What is a Computer?

A **computer** is an electronic device that processes data and performs tasks according to a set of instructions called a program. It can receive input, process the data, store information, and produce output. Computers are used for a wide range of applications including calculations, data management, communication, entertainment, and more.

Detailed Explanation of Computer Parts

1. Input Devices

These devices let you interact with the computer by entering data or commands.

- **Keyboard:** Used to input text and commands by pressing keys.
- **Mouse:** A pointing device to navigate the graphical interface.
- **Scanner:** Converts physical documents into digital images.
- **Microphone:** Captures sound for recording or communication.
- **Webcam:** Captures live video for streaming or video calls.

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2. Output Devices

Devices that display or produce the results of computer processing.

- **Monitor:** Displays images, videos, and text on a screen.
- **Printer:** Produces physical copies (hard copies) of documents.

- **Speakers:** Output sound from the computer.

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3. Central Processing Unit (CPU)

The CPU executes instructions and performs calculations.

- **Arithmetic Logic Unit (ALU):** Handles mathematical calculations (addition, subtraction) and logic operations (comparisons).

- **Control Unit (CU):** Directs the flow of data between the CPU and other parts, telling the computer how to respond to instructions.

The CPU speed is often measured in GHz, indicating how many instructions it can process per second.

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4. Memory (RAM - Random Access Memory)

- Temporarily holds data and programs currently being used.

- Faster than storage drives but volatile — data disappears when the power is off.

- The amount of RAM affects how many programs can run smoothly at once.

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5. Storage Devices

Where data is saved permanently until deleted or changed.

- **Hard Disk Drive (HDD):** Uses spinning disks to read/write data; offers large storage at lower cost but slower speeds.

- **Solid State Drive (SSD):** Uses flash memory for faster data access and better durability.
- **Optical Drives:** Reads/writes CDs, DVDs, or Blu-ray discs (less common nowadays).

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6. Motherboard

- The main printed circuit board (PCB) connecting all components.
- Contains slots for CPU, RAM, expansion cards, and connectors for storage devices.
- Manages communication between all hardware parts.

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7. Power Supply Unit (PSU)

- Converts electrical power from your wall outlet into the lower voltages used by computer components.
- Supplies power to the motherboard, drives, and peripherals.
- Power capacity is measured in watts.

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8. Expansion Cards

Additional hardware cards that extend computer capabilities.

- **Graphics Card (GPU):** Processes and outputs images to the monitor; essential for gaming, video editing, and 3D rendering.
- **Sound Card:** Improves audio quality and adds extra audio input/output options.

- **Network Interface Card (NIC):** Connects the computer to a network or the internet.
