

Computer Hardware Fundamentals

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1. Introduction to Computer Hardware:

- Computer hardware refers to the physical components of a computer system that can be seen and touched.
- It includes components like the central processing unit (CPU), memory (RAM), storage devices, input devices (keyboard, mouse), and output devices (monitor, printer).

2. Major Components of Computer Hardware:

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

- Known as the brain of the computer, responsible for executing instructions and tasks.
- Speed is measured in gigahertz (GHz) or megahertz (MHz).

- **Random Access Memory (RAM):**

- Temporary memory that stores data and instructions that the CPU needs while the computer is on.
- Faster access compared to storage devices.

- **Storage Devices:**

- Includes hard disk drives (HDDs), solid-state drives (SSDs), and external drives.
- Store data and programs even when the computer is turned off.

- **Motherboard:**

- Main circuit board that connects all components of a computer together.
- Contains CPU, RAM slots, and connectors for other peripherals.

3. Peripheral Devices:

- **Input Devices:**

- Devices that allow users to input data into the computer, such as keyboards, mice, scanners, and webcams.

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- **Output Devices:**

- Devices that display or present data processed by the computer, like monitors, printers, and speakers.

4. Types of Computers based on Hardware:

- **Desktop Computers:**

- Designed to be used on a desk and consist of a separate monitor, keyboard, and mouse.

- **Laptops:**

- Portable computers with an integrated screen, keyboard, and mouse.

- **Tablets and Smartphones:**

- Compact devices with touchscreens for both input and output.

5. Upgrading and Maintaining Computer Hardware:

- Hardware components can be upgraded to improve performance or add new features.
- Regular maintenance, like cleaning dust and updating drivers, can extend the lifespan of hardware.

6. Conclusion:

- Understanding computer hardware fundamentals is essential for users to make informed decisions about purchasing, upgrading, and maintaining their computer systems.