

Computers

What is a Computer?

- A **computer** is a **physical device designed to perform computation**.
- Laptops, mobile devices, and IoT devices are all computers.

What is an Operating System?

- An **operating system** is a piece of **software** that **supports a computer's basic functions**. It manages tasks, applications, and controls peripherals.
- The **kernel** is the **heart of an operating system** that is responsible for **managing and providing services to processes**.
 - One of the main responsibilities of the **kernel** is to manage the system's memory.
 - Another responsibility is using drivers to communicate with controllers.

Primary Computer Components

- The **system unit** refers to the **physical computer** as a whole.
- The **monitor** is a **video output interface**.
- The **keyboard and mouse** are **input interfaces**.
- **Printers** provide a **paper output**.
- **Speakers** provide an **audio output**.
- **Microphones** provide an **audio input**.
- **Web cameras** provide a **visual input**.

External Connections

- **Universal Serial Bus (USB)** is an **industry standard** that **establishes specifications for cables, connectors, and protocols for connection**.
 - There are **different types of USB connections**.
- **Ethernet** is a **technology for connecting devices in a wired local area network or wide area network**. **Ethernet connections enable different systems to communicate**.
 - There are different types of ethernet connectors, the most common is **RJ45**.
- **Audio jacks** are used to connect **input and output audio devices** to the **system unit**.
- There are **many kinds of video connections**, popular ones include:
 1. **Digital Visual Interface (DVI)** is an older type of video connection.
 2. **High-Definition Multimedia Interface (HDMI)** is a type of video connection.
 3. **DisplayPort** is a modern type of video connector (typically used for high performance video output).
- **Mini-DIN (PS/2)** are older connections that allow **keyboards and mice** to connect to older systems.
- **Parallel Port (LPT Port)** connectors are one of the oldest types of connectors, they are used to connect system units to **printers**.

- **Serial Connectors** are used for **inter-processor communication**, and are one of the oldest types of connections.
- **Video Graphics Array (VGA)** is an older type of video connector.
- **Separate Video (S-Video) Connectors** are an analog connector for standard definition video.

