Unit two

Essential components of computer

Goals of the lecture:

After studying this unit, it is expected that you will be able to:

Identify the components of the computer and the main computer functions

Lecture No.2
Essential components of computer

1. Hard ware.   2. Soft ware.
1. Hard ware

The principles function for this part:
1. Entering data and programmes through input unit.
2. Storing data and programs through memory unit.
3. Processing data through running programs in the central
   Processing unit (CPU).
4. Displaying results and data through output unit.

The hard ware components are:

Input devices: *which consists of some devices that help in entering data and other orders to (CPU), same of this device are: 1. Key board .2. Mouse. 3. Microphone .4. Scaner.5.Camera. 6.CD or DVD Rom.*

2. Central Processing unit (CPU): *One of The main ports in computer which get data and information from input unit the processing these data and give its result to output unit.*

This unit consist of :

   a. Storage memory: Temporary memory for data and also for results.

   b. Arithmetic and logic unit: This is responsible for computing
   Operations (additive, subtractive, etc ...).

c. Control unit: It s responsible with arrange Mont data transferring

   Between input and out put unit and CPU unit.

3. Output devices: *A. Monitor. B. Plotter .C. Printer*
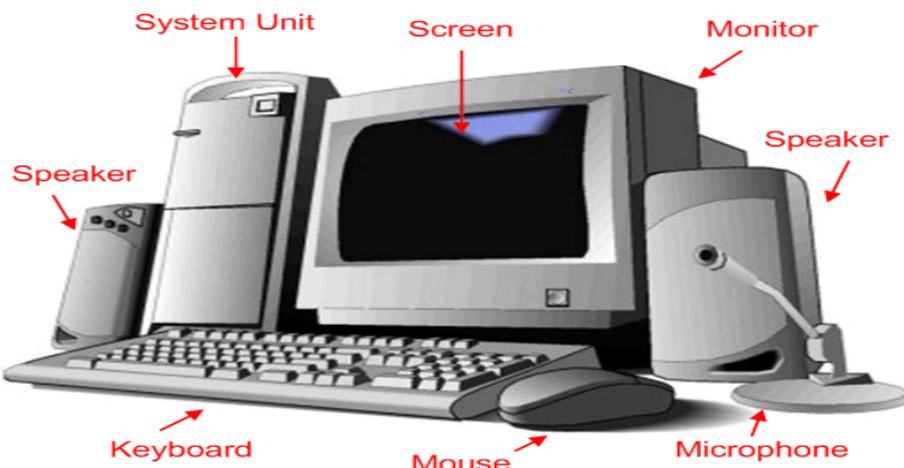
Parts of computer

2. Soft ware

2. Soft ware: *Group of programs that control on the internal operation of the*

Computer.

System soft ware: its divided into three parts:

A. Operating System: *which controls on the internal computer parts from arrangement data transferring between units (MS – Dos, UNIX, VMF).*
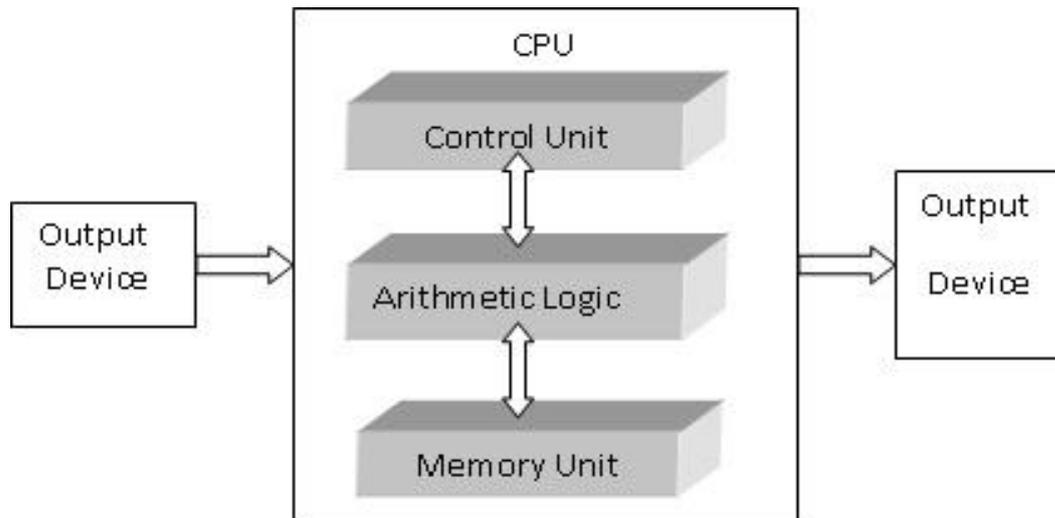
B .Compilers: *Translating high level program languages (COBOL, FORTRAN, BASIC) in to machine language.*

C. Programming language: *This programmers divided into high level language (Basic, Pascal ,Fortran , Cobol , and low level language (machine language).*
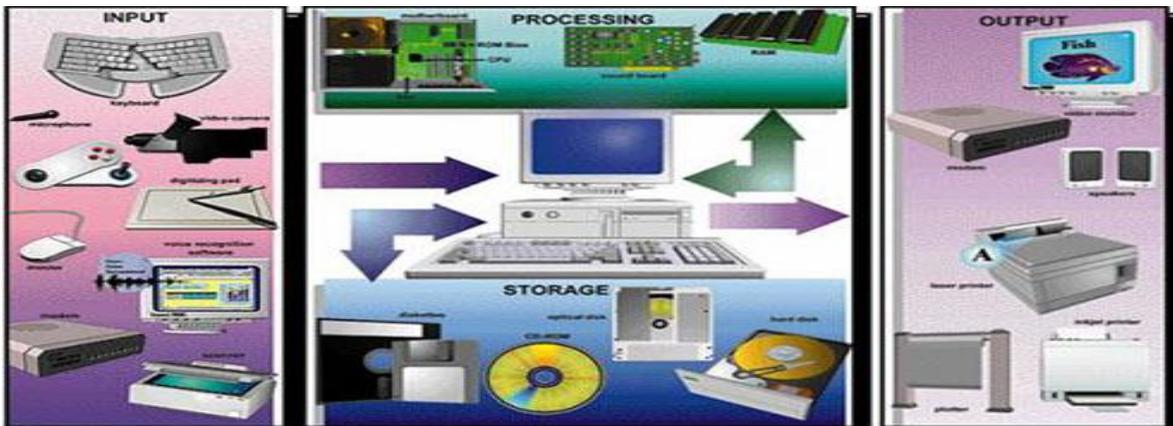
Central Processing unit

Diagram of the computer units


(Storage vs. Memory)

Storage refers to where your computer keeps all the data/information that it uses (i.e. any programs that you might run, files that you have created, or the computer's operating system). Your 3 main storage locations are:

1. The **Hard Drive** or **C:\ Drive**
2. The **Floppy Drive** or **A:\ Drive**
3. The **CD or DVD-ROM Drive** or **D:\ Drive**. Etc….

The computer's operating system and most frequently used programs (such as Microsoft Word) are stored on the **hard disk**. You might also store documents and other files you've created on the hard disk. **Floppy disks** are used to store files you've created so that you might work on them in multiple locations. They are also a good way to back up important information on your hard drive. **CD-ROMs** are used to store large programs. A CD-ROM can store over 650 MB of data, but remember that you can only save new information if it is a CD-R (because the **ROM** stands for "**Read Only Memory***").

Memory chips are the fast computer chips used to temporarily store information while a PC is on. Hard disk space, however, is what the computer uses to store unused files and programs. When the computer is on and you are running programs, these programs are temporarily held in the computer's memory for easy access. When the computer is turned off,

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the hard disk still holds all your files and programs, but the memory is emptied.
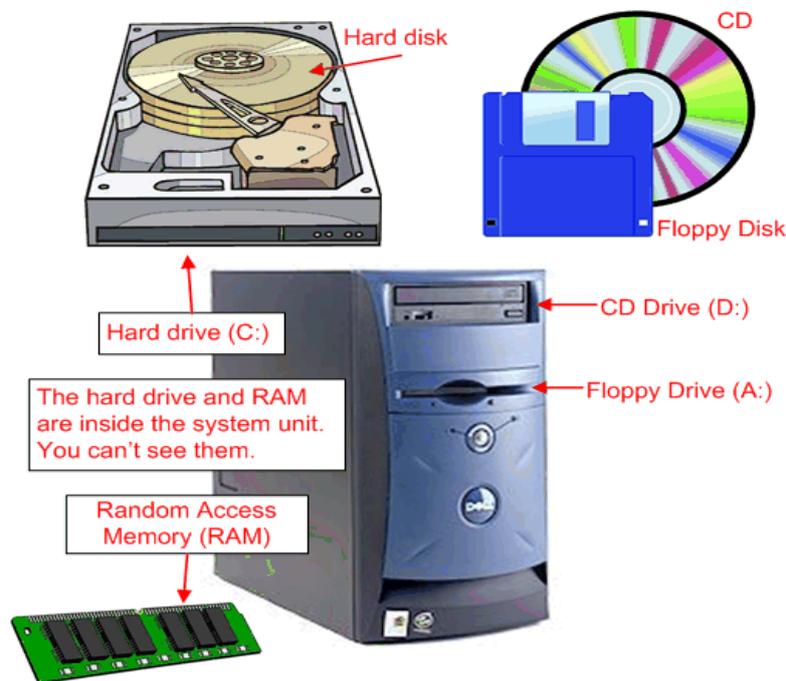
Bits, Bytes, Kilobytes, Megabytes & Gigabytes

Bit: We measure the information stored in a computer's memory and disk drives using **bits**. A bit is the smallest unit of measurement.

Byte: **8 bits** grouped together equal **one byte**. A byte is still a very small piece of information--one byte is equal to one character or one letter of the alphabet. Since a byte can only hold a very small piece of information, we often think in terms of kilobytes, megabytes, and gigabytes.

Kilobyte (KB): Normally defined as 1,024 bytes, although many people round it to 1,000. An average word-processing document will consume about 100 kilobytes.

Megabyte (MB): Defined as roughly 1,000 kilobytes or 1,000,000 bytes. While documents are usually measures in kilobytes, whole programs are measured in megabytes. A few years ago, when you purchased a new program at the store, it most often came on a floppy disk. Each **floppy disk** holds up to **1.44 megabytes** of information. Programs were smaller then, so you would only need a few disks to hold the whole thing. These

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days, the size of programs have become much bigger, so that virtually all new programs come on **CD-ROM. A CD-ROM** can hold over **650 megabytes***!*

Gigabyte (GB)**:** Defined as roughly 1,000 megabytes. The increasing size of programs has resulted in larger hard drives. Hard drives used to be measured in megabytes -- a computer from 1988 might have had a 30-megabyte hard drive! Now, the average **hard drive** in a new computer is about **350 gigabytes**.
Terabyte (TB): Defined as roughly 1,000 gigabytes.

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1 Bit	Smallest Unit
1 Byte	8 Bits
1 Kilobyte (KB)	1,000 Bytes
1 Megabyte (MG)	1,000 Kilobytes
1 Gigabyte (GB)	1,000 Megabytes
1 Terabyte (TB)	1,000 gigabytes