1. NETWORKING DEVICES

What is a Network?

A computer network is a digital telecommunications system that enables NODES to share RESOURCES.

- A **CLIENT** is a device that uses a service provided by a **SERVER**.
- A **SERVER** is a device that offers functions or services to CLIENTS.
  - *Note:* A single device can act as both a CLIENT and a SERVER depending on the situation. For example, in a Peer-to-Peer network.

SWITCHES (Layer 2)

- Provide connectivity to devices within the same LAN (Local Area Network).
- Have multiple network interfaces/ports for End Hosts to connect to.
- DO NOT facilitate connectivity between LANs or across the Internet.

ROUTERS (Layer 3)

- Typically have fewer network interfaces compared to switches.
- Enable connectivity BETWEEN different LANs.
- Facilitate the transmission of data over the Internet.

FIREWALL (Can operate at Layers 3, 4, and 7)

- Specialized hardware devices for network security that regulate traffic entering and leaving your network.
- Can be positioned either "inside" or "outside" of the network.
- Manage and filter network traffic according to defined rules.
- Referred to as "Next-Generation Firewalls" when equipped with advanced filtering features.
- Host-based firewalls are software programs that manage traffic entering and leaving a specific host machine, such as a personal computer.