Fundamentals of Computer Science
<< CS111 >>

01 – Computer Basics

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❑ What is a Computer?

A computer is a machine capable of doing four functions:-

1. Accepts Input.
2. Storage Data.
3. Processing Data.
4. Produces Output.

Human is a computer but not an automatic.

Input ➔ Keyboard, Mouse, and Scanner

Processing ➔ CPU (Central Processing Unit)

Storage ➔ Volatile (RAM) and Non-Volatile (Hard Disk)

Output ➔ Speakers, Printer, and Projector

❑ What is a Software?

Software is a set of programs or instructions that help the hardware do what it should do.

Software is divided into two types: system software and application software.

1. System Software

- Operating system controls the operation of programs and starts up the computer.
- Without an operating system, the computer does not work.
- Linux, Mac OS, Windows, etc.

2. Application Software

- Applications perform specific tasks, for example:
- Edit images, and View web pages.
- Send and receive emails and record/play CD and DVD.
- Design Programs.
- Games applications, etc.

❑ Computer Categories

Before: Computers are categorized into three main categories from least to most powerful.

- microcomputers
- minicomputers
- mainframe computers

Today: a computer is categorized based on its technology, size, performance, and cost.

❑ Old Computer Categories

- **Mainframe Computers** were the first type of computer that were very large, and were usually housed in a closet-sized metal frame. This term also applies to a category of large, expensive computers that were sold to big corporations and government agencies.

- **Minicomputers (1968)** were smaller, less expensive, and less powerful than mainframes, and were used by small businesses.

- **Microcomputers (1971)** were a type of computer whose CPU had a single chip, called a microprocessor. It was usually dedicated to a single user.

❑ Today's Computer Categories

- ➢ Personal computers
- ➢ Handheld computers
- ➢ Workstations
- ➢ Mainframes
- ➢ Supercomputers
- ➢ Servers

Today, just about any computer, no matter how large or small, uses one or more microprocessors as its CPU.

➢ **Personal Computer**

is a type of microcomputer designed to meet the computing needs of an individual.

- Desktop computers
- Notebook computers (laptops)

➢ **Handheld Computer**

is one that is designed to fit into a pocket, run on batteries, and be used while you are holding it.

➢ **Workstations**

powerful desktop models designed for specialized tasks, such as 3D graphics.

➢**Computer Network**

is two or more computers or other devices that are connected for the purpose of sharing data and programs.

➢**Mainframe Computer**

is a large and expensive computer that is capable of passing data simultaneously to many users.

used by governments and large corporations to provide centralized storage.

Supercomputer

is one of the fastest computers in the world.

Perform many tasks as:

- Modeling weather systems
- Simulating nuclear explosions
- Research simulations

Server

serves the computers on a network by supplying them with data.

a Client receives data from a server.

any computer can be a server or a client.

❑ Personal Computer System Parts

Keyboard

Mouse

Hard disk drive

Optical Drive

Other Storage

Sound System

Display System

Peripheral Device

Thank You !!