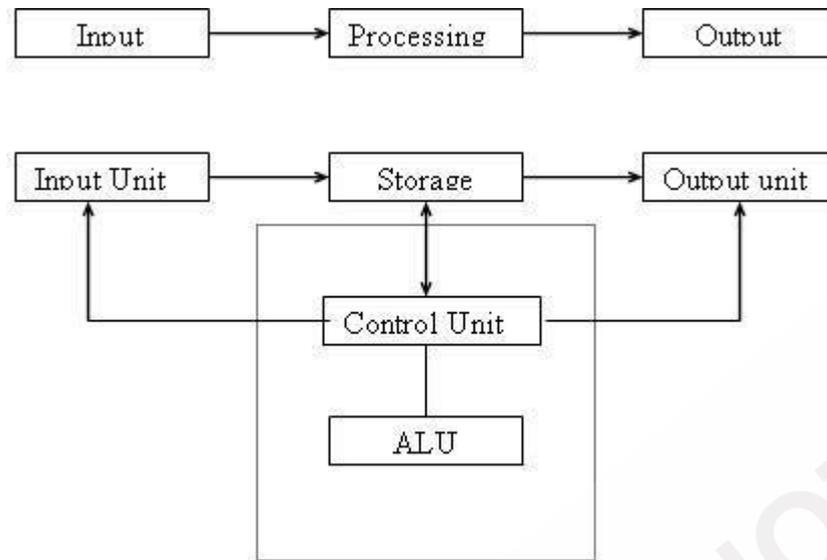


## BLOCK DIAGRAM OF COMPUTER :



A computer can process data, pictures, sound and graphics. They can solve highly complicated problems quickly and accurately.

### VON NEUMANN ARCHITECTURE

Most of today's computers designs referred to as Von Neumann Architecture, are based on concepts developed by John Von Neumann.

This design has five units to perform operations on data namely,:

- INPUT

- MEMOR

- Y

- OUTPUT

- ARITHMETIC & LOGICAL

- UNIT CONTROL UNIT

The Arithmetic & Logical Unit, and the CU built together are known as the CPU.

#### I. INPUT UNIT:

Computers need to receive data and instruction in order to solve any problem. Therefore we need to input the data and instructions into the computers. The

input unit consists of one or more input devices. Keyboard is the one of the most commonly used input device. Other commonly used input devices are the mouse, floppy disk drive, magnetic tape, etc. All the input devices perform the following functions.

- Accept the data and instructions from the outside world.
- Convert it to a form that the computer can understand.
- Supply the converted data to the computer system for further processing.

## II. STORAGE UNIT:

The storage unit of the computer holds data and instructions that are entered through the input unit, before they are processed. It preserves the intermediate and final results before these are sent to the output devices. It also saves the data for the later use. The various storage devices of a computer system are divided into two categories.

Primary Storage: Stores and provides very fast. This memory is generally used to hold the program being currently executed in the computer, the data being received from the input unit, the intermediate and final results of the program. The primary memory, RAM, is temporary in nature(Volatile). The data is lost, when the computer is switched off. In order to store the data permanently, the data has to be transferred to the secondary memory. The cost of the primary storage is more compared to the secondary storage. Therefore most computers have limited primary storage capacity.

2. Secondary Storage: Secondary storage is used like an archive. It stores several programs, documents, data bases etc. The programs that you run on the computer are first transferred to the primary memory before it is actually run. Whenever the results are saved, again they get stored in the secondary memory, ROM. The secondary memory is slower and cheaper than the primary memory. Some of the commonly used secondary memory devices are Hard disk, CD, etc.,

### MEMORY SIZE:

All digital computers use the binary system, i.e. 0's and 1's. Each character or a number is represented by an 8 bit code.

The set of 8 bits is called a byte.

A character occupies 1 byte space.

A numeric occupies 2 byte space.

Byte is the space occupied in the memory.

The size of the primary storage is specified in KB (Kilobytes) or MB (Megabyte). One KB is equal to 1024 bytes and one MB is equal to 1000KB. The size of the primary storage in a typical PC usually starts at 16MB. PCs having 32 MB, 48MB, 128 MB, 256MB memory are quite common.

### III. OUTPUT UNIT:

The output unit of a computer provides the information and results of a computation to outside world. Printers, Visual Display Unit (VDU) are the commonly used output devices. Other commonly used output devices are floppy disk drive, hard disk drive, and magnetic tape drive.

### IV. ARITHMETIC LOGICAL UNIT:

All calculations are performed in the Arithmetic Logic Unit (ALU) of the computer. It also does comparison and takes decision. The ALU can perform basic operations such as addition, subtraction, multiplication, division, etc and does logic operations viz, >, <, =, 'etc. Whenever calculations are required, the control unit transfers the data from storage unit to ALU, once the computations are done, the results are transferred to the storage unit by the control unit and then it is send to the output unit for displaying results.

## V. CONTROL UNIT:

It controls all other units in the computer. The control unit instructs the input unit, where to store the data after receiving it from the user. It controls the flow of data and instructions from the storage unit to ALU. It also controls the flow of results from the ALU to the storage unit. The control unit is generally referred as the central nervous system of the computer that control and synchronizes its working.

## VI. CENTRAL PROCESSING UNIT:

The control unit and ALU of the computer are together known as the Central Processing Unit (CPU). The CPU is the brain of the computer and performs the following functions:

- It performs all calculations.
- It takes all decisions.
- It controls all units of the computer.

A PC may have CPU-IC such as Intel 8088, 80286, 80386, 80486, Celeron, Pentium, Pentium Pro, Pentium II, Pentium III, Pentium IV, Dual Core, and AMD etc.