GROUP 3: SYSTEM UNIT AND ITS COMPONENTS

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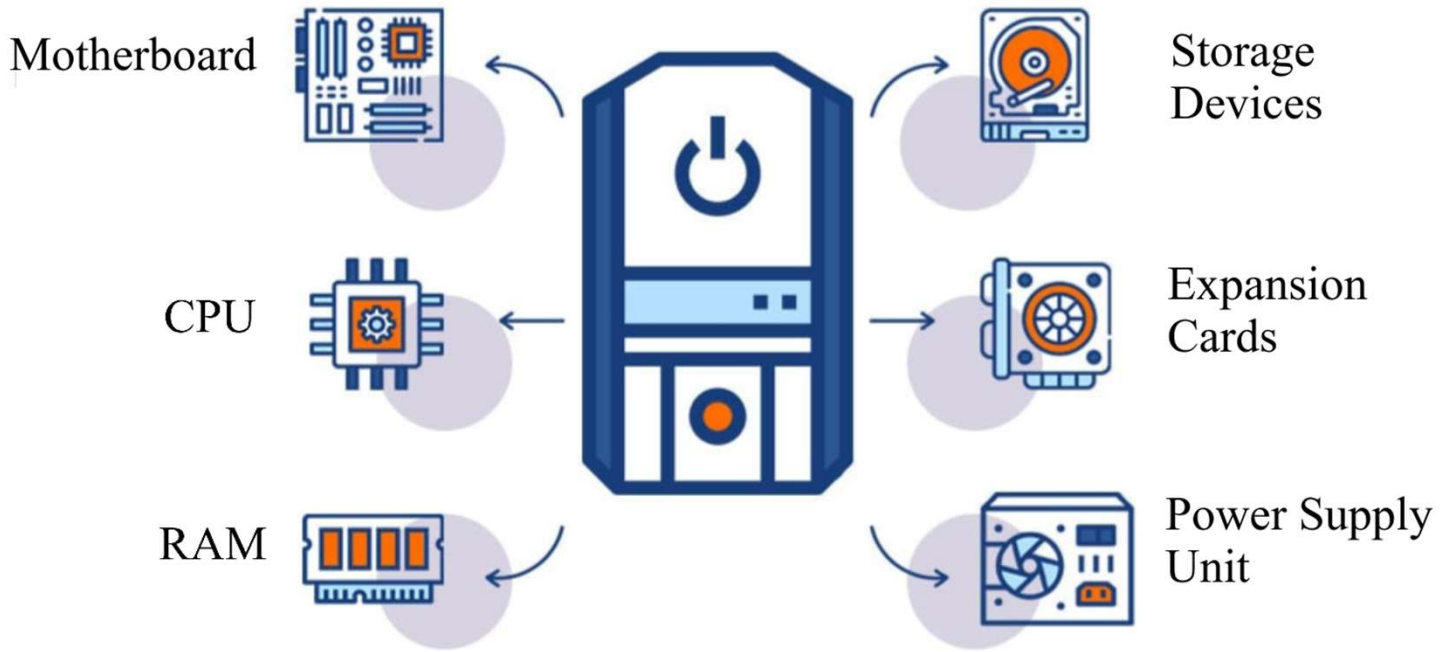
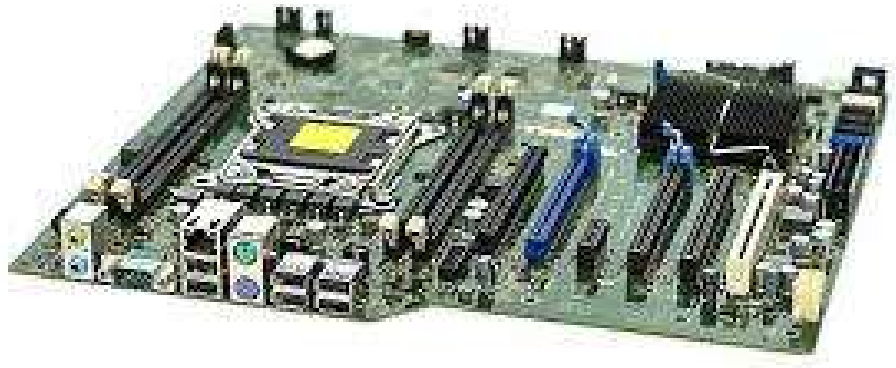
Definition of System Unit

- Often referred to as the computer case or chassis
- Is the main enclosure that houses the essential components of a computer.
- Serves as the framework for the internal hardware.
- Providing protection and organization.
- Connectivity for the various components that make up a computer systems.
- Typically include the motherboard, CPU, RAM, power supply, storage devices, and expansion cards.

Major Internal Components

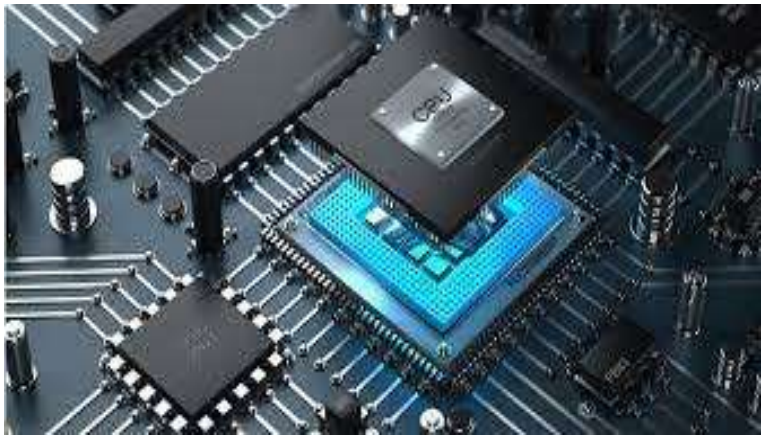


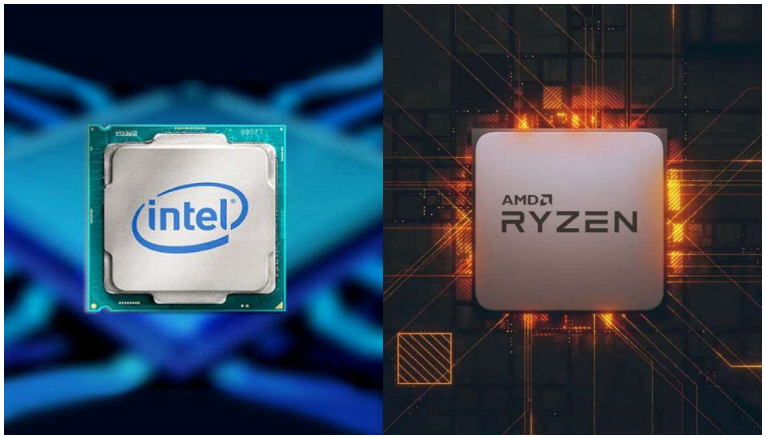
Motherboard



- The main circuit board that connects all the other components.
- It contains connectors for the CPU, RAM, storage devices, and expansion cards.
- It also includes ports for connecting peripherals like keyboards, mice, and monitors.

CPU (Central Processing Unit)





- The "brain" of the computer, responsible for executing instructions and performing calculations.
- CPU will be mounted on the motherboard and often has a cooling system (heat sink and fan) to dissipate heat.

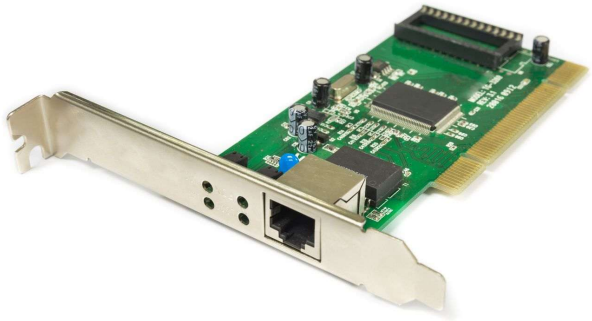
RAM (Random Access Memory)

- Temporary storage for data and instructions that the CPU is currently using.
- It's volatile, meaning data is lost when the power is turned off.
- RAM is connected to the motherboard and provides fast access to the CPU.

Storage Devices

- **Hard Disk Drive (HDD) or Solid State Drive (SSD):** Permanent storage for the operating system, applications, and user data.
- **Optical Drives (CD/DVD/Blu-ray):** Used for reading and writing data on optical discs.

Expansion Cards

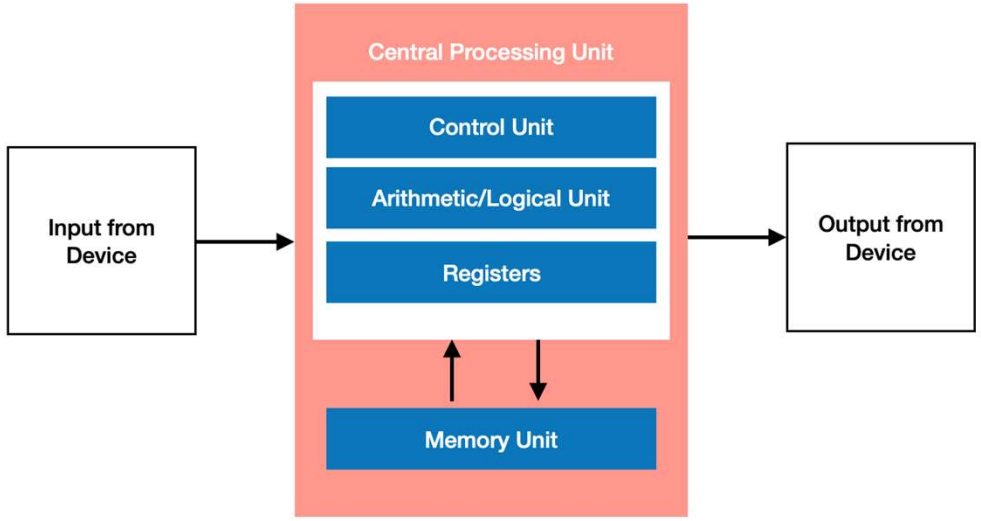


- Additional cards that can be inserted into the motherboard to add functionality, such as graphics cards, sound cards, and network cards.

Power Supply Unit (PSU)

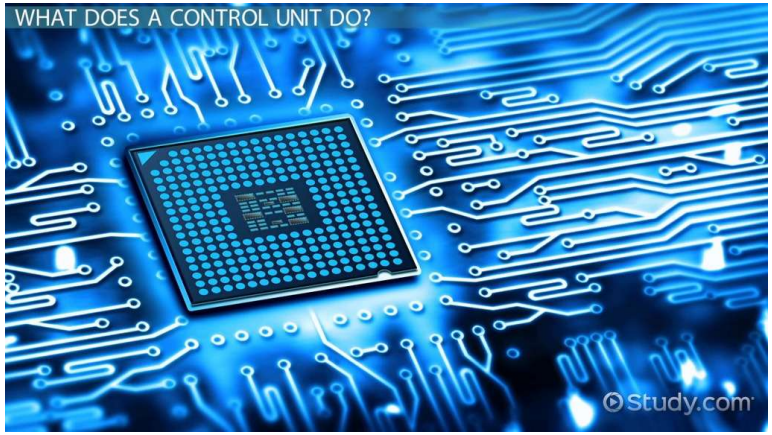
- Provides power to all the components within the system unit.
- It converts AC power from the wall outlet to DC power that the computer can use.

Description of CPU



- The core components of a CPU are the Control Unit (CU), Arithmetic Logic Unit (ALU), and Registers.

Control Unit (CU)



- The part of the CPU that directs the operation of the processor.
- It tells the computer's memory, ALU, and input/output devices how to respond to the instructions that have been sent to the processor.

Arithmetic Logic Unit (ALU)

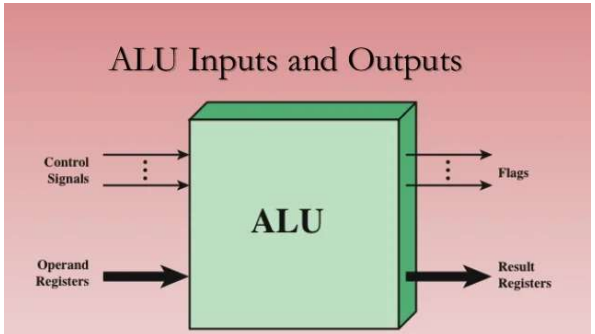
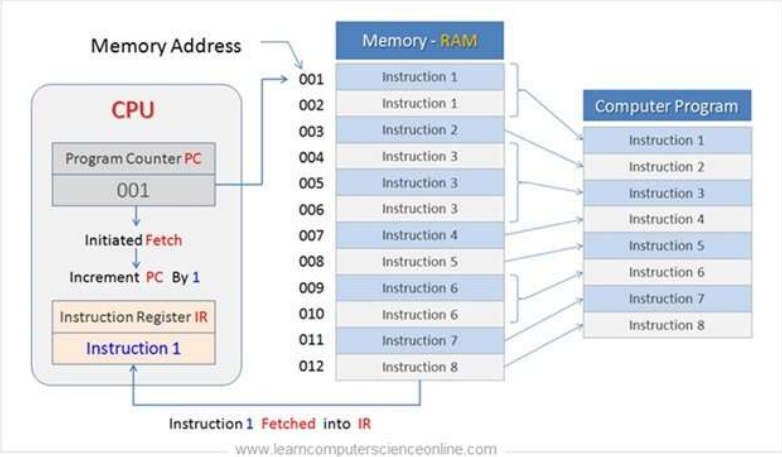


Figure 10.1 ALU Inputs and Outputs

- The component of the CPU that performs arithmetic and logical operations.
- It handles all mathematical calculations and logical comparisons.

Registers



- Small, high-speed storage locations within the CPU that temporarily hold data and instructions.
- Registers are used to store intermediate results of calculations and to hold the addresses of memory locations.

Functions and Importance of Each Components

Mother Board	
Functions	▪ Acts as the backbone of the computer, allowing communication between all components.
Importance	▪ It is crucial for system stability and performance.

CPU	
Functions	▪ Executes instructions and processes data, making it the most critical component for overall system performance.
Importance	▪ A faster CPU can significantly enhance computing speed.

Functions and Importance of Each Components

RAM	
Functions	▪ Provides temporary storage for data that the CPU needs to access quickly.
Importance	▪ More RAM allows for better multitasking and smoother performance in applications.

Storage Devices	
Functions	▪ Store the operating system, applications, and user data.
Importance	▪ The speed and capacity of storage devices affect system boot time and application load times.

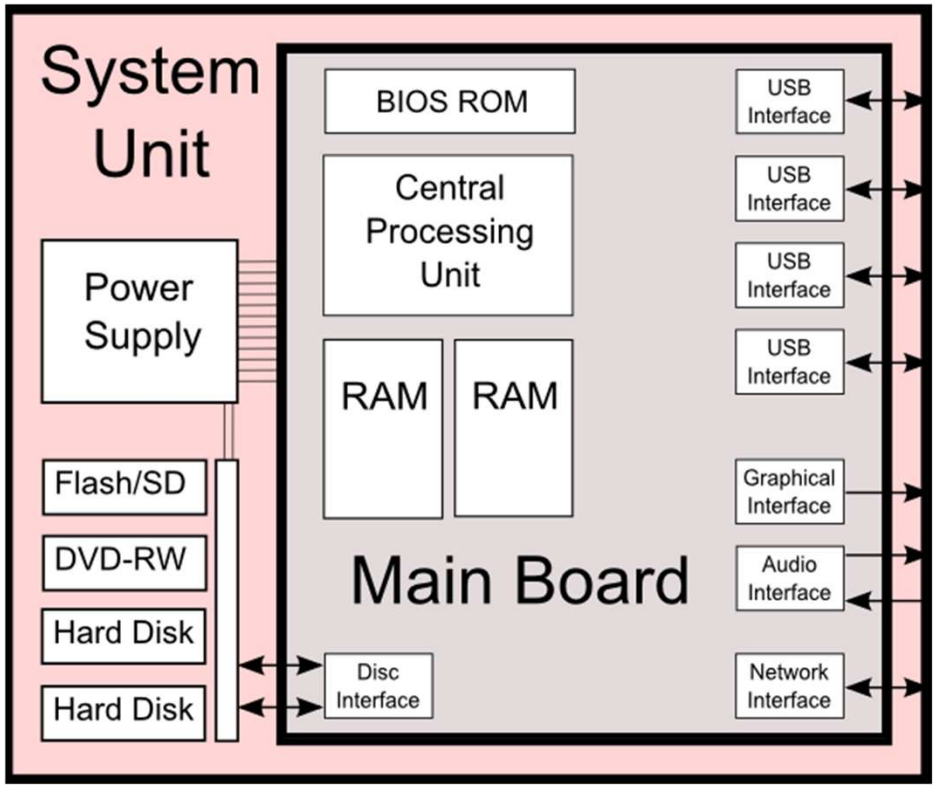
Functions and Importance of Each Components

Expansion Cards	
Functions	▪ Allowing for customization based on user needs, such as improved graphics, network or sound capabilities.
Importance	▪ Expansion cards are crucial for enhancing a computer system's functionality and capabilities.

Storage Devices	
Functions	▪ Ensures that all components receive the correct voltage and current.
Importance	▪ A reliable power supply is essential for system stability and longevity.

Visual Breakdown of a System Unit

Diagram of a System Unit



Quiz Time !!!

1. List three internal components of system unit.

2. What is the role of the control unit in the CPU?


THANK YOU!
Thank you!