

*****Structural Components of Computer System(CPU, ALU, Registers, CPU Interconnection)*****

Computer systems are a combination of both hardware and software working together. Hardware is the physical components of a computer and software is the programs that run on a computer. A computer device is made up of various elements which help in its effective functioning and processing.

There are following main components of computer system:-

1. CPU
2. ALU
3. Register
4. CPU Interconnection

CPU:-

The Central Processing Unit (CPU) is called "the brain of computer" as it controls operation of all parts of computer. The Central Processing Unit is the core of any computer devices. CPU controls the operation of a computer as well as performs its data processing functions. CPU is often simply referred to as processor. A program is a set of instructions that tells the computer how to accomplish a specific task, such as sending a file to the printer, opening a browser window, or playing music or video.

ALU(Arithmetic & Logical Unit):-

ALU performs the computer's data processing functions. As the name suggests, all the mathematical calculations or arithmetic operations are performed in the Arithmetic and Logical Unit of the CPU.

It can also perform actions like a comparison of data and decision-making actions. The ALU comprises circuits using which addition, subtraction, multiplication, division and other numerical based calculations can be performed

Data entered into computer is sent to RAM, from where it is then sent to ALU, where rest of data processing takes place. All types of processing, such as comparisons, decision-making and processing of non-numeric information takes place here and once again data is moved to RAM.

Register:-

Registers are small amounts of high-speed memory contained within the CPU. Register provides storage which lies internal to the CPU. They are used by the processor to store small amounts of data that are needed during processing, such as:

1. The address of the next instruction to be executed
2. The current instruction being decoded
3. The results of calculations

CPU Interconnection:-

There are also some mechanisms which provide for communication among the control unit, ALU as well as registers. However, there are several approaches to implement a control unit. The most common approach is the microprogrammed implementation. Here a microprogrammed control unit operates by executing microinstructions which define the functionality of the control unit. Multicore computers have multiple processors. When these processors all reside on a single chip, the term multicore computer is used. Each processing unit is called a core.