**Basic Design of a Computer**

**CPU (Central Processing Unit): -**

*The CPU, often referred to as the brain of the computer, is responsible for executing instructions and performing calculations. It consists of the following components.*

**ALU (Arithmetic Logic Unit)**

*The ALU is responsible for performing arithmetic and logical operations, such as addition, subtraction, AND, OR, and NOT.*

**Control Unit**

*The Control Unit manages the execution of instructions by fetching them from memory, decoding them, and executing them in the appropriate sequence.*

**Registers**

*Registers are small, high-speed storage locations within the CPU used to store data temporarily during processing. Common types of registers include the accumulator, instruction register, and program counter.*

**Memory**

*Memory, also known as RAM (Random Access Memory), is a volatile storage device that temporarily holds data and instructions for the CPU to process. It consists of the following types:*

**RAM (Random Access Memory)**

*RAM is used to store data and program instructions that are actively being used by the CPU. It allows for quick access to data but is volatile, meaning it loses its contents when the power is turned off.*

**ROM (Read-Only Memory)**

*ROM is a type of memory that stores firmware or permanent instructions. It retains its contents even when the power is turned off and is commonly used to store the computer's BIOS (Basic Input/output System).*

**Input/output Devices**

*Input and output devices allow users to interact with the computer and receive information from it. Some common input and output devices include:*

**Input Devices**

**Keyboard:** *Used to input text and commands into the computer.*

**Mouse:** *Used to move a cursor on the screen and make selections.*

**Touchpad:** *A built-in input device on laptops that functions similar to a mouse.*

**Scanner:** *Used to convert physical documents and images into digital format.*

**Output Devices**

**Monitor*:*** *Displays visual output from the computer, including text, images, and videos.*

**Printer*:*** *Used to produce hard copies of digital documents and images.*

**Speakers:** *Output sound generated by the computer, such as music, videos, and system alerts.*