

Chapter 2

WORKING WITH MICROSOFT EXCEL

*We are all good to learn about
Microsoft Excel.....*

Rest assured !

We will have great fun in learning this



What is Excel:

In Greek Language

- Excel is a computer program developed by Microsoft.
It is used to create electronic spreadsheets.

In Simple Language

- Excel assists user to organize data in row and columns.

Let us understand Spreadsheet

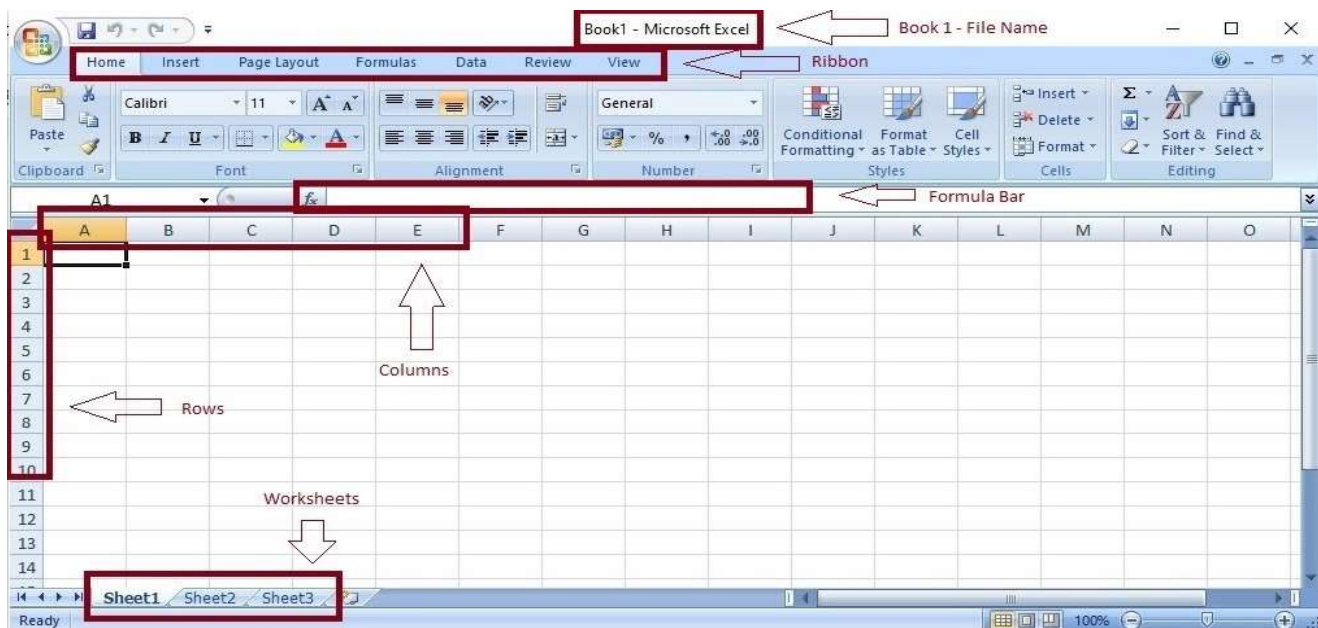
 It is an electronic document in which data is arranged in the rows and columns of a grid and can be manipulated and used in calculations.

 To perform basic mathematical operations such as addition, subtraction, or multiplication “We need data”

- Of Course we need data to perform these mathematical operations as inputs.
- This data is basically stored in one (or more) row or columns of spreadsheets.

Fun Facts:

- ✚ Excel is a very popular but **licensed spreadsheet** application. It is developed by **Microsoft**.
- ✚ Some spreadsheet applications are also **available for free of cost**. These are:
 - ✓ **LibreOffice Calc**
 - ✓ **Google Sheets**
- ✚ Microsoft Excel is based out of **spreadsheet concept**.
- ✚ Spreadsheet Origin
 - ✓ Invented in **1979**
 - ✓ By - **Dan Bricklin and Bob Frankston**
- ✚ **Spreadsheet is very important and hugely popular.**



Getting Familiar With Excel:

Ribbon:

- ✚ These are basically the **"Tabs"** in an excel.
 - For example: **Home, Insert, Page Layout, Formulas, Data, Review, View.**
- ✚ **Only One Tab** can be active at any given time.
- ✚ The active tab is **highlighted**.
- ✚ You can make a **Tab** active by clicking it.



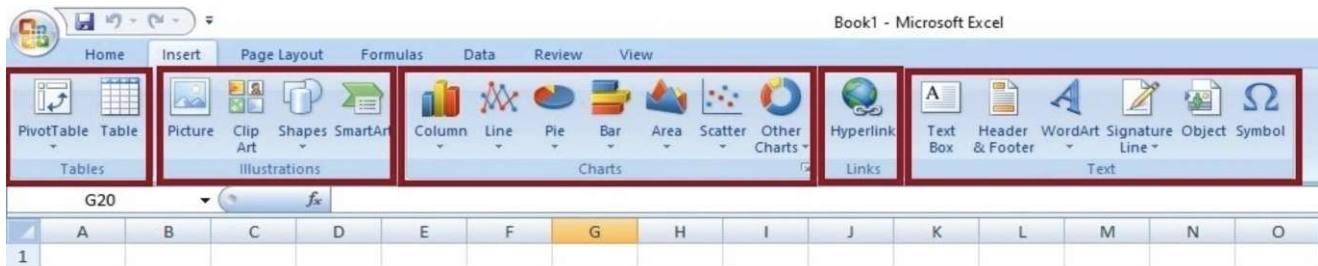
Home Tab:

- The Home tab gives you access to some of the most commonly used **commands** for working with data in Excel. **This includes copy, paste, formatting, and number styles.**
- The **Home tab is selected** by default whenever you open Excel.



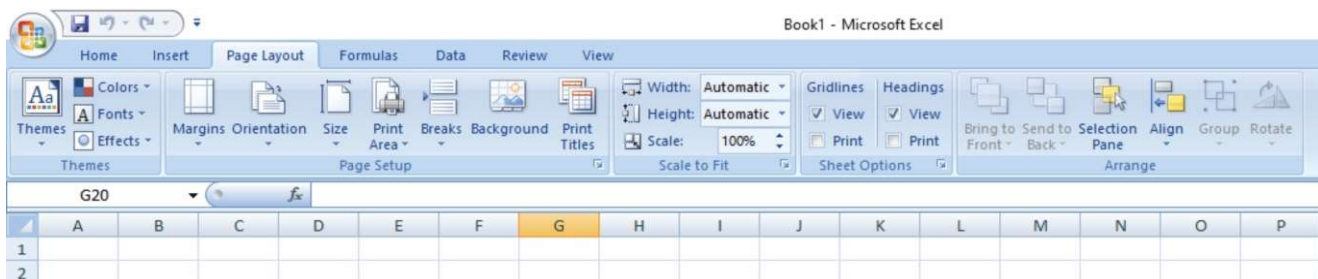
Insert Tab:

- The Insert tab allows you to **insert charts, tables, pictures, text.**
- This can help you **visualize and communicate your workbook** data graphically.



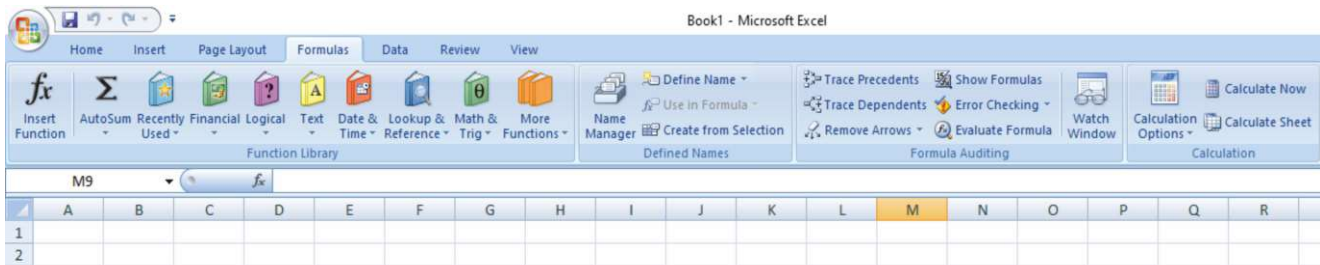
Page Layout Tab:

- The page layout tab allows you to change the **print formatting** of your workbook.
- This includes margin width, page orientation and themes.
- These options are extremely helpful when printing a workbook.



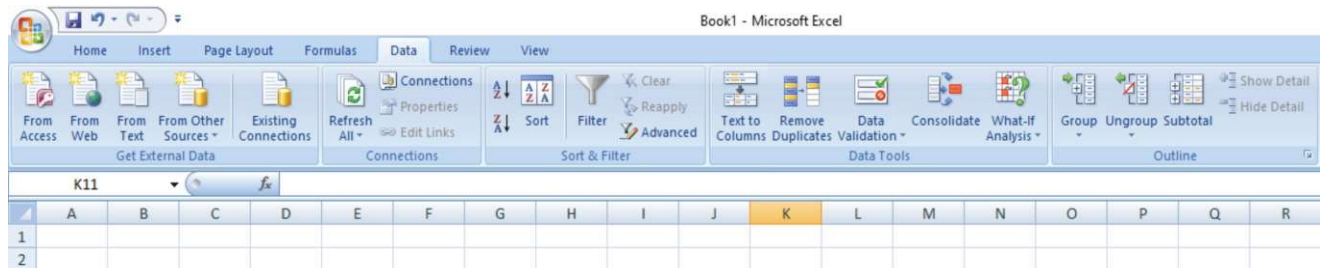
Formulas Tab:

- ✚ The formulas tab gives you access to the most common **functions and formulas** in an excel.
- ✚ These commands help to calculate and analyze the **numerical data like sum, average, percentage** etc.



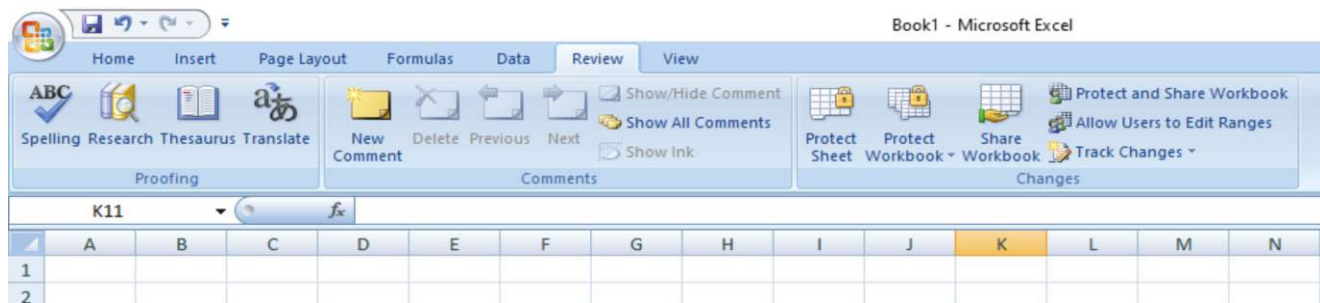
Data Tab:

- ✚ The data tab makes it easy to **sort and filter** information in workbook.
- ✚ This is very helpful while working with large amounts of data in a worksheet.



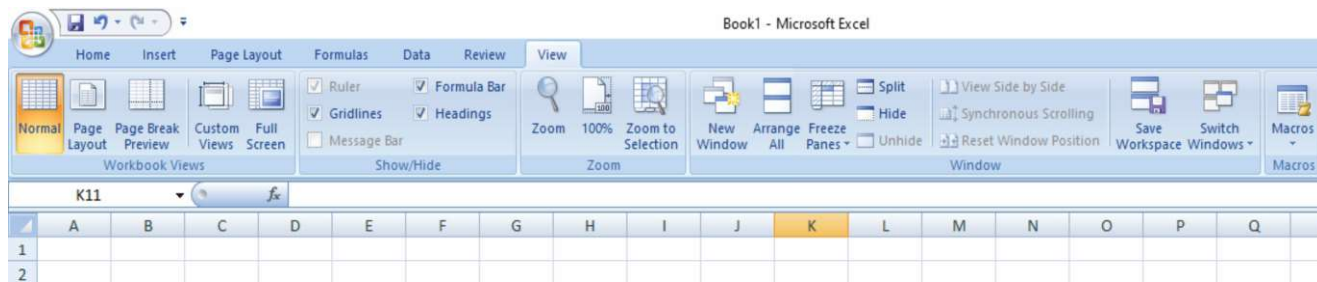
Review Tab:

- ✚ We use Review Tab to access Excel's powerful **editing features like comments and track changes**.
- ✚ These features makes it easy to **share and collaborate** on workbooks



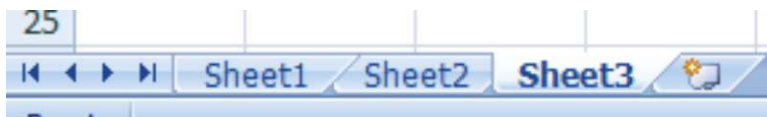
View Tab:

- + View Tab allows you to switch between **different views** of your workbook.
- + These commands are also helpful when **preparing to print** a workbook.

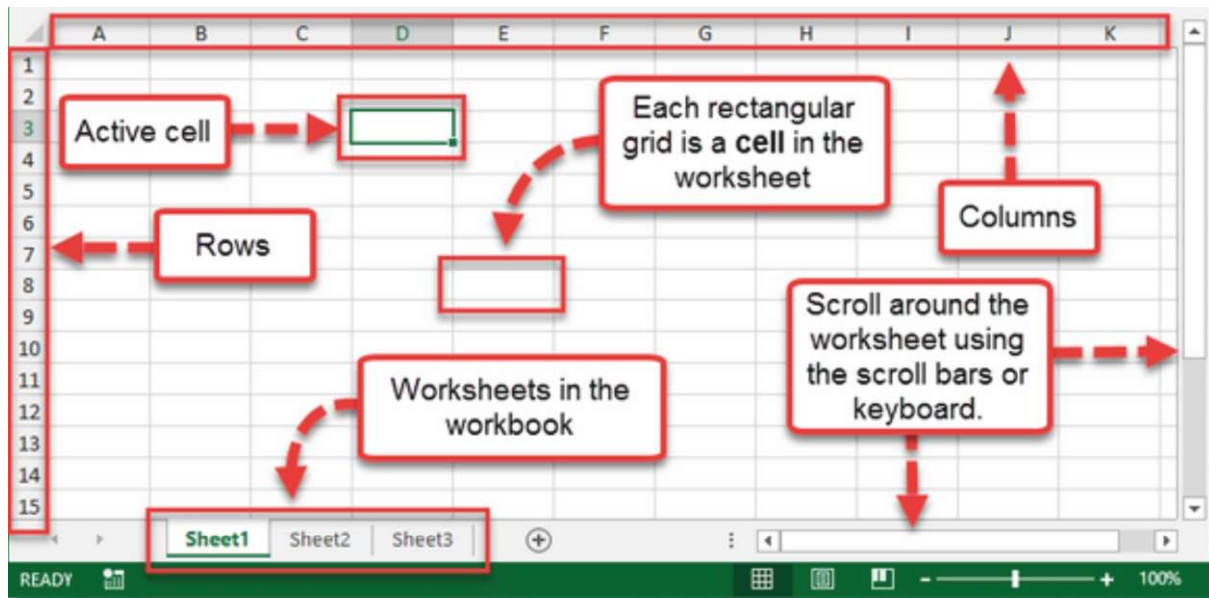


Sheets:

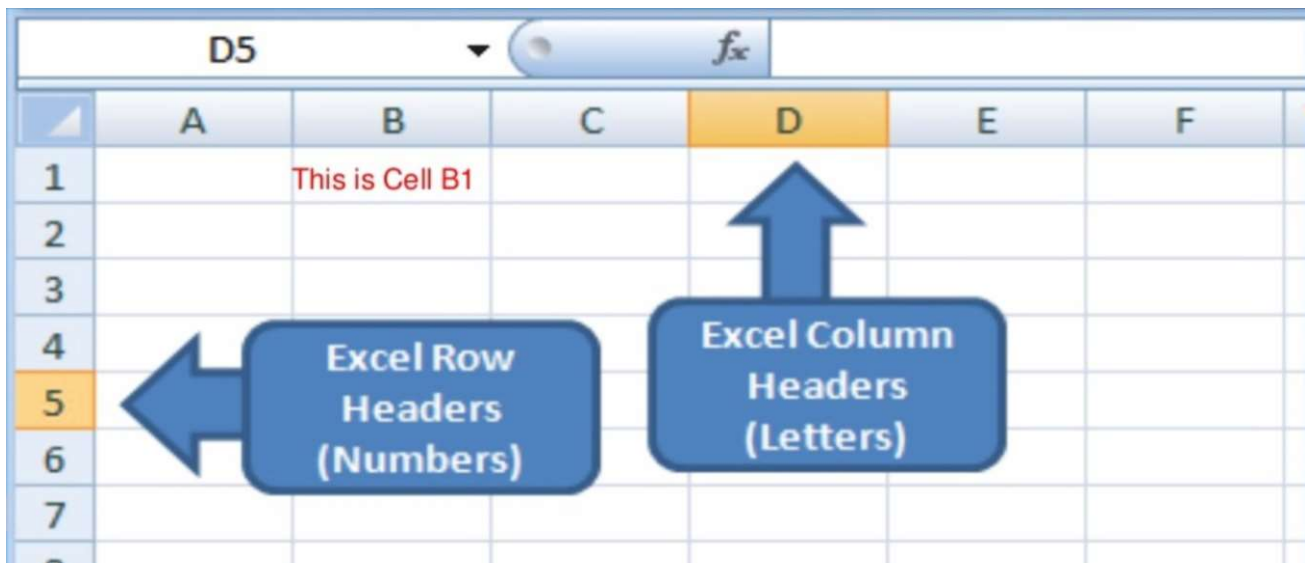
- + Similar to different pages in a book, spreadsheet or excel provides you to work with different sheets.
- + By default excel provides **three sheets** (sheet1, sheet2 and sheet3).
- + You can **add new sheets** by clicking on the new sheet symbol (📄) in the sheets panel.
- + You can also **Rename, Delete, Move or Copy** these sheets by right clicking and selecting the required option.
- + Your working sheet will be highlighted while the other sheets will be available for selection. Just click on it if required.



Worksheet Window:



Cells, Columns and Rows:



*Numbers 1 , 2, 3 and so on horizontally are called **Rows**.*

*Alphabets A, B, C..... and so on vertically are called **Columns**.*

***Intersection** between **Columns and Rows** Like **B1** are considered as a **Cell**.*

Step-by-Step creation of Excel:

The following are steps on how to work with Microsoft Excel at a beginner level. *Certain steps may vary slightly depending upon what version of Microsoft Office Excel you are using.*

This tutorial is specifically using **Microsoft Office Excel 2007**.

Launch the Excel Program:

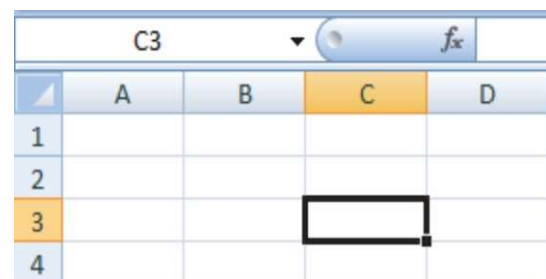
- ✚ Locate “Type here to search” or Use “Start” button.
- ✚ Type - “Excel”
- ✚ Enter or Open Microsoft Office Excel 2007 App
- ✚ This should open up your Excel workbook.

Exercise 1

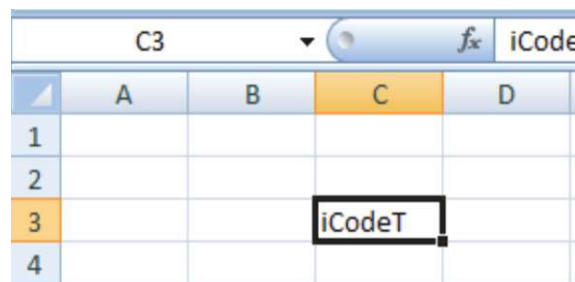
- ✚ Write a text “iCodeT” into an active cell (c3).
- ✚ Merge the cell to the next available cell.
- ✚ Format the cell with borders.

Step 1: Launch the Excel Program as mentioned above.

Step 2: Locate cell c3 (c-> column number, 3-> row number)



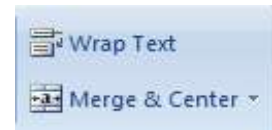
Step 3: Type text “iCodeT” in this cell.



Step 4: Click on C3 cell then Select “Shift” key and click on D3 cell.

	A	B	C	D
1				
2				
3			iCodeT	
4				

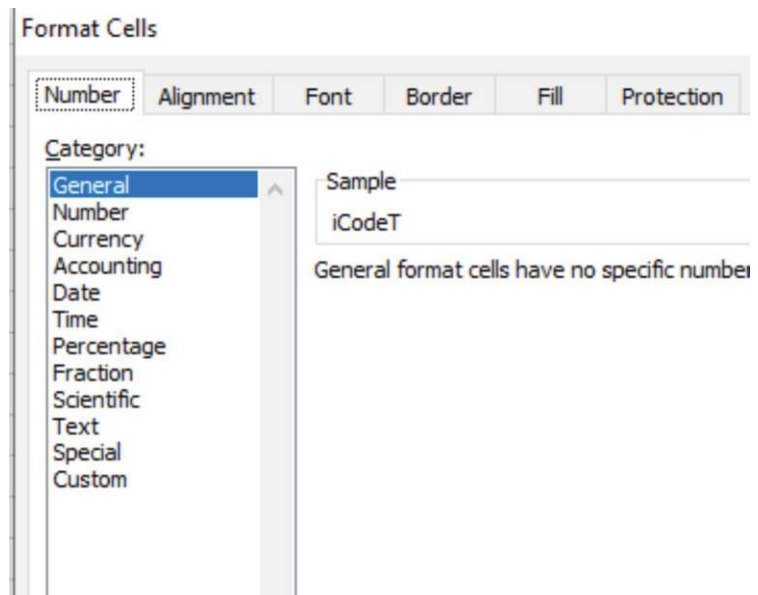
Step 5: Go to Home Tab and select “Merge and Center” button.



Step 6: You would now see the text “iCodeT” is span across C3 and D3 cells.

	A	B	C	D
1				
2				
3			iCodeT	
4				

Step 7: Now to Format this text. Right click on the cell and select “Format Cells...”. This should open up a window for formatting like alignment, font, border etc.



Step 8: Go to Border Tab and select required style and outline. Once Done, Click Ok. This should border the text “iCodeT”.

	A	B	C	D
1				
2				
3			iCodeT	

Exercise 1 - Done

Exercise 2

- ✚ Insert a numeric number “2” in cell A1.
- ✚ Insert a numeric number “3” in cell A2.
- ✚ Calculate the sum of cell A1 and A2 and put the result into cell A3.

Step 1: Launch the Excel Program as mentioned above.

Step 2: Locate cell A1 (A-> column number, 1-> row number).

	A	B	C
1			
2			
3			
4			

Step 3: Write numeric number 2 in this cell.

	A	B	C
1	2		
2			
3			

Step 4: Locate cell A2 (A-> column number, 2-> row number).

	A	B	C
1	2		
2			
3			

Step 5: Write numeric number 3 in this cell.

	A	B	C
1	2		
2	3		
3			

Step 6: Locate cell **A3** (A-> column number, 3-> row number).

	A	B	C
1	2		
2	3		
3			

Step 7: To Sum, use formula tab:

- ✚ Go to **Formula** Tab.
- ✚ Locate “**Auto Sum**” and Click on it.
- ✚ Inside Sum **type the cell names for summation**. In this case, A1 and A2 like (A1:A2).
- ✚ Click **Enter**.
- ✚ This Should give the sum of 2 and 3 as 5 in the A3 cell.

	A	B	C
1	2		
2	3		
3	=SUM(A1:A2)		
4	SUM(number1, [number2], ...)		

	A	B	C
1	2		
2	3		
3	5		
4			

Exercise 2 - Done

Wow, You successfully completed both the exercises.

Excel Formulas

Excel is very popular and powerful tool to **calculate numerical information** between cells using **Formulas**.

Just like a calculator –

you can perform mathematical operations like add, subtract, multiply and divide.

You can also perform **logical operations** like comparisons between cells.

Recall Cell Reference –

	A	B
1	10	
2	5	
3	=A1+A2	
4		

Numbers 1, 2, 3 and so on horizontally are called **Rows**.

Alphabets A, B, C..... and so on vertically are called **Columns**.

Intersection between **Columns and Rows** Like **A1** and **A2** are considered as a **Cells**.

The Cell A1 has a value 10 in it. Similarly the Cell A2 has a value 5 in it.

While you can create simple formulas in Excel manually (for example, **=10+5** or **=10*5**), most of the time you will use **cell addresses** to create a formula. This is known as making a **cell reference**.

Why using Cell Reference?

Using cell references will ensure that your formulas are always accurate because you can change the value of referenced cells without having to rewrite the formula.

	A	B
1	10	
2	5	
3	=A1+A2	
4		

The formula in cell A3 refers to the value in cell A1 plus the value in cell A2

	A	B
1	10	
2	5	
3	15	
4		

The formula calculates and displays the answer to the equation A1 plus A2

	A	B
1	15	
2	5	
3	20	
4		

The formula automatically recalculates when the value of a referenced cell is changed

We will start learning some mathematical operations.

Mathematical Operators

Excel uses standard operators for formulas, such as a **plus sign (+)** for **addition**, a **minus sign (-)** for **subtraction**, an **asterisk (*)** for **multiplication**, a **forward slash (/)** for **division**, and a **caret (^)** for **exponents**.

Addition	+
Subtraction	-
Multiplication	*
Division	/
Exponents	^

All formulas in Excel must begin with an **equals sign (=)**. This is because the cell contains, or is equal to, the formula and the value it calculates.

By combining a mathematical operator with cell references, you can create a variety of simple formulas in Excel. Formulas can also include a combination of cell references and numbers, as in the examples below:

=A1+A2	Adds cells A1 and A2
=C4-3	Subtracts 3 from cell C4
=E7/J4	Divides cell E7 by J4
=N10*1.05	Multiplies cell N10 by 1.05
=R5^2	Finds the square of cell R5

What would be the value at **A3** using these formulas

	A
1	25
2	3
3	=A1+A2

	A	B	C
1	25		6
2	3		
3	=C4-3		

	A	B	C	D	E	F	G	H	I	J
1	25		6							
2	3									
3	=E7/J4									
4										5
5										
6										
7					25					

What would be the value at **N11** and **R6** using these formulas

	N
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	100
11	=N10*1.05

	N	R
1		
2		
3		
4		
5		
6		=R5^2

To create a formula:

In our example below, we'll use a simple formula and cell references to calculate a budget.

1. Select the **cell** that will contain the formula. In our example, we'll select cell **B3**.

	A	B	C
1	June Budget	1200	
2	July Budget	1500	
3	Total Budget		
4			

2. Type the **equals sign (=)**. Notice how it appears in both the **cell** and the **formula bar**.

SUM					✖	✓	<i>fx</i>	=
	A	B	C	D				
1	June Budget	1200						
2	July Budget	1500						
3	Total Budget	=						
4								

Formula will appear in both the cells and the formula bar.

3. Type the **cell address** of the cell you want to reference first in the formula: cell **B1** in our example. A **blue border** will appear around the referenced cell.

	A	B	C
1	June Budget	1200	
2	July Budget	1500	
3	Total Budget	=B1	
4			

4. Type the **mathematical operator** you want to use. In our example, we'll type the **addition sign (+)**.
5. Type the **cell address** of the cell you want to reference second in the formula: cell **B2** in our example. A **red or Green border** will appear around the referenced cell.

	A	B	C
1	June Budget	1200	
2	July Budget	1500	
3	Total Budget	=B1+B2	
4			

6. Press **Enter** on your keyboard. The formula will be **calculated**, and the **value** will be displayed in the cell.

	A	B	C
1	June Budget	1200	
2	July Budget	1500	
3	Total Budget	2700	
4			

Some Facts:

- ✚ Colours of the borders may vary from Excel version to version. But overall the functionality will remain same.
- ✚ If the result of a formula is too large to be displayed in a cell, it may appear as **pound signs (#####)** instead of a value. This means the column is not wide enough to display the cell content. Simply **increase the column width** to show the cell content.

Modifying values with cell references

The true advantage of cell references is that they allow you to **update data** in your worksheet without having to rewrite formulas.

In the example below, we've modified the value of cell B1 from 1200 to 1800.

The formula in B3 will automatically recalculate and display the new value in cell B3.

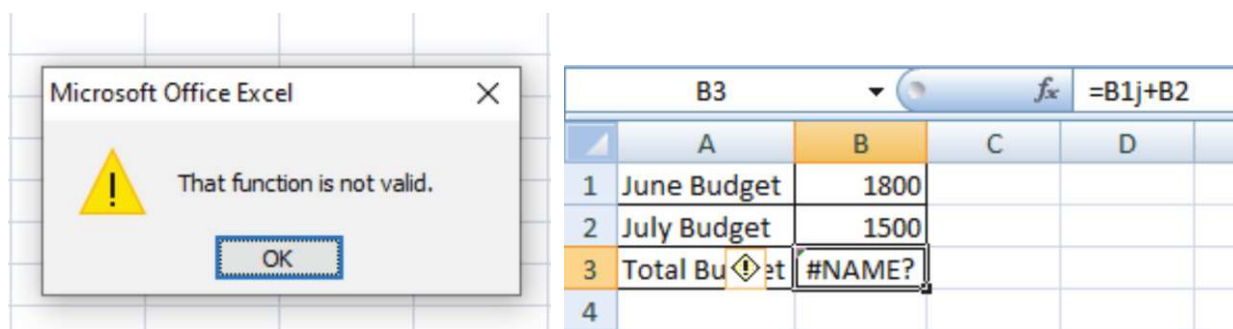
B3		fx =B1+B2		
	A	B	C	D
1	June Budget	1800		
2	July Budget	1500		
3	Total Budget	3300		
4				

Changed the value of Cell B1 from 1200 to 1800

Once the value is changed at B1.
The formula =B1+B2 at cell B3
automatically recalculates and displays the
new value as 3300

Error in Formula

Excel **may or may not tell you the error** in your formula. You might notice any of the below to correct your formula.



Edit Formula

Sometimes you may want to modify an existing formula. In the example below, we've entered an incorrect cell address in our formula, so we'll need to correct it.

1. Select the **cell** containing the formula you want to edit. In our example, we'll select cell **B3**.

B3		fx		=B1+C2	
	A	B	C	D	
1	June Budget	1800			
2	July Budget	1500			
3	Total Budget	1800			

2. Click the **formula bar** to edit the formula. You can also **double-click** the cell to view and edit the formula directly within the cell.
 - A **border** will appear around any referenced cells. In our example, we'll change the second part of the formula to reference cell **B2** instead of cell **C2**.

SUM		X ✓ fx		=B1+C2	
	A	B	C	D	
1	June Budget	1800			
2	July Budget	1500			
3	Total Budget	=B1+C2			

3. When you're finished, press **Enter** on your keyboard or click the **checkmark** in the formula bar.

SUM		X ✓ fx		=B1+B2	
	A	B	C	D	
1	June Budget	1800			
2	July Budget	1500			
3	Total Budget	=B1+B2			
4					

4. The formula will be **updated**, and the **new value** will be displayed in the cell.

B3		fx =B1+B2		
	A	B	C	D
1	June Budget	1800		
2	July Budget	1500		
3	Total Budget	3300		
4				

Some Facts:

- ✚ If you change your mind, you can press the **Esc** key on your keyboard to avoid accidentally making changes to your formula.
- ✚ To show all of the formulas in a spreadsheet, you can hold the **Ctrl** key and press ` (grave accent). The grave accent key is usually located in the top-left corner of the keyboard. You can press **Ctrl+`** again to switch back to the normal view.

Google Apps (Google Trio)

- Google Docs
 - o <https://docs.google.com/document/u/0/>
- Google Sheets
 - o <https://docs.google.com/spreadsheets/u/0/>
- Google Slides
 - o <https://docs.google.com/presentation/u/0/>



- Author's Note -

Microsoft Office apps like Microsoft Word, Microsoft Presentation and Microsoft Excel are great tool to work on your local computer and share.

But, it lacks one aspect of COLLABORATION where more people can work together and collaborate.

To work with documents, excel and presentation online you can use above mentioned google apps.

From functionality wise, they are similar. We will learn these in next chapter.