

## Introduction of Computer:

**Computer:** It is an electronic device which processes given data to derive the required and useful information. During the processing the computer has to perform various functions like:

- (i) Accepting Instructions & data from the user.
- (ii) Performing various arithmetic and Logical operations as per Instructions given.
- (iii) Presenting the Information or Output to the user.

**Data:** It is the collection of raw facts, figures & symbols.

Example: Names of students and their marks in different subjects listed in random order.

**Information:** It is the data that is processed & presented in an organized manner.

Example: When the names of students are arranged in alphabetical order, total and average marks are calculated & presented in a tabular form, it is information.

Input (Data) → Process (Data) → Output (Information)

## Computer is basically composed of essentially the following:

1. Hardware
2. Software

**Hardware:** Refers to physical, electrical and mechanical components of a computer.

For example keyboard, mouse...

**Software:** Refers to a program or set of instructions that is written to achieve a specified task.

**Program:** Set of instructions that enable a computer to perform a given task.

**Programmer:** Is a person who gives orders to the computer, a programmer should know at least one of the programming languages.

**Computer system consists of three units:**

- ✓ Input device
- ✓ Central Processing Unit (CPU)
- ✓ Output device

**Input device:** Reads data from input media and enters to the Computer in a coded form, the devices like keyboard, mouse and scanner are commonly used as input devices.

**Central Processing Unit:**

It is the part of the computer that carries out the instructions of a computer program. It is the unit that reads and executes program instructions. Hence it is known as the Brain of the computer. The CPU consists of:

- ❖ Storage or memory unit
- ❖ Arithmetic and Logic Unit (ALU)
- ❖ Control unit.

- The system unit is the core of a computer system. Usually it's a rectangular box placed on or underneath your desk. Inside this box are many electronic components that process information. The most important of these components is the central processing unit (CPU), or microprocessor, which acts as the "brain" of your computer. Another component is random access memory (RAM).

**Memory unit:** Stores program and data.

The data stored can be accessed and used whenever required by the CPU for necessary processing. This memory unit is usually referred as primary storage section.

**Arithmetic and Logic unit (A L U):** Performs arithmetic and logical functions.

**Control Unit:** The control unit controls the overall activities of the components of the computer.

**Units of memory:** The computer stores a character in the storage cells with binary (0,1) mechanism. Thus the basic unit of memory is a bit (binary digit 0, 1).

- To store a character, a computer requires 8 bits or 1 byte.

1 Byte = 8 bit

1 KB (Kilobyte) = 1024B

1 MB (Megabyte) =1024 KB

1 GB (Gigabyte) =1024 MB

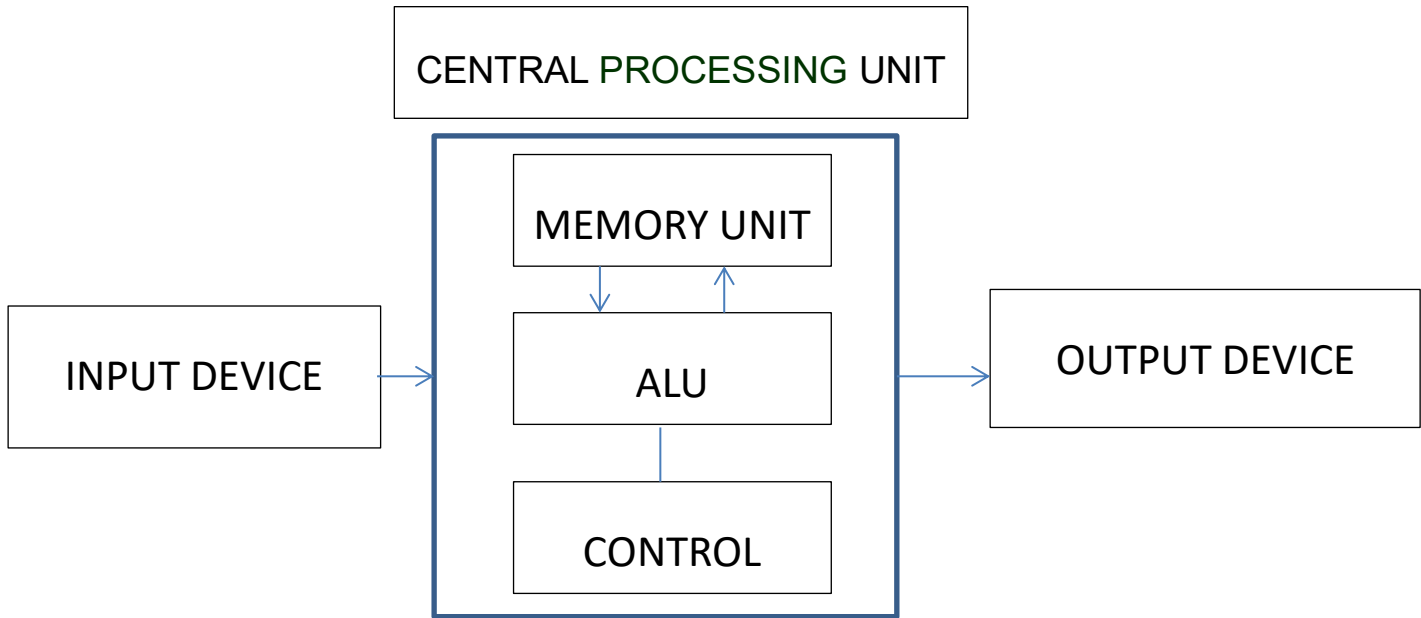
1 TB (Terabyte) =1024 GB

## **Output devices**

Any device that is capable of representing information on a computer is called an Output device.

Output devices receive information from the CPU and present it to the user in the desired form.

**Block Diagram of Computer (CPU):-**



**Operating System (OS):** Operating system is special kind of software that control and manage all the hardware of the computer, the most well-known OS is Microsoft Windows.

**CPU SPEED:** Computers speed is measured by a unit called (Giga Hertz-GHz), which measures the number of operations it processes in each second.

**(Random Access Memory): RAM**

While a program being is executed it requires data, such data is stored in RAM, and the data stored in RAM is volatile i.e. when there is a power failure the data in the RAM is lost. Whenever new data is stored in RAM the previous data is erased.

- RAM stores all running processes (applications) and the current running OS.

### **Read only Memory (ROM):**

Information can only be read from and not written or changed onto ROM.

It stores some basic input – output instructions to operate the computer. The storage of data and instructions in ROM is permanent. It does not depend on the power supply. I.e. it is non-volatile memory.

### **Secondary Memory (External storage):**

The primary memory which is faster (and hence expensive) is generally not sufficient for large storage of data. As a result, additional memory, called the (auxiliary or secondary) memory is used.

**Files:** Files are the basic unit of data that users can store on a disk. Every program, image, video, song, and document is stored as a file.

**Folders:** In the Windows and some other operating systems, a folder is a named collection of related files that can be retrieved and moved as one entity, Folders can also store other folders called subfolders.

**File Extensions:** Files are identified by a short (extension) at the end of their name. For example, ABC.JPG is a JPEG image, ABC.DOC is a Microsoft Word document file, and ABC.EXE is an executable application in Windows.

**Shortcut:** Shortcuts are pointers to files or programs and are used to access the files and programs. It can be deleted without affecting the original program.

**Task Bar:** Is the streak that goes horizontally at the bottom of the screen. The task bar shows the programs running on the computer.

**Path:** The exact location of a file, including drive letter, directory, subdirectory, and filename, as in the following:

C:\My Documents\BIOLOGY\HAWLER.doc.

**Control Panel:** The control panel is used to change the computer's hardware and software setting:



1. **Backspace:** This key deletes letters backward.
2. **Delete:** This key deletes letters forward.
3. **Shift:** This key, when pressed WITH another key, will perform a secondary function.
4. **Spacebar:** This key enters a space between words or letters.
5. **Tab:** This key will indent what you type, or move the text to the right. The default indent distance is usually 0.5 inch.
6. **Caps Lock:** Pressing this key will make every letter you type capitalized.
7. **Control (Ctrl):** This key, when pressed WITH another key, perform a shortcut.
8. **Enter:** This key either gives you a new line, or executes a command (pressed in a word processing program, it begins a new line).

9. **Number Keypad**: These are exactly the same as the numbers at the top of the keyboard; some people just find them easier to use in this position.

10. **Arrow Keys**: Like the mouse, these keys are used to navigate through a document or page.

**Information Technology**: Is a broad term which covers all aspects of the use of computer technology. It includes not only hardware and software, but also communication technology applied to linking computer systems, software engineering, and the administration and use of computer systems.

**Resolution**: An important characteristic of all screens is their resolution. Each point of light on the screen is called a pixel. The resolution of a screen is the maximum number of pixels that the screen can display.