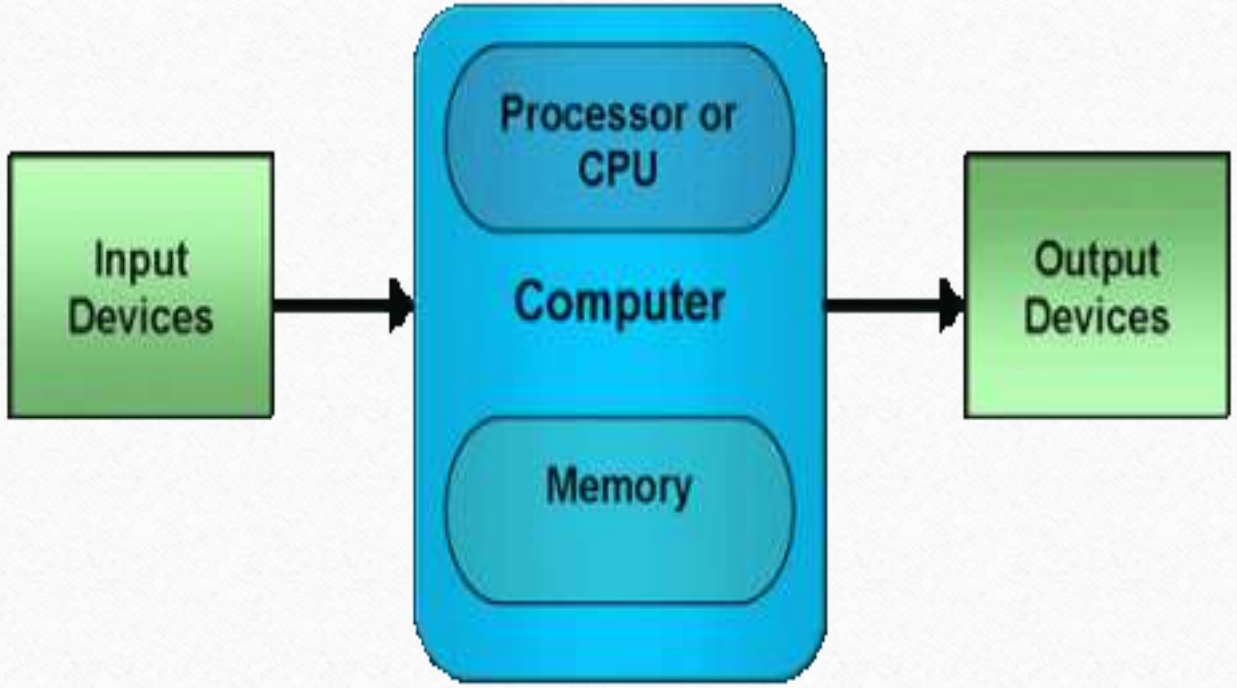
BASIC COMPONENTS OF A COMPUTER SYSTEM

Basic components of a computer are:



1. Input Unit

- Input is any data or instructions entered into the memory of a computer

- Any hardware component allows user to enter data and instructions in to a computer.

Keyboard and Mouse are the most common Input Devices which are used.

Keyboard

- ✓ Used to enter information into the computer and for giving commands.

- ✓ A standard computer keyboard is called a **QWERTY keyboard**

Ball Mouse

- An input device operated by rolling its ball across a flat surface. The mouse is used to control the on-screen pointer by pointing and clicking, double-clicking, or dragging objects on the screen.

Optical Mouse

- ✓ It is an advanced computer pointing device.
- ✓ It uses Light-Emitting Diode(LED) in place of the traditional mouse ball.
- ✓ Movement is detected by sensing changes in reflected light.

2. Output Unit

- The job of output unit is just the reverse of that of an Input Unit.

- It supplies information and results of computation to the outside world.

Monitor and Printer are the most common Output Devices which are used.

Monitor

- ✓A display screen is used to provide “output” to the user. It is where you can view the information you are working on.

Printer

- An output device that produces a hard of the information.
  Information to the user is in printed form.

3. **Memory / Storage Devices**

- All computer need to store data.

- Data is stored temporally while program is running
  – Main Memory.

- To store data for long-term, to preserve programs and data while not in use – Backing Storage.

Primary Memory and Secondary Memory

Primary Memory

- Temporary area for holding data.
- To store the program currently being executed
- To hold data produced while the programe is running.

Primary Memory are of two types

1. RAM &
2. ROM

1.RAM(Random Access Memory)

- ✓ Major portion of the Primary Memory
- ✓ Memory that is used by the program in execution
- ✓ If the computer gets turned off, RAM will lose all the data.

Static RAM & Dynamic RAM

Static RAM

- ✓The memory retains as long as power remains applied.
- ✓Uses Flip Flop circuitory.
- ✓Is more faster.

Dynamic RAM

- ✓ Need continues **Refreshing** in order to maintain the data.
- ✓ It uses transistors and capacitors in circuits
- ✓ Slow and consumes more power

2.ROM (Read Only Memory)

- ✓ Memory which we can only read but cannot write on.
- ✓ Non-volatile.
- ✓ Used to store some firmware programs.

PROM – Programmable Read Only Memory
EPROM – Erasable and Programmable read Only Memory.
EEPROM – Electrically Erasable and Programmable read Only Memory.

Secondary Memory

- ✓Permanent memory of the system.
- ✓More storage capacity.
- ✓It is the Backing Store.

Magnetic Disk & Optical Disk

Magnetic Disc

- Stored data in the form of Magnetic directions.

Hard Disk & Floppy Disk

Hard Disk

- ✓Access to data is far faster than access to data in floppy disks.
- ✓Read/Write Head is positioned close to the disk.
- ✓Disk is attached to a spindle.
- ✓Spindle is rotated by a motor.
- ✓Speed of disk depends on the speed of motor.

Floppy Disk

- Consists of a plastic disk coated with iron oxide.
- Disk access mechanism is arranged as a hardware unit called disk drive.
- Drive contains motor, Read/Write Head etc.
- Head comes in contact with the disk through the data access area.
- Disk is rotated to pass the sectors through the head.

inside view

back view

Optical disk

- ✓It is an electronic storage medium.
- ✓Read operation is done using low powered laser beam.
- ✓A laser read the dots and then the data is converted to an electrical signal .
- ✓The output form of this devise is in audio and visual format

CD-ROM – Compact Disk-Read Only Memory.
CD – R – Compact Disk – Recordable.
CD-RW – Compact Disk – Rewritable
DVD – ROM – Digital Versatile Disk – Read Only Memory
DVD – RAM - Digital Versatile Disk – Random Access Memory

4.Processor Or CPU

- The CU and ALU are jointly known as CPU.
- Brain of the computer.
- Perform data processing operations.
- Control the working of the entire system.

Arithmetic and Logic Unit (ALU) & Control Unit(CU)

Arithmetic and Logic Unit (ALU)

- ✓ Place where the actual execution of the instructions take place during the processing operations.
- ✓ All calculations are performed here.
- ✓ It consists of circuits that perform arithmetic as well as logical operations.

Control Unit

- It act as a central nervous system for the other components of the computer.
- It manages and coordinates the entire computer system.
- It get information from the main memory
- It issues signal to control every other units of the system.