كلية علوم الحاسوب وتكنولوجيا المعلومات
قسم علوم الحاسوب
المرحلة الاولى

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Computer skill
Internal Computer Hardware

Hard desk derive (HDD)

* History of hard disk drives

The hard disk was create in 1953.

* Why do computers need hard disks?

To install operating systems, programs and additional storage devices, and to save documents.

Definition

A hard disk or HDD is a hardware component on a computer that acts as the storage for all digital contents. It holds program files, documents, pictures, videos, music, and more.

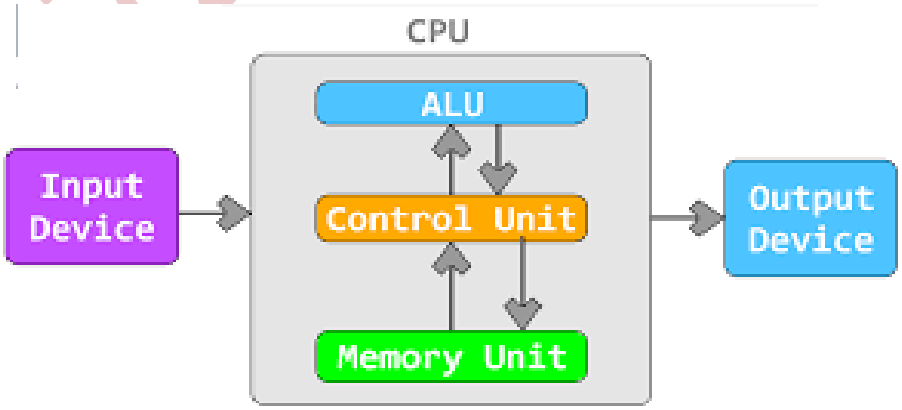
The non-volatile nature of hard drives means: they do not lose data, even if power is lost. Due to this, they help computer to store files and other data for a long time – as long as they don't get damaged.

Types of Hard Drives

- Parallel Advanced Technology Attachment (PATA)
- Serial Advanced Technology Attachment (SATA)
- Small Computer System Interface (SCSI)
- Solid State Drive (SSD)

4- Motherboard cables

These cables intended to supply power to various different types of hardware including hard drives, SSDs, internal CD/DVD optical drives, fan hubs and so on.



Block Diagram of the Computer

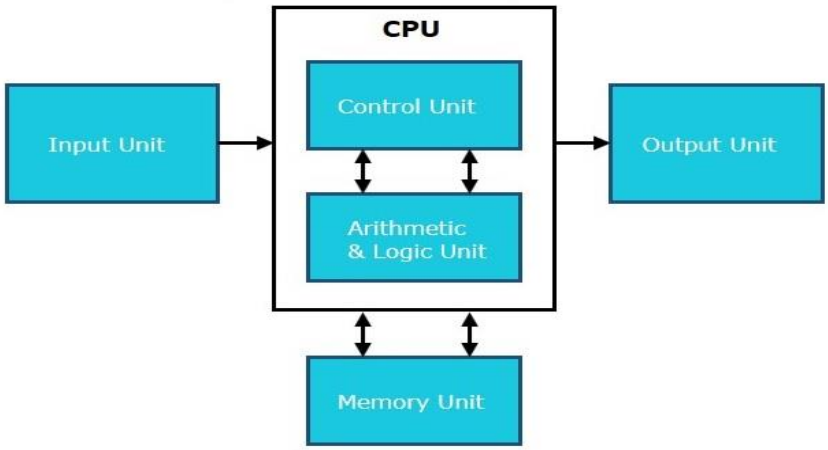
Central Processing Unit (CPU)

Definition

Is the unit, which performs most of the processing operations inside a computer and responsible for executing most of the commands from the computer's other hardware and software.

* There are many different names used to describe the CPU: processor, computer processor, microprocessor, central processor, and "the brains of the computer."

*CPUs are located on the **motherboard**.



Central Processing Unit (CPU)

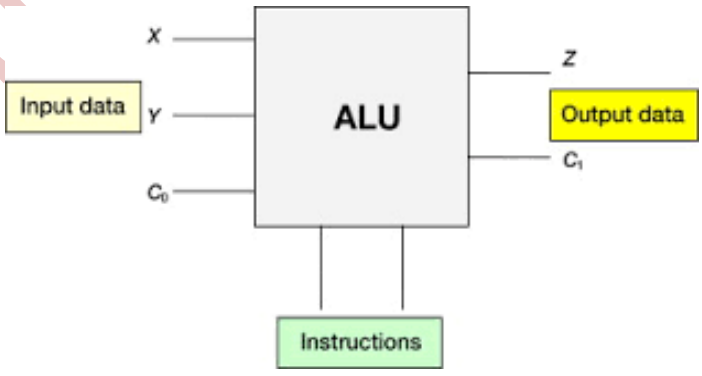
The components of a (CPU)

1- **The arithmetic logic unit *(ALU)***: performs arithmetic operations and logic operations and controls the speed of those operations.

Example
(Arithmetic operation) D= 4 + 2/C
(Logic operation) AVG >= 50 PRINT (“PASS”)

2. **Control Unit *(CU)***: directs the transfer of data to and from the ALU , registers, main memory and input output devices . Inaddition, it serves the instructions for ALU and controls every other parts of the computer.

3- **Registers**: use for quickly accept, store, and transfer data and instructions that are being used immediately by the CPU.



Arithmetic and Logic Unit (ALU)

CPU Types

1-Single-core

Is the oldest type of CPU .The single-core CPU can execute onlyone command at a time and it is not efficient in multi task.

If one operation started, the second process should wait untilthe first one is finished.

2-dual-core

Comprises of two strong cores .the running programs and operating system should have a unique Synchronized. Dual-coreCPU is rapid than a single core but it is not strong as quad-core CPU.

3-Quad-core

Design with four cores on a single CPU. Similar to dual-core CPU, that enables for effective multitasking. it execute multiple different programs at the same time

4-Hexa core

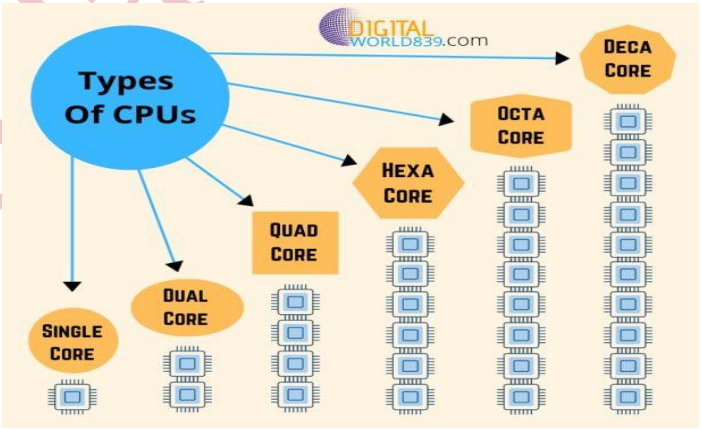
It is another multiple core processor, which is available with six cores and can execute the task, which works rapidly than the quad-core and dual-core processors.

5-Octa-core

The octa processors developed with eight independent cores to execute an effective task that is efficient and even acts rapidly than quad-core processors.

6-Deca core

Deca-core is available with ten independent systems that execute and manage the tasks. It is successful than other processors developed until now. It is faster than other processors and very successful in multi-tasking.



CPU Types