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Data Communication CS601 Lecture No 4

Lecture Prepared By

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Networks Types

- **Network classification:**
  - ✓ **Size**
  - ✓ **Geographical Coverage**
  - ✓ **Ownership**

- Local Area Networks

(LANs)

- Wide Area Networks (WANs)

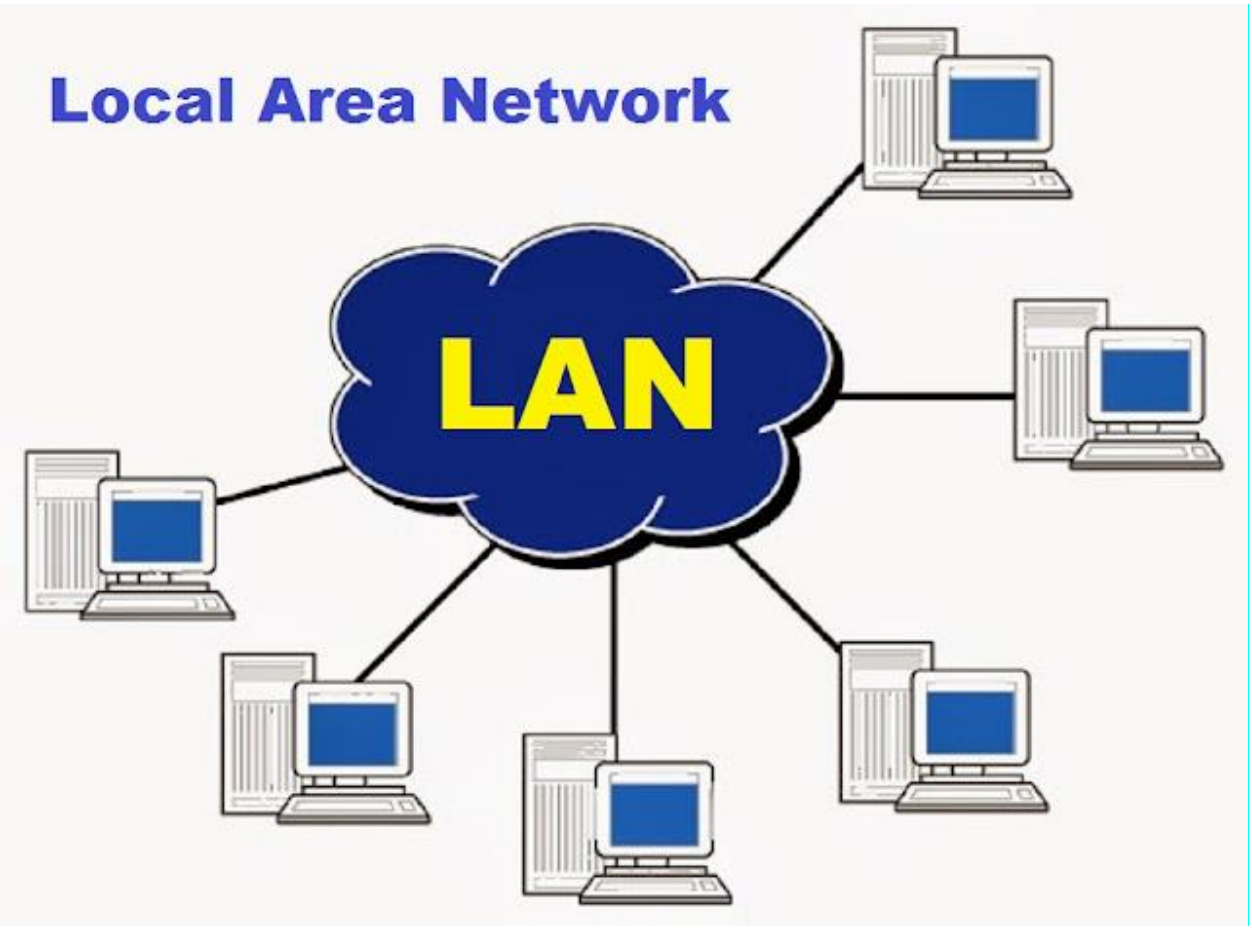
Local Area Networks

- **Usually Privately owned**
- **Connects some hosts in a single office, building, or campus**
- **Can be as simple as two PCs and a printer in someone's home office**
- **Can extend throughout a company**
- **Host Address**

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Wide Area Network

- **Wider geographical span than a LAN**
- **Spans a town, a state, a country, or even the world**
- **Interconnects connecting devices such as switches, routers, or modems**
- **Normally created and run by communication companies**

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- **Point-to-Point WAN**
- **Switched WAN**
- **Internetwork**

Point-to-Point WANs

Point-to-point connections are **typically used to connect two systems together over a wide area network (WAN)**. You can use a point-to-point connection to get data from your local system to a remote system or to get data from a local network to a remote network.



Switched WANs

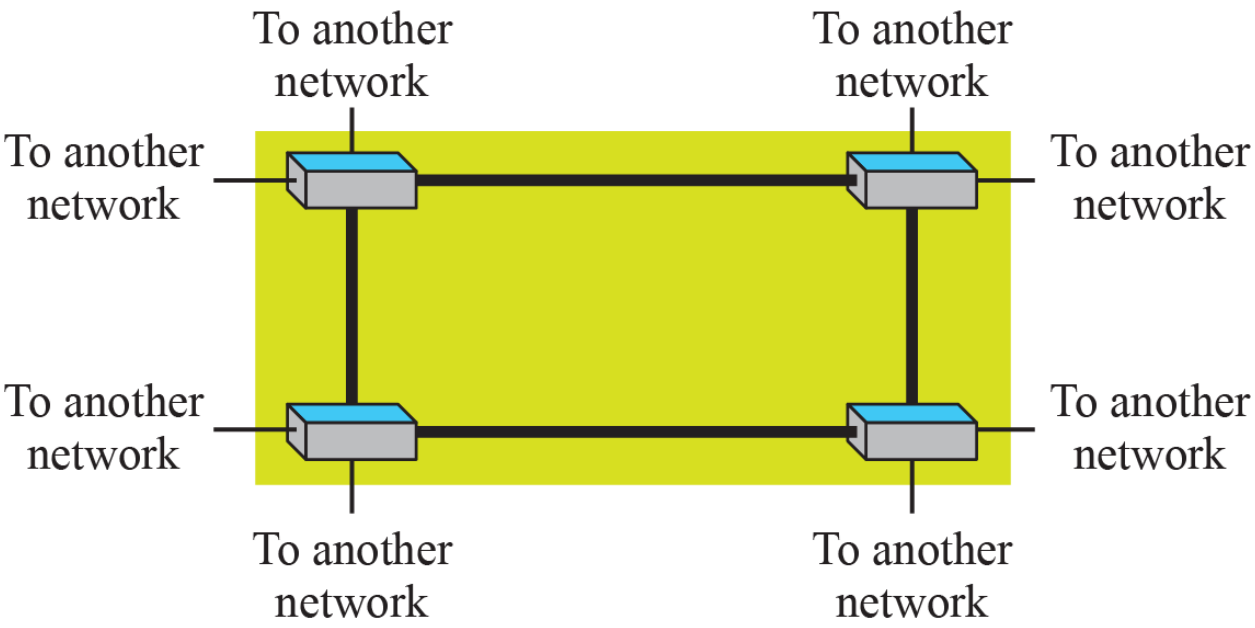
A switched WAN network is **used to connect multiple end nodes through a common WAN network**, example is Asynchronous Transfer Mode (ATM) network while Point-to-point WAN is one which consists of two end nodes connected by a leased line, example is a dial-up line that connects a home computer to the Internet.

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Internetwork

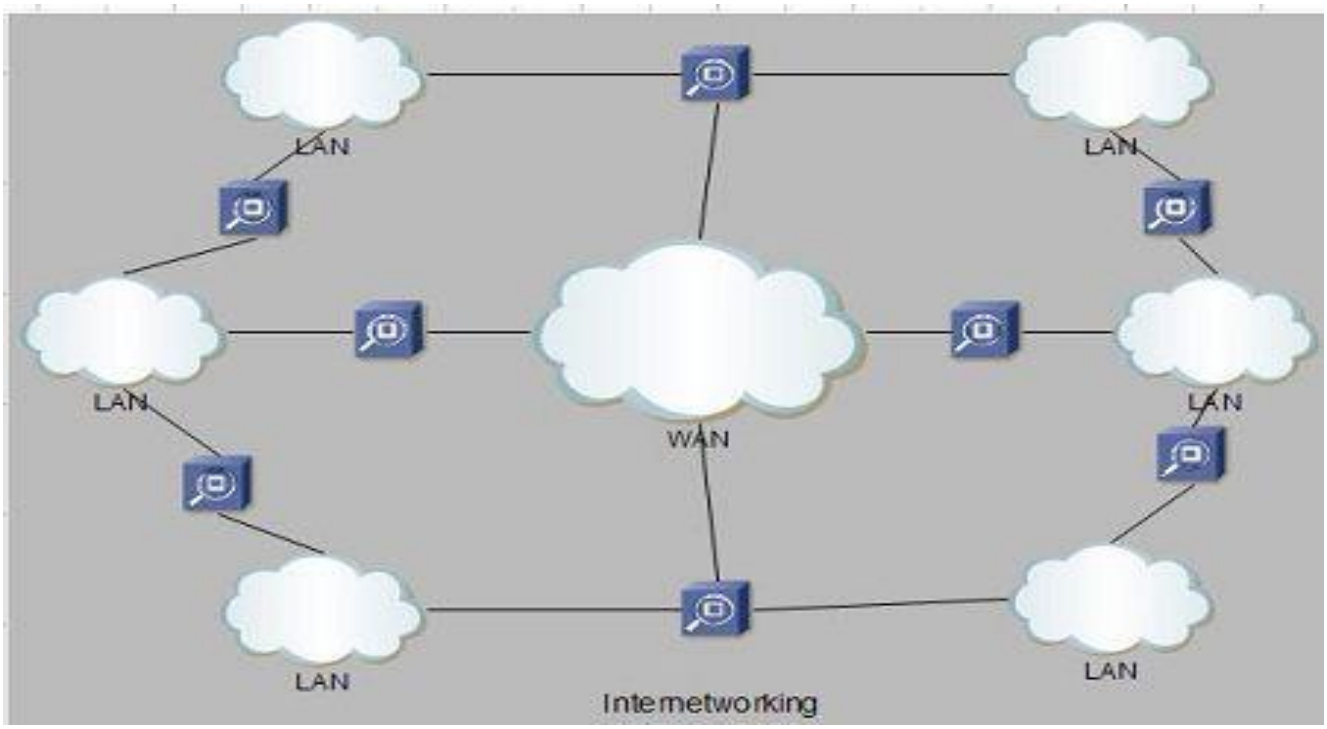
Internetworking is **the process or technique of connecting different networks by using intermediary devices such as routers or gateway devices**. Internetworking ensures data communication among networks owned and operated by different entities using a common data communication and the Internet Routing Protocol.

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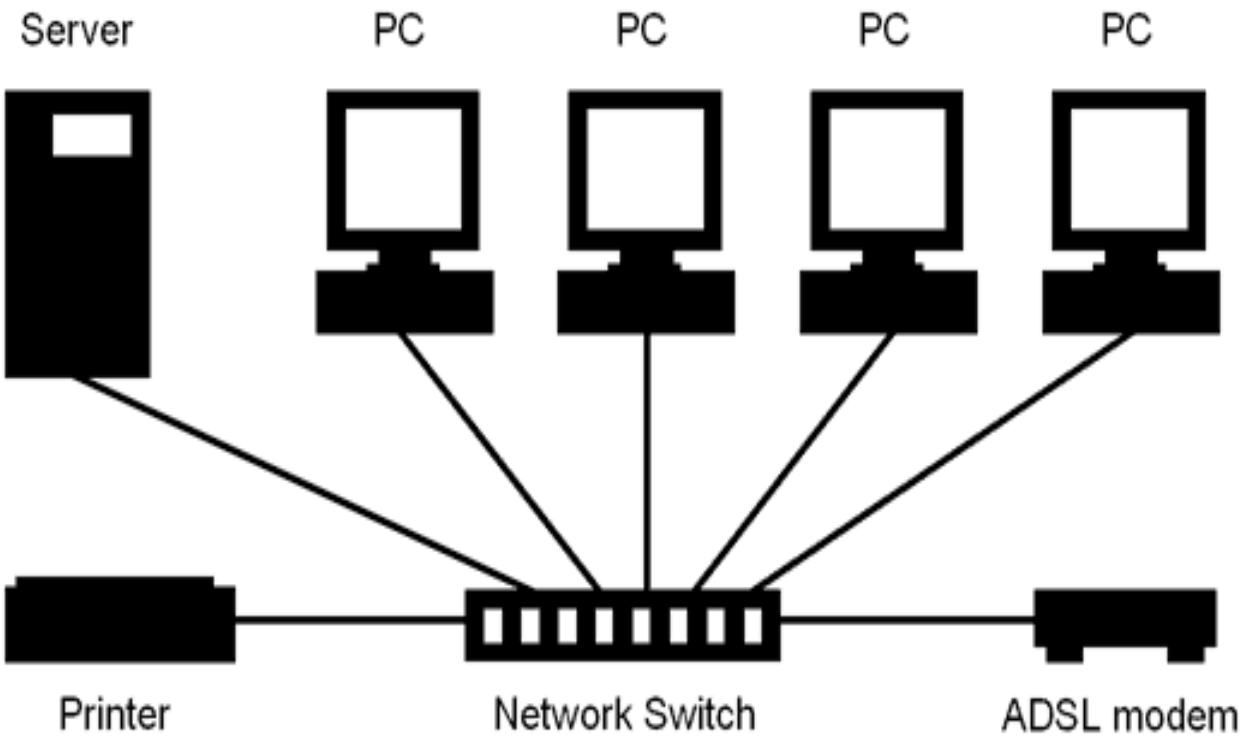
Switching

Switching in a computer network is **achieved by using switches**. A switch is a small hardware device which is used to join multiple computers together with one local area network (LAN). Network switches operate at layer 2 (Data link layer) in the OSI model.

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- **Switching**
  - ✓ **Circuit-Switched Network**
  - ✓ **Packet- Switched Network**

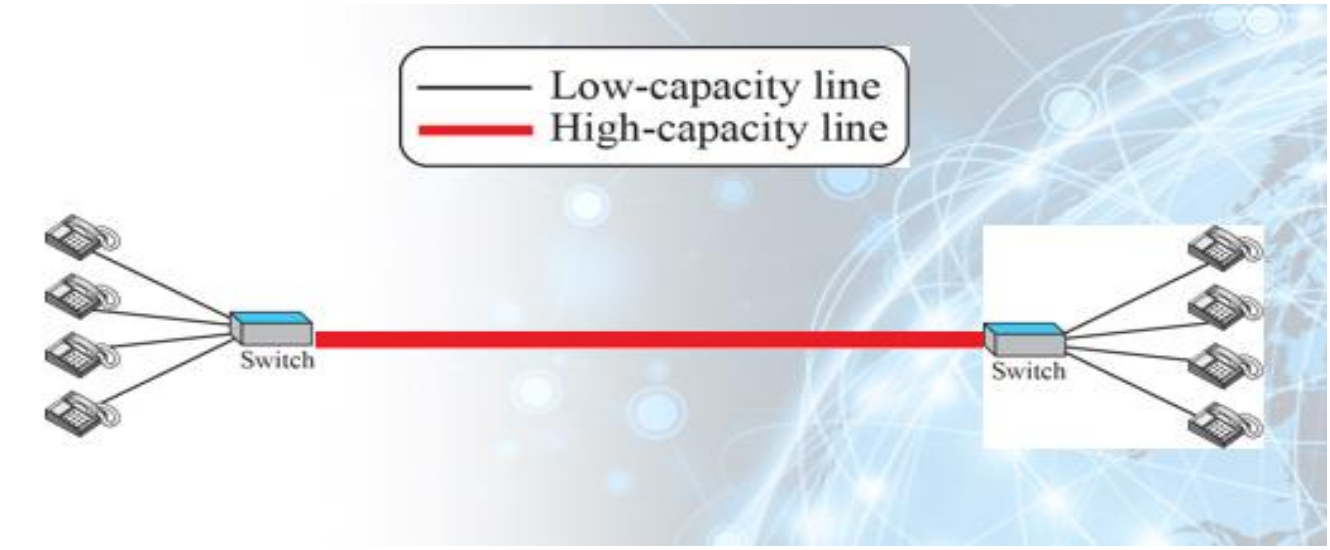
Circuit Switched Network

Circuit switching is **a type of network configuration in which a physical path is obtained and dedicated to a single connection between two endpoints in the network for the duration of a dedicated connection**.

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Packet Switched Network

A packet switched network (PSN) is **a type of computer communications network that groups and sends data in the form of small packets**. It enables the sending of data or network packets between a source and destination node over a network channel that is shared between multiple users and/or applications.

