Department of Education

SPTVE

COMPUTER SYSTEMS SERVICING (CSS) 8

Hardwares for Computer Operation

Quarter 2: Week 4 Module

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EXPECTATIONS

At the end of this module, the learners should be able to:

1. differentiate the hardwares that can input, process and output data in the computer;
2. evaluate the appropriate hardware to be use in the diagram that will illustrate how to set-up a desktop computer in accordance with required output; and
3. value the importance of identifying the appropriate hardware to be able to set-up a computer to perform basic operation in accordance with the required output.

PRE-TEST

Directions: Match column A (input devices) with column B (function) then write the letter of your choice on a separate sheet of paper.

Column A (input devices)	Column B (Functions)
1. RAM	**A.** Enables a user to hand-draw images, animations and graphics, using stylus pen.
2. Microphone	**B.** A device used to produce a sound that can be heard by multiple individuals.
3. Biometrics	**C.** It is a display device that allows the user to interact with a computer using their finger or stylus pen.
4. Speaker	**D.** A device that identifies a person by the measurement of their biological features.
5. Webcam	**E.** It is a device that produces a hardcopy of data in a form of text or pictures.
6. Projector	**F.** A device that captures audio by converting sound waves into an electrical signal.
7. Digitizer Tablet	**G.** It is a device that feeds or streams an image or video in real time to or through a computer to a computer network, such as the Internet.
8. CPU	**H.** Enables to projects an image onto a surface by creating an image using a shining a light through a small transparent lens.
9. Touch screen	**I.** It processes information you input to the computer.
10. Printer	**J.** It is a device used to enter Universal Product Code commonly use in supermarkets and department store to see the information about the product.
	K. It is where all processed data has been temporary stored.

LOOKING BACK

Directions: Before we move on, let's see if you can still remember the lesson about the data cables and computer operation. Write your answer on a separate sheet of paper.

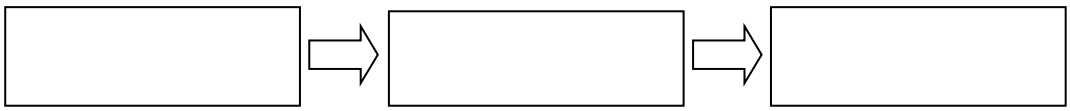
Part I. Name the data cables illustrated below.

1. 

2. 

3. 

Part II. Complete the diagram by writing the appropriate word that will illustrate the basic operation of computer for numbers 4-5. Copy and answer on a separate sheet of paper.



BRIEF INTRODUCTION

Hardwares for Computer Operation

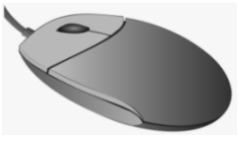
Input Devices

Input_means to enter something. When referring to computer it means to enter data in the computer. Illustrated below are examples of input devices referring to the devices/peripherals commonly used to enter data or command in the computer.

Examples of Input Devices

Source:https://tinyurl.com/y33fmhh3 on 09/02/20

KEYBOARD -an input device used to enter data and commands by pressing the keys on the board. It uses either PS2 or USB interface.



Source:https://tinyurl.com/u4xbpq3l on 09/04/20

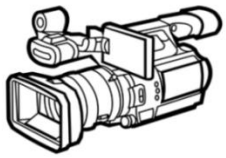
MOUSE - a pointing device use to select, drag and drop to enter data or command in the computer. It uses either PS2 or USB interface.

Source:https://tinyurl.com/yxbvy5ze on 09/04/20

BARCODE READER/SCANNER - capable of reading a barcode using a laser. It can also load the details of the product or log information about that product into a database. It is used to enter Universal Product Code commonly use in department store and supermarkets to see the details about the product.

Source:https://tinyurl.com/y58gatft on 09/07/20

DIGITAL CAMERA -a device used to capture an image file in digital form commonly saved in jpeg format. It can also be used to capture a video file but for a short time only. It uses SD card to save an image or video file. This device uses USB interface to enter the data in the computer.



Source: https://tinyurl.com/y58zr75a on 09/04/20

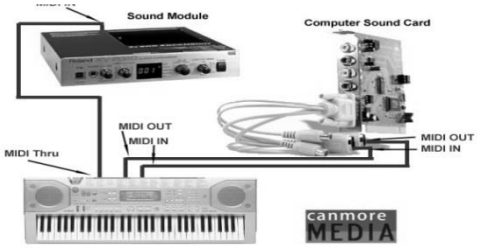
DIGITAL VIDEO CAMERA - a device used to capture video file commonly saved in MPEG-4 format. It can also be used to catch an image file but designed for capturing video file. It uses SD card to save a video or image file, commonly using USB interface to transfer data in the computer.

Source:https://tinyurl.com/y5rhzn4z on 09/04/20

WEBCAM - is a combination of "Web" and "video camera." The purpose of a webcam is to broadcast video on the Web. Webcams are typically small cameras that either attach to a user's monitor or sit on a desk. It allows the user to record video or stream the video on the Web. It uses USB interface

Source:http://clipartlibrary.com/clipart/1148213.htm on 09/04/20

MICROPHONE - is a device that captures audio by converting sound waves into an electrical signal. This signal can be amplified as an analog signal or may be converted to a digital signal, which can be processed by a computer or other digital audio device. It uses 3.5mm jack or USB interface.



Souce:https://danhume.wordpress.com/2010/11/18/midi/ on 09/04/20

MUSICAL INSTRUMENT DIGITAL INTERFACE (MIDI) - is the standard electronic language between electronic instruments and computerized devices which control them during performances. It allows a keyboardist to kick off a drum synthesizer with one key or a computer to store a sequence of composed notes as a MIDI file.

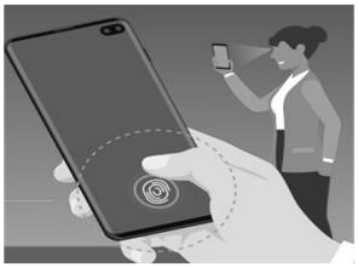


Image source: https://tinyurl.com/y4s5

Souce: https://tinyurl.com/u3hm8duh

Image Source: https://tinyurl.com/u67dkncy

Imaae source: https://tinyurl.com/u3aoia35

https://tinyurl.com/yyxu9b3q

https://tinyurl.com/y4urz3r3

All image on 09/04/20

BIOMETRICS - is the identification of a person by the measurement of their biological features. For example, a user identifying them to a computer or building by their fingerprint or voice is considered a biometric identification. When compared to password, this type of system is more difficult to fake since it is unique to the person. Other method of biometrics scans person's face, hand, iris and retina.

Source:https://tinyurl.com/y2tdpif9 on 09/04/20

TOUCHSCREEN - is a display device that allows the user to interact with a computer by using their finger or stylus pen. It is an alternative to a mouse or keyboard for navigating a graphical user interface. It is used on a variety of devices, such as laptop, Smartphone, tablets, cash registers, and information kiosks.

Source:https://tinyurl.com/y5xkm7k6 on 09/04/20

SCANNER - is a device that optically scans images, printed text, handwriting or an object and converts it to a digital image. Commonly used in offices are variations of the desktop flatbed scanner where the document is placed on a glass window for scanning.

Source:https://tinyurl.com/y8muqoes on 09/05/20

DIGITIZER TABLET/DRAWING TABLET - enables you to enter drawings and sketches into a computer. A digitizing tablet consists of an electronic tablet and a *cursor* or pen. The tablet contains electronics that enable it to detect movement of the cursor or pen and translate the movements into digital signals that it sends to the computer.It uses USB interface.

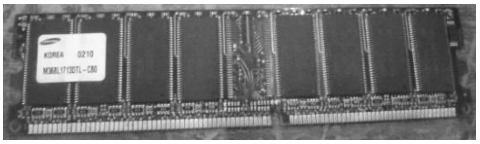
Processing Components: Process means performing a task based on the commands and data entered in the computer. If we refer to a desktop computer commonly we consider a system unit as the part that is responsible in processing the data. But to be specific only the CPU and RAM are the components responsible in processing the information and command we enter to the computer. Most of the components of the system unit are related to each other which help in the success of the operation. Both CPU and RAM cannot stand alone; they are attached to the motherboard for communication with other hardware and powered by power supply unit which is also a part of a system unit.

Examples of Process Components:

1. **CPU/Processor** --processes information you input to the computer commonly known as the brain of the computer.

Source: https://tinyurl.com/zx27d2b on 09/05/20

2. **RAM card/Memory card** - temporary storage of data processed by CPU. Running files or programs are temporarily stored in it.



Output refers to the product, result or processed data. There are two types of output in the computer known as hardcopy and softcopy. Below are the examples of output devices that produce either a hardcopy or softcopy of data in computer.

Examples of Output Devices

1. Monitor or display (sometimes called a visual display unit) – is an output device that produces a softcopy of data processed by the computer. It displays the output data in the screen. Common interface used are VGA, DVI and HDMI. In the technology of computer, there are different types of monitor named as:

a. **CRT (*Cathode Ray Tube)* Monitor –** is the oldest type of monitor introduced in desktop computer using a VGA interface. It is less expensive, less fragile and harder to damage but heavier and big that it consumes larger space in the working area compare with other type of monitors. It becomes obsolete nowadays.

Source:https://tinyurl.com/y6xzytl5 on 09/05/20

b. **LCD (Liquid Crystal display) Monitor –** A flat screen monitor when compare with CRT monitor it requires less power, smaller in size, lighter in weight and less eye strain.

Source:https://tinyurl.com/y6ttmjbs on 09/05/20

c. **LED (Light-Emitting Diode) Monitor -** is a flat screen, flat-panel computer monitor that has a very short depth and is light in terms of weight. The actual difference between this and a typical LCD monitor is the backlighting.Primary advantages compare to other type of monitors is that it consumes less power and environmental friendly.

2. Projector is an optical device that projects an image and videos onto a projection screen. It creates an image by shining a light through a small transparent lens, but some newer types of projectors can project the image directly, by using lasers. Interface used are VGA, HDMI, USB or Display port. Common types of projector used are the following:

a. **DLP Projector *(Digital Light Processing)*** uses micro-mirrors to project images from a monitor onto a large screen. It is seen in standalone projection units, in rear projection TVs, and digital cinema projection.

Source:https://tinyurl.com/y3rc7c8b on 09/05/20

b. **LCD projector *(Liquid Crystal Display)*** is based on liquid crystal displays that sends light from a metal-halide lamp through a prism to display images, data or video. It works on transmissive technology. It is more popular than many alternatives due to the fact that it is cheaper to produce and have excellent color reproduction

Source:https://tinyurl.com/yyky6ngd on 09/05/20

3. Sound devices commonly uses 3.5 mm jack plug (audio jack) where RCA connectors are sometimes used, and a USB port may supply both signal and power. It uses a wired or Bluetooth technology for the connection.

SPEAKER

Source: https://tinyurl.com/y579vyqy on 09/05/20

HEADPHONE

Source:https://www.pinterest.ca/pin/716002040733685191/ on 09/05/20

EARPHONE

Source:https://tinyurl.com/yyvc3e8b on 09/05/20

a. **Speaker** is an output device used to produce a sound that can be heard by multiple individual.

b. **Earphone/Headphone** is an output device used to produce a sound designed for a single user only.

4. **Printer** is an output device that produces a hardcopy of data in a form of text or pictures. It uses USB (Universal Serial Bus) interface. Common types are:

   a. **Inkjet printer** - are machines that spray microscopic droplets of ink onto paper. Inkjet printers are generally cheaper, smaller, and can be used to print both text documents and high quality colored images.

Source:https://tinyurl.com/y5etbscd on 09/05/20

   b. **Laser printer -** are machines that melt toner powder onto paper to create a print. It is more expensive than inkjet printers upfront and uses pricier toner cartridges but still more economical option in the long run with its overall lowercost per page, faster print speeds. It is ideal for high volume printing.

Source:https://tinyurl.com/tlberhn on 09/05/20

ACTIVITIES

Directions: With the information presented in the lesson about devices and components for computer operation, let's check if you really read and understand the lesson by answering the following questions on a separate sheet of paper.

1. Based on the input devices discussed in the lesson, evaluate what input device you should use to enter the different types of file in the computer. Write your answer in the table shown below. *(Note: Include all examples of input devices discussed in the lesson to your table)*

Text file	Image file	Sound file	Video file

2. Based on the output devices discussed in the lesson, evaluate what output device you should use to produce a softcopy or hardcopy of the data defending on the type of file you processed in the computer. Write your answer in the table shown below. *(Note: Include all examples of output devices discussed in the lesson to your table)*

Text file	Image file	Sound file	Video file

REMEMBER

Directions: Below is a paragraph that summarized the topic discussed in the lesson. Choose the appropriate word from the box. Copy and answer the paragraph on a separate sheet of paper.

BIOMETRICS	COMPUTER OPERATION	CPU	INPUT
INPUT DEVICE	KEYBOARD	MICROPHONE	MONITOR
MOUSE	OUTPUT	OUTPUT DEVICE	PRINTER
PROCESS	RAM	SPEAKER	WEBCAM

The lesson is about _____. In the process you have to _____ the data then it will be processed by CPU and temporarily stored in the _____, lastly the result will be produce in the _____. To enter a data in the computer you have to use _____ devices like _____, _____, _____, _____, _____. After processing the information, the computer will produce a/an _____ of the processed data. To produce a copy of the processed data you have to use _____ devices like _____, _____, _____.

CHECK YOUR UNDERSTANDING

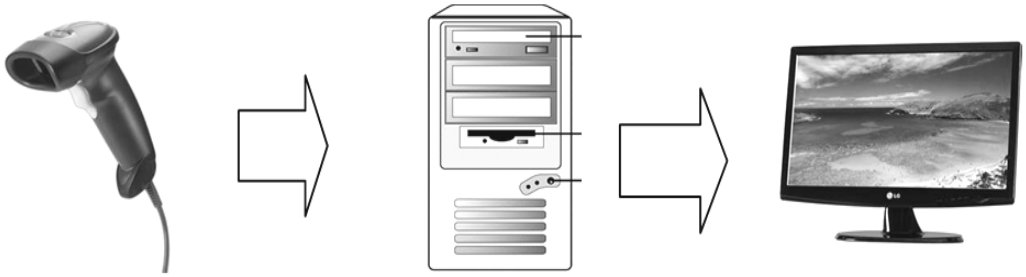
Directions: Answer activity 1 and 2 on a separate sheet of paper.

Activity 1: "Set-up Desktop Computer"

Laboratory Work:

1. Create a diagram that will illustrate the basic operation of computer.
2. In the diagram, draw the devices used in the operation of computer. Don't forget to include an arrow line to show the next process.
3. Make 2 diagram for each type of file listed below:
   - **a.** Text file
   - **b.** Image file
   - **c.** Sound file
   - **d.** Video file

Illustrated below is a sample diagram showing the hardwares used in the computer operation that processes text file.

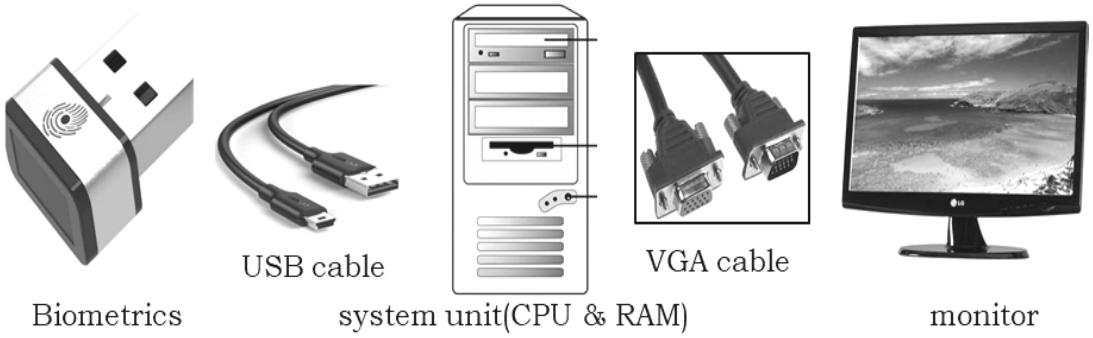


Activity 2: "Connect Me!"

Laboratory Work:

Based on the diagrams drawn in Activity 1, replace the arrow with the interface or data cables used by the different devices to connect the hardware to the system unit for communication and success of the operation.

Illustrated below is a sample diagram showing the appropriate interface to connect hardwares used in the computer operation processing a text file.



POST TEST

Directions: Write the letter of the correct answer on a separate sheet of paper.

1-5. Based on what you have learned about the hardwares for computer operation, identify the following devices or components below whether it is used to input, process and output data or an interface used in the computer.

1.	Monitor	A. input	B. interface	C.process	D. output
2.	USB	A. input	B. interface	C.process	D. output
3.	Touchscreen	A. input	B. interface	C.process	D. output
4.	CPU	A. input	B. interface	C.process	D. output
5.	Speaker	A. input	B. interface	C.process	D. output

6. Jane wants to record her voice in her video lesson. Which of the following device should she use to be able to allow the recording of her voice?
A. keyboard B. microphone C. MIDI D. speaker

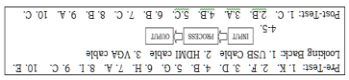
7. Ben decided to use a projector to have a larger image of his presentation. What interface should he **NOT** use to connect his projector to his laptop?
A. display port B. HDMI C. jacks D. VGA

8. Zia wants to produce a hardcopy of her file. Which of the following output device will she use?
A. monitor B. printer C. projector D. speaker

9. Tanya wants to easily identify the items that have already bought in her grocery store. Which of the following input device will she use to scan the universal product code of the product bought by her customer??
A. bardcode reader B. keyboard C. scanner D. touchscreen

10. Zion wants to connect her digital camera to his computer to transfer all the images she captures in his sister's wedding. What interface will he use to connect his device to his computer?
A. DVI B. HDMI C. USB D. VGA

Answer Key:



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