CENTRAL PROCESSING UNIT PART 2

1. Arithmetic Logic Unit ALU
2. Control Unit CU
3. Memory

   3.1 RAM or Primary memory

   3.2 Registers

Furthermore, a CPU has three components:

1. ALU (Arithmetic Logic Unit)
2. Control Unit
3. Memory or Storage Unit

ALU (ARITHMETIC LOGIC UNIT)

An arithmetic logic unit (ALU) is a digital circuit exists inside the processor that handles arithmetic and logical operations and maintaining timers that help run the computer.

A CPU may use more than one ALU in one single unit.

This unit consists of two subsections namely,

1. Arithmetic Section
2. Logic Section

Arithmetic Section

Function of arithmetic section is to perform arithmetic operations like addition, subtraction, multiplication, and division. All complex operations are done by making repetitive use of the above operations.

Logic Section

Function of logic section is to perform logic operations such as comparing, selecting, matching, and merging of data.

CONTROL UNIT

1. The Control Unit's main task is to maintain and regulate the flow of information across the processor.
2. It controls and coordinates the functioning of all parts of the computer.

3. The circuitry in the control unit use electrical signals to instruct the computer system for executing **already** stored instructions, but It does not take part in processing and storing data.
4. It takes instructions from memory and then decodes and executes them.

MEMORY OR STORAGE UNIT

This unit is used to store instructions, data, and intermediate results.

The memory unit is responsible for transferring information to other units of the computer when needed.

It provides communication between Secondary memory, I/O units and CPU.

The CPU memory can be divided in two parts:

Primary Memory: Also known as Internal storage unit or the main memory or the primary storage or Random Access Memory (RAM). It stores data and instructions for processing. Higher the RAM capacity the computer runs smoothly.

Registers: It acts as a temporary storage area that holds the data temporarily while processing, the capacity is almost negligible.

REGISTERS

Register is a small storage inbuild in CPU where data can be stored. A register is a combination of latches. Latches also known as flip-flops are combinations of logic gates which stores 1 bit of information.

A latch has two input wire, write and input wire and one output wire. We can enable the write wire to make changes to the stored data. When the write wire is disabled the output always remains the same.