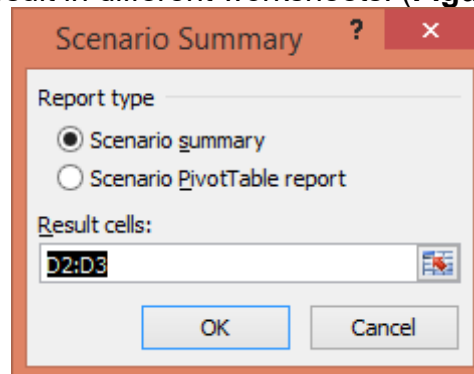
Figure 2.42 Multiple Scenarios

Clicking on the Summary button a dialog box as shown in the **Figure 2.43** is visible. Select the Scenario summary option in it, followed by entering the interested formula range in the Result Cells and click on the OK button. This will show the summary of different values and its result in different worksheets. (**Figure 2.44**)

Figure 2.43 Scenario Summary

We can change the data using this option, enter new record as well as view all the data in a summarized form.

Figure 2.44 Scenario Summary Output

The Scenario summary sheet shows the current values of the cells, values of cells as per the scenario, the value of current Result cell and value of Result cell after scenario is applied.

Data ➔Data Tools➔What-If Analysis ➔Goal Seek

Goal Seek: This option is used to get an exact desired output of a mathematical calculation. Three sub options Set Cell, To Value and By Changing Cells are available in the dialog box for this option. In Set Cell, only the address of cell that contains a formula can be entered, the value of the target is to be entered in To Value. In By Changing Cell enter an address of any one of the cells (by changing whose value the result is to be obtained) that has been used in the resultant formula. Let us take an example,

In this example the principal amount, rate of interest, number of years for which the principal amount is invested, and how much interest will be obtained is given. Here the principal amount is Rs. 250000, rate of interest is 10 percentage, number of years for which the principal amount is invested is 3. The interest is calculated with the help of simple interest formula ($I = P * R * N /100$), the interest calculated here is Rs. 75000.

Figure 2.45 Goal Seek

But now we want to see what needs to be done if only Rs. 50000 is to be obtained as interest instead of Rs. 75000? We need to change either the principal amount or rate of interest, or keep the amount for less number of years. To perform this

operation Goal Seek option is needed. A dialog box appears as soon as we click on the Goal Seek option.

When this option is to be used, initially the cursor has to be placed in the cell that needs to be changed (the cell containing the formula). The dialog box which opens when this option is clicked automatically contains the address of the Set Cell. As mentioned earlier in the two value box we need to type the value of the result that we want. Assume that we enter 50000 in it and then in By changing cell box select address of any one of the cells (cells containing principal amount, rate of interest or number of years) that we want to change, the address of the selected cell will be visible. By clicking on the OK button, the desired output will be obtained. Normally this option is used when large calculations are to be done.

2.9 OUTLINES
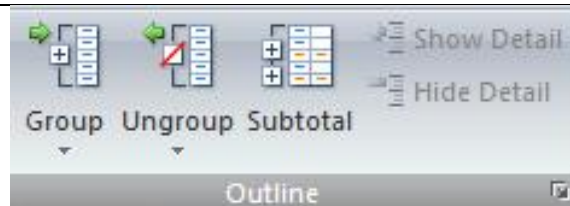
Figure 2.46 Outline

When there is huge amount of data in a worksheet, this option facilitates to arrange and view the data in groups. Also is it possible to show or hide the data based on this group. The data can be un-grouped using the ungroup option when not required. The Subtotal option allows to perform analysis and to total it for faster calculations.

Data →Outlines → Group

Group: As shown in the **Figure 2.47** different persons sell products belonging to different vendors. If we need to arrange this data in such a manner that the details of a person is shown together then with the help of Data → Sort option the data can be sorted on name, then select all the data and from the Outline group select Group option.

Figure 2.47 Data

As shown in the **Figure 2.48**, we can decide whether the group is to be created based on row or column.
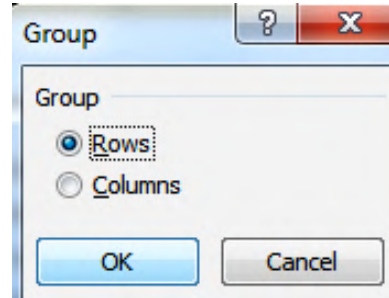
Figure 2.48 Group

As soon as we click on Rows we get the desired output. The output can be seen in the **Figure 2.49**. If the grouping was done based on Columns then it was possible to show or hide columns.

Figure 2.49 Output of Grouping

As seen in the **Figure 2.49** a line is visible on the left hand side. A '+' (plus) sign comes on the top and a '–'(minus) sign comes on the bottom of this line. Here when the '–'sign is clicked, the data is hidden and when a '+' sign is clicked the hidden data becomes visible on the screen again. Due to this option on the right side of the Outline tool, options like Hide Details and Show Details are given.

Once the group are created we can see options like 1 2 on the left side. This indicates that if we have created more than one group then the output of each of these groups can be seen by clicking on these numbers one by one.

Data ➔Outlines ➔ Ungroup

When we want to convert back the data that has been grouped into a normal dataset, then if the ungroup option of the Outline tool is clicked we get two sub options as shown in the **Figure 2.50**. Here if we directly click on the Clear Outline then we need to use the ungroup option.

Figure 2.50 Ungroup

Figure 2.51 Data after Ungroup

When the Ungroup option is selected, it will ask whether the group was based on row or column. Select the correct option, as soon as we click on either row or column the data will again become normal as shown in the **Figure 2.51**.

It is important to note that if the Subtotal has been done then that data will not be removed. To remove it, first we need to open the Subtotal dialog box by clicking on the Subtotal command, and then click on the Remove All, only then the groups and the subtotal can be removed.

Data ➔Outlines ➔ Subtotal

Subtotal option provides a facility to outline the data in different ways. The Subtotal option uses function like Sum, Count, and Average to summarize the data and keeps them in a group.

The subtotal option is used only when the data available is already sorted. If we have not sorted (ascending and descending) the data, then select the data and sort it using the Data Tools. Once the data is sorted select the entire data set as shown in the **Figure 2.51**. Now click on the Subtotal option which will open a new dialog box as shown in the **Figure 2.52**.
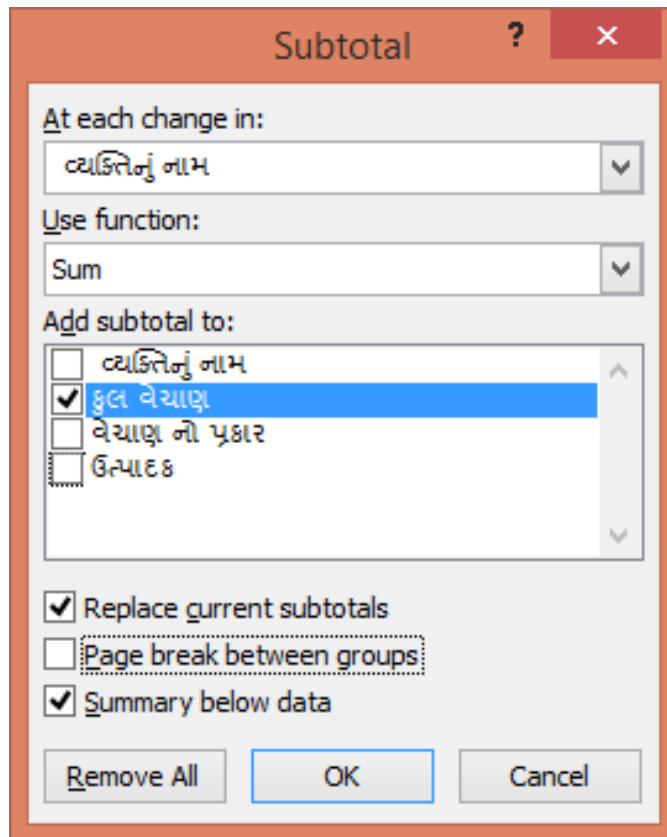
Figure 2.52 Subtotal Dialog box

In the '**at each change in:**' box select the column name that has been sorted, and in the '**Add subtotal to:**' box select the column in which subtotal is to be added. Here we need to find sales of an individual person, hence in the each change in: box person name and in the Add subtotal to: box Total Sales has been chosen. If a subtotal has been calculated previously then check Replace current subtotals option, which replaces the old subtotal with the new subtotal. If Summary below data is also checked then we will get the Grand total at the end. The output similar to the one shown in the **Figure 2.53** will be visible when the OK button is clicked.

Figure 2.53 Output of Subtotal

As can be seen in the **Figure 2.53,** on the left hand side three group options 1, 2, 3 can be seen. When the number 1 is clicked we will be able to see data as shown in the **Figure 2.54**. Here only the Title and the Grand Total have been displayed.

Figure 2.54 Output when 1 is clicked

When the number 2 is clicked, we will be able to see data as shown in the **Figure 2.55**. It displays the name of the person, total sale done by him along with the Grand Total. When the number 3 is clicked we will be able to see data similar to the one shown in the **Figure 2.53**.

Figure 2.55 Output when 2 is clicked

206

To remove the effect of subtotal, we first need to choose the Subtotal option. A dialog box as shown in the **Figure 2.52** will be opened, on the left bottom of which, there is Remove All option. Clicking on this option the effect of the subtotal will be removed and the data will come back to its normal form.

2.10 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

1. According to figure 2.2 create excel sheet and find total marks and percentage with the help of formula and function.
2. Find maximum and minimum marks in each subject.
3. Make a file in excel and sane it with name Myworksheet.
4. Add a new sheet in excel and name it mysheet and make it's tab colour brown.
5. Move mysheet to first sheet and copu it by the name Mysheet-1.
6. Hide mysheet and then unhide it.
7. Create excel sheet as figure 2.14 and remove all duplicate data that repeats in every columns.
8. Sort the data by the country name if data name and name are equal.
9. Display vinay's data of selling above 5000 with the help of data text and number filter.
10. According to figure 2.23 convert excel sheet data into three columns from one column .
11. After converting into three columns .circle the record with red colour which has selling less than 15000.
12. Insert a duplicate record of any record in the table and remove it using option 'remove duplicates'.
13. Collect quarterly exam data from one sheet and semester exam data from other sheet
14. Add name of the student and marks of three subjects and find total marks and percentage. And to find different values of percentage ,find marks needed in particular subject with the help of goal-seek.
15. Create different scenarios of marks of the student and make it's summary sheet.

Unit 3: Pivot Table, Charts and Review Tools in Excel 2010

<div style="float:right;">3</div>

Unit Structure

3.1 LEARNING OBJECTIVES

After studying this unit student should be able to:

- Create different types of Charts .
- Use Sparkline and Graphics in Excel.
- Consolidate and separate important data as per the requirement from a huge data set using Pivot Table
- Create chart for this using the Pivot Chart.

3.2 INTRODUCTION

In the previous chapter we have seen how to use different functions and formulas in Excel sheet. As well as Table formatting, Sorting of data. How different filters are used that is also discussed and how different Data Tools and Outlines are used that we have seen. This chapter provides detailing of Pivot Table. How it is used for different purposes. How different data can be represented in graphical form with the help of Charts that is discussed. This chapter also discusses about Spark lines and Graphics. Use of Review Tools is also covered in this chapter. With it, it also discusses Keyboard shortcuts.

3.3 PIVOT TABLE
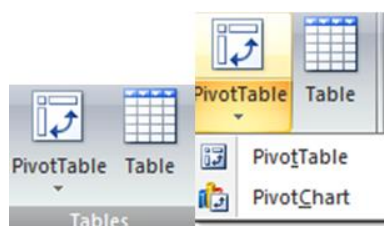
Figure 3.1 The Pivot Table

Pivot table is very fast and is a useful tool, used to summarize, analyze and present huge amount of data. With the help of pivot chart you can compare data, view type and variation of data easily. Pivot Table and Pivot Chart help you in taking efficient decisions for important dataset. Also it is feasible to answer some difficult questions very easily.

Let us take an example where sales of different products (vegetables and fruits) of different countries are listed. Now select all the data and go to the Insert tab, click on the Pivot Table option. This will open a dialog box as shown in the **Figure 3.2**. It shows an option that asks us whether the pivot table is to be placed in the same worksheet or another. Here as soon as OK button is clicked a dialog box will be opened as in the **Figure 3.3.**
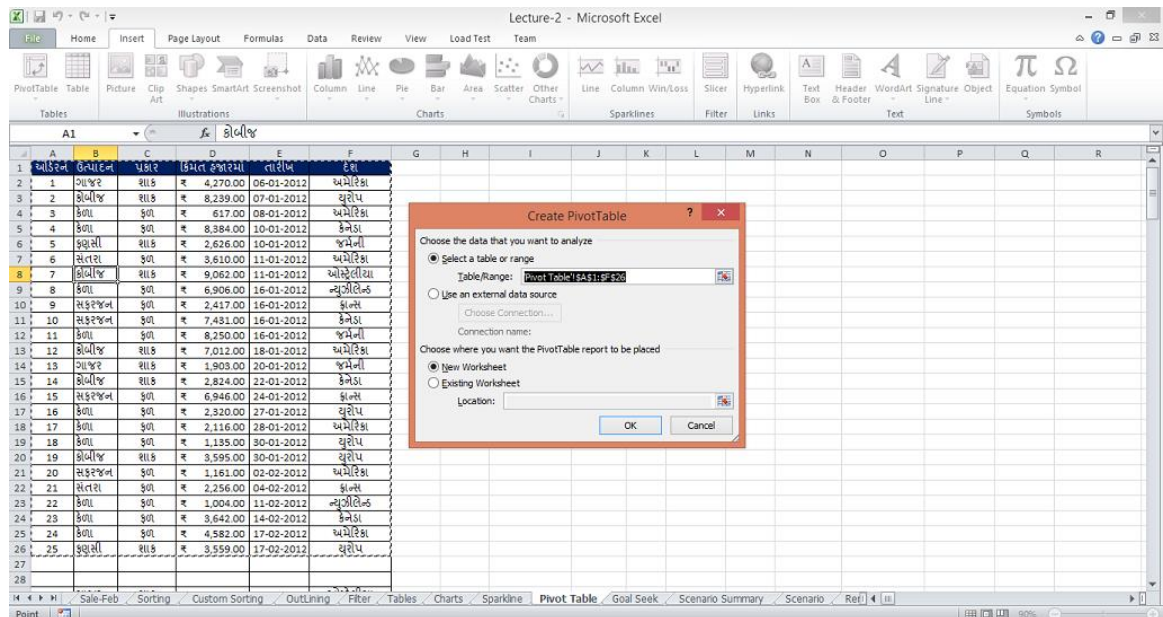
Figure 3.2 Pivot Table Example

In the right side here we are able to see the Field List as shown in the **Figure 3.4**. We can see Report Filter, Column Labels, Row Labels, and Values in it. We need to select the field names in the field list first. To select the field list go to the field and click on it, a Blank Pivot Table on the left side as shown in **Figure 3.3** will be filled with data.

To get the desired output when the Pivot Table is used, we need the fields like Report Filter, Column Labels, Row Labels and Values.

Row Labels: The value of the column names selected from the main table will be shown in the pivot table rows.

Column Labels: The value of the column names selected from the main table will be shown in the pivot table columns.

Values: Shows the sum, average, maximum, minimum or other function being selected at the intersection of the rows and columns.
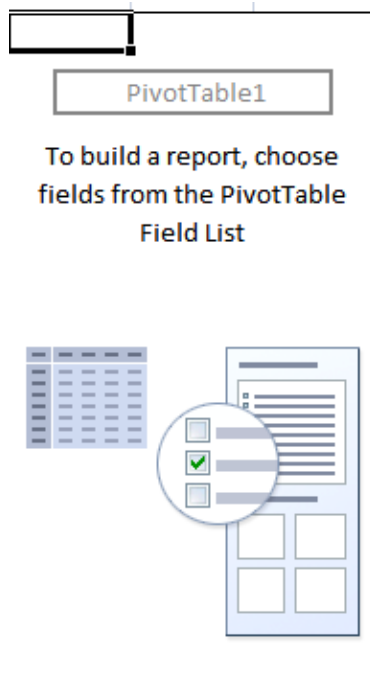
Figure 3.3: Blank Pivot Table
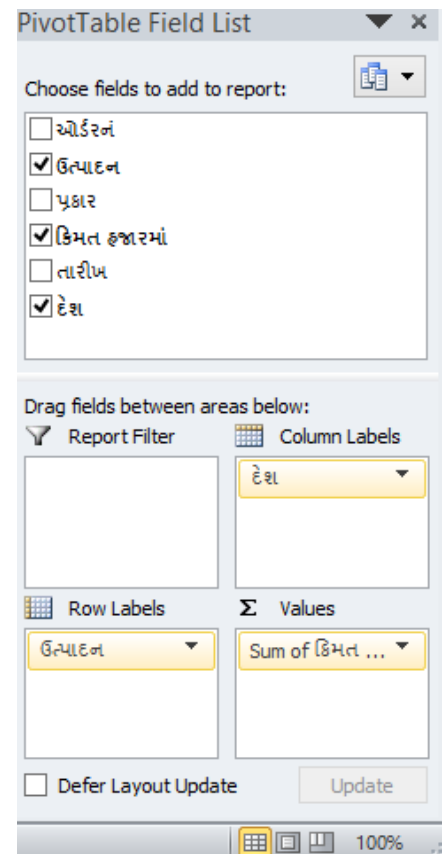
Figure 3.4 Pivot Table Field List

As shown in the **Figure 3.4** in the Pivot Table Field List, Product is selected as Row Labels, Country is selected as Column Labels and under the Values, and Sum of price is selected, hence in Pivot Table as shown in the **Figure 3.5**:

- The row will contain name of the products from the main table.
- The column will contain name of the countries from the main table.
- The intersection of the rows and columns will contain the sum of the price for a product sold in the corresponding country.
- The row will contain total of all products sold.
- The column will contain total of all products sold in each country.

Pivot table also provides you the facility to filter the data stored in the rows and columns. Thus we can hide unnecessary data.
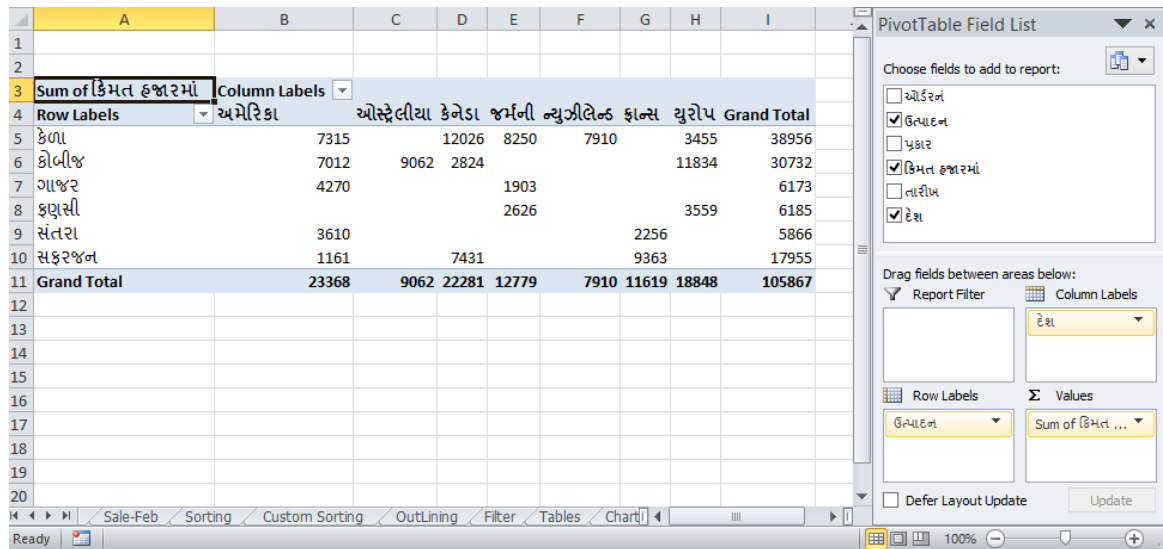
Figure 3.5 Output of Pivot Table
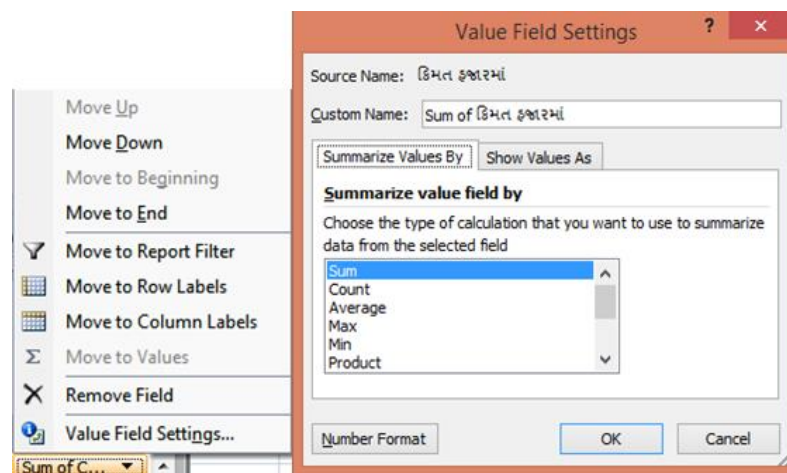
Figure 3.6 Value Field Setting

On the right hand side of the Pivot table a Field List option is given, within which when we click on the Values part a popup menu as shown in the **Figure 3.6** is visible. Using different options of this menu we can move a field, remove a field, or change a function.

Check Your Progress

1. Make pivot table entering data as figure 4.28 that shows total selling of vegetables and fruits in all countries.

3.4 CHART, SPARKLINES AND GRAPHICS

Figure 3.7 Charts

Chart is also recognized as the graph. In Excel charts are used to display specific data set graphically or to segregate information. As shown in the **Figure 3.8** we have data of students, their marks in different subjects, total marks and the corresponding percentages.

	A	B	C	D	E	F	G	H	I
1									
2			STUDENT NAME	COMP	HISTORY	ENGLISH	SANSKRIT	TOTAL	AVERAGE
3			ASHOK	66	88	77	54	285	71.25
4			BAKUL	54	65	23	65	207	51.75
5			DIPAK	26	76	43	34	179	44.75
6			GAURANG	48	45	56	24	173	43.25
7			JAY	69	77	66	77	289	72.25
8			NEEL	78	23	32	53	186	46.50
9			RAJESH	59	56	54	55	224	56.00
10			VIREN	18	77	87	12	194	48.50

Figure 3.8 Data

To create a chart the Insert tab is used. As soon as this tab is clicked a Chart tool is displayed. We can see different types of charts here. Almost 11 different types of charts like column, pie, line, bar, area, scatter chart are available here. Thus we have an opportunity to show the data in different ways.

Here we will create a graph based on the student names and their marks in four different subjects. For this, we will have to first select the name of the student and all the four subjects. (The data can be selected using shift + arrow keys or using a mouse drag).

Once the data is selected we need to select the type of the chart (graph) that we want to create. Here we are selecting Column chart. As soon as the Column chart is clicked, it asks the sub option of what type of column chart is to be created. See **Figure 3.9.**

Here we select the first option, as soon as we click on it a chart as shown in the **Figure 3.10** is visible to us.
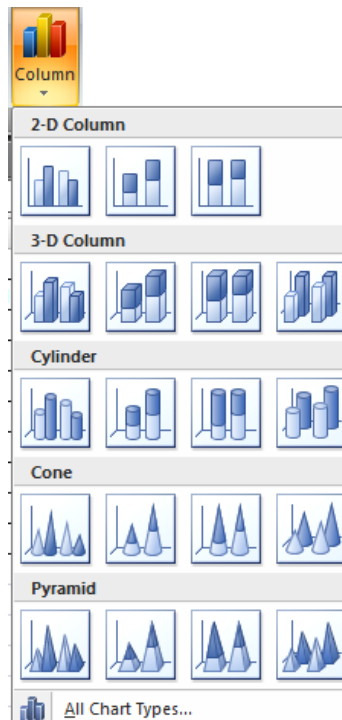
Figure 3.9 Column Chart Types
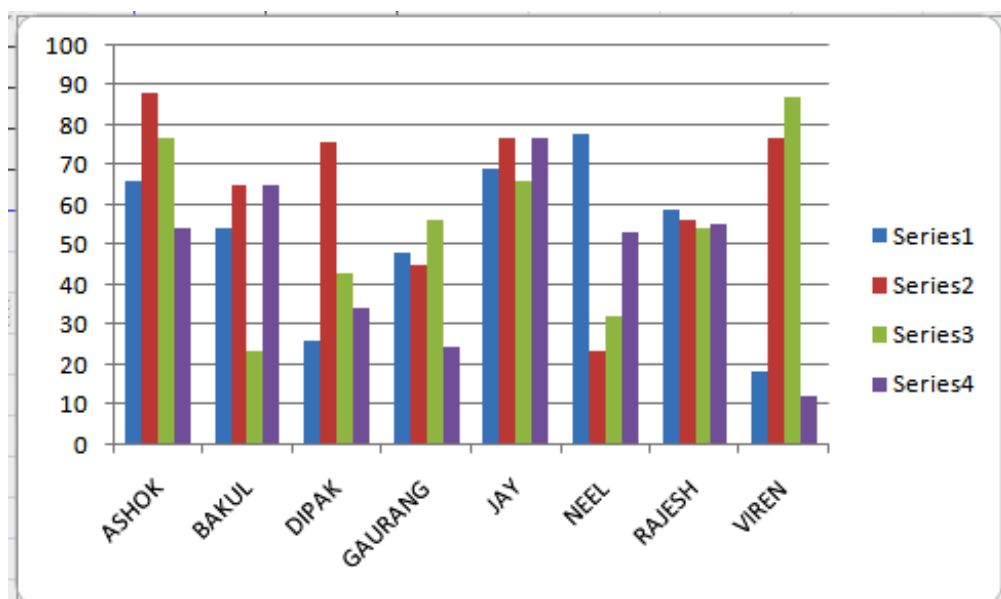
Figure 3.10 The Column Chart

A Chart tool as shown in the **Figure 3.11** will be visible on the screen as soon as the chart is created.
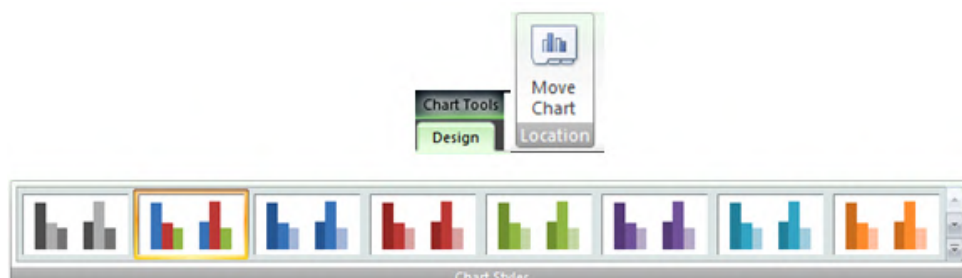
Figure 3.11 The Chart Tool

It is possible to change the design of the graphs with the available designs.

A Move Chart tool is available in the Chart Tool. We can easily move the chart to another sheet with the help of it. When we click on the Move Chart option a dialog box is opened. It displays the list of the sheets where the chart can be moved, selecting the desired sheet the chart is immediately moved to that sheet. (Figure **3.12**)
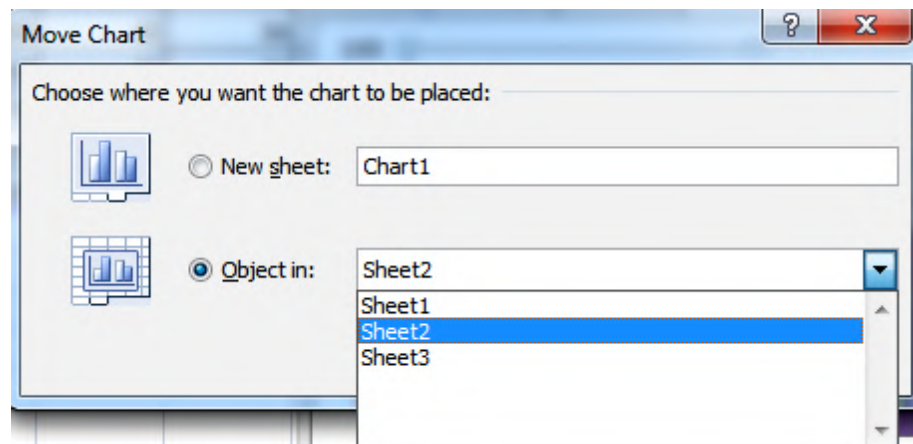
Figure 3.12 The Move Chart Dialog Box
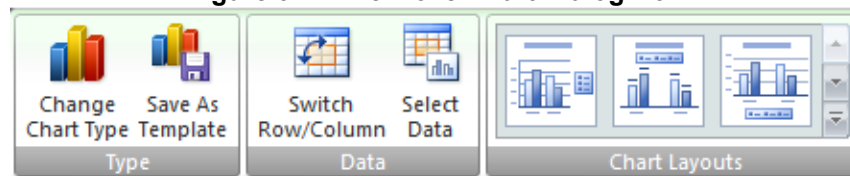
Figure 3.13 Chart Tools

The first tool available in the Chart Tools is '**Change Chart Type**'. With the help of it we can easily convert the column chart to pie, line or any other chart type. We simply need to select the chart type and the current chart will be converted to the new type. (**Figure 3.14**).
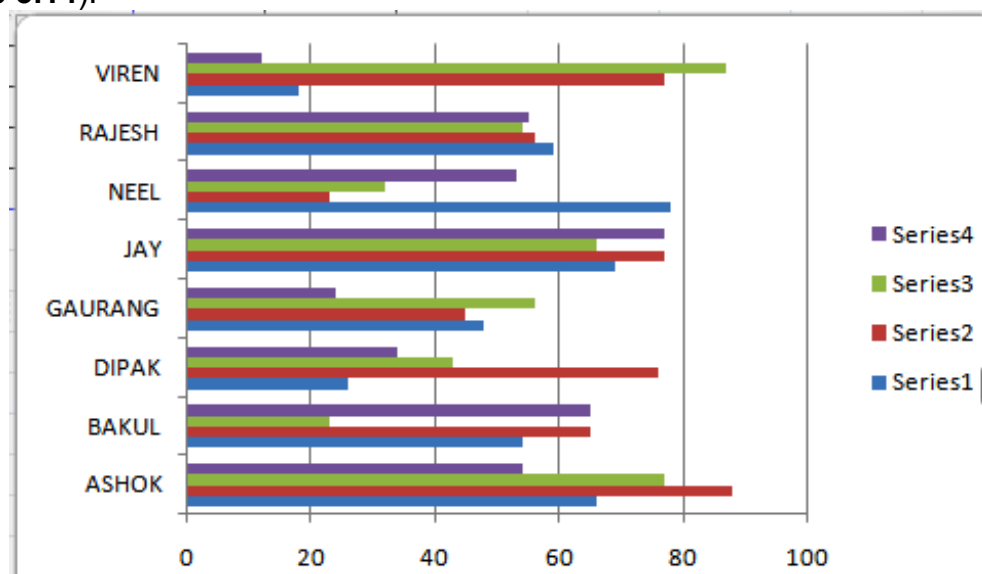
Figure 3.14 Changing Chart Type

The second tool of Chart Tools is '**Save As Template**'. With the help of it we can save the chart. Here the chart will be saved with the desired name , with the extension .crtx.(**Figure 3.15**).
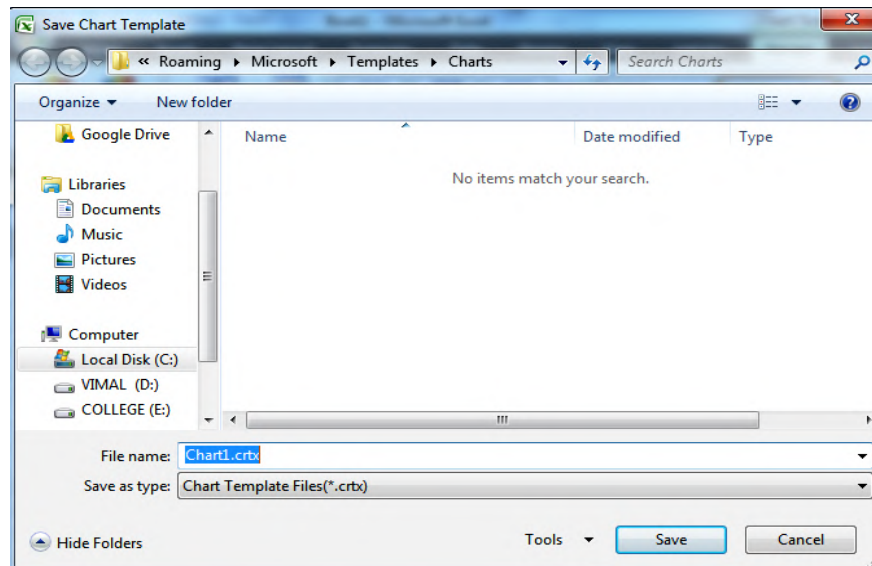
Figure 3.15 Saving Graph

The third tool of the Chart Tools is '**Switch Row/Column**'. In this example we have created the graph based on row (based on the name of the student). Now if we want to create a chart based on the column, then when this tool is clicked a new graph is created. (**Figure 3.16**).
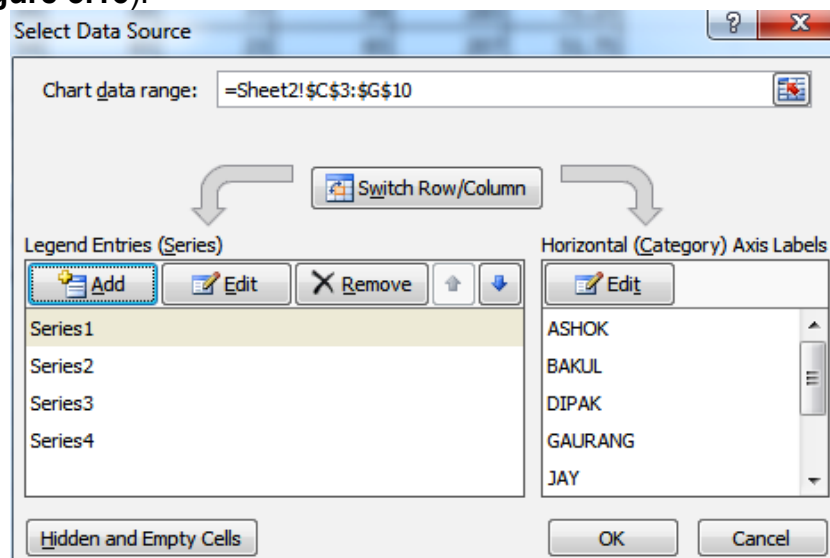
Figure 3.16 Select Data Source

'**Select Data store**' is the fourth tool in the Chart Tools.. With the help of it we can see the range (rows and columns) that we has been selected for the chart. We can change the range of cells using the Edit Series option.as shown in the **Figure 3.17**.
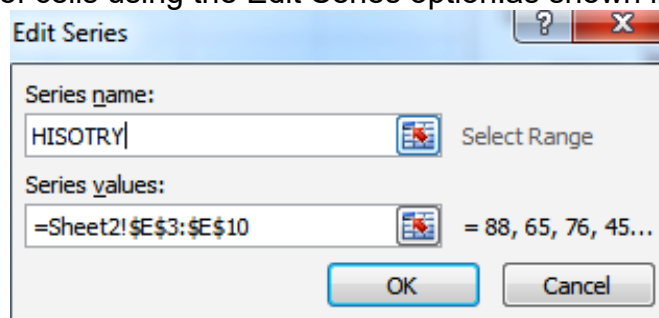
Figure 3.17 Edit Series

216

There is an option of Legend Entries (Series), as in the **Figure 3.14** which have been displayed on the right hand side as Series 1, Series 2, and Series 3 and so on. Instead of it if we want to write the names of the individual subjects, then it can be done by clicking on the Edit button. (See **Figure 3.18**)
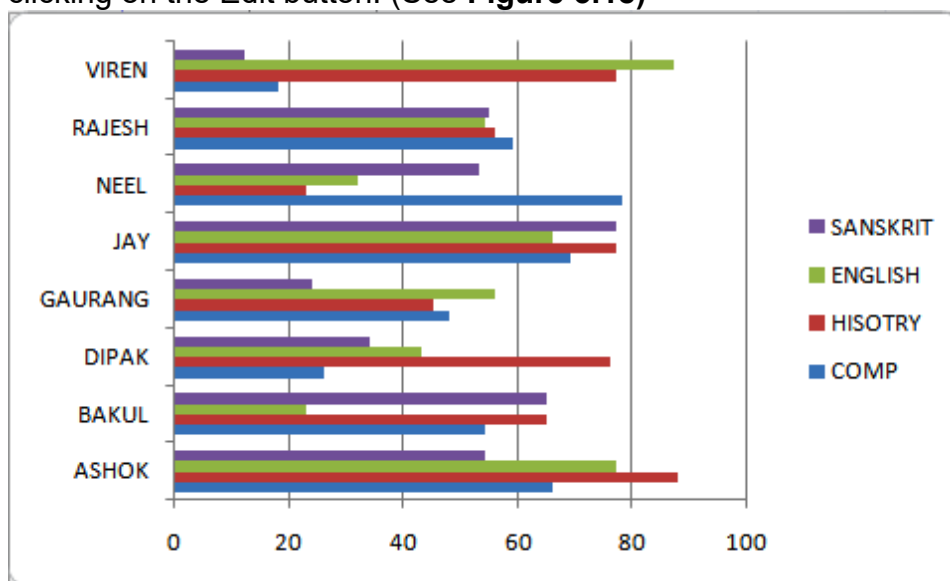
Figure 3.18 Changing Series

'**Chart Layout**' is the next tool in the Chart Tools. With the help of it we can add a Chart Title. We can also show numeric data, for example marks or average of the subject as shown below. Charts can be displayed in different ways like with the chart title, with the data table, with Axis title as shown in the follwing figures (**Figure 3.20, Figure 3.21** and **Figure 3.22**) respectively.

Figure 3.19 Chart Layout

Chart Title

DR.BAOU

Figure 3.20 Chart Title

DR.BAOU

	ASHOK	BAKUL	DIPAK	GAURA NG	JAY	NEEL	RAJESH	VIREN
■ SANSKRIT	54	65	34	24	77	53	55	12
■ ENGLISH	77	23	43	56	66	32	54	87
■ HISOTRY	88	65	76	45	77	23	56	77
■ COMP	66	54	26	48	69	78	59	18
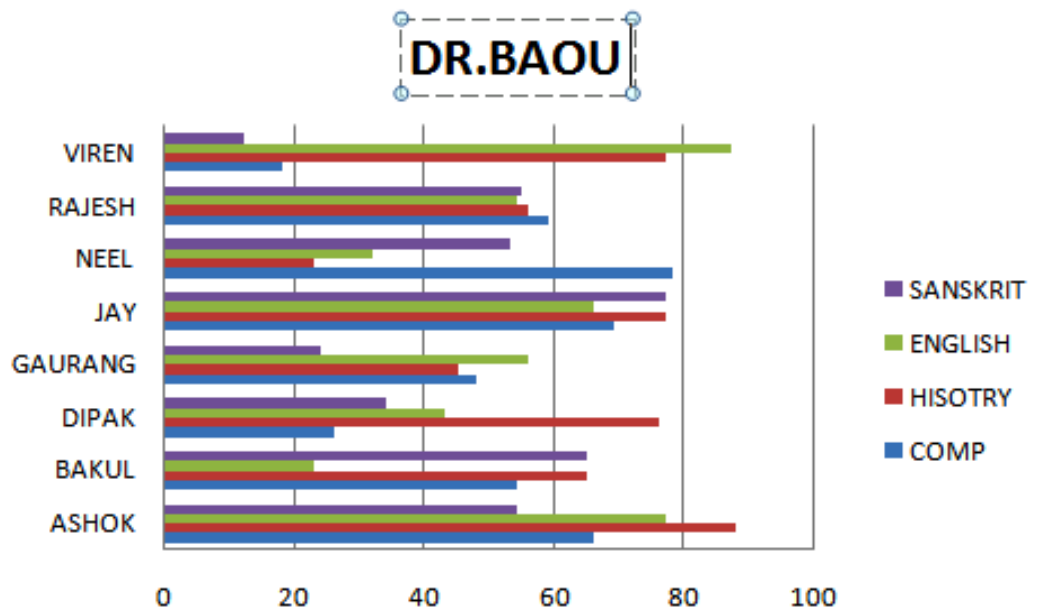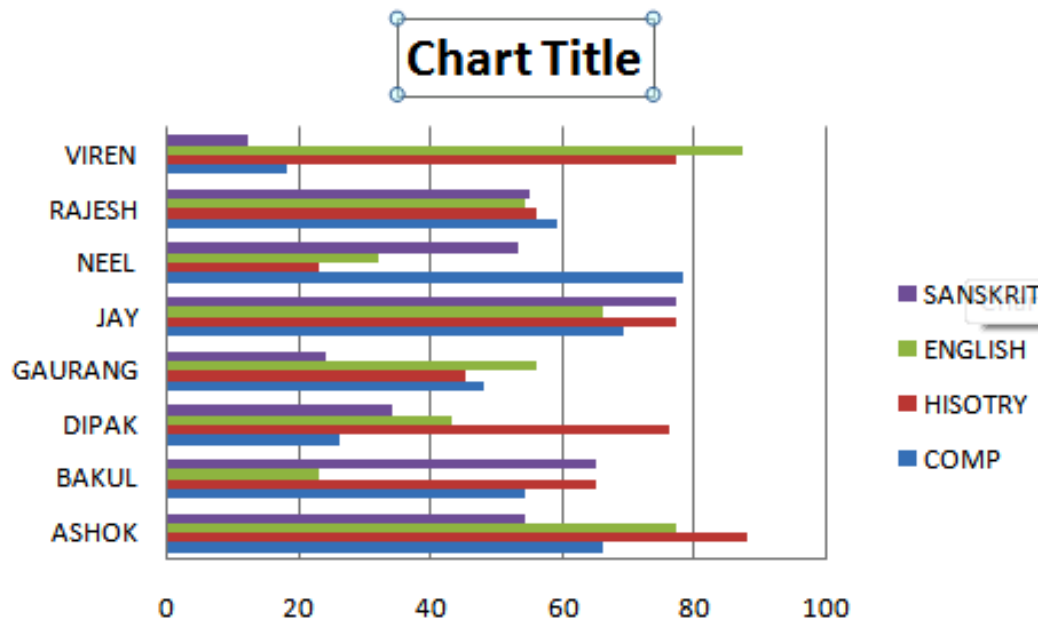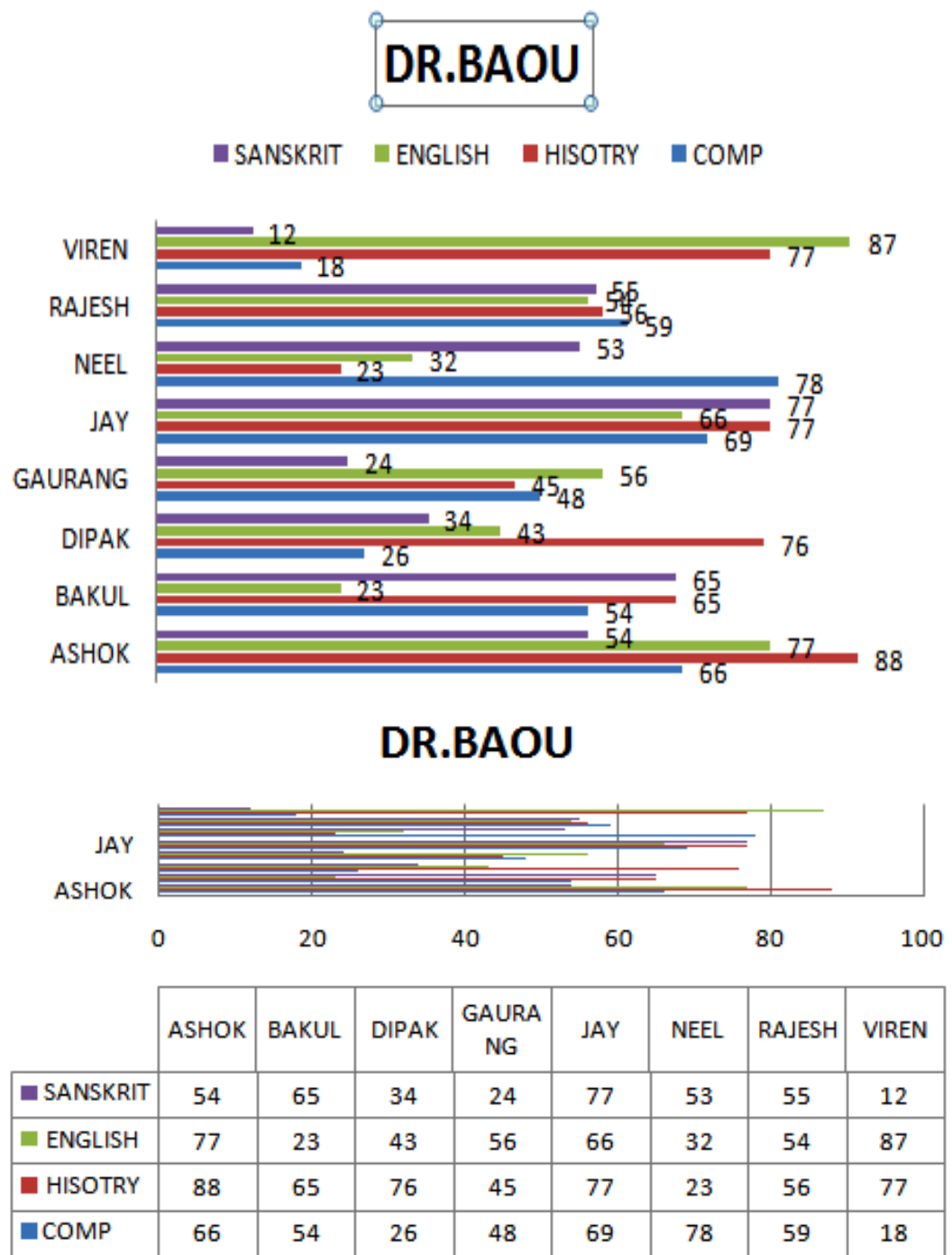
Figure 3.21 Chart with data table

Chart Title
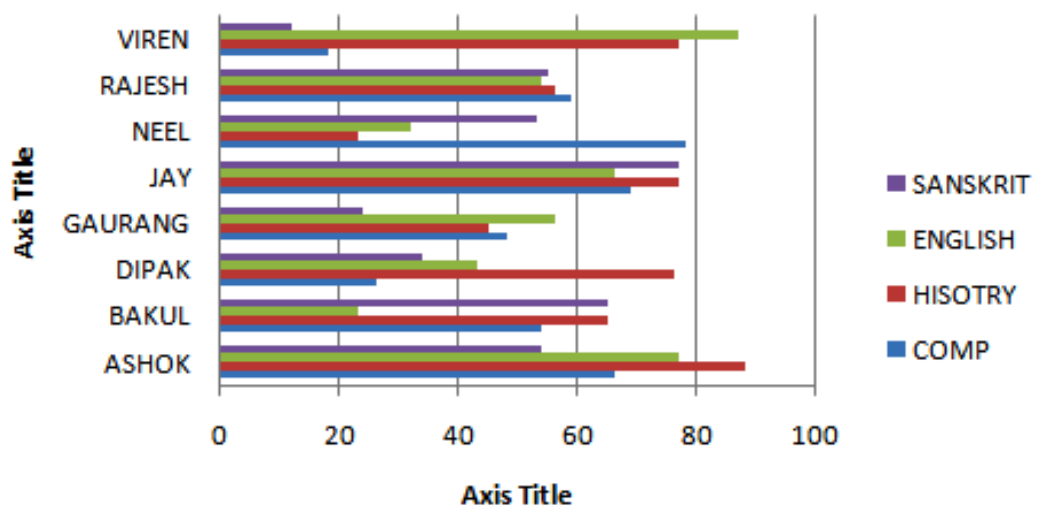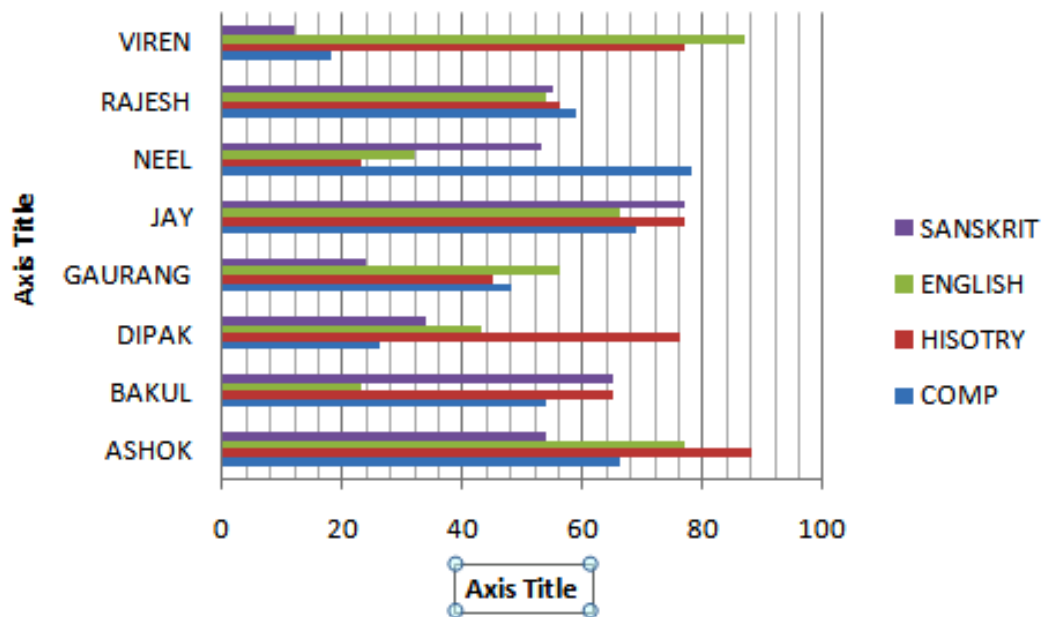
Figure 3.22 Axis Title

Sparkline

Normally the charts that can be embedded in a single cell is called sparkline. As sparkline is small we can work by keeping them along with the worksheet. In the previous example we have used name of the students, their marks in different subjects, total marks and their percentages. Let us now create a sparkline for the subject of Computers. To perform this operation we first need to select the marks in the subject of computer. Then select a line chart. Click on the first option (Line), you will be able to see a sparkline as shown in the **Figure 3.23**. Intialy the sparkline will come with a horizontal line. we can deselect the option of the horizontal line from the Line chart.. We can also change the size of this sparkline if required.
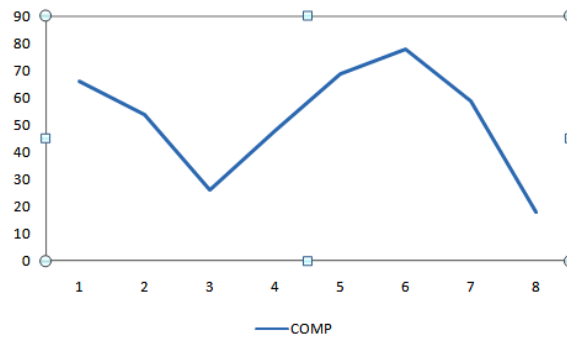
Figure 3.23 Sparkline

We can get coloured sparklines by selecting different designs.
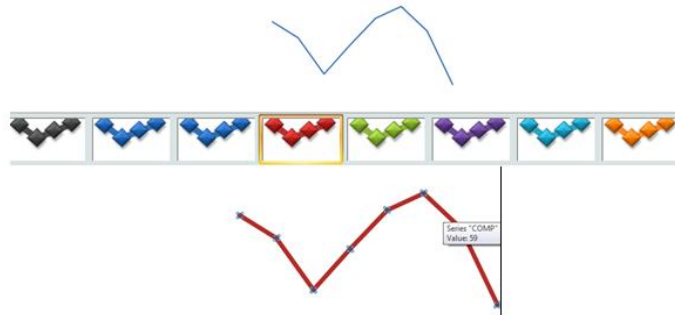
Figure 3.24 Different Designs

Check Your Progress

1. Create a column chart entering data as figure 2.1-b that shows name and total marks.
2. Enter data as figure 2.27 and create a pie chart that shows what percentage of selling is done of the total selling by a person.
3. Enter data as figure 2.1 –b and for each marks create a sparkline at the end of the column.

3.5 REVIEW TOOLS

Figure 3.25 Review Tools

Review ➜Proofing ➜ Spelling

Normally whenever we enter data, there is the possibility of some spelling mistakes always. . The Spell Check option can be used to check the spellings.

This option is available to us under the Review Tools, Proofing option. The shortcut key to activate the spell check is F7. This option when activated will check each and every spelling, and for the wrong spellings it will provide suggestive list of other relevant spellings that can be used. But the computer will display all the available spellings in its dictionary to us. If the suggestion is to be accepted then we need to click on the Change. If we don't want to use the suggestion then Ignore has to be

clicked. The Spell Checker in this case will move on to the next word. Once all the data is checked a message Spell Check Complete will appear on the screen,
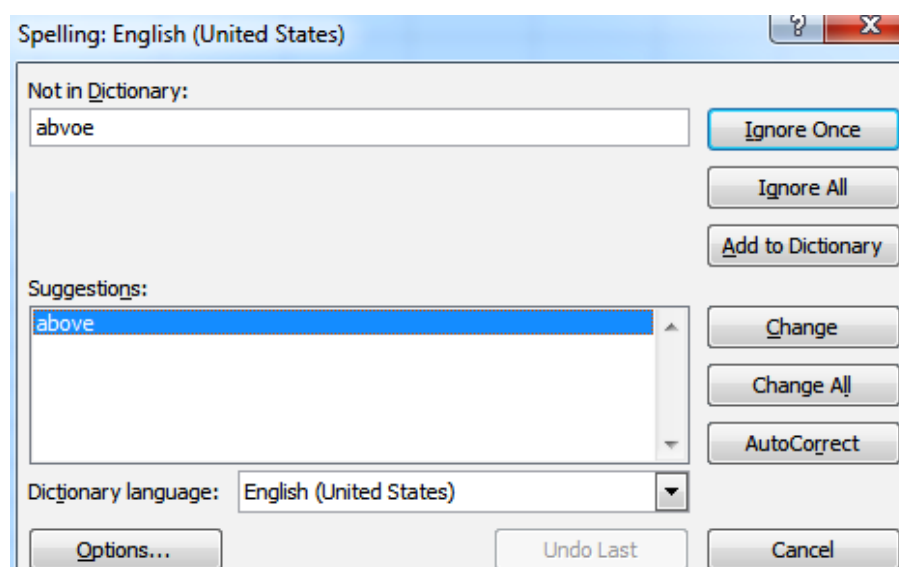
Figure 3.26 Spell Check

Review ➔ Proofing ➔ Research

This option is used usually when we need to find out a reference or a gist (how or where can the word be used) of a word from the available reference books. Let us try to understand with an example: Assume that we have written a word *above*, a research box will be opened as soon as we press Alt key and click the left mouse button on this word. We will be able to see the reference and the gist of this word in this box.

Review ➔ Proofing ➔ Thesaurus

This option helps us to find the synonyms of any word. For example for the word *Above*, Thesaurus will give the list of synonyms words as shown in the **Figure 3.28**

Review ➔ Proofing ➔ Translate

This option is used to translate the text written in English language into any other language. For example if we want to convert the word *this* into French language, then select the word and click on Translate, This will open a dialog box as shown in the **Figure 3.29**. Selecting French from this list in the dialog box, followed by pressing the Enter key, will translate the word into the French language. (**Figure 3.29**)
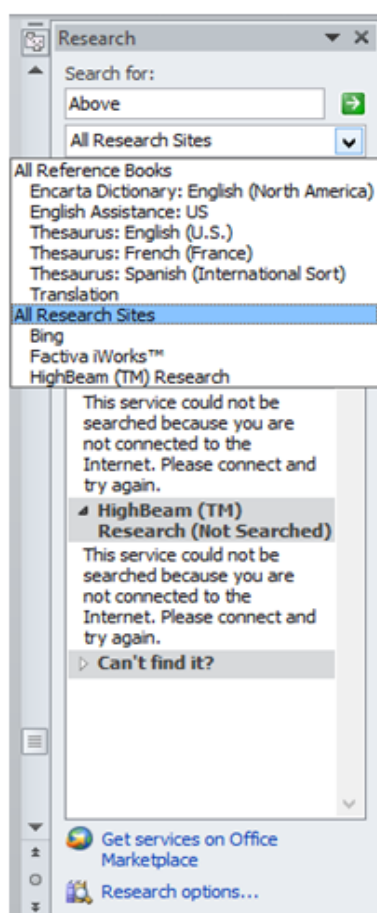
Figure 3.27 Research **Figure 3.28 Thesaurus** **Figure 3.29 Translate**
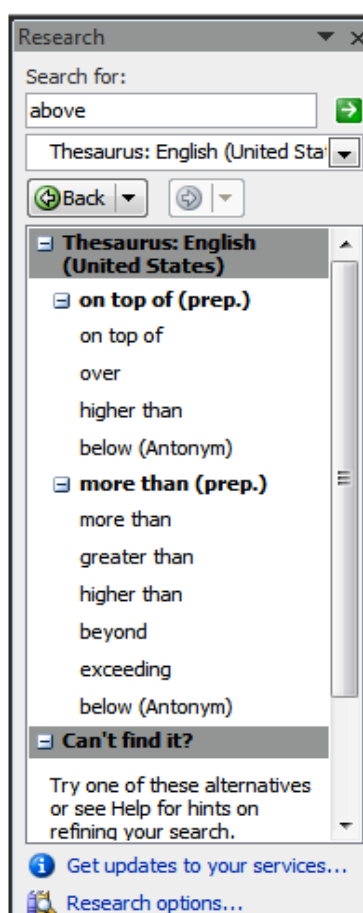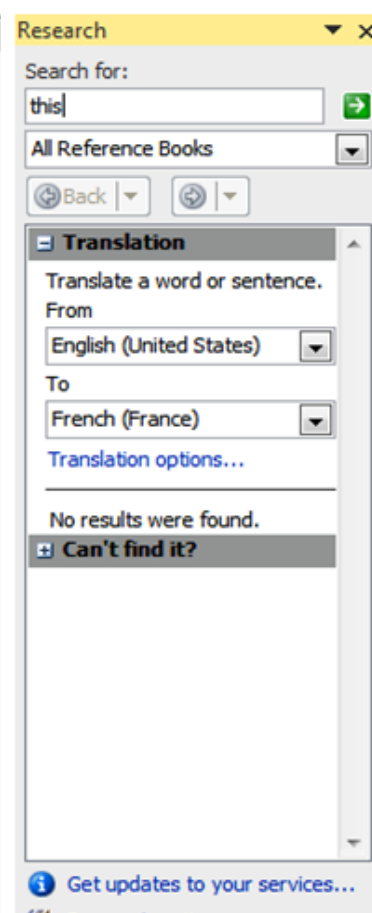
Review ➜Comment

When we want to provide additional information for data then this option is used. We can write the meaning, reference or any other detail about the data in the comment.

Review ➜Comment ➜ New Comment

We can write comment on any word. As shown in the **Figure 3.30,** a box appears as soon as we keep the cursor on the word a*bove*, and click on the Comments option in the Review Tools. We can write the desired comment in this box. Once the comment is written, a red colored dot is visible in the cell where comment has been written. When the cursor is brought on to this red dot, the comment that is written for this cell will be visible.
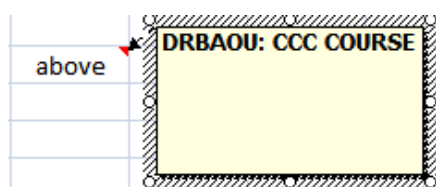
Figure 3.30 The Comment

Review ➜Comment ➜ Delete

This option is used to delete any comment that has entered for any word. To do so, go to the cell whose comment is to be deleted, and select this option. .

Review ➜Comment ➜ Previous

If we have written more than one comments in our sheet, then using this option we can see the previous comment.

Review ➜Comment ➜ Next

If more than one comments are there in a sheet, then this option allows us to see all the comments one by one.

Review ➜Comment ➜ Show/Hide Comment

This option is used to show or hide a comment that has been written within a cell. For performing this action, t we need to go to the cell where the comment is written. Clicking on this option, the comment can be made visible and invisible alternatively.

Review ➜Comment ➜ Show All Comments

This option is used to see all the comments in worksheet. It is possible to see all the comments given by the user at once.

Review ➜Changes ➜ Protect Sheet

This option is used if we need to protect our worksheet, a cell or a specific column. It is necessary to protect our sheet so that no one can copy the data or change the data. . Suppose we have some data as in the **Figure 3.31**.
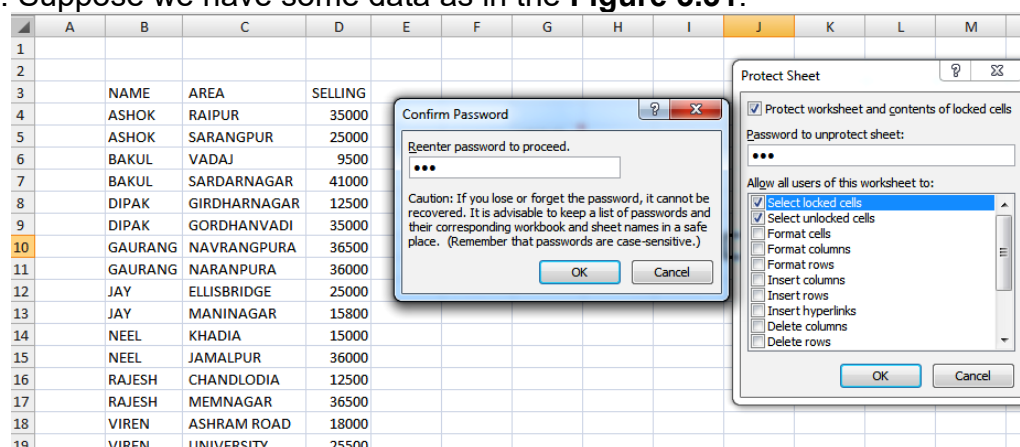
Figure 3.31 Data

We can see the Protect Sheet in the '**Changes**' option of the '**Review Tools**'. Clicking on this option will open a dialog box as shown above. It asks us whether we want to protect the whole sheet, some specific cell, column or row. This effect will be applicable to only that option being selected from the list.

We need to enter a password to protect the data. The password can contain alphabets as well as numbers. Once the password is entered and the OK button is clicked, a Confirm Password dialog box will appear. Entering the same password

again and clicking on the OK button, the data can be protected. . If anybody tries to delete the data being protected, then a message as shown in the **Figure 3.32** will be displayed.
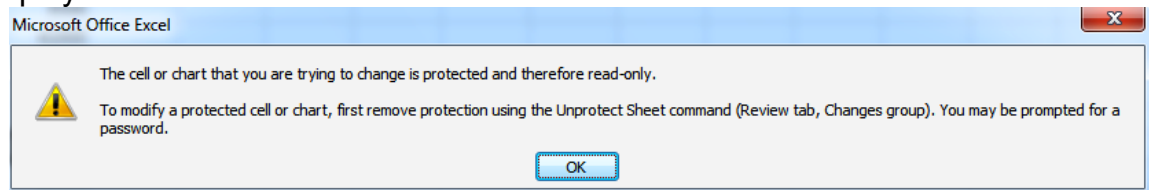
Figure 3.32 Message (displayed when data is accessed or deleted by anybody)

If we need to unprotect the sheet, then the option '**Unprotect Sheet**' available in the Changes option of Review Tools can be used. Clicking on this option will show a dialog box as shown in the **Figure 3.33**. By entering the correct password the sheet will get unprotected.
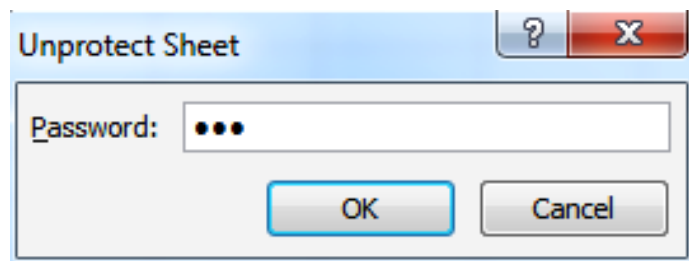
Figure 3.33 Unprotecting Sheet

Review ➔Changes ➔ Protect Workbook

This option is used to protect an entire workbook, thus protecting all the worksheets within the workbook.

. Clicking on this option will show some sub options as in the figure below.
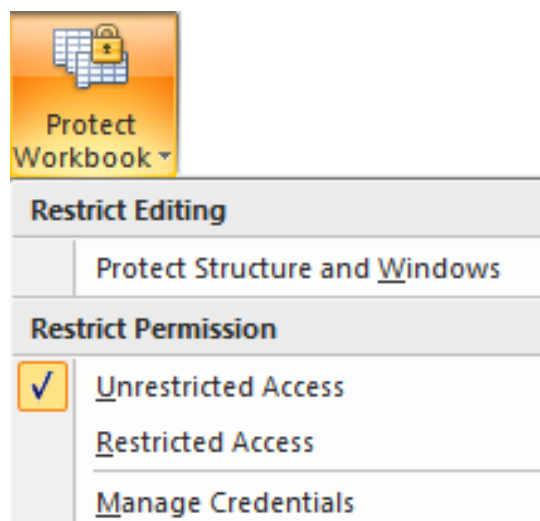
Figure 3.34 Protect Workbook

. In case we want that no one should be able to make changes, then we need to select Unrestricted Access. In order to provide some limited editing options Restricted Access has to be selected.

Review ➔Changes ➔ Share Workbook

This option is used when we need to share a workbook.

Selecting this option will open a dialog box as shown in the **Figure 3.35**. We can see the workbook name here. Selecting the workbook, followed by clicking the Enter key, the workbook can be activated for sharing.
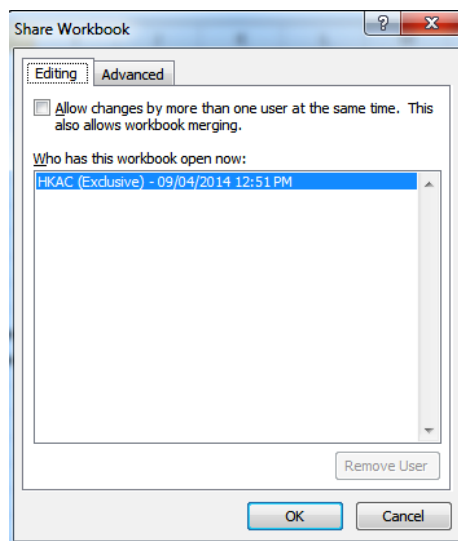
Figure 3.35 Protect Workbook

Check Your Progress
1.correct spelling mistakes in your worksheet, find synonyms and use translate option.
2. make your worksheet password protected.

3.6 KEYBOARD SHORTCUTS

A list of useful Excel keyboard shortcuts is given in table below:

Key	Meaning
Arrow Keys	To move up, down, left or right by one cell
Page Down/Page Up	To move up or down by one screen size
Alt + Page Down /Alt + Page Up	To move left or right by one screen size
Tab/Shift + Tab	To move right or left by one cell
Ctrl + Arrow Keys	To move to the next cell containing data from the active cell
Home	To move to the starting of a row
Ctrl + Home	To move to the first cell of the worksheet
Ctrl + End	To move to the last cell that contains data from active cell
Ctrl + f	Selects find option in Find and Replace dialog box

Key	Meaning
Ctrl + h	Selects replace option in Find and Replace dialog box
Shift + F4	To find the last find option again
Ctrl + g (or f5)	Goto dialog box
Alt + Arrow Down	Auto complete option
Shift + Space	To select an entire row
Ctrl + Space	To select an entire column
Ctrl + a	To select an entire worksheet
Ctrl + Shift + Page Up	To select the last worksheet
Shift + Arrow Keys	To increase the selection by one cell
Ctrl + Shift + Arrow Key	To take the selection to the last cell containing data in a row or a column
Shift + Page Down/Shift + Page Up	To move up or down the selection by one screen size
Shift + Home	To move selection to the first cell of the desired row
Ctrl + Shift + Home	To select the cells up to the first cell containing the data
Ctrl + Shift + End	To select the cells up to the last cell containing the data
F2	To edit an active cell
Alt + Enter	To enter a new line in the active cell
Enter	To complete an entry
Shift + Enter	To complete cell entry and to move up
Tab/Shift + Tab	To complete cell entry and to move towards the left or right side
Esc	To cancel an entry
Backspace	To remove the character on the left side of the cursor
Delete	To remove the character on the right side of the cursor
Ctrl + ; (semicolon)	To add the current date
Ctrl + Shift + : (colon)	To add the current time
Ctrl + c, Ctrl + x, Ctrl + v	To copy, cut and paste data
Ctrl + Alt + v	If clipboard has data then it shows the Paste Special dialog box
Ctrl + z	To undo the last change
Ctrl + y	To redo the last change again
Ctrl + 9	To hide a row
Ctrl + Shift + 9	To unhide the previously hidden row
Ctrl + 0 (zero)	To hide a column
Ctrl + Shift + 0 (zero)	To unhide the previously hidden column
Alt + Shift + Arrow Right	To group rows or columns
Alt + Shift + Arrow Left	To ungroup rows or columns
Ctrl + Space	To select an entire column
Alt + o, ca	To make the width of a column equal to the length of the data
Alt + o, cw	To make the width of a column as per the requirement
Alt + o, ra	To make the height of column equivalent the height of the data

Key	Meaning
Alt + o, re	To make the height of a column as per the requirement

3.13 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

Q1. Choose the correct option
1. What is the cell that contains the data in Excel-2010 known as?
   A) Active cell B) Select cell C) Current cell D) None of these
2. Which of the following type of data can be entered in a cell within Excel-2010?
   A) Numbers   B) Text   C) Formula   D) All of these
3. Which of the options given below are not available in the fill series dialog box of Excel-2010?
   A) Max value B) Type   C) Step Value   D) Series In
4. Which of the following operator has first precedence in Excel-2010?
   A) *   B) /   C)   ^   D)   +
5. What can be used in Excel-2010 for calculations?
   A) Formula   B) Function   C) a and b   D) only a

Q2. Choose the correct option and fill in the blanks.
1. In Excel-2010 _____ reference does not change the value of the cell when copied. (absolute, relative)
2. In Excel-2010 _____ refers to a chart that can be embedded in a single cell. (Sparkline, Slicer)
3. The _____ is a shortcut key to select an entire row in Excel-2010. (Ctrl+Space, Shift+Space)
4. In Excel-2010, _____ chart is used for only one series. (Pie, Column)
5. The _____ function is used to find an average of numbers in Excel-2010 (Average, Sum)

Q3. State whether the following statements are true or false.
1. In Excel-2010 comment is used to give additional detail for the entry within a cell.
2. In Excel-2010 the continuous information separated by comma (,) can be converted to columns using Data → Data Tools → Remove Duplicates option.
3. In Excel-2010 the Goal Seek option is used to get a specific output for a numeric calculation.
4. In Excel-2010 to use the Subtotal option the information needs to be in a sorted order.
5. In Excel-2010 once a chart is created it can be moved to another sheet.

Q4. Match the Following.

	A		**B**
1.	A$2	a.	Predefined formula
2.	$A2	b.	Written with the help of variable, constant and operators.
3.	Function	c.	When formula is copied, column will not change.
4.	Formula	d.	Shows selected rows only, when some given conditions are true.

5. Filter   e.   When formula is copied, row will not change.

Answers

Q1   1-A (Active Cell), 2-D (All of these), 3-A (Max value), 4-C (^), 5-C (a and b)

Q2   1-Absolute, 2- Sparkline, 3- Shift+Space, 4-Pie, 5-Average

Q3   1- True, 2-False, 3- True, 4-False, 5- True

Q4   1-c (When formula is copied, column will not change)

         2-e (When formula is copied, row will not change)

         3-a (Predefined formula)

         4-b (Written with the help of variable, constant and operators)

         5-d (Shows selected rows only, when some given conditions are true)

Unit 4: Basics of Microsoft Power Point 2010

4

Unit Structure

4.1 LEARNING OBJECTIVE

After studing this unit student will be able to do the follwing:

- Create 'Efficient Presentation' using Power Point 2010 by creating different types of slides.
- Add Text, Theme, Picture, differet Shapes and Audio and Video to make the slides attarctive.
- Save a presentation in various formats and print a Presentation.
- Give different effects using Slide Transition option when the slide changes.

4.2 INTRODUCTION

Nowadays, many skills are required to stand out in this competitive world. A skillful person becomes more successful in his work. Presentation skills (Art of Presenting Information) have gained a great deal of importance these days. Presentation means to convey our ideas and information effectively, so as to make them acceptable by the audience. A professional presentation can provide more information to the audience in less time, and the audience can easily comprehend it. It enables a person to inform, persuade and entertain the audience, and thus forms an integral part of our academic or professional career. At times it becomes difficult to understand a piece of information or an event narrated verbally; the same task can be performed more effective and within no time if aided by a picture. Picture makes your presentation more attractive and colorful and its impact can be increased by adding sound. Animation can also be added to a presentation which can ultimately work wonder. All these features enable us to make pace with the today's world where it is necessary to present more information, most effectively and in less time.

4.3 INTRODUCTION OF POWER POINT 2010

Power Point is well-known presentation software. The basic version of Microsoft Power Point has undergone many changes through the years, and the new versions are available in the market. Currently, Power Point 2010 is more in use. Power Point 2010 is a Program item of MS Office 2010. Previously, Office 2007 and Office 2003 were most commonly used.

With the help of Power Point, we can address a large audience with fewer efforts. We can also present our ideas or information more clearly and exquisitely because the presentation can be accompanied with pictures, audios and videos, thus making the presentation more meaningful. The information becomes more interesting because of this. Move rover with the help of various tools available in Power Point, we can select different fonts, font size and colors for textual information. With the use of multimedia technology, we can convey information to audience more effectively. This presentation can be presented by overhead projector or by 35-mm slides. Generally, the presentation is used in following scenarios:

- To render information about a new product
- To narrate an event in order
- For Company Meetings
- For Training and aids in Education Field

Let us discuss different parts of Power Point 2010 and the facilities it provides.

4.4 HOW DOES POWER POINT 2010 WORK?

Slide

A slide is used to prepare a Power Point presentation. A Presentation can consist of a group of slides put together to render information. We can use more than one slide to cover a lengthy topic and can also include more than one topic on a single slide. Once the slides are ready, we can arrange them sequentially and run the presentation. Text, Graphics, Audio and Video can also be included in a slide. As per requirement, we can add a new slide as well as delete or change a slide. One or more slides can also be printed whenever required. We can also decide the number of slides in a presentation. The slide show command can be used anytime to start a presentation. Collection of presentation slides can be saved as a file with .pptx extension.

It is very important to understand Ribbon and its Tabs along with their working to navigate and to get familiarised to the usage of various tools of Power Point. Ribbon is located at the top left hand side of the screen. It consists of various Tabs like File, Home, Insert, Design, Transition, Animations, Slide Show, Review and View. To work smoothly in Power Point, groups are created gathering various commands— Font Group, Paragraph Group, Drawing Group, etc. For example, different functions related to formatting text like Font Type, Font Color, Font Size, Text to be Bolded or Italicised can be grouped under the Font Group.
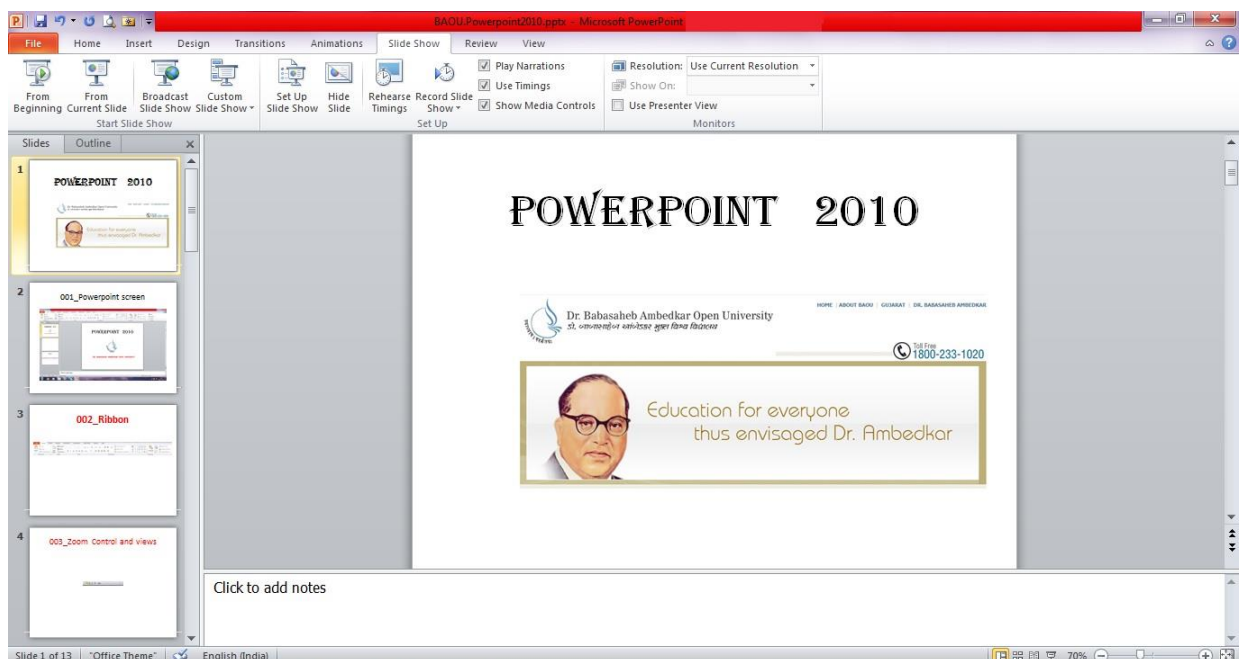
Figure 4.1 Power Point Screen

Figure 4.1 shows a toolbar on the left side of the Ribbon. It includes commands like Open, Save, Quick Print, Undo, Redo, etc., which are frequently used while creating a presentation. We can also create a Quick Access Toolbar as per our choice. This toolbar enables a user to include commands of his/her choice. By doing so, though we may be working anywhere on the Ribbon, we can directly use any commands on the Quick Access Toolbar.

Ribbon and various tabs

Figure 4.2 Tabs on Ribbon

As shown in figure 4.3, Power Point provides us a Zoom control which helps in enlarging or reducing the size of a slide. The Zoom-in and Zoom-out buttons can be seen on the lower right side of the screen. They have + and - signs respectively. Using these buttons, slide on the screen can be enlarged or reduced as per our wish. The size is also shown in percentage (%) on the left side of the button. There is a slider—'Zoom' between these two buttons. Size of the slide can be enlarged or reduced by dragging the slider. The 'Fit Slide to Current Window' button, on the right side of Zoom Control, enables the user to resize the slide as per the size of the window on the screen by zooming-in or zooming-out automatically. A slide can be zoomed in to the maximum of 400% and zoomed out to the minimum of 10%.

Figure 4.3 Zoom Control and View Buttons

With reference to figure 4.3, the first four buttons to the left hand side of the bar enable the user to view their presentation in different ways—Slide Sorter, Reading View, Slide Show and Normal.

Slides tab on the left hand side 'Pane' is very useful to work in different slides at a time and to navigate from one slide to other (figure 4.1). Here we can also change the order of slides, rearrange the slides, duplicate the slides and delete the slides. On clicking the Outline tab, near the Slide tab, we can see only the textual information in all the slides on the left side.

By dragging the scroll button on the right side bar, a user can smoothly navigate through slides. There are two buttons below this scroll bar through which a user can navigate a slide forward or backward. By using Ctrl + Home key combination, one can straight away reach the first slide, and to reach the last slide, one can use Ctrl + End key combination. Thus, Power Point 2010 provides various types of options to navigate through the slides of a presentation.

Steps to create new Power Point (Presentation) file
To create a new Power Point presentation, click the start button; a pop-up menu will be displayed on the screen. If not, findthe Microsoft PowerPoint 2010 from the menu displayed while clicking all the programs. You can also begin this program if it is

available on your desktop. By doing so, a new Power Point Presentation will open up which has a slide pane. We work and create slides in this area. We can see different slides in form of thumbnails on the left side of the screen (see figure 4.1 for reference). The slide in which we are working is highlighted in this left side area. There is a Notes Pane at the bottom of the screen. Here, a speaker can write additional necessary notes at the time of presentation. Speaker's notes can also be printed. After selecting the desired layout for each slide, details are entered in the slides. Different layouts can be selected for different slides of a single presentation.

Add a new slide
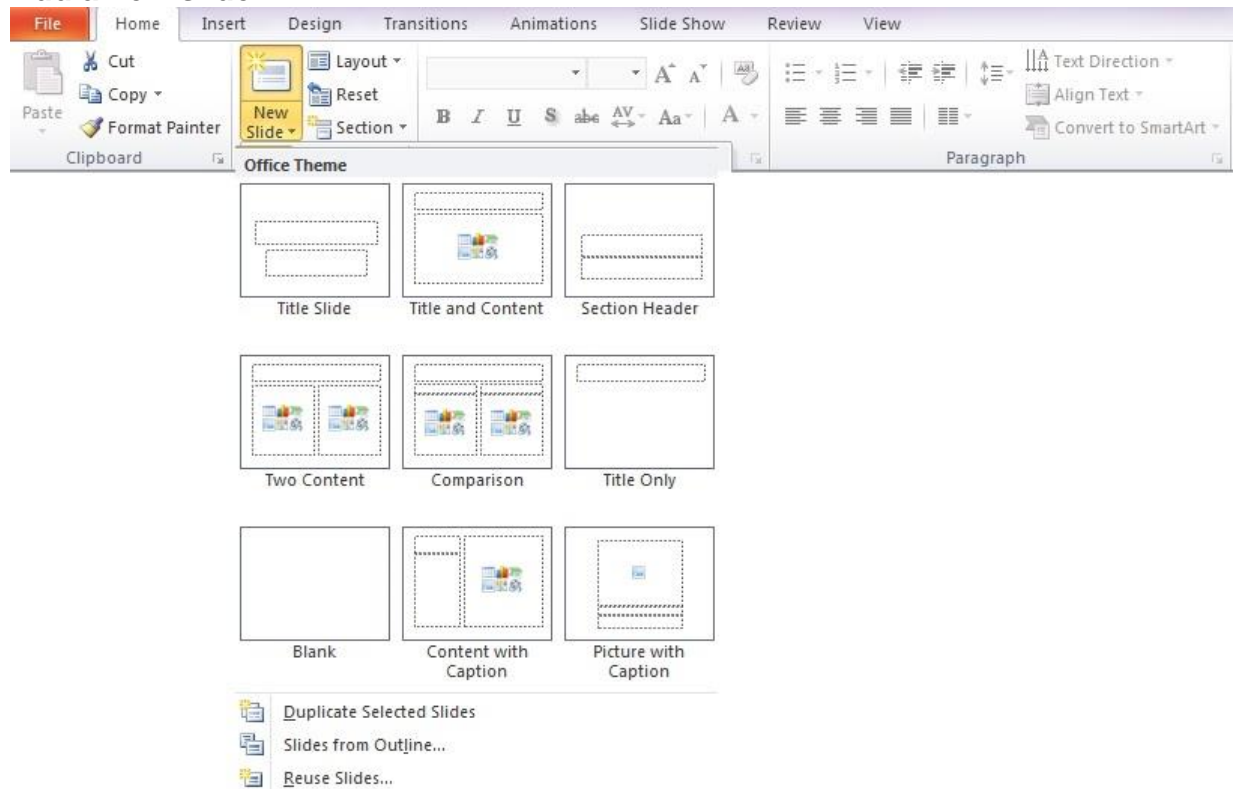
Figure 4.4 Slide's Layout

When we create a new Power Point presentation, it has only one slide. On clicking the Home Tab, New Slide icon will be displayed on the screen. On clicking the upper portion of this icon, a new slide will be added automatically after the slide displayed on the screen. Whereas, if we click the lower portion of this icon, a gallery consisting different types of layouts of slides will be displayed on the screen from which we can select the desired layout (see figure 4.4 for reference). The selected slide will be added to our presentation. Now, we can enter the desired text on the slide. Various layout displayed on the screen are Title Slide, Title and Content, Section Header, Two Content, Comparison, Title Only, Blank, Content with Caption and Picture with Caption. We can also add a new slide to the presentation by using the Ctrl + M key combination.

Text Formatting

Font and Paragraph groups are in the Home tab, which include various commands to enter the information in the slide. When we enter text in the place holder box of the slide, it gets automatically converted into a bulleted list. Information in the sub points is arranged below the main point. If the information in the place holder box is

excess, the size and space in between the lines of the Power Point text gets automatically reduced.

We can change Type, Size and Color of fonts with the help of different commands in the Font group. We can also make the text Bold, Italics and/or underline the lines of text. See figure 4.5a for reference. With the help of various commands in Paragraph group, we can set the type of bullet, indentation and space between two lines as per our wish. Example of the same is shown in figure 4.5b.

Figure 4.5-a Font and Paragraph Group
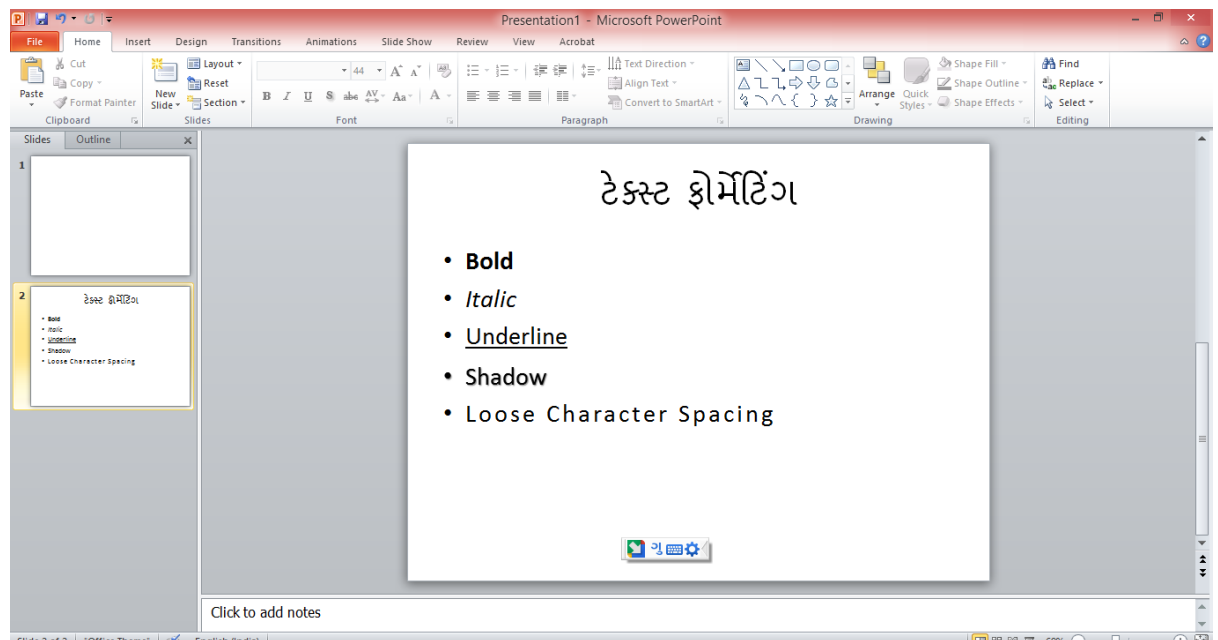
Figure 4.5-b Text Effects

Add Design Theme

Very often, we wish to have the same background in each slide of our presentation. The Design tab provides different themes with attractive background colors, fonts, filling effects which can be used to make the presentation unique, thus enhancing the presentation (**Figure 4.6**). Every new presentation starts with a predefined theme, which is called Office theme, which has a white background and black text. Many themes are provided by Power Point. If we wish to use a theme in our presentation, by clicking Design tab, we can get a group namely themes which provides us a series of designs for our selection. When we hover the cursor on the thumbnail, we can see (preview) its effects on the slide. When a theme is selected, the corresponding effects will be applied to the entire presentation.
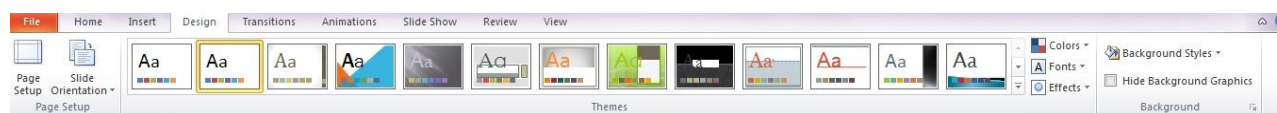
Figure 4.6 Design Theme

Include Picture, Audio, Video on the Slide

As shown in figure 4.7, by clicking the Insert tab on the Ribbon, Images and Media group can be obtained. We can add pictures from a file on a slide as well as pictures and audio-video files from the library of Power Point by using the commands of Image group. Any photograph or picture can be added to the presentation. . We can select various types of media files (e.g. pictures, photographs, video and audio) available in Power Point library and can add them to the slides using Clip Art command. As shown in figure 4.8, Search command is available in Clip Art to find the required image. For example—to add a picture of a computer, it is needed to search for the keyword 'Computer' in the **search for:** option (**Figure 4.8**). Now we can select any one of the available images for computers to be inserted in the slide. On clicking the 'Image' it gets automatically aligned on the slide. We can change the place of the image by dragging it.
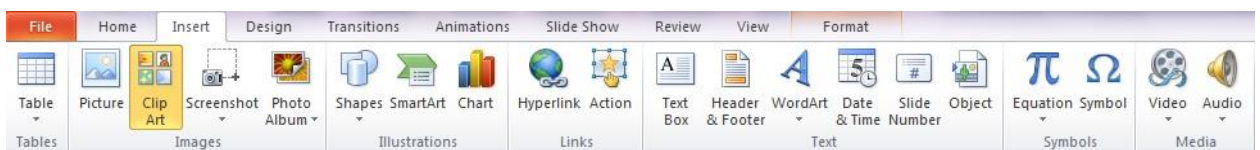
Figure 4.7 Image and Media Group in Insert Tab

Figure 4.8 Pictures from Clip Art
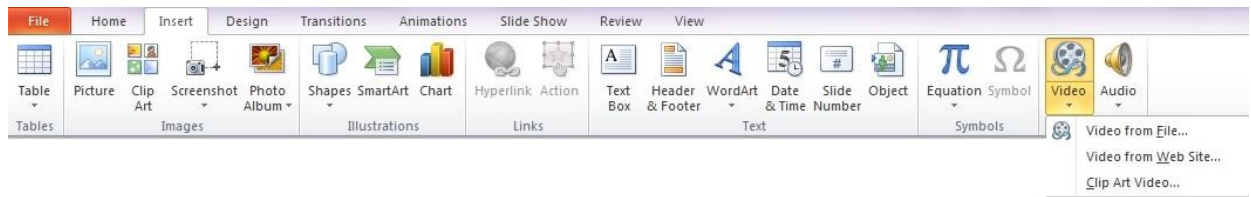
Figure 4.9 Options of Media Group and Video Command

In figure 4.9, video and audio commands of the Media group can be seen. By using the video command, a video can be added to the slide from any file from the website or from the Clip Art. In the same way, audio from any file, audio from Clip Art and recorded audio can also be added to the slide by audio command.

Include different types of Shapes

Shape command on Insert tab can be used to enhance the appearance of a slide and also to add graphics. Various shapes are displayed on the screen by clicking the Shapes command. Various types of lines, rectangle, circle, arrows, symbol of flow chart and call outs are available in this feature. We can select from these shapes as per our requirement, and by double clicking over that shape, it gets automatically displayed on screen. We can drag the shape to different places by clicking its border. We can also reduce or enlarge this shape and can rotate it in all the directions.

Note: Text Box available in the Insert tab can be added to the slide as is in the **Figure 4.9.** Whenever it is added, the cursor is seen in the text box so that we can write within it.
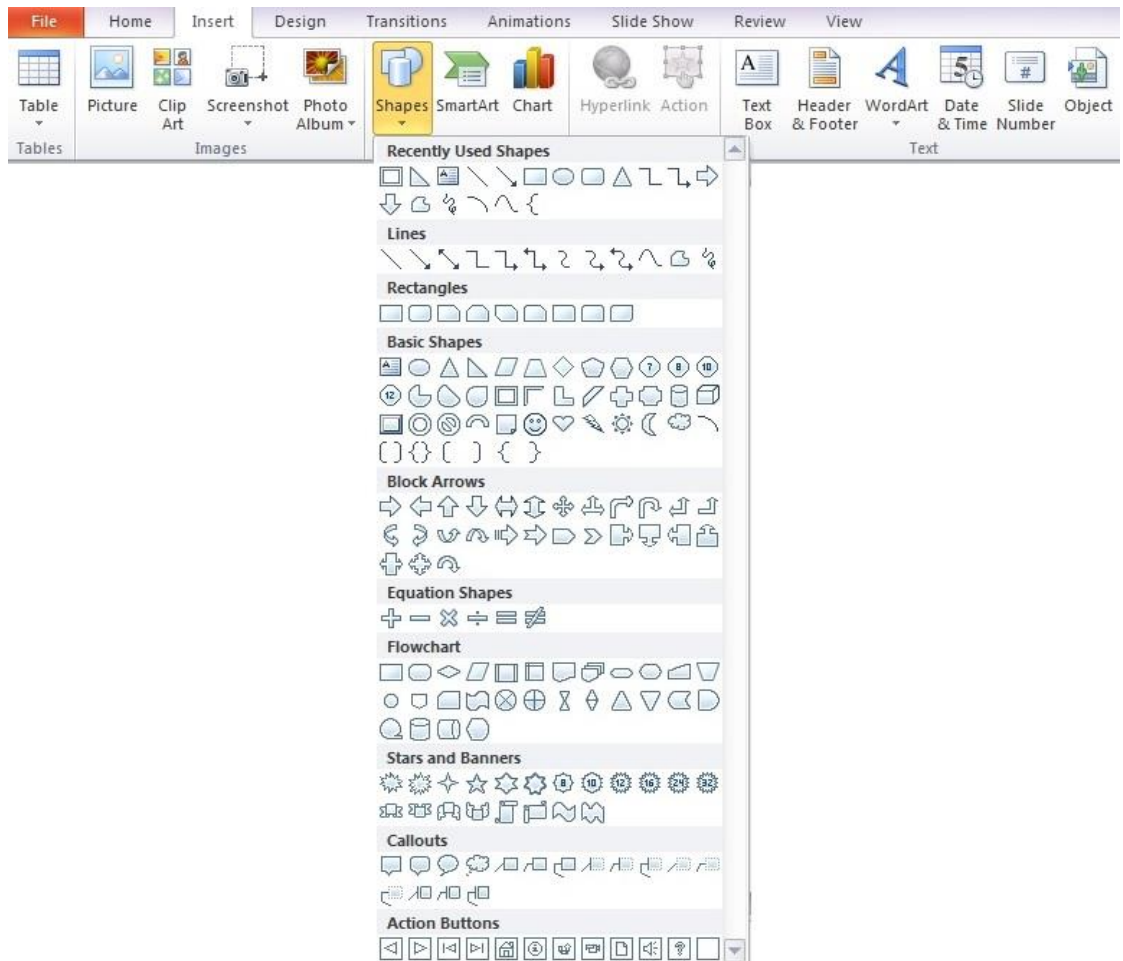
Figure 4.10 Diffrent types of shapes available under Shapes command

With reference to the **Figure 4.11**, we can add different shapes available in the Drawing group. The similar shapes are available in different groups as shown in the **Figure 4.12.** Also different textures and filling options can be applied to the objects being inserted. (**Figure 4.13**)

Figure 4.11 Drawing Group

238
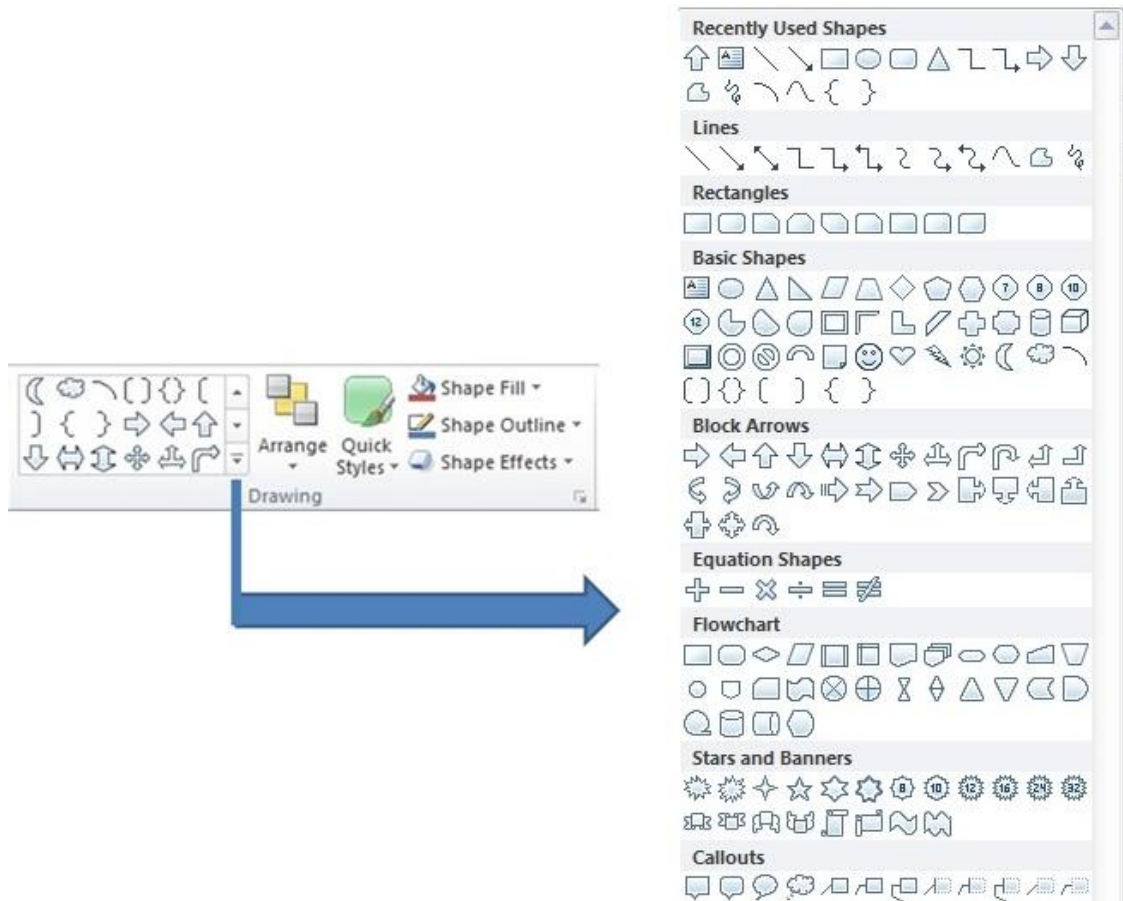
Figure 4.12-a Options of Drawing Group

Figure 4.12-b shows the slide with added shape.
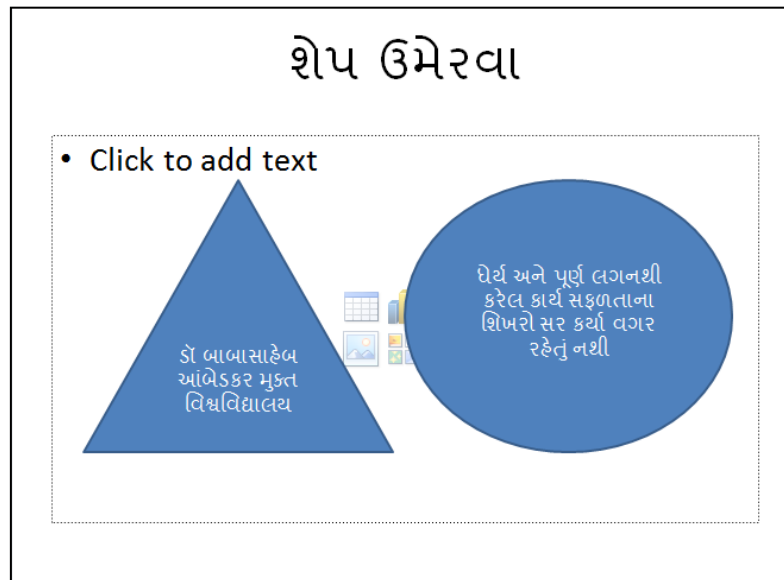
Figure 4.12-b Shapes on a Slide

Figure 4.13 **Texture available in Shape Fill Command**

4.5 SAVING PRESENTATION

The presentation that we prepare is used by us very often; therefore, its storage is very necessary. A presentation is saved as a file in Power Point with .pptx extension. The saved file can be re-edited and can be used whenever required... 'Save' or 'Save As' command in the File tab on the Ribbon is used to save the presentation prepared by us.

- **Save As –** This command is used to save the presentation for the first time. As soon as we click the Save As option, it asks us the name of the presentation and as to where should it be saved. If corrections are made in the presentation and if they are temporary, the earlier version of the file without corrections can also be saved by using this command but by giving a different file name. We can save the presentation with a new name so that this new presentation can also be detected if not required after its use. This option also gives us a facility to save a file in different formats. A list of some traditional file formats and the extensions used by Power Point are as follows:

  - PowerPoint Presentation (.pptx)
  - PowerPoint 97-2003 Presentation (.ppt)
  - PDF Document Format (.pdf)

- o PowerPoint Design Templates (.potx)
- o PowerPoint Show (.pps, .ppsx)
- o PowerPoint 97-2003 Show (.ppt)
- o Windows Media Video (.wmv)
- o GIF (Graphics Interchange Format) (.gif)
- o JPEG (Joint Photographic Experts Group) File Format (.jpeg)
- o PNG (Portable Network Graphics) Format (.png)
- o TIFF (Tag Image File Format) (.tif)
- o Device Independent Bitmap (.bmp)
- o PowerPoint Picture Presentation (.pptx)
- o Open Document Presentation (.opd)

- **Save:** By giving this command, the presentation is saved again with the same name and in the same directory. Save command can be run from the File tab. This command can also be given from the Quick Excess Toolbar.

Figure 4.14 Commands available on File tab

4.6 PRINTING PRESENTATION

Print command from File tab is given to print some or all the slides which we have prepared for our presentation. Therefore when print command is given, a preview of document is displayed on the screen with the option of print command. By looking at the preview, we can come to know how the presentation will look after being printed. Figure 4.15 shows the window which is displayed on giving the print command, along with the preview window.
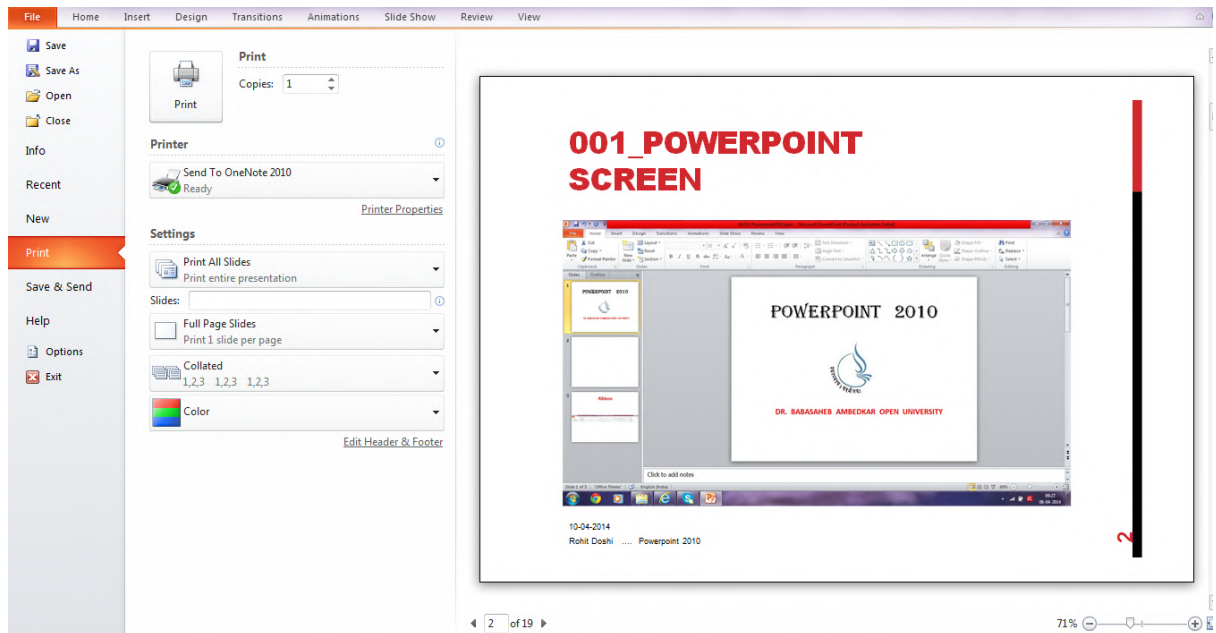
Figure 4.15 Parameters of print command with preview window.

Now, let us go through the parameters required while giving the print command:

- We are supposed to enter the numbers of copies to be printed in the box near Copies.
- We need to mention in the Settings section whether we want to print all the slides, selected slides or the slide displayed on the screen. Under custom range we can only provide slide numbers or range. For example, 5-12 means all the slides from number 5 to 12.   If we write 1,4,7,10-13,18, slide number 1,4,7,10,11,12,13 and 18 will be printed.
- On clicking Full Page Slides in the check box, an option as shown in figure 4.16 will be displayed on the screen. This option gives us the facility to select number of notes from Notes Pane along with the slide to be printed or only the text from the slide (outline) to be printed. We can print one, two, three, four, six or nine slides in a page.
- If more than one copy of presentation is to be printed, Collated option will print 1,2,3,.....,n and once again will start printing 1,2,3,...,n. But if uncollected option is selected and if 3 copy option is given, it will print the slides in 1,1,1,2,2,2,3,3,3,..........,n,n,n manner.
- We get two options in Orientation to print slides. If Portrait Orientation is selected, slide will be printed vertically; whereas, on selecting the Landscape Orientation, the slide will be printed horizontally. This effect of orientation can be seen in the preview window.
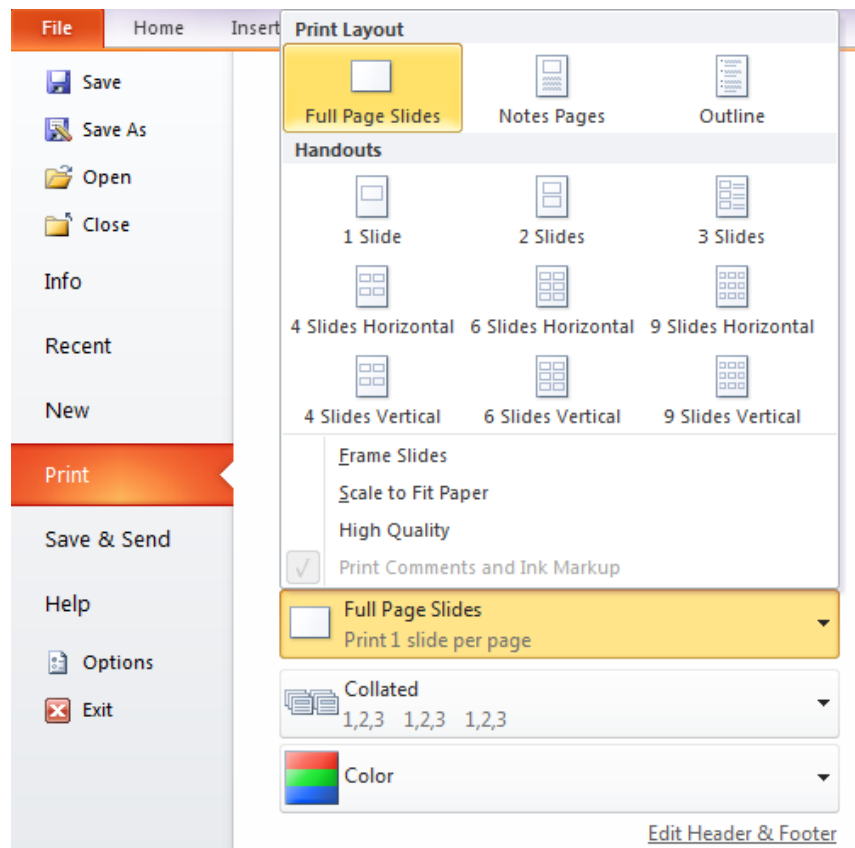
Figure 4.16 Options of Print Layout
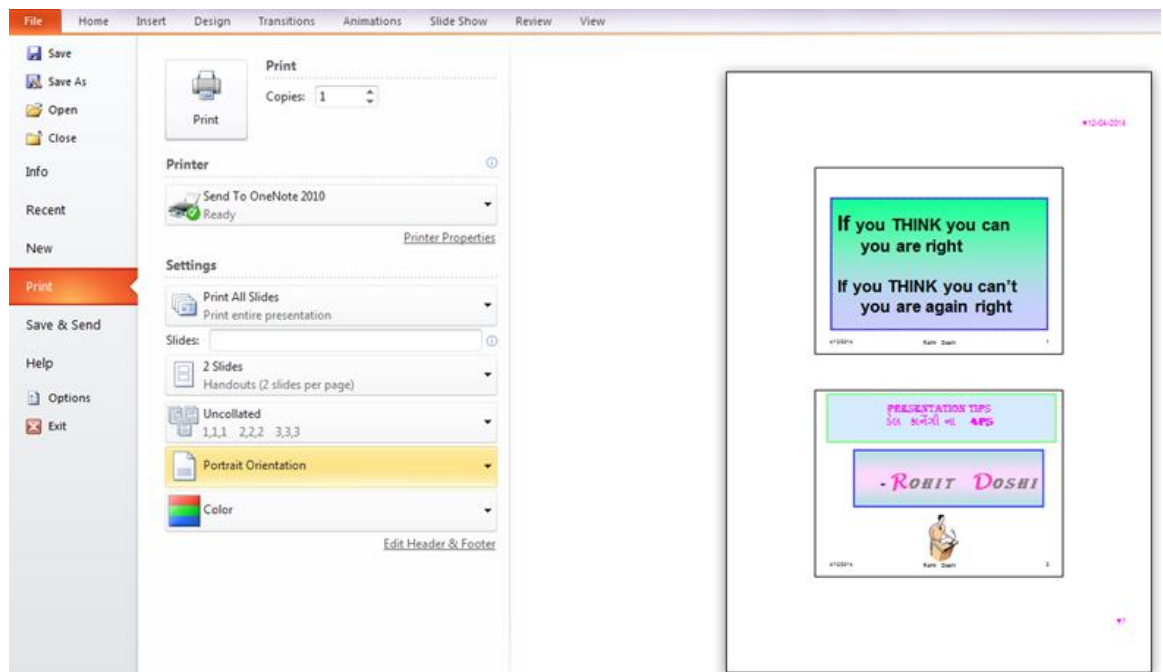
Figure 4.17 Portrait Orientation in Print
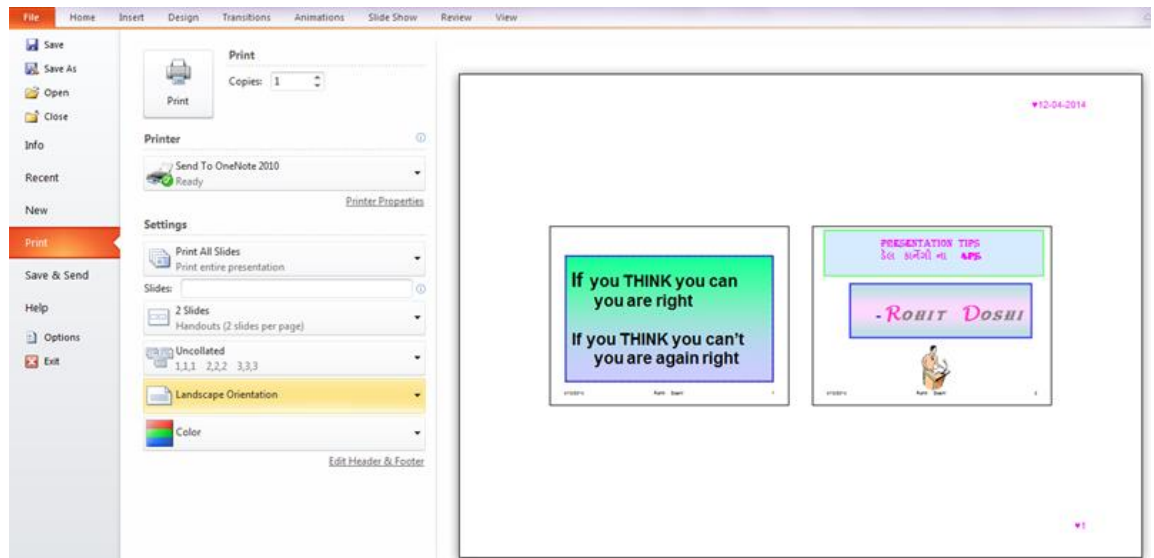
Figure 4.18 Landscape Orientation in Print

- For color, we can select any one option out of the three available color options: Color, Gray scale, and Pure Black and White. If we have the color printer, then this option can be used.
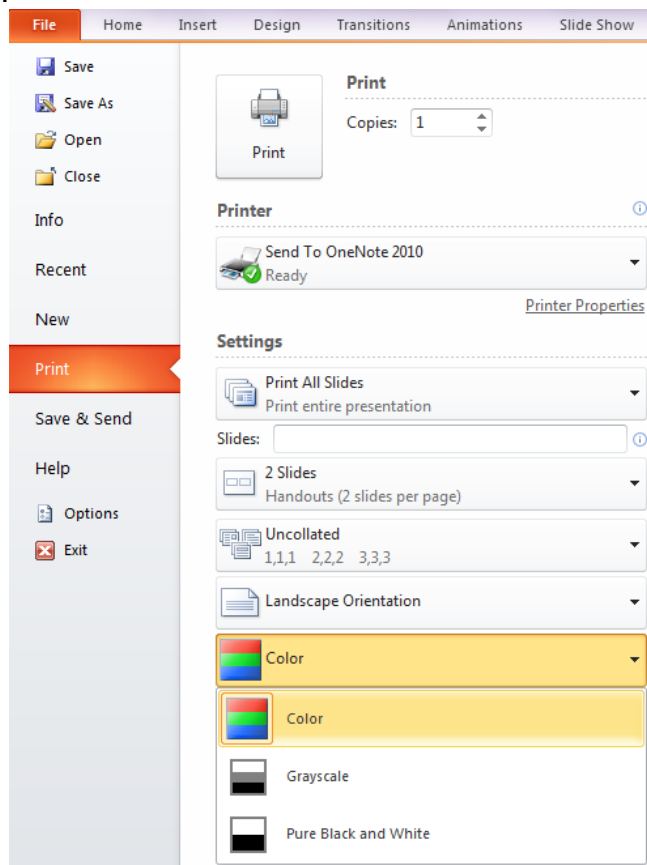
Figure 4.19 Presentation printing color

4.7 SLIDE TRANSITION
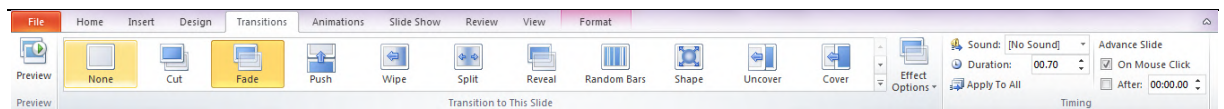
Figure 4.20 Commands of Transition tab

As shown in the **Figure 4.21**, on clicking the Transition tab on the Ribbon, various effects can be seen while displaying the slides on the screen—Cut, Fade, Push, wipe, Split, Reveal, Random Bars, etc. On clicking the tringle (More) on the bar near this option, all the transitions available in Power Point can be seen on the screen. If any option is clicked, we can see the preview on the screen and how it has effected the slide. We can also select an option from the Effects options for all these commands. Options of Effect options are different from each other as per the command. For example, if we select 'Zoom' command in transition, we get two options Zoom In and Zoom Out in the Effect option as shown in figure 4.21. But if we select 'Box' command, we get From Right, From Bottom, From Left and Top options in the Effect option as shown in figure 4.22.
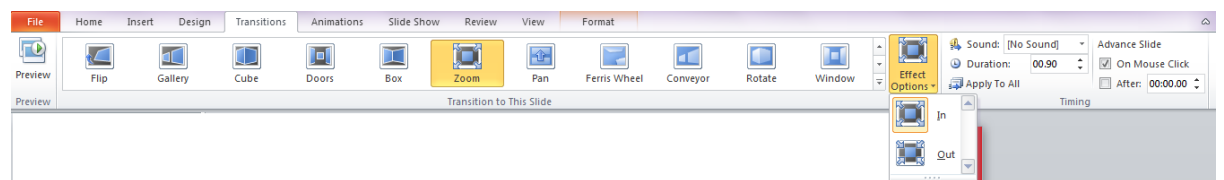
Figure 4.21 Options of Zoom command
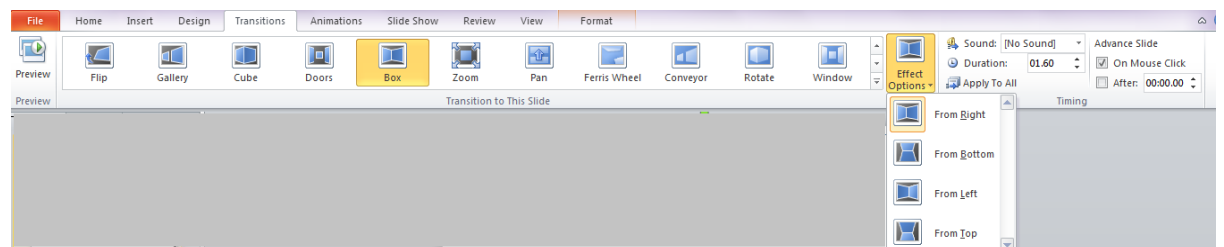
Figure 4.22 Options of Box command
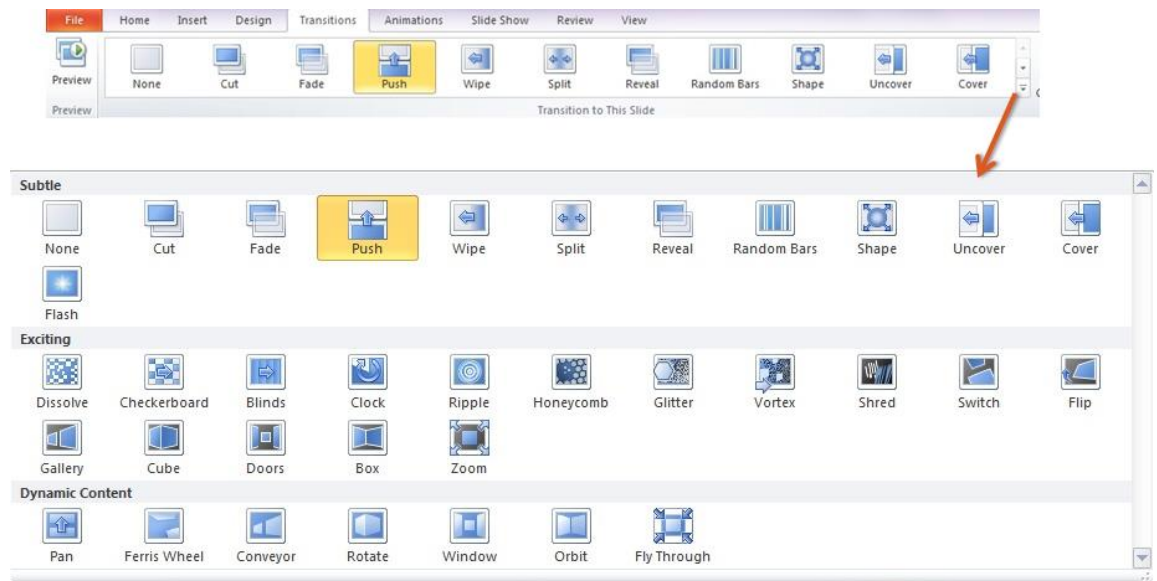
Figure 4.23 All options of Transition to this slide group

We can select different types of audio—Bomb, Breeze, Click, Coin, Explosion, Wind, etc., or any other audio that we have saved, and by mentioning the time in Duration can play it during the slide transition. See figure 4.24.
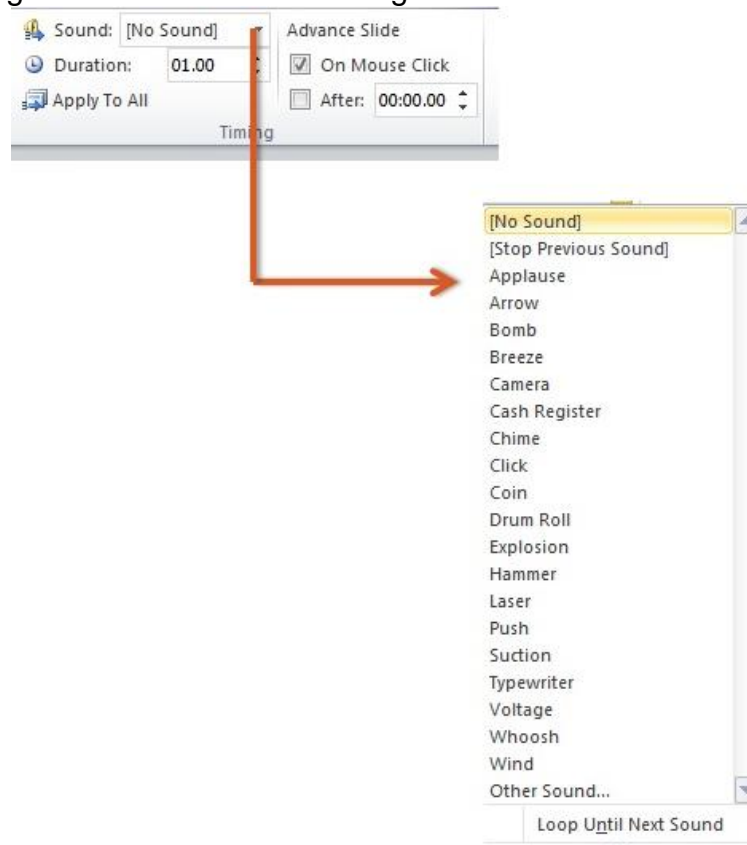
Figure 4.24 Sound options with Timing group

This sound can be applicable to all the slides of presentation by giving Apply to All command.

We have two options to display the next slide of the presentation on the screen. First option is by using a mouse click while second is automatic slide change after a prescribed time mentioned in the check box as shown in Figure 4.24.

4.8 CHECK YOUR PROGRSS: POSSIBLE ANSWERS

1. Prepare a presentation which gives information of your school/college/city and add text into to the slide with different slide layouts. Use various text formatting effects.
2. Apply design theme to your slide.
3. Add relevant pictures, clip art, shapes, audio and video to the presentation prepared earlier and make it more attractive.
4. Save the presentation prepared earlier in any other format.
5. Take a printout of your presentation.
6. Give various slide transition effects to the slides you have prepared.

Unit 5: Advance Features of Microsoft Power Point 2010

5

Unit Structure

5.1 LEARNING OBJECTIVE

After learning this chapter students will be able to :

- Use Table, Smart Art, Chart, Link, Symbol and Equation to present information effectively in a slide.
- Use Animation to make your slide more live and how to run your Slide Show?
- Give overall common lock to slide using 'Slide Master' and also use 'Review Tools' to varify information.
- Become conversant with important words and some shortcut keys used in Power Point.

5.2 INTRODUCTION

In previous chapter we have discussed How Power Point works and how you can save it. Printing options are also discussed. We have also seen Slide Transition in previous chapter. This chapter introduces some advance features like use of Table, Smart Art and Charts in a Slide. How you can insert Hyperlink, symbols as well as equations for calculation in a slide that is also discussed. How you show will run and how to use Slide Master that is explained in this chapter. The chapter gives immense knowledge of Review Tools , Dictionary of Power Point and Key board Shortcuts. Now let us start our Discussion.

5.3 USE OF TABLE IN SLIDE

Add Table

Table is used to generally show numeric information so that it becomes easy to compare and contrast the values. Tables can be added to the slides by using one of the following methods.

1) Select Insert→Table→Insert table option. A dialog box as shown in the **Figure 5.1**-a will be opened.
2) Now enter the n**umber of colu**mns and rows as required for the table to be inserted followed by pressing the OK button, the table with desired number of rows and columns will be inserted.
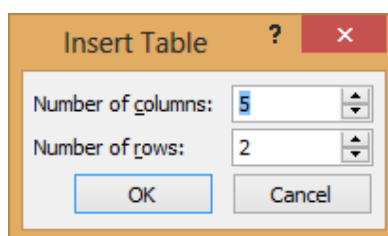
Figure 5.1-a Insert table dialog box

Table can also be added by clicking the Table icon as shown in figure 5.2. If you have prepared a table in Excel earlier or if you want to prepare a table in excel format, click the Excel Spreadsheet as shown in figure 5.1-b. As shown in figure 5.3,

Excel sheet can be seen in the slide. Here you can type or you can open spread sheets prepared earlier. Once the data is typed, it looks like only a table as in the Figure 5.4.
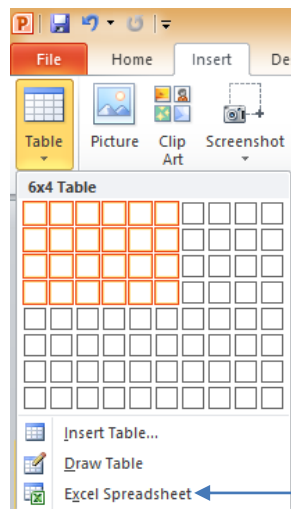
Figure 5.1-b Add table through Selection
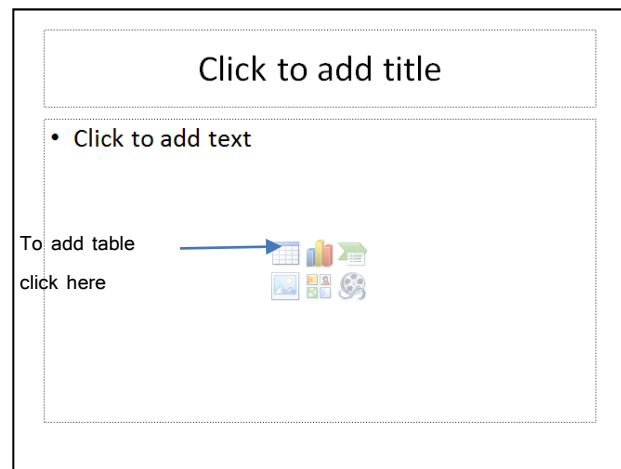
Figure 5.2 Add table by clicking on table icon

To add table from Excel click here
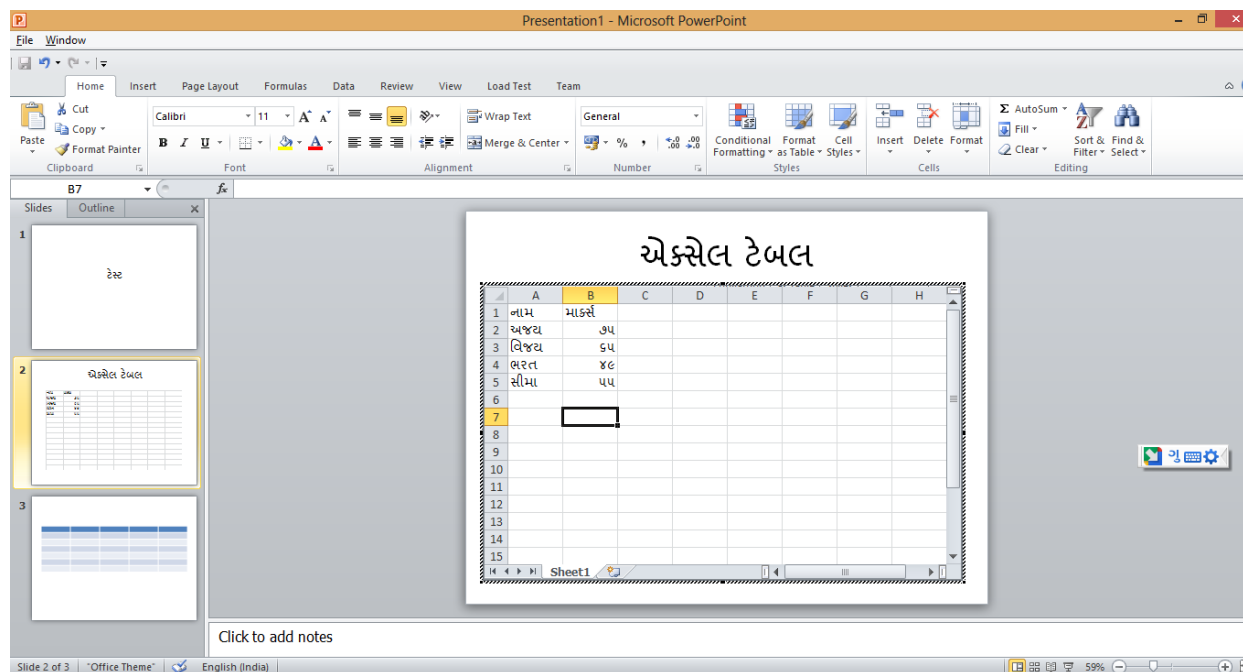
Figure 5.3 Insert data in Excel sheet
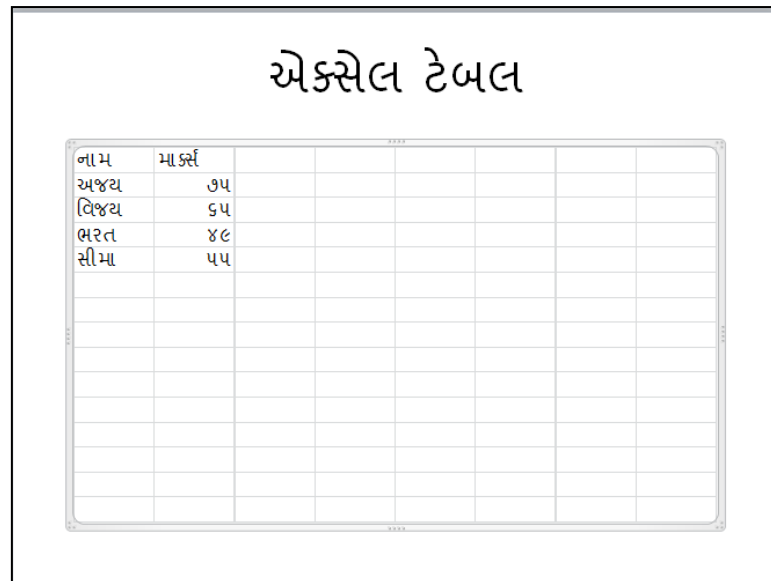
Figure 5.4 After inserting data into Excel sheet only table is seen

Table Formatting

On selecting a table, Design tab and Layout tab are displayed in the Table Tool Group where options are available to format a table.

As shown in figure 5.5, Design tab has the following options:
1) To give Table Style (predefined shading, border and effect)
2) Various options for Table Style
3) To change the color of Text, Style and to change Border (WordArt Styles)
4) Border Style (Draw Borders)
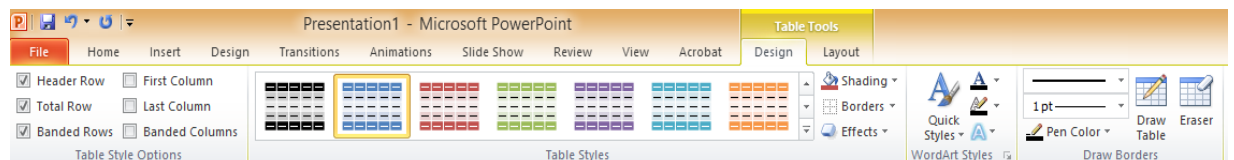
Figure 5.5 Design tab

As shown in figure 5.6, Layout tab has the following options:

1) Table select and view gridlines (Tables)
2) Addition or deletion of rows and columns (Row and Column)
3) Merging or separation of more than one cell (Merge)
4) Changing of heights and widths of rows and columns (Cell Size)
5) Alignment of cells (Alignment)
6) Changing of height and width of table (Table Size)
7) Arrangement of table (Arrange)

Figure 5.6 Layout tab

251
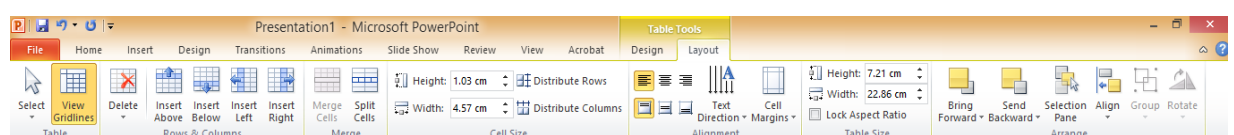
5.4 USE OF SMART ART IN A SLIDE

Figures are created with SmartArt Graphics in Power Point. You can shift, change or write in these figures which are very useful. In other words, you can use it to create figures and can change these figures easily as per your choice.

You can use anyone of these methods to add a SmartArt:

1) Click the Insert tab and select the SmartArt option (Insert➜SmartArt). A dialogue box is displayed on the screen as shown in figure 5.7 from which you can select the diagram of your choice.
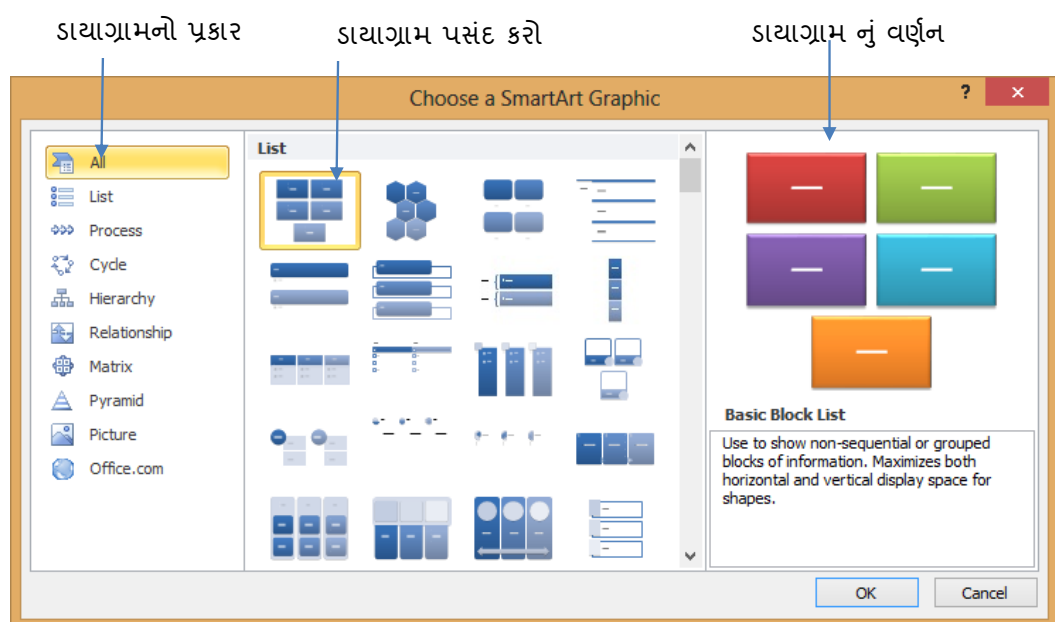
Figure 5.7 SmartArt Dialog box

2. Click the 'SmartArt' icon in the slide as shown in figure 5.8.

Figure 5.8 SmartArt icon

Following diagrams are available in SmartArt:

Diagram	Usage
List	Related information, to show steps and to show the order of work and process.
Process	To narrate the changes with time in form of an idea or process.
Cycle	Shows cyclic progress without beginning or end, to show balanced parts.
Hierarchy	To narrate the hierarchical relationship between people, divisions or other things and to narrate such relations that leads to decision making or process.
Matrix	To show relationship between four different divisions.
Pyramid	Shows balanced or hierarchical relations.
Picture	To create figure that includes photographs and pictures.
Office.com	To download different figures from Office.com.

Figure 5.9-a shows SmartArt with hierarchy type of Diagram.
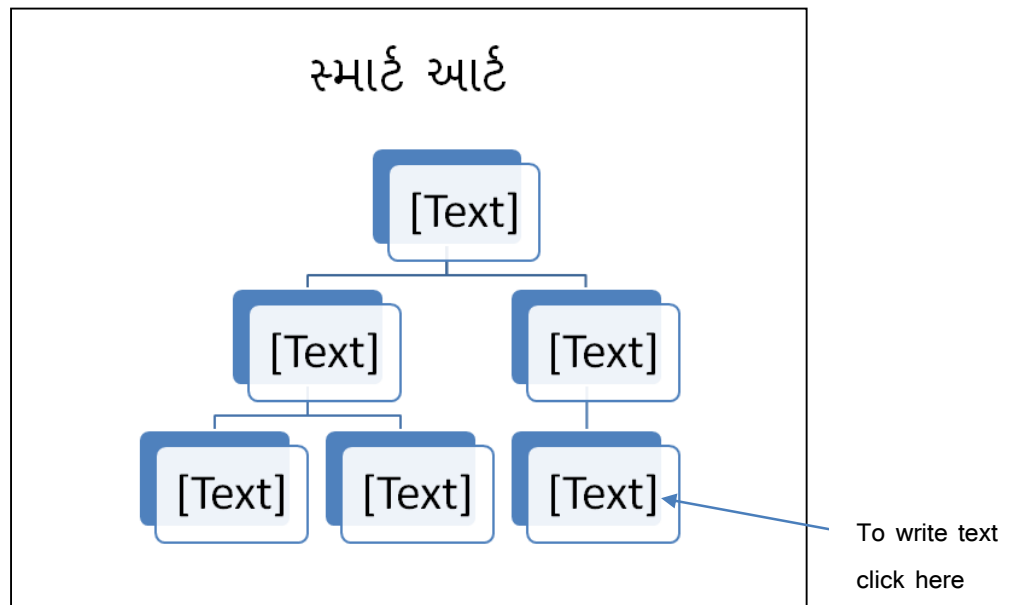
Figure 5.9-a Slide with SmartArt

Figure 5.9-b Shows slide after inserting SmartArt
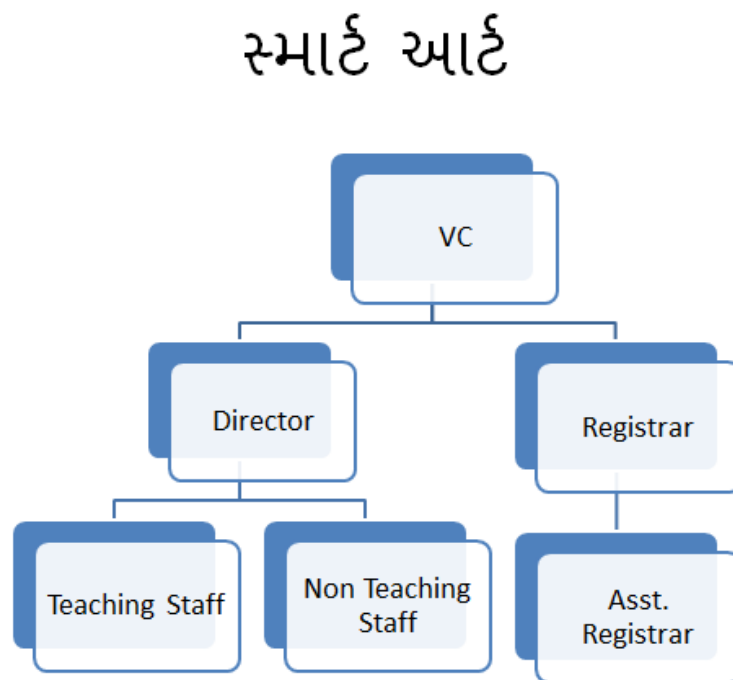
Figure 5.9-b Slide after inserting text

When clicked once, Power Point shows Design tab in SmartArt tab as shown in figure 5.10 and in the same way shows Format tab as shown in figure 5.11, which helps to change the SmartArt.

Design tab provides the following options:

1) Add any shape of SmartArt to the front, back, above or below another shape, remove and/or change its position. (Create Graphics)

2) Change the look of SmartArt. (Layouts)
3) Change the color of SmartArt. (Change Colors)
4) Remove format or its conversion into text and shape.(Reset)
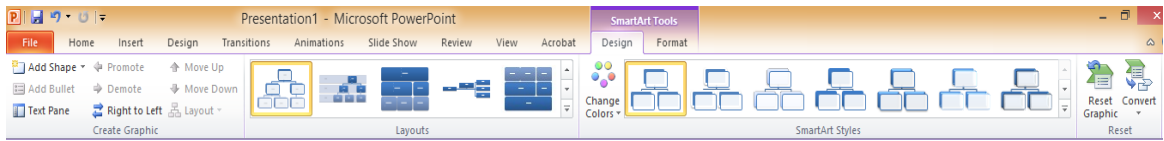
Figure 5.10 Design tab

Format tab provides the following options:

1) Change the shape of SmartArt—reduce or enlarge as compared to others. (Shapes)
2) Change the style of a shape—fill color, border color or change effect. (Shape Styles)
3) Change Text color, outline color or to change its appearance. (WordArt Styles)
4) Shift a shape in front or back of another shape, to group or to rotate it from centre or around its axis, etc. (Arrange)
5) Change the size of shape.
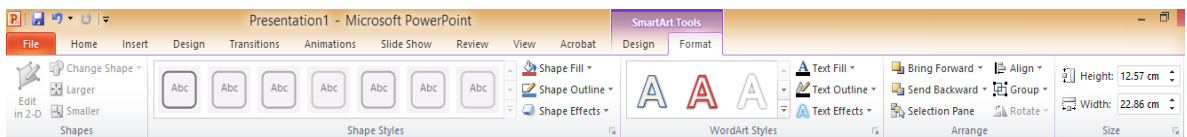
Figure 5.11 Format Tab

<u>Check your progress</u>

1. Add a table with information related to School/College/City to your presentation and format it with the help of Design tab.
2. Shows the proper information of School/ College/City in presentation with the help of SmartArt.

5.5 USE OF CHART IN A SLIDE

Power Point provides us with the facility to add different types of charts to our presentation, as shown in figure 5.12. With the help of charts, audience, students/trainees or members can easily understand the meaning of figures, their importance and comparisons.
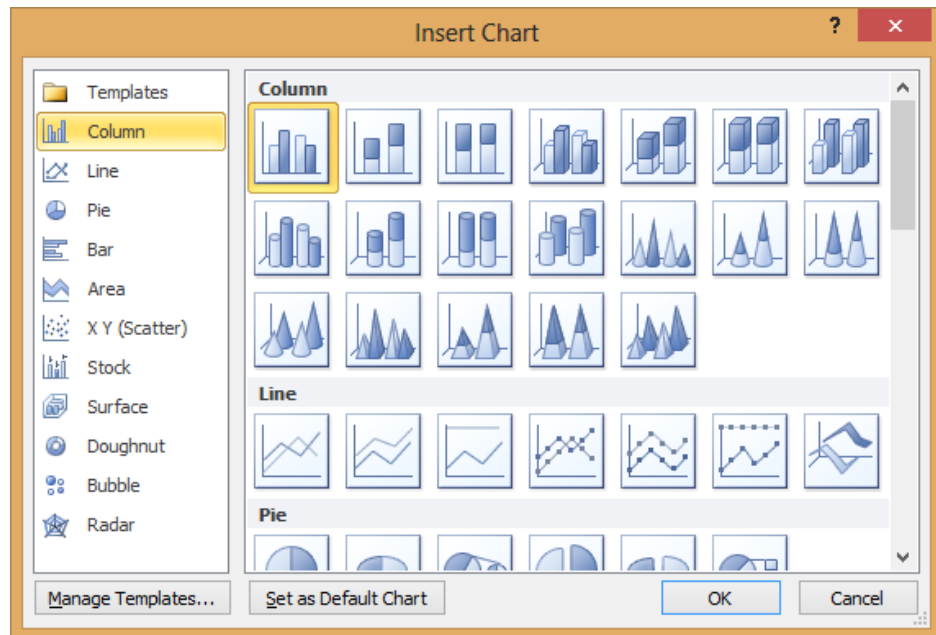
Figure 5.12 Types of Charts

Charts can be added to a slide by following one of the following methods:

1) Click on the Insert tab and select the chart option (Insert➜Chart). A dialog box as shown in figure 5.12 is displayed on the screen. By selecting the desired type of chart and by pressing the OK button, it gets added to the slide. Excel opens up in a new window as shown in figure 5.13, and after entering the data in it and on closing it, the chart in the slide also shows the relevant changes. (See figure 5.14)
2) Click the Chart Icon on the slide. (See figure 5.15)
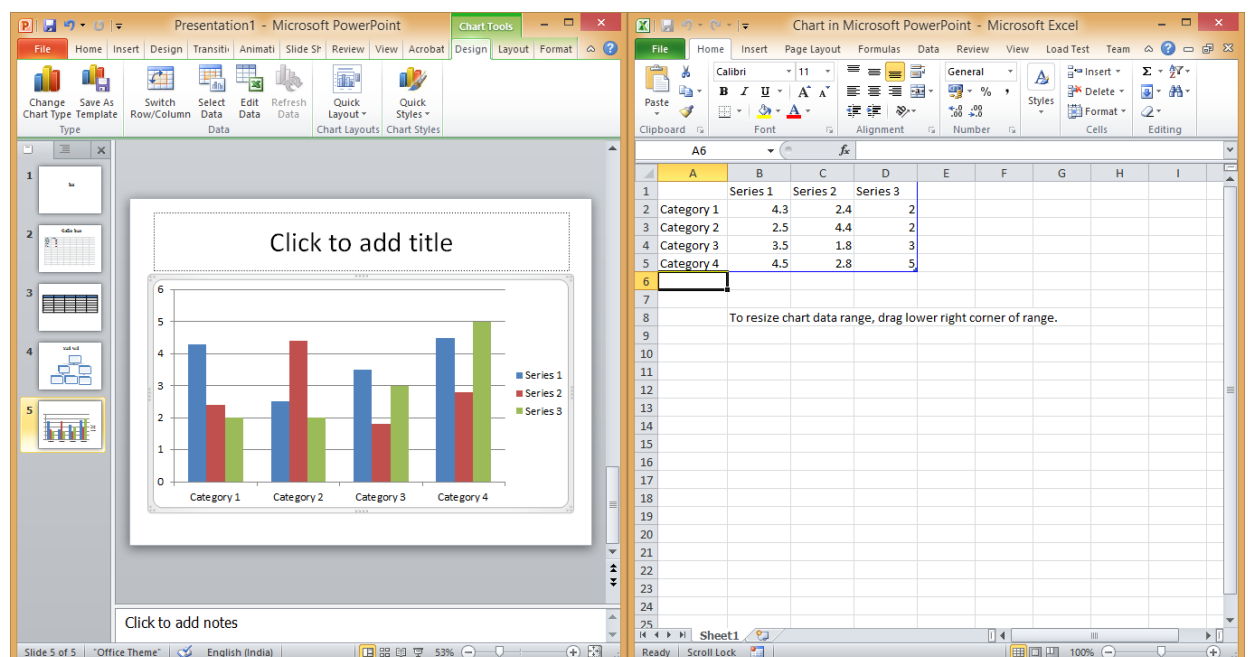
Figure 5.13 At the time of Inserting Chart
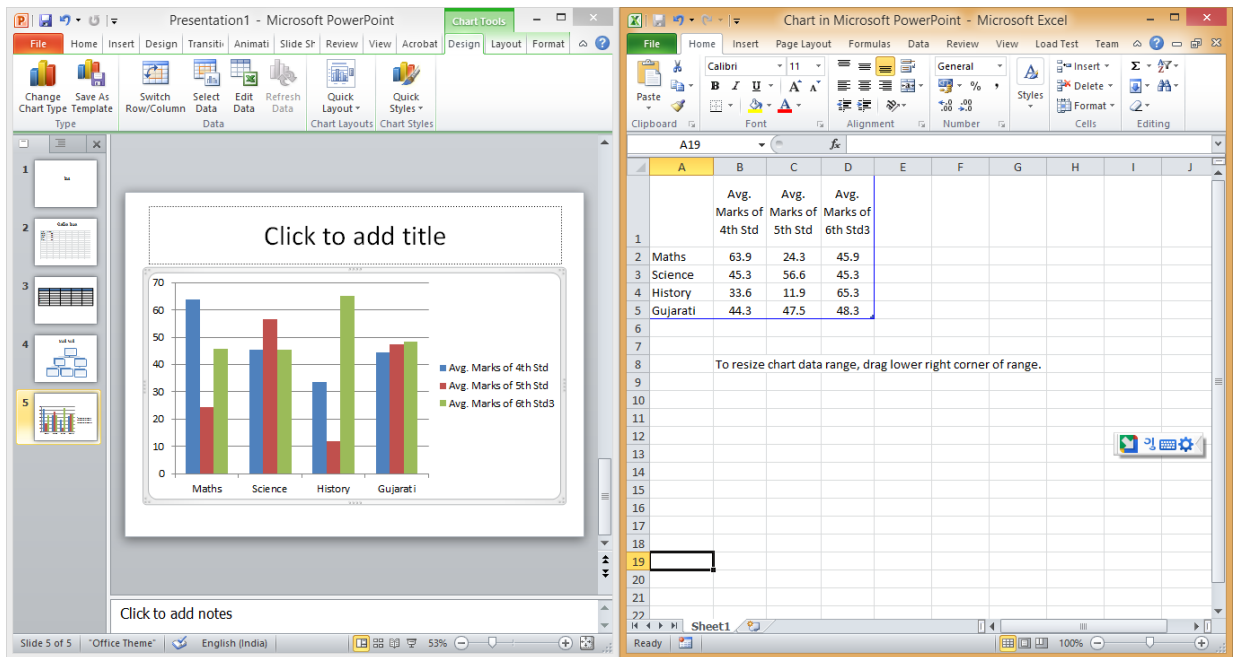
Figure 5.14 After the data Inseration
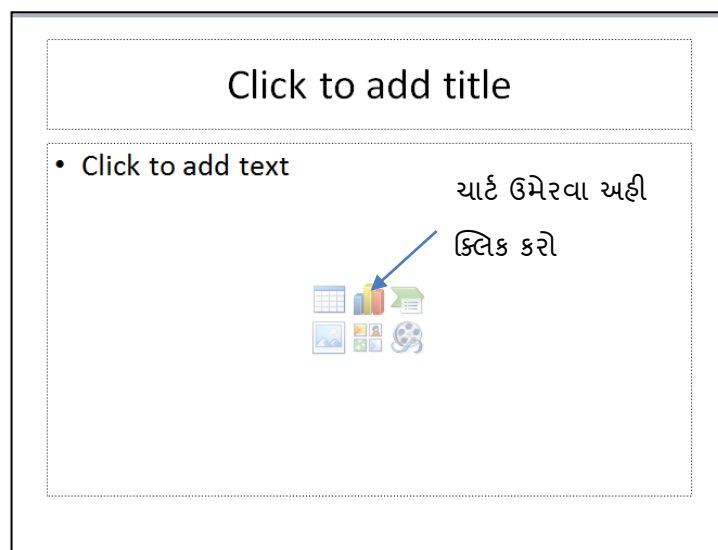
Figure 5.15 Insertion of Chart through Chart icon

Understanding of the various parts of a chart is given in figure 5.16.
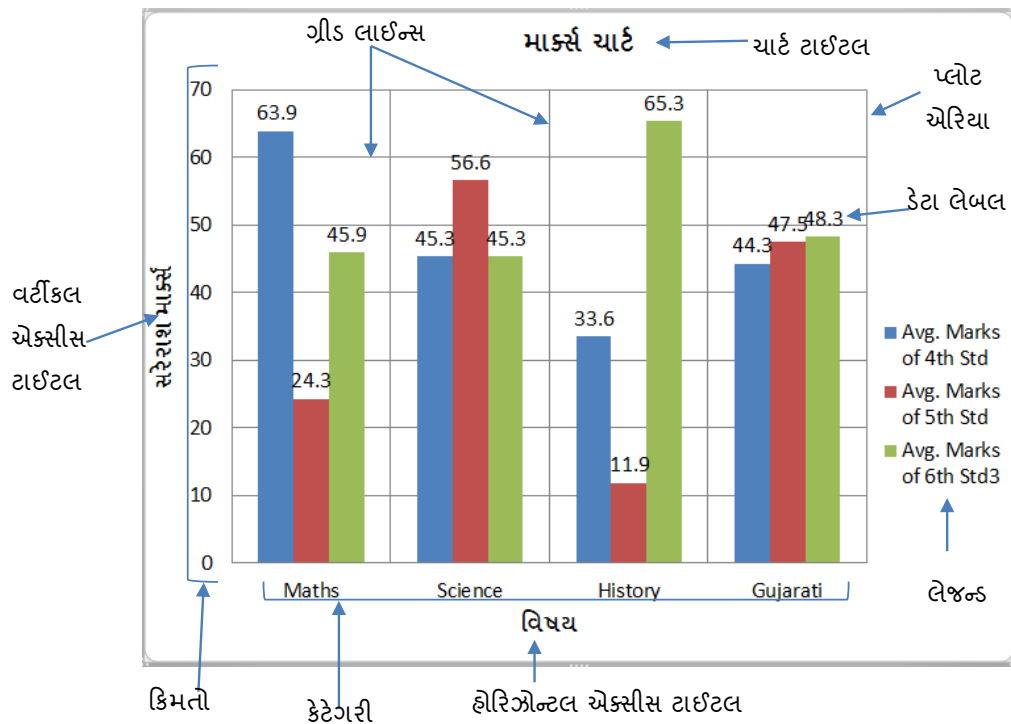
Figure 5.16 Parts of Chart

On clicking the chart, Power Point displays a Chart Tool Tab group. Design, Layout and Format tabs are available under the Chart Tool tab. These tabs enable us to make changes to the chart even after the chart has been created.

Options provided by the Design Tab are as follows:
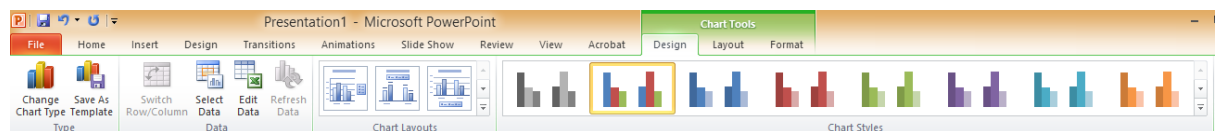
Figure 5.17 Design Tab

1) To change the type of chart (Type)
2) To change the data in the chart (Data)
3) To change the layout of the chart (Charts Layouts)
4) To change the style of the chart (Chart Style)

Options provided by the Layout Tab are as follows:
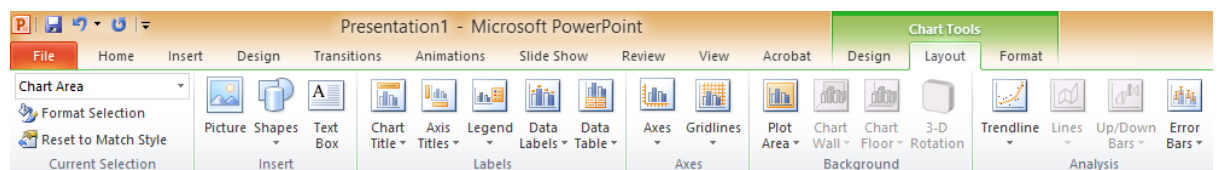
Figure 5.18 Layout Tab

258

1) To change the format of the selected area of a chart (Current Selection)
2) To insert picture, shape or text in the chart (Insert)
3) To show the title of a chart, axis titles, value of data used in the chart and to show the table along with the chart. (Labels
4) To show the Axes differently and to show or not to show the gridlines. (Axes)
5) To change the background of the chart (Background)
6) Options for analysis of the chart (Analysis)

Options provided by the Format Tab are as follows:
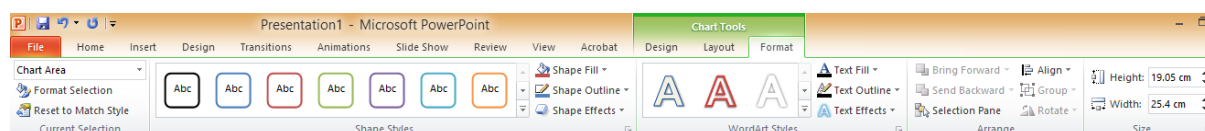
Figure 5.19 Format Tab

1) To change the format of selected area of the chart (Current Selection)
2) To change the color of selected area of the chart/give border color and effect (Shape Styles)
3) Format the text of the chart in terms of text color, text border, text effect (WordArt Style)
4) Arrangement of selected area of the chart (Arrange)
5) To change the size of the chart (Size)

When and where to use which type of chart in general is given in Table 5.1

Chart	Usage
Area	Observation of how the values change with time and see the ups and downs of values.
Bar	Useful in comparing the values of different category with one another as the time passes by. The information is displayed in form of horizontal lines in this chart.
Bubble	This chart is useful in observing the information by the study of the size and place of a bubble in the chart.
Column	Generally, useful in comparing the values of different categories with one another as the time passes by. The data is shown in form of vertical lines in this chart.
Doughnut	Useful in showing values as a part of overall percentage.
Line	To see the ups and downs of values with the passage of time. Data is displayed in a single line.
Pie	Useful in showing values as a part of overall percentage.
Radar	Useful in examining information and plotting values of different category along a separate axis starting from the center point with the minimum value and the edge with the maximum value. Thus for each category the value of the point is the distance from the center of the chart.
XY (XY- Scatter)	Useful in knowing the relationship between numerical datas along the horizontal and vertical axes
Stock	Useful in knowing the daily, weekly or annual variations in value of a item.
Surface	Display relation betwen information and values on 3D surface or layer with different colors.

Table 5.1 Types of Chart

5.6 INSERTING HYPERLINK IN A SLIDE

Information can be easily accessed by adding a hyperlink to a slide. Hyperlink is useful in performing the action of going forward or backward or to a predefine slide in a slide show. Link group in Insert Tab is used to add a Hyperlink.

On clicking Insert ➡ Links ➡ Hyperlink, a dialog box is displayed on the screen as shown in figure 5.20. Here on entering the text of the hyperlink, providing the address of the link and clicking the OK button, a hyperlink gets added as shown in figure 5.21. When the slide show is running and meanwhile if the link is clicked, website of Dr. Baba Saheb Ambedkar opens up.
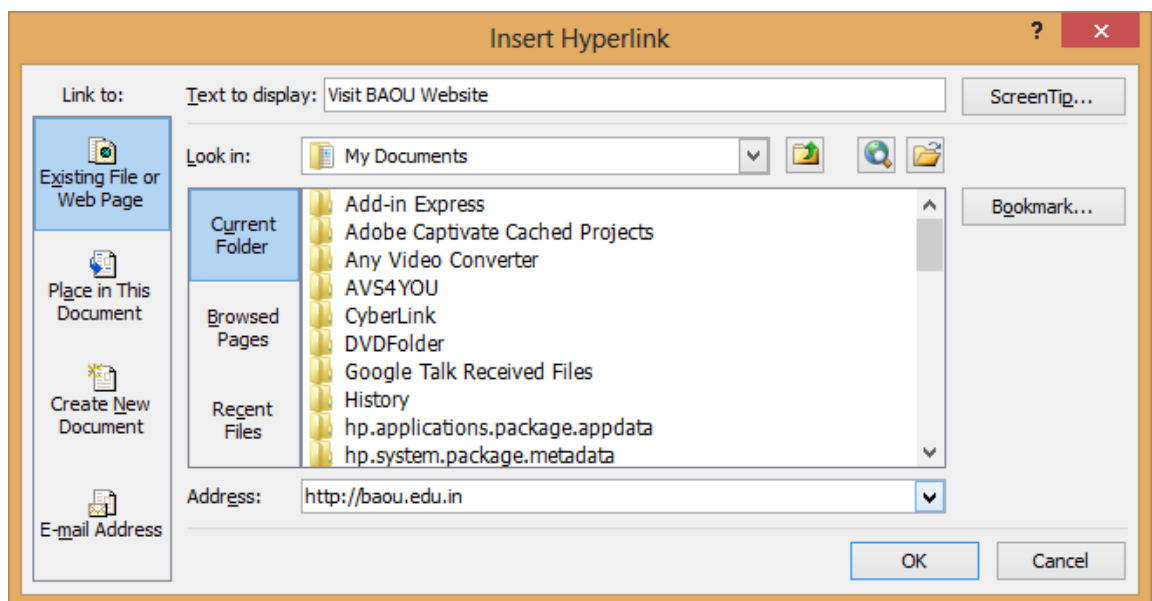
Figure 5.20 Insert Hyperlink dialog box

Figure 5.21 Slide including Hyperlink

To add Action Button

Action Button is used to go forward or backward in a slide and also to open a Programme. By clicking Insert➜Shape➜Action Buttons, any desired action button can be inserted in a slide. (**Figure 5.22**)
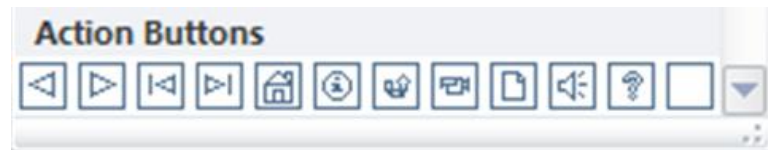
Figure 5.22 Action Button
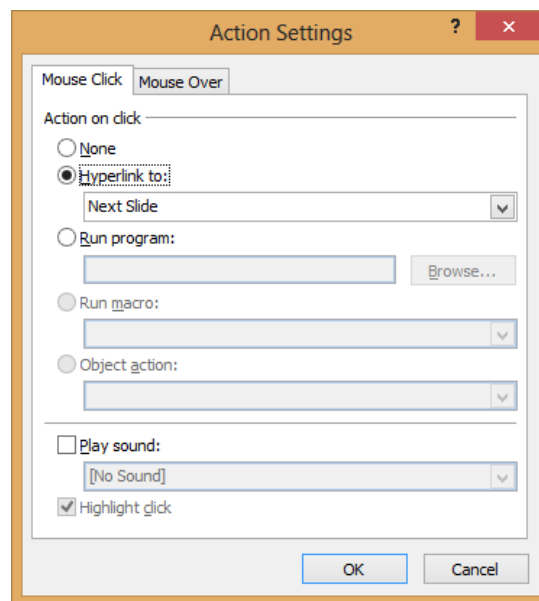
Figure 5.23 Action Settings dialog box

Use the Mouse Clicktab if you want to open a link by a click of themouse. , and if you want to open a link by moving the mouse over it, then use "Mouse Over" tab and can select the options as described below

1) **None:** No action is to be taken.
2) **Hyperlink to: On s**electing this option and clicking on one of the options from the drop down menu, you can select forward, backward, first or last slide or can even select the option to close the slide show.
3) **Reprogram:** This option is useful for opening a program. You can also give a path of the program you want to open by using the 'Browse' button.
4) **Play Sound:** By clicking this checkbox, when a new slide is opened, any audio/sound—hand clapping, applause, hammer, breeze, etc., can be played from the gallery saved in the computer.

Finally on clicking the OK button, Action Button setting gets completed.

5.7 INSERTING SYMBOL IN A SLIDE

To add any 'sign' which is not seen on the keyboard, we can use the Symbol command available in the Insert tab. On clicking Insert ➔ Symbol, a dialog box as shown in figure 5.24 is displayed on the screen. Now by selecting the desired symbol and clicking the Insert button, it gets automatically added to the slide. Different fonts can be selected from the Font drop down list. The added symbol is added in Recently Used Symbols and can be promptly used once again.
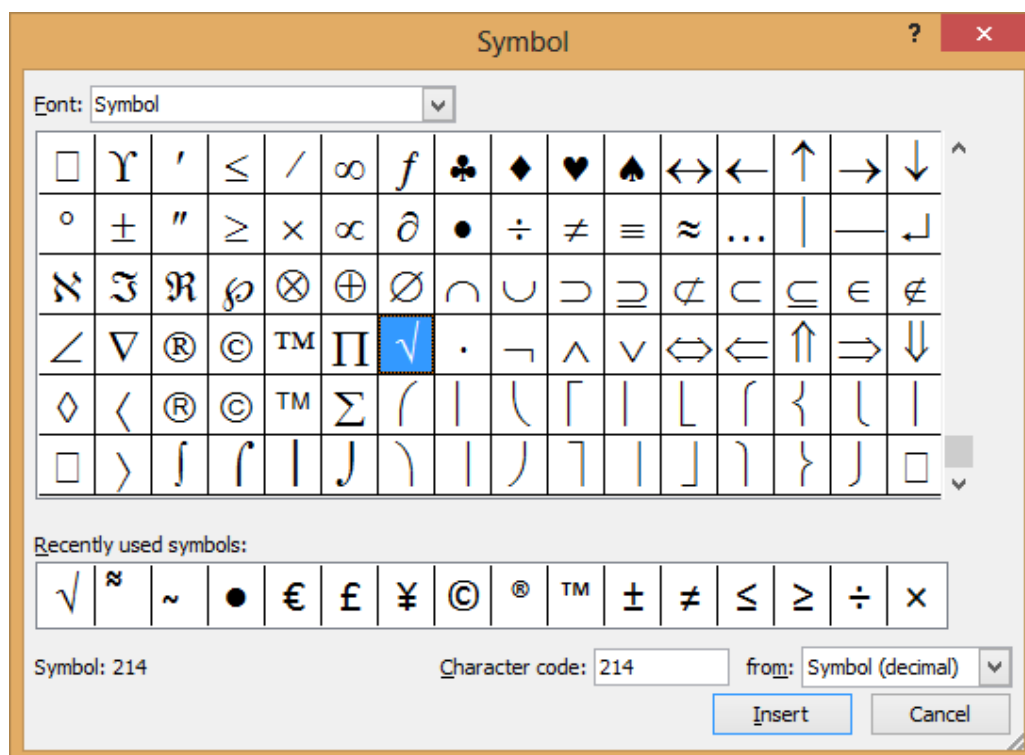
Figure 5.24 Symbol dialog box

5.8 INSERTING EQUATION IN A SLIDE

Equation command of Symbols group in the Insert tab is used to add an equation to the slide. With the help of Equation editor, you can add mathematical equations and you can also create your own equations.

Various types of predefined equations are seen on clicking Insert ➔ Symbols ➔ Equation button as shown in figure 5.25. We can add any of these to our slide by clicking over it.

If you want to add a new equation, you are supposed to click on the "Insert New Equation" button. As shown in figure 5.26, a Equation Tools tab is added to the Ribbon. You can select the type of the equation you want to add. Also built in symbols and equation elements can be added to create custom equations.
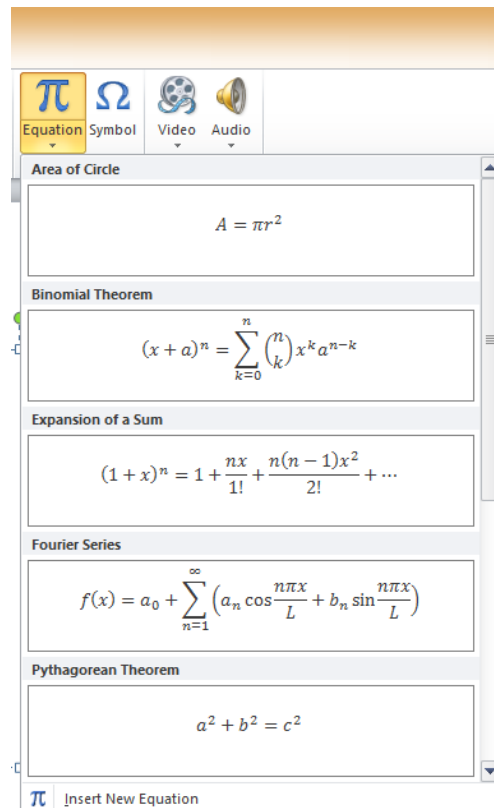
Figure 5.25 Predefined Equations
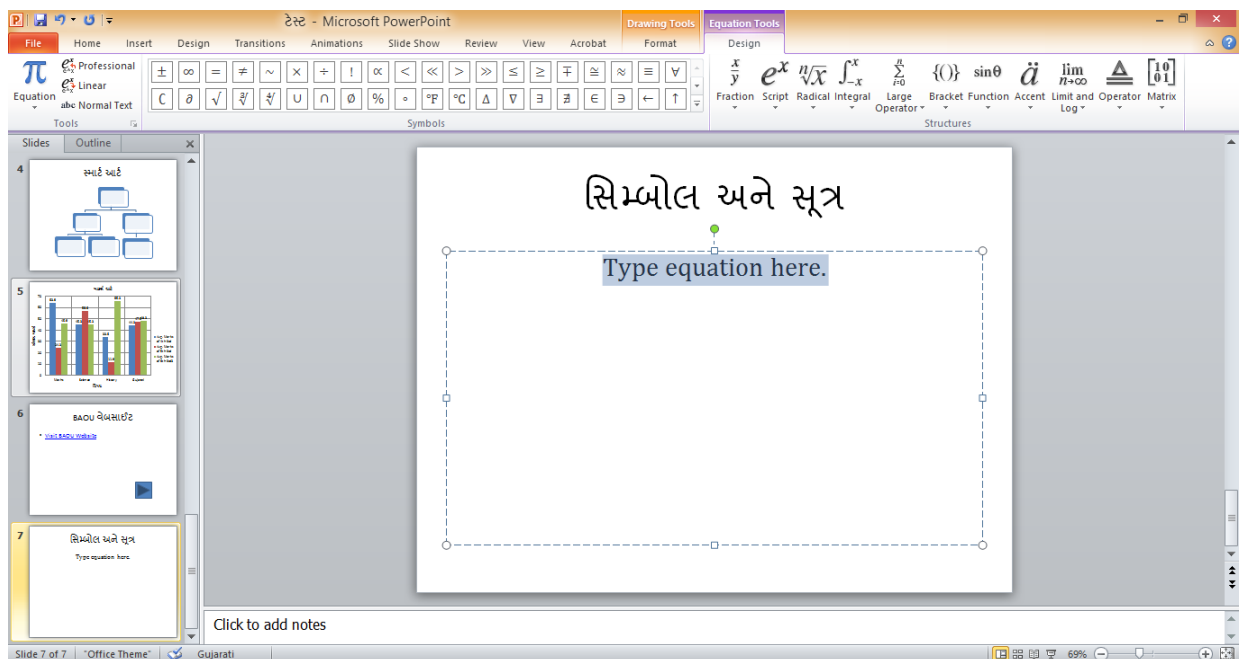
Figure 5.26 To create Equation

5.9 ADD AN ANIMATION TO A SLIDE

You can make your text, clipart, shape or picture alive by using Animation. It is used to draw attention of the audience on a particular point or to make the slide easier to

read. Animation tab is used to add Animation to a slide. First of all, we have to select the text or object which requires animation.

Animation is divided in four categories as shown in figure 5.27:

Entrance: Controls the entry of any item in a slide.
Emphasis: This animation takes place when an item is on the slide.
Exit: Controls the exit of any item from a slide.
Motion Paths: This is useful in moving an object on a predefined path in the slide.
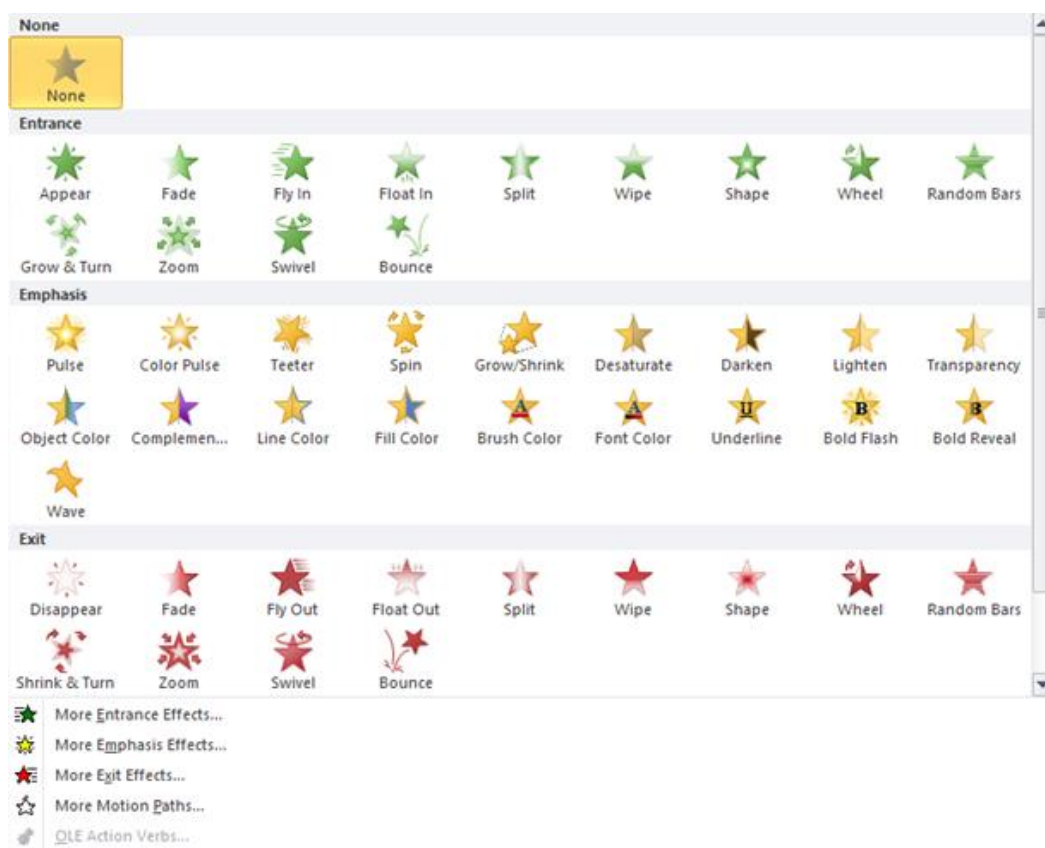
Figure 5.27 Types of Animations
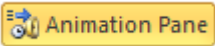
Animation Tab is used to select animation options in Power Point as seen in figure 5.28.
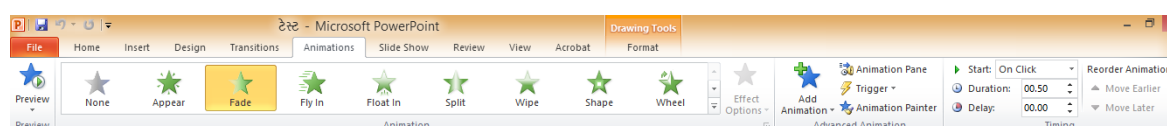
Figure 5.28 Animation tab

Table 5.2 discusses various options available in the Animation tab.

Option	Usage

Option	Usage
Preview	See how the animation will look before starting a slide show by clicking this button.
Animation	Add animation as discussed earlier.
Effect Options	Provides options for some animation effects. You can change them. Options for effects change as per the type of animation—Direction of an object in the slide can be controlled.
Add Animation	Add animation and see how it will look.
Animation Pane	Displays Animation pane as shown on the right side of figure 5.53 will be displayed on the screen. It will enable you to control when to begin the animation and in which order.
Trigger	enables to choose the embedded object for triggering the animation effect
Animation Painter	You can copy the animation effects of one object to another object with the help of animation painter.
Start: On Click Duration: 00.50 Delay: 00.00	Can be set to decide, how to start the animation, the length of an animation effect, and the gape between the end of one animation and the start of the new animation.
Reorder Animation ▲ Move Earlier ▼ Move Later	Helps to change the order of the animation selected in the animation pane.

Table 5.2 Options of Animation tab

You can give more than one animation at a time, record animation, preserve how it will start, and decide how much time it will run.
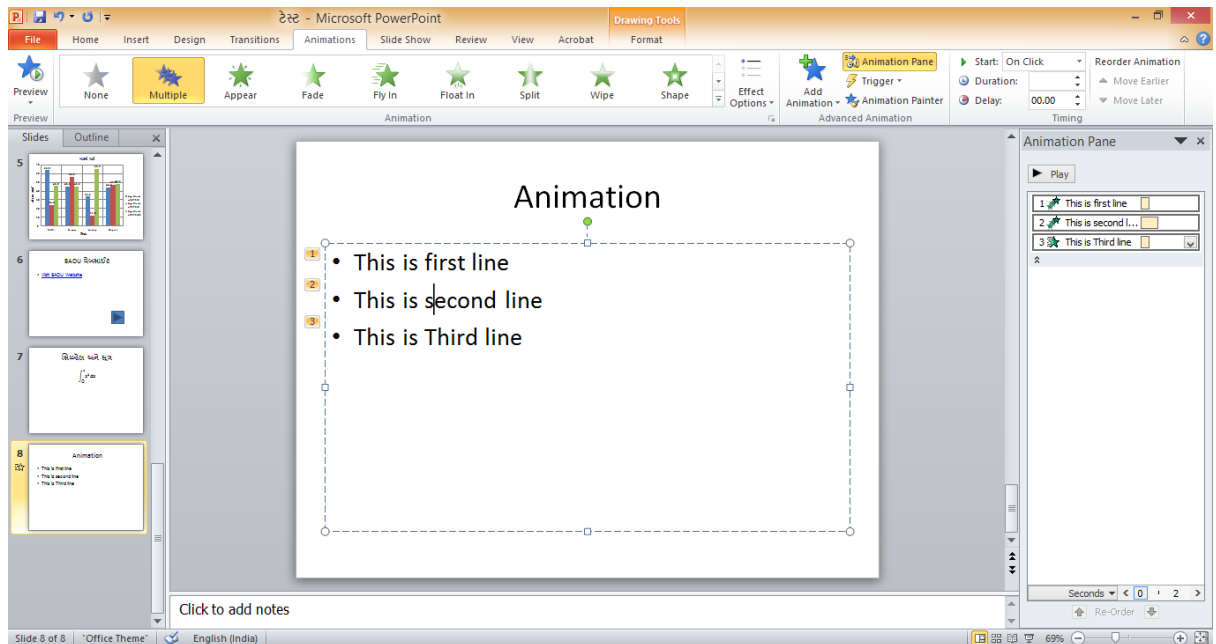
Figure 5.29 Slide including animation

Check your progress

1. Prepare a chart to show statistical information of school/college/city in the presentation.
2. Add hyperlink to website and email address of school/college/city in the presentation.
3. Use 'Action button' to move forward/backward in the slide.
4. Add a mathematical equation to your presentation.
5. Give different animation effects to various objects your presentation.

5.10 START SLIDE SHOW (RUN YOUR SHOW)

Figure 5.30 Commands available on Slide Show tab

Once the slides are ready, you can run the slide show and see the actual presentation. The Slide Show tab can be clicked from the Ribbon. If the presentation is supposed to be started from the first slide, select the 'From Beginning' command; whereas, if it is to be started from the slide displayed on the screen, select 'From Current Slide' command. On giving the Slide Show command, active screen will disappear and a slide show will start on the entire screen. We can display the next slide on the screen by clicking on the separator, pressing the Enter key or mouse key. Presentation can be terminated by pressing the Esc key. We can also start a presentation by pressing F5 Key on the keyboard.

Note: We can also begin a slide show by clicking the right hand side button from the four view buttons, at the bottom right corner of the screen as shown in figure 4.3.

Apart from the above-mentioned commands, there are other commands on the Slide Show Tab, which enable us to run the presentation as per our requirement. For this settings of slide are necessary.

- **Broadcast Slide Show:** This option is used to broadcast the show for the audience who are far away and wish to see the slide show on web browser.
- **Custom Slide Show:** This option is used to display presentation by selecting different slides for different audiences from a single presentation. Some slides are not displayed for certain presentation, using the Hide command. This Custom show is saved separately with a different name. We select different slides as per our requirement for different audiences by giving their names in the Custom Show and apply that presentation.
- **Set up Slide Show:** We can set the timing of each slide displayed on the screen during a presentation. Hence, the slide gets automatically changed once the time limit is over. If we do not want to set the time for a slide, we can click the radio button of manually option. In addition to this, if a Presentation is to be continued while you are preparing the next part of your presentation so as to keep the audience entertained, then select the check mark in front or the loop continuously until Esc option.
- **Hide Slide:** This command is used to prohibit the display of a slide in the presentation though it has been created along with other slides. The slide does not get deleted with this command, but it is not displayed in the presentation.
- **Rehearse Timings**: We can rehearse before the presentation, and can set up to play it at a certain speed without having to click through the slides throat Rehearse Timings. If the time seems right, you can also set the time for each slide, and also come to know how much time the entire presentation will take. We can also change the time of each slide if required.

In addition to this, Slide Show Tab also provides us certain distinctive facilities like different displays on different monitors. For example, if our system has two monitors, one monitor displays the slide show while the speaker's view is displayed on the other monitor.

Thus, the Slide Show Tab provides us many commands to display the preseentation prepared by us along with numerous facilities and options.

5.11 SLIDE MASTER

Slide Master saves the information of Theme of presentation and Slide Layout, which includes background, color, font, size of place holder and its placement. Each presentation has minimum one slide master, and you can also create more number of slide master for a lengthy presentation. Having many types of slides is always considered worthwhile. As shown in figure 5.31, Slide Master Command is available on the View tab of the Ribbon. As shown in figure 5.32, by opening the view of Slide Master using this command, enables you to change the design and layout of the master slide.
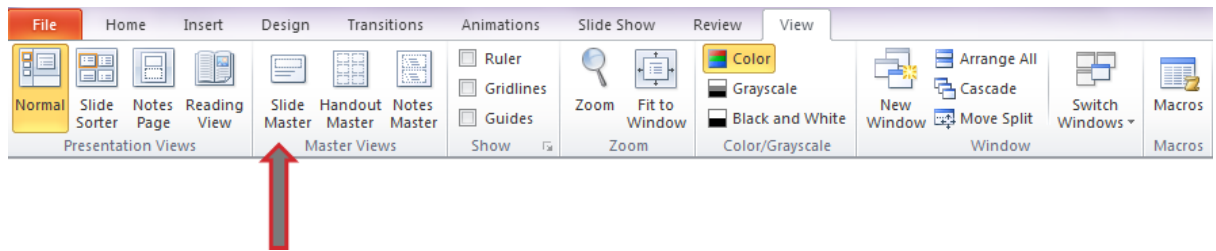
Figure 5.31 Slide Master command on View Tab
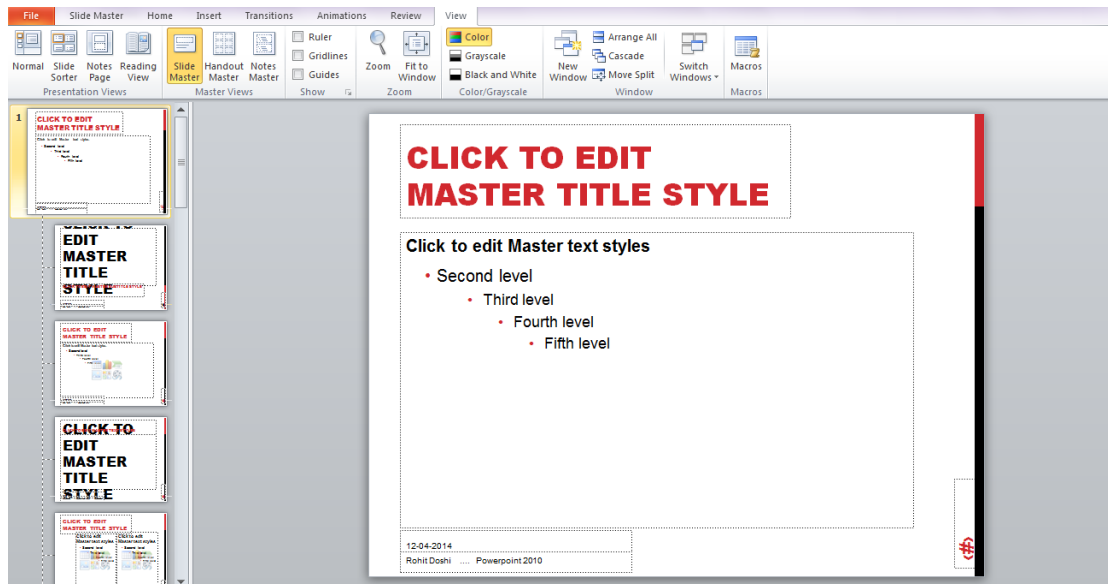
Figure 5.32 Slide Master View

The customization made in the Slide Master can be seen in the entire presentation. Therefore, we can modify the backgrounds, can change the place holders, can customize the text formatting's too.) If we want to have two or more different themes (e.g. background, color scheme or font) in a presentation, a slide master for each theme has to be added. **(Figure5.32)**

There are options of Handout Master and Notes Master in Master View group. Options of working in all these three master slides are the same. There is a checkbox to select options for Ruler, Gridlines and Guides, for the easy editing of Master Slide. Zoom command can be used to zoom the slide; it allows maximum 400% zooming. Fit to Window command when used enlarges or reduces the size of the slide and makes it equal to the size of the screen. We can also select Color, Gray scale or Black and White option to view the presentation.
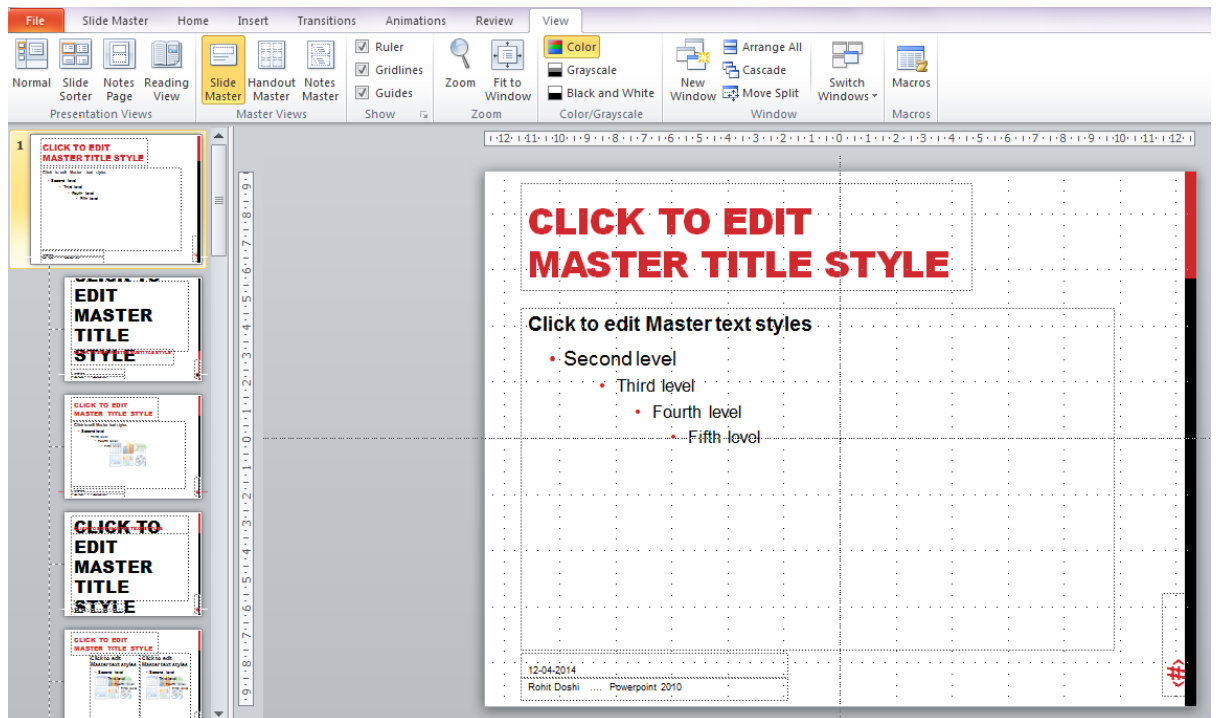
Figure 5.33 Master Slide view along with Ruler, Gridlines and Guides

5.12 REVIEW TOOLS

There are four groups namely Proofing, Language, Comments and Compare on the Review Tab of the Ribbon. By using the New Comment option under the Comments group, we can add new comments to the slides. Existing comment can be edited or can be deleted by using the Edit Comment or Delete options. Previous and Next commands help us to go to the previous or next comment.
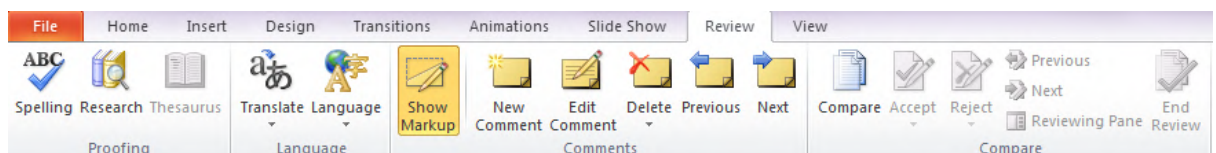
Figure 5.34 Groups available on Review Tab

Power Point provides an excellent facility of spelling command to check the spellings of the text entered in the slides. It also provides us the option to select another word if the spelling is not available in the dictionary or to ignore it. We also get an option to add a word in the dictionary. Figure 5.35 shows various options to correct the spelling of the word—learners.
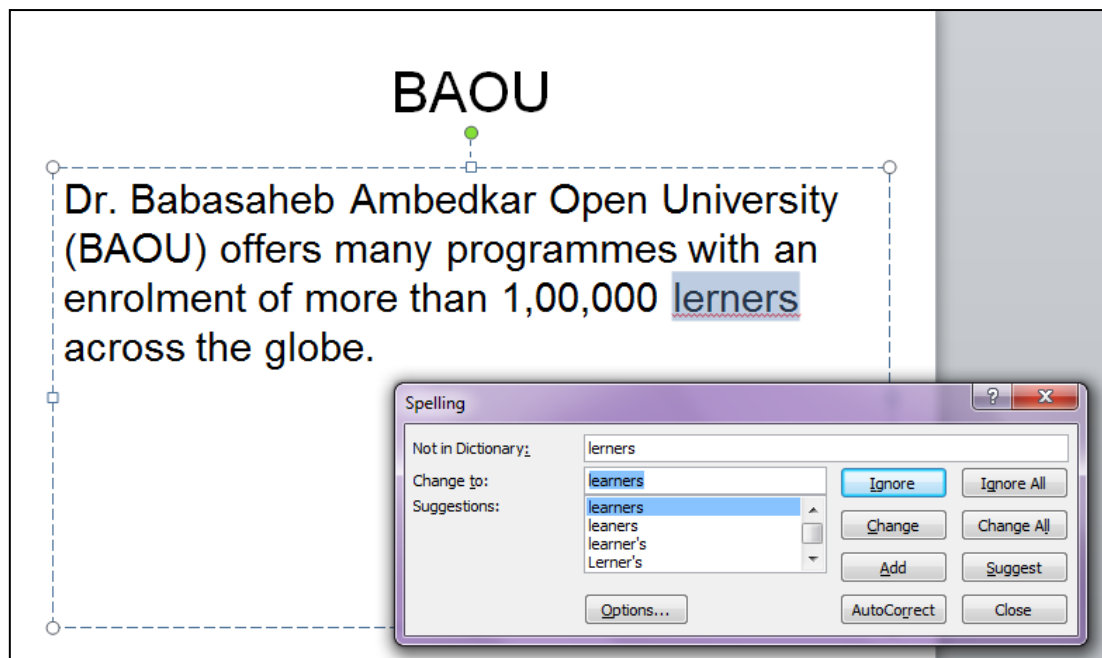
Figure 5.35 Options available when spelling mistake occurs

Alternately, Spelling commandcan also be run by pressing F7 function key on keyboard.

With the research task pane under Review→Proofing can search through reference materials, Dictionaries and from Encyclopedias, thus giving an advantage of a number of research and reference services. (Figure 5.36)
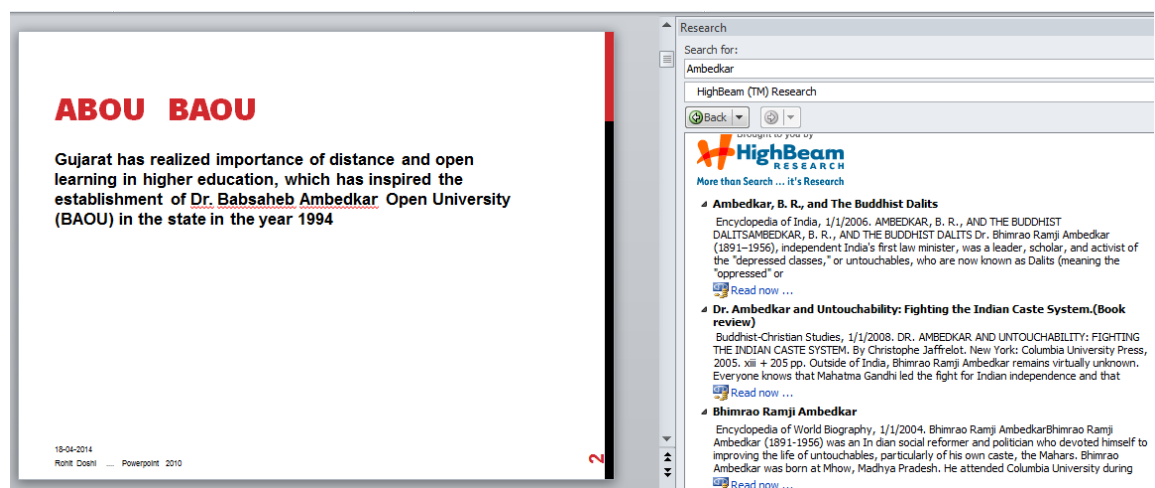
Figure 5.36 Use of Research command

Further in Research pan we can go for Thesaurus for synonyms and antonyms for the word under search.
Selected text can be translated with the help of Translate command. There are many options of languages available for translation; Hindi being one of them.

Thus, commands on Review Tab enable us to prepare a presentation without mistakes and are useful in finding and adding necessary information to our presentation.

Check your progress

1. Set up a slide show for your presentation and rehearse your presentation.
2. Prepare a Slide Master of your requirement and apply it.
3. Correct the spelling mistakes in your presentation.

5.13 DICTIONARY OF POWER POINT

Word	Meaning
Animation	Movement of any type
Bold	Thicken a word/text. It is generally used to emphasisea keyword.
Border	Border around a picture.
Chart	Presentation with graphics which makes the data more meaningful.
ClipArt	Graphic images that can be inserted from a file into a power point slide. They can also be online pictures.
Clip Board	Memory field to save information temporarily or a place where we can save one or more items and then paste it back in the office documents.
Copy Paste	To copy an item on the clipboard and paste it to another place.
Drag	It is the process pressing the left button of the mouse and relesing it , can be used for moving an object.
Drag Drop	An object (word text or image) can be placed in a desired location being dragged from another place.
Gallery	Library where various options are avilable.
Handout	To print information on slide for the audience. One, two, three, four, six and nine slides can be printed on a page for handout.
Navigate	To go to different parts of presentation.
Normal view	Power Point window is divided into three parts—Slide/outline pane, Slide pane and Note pane.
Help	To be used to learn and use powerpoint
Print Preview	A facility to see the document on the screen before printing as to how it will work after it is printed.
Ribbon	Arragement of various commands on Tab and to prepare a group of related commands to do certain type of work.
Slide	A page of presentation.
Slide pane	Big image of active slide is shown in slide pane.
Slide show	Presentation—slides are displayed one by one on the computer screen.
Slide sorter	To make global changes in the presentation and reviewing the entire presentatiion with small slide thumbnails.
File	All the slides of presentation are saved in a file. Extension of Power Point file is .pptx.
Transition	During the slide show, display of a new slide on the screen. New slide can be displayed in various ways.

Table 5.3 Some Keywords in PowerPoint

5.14 KEYBOARD SHORTCUT

Generally, a command is clicked to perform a task in Power Point, but we can also use certain key combinations from the keyboard to perform the same task. These combinations are known as shortcut key. The key is separated with + sign, when two key are to be pressed together. A list of Shortcut Keys used frequently has been given in the following table. Working in Power Point becomes easier and faster if we navigate with the Shortcut Keys.

Shortcut-Key	Work
Alt+F1	Help—to open window
Alt+F4	Help—to close window
Ctrl+F1	Display Ribbon or to close the display of Ribbon
Ctrl+M	To add new slide
Ctrl+C	To copy informationor an object to the clipboard. (Copy)
Ctrl+V	To paste from clipboard. (Paste)
Ctrl+X	Tocut the selected information and keep it in the clipboard. (Cut)
Ctrl+B	To bold the selected text. (Bold)
Ctrl+I	To italicize the selected text. (Italic)
Ctrl+U	To underline the selected text. (Underline)
Ctrl+Shift+>	To increase the size of fonts.
Ctrl+Shift+<	To decrease the size of fonts.
Ctrl+L	To align text to the left side.
Ctrl+E	To align text in the center.
Ctrl+R	To align text to the right side.
Ctrl+F	To find text in a document (Find)
Ctrl+H	To find text in document replace it with another text (Replace)
Ctrl+K	To add a hyperlink
F5	To start a slide show beginning from the first slide of the presentation.
Shift+F5	To start a slide show from the current slide.
F7	To check spellings.
Shift+F7	Thesaurus—provides a list of words having the same meaning as the selected word.

5.15 CHECK YOUR PROGRSS: POSSIBLE ANSWERS

Q1. Select appropriateoptions.

1. Power Point 2010 is a program item of which of the following software?
   A) Microsoft Office 2010   B)   Microsoft Visual Studio 2010
   C) Oracle 10g   D)   Microsoft Word 2010
2. Which key combination can be used as a shortcut to add a new slide to the presentation?
   A)   Ctrl + C   B)   Ctrl + V
   C)   Ctrl + M   D)   Ctrl + B
3. Presentation document prepared in Power Point is saved as a file. What is the extension of that file?
   A) .docx   B) .jpg
   C) .pptx   D) .pdf
4. Which key cannot be used to go to the next slide during a slide show?
   A) Esc Key   B) Space bar

C) Enter key   D) Mouse button

5. When you open a new presentation, which of the following is not available on the left side Pane?
   A) Outline   B) Slides
   C) Notes   D) All of the above

6. How to start a slide show?
   A) F5 Key   B) F1 Key
   C) Giving Rehearse Timings command to the slide show   D) A and B both

7. Which key combination will take us to the first slide of presentation ?
   A) Page up   B) Ctrl + F
   C) Ctrl + Home   D) Ctrl + End

8. Which key combination will take us to the last slide of presentation ?
   A) Page down   B) Ctrl + E
   C) Ctrl + Home   D) Ctrl + End

9. What is the maximum limit of zooming of a slide in Microsoft Power Point 2010?
   A) 100%   B) 200%
   C) 400%   D) 500%

10. Which key combination is used to get help in Power Point 2010 ?
    A) F1   B) F2
    C) F5   D) F10

Q2. Fill in the blsnk eith proer option.

1. To get help in Power Point _____ function key is used.
2. First slide of the presentation can be reached by giving Ctrl + _____ on keyboard.
3. Maximum _____ slides can be printed on a page.
4. We can print a slide in Portrait orientation as well as _____ orientation.
5. By giving _____command, we can see the words of common meaning in Research Pane, related to the word of our choice.

Q3. State whether the statements are True or False.

1. Microsoft Project software is required to prepare a presentation.
2. On clicking any slide displayed in the Slide Sorter View and then clicking the delete key, automatically deletes the slide from the presentation.
3. Power Point 2010 is a hardware of one kind through which a presentation can be prepared.
4. Slide in presentation can be seen on screen and can also be printed on a paper.
5. If Hide slide is activated on a slide, it is not displayed in the presentation.
6. Extension of file in presentation is .docx.

Q4. Add proper link

A	B
1. Animation	a. Selecting an item and moving it to a new place
2. Drag and Drop	b. Memory field to save information temporarily
3. Clipboard	c. Slide show
4. Slide	d. Movement of any type
5. F5 key	e. A page of presentation

Answers:

Q1.   1. A (Microsoft Office 2010)   2. C (Ctrl + M)
   3. C (.pptx)   4. A (Esc Key)
   5. C (Notes)   6. A (Pressing F5 key)
   7. C (Ctrl + Home)   8. D (Ctrl + End)
   9. C (400%)   10. A (F1)

Q2.   1. F12. Home   3. 9 (nine)4. Landscape 5. Thesaurus

Q3.   1. False2. True3. False4. True 5. True 6. False

Q4.   1. d (Movement of any type)
   2. a (Selecting an item and moving it to a new place)

   3. b (Memory field to save information temporarily)

   4. e (A page of presentation)
   5. c (Slide show)

Block-4

Internet and Networking

Unit 1: Computer Networks 1

Unit Structure

1.1 LEARNING OBJECTIVES

After studying this unit student should be able to:

- To get an overview of computer networks and its types.
- To understand various transmission media used for computer networks.
- To understand various devices used in computer networks.

1.2 INTRODUCTION

We are all familiar with the term 'network'. In our day to day life, we use terms like road network, canal network, railway network, bus network, telephone network, etc. Recently in the 21st century, few more terms have been added like mobile networks, social network, etc.   Broadly speaking, network means group of components/elements connected together.   These groups can be of people or devices.   When we use the term 'computer network', these components can be computers, laptops, lets, etc. Let us now study computer networks in detail.

1.3 ELEMENTS OF COMMUNICATION

In this section, we will familiarize ourselves with few terms used in computer networking. The following terms are used when two or more computers exchange information. These terms are known as elements of communication.

- ➢ **Message:** The data or information that is being transmitted is usually known as message.   After a network is established, computers can exchange information with one another. When we transfer a file from one computer to other, it takes the form of a message and gets transmitted. Such messages can be made up of single packet or multiple packets.   These packets are converted into electrical signals or waves, and they are delivered to other computer.
- ➢ **Sender:** The computer that sends the message is usually known as a sender or source.
- ➢ **Receiver:** The computer that receives the message is usually known as a receiver or destination.
- ➢ **Transmission Media:**   To exchange data or information across different computers, wire/cables or space (air) is required. With the help of wires, the data travels in the form of electrical signals; whereas in space, the data travels in the form of electromagnetic waves. Optical fibers allow the data to travel in form of light rays.   Such communication media are known as transmission media. We will discuss different types of media in subsequent sections.
- ➢ **Protocol**: Well defined set of rules are required whenever messages get transferred between computers. For example, when two persons talk with each other, there are few rules like in which language will they communicate, how long will they wait for each others reply, etc.   Similarly in computer networks, sender and receiver communicate with each other using certain well-defined rules. Each computer over the network has to follow certain rules

while communicating with other systems. These well defined set of rules are known as protocols.

Note: In computer networks, terms like computer/workstation, host or node can be used interchangeably. A host or node can be either a sender or a receiver.

Following are a few protocols that are widely used:

HTTP	-Hyper Text Transfer Protocol
FTP	-File Transfer Protocol
SMTP	-Simple Mail Transfer Protocol
IMAP	-Internet Message Access Protocol
TCP	-Transmission Control Protocol
IP	-Internet Protocol
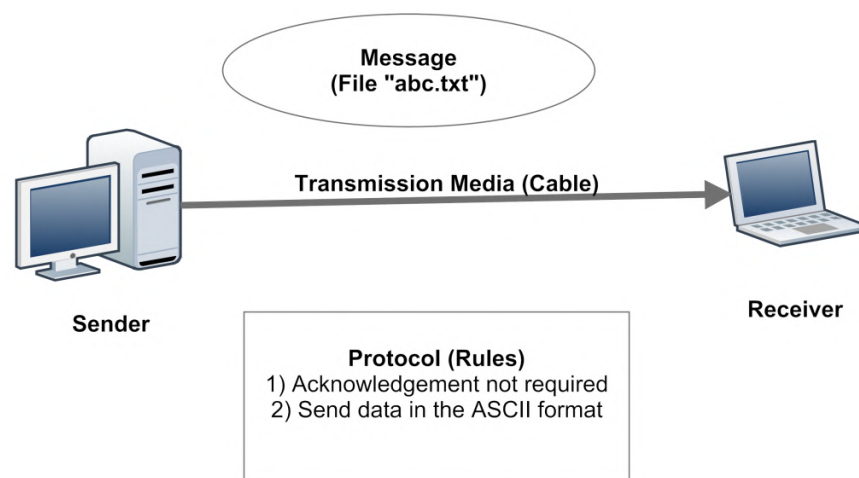
Figure 1.1 Elements of Communication

In computer networks, the speed of transmission of data is known as bandwidth. As we use terms like Km/h while driving a vehicle, the following is a list of few units used to identify the amount of data transferred with respect to the time:

Kbps	= Kilobits per second
Mbps	= Megabits per second
Gbps	= Giga bits per second
KBps	= Kilobytes per second
MBps	= Megabytes per second

1 Giga	= 1024 Mega
1 Mega	= 1024 Kilo
1 Kilo	= 1024 bits Or bytes
(1 byte	= 8 bits)

➤ In layman terms, the transmission speed of 256 kbps is known as broadband connection.

1.4 BENEFITS FROM COMPUTER NETWORK

Computer can store a lot of information. When we want to transfer the information from one computer to another computer, we need storage media like CD, DVD or Pen-Drive.   This process consumes a lot of time and money; however, in the presence of computer networks, the transfer of data and information can be done very easily.

If we attach a microphone, speaker and webcam to a computer and connect the computer with a network, we can perform face-to-face meeting and can chat with many people at the same time. Computer networks can be extremely helpful in Tele-Conferencing and Video-Conferencing.   Using these techniques, people can communicate at a very low cost.

In most of the corporate offices, each and every employee may not be provided with the facility of printers, scanners, etc. With the help of computer networks, a single printer or scanner can be shared by many people. By this way, an employee can take prints remotely from his computer even though the printer is not on his desk. This is how a computer networks can help in saving costs.

We have discussed few benefits that can be achieved through computer networks; however, there are few precautions which need to be taken while working with computer networks. Malicious programs like viruses, worms, Trojans can easily spread over computer networks. Moreover, the data and information stored in a computer can be easily accessed from other computers. Proper security measures are required to ensure the safety of data while using computer networks.

1.5 TYPES OF COMPUTER NETWORK

Computer networks can be classified into 5 major categories depending on the type of work it performs and its geographical span.

a. Local Area Network (LAN): Whenever a computer network is established in a room, a building or a small campus of single organization, we identify it is a Local Area Network (LAN). Computers placed in LAN are very near to each other. For example, computer network created in computer laboratory of schools or colleges.

b. Metropolitan Area Network (MAN): Whenever a computer network is created for a city, we identify that network as Metropolitan Area Network (MAN). For example, networks used by municipalities or local bus transportation (BRTS).

c. Wide Area Network (WAN): Whenever a computer network covers a wide geographical area, it is known as Wide Area Network (WAN). A network spread across the state, country or continent is a WAN. These networks usually range from 50-100 Km to several Km in geographical coverage. For example, Gujarat State Wide Area Network (GSWAN) connects the collector/ mamlatdar offices of Gujarat state. Few other networks like NIC, ERNET are the examples of WAN. Internet is also considered WAN which we will discuss in the next chapter.

d. Personal Area Network (PAN): We are familiar with many families where more than one computer is used at their home. Such types of networks found in homes are known as Personal Area Network (PAN). These networks are restricted to a single house.

e. Body Area Network (BAN): With the increased use of smart phones, many people nowadays connect wireless headphones, laptops with their smart phones. Most of the time they use Bluetooth technology to establish the connection. Such kinds of networks establish within a person's peripheries are known as Body Area Networks (BAN).

Network Type	Geographical (span(approximate	Need of Security	Persons involved
BAN	1-2 metre	Less	Single
PAN	1-20 metre	Less	House/Family
LAN	1-100 metre	Medium	Small Organization
MAN	1-100 Km	More	City/Metropolitan
WAN	100 Km or more	More	State/Country

Figure 6.2 Summary of Classification of Computer Networks

1.6 TRANSMISSION MEDIA

A computer network is created whenever various computers are interconnected. There are two different ways to interconnect different computers:

a) Using Wire/Cables for connection
b) Wireless connection

Whenever the computer network is fixed, that is the computers are not required to move now and then, wires or cables are used to interconnect the computers. But for a businessman who has to travel a lot with his computer or laptop, a wireless network is preferable. Let us explore both the types of transmission media in detail.

1.6.1 Wired/Cable Medium

Usually metals like copper or aluminum are used in electrical wires. Such types of metals are good conductors of electricity. When two computers are connected through wires made up of conducting material, the data gets converted into electrical signals with the use of hardware and software. These signals can be transmitted from one computer to other with the help of wires. The amount of current flowing through the wires is negligible, and therefore there is no threat of accidents.

Different types of wires are available for networking. For instance, the wires used for landline telephones are thin and are known as twisted pair cable whereas the wires used in televisions (that the connect dish antenna to the set-top-box) are thick and are known as co-axial cables. Nowadays, small fiber-like cables are also being used, which are known as optical fiber cables. Depending on the need and circumstances,

different types of cables can be used to establish a computer network.

1.6.1.1 Unshielded Twisted Pair – UTP

Unshielded Twisted Pair (UTP) is a type of cable used for data transmission. This type of cable has eight thin wires twisted in pairs and so it is known as a twisted pair cable. These cables are widely used in LANs. The quality of twisted pair cable is considered to be superior with the increase in number of twists per centimeter?(Please check for the meaning of this sentence, hope it is not distorted) There are different categories of UTP cables, for instance CAT3 cables are used for telephone lines whereas CAT5, CAT6 or CAT7 cables are used for computer networks. The transmission capability of CAT5, CAT6 and CAT7 cables is more as compared to CAT3 cables. Nowadays, CAT5 and CAT6 cables are widely used to enhance computer networks. These cables can connect two different computers which can be nearly 100 meters apart and can transfer the data at a speed of 100-250 Mbps.

The cable shown in figure 1.3 is a UTP cable. These cables are covered with a protective material. The connectors used to connect such cables with a computer are known as RJ-45 connectors. A special type of protective material can provide more security to the data. When such special covering is used with UTP cables, the cables are known as Shielded Twisted Pair Cables (STP). The cables available for computer networks have more number of twists per centimeter.
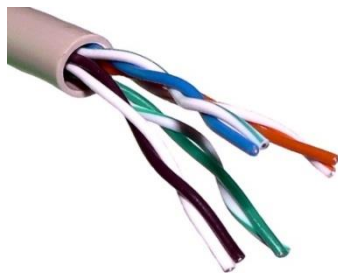
Figure 1.3 UTP Cable

Figure 1.4 UTP Cable with RJ-45 Connector

1.6.1.2 Co-axial Cable

In earlier years, co-axial cables were used in computer networks. However, recently they are hardly being used. These cables can be used for LANs. They are widely used in televisions. As shown in figure 6.4, these cables are covered with a plastic sleeve. At the center of the cable, a thick metal wire is present for the transmission of data. Co-axial cables can be used even if two computers are up to 5 Km apart from each other. The data transmission speeds varies from 10-100 Mbps in the presence of co-axial cables. The connector used with co-axial cables is known as a BNC connector. These cables are more expensive as compared to UTP cable and they require more care as well. For this reason, co-axial cables are not found frequently in computer networks; however, they can transmit data more reliably when compared to certain UTP cables.

Figure 1.5 Co-axial Cable

Figure 1.6 Co-axial Cable with BNC Connector

1.6.1.3 Fiber Optic Cable

With the development in technology, a new type of cable has started taking up the markets. These cables are known as Optical Fiber Cable (OFC). Such cables are created from glass-like material that can transmit data with the help of light rays. (Imagine that we are sending message to some distant person with the help of a torch.)

These cables are prepared by taking special care so that the data can be easily transmitted with the help of light rays. It is ensured that the light gets reflected within the cable and does not get refracted (emerge out from the cable).

When compared to other cables, OFCs can transmit data several times more and can also transmit it more reliably with minimum errors. However, OFCs are expensive and difficult to manage as compared to other cables. Special type of connectors like SC and ST connectors are used with these cables.
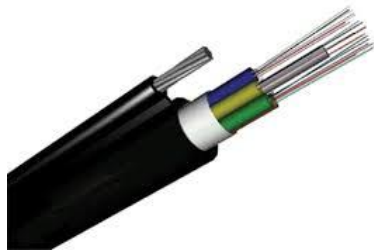
Figure 1.7 OFC Cable
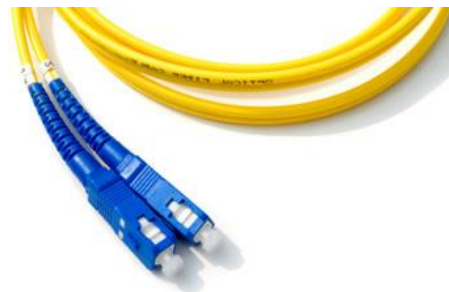
Figure 1.8 OFC Cable with Connector

1.6.2 Wireless Medium

We are all familiar with the term wireless. FM radio is a good example that uses wireless technology where we can listen to audio with the help of waves. Various utilities that we use at home like remote control, cordless phone, mobile phones, etc. use a wireless technology. These devices operate on different frequencies. As such, there are different categories for wireless medium like radio waves, micro waves, x-ray, light rays etc., but in computer networks radio waves and micro waves are being used

We can connect our computer, laptop or let in a network without using wires. Such devices are connected to existing networks using wireless technologies like 3G or

Wi-Fi. The data is transmitted in air with the help of radio waves. Different types of technologies like Wi-Fi, GSM, WiMAX, Bluetooth, CDMA, etc. operate on different frequencies of radio waves, and that is the reason why their features keep on varying.

As we have different channels (91.1 FM or 98.3 FM) in FM radio; similarly in wireless networks, different computers operate on different frequencies to transmit data. As the devices operate on different wireless technologies, the range of connectivity and bandwidth vary with the frequencies on which they operate. For example, wireless LAN or Wi-Fi technology can transmit data at the speed of 300 Mbps and within the periphery of 100 meter; whereas, Bluetooth technology can cover at the most 10 meter periphery with the transmission speed of 700 Kbps.

Note: The desktop computers that use wireless technology require special hardware equipment which are generally not present in consumer desktop computers. However, laptops and lets do have the in-built hardware to support the wireless medium.
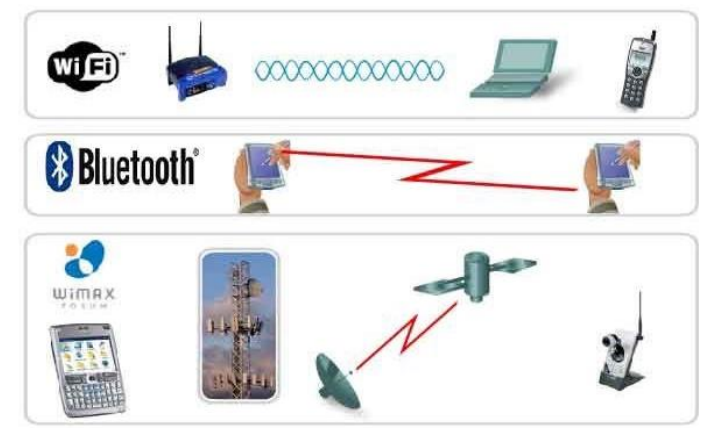
Figure 1.9 Wireless Media

1.6.3 Satellite

Data transmission can also take place with the help of satellites. With the help of 3 satellites, data can be transmitted to any part of the globe. As we can receive various channels in television using DTH technology; similarly, our home computers can be connected to word-wide computers. As this technology is very expensive, it is being rarely used. The technology used to establish computer networks with the help of satellites is known as Very Small Aperture Technology (VSAT).

Figure 1.10 Communication with the help of Satellite

1.7 DEVICES USED IN COMPUTER NETWORK

Different types of devices are used in computer networks. Following points are usually considered before making the appropriate selection of a network device:

- How many rooms or buildings are to be covered by a computer network?
- Distance between these rooms and buildings?
- What type of computers will be used (desktop/laptop)?
- Type of network topology (we will discuss network topology in subsequent section) is used?
- Will the organization be connected to any other organizations?
- What kind of work is to be achieved through computer network?
- Will the local network will be connected with internet or not? Let us take a brief overview of widely used devices in computer networks.

1.7.1 Network Interface Card

Network Interface Card (NIC) is an inveigle device for computer networking. NIC usually accompanies the motherboard of the computer. The main job of NIC is to convert data (bits form) into electrical signals for wired medium or electromagnetic waves for wireless medium and later transmit over those medium. At the receiver's side, the NIC of that computer does the reverse process, i.e., it receives the signals and converts them back into bits form.

Nowadays most of the computers and laptops have in-built NIC on the motherboard. However, NICs for wireless transmission are available in the form of external USB Dongles.

1.7.2 Modem

Modems are required when a computer at home needs to be connected with Internet (global network). With the help of modem, a home computer can be connected to various other computers over the internet using telephone lines. A modem is also required at the other end in case if they are using telephone lines. Different types of modems are available in market; they are generally known as dial-up modem like DSL, ADSL, and ASDL+ etc. The main job of these models is to convert analog signals into digital signals and digital signals into analog signals (modulation & demodulation).

Figure 1.11 Modem

1.7.3 Hub
Hub is a device used to connect different computers into a single network. The cables coming out of the computer NIC are connected with the hub. Whenever a message is sent by a computer, it is passed on to another computer via hub.

Figure 1.12 Hub

1.7.4 Switch
The working of a switch is similar to that of a hub; however, it operates at a faster rate and is capable of attaching more computers into a single network. A single switch can connect 64 computers into a single network. In case one needs to connect more computers, these switches can be interconnected to accommodate hundreds of computers into a network. Switches are more expensive than hub.

Figure 1.13 Switch

1.7.5 Access Point or Wireless Access Point
The role of wireless access point is similar to that of a hub or a switch in the presence of wireless networks. Recently, there has been a major increase in number of devices like lets and smartphones. Such devices have the wireless networking capabilities (wireless card) and can easily connect to Wi-Fi networks with the help of access point. An access point is connected with the switch so that it can connect various devices to the computer network of any organization. Using a single access point, at least 4-5 computers can get connected by a network without the use

of wires.

Figure 1.14 Wireless Access Point

1.7.6 Bridge

Bridge is used whenever an interconnection of two or more LANs is required. For example, suppose there are two different LANs in different buildings, these LANs can be connected with each other with the help of a bridge device.

1.7.7 Router

Routers are used whenever LANs need to be connected with WAN. Routers are also used to decide the path of flow of data (Route discovery and forwarding). A device which is capable of performing the work of a router as well as a bridge is known as a Router.

Figure 1.15 Router

1.7.8 Gateway

Gateways are widely used to interconnect two or more networks of diverse types. These networks might be running different applications. For example, interconnecting telephone network and computer network or mobile network and computer network. Modern routers and switches do possess limited capabilities of gateways.

1.7.9 Amplifier & Repeater

Whenever computers are connected with the help of wires, we must keep in mind the total length of the wire. In case of UTP cables, if the length of wire exceeds 100 meters, gradually the electrical signals being transmitted get weakened. Under such situations, devices like amplifiers or repeaters help to improve the signal strength so that they can propagate longer distances. Few devices can help in reducing noise present in these signals. Such devices are similar to pumping stations found in water pipelines.
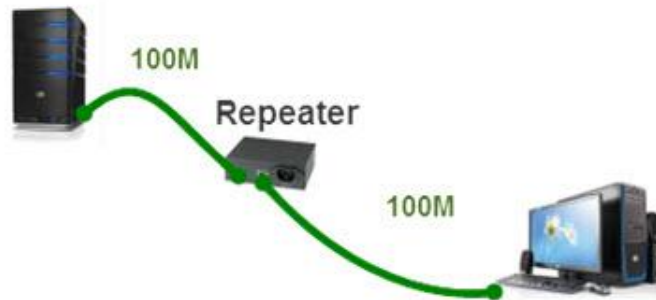
Figure 1.16 Repeater

1.7.10 Crimping Tool
To attach connectors like RJ-45 to the UTP cables, crimping tools are required. With the help of such tools, connectors can be easily attached to UTP cables.

Figure 1.17 Crimping Tool

1.8 NETWORK TOPOLOGY

Network Topology identifies the way in which different computers are connected in LAN. Few well known network topologies are bus, ring, mesh, star, tree and hybrid. Most of the LANs nowadays use star topology. Let us explore each topology in brief:
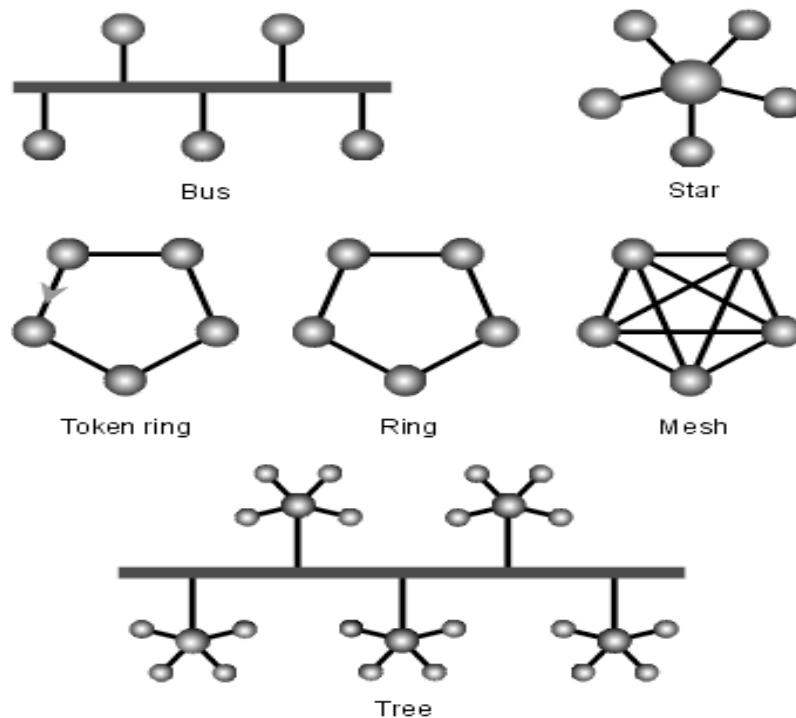
Figure 1.18 Network Topology

1.8.1 Bus Topology

Bus topology was widely used earlier. In this topology, all the computers in a network are attached with a main cable (bus). It is similar to a water pipeline found in a society. In early days, co-axial cables were being used. A special device known as 'Central Controller' is used in the bus topology. The job of this device is to decide the path and the computers that will communicate at any given instance of time. Due to such a provision, only two computers can communicate at a time. There are other problems like scaling issues, i.e., as the number of computers attached to the bus increase, the network slows down. Major issue is that in case the bus gets damaged, entire network will stop functioning.

1.8.2 Ring Topology

In the ring topology, all the computers are connected with each other in a circular fashion. It is also known as a loop. The transmission of data in ring topology is unidirectional. At any instance, only two computers can communicate with the use of ring topology. To avoid multiple computers transmitting data at the same time, a concept of 'token' is applied. With the help of tokens, each computer can transmit data turn by turn. The computer that possesses the token will be able to transmit data while the rest of the computers will listen. After a fixed time interval, the token is passed on to the other computers. Ring topology shows drawbacks like slow network speed when we try to add more computers into the network. This network is not fault tolerant; in case if the loop gets damaged, it can bring down the entire network.

1.8.3 Mesh Topology

In mesh topology, each computer is connected with rest of the computers with dedicated cables. Special kinds of network cards are required to implement this topology. Such network cards can accommodate multiple cables. Practical implementation of mesh topology is very difficult, apart from which, as the number of computers increases, more and more wires are required.

1.8.4 Star Topology

In star topology, each computer is connected with a special device called hub or switch. This device works like a controller; it works like an intermediary while transmitting data from one computer to another.

Nowadays, switches are used in most of the LAN networks. Each computer is connected with the switch using UTP cables. Hubs and switches are low price products and are easily available in the market. Modern switches allow fast transmission of data as compared to the rest of the topologies. The main advantage of the switch is that in case of damage to the cable, only one computer will get disconnected while the rest of the computers can still be a part of the network. However, in case if a hub/switch fails, the entire network goes down.

1.8.5 Tree Topology

Whenever the computers are arranged and connected in a sequence of tree structure, a tree topology is formed. Tree topology can accommodate multiple topologies. Tree topology is best suited when multiple computers are to be interconnected.

1.8.6 Hybrid Topology

In certain cases, different topologies are required to construct a single network from different LANs. A hybrid topology is a combination of various topologies applied to a LAN.

1.9 COMPUTER NETWORK MODELS

Computer networks can be classified into two different categories according to their functions.

1.9.1 Client-Server Models

In the client-server model, various workstations or desktop computers are connected to the Server(s). Figure 6.18 illustrates a network that works according to client-server model. These servers can be file server, print server or network server. Servers are usually high-end computers that offer various services like hosting of a website whereas client computers are normal PCs or workstations from where the users can run their programs. Client computers depend on servers for data processing, storage requirements and/or accessing shared devices.

Servers can store a lot of information. Usually, the client computer sends a request to the server to access the information and the server provides response for the same. Client-server model works according to request-response mechanism. The

best example is when we read emails from gmail.com, our system works like a client that sends request to the server.
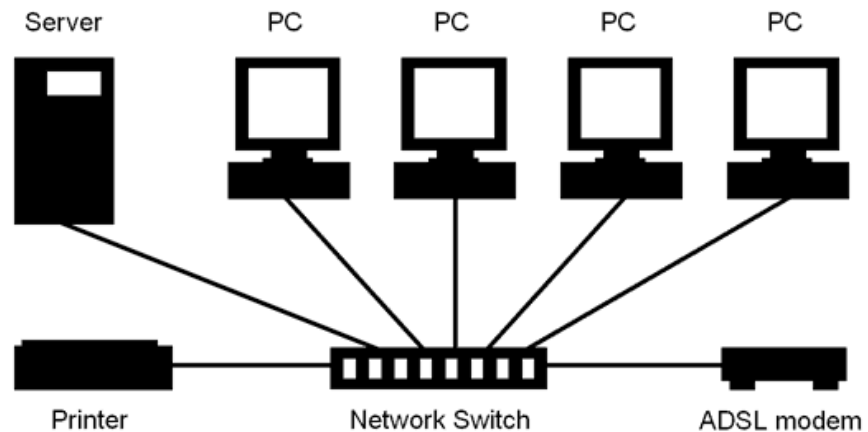
Figure 1.19 Client-Server Model

1.9.2 Peer-to-Peer Model

In peer-to-peer model, each workstation can behave like a client as well as a server, i.e., each computer can send a request or give response to others request. In this model, each computer has equal status. In this model, there is no separate server with higher status. Bit-torrent protocol is an example of peer-to-peer model using which we can upload or download files from any network.

1.10 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

Q1. Select the appropriate choice

1   Internet is a _____ type of network?
   (A) LAN   (B) MAN (C) WAN (D) PAN
2   Data transmission rate in computer networks in known as _____ .
   (A) Protocol   (B)   Bandwidth (C) Waves   (D)   Topology
3   _____ Device increases the strength of signals.
   (A) Modem   (B)   Router   (C)Hub   (D)Amplifier
4   _____ Topologyrequires hub or switch.
   (A) STAR (B)   BUS   (C)RING   (D)MESH
5   _____ Type of cable uses light rays for data transmission.
   (A) UTP cable(B)   Co-Axial cable   (C)Fiber Optic cable(D)STP cable

Q2. Fill in the blanks with appropriate answers.

1. Set of standardised rules and procedures are known as _____ in computer network.
2. _____Type of network has its span throughout the city.
3. RJ-45 connector can be used with _____ type of cable.
4. Wi-Fi network uses _____ type of transmission medium.
5. _____Device is used in Star topology to connect different hosts.
6. In wireless networks, _____ device works similar to a Switch.

Q3. State whether the followings are true or false.

1. Brouter is the device that does the function of abridge as well as a router.
2. Private network of any organization is known as BAN.
3. Gateways are required to establish Wi-Fi network.
4. Client-Server Model follows request-response mechanism.
5. Crimping Tool is used to attach connectors to Fibre Optic Cables.

Q4. Match the followings:

1. RJ-45 connector   a. Fiber Optic cable
2. BNC connector   b. Satellite Communication
3. SC/ST connector   c. Dial-up Connection
4.VSAT   d. UTP cable
5. Modem   e. Co-Axial cable

Answers
Q1. 1. C (WAN) 2. B (Bandwidth) 3. D (Amplifier) 4. A (STAR) 5. C (Fiber Optic Cable)
Q2. 1. Protocol 2. MAN 3. UTP 4. Wireless 5. Hub or Switch 6. Wireless Access Point
Q3. 1. True 2. False 3. False 4. True 5. False
Q4. 1. RJ-45 connector- d (UTP cable) 2. BNC connector –e (Co-Axial cable)
3. SC/ST connector- a (Fiber Optic cable) 4. VSAT–b (Satellite communications)
    5. Modem – c (dial-up connection)

Unit 2: Internet   **2**

Unit Structure

2.1 LEARNING OBJECTIVES

After studying this unit student should be able to understand:

- To get an overview about Internet and its services
- To learn various techniques of establishing Internet connection

2.2 INTRODUCTION

Internet is a network of networks. Internet word is derived from combination of two words, 'INTER Connection' and 'NET Work'. Internet means a collection of huge number of computers or we can say it is network of various computer networks. The computers connected with Internet can easily exchange data. Today, most of the countries are well connected with the Internet.

Internet is not restricted or controlled by any single organization; it is jointly governed by various organizations, industries and citizens. Few countries have formed their own policies and standards on Internet usage, some of them have also formed policies for penalizing in certain cases. Internet has evolved rapidly in short span, which is an achievement to human race. The penetration of Internet among people is more compared to the increase in human census, it won't be an exaggeration if all people world-wide will start using internet in near future.

Origin of Internet:

A brief summary of evolution of Internet is as under:

1962: First computer network was invented
1964: Packet Switching was invented
1965: Hypertext was developed
1969: ARPANET was formed
1972: TCP/IP protocols were developed
1984: Internet nomenclature was established
1989: WWW was developed

Initially, in 1969, the Advanced Research Project Agency (ARPA) of US Defense department developed ARPANET. In short period, ARPANET was extended to connect various Universities,
Scientific Labs and was later extended to other countries. Initially ARPANET connected only few networks which later on scaled to world-wide network.

During 1980s, networks like BITNET, CSNET were developed. In the same year National Science Foundation of USA developed NSFNET to interconnect various colleges, universities and scientific organization. Later, in 1993, International national information Centre (INTER NIC) was formed by NSF which worked with the collaboration of Network Solutions Incorporation (NSI) and AT&T.

Protocol: Usually, TCP/IP protocol suite is used over Internet. Apart from TCP & IP, few well-known protocols like NETBEUI, Point-to-Point protocol (PPP), Serial Line

Internet Protocol (SLIP) and application protocols like simple mail transfer protocol (SMTP), file transfer protocol (FTP), terminal emulation protocol (TELNET) etc. are also being used.

Browser: Browsers are tools used to open any website running over Internet. By entering the website address and pressing the enter key will load the website in our browser. While browsing, we use 'WWW' that stands for World Wide Web. The information stored in web-pages is linked with each other and it is similar to the spider's web. Huge information is available over internet with the help of WWW, we can surf websites over internet and collect the information. To create such web-pages, special tools and technologies are used. Hypertext mark-up language (HTML) and Dynamic HTML (DHTML) are the most familiar technologies used to create web-pages. Few well-known browsers like Netscape navigator and internet explorer were famous for browsing the websites. Internet explorer is a widely used browser till date.

Using Internet Explorer: The icon of 'Internet explorer' is usually present on the desktop. However, the option of internet explorer is also present on the Start Menu. By clicking on the icon/short-cut, the browser gets loaded as shown in figure 2.1 We type the website name in the address bar, later by pressing the enter key corresponding website gets loaded in the browser. We can surf multiple websites with the help of tabs in Internet Explorer.
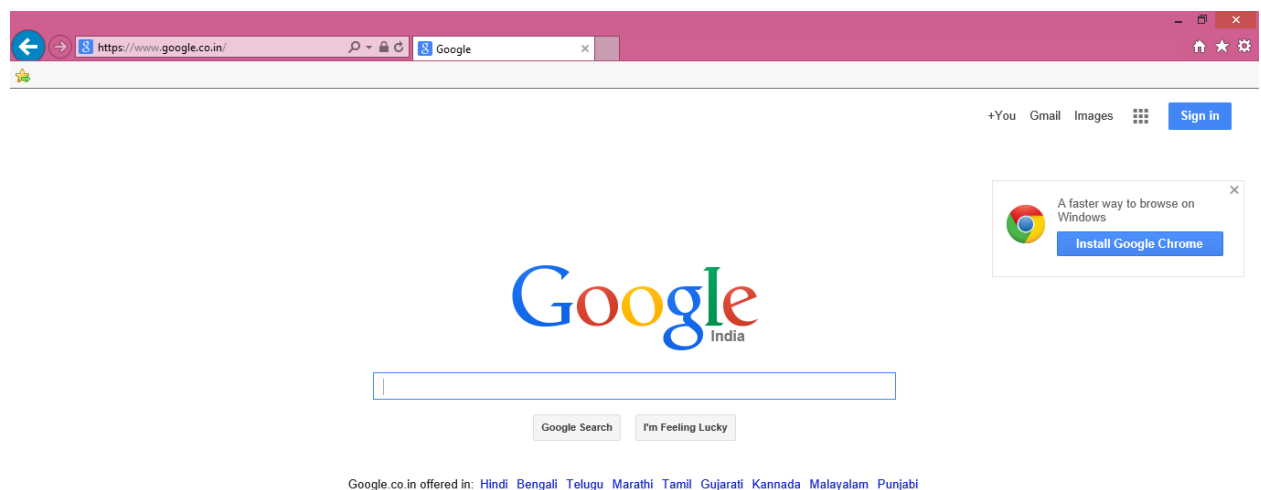
Figure 2.1-a Internet Explorer (Browser)

Although there are many advantages of Internet, but few disadvantages also exist. A big threat of hacking exists over Internet. Hackers are those people who try to steal or modify important information from the servers. Rumors or un-authentic information can easily spread over internet. Presence of pornographic content and objectionable content cannot be restricted over internet. Apart from it, various viruses try to spread over internet with the help of online free games, screen-savers, advertisements etc. Malicious software like viruses can easily spread through Internet. This leads to loss of revenue and our time.

294

2.3 INTERNET SERVICES

Usually, internet is used for e-mailing, chatting, group discussion, video conferencing, online shopping and entertainment. Let us explore each one of them in brief.

i) **Store-house of Knowledge:** Generally it is said that Internet means information hidden in vast ocean. Within seconds, we can get lot of information related to industries, education, people, and tribes, geographic areas, banking sector, travelling, defense or any subject.

ii) **E-mail:** Electronic mail is a very important service of internet. With this service, one person can exchange messages, images, and audio/video with any other person or group of persons residing anywhere in the world. E-mail services are very cheap. However, to use e-mail services, proper user-id like baou@rediffmail.com must exist. Here, baou is Account Holder's id; rediffmail.com is the domain and @ is the separator. Few terminologies used with e-mail are:

a. **Outlook Express:** It is an e-mail service where client can read email delivered from any person or organization, type and send emails, reply to any emails, sending or receiving important documents with messages

b. Inbox: It is a folder that stores the incoming messages (emails)

c. Outbox: It is a folder that stores the emails that are already typed and to be sent

d. Sent Items: It is a folder that stores the emails that were sent earlier

e. New Mail: It is a button used to type emails

f. Send: It is a button to send the emails that have been typed

g. Deleted items: It is a folder that stores the emails that were deleted previously

h. Attachment: It is a button used to attach any file along with the message

i. Addresses: This option is used to store the email contacts

iii) **Chatting:** Chatting is very famous among youth. Usually chatting involves two or more people exchanging messages by typing it live. Chatting can be used to stay in touch with others, for example, Facebook, WhatsApp etc. provide such facilities. Chatting has found its wide use in students where at any time, one person can send messages to any other person or group of person sitting anywhere in the world within seconds and for any period.

iv) **Video Conferencing (Group Discussion):** In video-conferencing, two or more people staying far away, can see and talk with each other live over internet. It is very important; websites like skype, webex provide such kind of services. We have seen in televisions that the news reader can communicate from studio with the correspondents who are at incident sites. Let us see another practical example, a director who is in USA can talk with the employees of his company in India using video-conferencing just by sitting in his office, there is no need for him to personally visit India. Video-conferencing can also be known as online group discussion. Gradually, the use of video-conferencing is widening, now-a-days interviews are also being conducted with the help of video-conferencing. In near future, the education system will start using video-conferencing through which the students in India can attend live lectures from their home of any other universities of Germany, USA, and London etc. without traveling to such places. The main advantage of video-conferencing is that we can see the expressions while interacting over

internet.

v) **Online Shopping:** Now-a-days, there is no need to visit any shop for the purchase, most of the purchases can be done online through websites with the help of Internet. Most of the companies have their websites, just by visiting the website, we can select appropriate model and place an order. The product is delivered at our place with the help of agents/courier in very short span. The advantage of internet is that we can compare various products just by sitting at home with the help of websites. According to a survey, in America, nearly 40% of purchase is done online. A well-known website amazon.com is famous for online shopping.

vi) **Job Search:** Whenever any organization requires employees, they can put the advertisement of their requirements over Internet; the needy people can search and apply to respective positions. Lot of jobs are being posted over Internet, there are few special websites that can be used for job search. We can upload our information over such websites, which becomes our bio-data, later various job related announcements and information is sent to our emails. A well-known website for job search is timesjobs.com

vii) **Entertainment:** There are lots of websites for online entertainment and to remove boredom. Websites for online games, films, commercials are available over internet.

viii) **Railway and bus booking:** We usually use railways, state transport and private buses for travelling. It consumes lot of time to book tickets physically as we have to stand in long queues. However, with the help of internet, these booking can be done online with confirmed tickets. A well-known website for railway ticket booking is irctc.co.in

ix) **Information about geographic location:** We can get information about places, maps along with pictures over internet. e.g. Google maps

x) **News:** We can use internet to know the latest news and events taking place world-wide. Websites like divyabhaskar.in (Gujarati), timesofindia.indiatimes.com - Times of India (English) are widely used for the same.

xi) **Admissions in School/Colleges:** Websites running over internet are very helpful in choosing a particular school or college and securing admissions. For example baou.edu.in, gtu.ac.in, siksha.com

xii) **Travel Planning:** Internet can be helpful to plan national or international visits and do online booking of tickets and hotels. For example yatraa.com

The above listed are few uses of internet in our daily life. Apart from which, internet is also helpful in huge business, government, exchange of information for education etc.

2.4 INTERNET ADDRESS

As we have to remember different roads and paths to reach at a particular address or home, similarly each computer connected with Internet is identified by a unique address. These addresses are known as internet address.
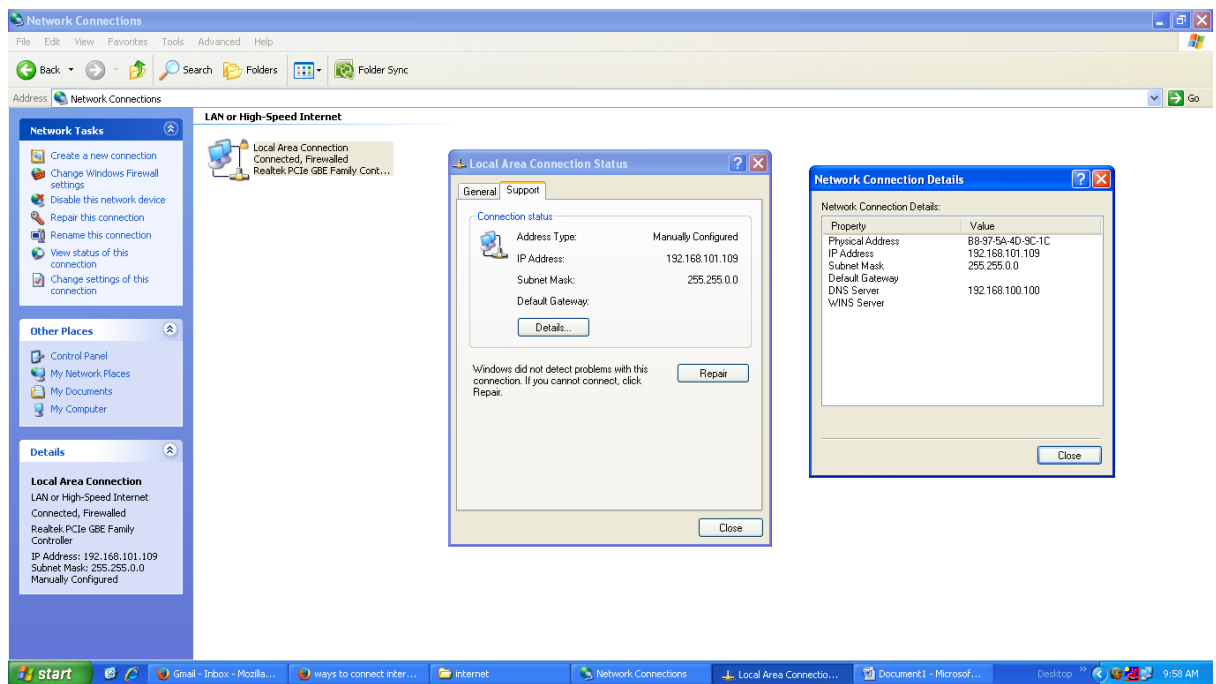
Figure 2.1-b Internet Address

Internet address of our computer can be viewed by opening control panel or My Computer icon. To view or modify the internet address, select Network Connection which shows the devices used to connect to the internet. In the above screen, the computer is connected using "Local Area Connection", by double clicking on this icon, we can see the status, further navigate to Support->Details tab which opens a new dialog box. This dialog box shows Physical Address, IP Address, Subnet Mask, Default Gateway, DNS Server and Wins Server.

2.4.1 IP Address

Internet Protocol (IP) is a standard protocol for Internet. Each computer connected with internet is uniquely identified by a unique number known as "internet number". This number has 32 bits and is divided into four parts. Each part has 8 bits ranging from 0 to 255. So, each part has different numbers from 0 to 255, for example 203.52.42.36 is an IP address. These addresses are unique for each computer; however, if a computer has multiple internet connections, it may have multiple internet addresses.

2.4.2 MAC Address

MAC address is Medium Access Control Address. It is a unique address found on network hardware like NIC card. It is usually of 48 or 64 bits. MAC address is a permanent code found over internet adapter. It is given by the manufacturer of the NIC and adheres to Institute of Electrical and Electronics Engineers (IEEE) standards.

2.4.3 Port Address / Port Number

Computer network or Internet provides various services like file transfer, email, web services etc. Each of these services is offered on a pre-defined port. A port number or port address is an integer number that identifies each service uniquely. For

example file transfer protocol (FTP) uses port number 21, HTTP uses 80 and E-mail service of sending mails (SMTP) uses port number 25.

We generally apply port numbers to enable or disable any service from firewall.

2.5 TOP LEVEL DOMAIN

It is difficult to remember IP addresses over internet. A service called Domain Name system (DNS) was established to easily remember names of computers/websites. It maps each IP address to some domain. Depending on the type of services being offered, there are various domain names available as shown in the following table:

Domain	Significance
.gov	Government
.mil	Military
.edu	Educational
.com	Commercial
.org	Organization
.net	Network

Domain names are also assigned depending on the country name. The below table illustrates county level domains.

Domain	Country
.in	India
.au	Australia
.us	America
.uk	England
.ca	Canada

As it is difficult to remember the IP address of different websites, an easy technique of domain name system was developed. Using which, we can remember websites easily like google.com, yahoo.com, baou.edu.in, gswan.gov.in, gujarat.gov.in etc. In fact for each of these websites, there are corresponding IP addresses with the help of which they function.

To know the corresponding IP address for any domain name, we can use lookup command at command prompt as shown below:

C:\>nslookup gswan.gov.in

2.5.1 Domain Name System

Whenever we open any website, our computer first contacts the domain name system (DNS) to fetch the IP address of that website. Later, using the IP address, our computer contacts the web-server and finally loads the webpage into our browser. This procedure is known as DNS resolution. Figure 2.2 explains the procedure in graphical form. In the figure, various message exchanges of DNS resolution are shown when our computer is trying to open hubpages.com website. As of now, there are thousands of DNS servers spread worldwide.
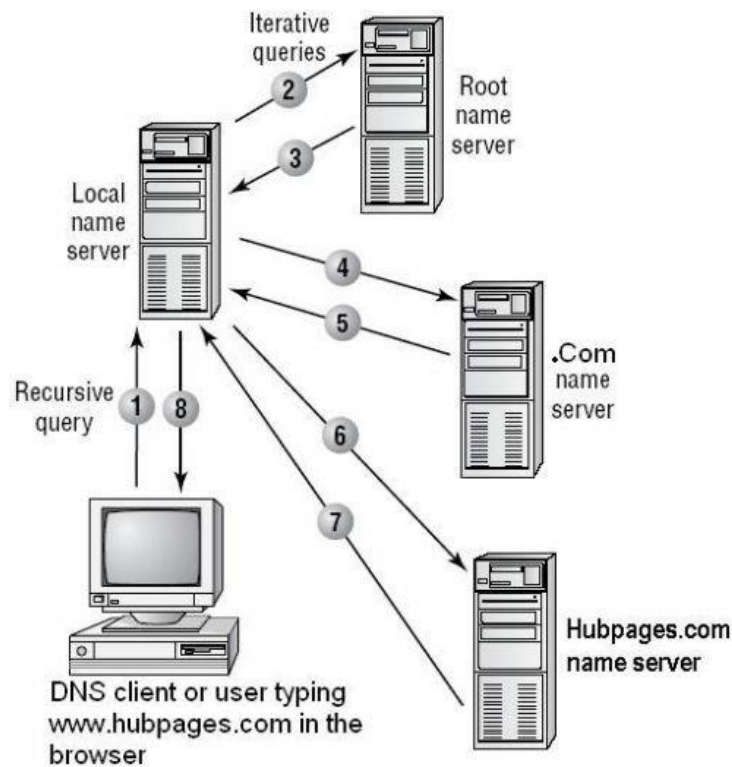
Figure 2.2 DNS Server

2.5.2 Uniform Resource Locators –URLs

Uniform resource locator (URL) is also known as web address. A website is a collection of web-pages. Each of the webpage can be uniquely identified over the internet and can be loaded in the browser. To identify each of the webpage, we use URLs. A URL is a combination of protocol, website (domain name), path of file and filename. For example, the library timings details of Santa Rosa College can be gained using the following URL

Figure 2.3 Uniform Resource Locators (URLs)

2.6 TECHNIQUES TO ESTABLISH AN INTERNET CONNECTION

With the recently developed technologies, the following are different ways to connect with Internet.

  i)   Using Direct / Leased Line
  ii) Using Remote / Dial-up connection
  iii) Using SLIP / PPP
  iv) Using Commercial Online Services

i)   Direct / Leased Line: With the help of telephone line or dedicated line, internet connection can be established. The fee/tariff is charged depending on the bandwidth, usage and number of users. Usually, leased line connection is more expensive.

ii) Remote Dial-up: Whenever a personal computer is required to establish connection with Internet through gateway computer or telephone line, under those circumstances the internet service provider (ISP) provides dial-up connection service through telephone lines. It is also known as remote dial-up.

iii) SLIP/PPP: With the help of remote dial-up connection, the client computer can connect to other host computer with the help of point to point protocol (PPP) or serial line interface protocol (SLIP)

Commercial Online Service: Various other commercial services that use phone line or cable lines cater online environment and internet service. They help connecting personal computer with other host computers over internet.

2.7 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

Check Your Progress:

  1. Try to know the IP address of your computer if it is connected with the Internet.
  2. Try to know the IP address of google.com if your computer is connected with the Internet.
  3. Visit the following websites:
       a. www.baou.edu.in
       b. www.gujaratuniversity.org.in
       c. www.pmindia.nic.in
       d. www.hostindia.net
       e. www.ril.com

Unit 3: E-mail Client 　3

Unit Structure

3.1 LEARNING OBJECTIVES

After studying this unit student should be able to understand:

- To understand the role of Browsers and its features
- To understand the role of E-mail and MS-Outlook configurations

3.2 INTRODUCTION

In Previous lecture we have seen the origin of Internet, its services, Internet Address and different techniques to establish an Internet Connection. This chapter introduces E-Mail Client. Also explains how to add and configure E-mail. It also discusses facilities like Calendar, Contacts and Task and Note. Gives idea about general security concepts and Network Troubleshooting.

3.3 BROWSER

Once the internet connection is established, we must harness the benefits of it. Browsers were developed to use Internet and get the benefits of Internet. Browsers are also found in laptops and smart-phones. Browsers can be classified as follows:

i) Line Browser: This type of browser uses command line interface. It only displays textual data. Here, the user can enter various commands to surf internet. At the bottom of browser screen, various commands and its usage are displayed. Lynx is a widely used command line browser.

ii) Graphical Browser: Line browser cannot display multi-media data like images, audio, video etc. Graphical browsers are helpful in displaying such kind of data; mostly they rely on mouse instead of keyboard while surfing. These browsers can display hyperlinks in different colors; users can easily distinguish the web-pages they have already visited as such hyperlinks are shown in violet color, while the non-visited hyperlinks are shown in blue color.

iii) Java Enabled Browser: These browser support java language. With the help of such browsers, java applets can be downloaded from the server and can execute within the browsers. With the help of such browsers, dynamic content can be accessed.

Figure 2.1-a Different Browsers

The above figure shows icons of four widely used browsers.
- i) Internet Explorer
- ii) Mozilla Firefox
- iii) Google Chrome
- iv) Safari

These browsers are famous among computer users. Internet Explorer is pre-installed and available on all windows computer. Browsers come with various facilities, although there are different browsers, most of the features are available in all these browsers. Let us briefly study the features available in the browsers.

(a) **Back and Forward Button:** These buttons help us to easily navigate during internet surfing session. It helps to see the previous visited web-pages and subsequent web-pages during the session.

(b) **Refresh/Reload and Stop button:** Refresh/Reload button can be used to load the web-page again in the browser so that it can provide updated details, if the web-page is taking lot of time to load, the stop button can be used to stop loading of the page.

(c) **Zooming:** The browser fonts and display can be enlarged.

(d) **Home Button:** It helps in loading the Home page (default website); in few cases it opens a blank page in the browser.

(e) **Search bar:** With the help of search bar, we can search for any specific keyword using a pre-configured search engine.

(f) **Address bar:** The website is typed in address bar, after which the corresponding web-pages start getting loaded

(g) **Status bar:** When a website is being loaded in the browser, its progress is displayed in status bar

(h) **Pinned Websites:** Favorite websites can be pinned using this button, so that they can be easily launched from the task bar.

(i) **Bookmarks:** Favorite websites can be bookmarked, so that the browser remembers such websites, it helps us to easily load websites in another browsing session (some other day) and reduces the burden of typing websites in address bar.

(j) **History:** All the websites that have been visited are remembered by the browser as browsing history. We can get the details of our browsing history of any previous day by using this option.

(k)**In private browsing:** Each of our browsing session's data and history is stored by the browser. At times it is not preferable to store our data in the browser, for instance when we are using public computer from cyber cafe. In such cases, we can use 'private browsing' option so that the browser does not store our history and data; this ensures that our browsing session is secure and protected.

(l) **Internet Options:** To configure the behavior of browser during surfing, 'internet options' is used. Various aspects of browser like security, history, content etc. can be configured using it.
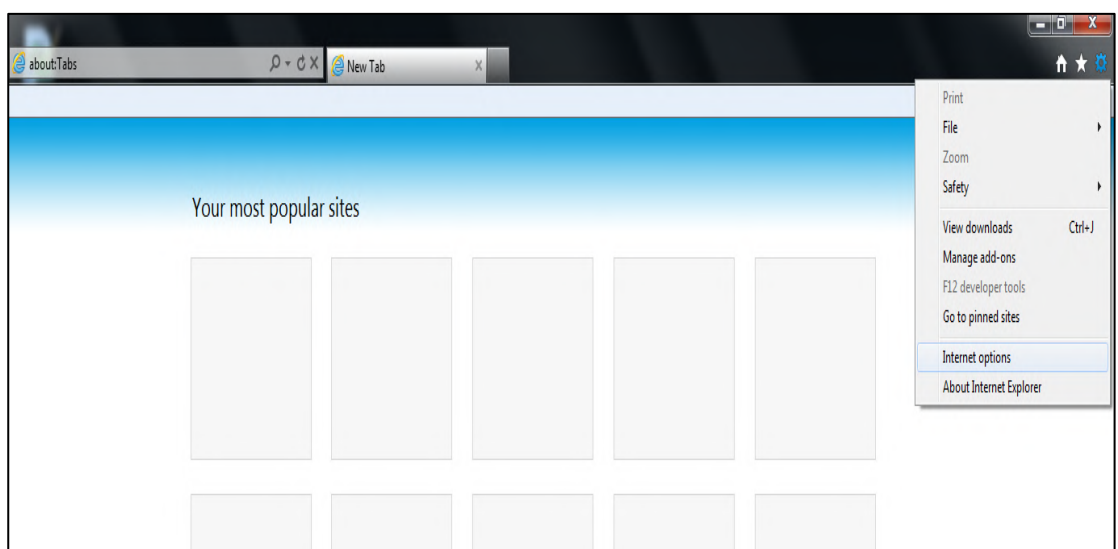
Figure 3.1-b Internet Explorer Browser
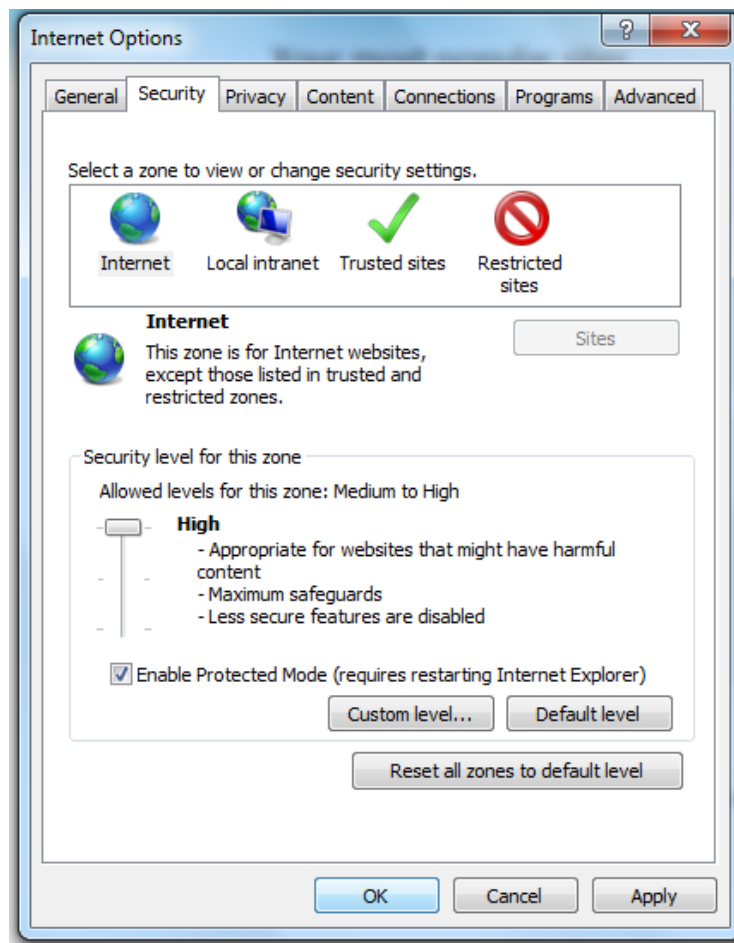
Figure 3.1-c Internet Options in Internet Explorer

<u>Check Your Progress</u>
1. Set the website google.com as your default page
2. Open and check the website <u>www.baou.edu.in</u> in different browsers.

3.4 MS OUTLOOK

Outlook is a product of Microsoft. It has facilities to create and store E-mails, Calendars, and Addresses etc. Outlook can be used to send or received emails when connected with the internet. The advantage of outlook is that we can view old emails without live internet connection. Today, outlook is being used in various organizations. Outlook is very simple to use, let us explore in more detail.

The figure 3.2 is the initial screen when we open outlook. The screen is divided into four parts including a menu bar as seen in other programs. Part-1 displays the information about mails, on clicking an option in part-1; the details of those items will be shown in part-2. For instance, when you click on inbox in part-1, the details of inbox will be shown in part-2. After clicking on any mail in part-2, a small preview will be seen in part-3. Part-4 contains calendar, apart from viewing the dates, it can help to remind various events according to dates. It saves the information about work to be done on particular dates.
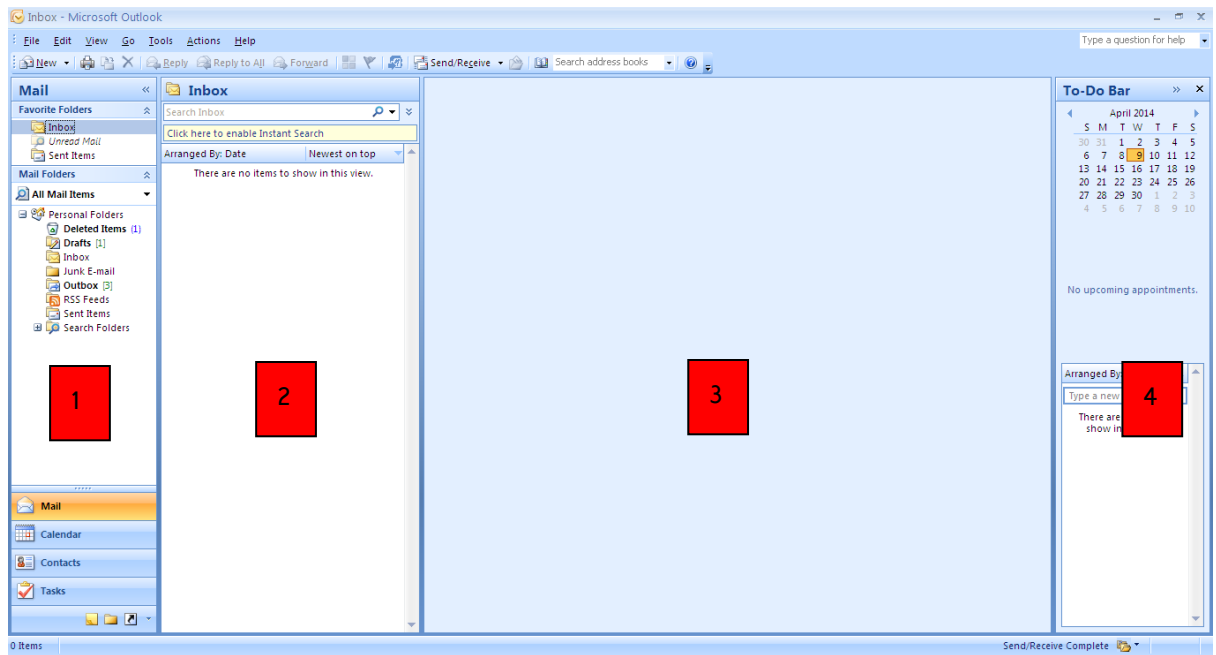
Figure 3.2 Outlook Express

3.5 ADDING AND CONFIGURING E-MAIL

Figure 3.3 Adding an Email Account to MS Outlook 2010

E-mail means electronic mail (electronic post). With the help of internet, any message can be sent or received instantly. To use e-mail, there must be a unique e-mail address. We need to configure outlook to send or receive e-mails. Configuring a single email address is one time process. As soon as we start outlook, the first dialog box appears that displays configuring outlook. Subsequent dialog box will show 'startup', after clicking on 'next', it asks to enter the e-mail account. If you already have an online e-mail account and want to proceed further, click 'yes' else click on 'no'.

Enter the details required by outlook, further click 'yes'. If all the details entered are configured successfully, you may click on 'finish' else it shows error message. To open a new account, click on the sign present in left hand side top corner. Later

enter into 'Profile' and click on 'Add account'. Fill all the details in the screen, on confirming the details, your e-mail address will be added.

3.6 ATTACHMENT AND SIGNATURE IN E-MAIL

To send any file with e-mail, we use the 'Attach' button in 'Insert' menu. After selecting the file, it will be seen as an attachment in your email that can be sent to any person through email.

Now, to send any file or attachment to any person, go to 'Files' menu and click on 'New', this will open up the screen as shown in figure 3.4. Then click on 'Attach Item', browse the file from your system to attach the file with the message.

To attach a 'Signature' to your email, click on the 'Signature' button, this helps to add our signature (name & contact details) that we have already configured.
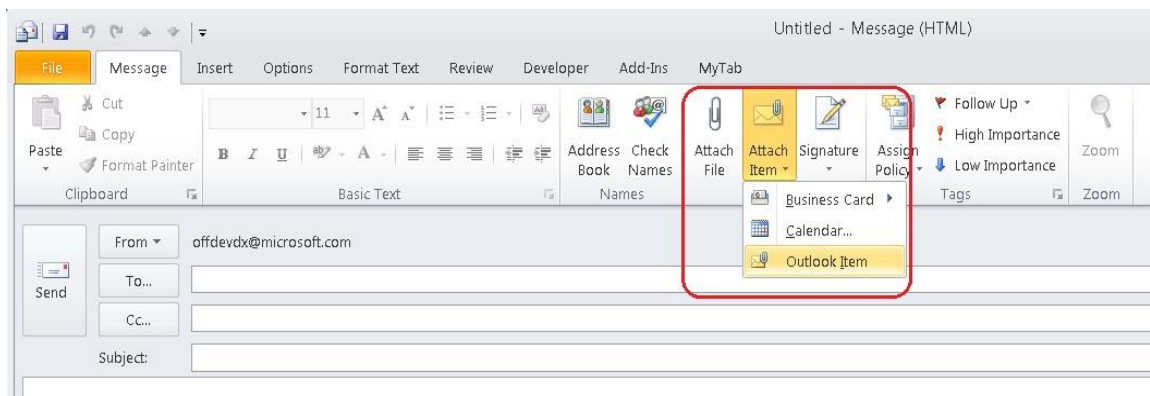
Figure 3.4 Attachments in E-mail

Check Your Progress
1. Configure the outlook as per your email id.
2. Send an email to your friend from outlook.
3. Send an email with attachment and signature to your friend from outlook.

3.7 CALENDAR

By clicking on the calendar option, it pops up the calendar similar to that we use at home. Using this calendar, we can easily navigate between dates, months or years back and forward. We can prepare an organizer to identify the tasks to be done on particular date and time.

The following steps are necessary to setup an organizer:

• By clicking on 'New' button will open up a new window
• Go to 'Action' menu and click on 'New Appointment' to open up another window.
• Enter Subject, Location, time and other details.

As shown in figure 3.5, a calendar for the month of April, 2014 is shown with dates. By clicking on a particular day, we can enter tasks to be performed on those days.
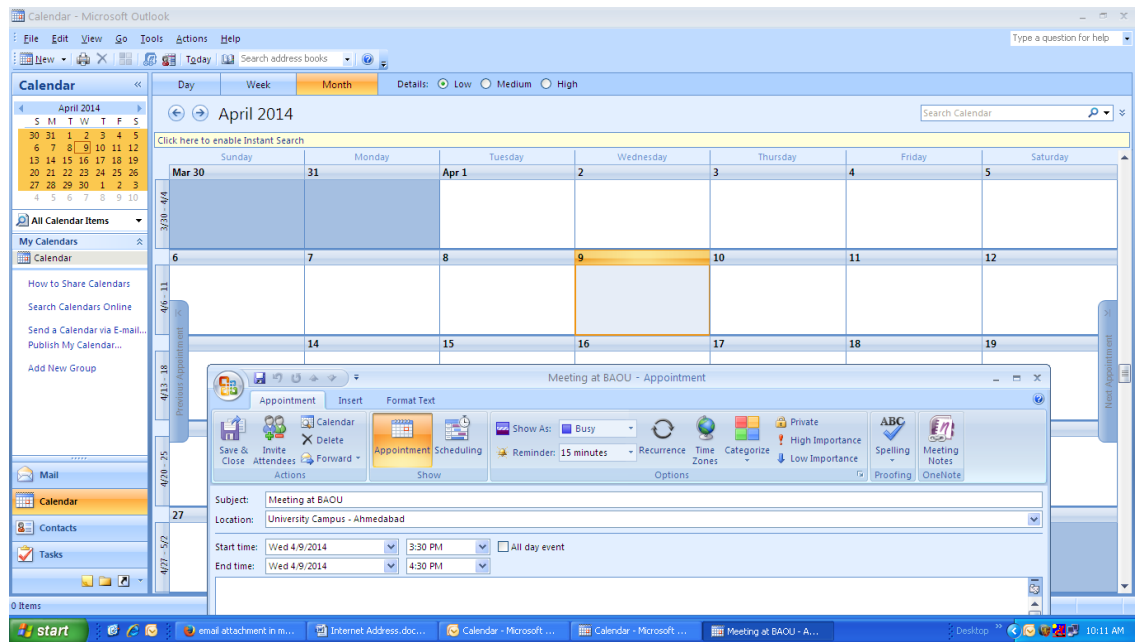
Figure 3.5 Calendar in Outlook

3.8 CONTACTS

After we send a new email to any person, there is a facility to add their contact details in outlook. The 'Contacts' menu will display icons to manage contacts from outlook. From the 'Address Cards List', we can see the phone numbers and other details using the 'Current View' icon. We have to add details of any person by selecting the emails sent to them. It is a onetime process to enter the detail of any person, later we have to save and close the window.
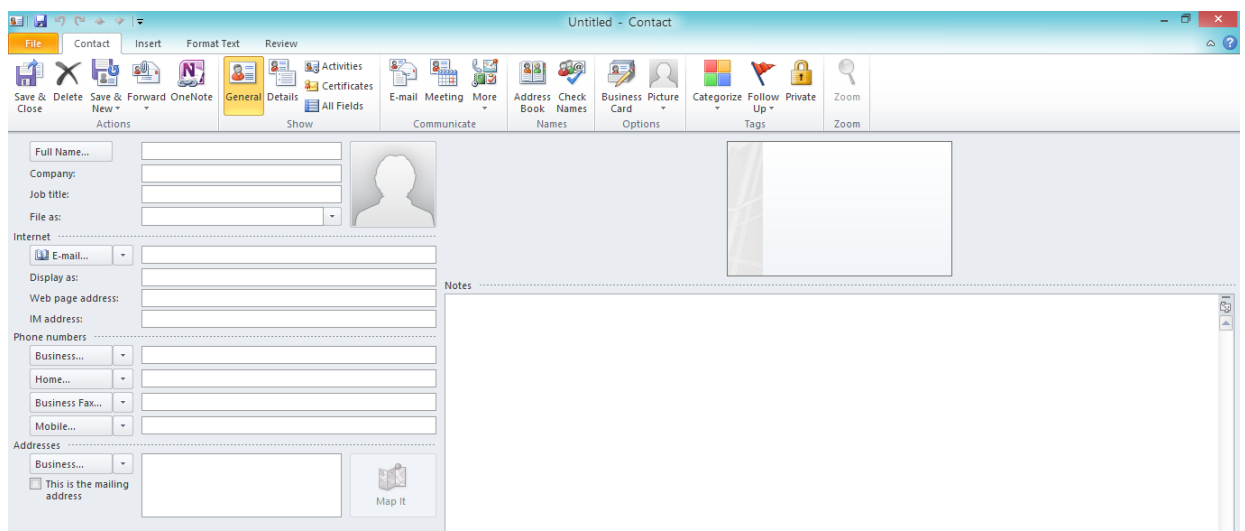
Figure 3.6 Adding Contacts in Outlook

3.9 TASK AND NOTE
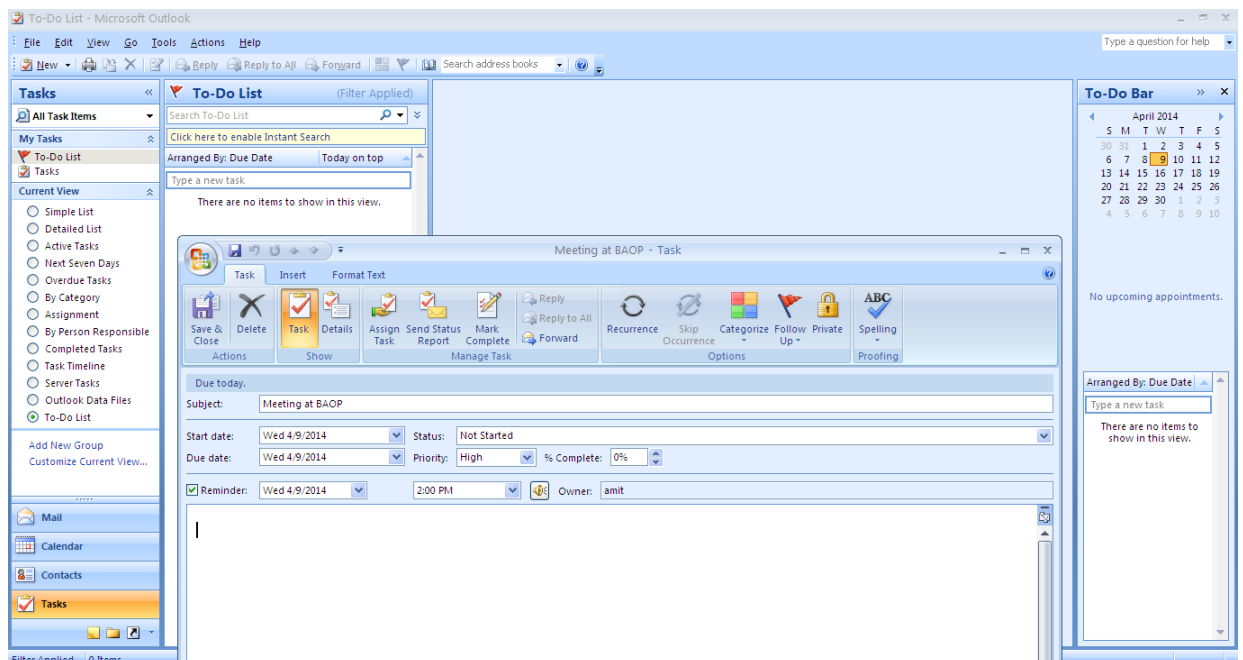
Figure 3.7 Task in Outlook

By clicking on 'Task' button, it displays all the tasks till date with the ending days of each task. To add a new task, a dialog box opens by clicking on 'new' button. We can add the task details like subject, start date and end date etc. and later save and close the window. The inserted details will be shown in a dialog box.
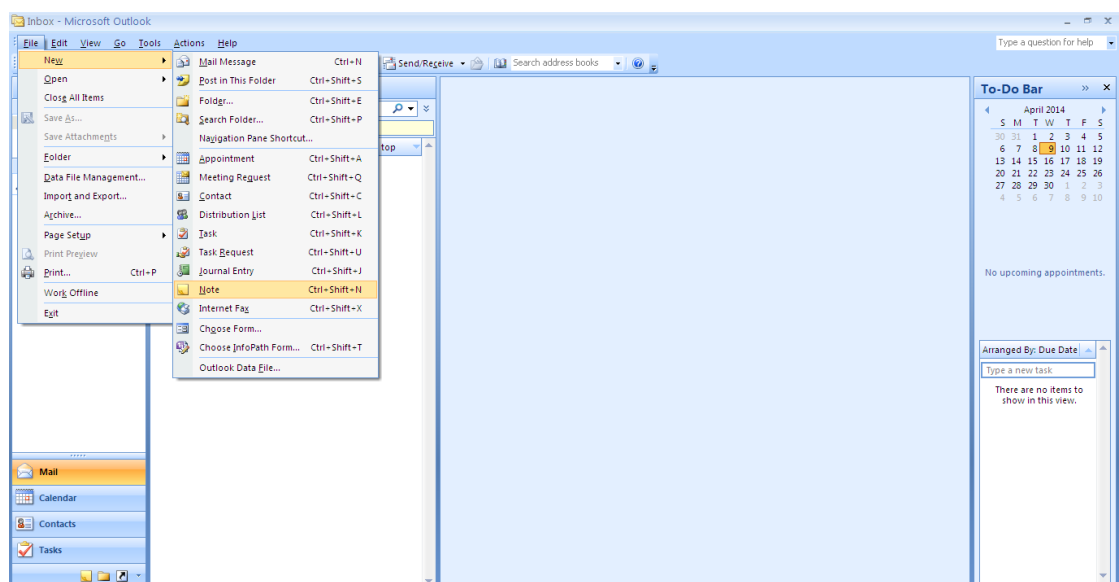
Figure 3.8 Facility of Notes in Outlook

Calendars can be used to insert daily tasks, however if we forget to visit the calendar on daily basis, the entire schedule may get disturbed. 'Tasks' is another functionality of outlook which allows us to remember our schedule by sending alerts (reminders) on scheduled date and time.

In outlook, there are features to organize tasks and reminders by using notes. A user may enter notes for the task to be done on time to time basis.
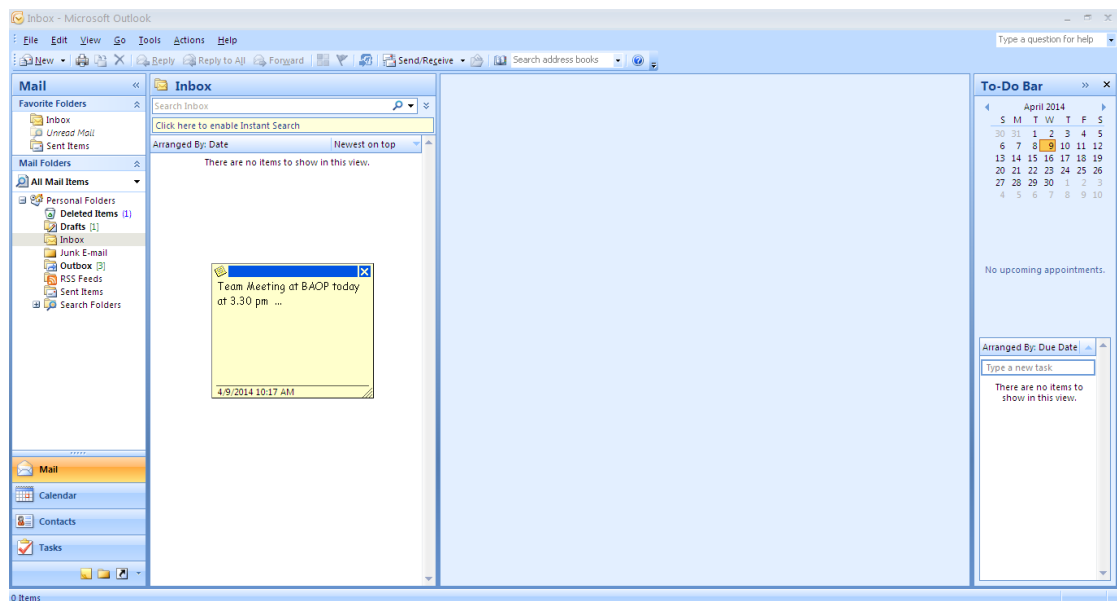
Figure 3.9 Reminder Note

Check your progress

1. Create your schedule for the current month in outlook.
2. Create a reminder for the birth-days of your father and mother in outlook.
3. Add the contact details of your friends in outlook.

3.10 VIRTUAL PRIVATE NETWORK – VPN

Let us understand the concept of VPN through an example. Suppose a company has two branches, one in Jamnagar and the other in Mumbai. Now, if we want to establish a computer network between these two branches, it is known as private network. This network will be limited to the company. We have three ways to establish a private network for the above case:
1.   Use a dedicated wire to connect both the branches
2.   Use satellite communication to connect both the branches
3.   Use internet to connect both the branches.

From the above alternatives, options (i) and (ii) are more expensive, in certain cases they might not be possible. For instance option (i) may face problems if there are sea/mountains in between the branches.
In virtual private network (VPN) all the branches of any organization can be inter-connected with the help of internet. Being a private network, no other person except the authorized people of the organization can use it. In VPN, the transmission of data takes place with the help of internet. In VPN, the security of data is a key concern, as private information is flowing through the public internet. In VPNs, the data is made secure using IPsec technology. Using IPsec, the data gets encrypted (cipher text) and is transmitted over internet. No one in the middle can understand the data. Once

the data reaches the destination, it gets decrypted (plain text) and can be used by the organization. To establish VPN, special types of routers are required.
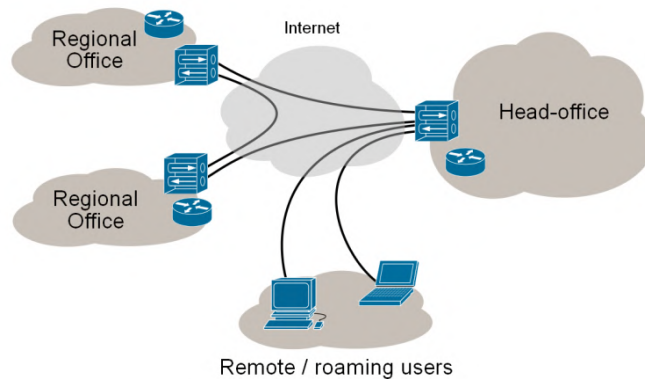
Figure 3.10 Virtual Private Network – VPN

Types of VPN Connectivity: Usually, VPNs are classified into three categories. Let us explore each one of them in brief:

(a) Virtual Private Dial-up Network (VPDN) – Whenever an employee of any organization wants to access the company's private network being out of station, under those circumstances VPDN is used. An employee can connect his computer with the internet, through which he can login to his company's network. A special kind of software called VPN client is required to establish this type of connection.

(b) Intranet based VPN – It is also known as site-to-site VPN. Whenever, two or more branches of an organization (sites) want to interconnect, they can connect their LANs with Internet. This helps to establish intranet based VPN.

(c) Extranet based VPN – This type of connectivity is generally used when different organizations want to interconnect with each other. LANs of various organizations can be inter-connected with the help of internet. For example, a company (customer) can order goods from another company (supplier) through VPN.

3.11 GENERAL SECURITY CONCEPTS

Each and every computer is a store house of information. Lot of information can exists which may be personal information or belong to some organization. Most of the time, the information is confidential which has to be protected from public. Security is required to ensure that the data is protected, integral and safe. There are various aspects of security like:

- Securing the Computer
- Securing the Network – outsiders cannot access private network
- Securing the data being transmitted
- Securing the data residing on the Server

For the above aspects, different technologies exist to ensure security. For example, username and password are used for authentication purpose while encryption and decryption are used to maintain confidentiality of data being transmitted. Now, let us understand various principles and techniques in security in detail.

Figure 3.11 General Security Concepts

Importance of Password: Whenever we use the Gmail or Yahoo mail services, we provide username and password which plays an important role. They are used for authentication purpose so that no other person can access our emails. Depending on the situation, username and passwords can be different. For example, the username and password used for home PC is different from those of e-mails.

In some cases, only passwords are used to secure a file. Whereas in other cases, apart from username and password, one time passwords (OTP) are sent to mobile via SMS for security purpose.

In case if our username and password are known to other people, our data becomes unsecure. Although username can be known by others but password must always be kept secret. Passwords are similar to keys that must be kept in private to secure the data.

> Note: Most of the websites uses captcha which asks to type few characters and digits that are distorted and difficult to identify. Captcha is different from passwords, it is used to ensure that the data being entered comes from a living person and is not being entered automatically through some program.

Points to consider while selecting a password:

- Password must not be too small.
- Ideally a Password must be between 6-20 characters.

- A Password must be a combination of digits (0-9), alphabets (a-z or A-Z) and special characters ($, @, #).
- Password must not be a dictionary word.
- Password must not be a mobile number, car no., date of birth etc.

Examples of Passwords:

Username	Password	Particulars
Mahesh	Mahesh	Insecure
Mahesh	Mahesh123	Insecure
Mahesh	M123	Insecure
Mahesh	9879100000	Insecure
Mahesh	29feb	Insecure
Mahesh	GJ-6	Insecure
Mahesh	Vanilla	Insecure
Mahesh	Iw@nt2fly	Secure
Mahesh	Lx2$a33pqr	Secure
Mahesh	TobeOrNotzb	Secure
Mahesh	Trouble$hoot!ng	Secure

Things to take care while using passwords:

- Passwords must be changed at regular intervals.
- If possible, different passwords must be used for different accounts.
- Password must not be kept in written along with you.
- Password must not be told to anyone.

3.12 FIREWALL

Network Firewall helps to secure the data in our computer and networks. Firewall is like a fort that provides safety to our computer. It secures the information flowing out from our computer and the information entering into our computer. As the 'Great Wall of China' used to provide safety to China, similarly a firewall provides safety to any computer or a network.

Basic Firewall Configurations: With the help of administrator login, we can either enable (on) or disable (off) a firewall. There are two ways to configure a firewall:

a) By clicking on Windows Firewall Icon from Start button -> Control Panel -> Windows firewall
b) By clicking on Left Pane and selecting 'Turn Windows Firewall On or Off'
c) In a computer, when the data arrives from outside (enters our PC) through network, it is known as inbound connection, while the data leaving our computer (output of PC) to some network is known as outbound connection.

With the help of firewall configuration, we can ensure what type of data must be allowed to enter our system or leave our system. For example, allowing data that enters our system using HTTP or HTTPS protocol but denies the data of FTP

connection. Firewall allows us to set rules and configure it according to different type of network services like HTTP, FTP, and SMTP etc.
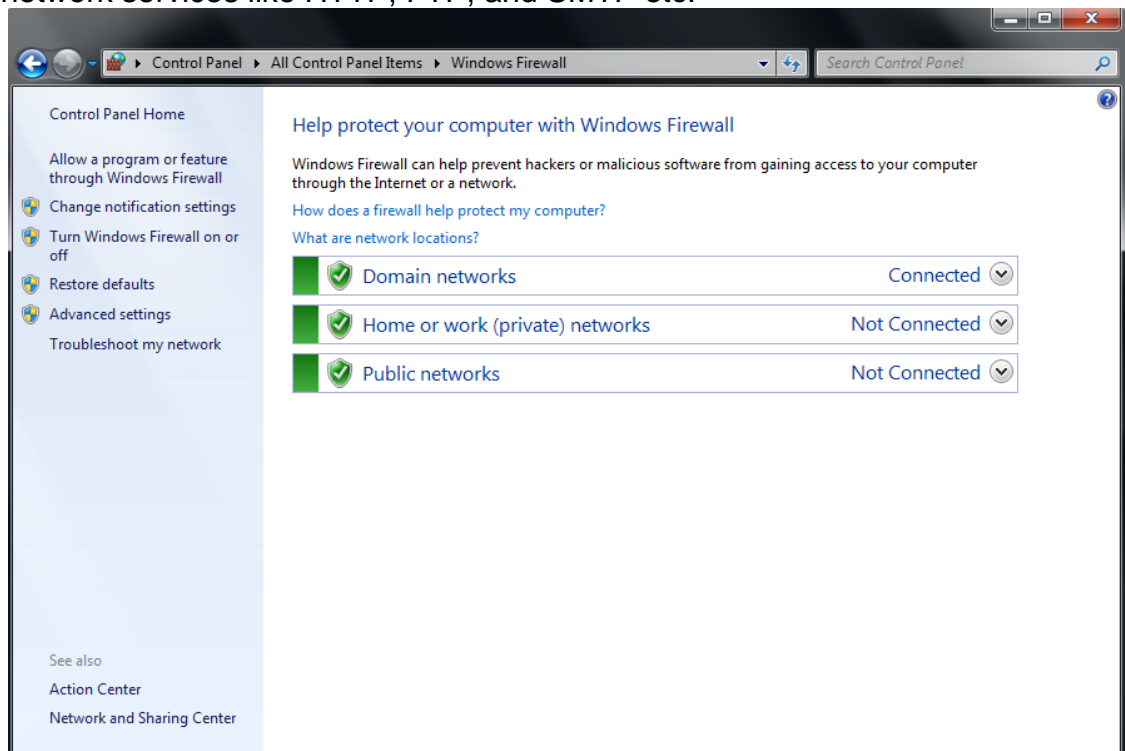
Figure 3.12 Basic Configurations of Firewall
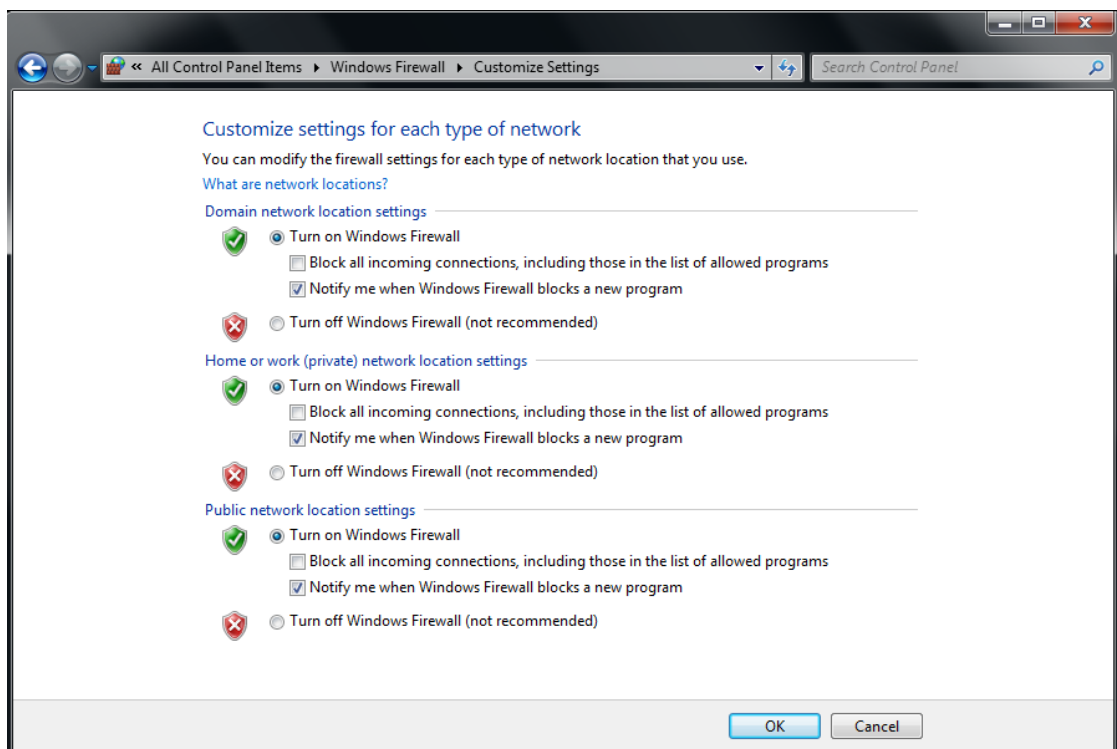
Figure 3.13 Customized Settings of Firewall

313

Advanced Settings of Firewall Configuration: We can provide different inbound rules or outbound rules to configure a firewall. If similar rules are required for different computers over the network, we can configure a single system and copy those rules to rest of the computers. For this, the option of 'Import policy' and 'Export policy' are used from the advanced settings of firewall.

With the help of firewalls, we can configure only inbound or only outbound connections. We can generate log files with the help of firewall, these log file records all the incidences. It can record the malicious activities (incidences) taking place in the network that violates the rules. The configurations are shown in figure 7.18.
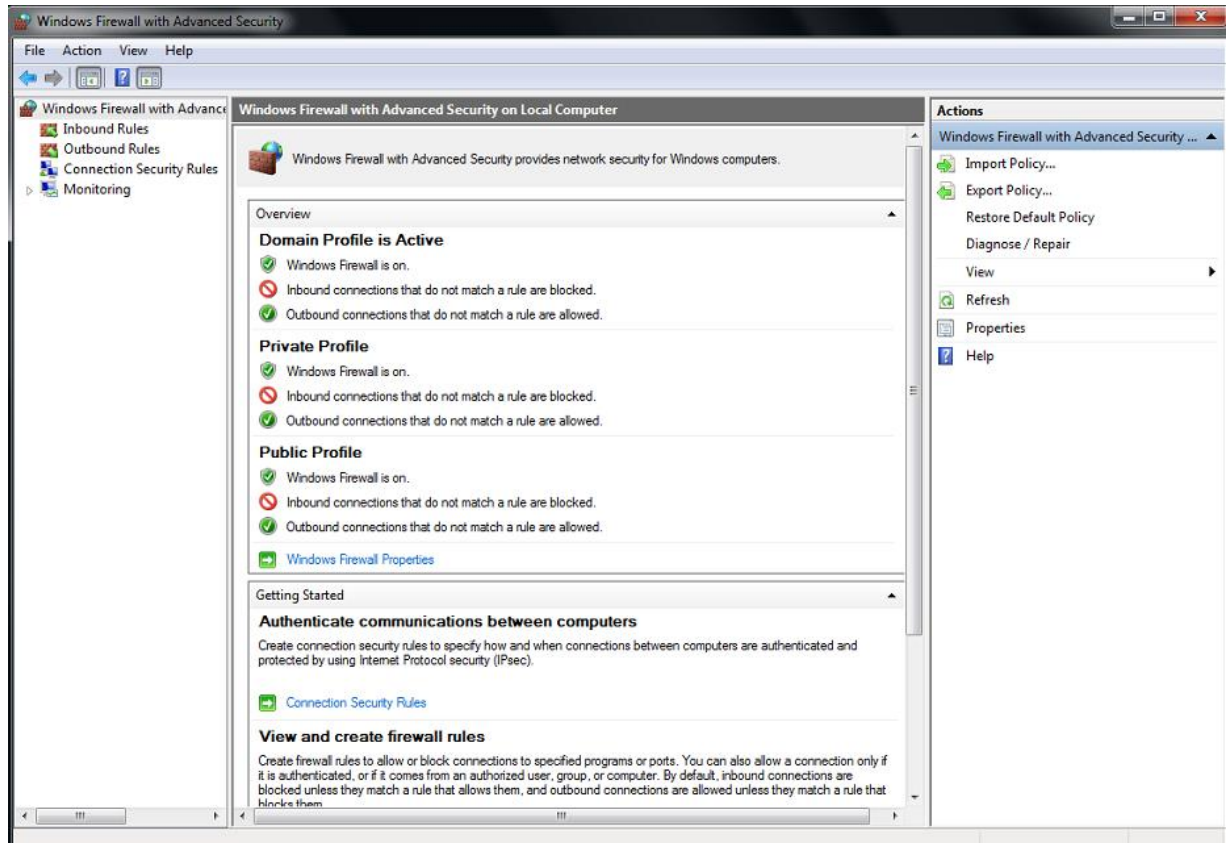
Figure 3.14 Advanced Configurations of Firewall
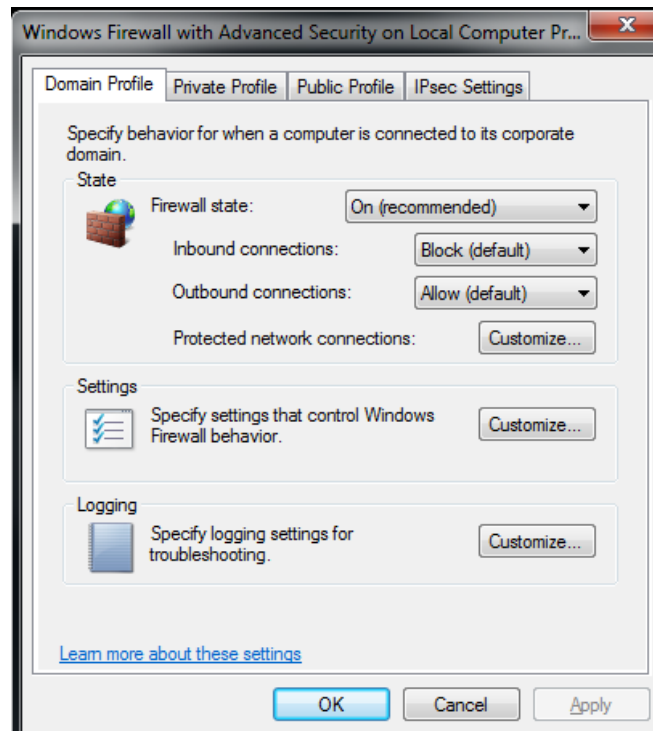
Figure 3.15 Dialog box showing Inbound/Outbound and Log File Configurations in Firewall

Check Your Progress

1. Identify whether the firewall of your computer is enabled or disabled. If it is disabled, put on the firewall of your system.

3.13 INFRASTRUCTURE SECURITY

Now-a-days, most of the organizations possess their own computer networks. Their computer network and various devices work like an infrastructure. Security is very essential for any infrastructure. Security concerns can be classified into two parts:

a)   Physical Security
b)   Logical Security

Physical Security: Computers and various devices of an organization must be made secure from natural calamities like earthquakes, hurricanes, heavy-rains etc. It must be secured from fire accidents, terrorist attacks, riots etc. Apart from this, it must be ensured that the infrastructure is protected from the employees of the organization. Any employee must not be able to steal the devices or do not start using without the notice of managers or supervisory staff.
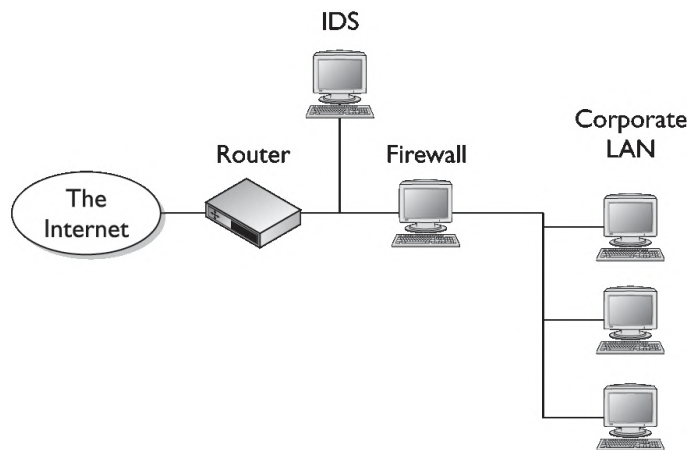
Figure 3.16Infrastrucutre Security

Logical Security: As it is necessary to secure the computer hardware, similarly the concern for security of data is required. Confidential data of any organization must not be available to the outsiders or must not get corrupted by viruses. Lot of research has been done to ensure the security of the data. Techniques like authentication, authorization are applied to ensure the security of data and information. These techniques are based on the mechanism known as cryptography.

Authentication: It is used to check the identity of the user. It allows identifying only the allowed users can access the system.

Authorization: It is used to identify that the users can access the resources they are allowed to on the basis of certain permissions (having proper rights to read/modify a file).

Cryptography: It is the art and science to convert plain text (understandable data) into cipher text (non-understandable form of data). The process of converting plain text into cipher text is known as encryption while the reverse is known as decryption. The encryption-decryption process requires keys and certain algorithms. However, with the help of crypto-analysis, if the keys or algorithms are not good enough, hack attacks are possible.

Operations Security: It is necessary to ensure that the daily operations of any organization are carried out safely without any disturbance. The following points are necessary to maintain operational security:

 a) Development of Policies for computer usage and its implementation
 b) To identify and design the Standards for the usage of data by various employees.
 c) Necessary procedures to be developed and followed for each task.
 d) Necessary guidelines to be prepared for the usage of systems and devices.

Organizational Security: New threats are being recognized daily, it is essential to maintain security for the organization's network and systems. Few widely used software to maintain security in an organization are:

a) Firewalls
b) Intrusion Detection systems (IDS) – it detects unauthentic users or programs entering into the system or network.
c) Intrusion Prevention Systems (IPS) – it prevents unauthentic users or programs entering into the system or the network.
d) Anti-Viruses, Anti-Malwares

To enforce hardware based security, devices like bio-metrics authentication system, smart cards, RFID cards etc. are used.

Communication Security: Whenever the transmission of data is taking place, the following concerns are necessary to enforce communication security:
a) Confidentiality – to keep data confidential
b) Integrity – to ensure that the data does not change while transmission

During transmission of data, the following criteria must be satisfied:
a) Availability – data must always be available
b) Accuracy – data must be accurate and integral (without any change)
c) Authentication – data must arrive from authentic source

Note: https protocol provides confidentiality compared to http protocol. It is advisable to use https protocol when sending passwords or confidential information.

3.14 NETWORK TROUBLESHOOTING

The following are few issues and solutions that arise in computer networks:

Question: A message occurs saying "Cable Unplugged"
Solution: Usually there are two reasons for the above message:
(a) The cable attached with the network card is not properly connected, or maybe the cable is damaged. For this remove the cable, check it and again insert it.
(b) Hub or Switch is switched off, ensure that it is working properly.

Question: Computer is not connecting with the network.
Solution: Usually, when the IP address is not properly configured, the computer is not identified over the network. The following things are to be done:
(a) Configure proper IP address, Sub-net mask.
(b) If the organization uses DHCP server, ensure that "Obtain an IP address Automatically" is selected and check that the DHCP server is functioning and reachable.

Question: Computer is getting connected to network but internet is not working.
Solution: Although there can be many reasons, the following are few alternatives that can be tried
(a) IP address is assigned but the Gateway or DNS is not configured properly.
(b) Internet is blocked from firewall.
(c) Computer is infected by virus or malware.
(d) Modem or USB dongle is not configured properly or not working.
(e) Services from ISP has been stopped (Internet account might have expired)

3.15 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

Q1. Select the appropriate choice from the followings

1 Which of the following is requred to surf Internet ?

A) Browser   B) Microsoft OfficeC) Outlook   D) Wi-Fi

2 URL stands for _____.
   A) Unified Research Location   B) Uniform Resource Locator
   C) Uniform Resource Link   D) Unified Research Link

3 In the E-mail address: abc@baou.edu , _____ is the domain name.
   A) abc   B) .org   C) baou.org   D) None of above

4 Which of the following is a valid website address ?
   A) www.baou.edu.in   B) www.baou@india.baou
   C) wwww.baou.india.uni   D) wwwbaou.university.com

5 _____ is the owner of Internet.
   A) USAB) UK C) India   D) None

Q2. Fill in the blanks

1 _____ is not a Search engine. (Bing, Outlook, Google)
2 Outlook is a product of _____ . (Google, Apple, Microsoft)
3 Wireless Internet cannot be established using _____ (Wi-Fi, Hotspot, Hub)
4 _____ cannot be accessed with Internet. (PDA, Mobile, Stand-Alone Computer)
5 Software Applications running on Internet are known as _____ applications. (desktop, web, mobile)

Q3. State whether the followings are true or false:

1 Every mobile phone has internet connection.
2 Previous emails (old emails) can be viewed in Outlook.
3 Netscape is a browser.
4 For any business application, Internet is mandatory.
5 The length of IP address must be 12 digits.

Q4. Match the pair

	A	B
1		a. Firefox Mozilla
2		b. Internet explorer
3		c. Safari
4		d. Chrome

Answers

Q1. 1. A (Browser)
2. B (Uniform Resource Locator)
3. D (None of above)
4. A (www.baou.edu.in)

5. D (None)

Q2. 1. Outlook   2. Microsoft   3. Hub 4. Stand-Alone Computer   5. Web

Q3. 1. False 2. True 3. True 4. False 5. True

Q4. 1-b, 2-a, 3-d, 4-c.

Block-5

Practical Exercise and Best Practices

Unit 1: Practical Exercise **1**

Unit Structure

1.1 LEARNING OBJECTIVES

After studying this unit students will able to:

- Apply Theorical knowledge learned in previous chapters
- Enhance their Practical knowledge

1.2 INTRODUCTION

This chapter is for the practice of students. Whatever discussions the students are having in previous chapters their practical exercises are given here so that they can apply the concepts learned. This will also help them to enhance their knowledge by applying theory concepts. So now let us move further to see the exercises.

1.3 WINDOWS-7 PRACTICALS

Q1. Change Background and screen saver in Windows 7.
Q2. Draw Natural Scene in MS-Paint.
Q3. Write your computer hard disk drives and their storage capacity.
Q4. Change date and time of your computer.
Q5. Write IP address of your computer.
Q6. Use any gadgets of your choice in your Windows 7.
Q7. Type any paragraph in notepad and copy it in WordPad and format the paragraph in WordPad.
Q8. Prepare your important task list in sticky note.
Q9. Pin calculator program in taskbar.
Create short cut of Word, Excel and PowerPoint on your desktop.

1.4 WORD-2010 PRACTICALS

Q-1 Type the following text in Word-2010.

The Panchatantra

The Panchatantra stories are written by many years ago. Each stories of Panchatantra has some lesson at the end of the story. The stories like "The thirsty crow" has lesson "Necessity is the mother of invention".

These stories use generally animals as characters of the story. This story makes children interesting in reading the story.

Some of the popular stories are:

- The talkative tortoise
- Who will bell the cat?
- The clever jackal

Do as directed.

(1) Save your file with name "Panchatantra"
(2) Check your document for spelling mistakes
(3) Bold and underline the text "The thirsty crow"
(4) Make line spacing of paragraph as 1.5
(5) Give hanging indentation to the paragraph starts with "These stories use…"
(6) Replace word Lesson with Message using find and replace option.
(7) Insert header in your document and write your name in header.
(8) Change bulleted list to number list

Q-2. Type following paragraph in Word-2010 :

Curriculum Vitae of Sachin Tendulkar

OBJECTIVE

To seek career challenges keeping in view my past achievements and future goals. And to set new industry benchmarks in everything I endeavor.

PROFESSIONAL EXPERIENCE

- International Cricketer: Indian National Cricket Team [1989 -2013 onwards]
- First Class Cricketer: Mumbai, West Zone, Yorkshire [1988 - 2013 onwards]
- Junior Cricketer: Shardashram School, Bombay U-15, West Zone U-15 [1985-1988].

KEY OPERATIONS & MISSIONS UNDERTAKEN

1. 155* — Operation Deflate Warne [Chennai, 1998]
2. 143 & 134 — Operation Desert Storm [Sharjah, 1998]
4. 98 — Operation Tame Vile Green Warriors [Centurion, 2003]

CRISIS MANAGEMENT EXPERTISE

1. 119* — Operation Bat Till Bedtime [Manchester, 1990]
2. 82 — Mission Find New Opener [Christchurch, 1993]
3. 1-0-3-0 — Operation Hold South Africa [Kolkata, 1993]

OTHER BUSINESS INTERESTS

I have interests in the food and beverages industry. I partly own two restaurants in Mumbai:
- Tendulkar's (Colaba, 2002).
- Sachin's (Mulund, 2004).

[Reference: xa.yimg.com/kq/groups/18137660/.../cv+of+sachin+tendulkar.pdf]

Do as directed.

(1) Save your file with name "Sachin" in My Documents.
(2) On left side of first line, insert image of sachin Tendulkar.
(3) Insert border in word document.
(4) Insert "Confidential" as watermark text.
Take print out of your file.

Q-3Create following table in Word-2010

Surname	Name	Computer	Guajarati	English
Mehta	Anjali	75	65	70
Kotari	Zarna	60	68	55
Gandhi	Vandna	90	55	86

(1) Add row between Zarna and Vandna

Patel	Rachana	85	80	90

(2) Give Right alignement in second row
(3) Add column "Total" as a last column
(4) Using formula Find total of marks in "Total" column.
(5) Arrange data in table surname wise in ascending order.

Q-4 Mail Merge

Write letter using mail merge feature of Word 2010 for inviting your friends at party. Invite at least your five friends.

1.5 EXCEL-2010 PRACTICALS

Q1 Type the following data in excel and calculate values as per following instructions.

Pay Slip				
Employee Name		Bharat Patel		
Designation		Assistant Professor		
Month-Year		Oct-13		
Allowances	**Amount**	**Deductions**		**Amount**
Pay	15600	**IT**		?
GP	6000	**GPF**		?
DA	?	**PROF. TAX**		?
HRA	?	**GIS**		?
COMP LO ALLOW	?	**FOODGRAIN DAVANCE**		?
MA	?	**FESTIVAL ADVANCE**		?

TA	?	HOUSE RENT	?
OTHER ALLOW	?	EPF	?
OTHER	?	OTHER	?
TOTAL EARN	?	TOTAL DED.	?
Net Pay : ?			

(1) DA is 90% of Pay+GP
(2) HRA is 20% of Pay+GP
(3) MA is 1% of Pay+GP
(4) TA is 10% of Pay
(5) IT is 10% of Pay
(6) GPF is 12% of Pay+GP
(7) Prof. Tax is to be calculated as follows
    a. Prof. Tax is 100 if total earn is between 0-6000
    b. Prof. Tax is 150 if total earn is between 6001-12000
    c. Prof. Tax is 200 if total earn is > 12000
(8) Enter all other information manually
(9) Calculate Total Earn, Total Deduction and Net Pay
(10) Format the pay slip
(11) Create same sheet for Nov-2013 and Dec-2013 and Group all three sheets.

Q. 2 Create worksheet as shown below in Excel and calculate as per below instructions

	A	B	C	D	E	F	G	H	I
1	Student ID	Student Name	CCC-1 35	CCC-2 70	CCC-3 35	CCC-4 100	Total 240	Percentage	Result
2	1	Kiran	28	56	20	80	?	?	?
3	2	Sanjay	25	45	25	75	?	?	?
4	3	Hardik	20	52	29	69	?	?	?
5	4	Jatan	15	47	30	72	?	?	?
6	5	Komal	18	18	30	55	?	?	?
7	6	Sparkline Chart							
8	7	Average	?	?	?	?	?	?	?
9	8	Minimum	?	?	?	?	?	?	?
10	9	Maximum	?	?	?	?	?	?	?
11	10	No of Pass	?	?	?	?	?	?	?
12	11	No of Fail	?	?	?	?	?	?	?

(1) Calculate total marks using formula
(2) Calculate percentage using formula and give percentage format up to two decimal points.
(3) Generate students result. To pass in exam student must have at least 40% marks in each subjects. Write SC in result if student is pass and NC if student fails.
(4) Sort student data in ascending order of percentage
(5) Show fail students row with red background using conditional formatting.
(6) Using filter feature separate student with more than 70% marks and copy all rows and paste at J1 cell.
(7) Prepare column chart showing student name and Marks obtained in CCC-1
(8) Prepare pie chart showing pass and fail student's percentage.

(9) Calculate Average, Minimum and Maximum marks in each subjects using function.
(10) Count number of pass and number of fail students in each subject using function.
(11) Create Sparkline chart for CCC-1, CCC-2, CCC-3 and CCC-4 in cell C7, D7, E7 and F7 respectively.
(12) Convert information in table format and apply style of your choice.

Q3. Create Excel worksheet for following information and calculate values as per instructions .

	A	B	C	D	E	F
1	**Transaction ID**	**Date**	**Description**	**Debit**	**Credit**	**Balance**
2	1	01/07/2013	Initial Balance		50000	50000
3	2	13/07/2013	Purchase Row material	8000		42000
4	3	24/07/2013	Food	4000		38000
5	4	10/08/2013	Cheque Received #25632		7500	45500
6	5	12/08/2013	Furniture	5000		40500
7	6	15/09/2013	Bank Interest		2500	43000
8	7	01/10/2013	Salary	7000		36000
9	8	20/10/2013	Cheque Received #45263		10000	46000
10	9	30/10/2103	Fuel	1000		45000
11	10	03/11/2013	Sales Income		8000	53000
12			**Total**			
			Minimum			
			Maximum			
			Average			

(1) Find Balance using formula.
(2) Find total income and total expense.
(3) Calculate maximum, minimum and average income, expense and balance using function.
(4) Sort in descending order of date.
(5) Format income with greater than 10000 and expense greater than 5000.
(6) Create date wise bar chart for income and expense.
(7) Prepare Sparkline chart for balance
(8) Convert information in table format.
(9) Calculate no of days on which balance is greater than 50000.
(10) Prepare pie chart for showing income and expense percentage
(11) Find month wise subtotal of income and expense
(12) Copy October month information and paste at some other place in your worksheet.

Q4 Enter following information in excel worksheet and do necessary calculations as per instructions.

	A	B	C	D	E	F	G
1	**Research Survey**						
2							
3	**Question-1**				**Question-2**		
4							

5	**Gender**	**Frequency**	**Percentage**	**Marital Status**	**Frequency**	**Percentage**
6	Male	650		Married	750	
7	Female	750		Widowed	160	
8	**Total**			Divorced	78	
9				Separated	50	
10				Un-Married	250	
11				**Total**		

(1) Find percentage and total using formula.
(2) Draw column chart for gender in separate sheet and give proper name to chart sheet.
(3) Draw pie chart for marital status in separate sheet and give proper name to chart sheet.
(4) Give tab color to work sheet and protect file with password.
(5) Save file as pdf file.

1.6 POWERPOINT-2010 PRACTICALS

Q1

Open PowerPoint 2010 and Prepare different slides for providing information regarding Dr. Babasaheb Ambedkar Open University. You can include information such as university establishment, vision, mission, objectives, various courses run by university, staff information, year wise student information and university program photos. You can collect these information from university prospectus and from university website http://www.baou.edu.in available on internet. Arrange proper information in slides.

Change slide as per following instructions
1) Prepare bulleted list for university objectives.
2) Show current date and slide number in slide footer.
3) Use different slide transitions effects sounds such as braze, click, push, applause etc. for slide transition.
4) Check Spelling mistakes in slides prepared by you using Spelling command of review tools.
5) Print all slides such that two slides print in one page.
6) Insert University event photos in slides at proper place using clipart command from Insert tab.
7) Prepare custom slide shows for selected slides.
8) User predefined time for each slide to automatic change slide when slide show presented.

Q 2 . Prepare PowerPoint slides as per following instruction and slide given below.
(1) Prepare title slide as shown in slide-1
(2) Prepare table as shown in slide-2
(3) Prepare chart as shown in slide-3. You can use necessary data from chart itself
(4) Prepare slide as shown in slide-4 and obtain necessary picture from clipart.
(5) Give slide design
(6) Setup slide show to automatically show each slide for 5 Seconds.
(7) Give animation effects to text in slide 4 and slide 7.
(8) Give slide transition effect to each slide.

(9) Add slide-9. Insert any table already prepared in excel in slide-9.
(10) Add Slide-10. Insert any video in slide-10, video should be played when mouse pointer is place over video.

(11) 1)	2)
Student Information	**Course Enrolment** | Year	Certificate Course	Diploma Course	Bachelor	Master	Vocational
---	---	---	---	---	---
2009	20000	5630	15000	6000	7500
2010	17850	4785	12563	4256	6585
2011	25000	8562	17523	7523	7256
2012	25630	4639	18523	4444	3698
2013	15630	4500	16963	6321	7456	

(12)

3)	4)
Results Chart Title Pass% Fail% Absent% Certificate 72 16 2 Diploma 65 34 1 Bachlor 69 26 5 Master 70 28 2 Vocational 80 18 2	**Certificate Course** • Computer Courses • CCC • CIC • CCC-In Service
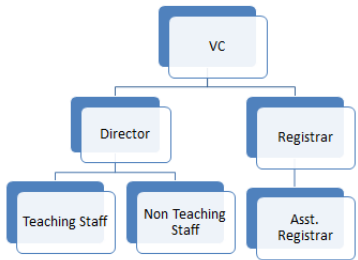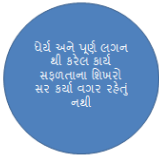
5)	6)
સ્માર્ટ આર્ટ VC Director — Registrar Teaching Staff — Non Teaching Staff — Asst. Registrar	સિમ્બોલ અને સૂત્ર $$\int_0^1 x^2\,dx$$
7)	8)

ટેક્સ્ટ ફોર્મેટિંગ	શેપ ઉમેરવા
• **Bold** • *Italic* • <u>Underline</u> • Shadow • Loose Character Spacing	

1.7 OUTLOOK PRACTICALS

Q1. Add your email ID and other information in outlook.
Q2. Prepare your email signature.
Q3. Add information on calendar for email.
Q4. Prepare task and note for email in outlook.
Q5. Send email to your five friends using CC.

Unit 2:
Utility, Troubleshooting, Installation and Best Practices

2

Unit Structure

2.1 LEARNING OBJECTIVE

After studying this unit you will get an understanding of the following issues.

- Download, Install and do various settings in Microsoft Office Indic to type in Gujarati. Also be well informed about the different types of keyboards.
- Downloading, Installation and use of TBIL software to convert text written in one Indian language into other Indian languages and in the language of one format into another format.
- To copy and paste data in CD, DVD & pen drive in Windows 7.
- Copy files from your computer and paste on another computer attached in the LAN in Windows 7.
- How to utilize FTP protocol to copy and paste file on internet in Windows 7.
- Scan the Picture, document or other information through the scanner attached to the computer.
- How to install and Uninstall Microsoft Office 2010, fonts, printers or any hardware or software in Windows 7.
- How to get information about software patch, upgrade and new version to install, viruses and anti-virus, backup and scandisk.

2.2 INTRODUCTION

It is necessary to learn downloading, uploading as well as several other important features like installation when you are using software for documentation purpose. This chapter gives students detailing about this points as well as other facilities like conversion of one language into other language. Utilization of FTP protocol as well as how to install and uninstall any software.

2.3 MICROSOFT OFFICE INDIC

www.bhashaindia.com has specially created font for people to easily write in Gujarati language. It is required to install the Gujarati IME (Input Method Editor) Indic. After installation, some settings in computer need to be done to work in Gujarati.

Indic IME is an open source project. So it does not require a license. Currently, it is available in multiple languages. First you have to go the website http:\\www.bhashaindia.com and download the software.

Figure 2.1

Now, let us see how to install Indic IME software. After the ZIP (.zip) Indic Input 2 file has been downloaded from the website, it will have to be un-zipped. By double clicking on the ZIP file, it is extracted (un-zipped) and extracted files will be available in a new directory.
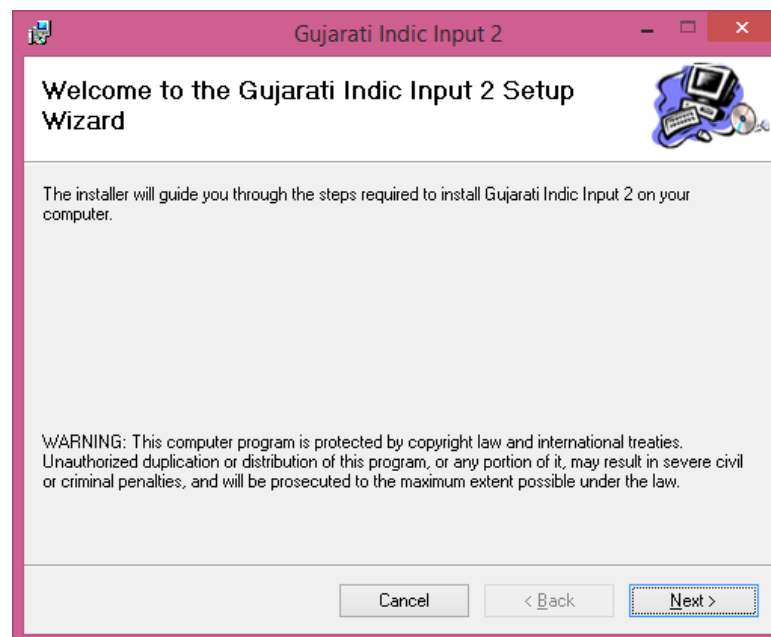

Figure 2.2

Here, we have to double-click on the Setup.exe file. When we Double-click on .exe file, a screen appears as shown in Figure 2.2.

Here, click on the Next button and the new dialog box appears as shown in Figure 2.3.
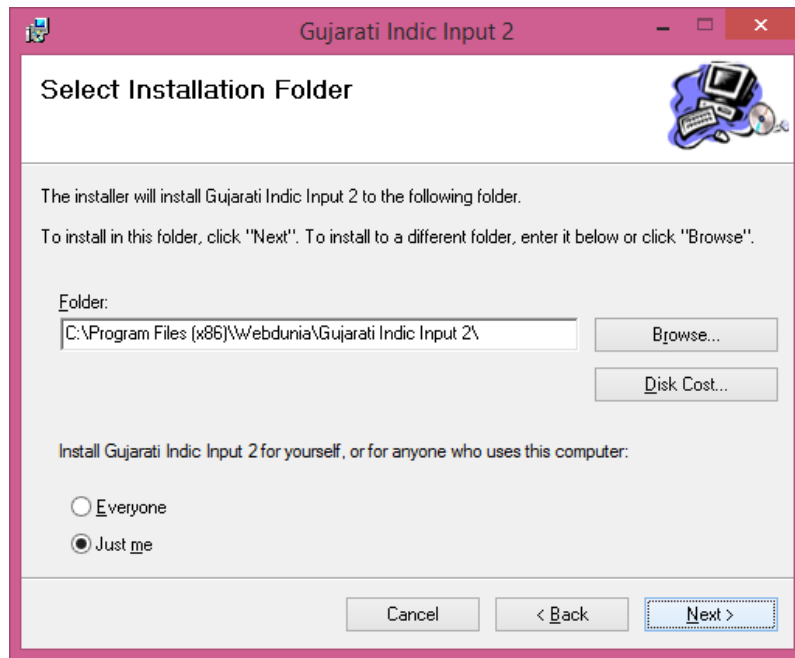
Figure 2.3

Here, click on the Next button and the dialog box opens, as shown in Figure 2.4
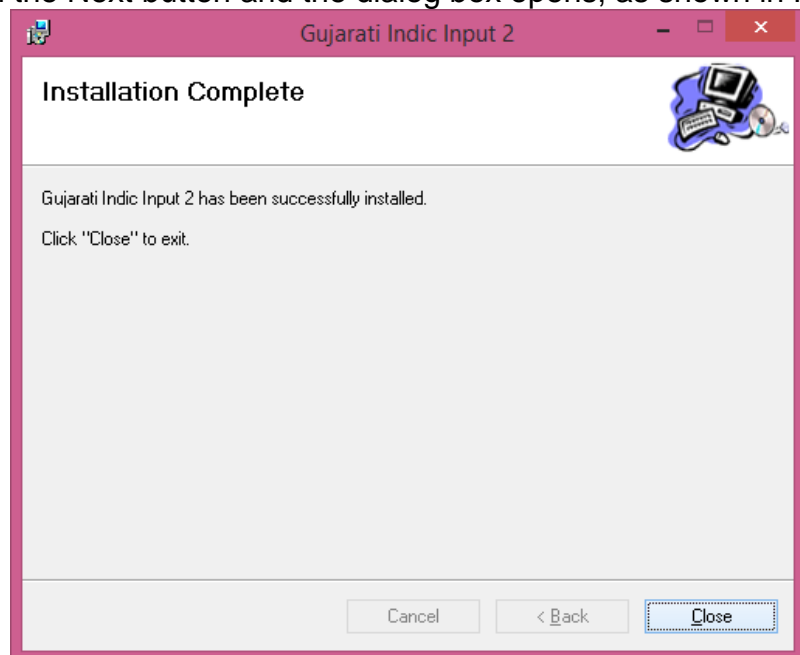

Figure 2.4

Then, click on Close and Indic IME application will be installed.

2.1.1 Setup for the Gujarati language

To write in Gujarati Language, we have to go to control panel and then go to a Region and Language option as we can see in Figure 2.5.
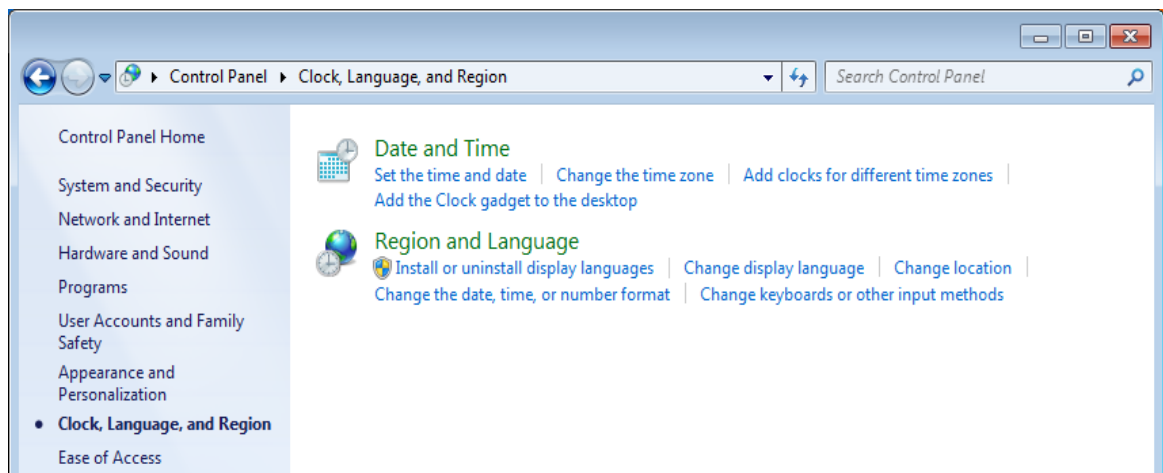
Figure 2.5

Here, we have to select Keyboard and language tab. Then click on Change keyboards. On doing so, a dialog box will appear as shown in Figure 2.7.
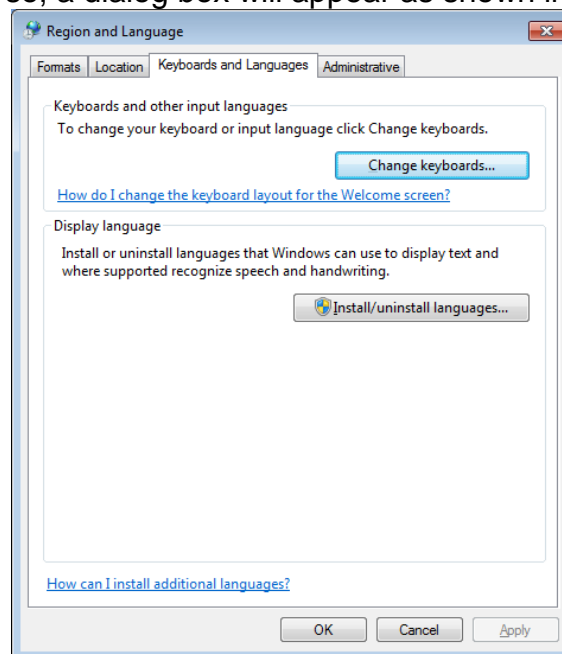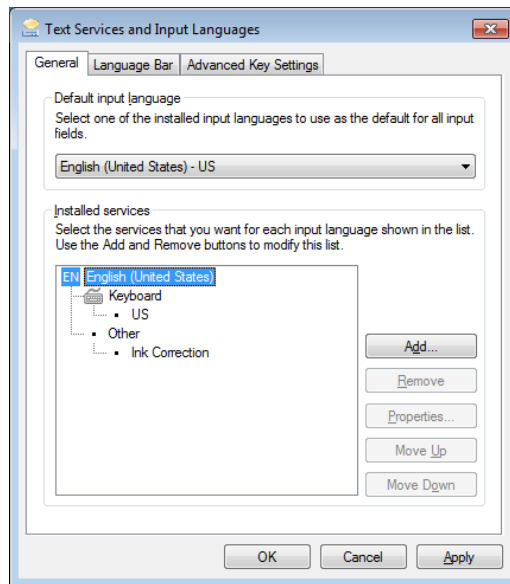

Figure 2.6

Figure 2.7

Here, click on Add button, so the dialog box appears as in Figure 2.8.Select the Gujarati (India) Gujarati Indic IME option from the list of languages and select OK. We can see a Language bar on the desktop, as shown in 2.9. We can write text in English as well as Gujarati by selecting a language in Language bar.
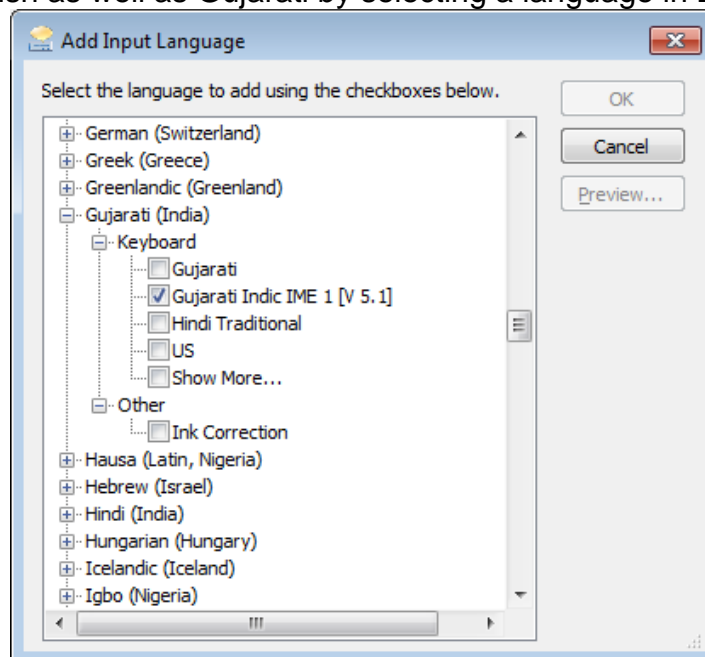

Figure 2.8

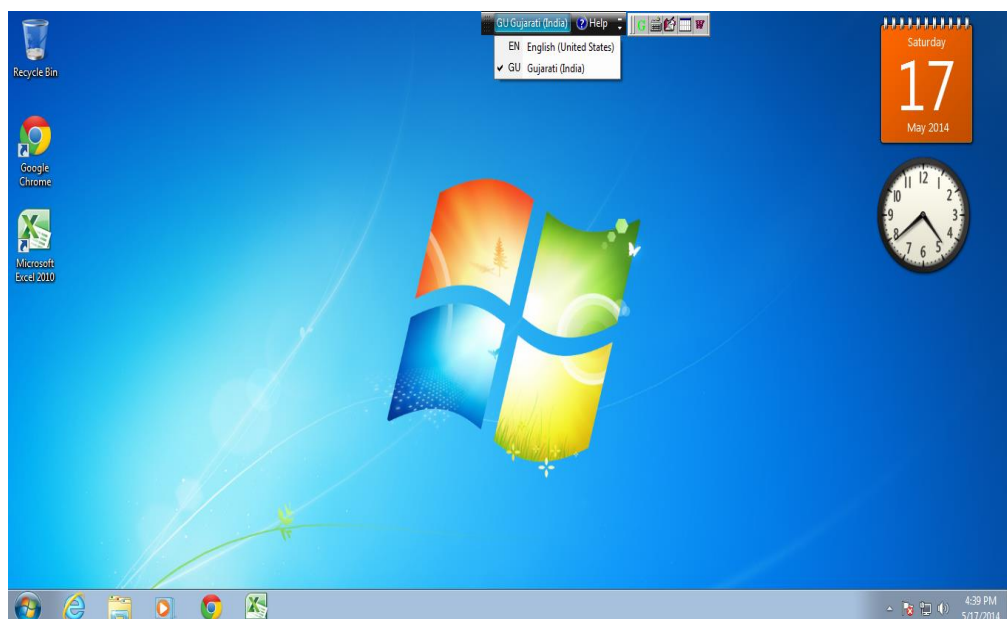**2.1.2 Changing language: from English to Gujarati**

Figure 2.9

English or Gujarati language can be selected from the toolbar. You can see that Gujarati Language is chosen in the diagram shown above.

2.1.3 Introduction of the Gujarati Keyboard

As shown in the figure, Gujarati Indic IME keyboard provides a facility like following keyboards. By selecting the last option 'Shoe Keyboard', the selected keyboard layout will appear on the desktop as shown in in Figure 2.11. If the first option is selected, keyboard layout will not appear.
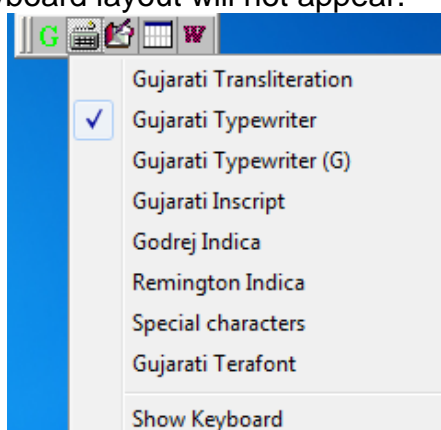

Figure 2.10

Gujarati Transliteration: This keyboard is phonetic. When we type in English here, English words are automatically typed in relevant words in Gujarati. This is very useful when you know the English spellings of the Gujarati words and want to type in Gujarati. While typing, you get On Fly Help as shown in Figure 9.11-a. If you want to type 'computer' in Gujarati, you have to type k + m + p + yoo + Ta + r. More examples given below are from Software Help Manual.

Input	Output
auShadhee	ઔષધી

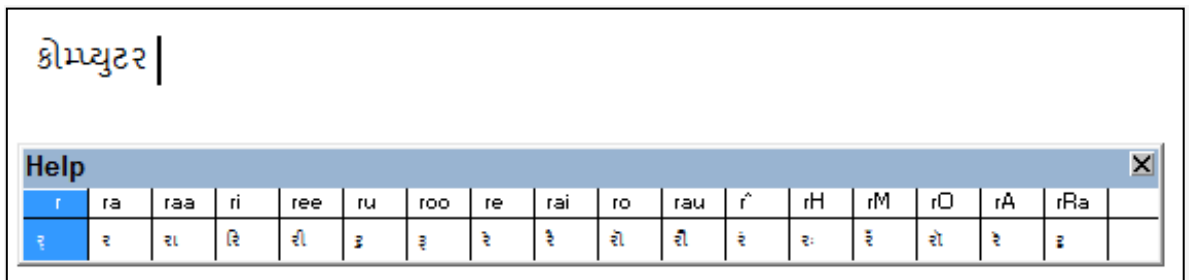|	
Rtu	ઋતુ
Ofar	ઑફર
Anukulan	અનુકુલૂન
sangeet	સંગીત
atH	અતઃ
shuddha	શુદ્ધ
vidhya	વિધ્યા
satyam	સત્યમ

Figure 2.11-a

Gujarati Typewriter and Gujarati Typewriter (G): The layout of this keyboard is similar to the Gujarati type writer keyboard.
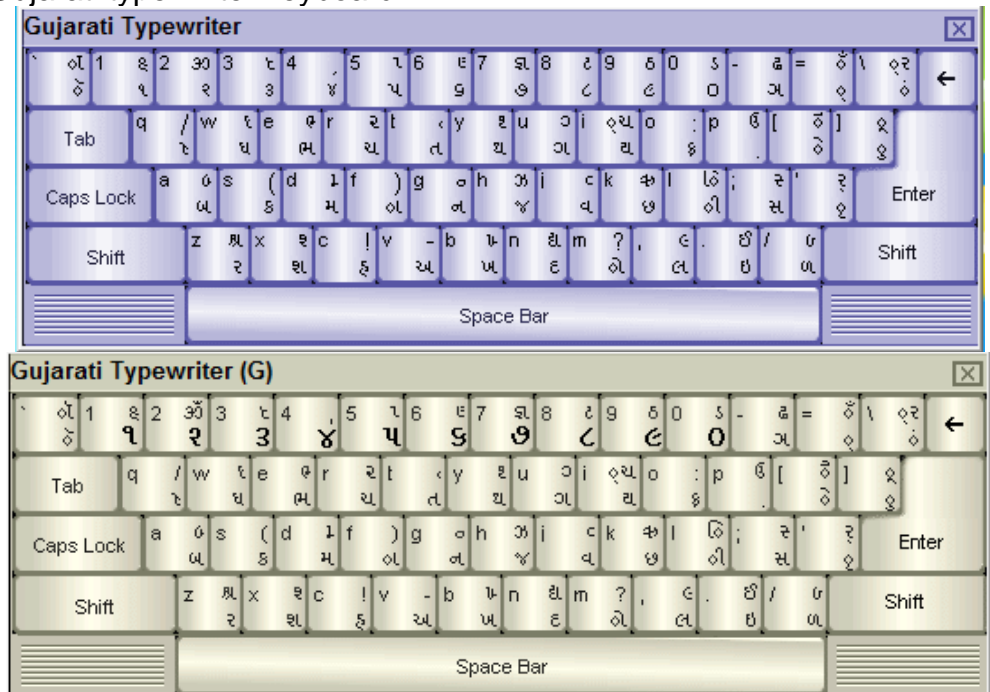

Figure 2.11-b

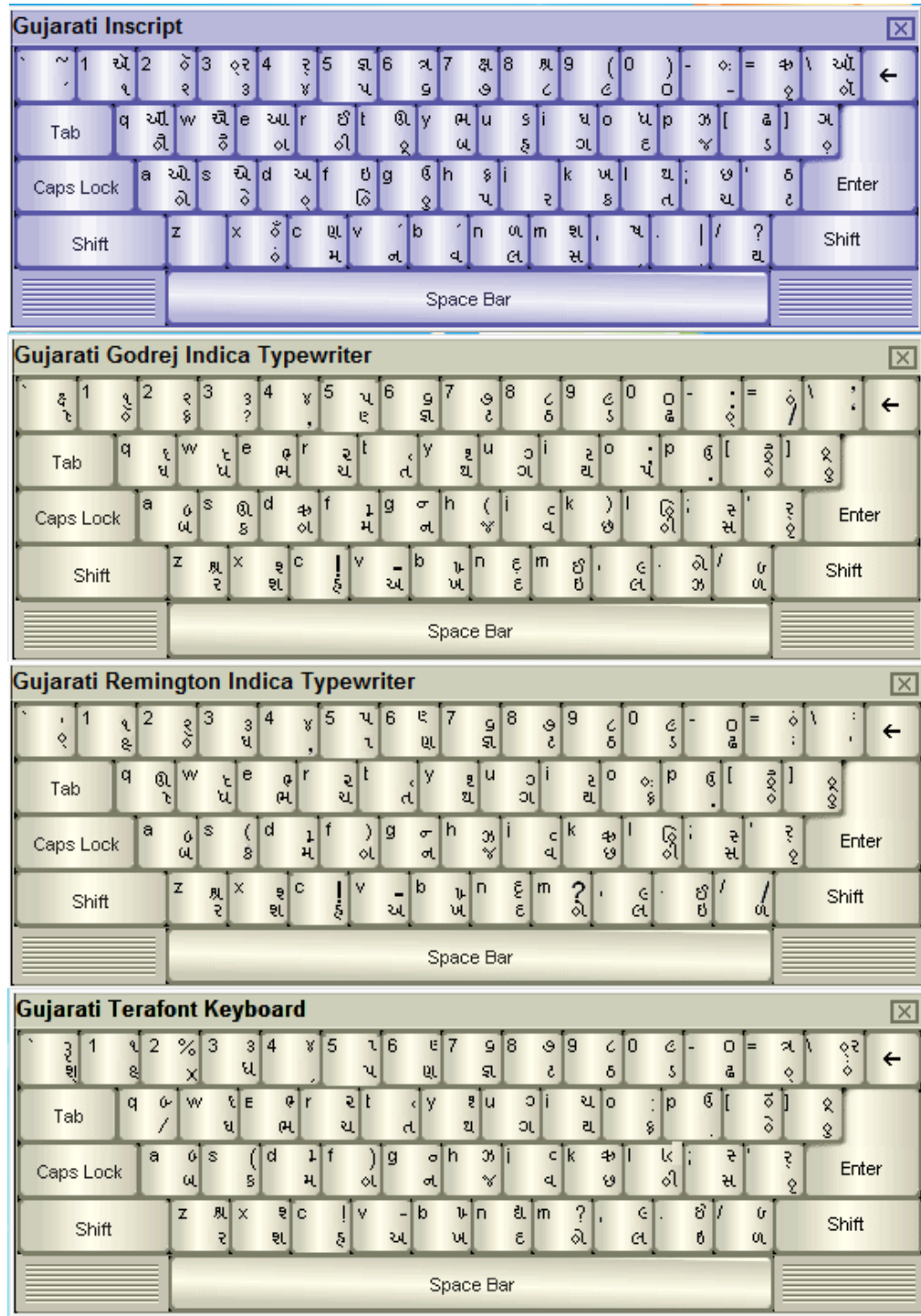The keyboard shown below operates as per the key indicated on it.

Figure 2.11-c

The keyboard shown in Figure 2.11-d is used for special characters in Gujarati.

Figure 2.11-d

2.4 TBIL (TRNASLITERATOR BETWEEN INDIAN LANGUAGES) DATA CONVERTER

TBIL is a software to convert information from one Indian language to other Indian languages. Data in Word, Text or Access file in ROMAN or UNICODE format can be transliterated in other Indian languages through this software.   Currently it supports seven languages. The software is an   open   source,   which can be downloaded   for   free. The free   of   cost   software can be   downloaded   from www.bhashaindia.com.

It is necessary to have Windows XP or higher operating system for TBIL and MS Office version should be Microsoft Office 2000 or higher. Installation of TBIL starts as soon as we double click on the setup.exe file.   At the end, click on Finish and its icon appears on the desktop.
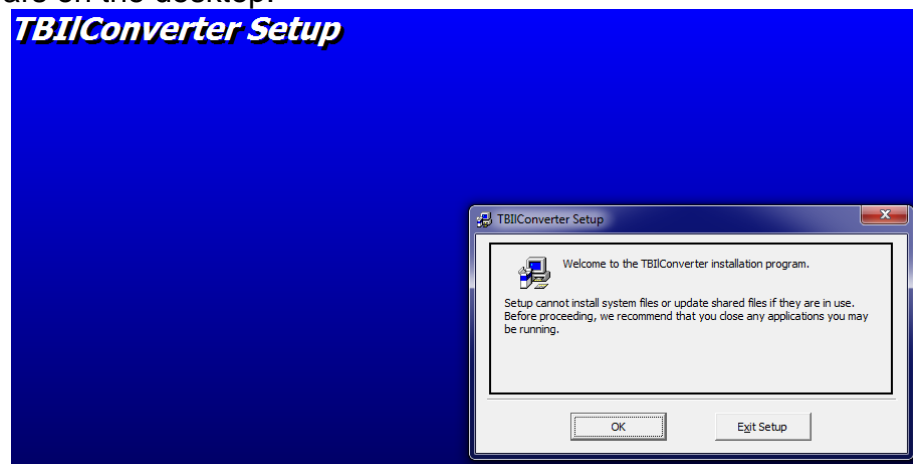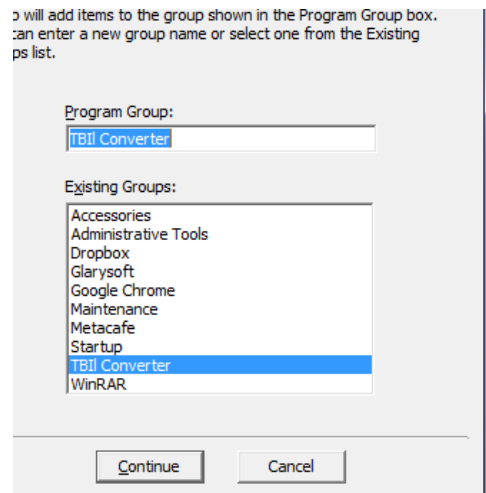

Figure 2.12

Figure 2.13

Let's understand with an example. We have created one file which we want to convert its text in any other language. To do so, first we click on TBIL icon and the screen appears as shown in Figure 2.14.
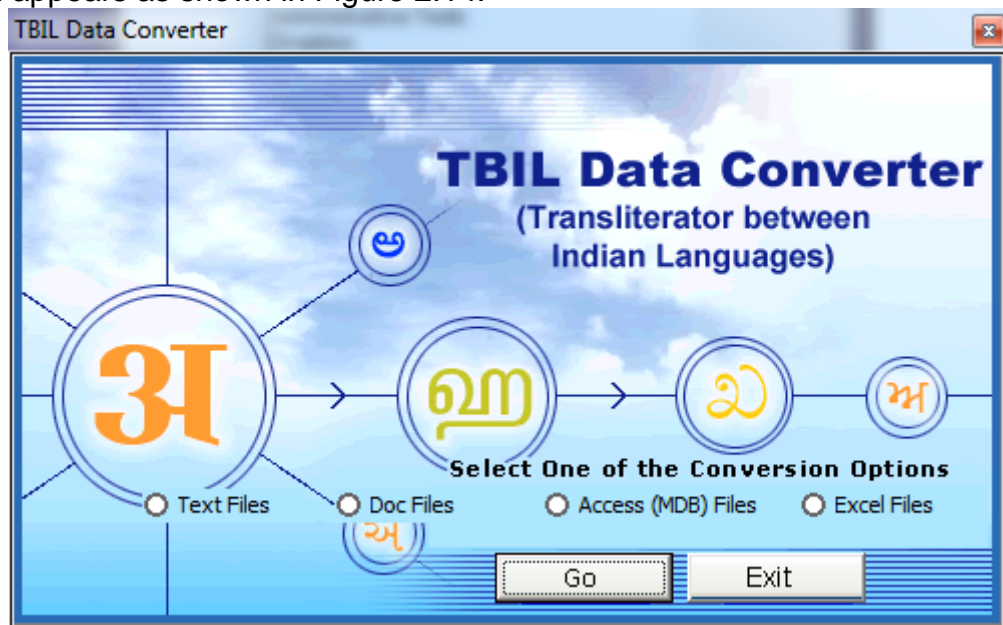

Figure 2.14

We have to select the file type by clicking on the radio button from the given options-Text, Word, Access and Excel. After selecting, click on Go button and the dialog box as shown in 2.15 appears. We can see the Source Font Selection Wizard.
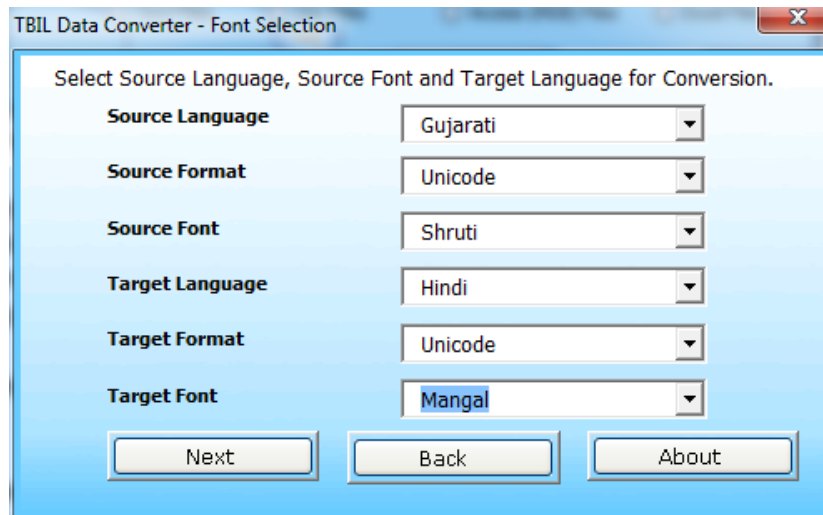
Figure 2.15

Options	Use
Source Language	We have to select the language in which we have written the information such as Hindi, Gujarati, Tamil or any other language.
Source Format	Here, ASCII, UTF, UNICODE options are given. It is usually recommended to click on ASCII or UNICODE.
Source Font	We have to select the fonts of the language that we have used.
Target Language	We have to select name of the language in which the data is to be transliterated.
Target Format	We are given ASCII, UTF and UNICODE options here, out of which it is usually recommended to select ASCII of UNICODE.
Target Font	We have to select the font in which we want to covert the font. E.g. Here, we want to select fonts for Hindi language, so we should select Mangal font.

After this selection, we should click on the Next button to go to the new dialog box which appears in Figure 2.16.
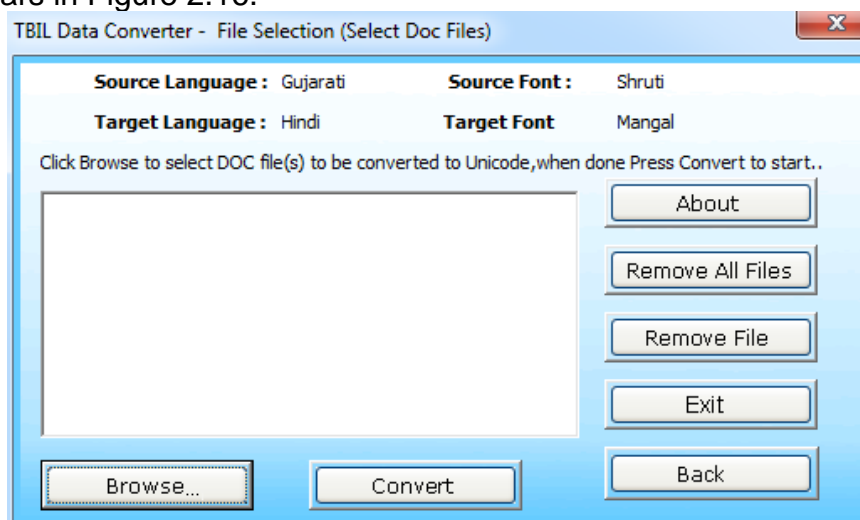

Figure 9.16

By clicking on the Browse option here, we have to select Word, Excel or Access file. As soon as we click on 'Convert' and completion of the process, the converted file can be seen at the location of the given path.
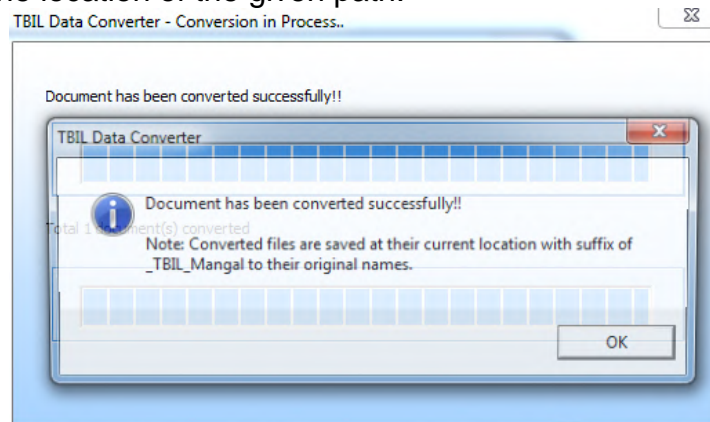

Figure 9.17

2.5 USE OF DIFFERENT STORAGE DEVICES

CD-ROM / DVD data writing (Burning Data Disc)

Windows Explorer is used to write data in Windows 7 so that it can be viewed or copied in another computer. Windows allows you to write data in two formats.

1. Live File System format: This format is useful to use data on a computer with Windows XP or later operating system.
2. Master Format: This format is useful to view the data or play data on any computer or on a CD, DVD or Blue-Ray player. To writing the data in this format to the hard disk which has space should be twice the size of disc.

Write data into the live file system format

1. Put writable CD or DVD in your computer's CD, or DVD Writer.
2. As CD or DVD is placed in Writer, the Auto play dialog box appears. Click on Burn files to disc using Windows Explorer.
3. Type the name of a disk in Disc title box in Burn a Disc dialog box. Click on like a USB Flash Drive and click next. The disk formatted in Live File System format and shows disk empty folder.
4. To make a copy in blank disc, drag one by one or all at the same time in blank folder. As you drag the file, it will be automatically copied to disk
5. In Windows Explorer, click on CD or DVD drive then click on the toolbar and then click on the Close Session. After following these steps, you can use the disk on another computer.

Master writing data format

1. Put Writable CD or DVD, in your computer's CD, or DVD Writer.

2. As CD or DVD is placed in Writer, the Auto play dialog box appears. Now click on Burn files to disc using Windows Explorer.
3. Type the name of a disk in Disc title box in Burn a Disc dialog box. Click with a CD / DVD player and click next.
4. To make a copy in blank disc, drag one by one or all at the same time in blank folder.
5. Now click on Burn to Disc in the toolbar and follow the steps in the wizard. Files will be copied to the disk after above steps are followed. When the data are written to the disk, the disk tray opens and user can take it back from the trey and use it in another computer or DVD player.

Pen Drive

Files can be copied from *Hard disk* to *Pen Drive* in the following way.

1. In windows explorer, select the file from Hard Disk. Click right button of mouse and then select Copy option from shortcut menu or press Ctrl + C. Select a path on Pen Drive and click the right button of mouse. Select Paste option from shortcut menu or press Ctrl + V and the selected file will be copied in Pen Drive.
2. In windows explorer, select the file from hard disk and click right button of mouse and then select Send to option from shortcut menu and within that select pen drive option to copy the file in the Pen Drive.

Files can be copied from Pen Drive to Hard disk in the following way.
1. In windows explorer, select the file from Pen Drive. Click right button of mouse. Then select Copy option from shortcut menu or press Ctrl + C. Select a path on Hard Disk and click the right button of mouse. Select Paste option from shortcut menu or press Ctrl + V and the file will be copied in the Hard Disk.

2.6 TO COPY AND PASTE FILE FROM LAN

Follow the following steps to copy files from the network computer to your computer in Windows 7.

1) Press Windows Key + E or click on Start →Computer to open File Explorer.
2) Click on the Network icon in the left side, which shows the list of connected computers to your computer.
3) Select the computer from the list, from where you want to copy the file and double-click on it.
4) If the computer is protected, than a dialog box will appear. You have to enter correct user name and password. When you press OK, shared folder / file will be shown on the computer that you need to copy.
5) Copy and Paste the file wherever you want in your computer.

Follow the following steps to copy files from your computer to the network computer in Windows 7.

1) Press Windows Key + E or click on Start→ Computer to open File Explorer.
2) Select the file which you have to copy from the File Explorer.

3) Click on the Network icon in the left side. It shows the list of connected computer to your computer.
4) Select the computer where you want to copy the file, from the list and double click on it.
5) If the computer is protected, than a dialog box will appear. You have to enter correct user name and password. When you press OK, shared folder/ file will be shown on the computer that you need to copy.

As mentioned earlier, paste the file you have copied in the computer. However, the computer on which the files are to be pasted should have Write permission.

2.7 UOLOAD AND DOWNLOAD FILE ON INTERNET USING FTP

FTP (File Transfer Protocol) is used to download or upload a file from one computer to another computer using Internet. Address of any ftp site start with ftp: //

To download File: Type the site address from where you want to download a file in the address bar of Internet Explorer. E.g. 'ftp://ftp.microsoft.com' as shown in Figure 2.18. In doing so, it shows a list of available folders and files on the site, which can be viewed by clicking on the file or folder. For saving the file, right click the mouse on the file or folder to be saved and select Save Target as an option to download the file.
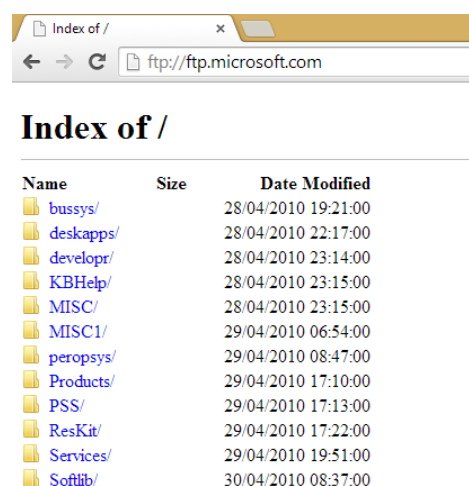
Figure 2.18

To Upload File: It is necessary to have specific permission granted to the ftp site on which we want to upload a file or files. In addition, the user name and password are required to login.

1) Type the name of a site from where you want to download data in the address bar of Internet Explorer. As shown in Figure 2.19, type ftp://ftp.microsoft.com and press Enter to open the site.
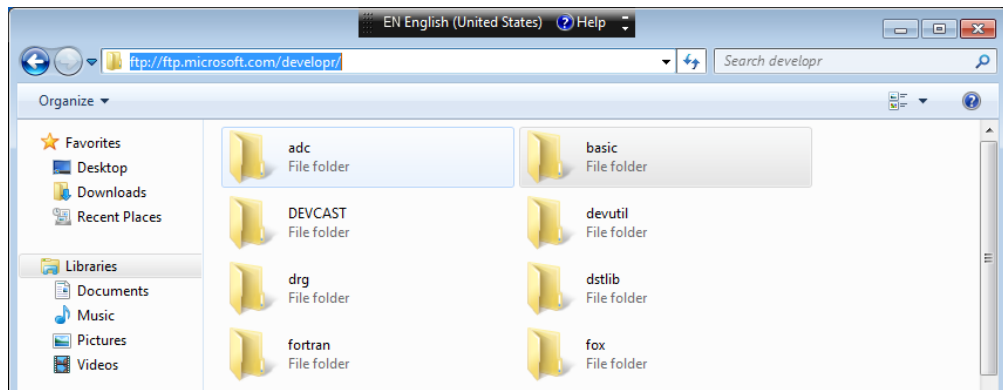
Figure 2.19

2) Press Alt+F to open file menu. Login dialog box appears when you press *Login as* from the file menu. Type correct username and password to login. Now you can upload a file in folder on ftp site.
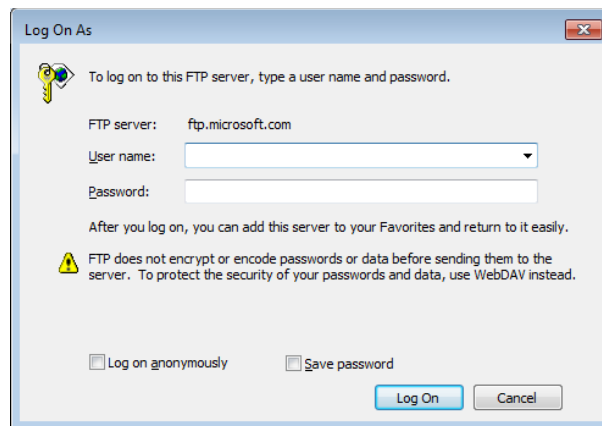

Figure 2.20

2.8 SCANNER

Usually we use scanner to store any photograph in digital format in computer. However, scanner is also used for many other data like text, certificate etc to store them in digital format. Currently many scanners like hand-held scanner and Flat Bed scanner are available in different sizes. We have to first install the scanner, which ever is best suited to our needs, in our computer. When we purchase a scanner, it is accompanied with a CD to install scanner. The scanner can be installed by running the CD and installing the software in our computer.

After successfully installing the scanner if we want to save a photograph in digital form, we have to put the photograph in the scanner. Then, click on the scanner icon. When *Scan Picture* option appears, click on that button and then the photograph image will be scanned and will appear on the screen. Now select the image and store at the location we wish to. We can usually store the scanned object in different formats like.jpg, .pdf, .bmp, .png etc.

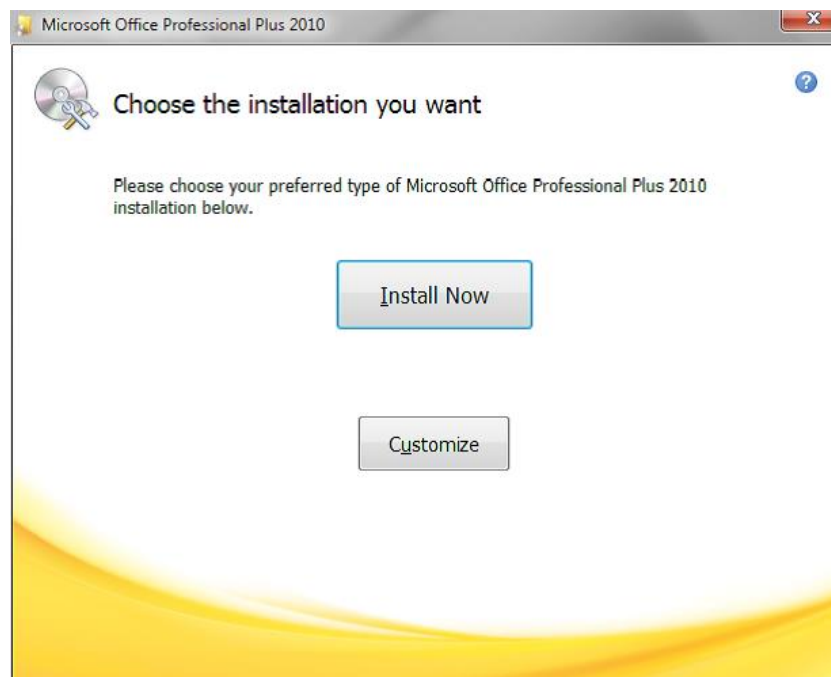# 2.9 INSTALLATION

2.9.1 Microsoft Office Installation

Following steps are there to install Microsoft Office. You must have a licensed copy of the Office.

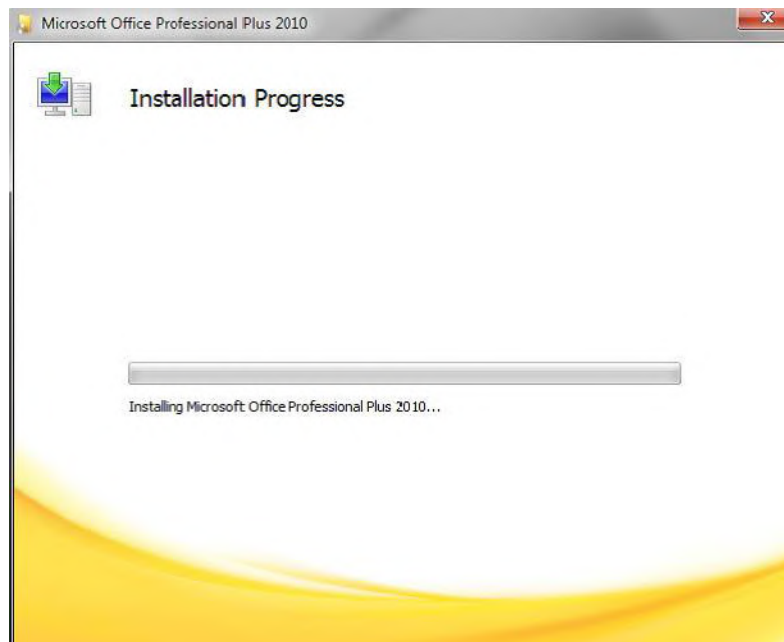1) When we run the *Setup* programme of Office 2010, following dialog box appears. (Figure 2.21)
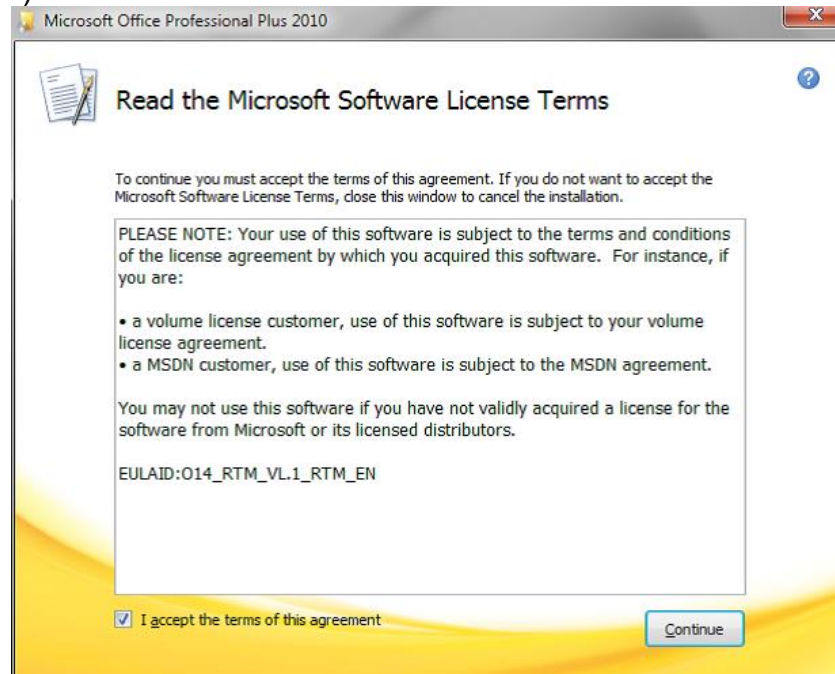
Figure 2.21

2) Click on checkbox and click on the Continue button. A Dialog box shown below appears.
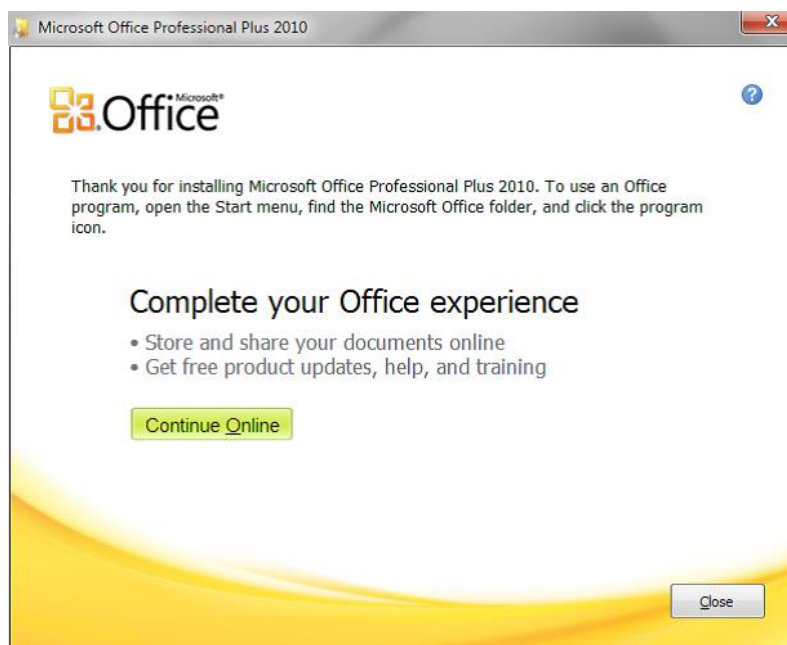
3) As you press *Install Now* button, installation will start and the dialog box shown below will appear to show the progress of the installation.

Figure 2.23

4. Following screen appears as soon as the installation is over.

Figure 2.24

5. Once the installation is over, start Microsoft Word 2010 as shown in the diagram to activate office.
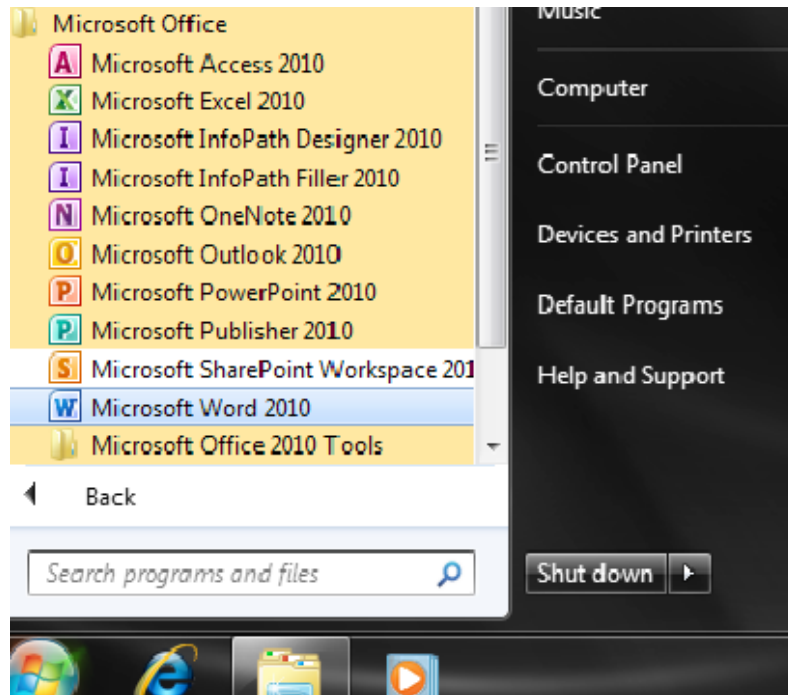
Figure 2.25

6) Go to File tab, click on Help available in the right-hand side of the screen. Activation process begins as you click on *Change Product Key.* Internet connection is required during the entire process.
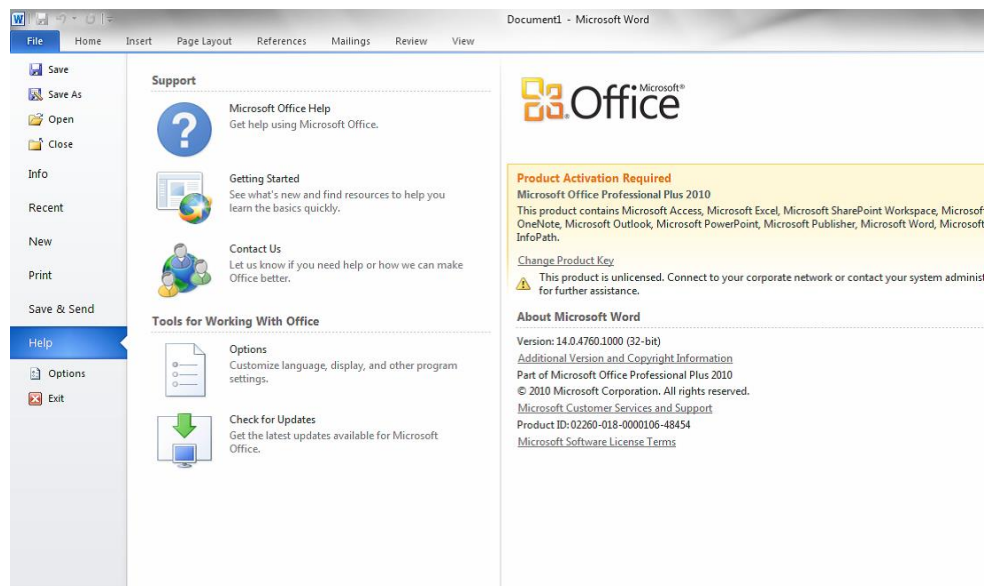
Figure 2.26

7. You have to enter the product key in the dialog box that opens after you follow the above mentioned procedure.
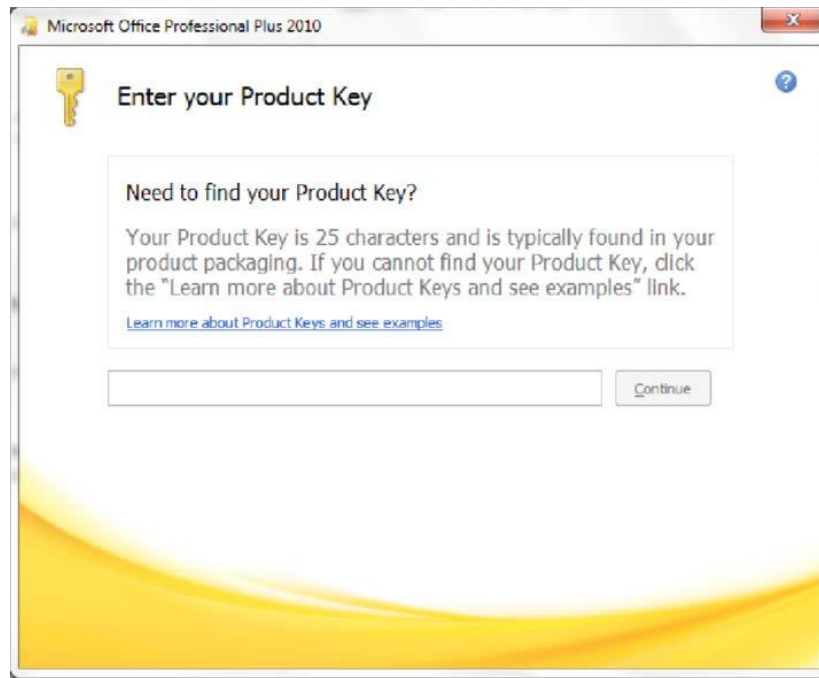
Figure 2.27

8. After entering the product key, click on the Continue button to begin the process of Configuration in which the following dialog box appears.
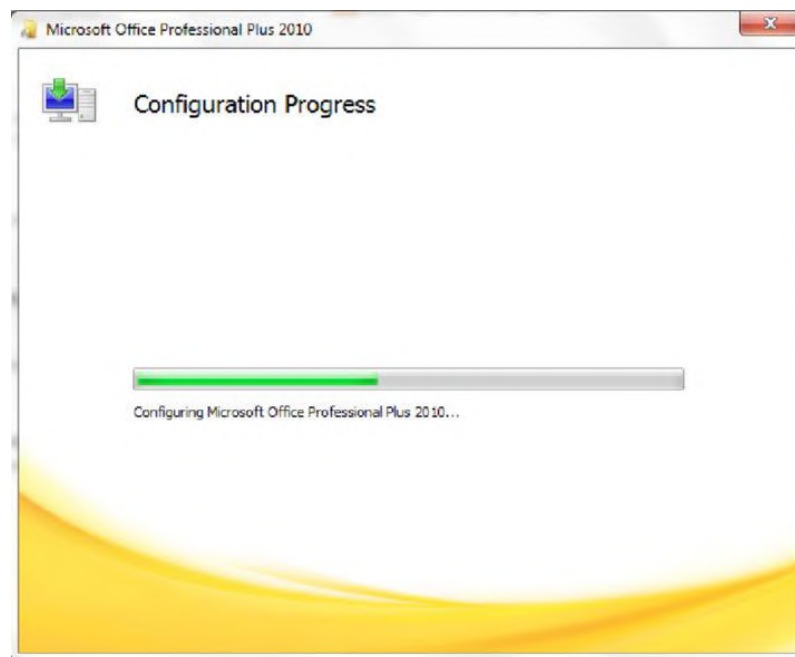
Figure 2.28

1) When the activation process is completed, the following dialog box appears and installation process gets completed. If you have opened any Office program, turn it off and start it again as we have to close and begin Word 2010

Figure 2.29

2.9.2 Printer Installation

It is necessary to have information about which printer do we have or we wish to have. Currently Dot Matrix, Inkjet and Laser printers are more common. Among these, laser printers are faster and give better quality results. First, the printer is connected to the computer. The printer is installed in two ways.

1) We have to run the CD that is provided along with the printer and follow the steps by clicking on *Yes* or *Next*. After the last step, the printer will be installed.
2) After the printer CD is inserted into the computer, we have to move to printer option in control panel and click on Add Printer. First, it asks the company name and model number. Insallation process automatically begins after entering the correct company name and model number.While installation, the printer asks us whether we want to set up the printer in network or setup it as personal. Here we can select the option as required. Finally, click on the *Finish* button and the printer will be installed.

2.9.3 Font Installation

Font installation (addition) is quite simple in Windows 7. Many of the fonts in are provided by default in Windows 7, but we can also add new fonts. The following steps are there to install the font.

1) Copy the font file to install it.
2) Open the Font folder as per the shown path. Start → Control Panel →Appearance and Personalization →Font. The window as Figure 2.30 opens when we open the *Fonts* folder.
3) Paste the copied font at the right-hand side where you can see a list or icons of fonts. In doing so, the dialog box appears and the font installation gets over.

Figure 2.30
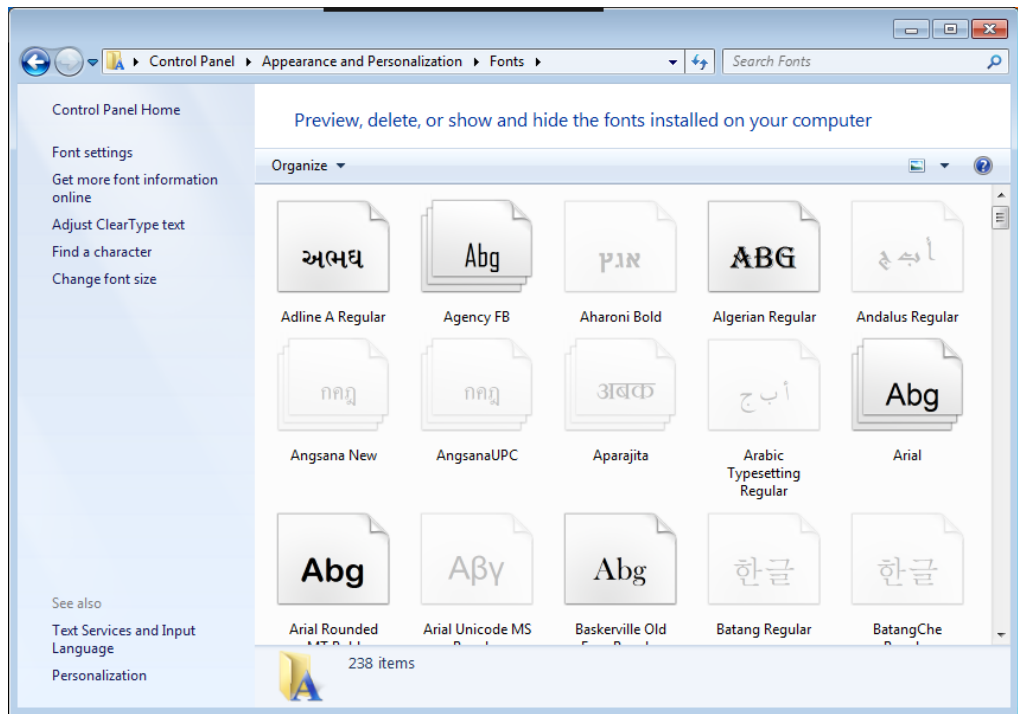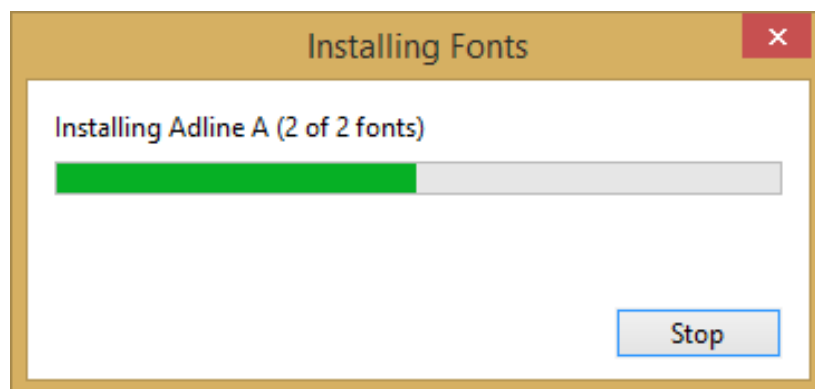

Figure 2.31

2.9.4 Un-install the program from control panel

To remove (un-install) programs from the control panel, first open control panel. To do so, go to start menu, click on Control Panel and the Control Panel window opens.
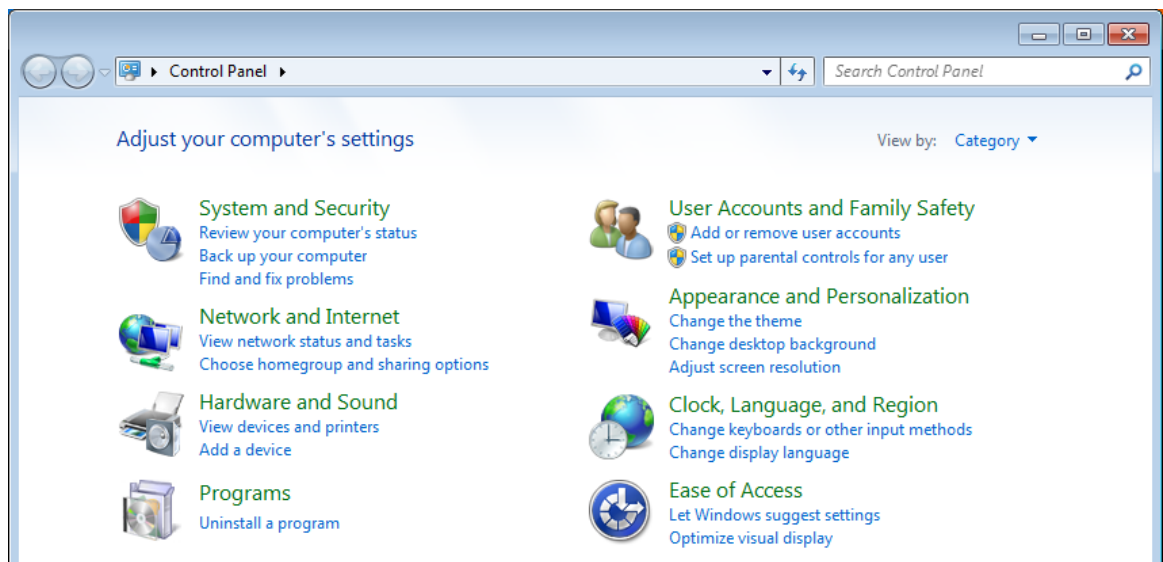
Figure 2.32

New window as shown in Figure 2.33 opens when you click on *Uninstall a programme*.
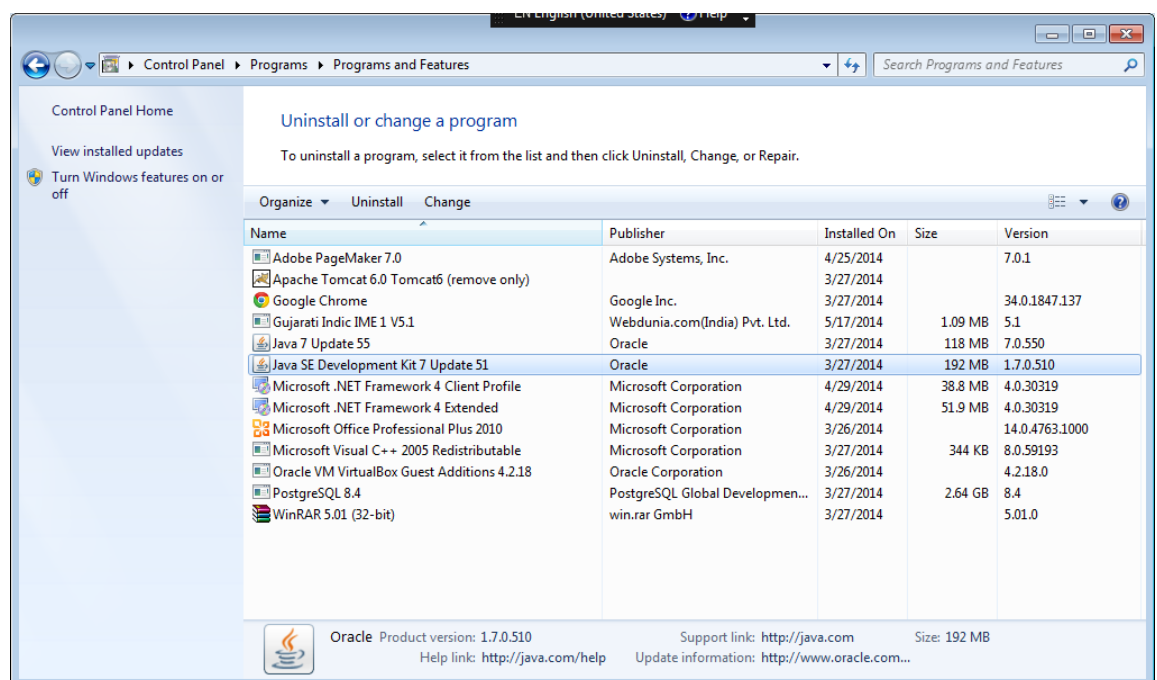
Figure 2.33

Now selects that program from the list to uninstall and press the Uninstall button. The selected programme will be uninstalled.

2.9.5 Installation of a new hardware driver

When we connect a new hardware with the computer, we have to add the driver software. Software for that is provided with it in a CD, a DVD or from the website of the company that manufactured that hardware. To update or add any new device,

click on Start → Control Panel →Hardware and Sound → Add Device. Following window will appear.

Figure 2.34

A list of device and printer attached to your computer will be displayed. You have to select the device or printer and by pressing the Next button. The following window will appear and it will be installed.
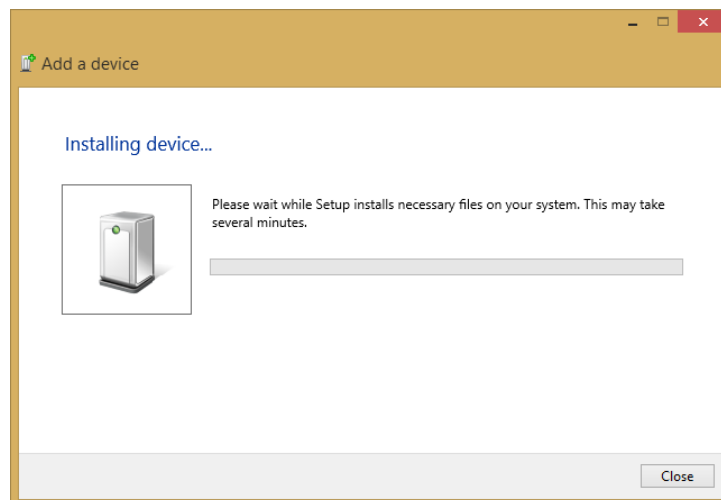
Figure 2.35

2.10 BEST PRACTICES FOR PC

2.10.1 Patch, Upgrade, and Version

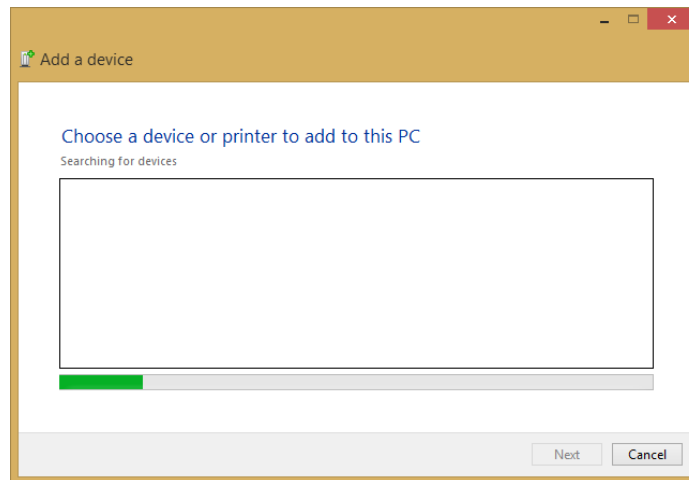Patch is generally created to remove critical software bugs, problems or security problem in software, while the updates are available to provide additional facilities. Patch is needed when a fault is indicated by the user or found by any other way. The Company that has created the Software updates the software to improve the utility of software. Usually software patch or update can be installed via the Internet.

The software version provides a unique number to each release of the software. There are two types of versions, major and minor. Usually version numbers aregiven

in ascending order and they suggest major or minor changes in the software. The following are various ways of providing version number.

1. Change based streamlined version number (1.3.1, 1.3.2, 1.3.3, 1.3.4 ... 1.4.1,)
2. Software Development based version number (0-alpha, 1-beta, 2-release candidate, and 3-Final)
3. Date based version number (e.g. Ubuntu 11.10 was released on October, 2011,).
4. Year based version number (Office 2010, Office 2013)

2.10.2 Disk Cleanup

Windows 7 allows disk cleanup utility to remove unnecessary files running on your computer so you have more storage space on your hard disk and your computer can work faster. Disk cleanup removes additional files such as temporary file, deleted file in recycle bin and unnecessary files.

To remove the file using Disk Cleanup, type Disk in search box and the disk cleanup appears in program as shown in Figure 9.36. As you click on it the dialog box opens up as shown in Figure 2.37.
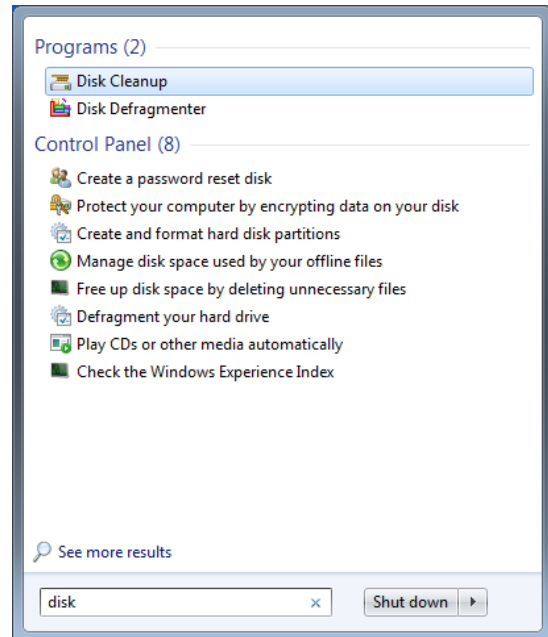
Figure 2.36
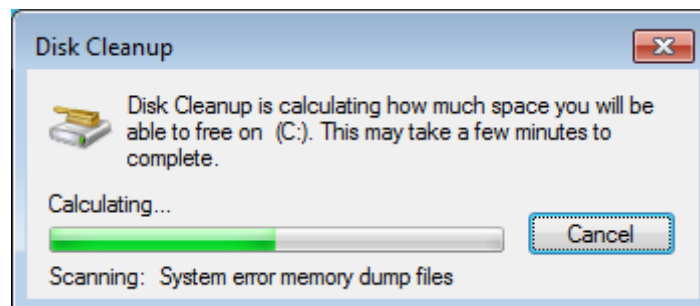
Figure 2.37
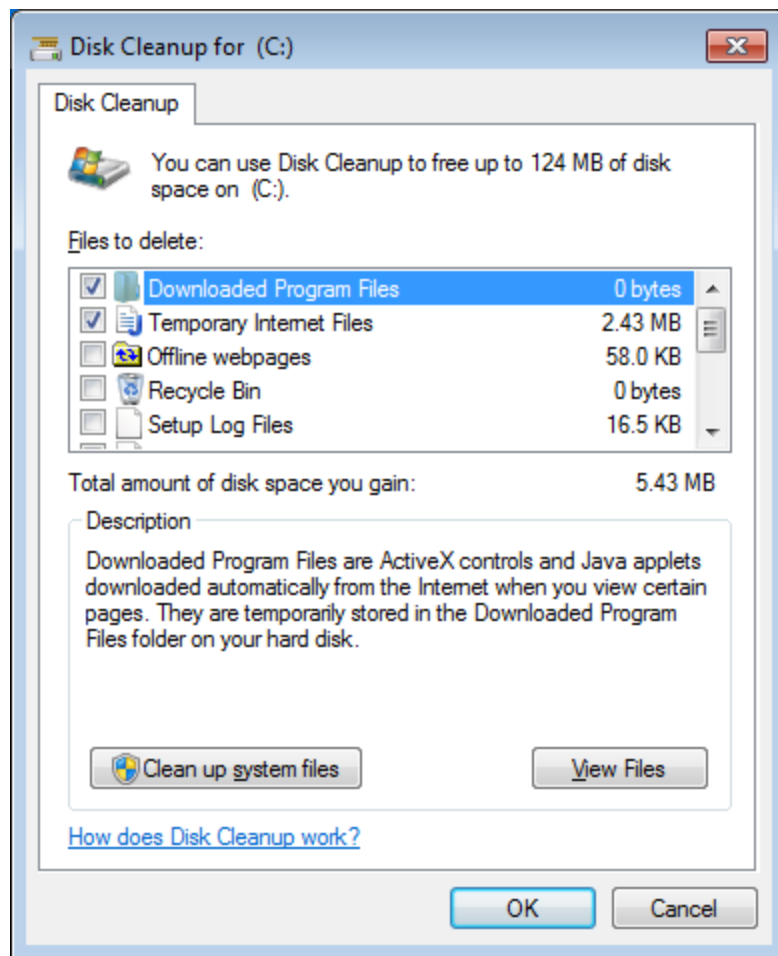
Figure 2.38

You can see in Figure 2.38 a list of file which can be deleted. Out of these files, check the unrequired file and press the OK button as shown in the diagram. Tt ask you for your consent. When you give your concent by pressing Delete Files button, the selected file will be deleted. By pressing Clean up system files button we can delete unnecessary system files.
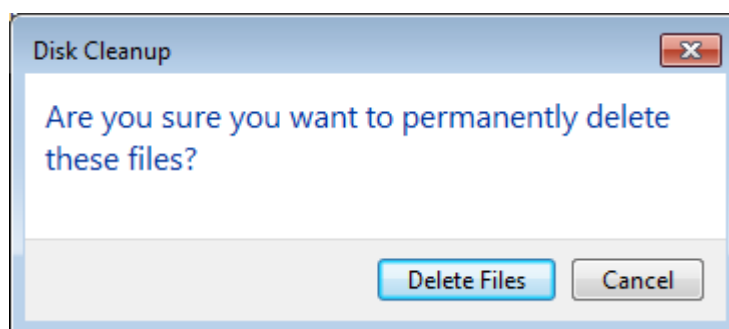
Figure 2.39

2.10.3 Virus and Antivirus Awareness
Virus: In Modern era, Computer and Internet are widely used in every sector. Important information, business details, confidential data and software are stored in computer. We wish to make it safe and secure.

Virus:
- Virus is a dangerous program created by computer experts, which causes destruction to computer data.
- Just like biological virus, which spreads from a person to person, the computer virus also moves from one computer to another through floppy disk, hard disk or pen drive. In addition, if Internet is available; virus may enter through the Internet too.
- Generally, some computer experts prepare the virus programs in a way that they are activated on a particular date and time; so many computers are found affected by virus at some specific time.
- Computer virus attacks on the computer software.
- Some virus is placed automatically or intentionally with common and widely used software such as Games or Word Processor. When a user of computer downloads or copy of such a program, the virus program immediately becomes active automatically. Then the virus loads itself into memory and finds other programs in the memory and damages them.
- When virus finds such type of program, it immediately spreads in it and also spoils a good program. Some of the dangerous viruses are Morris Worm, Melissa, Rontoubro etc. Types of virus: There are mainly three types of virus in computer.
    1. Boot Sector Virus
    2. Macro Virus
    3. E-mail

Boot Sector Virus:
- This type of virus damages the boot sector of hard disk, floppy disk that is used to turn on the computer or any secondary storage.
- It comes into effect as soon as the computer starts.
- It may happen that the computer does not start due to loss of the Boot Disk.

Macro Virus:
- This virus is a Macro or Script that attaches them with Template or file. Hence, when the file is loaded into memory, the immediately connected Macro or Script is activated.
- Macro viruses more often damage Microsoft Word application and add unnecessary words in it.

E-Mail Virus:
- This Virus moves around E-Mail messages. It automatically collects the E-mail addresses from E-mail Address Book and sends e-mail by itself. They spread themselves from one computer to other computers.

Virus and file:
- Some viruses get connected with .com or .exe program file.
- Some viruses damage the programs that ask for permission for the execution in addition to .sys, .ovl, .prg and .mnu.

Harmful software:

- Some programs, which are not actually considered as virus, but are harmful to computer. Such programs spread while downloading from the internet. Such viruses are hidden in software. Such harmful Softwares are introduced below.

Malware:

- Malware is a program, file or a set of instructions (Code) that damages the computer without a permission of the user.

Spyware:
- Spyware are different from the virus. Some are similar to the behavior of the virus.
- This is a program that enters into our computer to collect information on our computer and forward it to the advertising company or other interested persons.
- Spyware enters into our computer without our permission and without informing us.
- Spyware enters during the process of downloading information from the internet or clicking the pop-up window option.

Worm:
- It is theoretically similar to virus. It is improved version to the virus program.
- Worm does not change the program, but it frequently causes duplication of data and multiple copies. The numbers of these unnecessary programs are increasing to the extent that eventually the computer on the network is slowed down and at the end computer shuts down.
- Thus, the intension of the Worm attack is different from that of Virus. Worm attack victimizes a computer or network resources to destroy it and make it unusable.

Trojan horse:
- Just like virus, it is a hidden part of instructions.
- The main objective of Trojan horse attack is to deliver confidential information of the computer to attacker. Trojan horse hides itself quietly in instructions and waits for the login screen. When the user of the system enters the user-id and password, it immediately activates and gets user-id and password unknowingly to the user and sends it to attackers.

Browser Hijackers:
- Browser hijacker is a program to change our computer browser's settings so that it will automatically open some of the websites.
- Most of the browser hijackers change the default Home Page and Search Page.

Spam:
- Spamming is used to send the unwanted messages through the email.

- E-mail spam is also known as undesirable email or unwanted commercial e-mail.
- It repeatedly sends unwanted e-mails and business detail e-mail operations to the recipient group. To prevent spam, we have to configure Spam Guard in Email account. Such unwanted e-mail goes to spam folder that we can delete later.

Rescue virus:
- A virus generally spreads through various media such as floppy, hard disk, pen drive, CD, or Internet. Many antivirus programs are available in the market to prevent virus. But it is essential to regularly update antivirus software.

Kaspersky, Netware, Quick Heal etc. are known antivirus. Antivirus keeps constant watch on computer and prevents it from virus entering through floppy, Internet, CD or pen drive and it scans the data before allowing further action.

2.10.4 Scandisk Utility

Sometimes the hard disk runs slow because of the bad sectors. One reason to occur bad sector may be a sudden power failure. If the number of bad sectors is increased, it will create difficulties to store data. To solve this problem, we have to format the hard disk, floppy disk etc so that the life of hard disk can be extended and search can be made faster.

We can use *Scandisk* utility of windows (The term *utility* referes to the need of the application for the user). Followings are steps for using scandisk utility.

1. Click to open Computer.
2. Right-click the drive that you want to check, and then click Properties.
3. Click the Tools tab, and then, under Error-checking, click Check now.
4. To automatically repair problems with files and folders that the scan detects, select automatically fix file system errors. Otherwise, the disk check will report problems but not fix them.
5. To perform a thorough check, select Scan for and attempt recovery of bad sectors. This scan attempts to find and repair physical errors on the drive itself, and it can take much longer to complete.
6. To check for both file errors and physical errors, select both Automatically fix file system errors and Scan for and attempt recovery of bad sectors.
7. Click Start.

Depending on the size of your drive, this might take several minutes. For best results, don't use your computer for any other tasks while it is checking for errors.

2.10.5 Backup Utility

Though all the data in the computer are safe, generally we copy all the files and store them at some other safe location for more safety. This is known as *backup*. Backup helps us restore or retrieve the data even though our computer faces some major problem or the data gets damages or deleted occasionally.

Usually backups are taken into external drive, pen drive, DVD or CD. It is even possible to take a backup with an application. Its best example is the database management system. Here, whatever the information is stored is known as the data.

The database management software has a separate backup facility. The application may be given the same option. Click on the backup and all data are stored into another drive or folder. It is a simple and small utility through which we can safely back up the files and rescue out computer from data loss.

2.11 Troubleshootings

Some common problems may arise in our computer many a times. We should have the information to overcome these problems. Solving such problems is known as troubleshooting. Let us know some of the simple and basic troubleshooting that may be applied when we are or somebody is struggling to turn on the computer.

(1) It is required to check that all cables of computer are properly fixed or not.
(2) It is necessary to check the power cable (cord) of the computer to verify that whether it is connected to electricity supply or not.
(3) It is required to check whether the UPS (Uninterruptable Power Supply), responsible for proper electricity supply, is properly connected. It is also needed to check whether its electric supply is appropriate or not. We must also check that UPS/Voltage Stabilizer has no error.
(4) There are possibilities of occurrence of fault if there is some error in RAM or if the RAM is not fixed properly into the motherboard.
(5) There may be a fault in the Microprocessor (CPU).
(6) There may be a fault in CPU fan or it may not be working properly.
(7) There may be fault in the motherboard or its circuit.
(8) Problem or fault may occur in SMPS (Switched-mode power supply), which supplies the electricity to different parts of a computer.
(9) If computer is connected to LAN, it is required to check whether the LAN card has been fixed correctly on the motherboard or not.
(10) It is also required to check that sound cards, graphic cards, key-board, monitor cable, mouse cable, printer cable, scanner cable or other cables are connected at appropriate place.
(11) If possible, clean the input and output devices daily since dust may damage the device and cause early breakdown in the device.
(12) Cool environment enhances the life span of computer hardware. So turn on AC or fan while using the computer.
(13) Improper installation of the new hardware may also create fault in the computer.
(14) If the operating system is corrupted, the computer can not be startted. In such a scenario, we have backup of operating system or a bootable operating system disk then we can immediately re-install the operating system and resolve the problem.
(15) Virus can cause severe damage to the computer hardware and software. The computer may slow down, files may be damaged, and applications can be corrupted or entirely removed due to virus. We should have anti-virus software in our computer to protect our computer against virus attack and keep it secure and safe.

It is required to remove garbage files from a computer at a regular time interval. Unnecessary files may waste disk space. There are some good utilities available to do this. The *disk cleanup* utility removes unnecessary files from your computer. Another utility is *Scandisk,* which is used to find or correct the bad sectors in the

storage device like hard disk. Hard disk data are stored at scattered locations. *Defragment Drive* utility is to be used at regular intervals to systematically arrange data on hard disk for faster access of the information.

2.12 PORTABLE DOCUMENT FORMAT PDF

Portable Document Format (PDF) is the open standard file format developed by Adobe Systems. It is used for representing two dimensional documents. PDF file can be viewed on any device. PDF format allows you to make a document with different resolution, fonts, graphics, colors and images.

As shown in the preceding chapters, file created in Word, Excel or PowerPoint 2010 can be saved as a PDF file. PDF file format consists of the following characteristics:
- Multi-platform: It can be seen and printed on any operating systems like Macintosh, Windows, and Unix etc.
- Data integrity: A PDF file crated in one device or computer can be seen on any other computer or device without any changes.
- Information Search: It allows the user to easily find any word, bookmarks and data field from text data.

Information accessibility: PDF document makes the information accessible for people with disabilities with the help of assistive technology.

યુનિવર્સિટી ગીત

સ્વાધ્યાયઃ પરમં તપઃ
સ્વાધ્યાયઃ પરમં તપઃ
સ્વાધ્યાયઃ પરમં તપઃ

શિક્ષણ, સંસ્કૃતિ, સદ્દભાવ, દિવ્યબોધનું ધામ
ડૉ. બાબાસાહેબ આંબેડકર ઓપન યુનિવર્સિટી નામ;
સૌને સૌની પાંખ મળે, ને સૌને સૌનું આભ,
દશે દિશામાં સ્મિત વહે હો દશે દિશે શુભ-લાભ.

અભણ રહી અજ્ઞાનના શાને, અંધકારને પીવો ?
કહે બુદ્ધ આંબેડકર કહે, તું થા તારો દીવો;
શારદીય અજવાળા પહોંચ્યાં ગુર્જર ગામે ગામ
ધ્રુવ તારકની જેમ ઝળહળે એકલવ્યની શાન.

સરસ્વતીના મયૂર તમારે ફળિયે આવી ગહેકે
અંધકારને હડસેલીને ઉજાસના ફૂલ મહેંકે;
બંધન નહીં કો સ્થાન સમયના જવું ન ઘરથી દૂર
ઘર આવી મા હરે શારદા દૈન્ય તિમિરના પૂર.

સંસ્કારોની સુગંધ મહેંકે, મન મંદિરને ધામે
સુખની ટપાલ પહોંચે સૌને પોતાને સરનામે;
સમાજ કેરે દરિયે હાંકી શિક્ષણ કેરું વહાણ,
આવો કરીયે આપણ સૌ
ભવ્ય રાષ્ટ્ર નિર્માણ...
દિવ્ય રાષ્ટ્ર નિર્માણ...
ભવ્ય રાષ્ટ્ર નિર્માણ