

## Introduction to Computer

A computer system is a set of integrated devices that input, output, process, and store data and information. The computer system has two main components that make a computer system. These are: Hardware and Software

### 1. Concepts of Hardware and Software

#### A. Hardware

Hardware refers to the **physical components** of a computer system. These are tangible and can be touched. Examples include:

- **Input devices:** keyboard, mouse, scanner, microphone.
- **Output devices:** monitor, printer, speakers.
- **Storage devices:** hard drive, SSD, USB flash drives.
- **Central Processing Unit (CPU):** the "brain" of the computer, which processes instructions.
- **Motherboard:** connects all components together.

#### B. Software

Software refers to the **set of instructions and programs** that tell the hardware what to do. It is intangible. Software can be classified into:

- **System Software:** operating systems (Windows, Linux, macOS) and utility programs that manage hardware.
- **Application Software:** programs designed to perform specific tasks (Microsoft Word, web browsers, video games).

- **Programming Software:** tools used to create new programs (compilers, interpreters, code editors).

## 2. Concept of Computing, Data, and Information

- **Computing:** The process of using computers to solve problems, process data, and perform calculations.
- **Data:** Raw facts and figures that have no meaning on their own (e.g., numbers, text, symbols).
- **Information:** Processed and organized data that is meaningful and useful for decision-making.

### Example:

- Data: "90, 85, 95"
- Information: "The student's average score is 90."

## 3. Applications of Information Electronics and Communication Technology (IECT)

IECT refers to the integration of information technology, electronics, and communication to provide services and solutions. Applications include:

- **Education:** E-learning platforms, smart classrooms, digital libraries.
- **Healthcare:** Telemedicine, electronic health records, medical imaging.
- **Finance:** Online banking, mobile payments, cryptocurrency.
- **Transportation:** GPS navigation, traffic management, smart vehicles.

- **Entertainment:** Online streaming, gaming, virtual reality.

#### 4. Connecting Input/Output Devices and Peripherals to CPU

The CPU communicates with devices through **ports, buses, and interfaces**.

- **Input Devices:** Send data to the CPU (keyboard via USB, microphone via audio jack).
- **Output Devices:** Receive processed data from the CPU (monitor via HDMI, printer via USB/Wi-Fi).
- **Peripherals:** External devices such as external hard drives, webcams, or speakers.
- **Connectivity Standards:** USB, HDMI, Bluetooth, Wi-Fi are common ways to connect peripherals.