DepED
DEPARTMENT OF EDUCATION

SDO PASAY CITY

9

Supplementary Learning Materials in Technology and Livelihood Education

Computer System Servicing 9

4th Quarter

LEARNING COMPETENCIES:

LO 1. Assemble computer hardware.

- Plan and prepare unit assembly to ensure OHS policies and procedures are followed in accordance with systems requirements
- Identify components of the system unit and their functions. TLE_IACSS9-12ICCS-Ia-e-28

WEEK 1: INSTALLING AND CONFIGURING COMPUTER SYSTEMS (ICCS)

EXPECTATIONS

At the end of the module, you should be able to:

a. observe safety procedures in installing and configuring computer systems; and
b. recognize the different components of a system unit.

PRETEST

Directions: Write the word **TRUE** if the statement is correct and **FALSE** if it is wrong on the space provided.

_____1. Any component of the machine is connected to the motherboard, either directly or indirectly.

_____ 2. A computer's power supply unit transforms power from a wall outlet to the form of power needed by the computer.

_____ 3. The fan circulates cool air through the heat sinks of different devices, including processors and chipsets.

_____ 4. ASTA and IDE data cables are the two most common types of data cables.

_____ 5. A computer's power supply unit transforms power from a wall outlet to the form of power needed by the computer.

BRIEF INTRODUCTION

This lesson is designed to give you the proper procedures used in installing devices and operating system of a personal computer, alongside with it is the basic computer configuration set up.

Computer equipment can be dangerous, and you or others can be injured or even killed if you don't follow proper safety guidelines when working along with PC's.

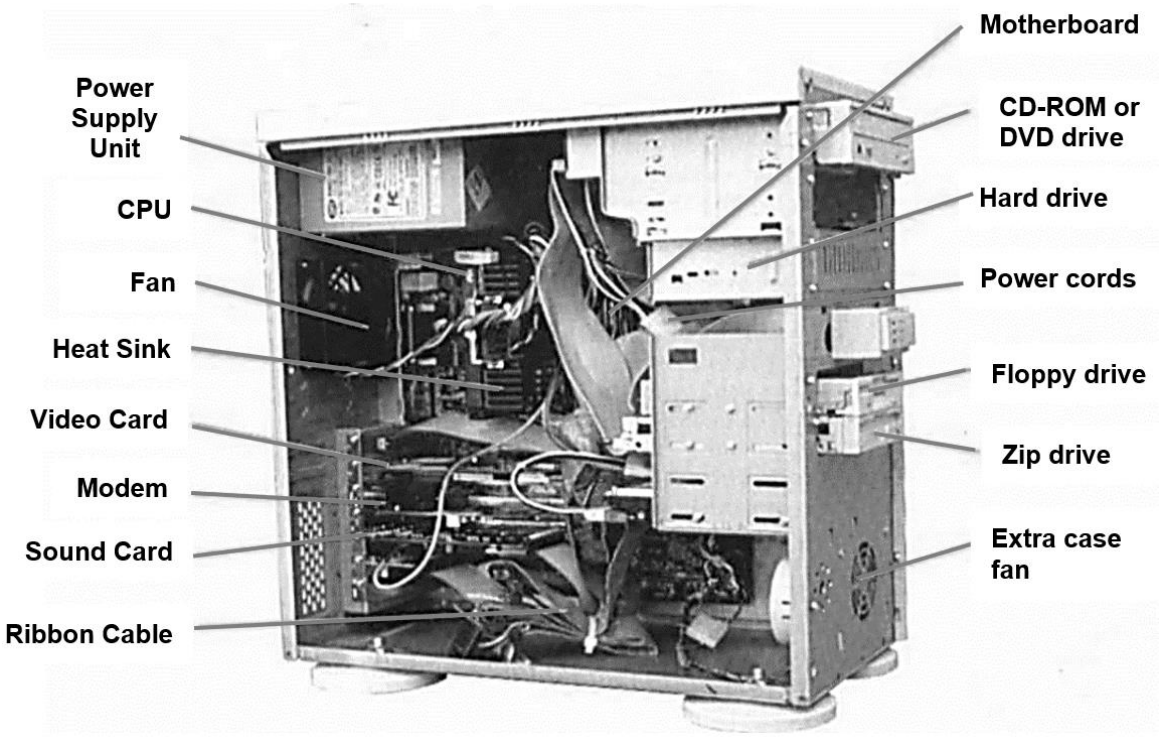
The following are some precautionary measures to take before working with any computer equipment:

- Wear shoes with non-conductive rubber soles to help reduce the chance of being shocked or seriously injured in an electrical accident.
- Do not work on components that are plugged into their power source.
- Do not remove expansion cards from a computer when it is turned on.
- Remove jewelries when working inside any computer related equipment.
- Be sure not to mix electronic components and water.

It is essential to examine and understand every computer component and identify its function in order to apply the correct troubleshooting steps there are errors encountered. Keep in mind that every hardware component is essential for the operation of that computer.

Components of a System Unit

The **System Unit** is one of a computer's four main hardware components. It is normally a rectangular container that houses other important hardware components. Random Access Memory (RAM), Compact Disc-Read Only Memory (CD-ROM), Hard disk drive, Motherboard, Fan, Processor or Central Processing Unit (CPU), Power Supply, and Expansion cards are some of the components in the system unit.



Motherboard- It is the main circuit board of the computer. It is a thin plate that houses the processor, memory, hard drive and optical drive connectors, video and audio expansion cards, and connections to your computer's ports (such as USB ports). Any component of the machine is connected to the motherboard, either directly or indirectly.

CPU - The central processing unit (CPU), also known as a processor, is found on the motherboard inside the computer case. It is often referred to as the computer's brain, and its role is to execute commands.

RAM - The primary memory of a computer system's main purpose is to temporarily store data. It enables the CPU to quickly access data due to the fact that data is accessed at random (in no specific order). Because of its ability to allow random access to data, it also speeds up the computer's operations.

Hard disk drive - Your applications, documents, and other files are stored on the hard drive. The data is saved even though you turn off the device or unplug it because the hard drive is long-term storage.

Power Supply Unit - A computer's power supply unit transforms power from a wall outlet to the form of power needed by the computer. It supplies power to the motherboard and other components through cables.

Expansion Cards - Most motherboards have expansion slots for different types of expansion cards. PCI (peripheral component interconnect) cards are another name for this type of card. Most motherboards come with built-in video, sound, network, and other features, so you can never need to add any PCI cards.

Compact Disc-Read Only Memory (CD-ROM)- A removable disk is included in this high-capacity optical data storage unit. It stores data on a storage medium and reads data from it. An IDE (ATA), SCSI, S-ATA, Firewire, USB, or proprietary interface can all be used to connect a CD-ROM drive to a device.

Computer Fan - Another part within the computer system unit is a fan. The fan also circulates cool air through the heat sinks of different devices, including processors and chipsets.

Computer Data Cables - The data cable connects the hard drive to the motherboard and vice versa. SATA and IDE data cables are the two most common types of data cables.

REMEMBER

- It is important to keep in mind the different safety measures before installing computer hardware and software components. Following safety procedures protects us from injuries such as electrical hazards, heat, chemicals, and infection, for job-related occupational safety and health purposes.
- Understanding the components of a system unit and its functions is vital in order to find out what the problem is if the computer stops working. You must also be familiar with electronic devices in order to understand basic machine troubleshooting.

CHECKING YOUR UNDERSTANDING

I. **Directions:** It is essential to recognize the different components of a system unit and its functions. Unjumble the set of words below, some of the letters has an equivalent number below it. Transfer the numbered letters in the box to unveil mystery word.

1. TOREHRDAOMB

6		10		5						

It is the main circuit board of the computer.

2. RTUPNMCOFEA

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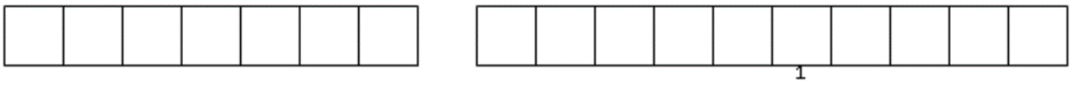
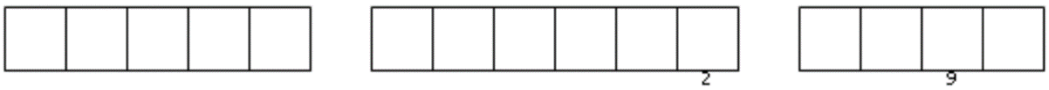
It circulates cool air through the heat sinks of different devices, including processors and chipsets

3. TPCNIESSAUIOTRENCGNLR



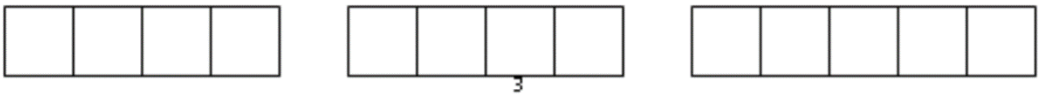
It is also known as a processor.

4. UIUPTNEPPROSYWL

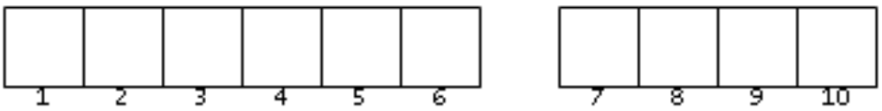


It supplies power to the motherboard and other components through cables.

5. EAHRDKISRDIDV



Applications, documents, and other files are stored in this component.



Mystery Word: _____

II. **Directions:** Answer each question briefly.
1. Why do we need keep in mind the proper safety guidelines when working along with computers?
2. Discuss the importance of being familiar with the use and function of the System Unit.

Directions: Read the following questions carefully. Choose the correct answer and write it on your answer sheet.

_____ 1. It is a thin plate that houses the processor, memory, hard drive and optical drive connectors, video and audio expansion cards, and connections to your computer's ports (such as USB ports).

A. CPU B. Hard disk drive C. Motherboard D. Power Supply Unit

_____ 2. A removable disk is included in this high-capacity optical data storage unit.

A. CD-ROM B. Computer Fan C. Expansion Cards D. RAM

_____ 3. It is often referred to as the computer's brain, and its role is to execute commands.

A. CPU B. Hard disk drive C. Motherboard D. Power Supply Unit

_____ 4. It is normally a rectangular container that houses other important hardware components

A. CD-ROM B. Computer Fan C. Motherboard D. System Unit

_____ 5. It supplies power to the motherboard and other components through cables.

A. CPU B. Hard disk drive C. Motherboard D. Power Supply Unit

LEARNING COMPETENCY:

LO 1. Assemble computer hardware.

- Assemble computer hardware in accordance with established procedures and system requirements
  TLE_IACSS9-12ICCS-Ia-e-28

WEEK 2: INSTALLING AND CONFIGURING COMPUTER SYSTEMS (ICCS)

EXPECTATIONS

At the end of the module, you should be able to:

a. figure out the steps on how to assemble and disassemble a computer system; and
b. stress the importance of understanding the proper way on how to assemble and disassemble a computer system.

PRETEST

Directions: Write the word **TRUE** if the statement is correct and **FALSE** if it is wrong on the space provided.

_____ 1. To remove the RAM, push down on both tabs holding the RAM in place.

_____ 2. Great care should be taken when installing the motherboard.

_____ 3. The CPU fan is located on bottom of the CPU heat sink.

_____ 4. In order to install the memory modules, insert them into the proper sockets and push down firmly but evenly until the clips on both sides of the socket pop into place.

_____ 5. First Step in personal computer disassembly is to unplug every cable that is plugged in to the computer.

BRIEF INTRODUCTION

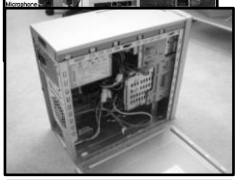
It is important to have an understanding on how to assemble and disassemble a personal computer or setting up a personal computer. These are the steps on how to disassemble and assemble a computer system:

Personal Computer Disassembly

Before starting computer disassembly, make sure you have the tools you need and they are all close by and handy and be sure to have a container to keep the screws in so you have them when you want to put things back together.

Step1. Unplugging - The first thing you do is to unplug every cable that is plugged in to the computer. That includes the cables such as Power, USB, Mouse, Keyboard, Internet, Ethernet, Modem, AM\FM Antenna, Cable TV, etc. Unplug all the cables for safety purposes. Now that your computer is fully unplugged, move your PC to a clean work space.

Step 2. Opening the Outer Shell/Case - First, unscrew the four screws at the back of the computer. On most computer cases, there will be large knobs that you can unscrew by hand or by screw driver on the back-right side of the computer. Once the screws are removed, you can remove the side panels. On most computers, they just slide off.

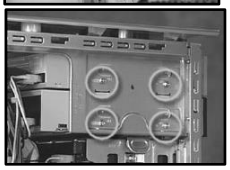


Step 3. Removing the System Fan - First, unplug the fan from the motherboard. You can find the plug by following the wire from the fan. You should now be able to lift the fan out of the PC.

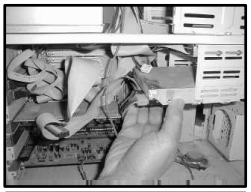
Step 4. Removing the CPU Fan - The CPU fan is located on top of the CPU heat sink, which is a large piece of metal with fins on the top. The CPU fan plugs into the motherboard. Follow the wires and you should easily find it. To remove the fan from the heat sink, remove the four screws securing it in place.

Step 5. Removing the Power Supply - The first thing to do is unplug every wire coming from the power supply. Once everything is unplugged, unscrew the four screws holding the power supply in place, on the back of the computer. Next, push the power supply from the outside, and then lift it out.

Step 6. Removing the CD/ DVD Drive(s) - First, unplug the ribbon (IDE or SATA cable) from the back of the drive. Once that is completed, pull on the tab securing the drive-in place, then push it out from the inside.



Step 7. Removing the Hard Drive - First, unplug the SATA cable from the motherboard and the hard drive. To remove the hard drive from the side of the slot, unscrew the four screws securing it in place. You must be very careful not to drop the hard drive, since it is very delicate.



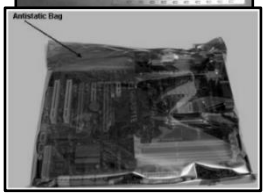
Step 8. Removing the Memory (RAM) - To remove the RAM, push down on both tabs holding the RAM in place, which are located at both ends of the RAM.

Step 9. Removing the Motherboard - The motherboard has seven screws holding it to the frame, which are indicated by large white circles around them. Remove them and then lift the motherboard out of the frame.

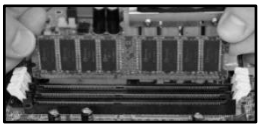
Personal Computer Assembly

Step 1. Prepare your workplace

•Take inventory, make space, make time, prepare grounding protection and hand tools to be needed and have the Drivers Ready



Step 2. Prepare the Motherboard - Great care should be taken when installing the motherboard. First, take the board out of its packaging and put it on top of the antistatic bag it came (if new) Remember, you always want to safeguard your components from potentially hazardous static electricity (wear your strap).

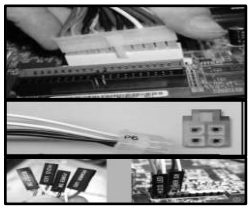


Step 3. Install Memory (RAM) - In order to install the memory modules, insert them into the proper sockets and push down firmly but evenly until the clips on both sides of the socket pop into place.

Step 4. Place the motherboard into the case - Note the pattern of the holes in your motherboard and screw brass standoffs into the motherboard tray or into the PC case in the correct locations. Carefully position the motherboard on top of the brass standoffs, line up all the holes, and use the screws that accompanied the case to fasten down the motherboard.

Step 5. Connect the Power Supply

First, plug the large ATX power connector from your power supply into the matching port on your motherboard. Locate the smaller, square processor power connector (you cannot miss it - it is the one sprouting the yellow and black wires) and attach it to the motherboard. Detach each of the tiny leads (power, reset, hard-disk activity lights, PC speaker, and front-panel USB) to the corresponding pin on your motherboard.



Step 6. Install Internal Drives

•Install the CD/DVD drive, connect the data and power cable.

•Install the hard disk drive. Same with the CD//DVD drive, connect the data and power cable.

Step 7. Connect/Plug-in the Peripherals

•Attach the monitor cable to the video port. Secure the cable by tightening the screws on the connector. Plug the keyboard cable and mouse, USB cable, network cable, and power cable their respective ports.

REMEMBER

After familiarizing with all the tools, devices, peripherals and safety precautions, one of the basic skills that you must acquire in computer system servicing is to independently assemble and disassemble a personal computer or simply setting up a PC.

CHECKING YOUR UNDERSTANDING

I. Directions: Rearrange the procedures below in the correct order. To show the order of precedence, use numbers.

A. Personal Computer Disassembly

_____ Opening the Outer Shell/Case
_____ Removing the CPU Fan
_____ Unplugging
_____ Removing the System Fan
_____ Removing the CD/ DVD Drive(s)
_____ Removing the Memory (RAM)
_____ Removing the Hard Drive
_____ Removing the Motherboard
_____ Removing the Power Supply

B. Personal Computer Assembly

_____ Install Internal Drives
_____ Prepare your workplace
_____ Prepare the Motherboard
_____ Install Memory (RAM)
_____ Connect the Power Supply
_____ Place the motherboard into the case
_____ Connect/Plug-in the Peripherals

II. Directions: Explain the importance of understanding the proper way on how to assemble and disassemble a computer system.

POST TEST

Directions: Given the following situation in computer assembly / disassembly, identify what is being asked. Write the letter of the correct answer on your answer sheet.

1. Kirsten needs to disassemble her system unit. After she opens the outer shell/case, what would be her next step?
   A. Removing the CPU Fan
   B. Removing the Memory
   C. Removing the Motherboard
   D. Removing the System Fan
2. When Kibou removes the RAM, what would be the next component will she remove?
   A. Removing the CPU Fan
   B. Removing the Hard Drive
   C. Removing the Motherboard
   D. Removing the System Fan
3. Yedda removed the Power Supply, what would be her next step?
   A. Removing the CD/DVD Drive
   B. Removing the Hard Drive
   C. Removing the Memory
   D. Removing the System Fan
4. After Xin prepared her workplace, what would be her next step?
   A. Connect the Power Supply
   B. Install Internal Drives
   C. Install Memory (RAM)
   D. Prepare the Motherboard
5. Naomi takes inventory of all the components, have the drivers and hand tools ready, which assembly steps demonstrated by Hannah?
   A. Prepare the workplace
   B. Prepare the Motherboard
   C. Prepare the Internal Drives
   D. Prepare the Power Supply.

LEARNING COMPETENCIES:

LO 1. Assemble computer hardware.

- Perform BIOS configuration in accordance with hardware requirements.
  TLE_IACSS9-12ICCS-Ia-e-28

WEEK 3: INSTALLING AND CONFIGURING COMPUTER SYSTEMS (ICCS)

EXPECTATIONS

At the end of the module, you should be able to:

a. identify the function of Power on Self-Test; and
b. be familiar on how to access the Basic-Input-Output-System (BIOS) configuration procedures.

PRETEST

Directions: Write the word **TRUE** if the statement is correct and **FALSE** if it is wrong on the space provided.

_____1. The Basic Input Output System, is a piece of software that is stored on a small memory chip on the motherboard.

_____ 2. The computer POST tests the computer, ensuring that it meets the necessary system requirements and that all hardware is working properly before starting the boot process.

_____ 3. BIOS instructs the computer on how to perform basic functions such as assembly and disassembly and keyboard control.

_____ 4. Every device comes with a pre-installed default boot sequence that is set by the manufacturer.

_____ 5. BIOS Setup Utility allows users to access and configure the BIOS.

BRIEF INTRODUCTION

After being familiar with the components of a system unit and how to assemble and disassemble it, being familiar with the BIOS configuration and POST (Power On Self-Test) is essential in order for the computer system to work properly.

The BIOS, or Basic Input Output System, is a piece of software that is stored on a small memory chip on the motherboard. BIOS is in charge of the POST, making it the first piece of software to run when a device boots up. The computer POST tests the computer, ensuring that it meets the necessary system requirements and that all hardware is working properly before starting the boot process.

BIOS instructs the computer on how to perform basic functions such as booting and keyboard control. It also controls data flow between the computer's operating system (OS) and peripherals including the hard disk, video adapter, keyboard, mouse, and printer.

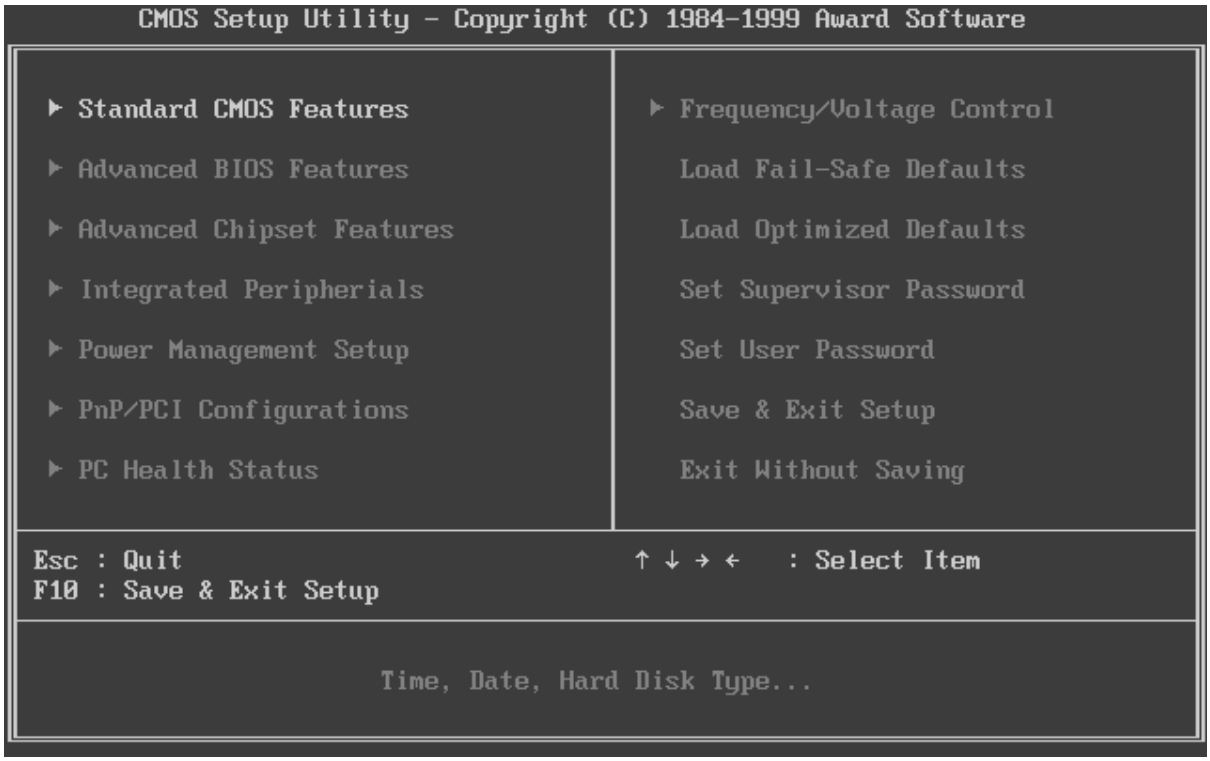
BIOS Setup Utility allows users to access and configure the BIOS. The method for accessing the BIOS Setup Utility varies depending on the device being used. Users can typically access and customize BIOS by Setup Utility by following the steps below:

1. Reset or power off the computer.
2. When the computer turns back on, look for a message which displays "entering setup" message in the first few seconds after turning on your computer. This message varies greatly from computer to computer and also includes the key or keys you need to press to enter BIOS. Some keys often used as prompts are Del, Tab, Esc, Ctrl-Esc, Ctrl-Alt-Esc and any of the function keys (F1-F12).
3. Upon seeing the prompt, quickly press the key specified.

Once you have entered setup, you will see a set of text screens with a number of options. Some of these are standard, while others vary according to the BIOS manufacturer. Common options include:

1. **System Time/Date** – This option allows you to set the system time and date.
2. **Boot Sequence** – This option allows you to load the operating system and select the boot configuration order.
3. **Plug and Play** – It is a standard for auto-detecting connected devices; should be set to "Yes" if your computer and operating system both support it.

4. **Mouse/Keyboard** – It allows you to set options such as "Enable Num Lock," "Enable the Keyboard," "Auto-Detect Mouse" etc.
5. **Drive Configuration** - allows you to set the drive priority during system boot-up and configure hard drives, CD-ROM and floppy drives
6. **Memory** - Direct the BIOS to shadow to a specific memory address.
7. **Security** - Set a password for accessing the computer.
8. **Power Management** – It allows you to select whether to use power management, as well as set the amount of time for standby and suspend.
9. **Exit** - Save your changes, discard your changes or restore default settings. When you save and restart, your computer will reboot with the new settings.



BIOS Set- up

Every device comes with a pre-installed default boot sequence that is set by the manufacturer. However, if many changes are required, such as changing the order in which the booting occurs, the list may be changed according to the priorities that must be booted from. This list can be updated by going into the BIOS menu on the PC and adjusting the order.

BIOS supports several hardware configuration options that can be changed through the setup utility. Saving these changes and restarting the computer applies the changes to the BIOS and alters the way BIOS instructs the hardware to function. In order for a system to boot, it must have a BIOS. In fact, if the BIOS fails or is missing, the system will not start. BIOS is needed for the vital areas in computer device. Initializing and checking hardware modules, as well as loading the operating system, are two of the most important tasks. These are necessary for the startup process to be successful.

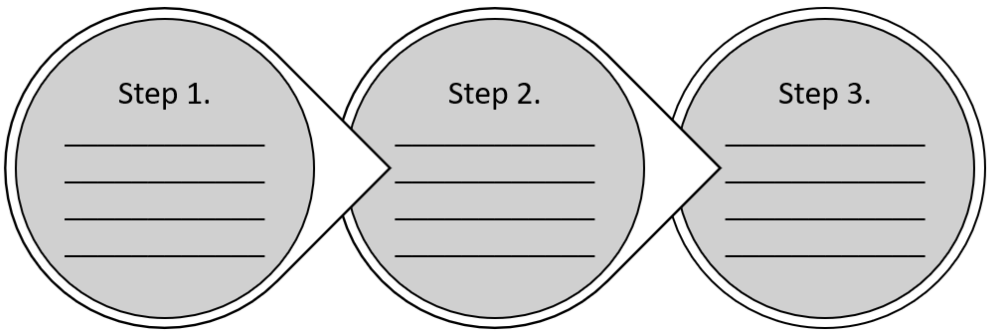
REMEMBER

It is essential to understand the functions of the BIOS and POST in order to update the BIOS and chipset drivers. These drivers allow the operating system to communicate with other devices on the computer. BIOS also identifies and configures the hardware in a device, including the hard disk, optical drive, Processor, memory, and other peripherals. Updated drivers can boost machine performance or repair recent BIOS-level security flaws.

CHECKING YOUR UNDERSTANDING

Directions: Answer each question briefly.

1. List down three functions of Power on self-test
2. Danielle assembled her computer and wants to configure the date and time. She needs to access the BIOS Setup Utility. What steps should be done?



POSTTEST

Directions: Read the following statement carefully and identify what is being described. Choose the correct answer and write it on your answer sheet.

_____ 1. It is a single file that perfectly represents an entire CD, DVD, or Blu-ray disk.

A. CD/DVD C. Rufus Application
B. ISO D. USB installer

_____ 2. It is a BIOS Setup Utility option that allows you to set the system time and date.

C. Boot Sequence C. Power Management
D. Drive Configuration D. System Time/Date

_____ 3. It is a BIOS Setup Utility option that allows you to set the drive priority during system boot-up and configure hard drives, CD-ROM and floppy drives.

A. Boot Sequence C. Power Management
B. Drive Configuration D. System Time/Date

_____ 4. It is a BIOS Setup Utility option that allows you to Set a password for accessing the computer.

A. Boot Sequence C. Security
B. Plug and Play D. System Time/Date

_____ 5. It is a BIOS Setup Utility option that allows you to Save your changes, discard your changes or restore default settings

A. Boot Sequence C. Memory
B. Exit D. System Time/Date

LEARNING COMPETENCIES:

LO 2. Prepare installer

- Create portable bootable devices in accordance with software manufacturer instruction.
- Prepare customized installers in accordance with software utilization guide and end user agreement
  TLE_IACSS9-12ICCS-If-j-29

WEEK 4: INSTALLING AND CONFIGURING COMPUTER SYSTEMS (ICCS)

EXPECTATIONS

At the end of the module, you should be able to:

a. create portable bootable devices following software manufacturer instruction;
b. be familiar with the steps on creating a bootable device using Rufus software; and
c. determine the requirements needed to create a bootable disk.

PRETEST

Directions: Write the word **TRUE** if the statement is correct and **FALSE** if it is wrong on the space provided.

_____1. You can boot up your computer using the USB's ISO image.
_____ 2. It is very common to use a bootable USB drive instead of a CD/DVD drive to install the operating system since it's readily accessible and configurable
_____ 3. An ISO file, also known as an ISO USB, is a single file that represents an entire CD, DVD, or Blu-ray disk.
_____ 4. A single ISO disk, the entire contents of a disc may be precisely duplicated.
_____ 5. One of the requirements in order to create a bootable USB installer application is an ISO file.

BRIEF INTRODUCTION

Generally, your computer boots from the operating system installed on your internal hard drive once you turn it on. By running the bootable USB however, you can boot up your computer using the USB's ISO image instead. This can be useful if you ever need to recover, repair or install an operating system on your computer.

Requirements:

- A USB with at least 8GB of space or more (depending on the OS size).
- Bootable USB installer or application e.g. Rufus
- An ISO file of the required OS. e.g. Windows 10

What is a Bootable USB installer application?

It is very common to use a bootable USB drive instead of a CD/DVD drive to install the operating system since it's readily accessible and configurable. For Windows, there are numerous software programs that allows you to create bootable USB drives. One example of it is Rufus. It a free and open-source application and is one of the best.

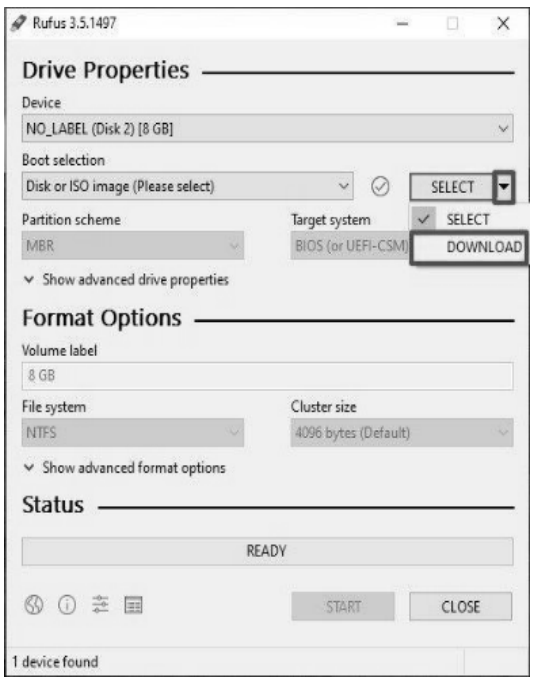
What is an ISO?

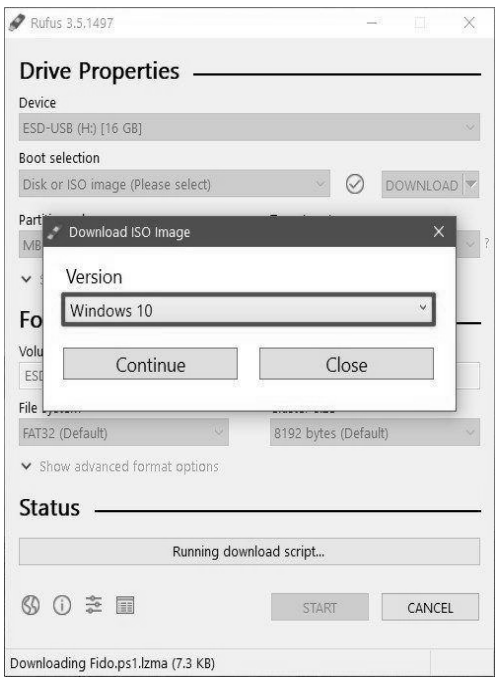
An ISO file, also known as an ISO image, is a single file that represents an entire CD, DVD, or Blu-ray disk. In a single ISO disk, the entire contents of a disc may be precisely duplicated.

Note: Remember to back up your data before you begin, as the data flash drive will be erased during the process of making a bootable USB. It is recommended to use a clean / formatted flashdrive.

Creating Bootable USB using Rufus application

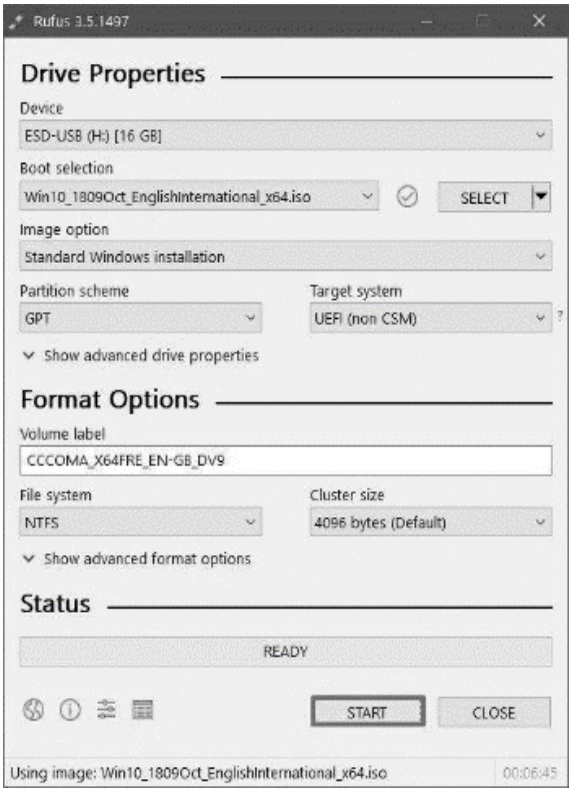
1. Download Rufus from the website - https://rufus.ie/.
2. Open Rufus application and plug your USB stick into your computer.
3. Rufus will automatically detect your USB. Click on Device and choose the USB you want to use from the drop-down menu.





4. Make sure Disk or ISO image is selected as the Boot Selection option, then press Select. Rufus can launch a browser window with a file explorer; locate the ISO image you want to burn onto the USB and select it.

Note: If you don't have a copy ISO image, you can download the ISO image for Windows 8.1 or 10 directly from Rufus in the new version (3.5). Just choose Download instead of Select from the drop-down arrow next to the Select button. This will bring up a dialog box where you can choose which version of Windows you want to download.



5. Generally, in if you want to create a Standard Windows installation, Rufus can automatically detect the correct Partition Scheme based on your computer, so keep the default settings as they are. However, you can also change these if you want.
6. Provide the Volume label a name of your choice, or leave it as it is, and once again leave the default settings for File system and Cluster size. then click Start.

   Note: if the USB you're using isn't large enough, you'll get an error message you letting you know. In this case, you'll need to start again with a different larger USB.

7. A prompt will appear, indicating that any data on the USB will be deleted. Rufus will begin generating the ISO picture on the USB after you click OK.
8. Once Rufus has finished creating the ISO image on the USB, you can close it and your bootable USB is ready to be used.

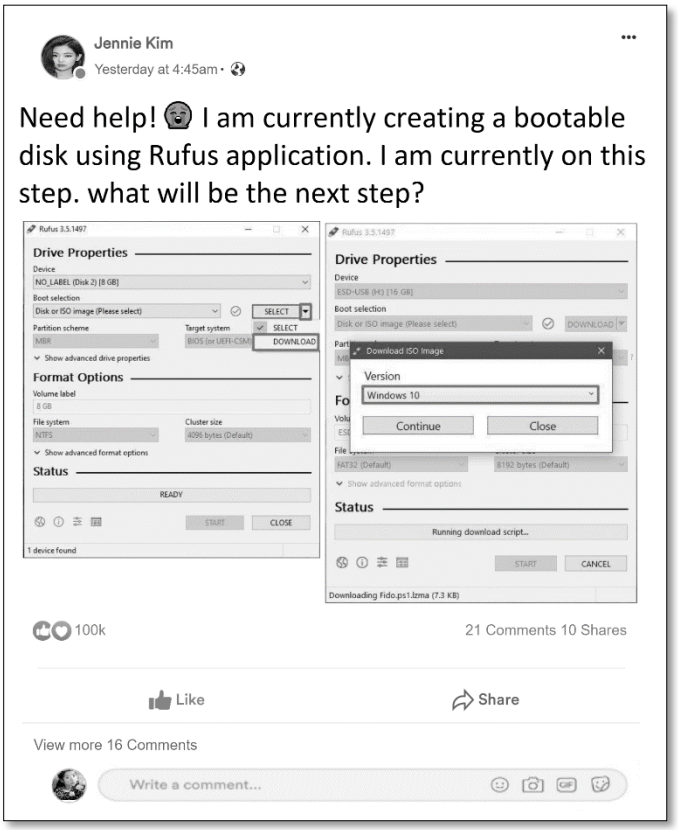
REMEMBER

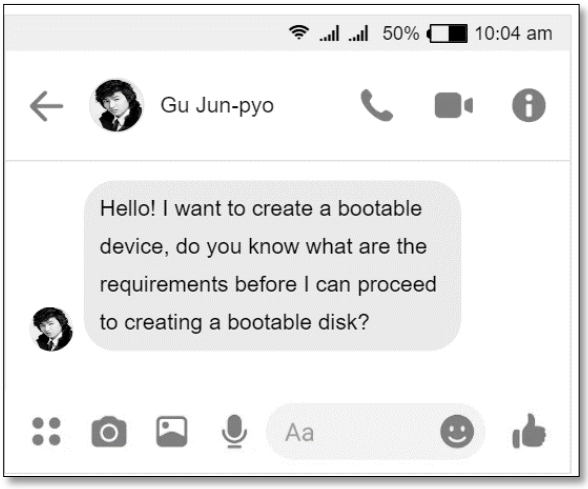
A "**bootable USB**" is a USB storage device (such as a USB stick or an external hard drive) that contains a "ISO image" of an operating system. An **ISO image** is a file that contains anything on an optical disk, like a CD or DVD. This may be a windows installation CD, for example. A **bootable USB** drive provides many useful functions. if your computer has been affected by a virus and will not boot or if you have a system failure.

CHECKING YOUR UNDERSTANDING

Directions: Answer each question briefly.

While browsing your social media accounts, some of your friends are having trouble about portable bootable devices. Help them by replying to their concerns. Write your answer on the space provided.





POSTTEST

Directions: Read the following questions carefully. Choose the correct answer and write it on your answer sheet.

_____ 1. Avril wants to access the BIOS Setup Utility to change the boot sequence of her computer. What should be the first step?

A. Look for a message which displays "entering setup" Motherboard
B. Press the F12 key
C. Quickly press the key specified.
D. Reset or power off the computer.

_____ 2. Which is a BIOS Setup Utility option that allows you to set the system time and date.

A. Boot Sequence C. Power Management
B. Drive Configuration D. System Time/Date

_____ 3. Which is a BIOS Setup Utility option that allows you to set the drive priority during system boot-up and configure hard drives, CD-ROM and floppy drives.

A. Boot Sequence C. Power Management
B. Drive Configuration D. System Time/Date

_____ 4. Which is a BIOS Setup Utility option that allows you to Set a password for accessing the computer.

A. Boot Sequence C. Security
B. Plug and Play D. System Time/Date

_____ 5. Which is a BIOS Setup Utility option that allows you to Save your changes, discard your changes or restore default settings

A. Boot Sequence C. Memory
B. Exit D. System Time/Date

LEARNING COMPETENCIES:

LO 3. Install operating system and drivers for peripherals/devices.

3.1 Install Operating System (OS) in accordance with established installation procedures and to comply with end-user requirements
3.2 Install Operating System (OS) in accordance with manufacturer's instructions and/or OS installation process.
TLE_IACSS9-12ICCS-IIa-j-30

WEEK 5: INSTALLING AND CONFIGURING COMPUTER SYSTEMS (ICCS)

EXPECTATIONS

At the end of the module, you should be able to:

a. recognize the step by step procedures in installing Windows 7 Operating System; and
b. perform windows operating system installation.

PRETEST

Directions: Write the word **TRUE** if the statement is correct and **FALSE** if it is wrong on the space provided.

____1. Mr. Garcia is in the process of installing, he finished choosing the type of installation, which step should he do next?

A. Finalize the setting
B. User setting (username, computer name and password)
C. Activate the windows using the 25 characters product key.
D. Choose the partition where you want to install windows operating system

____2. Mrs. Gregorio divides her hard disk drive into sections, what does she do?

A. Partition B. Reformat C. Sectioning D. Upgrade

____3. Mrs. Lope helps her friend to install operating system, they are done setting the username and password, which is their next step?

A. Setting up windows.
B. Finalize the settings
C. Configure the updates
D. Activate the windows using the 25 characters product key.

____4. Mrs. Gregorio is installing operating system and she is done accepting the license agreement, which step should she do next?

A. Choose the type of installation
B. User setting (username, computer name and password)
C. Activate the windows using the 25 characters product key.
D. Choose the language, time/currency format and the keyboard input method.

____5. Mr. Sumaway choose Taipei, Taiwan (GMT+8), which step in installing operating system did he do?

A. Configure the update
B. Configure the network
C. Configure the timezone.
D. Choose the language, time/currency format and the keyboard input method.

BRIEF INTRODUCTION

WINDOWS INSTALLATION

As with any OS installation, you must first plan the installation process. When you run the Windows 7 Setup program, you must provide information about how to install and configure the operating system. Thorough planning can make your installation of Windows 7 more efficient by helping you to avoid potential problems during installation. An understanding of the configuration options will also help to ensure that you have properly configured your system.

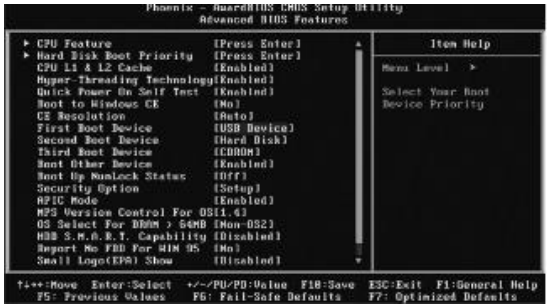
Types of Installation

1. **Upgrade** (In-place upgrade) - This option replaces your current version of Windows with Windows 7, and keeps your files, settings, and programs in place on your computer.
2. **Custom** ("fresh" installation) - This option replaces your current version of Windows with Windows 7, but doesn't preserve your files, settings, and programs. It's sometimes referred to as a clean installation for that reason.

Installation Process

1. Boot the computer using the bootable windows installation disc from the DVD-ROM.
2. Your first step is to choose the language, time/currency format and the keyboard input method.
3. Accept the license agreement
4. Choose a type of installation “Upgrade or Custom(advance)”
5. Choose the partition where you want to install Windows 7. This is probably the most important part of the entire installation, so you need to be very careful here and make the right choices.
6. User setting (username, computer name and password).
7. Activate the windows using the 25 characters product key.
8. Configure your updates
9. Configure your timezone.
10. Finalizing the setting.

Access the BIOS by pressing F1, F2, F10, Del, ESC



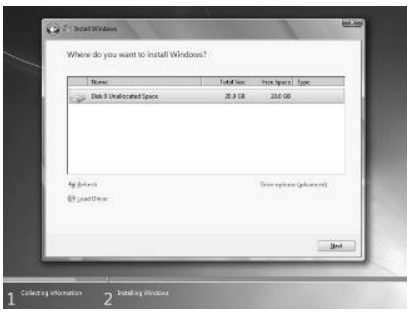
Change the first boot device option and choose where your installer is located for example: USB DRIVE

Boot the computer using the bootable windows installation disc

Choose the language, time/currency format and the keyboard input method

Accept the license agreement

Choose a type of installation “Upgrade or Custom(advance)”



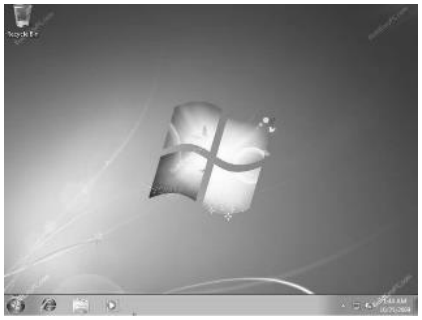
Choose the partition where you want to install Windows 7.

User setting (username, computer name and password).

Activate the windows using the 25 characters product key.

Configure your updates

Configure your timezone



Finalizing Setting

REMEMBER

- Before installing windows OS, you will need to *backup* your files.
- Partition is a logical division of a hard disk drive.
- Configuration is the way a system is set up, or the assortment of components that make up the system. Configuration can refer to either hardware or software, or the combination of both.
- BIOS (Basic Input Output System) - instruct the computer on how to perform a number of basic functions such as booting and keyboard control. BIOS is also used to identify and configure the hardware in a computer such as the hard drive, optical drive, CPU, memory, etc.

CHECKING YOUR UNDERSTANDING

Directions: Arrange the step by step procedure of installing windows operating system. Use letters A-I in arranging the procedure.

___Configure your updates and timezone.
___Boot the computer using the bootable windows installation disc from the DVD-ROM.
___User setting (username, computer name and password).
___Accept the license agreement
___Your first step is to choose the language, time/currency format and the keyboard input method.
___Activate the windows using the 25 characters product key.
___Finalizing the setting.
___Choose a type of installation “Upgrade or Custom(advance)”
___Choose the partition where you want to install Windows 7. This is probably the most important part of the entire installation, so you need to be very careful here and make the right choices.

POSTTEST

Directions: Read the following situations carefully. Choose the correct answer and write it on your answer sheet.

_____ 1. Bambi bought a new computer to be used in her online class and she needs to install an operating system on it. Which is the first thing that she needs to do?

A. Accept the license agreement.
B. Activate the windows using the 25 characters product key.
C. Choose a type of installation “Upgrade or Custom(advance)”.
D. Boot the computer using the bootable windows installation disc from the DVD-ROM.

_____ 2. Milly is installing windows 7 operating system on her computer and she was about to choose a type of installation. Which type of installation she must choose if she wants to keep her files, settings and programs?

A. Clean Installation B. Custom C. Update D. Upgrade

_____ 3. Vince is done choosing the type of installation he wanted to do. Which is the next step the he would do?

A. Finalizing the setting.
B. Configure your updates and timezone.
C. User setting (username, computer name and password).
D. Choose the partition where you want to install Windows 7.

_____ 4. Eugene hard disk is divided into Local Disk C and Local Disk D. What did he do to his hard disk?

A. Partition B. Split-Up C. Segregate D. Separate

_____ 5. Alexa wants to install new operating system on her computer but she wants to keep her files. What should she do to her files?

A. Backup B. Contain C. Reserve D. Save

LEARNING COMPETENCY:

LO 3. Install operating system and drivers for peripherals/devices.

3.1 Access OS and drivers updates/patches in accordance with manufacturer's recommendations and requirements.

3.2 Install OS and drivers updates/patches in accordance with manufacturer's recommendations and requirements.

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WEEK 6: INSTALLING AND CONFIGURING COMPUTER SYSTEMS (ICCS)

EXPECTATIONS

At the end of the module, you should be able to:

a. determine the step by step procedure in updating/installing drivers; and
b. perform the installation of drivers.

PRETEST

Directions: Write the word **TRUE** if the statement is correct and **FALSE** if it is wrong on the space provided.

1. It is a small software programs that help the operating system use or "drive" the device.
   A. BIOS B. Configuration C. Device Manager D. Drivers
2. It allows the user to view and manage all the hardware devices installed on a computer, such as hard drives, video cards, keyboards, USB devices, and so on.
   A. BIOS B. Configuration C. Device Manager D. Drivers
3. It is the way a system is set up, or the assortment of components that make up the system.
   A. BIOS B. Configuration C. Device Manager D. Drivers
4. It instructs the computer on how to perform a number of basic functions such as booting and keyboard control.
   A. BIOS B. Configuration C. Device Manager D. Drivers
5. It is the First Step in installing driver.
   A. Check the BIOS. C. Obtain the driver.
   B. Install the driver. D. Determine the hardware manufacturer.

BRIEF INTRODUCTION

Configuration is the way a system is set up, or the assortment of components that make up the system. Configuration can refer to either hardware or software, or the combination of both.

BIOS (Basic Input Output System) instruct the computer on how to perform a number of basic functions such as booting and keyboard control. BIOS is also used to

identify and configure the hardware in a computer such as the hard drive, optical drive, CPU, memory, etc.

Device Drivers

After you successfully installed the operating system, you will need to configure the devices such as Video Cards, Network Interface Card, Sound Cards, and so on by installing their device drivers. In many cases, the drivers will be automatically installed if the Windows recognizes the device. In some cases, drivers are installed so that the device will work properly.

Drivers are small software programs that help the operating system use or "drive" the device.

Steps in Installing Drivers

Determine the Hardware Manufacturer.

1. To determine the hardware manufacturer, go to **File Explorer** right click on **My Computer** then click **Manage.**
2. Under **System Tools**, click **Device Manager.** All the devices that are installed on the computer at the right pane.
3. Click on the device that you want to configure to expand the device category.
4. Right Click the device you wish to install the driver then click **Properties.**
5. Click the **General** tab and take note of the manufacturer and model of the device.

Obtain the Driver.

To obtain the latest driver, go to computer manufacturer's website or device manufacturer's website. Branded computers are recommended to go to the computer manufacturer's website to check for the latest update. Also, some computers and devices include original driver CD.

Install the Driver.

The downloaded driver file will be an executable file or a zip file.

- If the file is an executable program, run the program to extract the files. If the file is in .zip format, you can use a third-party utility such as WinZip to extract the files. For more information about how to extract the driver files, see the instructions that are provided by the manufacturer of the driver.

Driver with a Setup or Installation Program

If the driver uses a setup or installation program, run the program to install the driver. For more information about how to do this, see the documentation or contact the driver manufacturer.

Device Is Displayed in Device Manager

1. Go to **Device Manager**.
2. Look for the device that you wish to install the driver.
3. Right Click on the device and select **Update Driver Software.**
4. Select **Browse my computer for driver software**
5. Select **Let me pick from a list of device drivers on my computer.**
6. Click **Have Disk…** button.
7. Click **Browse…** button. Navigate to the folder where you saved the downloaded driver file and browse the .inf driver file.
8. Click **OK** button then **Next** button to finish the installation. You might be asked for an admin password or to confirm your choice.

REMEMBER

Whenever a device doesn't work properly, check if the driver has been installed properly. To fix the problem, you need update the driver. For some devices, Windows can update the driver automatically. For some devices especially external devices, you need to install the updated drivers yourself, then you need to download the driver manually.

CHECKING YOUR UNDERSTANDING

I. Directions: Modified **TRUE OR FALSE**. Write the word **TRUE** if the statement is correct and if FALSE, **change the underlined word** to correct the statement.

_____ 1. Device Drivers are small software programs that help the operating system use or "drive" the device.

_____ 2. Configuration allows the user to view and manage all the hardware devices installed on a computer, such as hard drives, video cards, keyboards, USB devices, and so on.

_____ 3. Device Manager is the way a system is set up, or the assortment of components that make up the system.

_____ 4. BIOS instruct the computer on how to perform a number of basic functions such as booting and keyboard control.

_____ 5. The First Step in installing driver is to determine the hardware manufacturer.

II. Directions: Arrange the steps in installing the drivers. Use number 1-10.

____Go to **Device Manager**.

____Look for the device that you wish to install the driver.

____Right Click on the device and select **Update Driver Software.**

____Select **Browse my computer for driver software.**

____Select **Let me pick from a list of device drivers on my computer.**

____Click **Have Disk…** button.

____Click **Browse…** button. Navigate to the folder where you saved the downloaded driver file and browse the .inf driver file.

____Click **OK** button then **Next** button to finish the installation. You might be asked for an admin password or to confirm your choice.

POSTTEST

Directions: Read the following situations carefully. Choose the correct answer and write it on your answer sheet.

1. Louis wanted to update the driver of his Sound Card. Which is the first step that he needs to do?

A. Install the driver
B. Obtain the driver
C. Check the sound card
D. Determine the sound card manufacturer

2. Henry is installing the drivers of his computer and he is done which is the first thing that he needs to do?

A. Go to Device Manager
B. Click Browse… button
C. Click Have Disk… button
D. Select Update Driver Software

3. Elly wants to determine the hardware manufacturer of her device. Which step should she do?

A. Access the BIOS.
B. Update the device.
C. Configure the device.
D. Contact the device manufacturer

4. After Josh determine the device manufacturer, what would be his next step?

A. Install the driver
B. Obtain the driver
C. Check the sound card
D. Determine the sound card manufacturer

5. Rose wants to update the driver of her video card. How will she obtain the driver?

A. Go to BIOS set up.
B. Go to her files and check for updates.
C. Go to the video card settings
D. Go to the device manufacturers website

LEARNING COMPETENCIES:

LO 4. Install application software.

5.1 Install application software based on software installation guides, end-user requirements and software license agreement
TLE_IACSS9-12ICCS-IIIa-e-31

WEEK 7: INSTALLING AND CONFIGURING COMPUTER SYSTEMS (ICCS)

EXPECTATIONS

At the end of the module, you should be able to:

a. recognize the different application software; and
b. differentiate the types of application software.

PRETEST

Directions: Write **TRUE** if the statement is correct and **FALSE** if the statement is incorrect.

____1. Utility software is system software designed to help analyze, configure, optimize or maintain a computer.

____2. Specific application software is a single application created to execute one specific task.

____3. Application software is a type of software that allows you to perform specific tasks.

____4. Integrated software is a collection of software designed to work similar programs.

____5. A good example of integrated software package is Microsoft Office.

APPLICATION SOFTWARE

An application is a type of software that allows you to perform specific tasks. Applications for desktop or laptop computers are sometimes called desktop applications, while those for mobile devices are called mobile apps.

When you open an application, it runs inside the operating system until you close it. Most of the time, you will have more than one application open at the same time, which is known as multi-tasking.

Types of Application Software

1. **Database software**
   Database software acts as the filing clerk for this system by keeping everything organized and storing, modifying and extracting database information. Examples are Oracle, Microsoft Access and MySQL.
2. **Multimedia software**
   Multimedia software allows users to create and experience text, graphics, video and animation in an integrated way. Examples are VLC Media Player, Windows Media Player and Winamp.
3. **Educational Software**
   Designed for teaching or learning, educational software applications are able to run tests, track programs and assess student's performance. Ex.: Encarta, Jumpstart, Google Classroom
4. **Word Processing Software**
   This software allows you to create, edit, and print documents. Common examples of word processing software include Microsoft Word, iWork and Google Docs.
5. **Presentation Software**
   Presentation software is designed to arrange information for use in a demonstration or display. Examples include Microsoft PowerPoint, Keynote and SlideRocket.
6. **Spreadsheet Software**
   Spreadsheet applications allow users to compile data and perform calculations in a spreadsheet format. Common examples include Microsoft Excel, Lotus 1-2-3 and Apple Numbers.
7. **Simulation Software**
   Simulation software models real phenomena by using a set of mathematical formulas. This application type is used for research and design, as well as entertainment.

Application software's either need to be installed or can run online. Application software's can also be distinguished on the basis of usage into the following:

Utility software is system software designed to help analyze, configure, optimize or maintain a computer. Examples of utility software includes firewall utilities and antivirus applications, as well as other utilities like zipping or unzipping utilities or disk defragmenting tools, or anything else that an end user can operate as a utility.

Specific application software this would be a single application created to execute one specific task. Example of this is an application in your camera that allows you to share photos.

Integrated software is a collection of software designed to work similar programs. A good example of integrated software package is Microsoft Office, which contains programs used in an office environment (Excel, Outlook, and Word).

REMEMBER

- Application is a generic term used to describe computer programs that run on PCs, mobile phones, tablets, or other smart devices.
- An application is a type of software that allows you to perform specific tasks.

CHECKING YOUR UNDERSTANDING

I. **Directions:** Matching Type. Match Column A with Column B.

1. It is single application created to execute one specific task.	a. Integrated software
2. One of the examples of this is Microsoft Excel	b. Utility software
3. It is a collection of software designed to work similar programs.	c. Application Software
4. It is commonly defined as any program or number of programs designed for end-users.	d. Spread Sheet Software
5. It is system software designed to help analyze, configure, optimize or maintain a computer.	e. Software
	f. Specific application software

II. **Directions:** Arrange the jumbled letters and give one example for each type of software.

1. DUAALTIONEC WAFSOTRE _____
2. RDOW PROSINGCES WAFSOTRE _____
3. PRTATIOESENN WAFSOTRE _____
4. SSEEHPREADT WAFSOTRE _____
5. ULMIMTIAED WAFSOTRE _____

POSTTEST

Directions: Read the following situations carefully. Choose the correct answer and write it on your answer sheet.

_____ 1. Vincenzo install Microsoft Office on his computer. Which type of software did he install?

A. Integrated B. Specific Application C. System D. Utility

_____ 2. Leon was task to present the updates on the vaccination plan of their barangay. Which type of software should he use?

A. Presentation Software C. Word Processing
B. Spreadsheet Software D. Word Software

_____ 3. Alexa installed an antivirus on her computer. Which type of software did she install?

A. Integrated B. Specific Application C. System D. Utility

_____ 4. Hannah was task to gather the data of their barangay about the number of people that wants to have the vaccine. Which type of software should she use?

A. Educational Software C. Spreadsheet Software
B. Presentation Software D. Simulation Software

_____ 5. Melody uses google classroom during their online classes. Which type of software does she use?

A. Database Software C. Presentation Software
B. Educational Software D. Simulation Software

LEARNING COMPETENCY:

LO 4. Install application software.

7.1 Install application software based on software installation guides, end-user requirements and software license agreement
TLE_IACSS9-12ICCS-IIIa-e-31

WEEK 8: INSTALLING AND CONFIGURING COMPUTER SYSTEMS (ICCS)

EXPECTATIONS

At the end of the module, you should be able to:

a. determine the step by step procedure in installing Microsoft Office and Office 365; and
b. perform the installation of Microsoft Office and Office 365.

PRETEST

Directions: Write the word **TRUE** if the statement is correct and **FALSE** if it is wrong on the space provided.

____1. To download the installer of Office 365 go to office.com.
____2. You need to check the compatibility of your operating system in order to choose the right installer.

____3. If your computer already has Microsoft office, you must uninstall it first in order for you to upgrade in a new version of Microsoft office.
____4. In installing Microsoft Office 201, you need to Double Click on the setup.exe file then Click Run.
____5. Microsoft account is needed when installing Office365.

Installation Process for Microsoft Office 2016 and Office 365

1. Check the system requirements of the application.

You need to check the compatibility of your operating system in order to choose the right installer.

2. Obtain the Installer

To obtain the installer, go to Microsoft website and check for the latest update of the application. Some newly bought computer or laptop comes with CD that contains the Microsoft office installer.

3. Install the Application

The downloaded file will be an executable file or a zip file.

- If the file is an executable program, run the program to extract the files. If the file is in .zip format, you can use a third-party utility such as WinZip to extract the files.

If your computer already has Microsoft office, you must uninstall it first in order for you to upgrade in a new version of Microsoft office.

To uninstall old version;

1. Go to **Control Panel**.
2. Choose **Uninstall Program**.
3. Locate the application you want to remove.
4. Double-click the application name.
5. Follow the instructions for removing the application.

Installing Microsoft Office 2016.

1. Open your downloaded file.
2. Double Click on the **setup.exe** file then Click **Run**.
3. Read the license agreement, select **I accept the terms of this agreement**, and then click **Continue**.
4. Click **Install Now.**
5. Wait while the software is installed.
6. Once the installation is complete, click **Close.**

Installing Office 365

1. Sign in to download Office
2. Go to www.office.com and if you're not already signed in, select Sign in.
3. Sign in with the account you associated with this version of Office. This account can be a Microsoft account, or work or school account.
4. After signing in, follow the steps that match the type of account you signed in with.

5. You signed in with a work or school account
a. From the home page select **Install Office.**
b. Select **Office 365 apps** to begin the installation.

Install Office

1. Depending on your browser, select **Run** (in Edge or Internet Explorer), **Setup** (in Chrome), or **Save File** (in Firefox).

If you see the User Account Control prompt that says, **Do you want to allow this app to make changes to your device?** select **Yes**.

The installation begins.

2. Your installation is finished when you see the phrase, "You're all set! Office is installed now" and an animation plays to show you where to find Office applications on your computer. Select Close.

Activate Office

1. To open an Office app, select the **Start button** (lower-left corner of your screen) and type the name of an Office app, like Word.

2. To open the Office app, select its icon in the search results.

3. When the Office app opens, accept the license agreement. Office is activated and ready to use.

REMEMBER

- You need to check the compatibility of your operating system in order to choose the right installer.
- Make sure that the previous version is removed before performing the installation process.

CHECKING YOUR UNDERSTANDING

I. Directions: Fill in the blanks. Complete the step by step procedure of installing office 365. Choose your answer from the box below.

a. Sign in to download _____**(1)**.
b. Go to www.office.com and if you're not already signed in, select _____**(2)**.
c. Sign in with the account you associated with this version of Office. This account can be a Microsoft account, or work or school account.
d. After signing in, follow the steps that match the type of account you signed in with.
e. You signed in with a work or school account
   i. From the home page select _____**(3).**
   ii. Select _____**(4)** to begin the installation.

Install Office

Depending on your browser, select _____**(5)** (in Edge or Internet Explorer), _____**(6)** (in Chrome), or **Save File** (in Firefox).

If you see the User Account Control prompt that says, **Do you want to allow this app to make changes to your** _____**(7)?** select **Yes**.

The installation begins.

Your installation is _____**(8)** when you see the phrase, "You're all set! Office is installed now" and an animation plays to show you where to find Office applications on your computer. Select _____**(9)**.

Office	Office 365 apps	Install Office	Run	Sign In	Home
Close	Finished	Device	Set Up	Save	Password

II. Directions: Arrange the steps in installing the Microsoft Office 2016. Use letters A-F.

____Click Install Now.
____ Open your downloaded file.
____Read the license agreement, select I accept the terms of this agreement, and then click Continue.
____Double Click on the setup.exe file then Click Run.
____Once the installation is complete, click Close.
____Wait while the software is installed.

POSTTEST

Directions: Read the following situations carefully. Choose the correct answer and write it on your answer sheet.

1. Jae wanted to install Office 365 on his laptop. Which is the first step that he should do?
   A. Go to Control Panel
   B. Go to Device Manager
   C. Go to Office.com
   D. Go to Microsoft Website
2. Penny was done installing office 365. Which will be his next step?
   A. Activate the office
   B. Back Up the office
   C. Download the office
   D. Restart the computer
3. Minnie wanted to remove her previous version of Microsoft office. Which should she do first?
   A. Go to Control Panel
   B. Go to Device Manager
   C. Go to Office.com
   D. Go to Microsoft Website
4. Angel is installing Microsoft office 2016 and done downloading the installer. What should she do next?
   A. Click Run
   B. Click Close.
   C. Click Install Now
   D. Click setup.exe
5. Sunny is installing Microsoft office 2016 and was done accepting the license agreement. Which will be the next step in the installation process?

A. Click Run B. Click Close C. Click Install Now D. Click Finish Set Up

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