

Lecture 2

Computer Fundamentals

* **A system Unit (Computer Case):** The case also included:

❖ **Power Supply:** The power supply supplies power to the computer components, this converts electricity into the current works for the computer. The power supply has a fan built into it to keep itself and the computer cool.



❖ **Disk Drives:** The disk drive is the device that reads information that is on disk. Generally computers have three disk drives:

✦ **CD / DVD drives:** These are provide the capability to use CD-ROMs, DVD-ROMs, and also writes and/or reads items to and from storage media CD/DVD-R's and CD/DVD-RW's



✦ **3.5 Floppy Disk Drive:** Many new computers do not have this floppy drive, but it can be added internally to your computer, or externally with a USB cable.



✦ **Hard Drive (Hard Disk):** is the computer's main permanent storage part used to stores programs and documents. The drives and peripherals communicate with the motherboard through wired connections.



❖ **Button**

- o **Power button:** This button to turn the computer on. Often the power button will light up indicating the computer is on.
- o **Reset button:** Restart the computer
- o **Power light:** Lets you know the computer is processing.



***Input Devices:**

An input device is any hardware component that allows you the user to input data (text, images, and sounds) and instructions into the computer to be processed. The most commonly used input devices are:

- ✦ **Keyboard:** Main input devices you use to control your PC and type letters, numbers, and symbols and commands into the computer.

- ✦ **Mouse:** Pointing devices you use to control your PC. Click the mouse allows you to enter data by pressing the button. There are many operations that are much easier to perform with a mouse than a keyboard because you can just point and click to select an item on a screen or choose an item from a list of options.

- ✦ **Microphone:** The microphone is usually used for input sounds and instructions into the computer

- ✦ **Scanner:** This input device generates a digital representation of an image for data input (such as text and pictures) to a computer

- ✦ **Digital camera:** The digital camera allows you to take pictures or create movie that you can input into your computer.

- ✦ **PC video camera (Web Cam):** The PC video camera allows you take both video and still images that you can input into your computer



* Output Devices:

An output device is any hardware component that gives information to the user and send processed data out of your computer. When you send inputs into the PC, it processes them and produces useful output for you.

The most commonly used output devices are as follow:

- ✚ **A Monitor(display screen):** This output device displays your information (text, graphics, and videos) on a screen.
- ✚ **A Printer:** Used to prints information on paper.
- ✚ **A Speaker:** Sound output you will get from a speaker. Speakers allow you to hear (music, voice and other sounds) and let a lots of people listen.
- ✚ **Headphones:** Keep the sound to one person.



The Printers: These output devices are most common output device and used everywhere to produce documents, presentation, and pictures on papers

- **Dot Matrix Printers:** are not so common today. They are low quality but are cheap to run and are used mostly in Banks, and Office, such as used to print check, receipts and other copy. Also, they are slower and its efficiency is less.
- **Inkjet Printers:** Offer black and white or color printing with reduced levels of quality and speed. This printer uses very small dots of ink onto paper. The dots are extremely small usually 50 microns in diameter, the dots can have different colors combined together to create photo-quality images. Ink jet printers are cheaper to buy than color laser printers. Ink-jet printer provides a [resolution](#) of 300 [dots per inch](#).
- **Laser Printers:** A type of [printer](#) that uses a laser beam to produce an image. This printer is a popular type of personal computer printer are quite expensive to buy and run but produce a high quality output (printing resolution) and are fast.

✦ **Secondary Memory (Storage devices):** Fix Disk & Removable Disk

Storage devices are both input and output devices in one. A storage device is a place to keep data that has been processed so that it can be retrieved at a later time to be used again. Storage is non-volatile which means it retains information even when it is powered off. It stores programs which run the PC as well as data, which is a digital form of everything you use like documents, music, pictures, etc. Storage keeps data, information and instructions for use in the future. All computers use storage to keep the software that makes the hardware work. As a user you store a variety of data and information on your computer or on storage media. When a user saves information or data to a storage medium he or she is storing a file, and this process is called writing. When the file is opened the process is called reading. Common storage media are:

- **Hard Disk: (Fix Disk):** A hard disk - which is also called a "hard drive" This medium is always inside the computer. The programs and data are stored on the hard disk and the computer accesses them as they are needed. When the computer accesses the hard drive, it is reading and moving the stored information into the RAM memory. That memory is the temporary workspace. However, the original file is still on the hard disk and is left undisturbed until the file is saved. The purpose of the hard drive is to permanently store information like the operating system, programs and information data.



- **Floppy Disk: (Removable Disk):** This storage medium is considered to be a portable storage medium. You put it into the computer save your information on it, take it out, and take it with you wherever you go.



- **CD&DVD: (Removable Disk):** These types of storage media hold much more information than a floppy disk. They are also considered portable storage. These types of storage media come in different forms. This means that there are CDs and DVDs that you can only save information on but you cannot erase the information. In addition there are those that can both save information on and erase the information you have saved.



- **USB Flash Drive: (Removable Disk):** This is a storage medium that is very easy to carry around and it also holds more data than a floppy disk. As you can see from the picture below it is very small when compared with the others.



What affects a computers performance?

- **CPU speed (MHZ)** is often played up to be the major factor in a computer's overall performance. CPU speed is measured in Megahertz (MHz), millions of cycles per second the more gigabytes (GB)
- **RAM size (MB):** A greater amount of [RAM memory](#) means that more instructions fit into that memory and, therefore, the more programs you can have open at once.
- **Hard disk speed and size:** The biggest factor in your computer's performance. The faster hard disk is the faster to load programs in to main memory.
- **Operating system:** The Computer performance was better whenever be a few errors and problems in operating system. Usually the manufacturers of the operating system releases updates on a regular through the internet.

Virus Attack: A computer virus is a program written by a person on purpose to harm other people's computers. A computer virus is passed from one computer o another when you share and download files without the protection of antivirus software. For this reason you should get permission before downloading files. There are many antivirus programs like Kaspersky, Macafee, and Norton, these are used to protect the computer from viruses.