SAFALTA CLASS™

An Initiative by अमर उजाला

SAFALTA CLASS™
An Initiative by अमर उजाला

COMPUTER NETWORKING

COMPUTER SPECIAL CLASS

SSC CGL / CHSL / RAILWAY / DELHI POLICE / BANKING

1 November | 9:30 AM – 12:00 PM

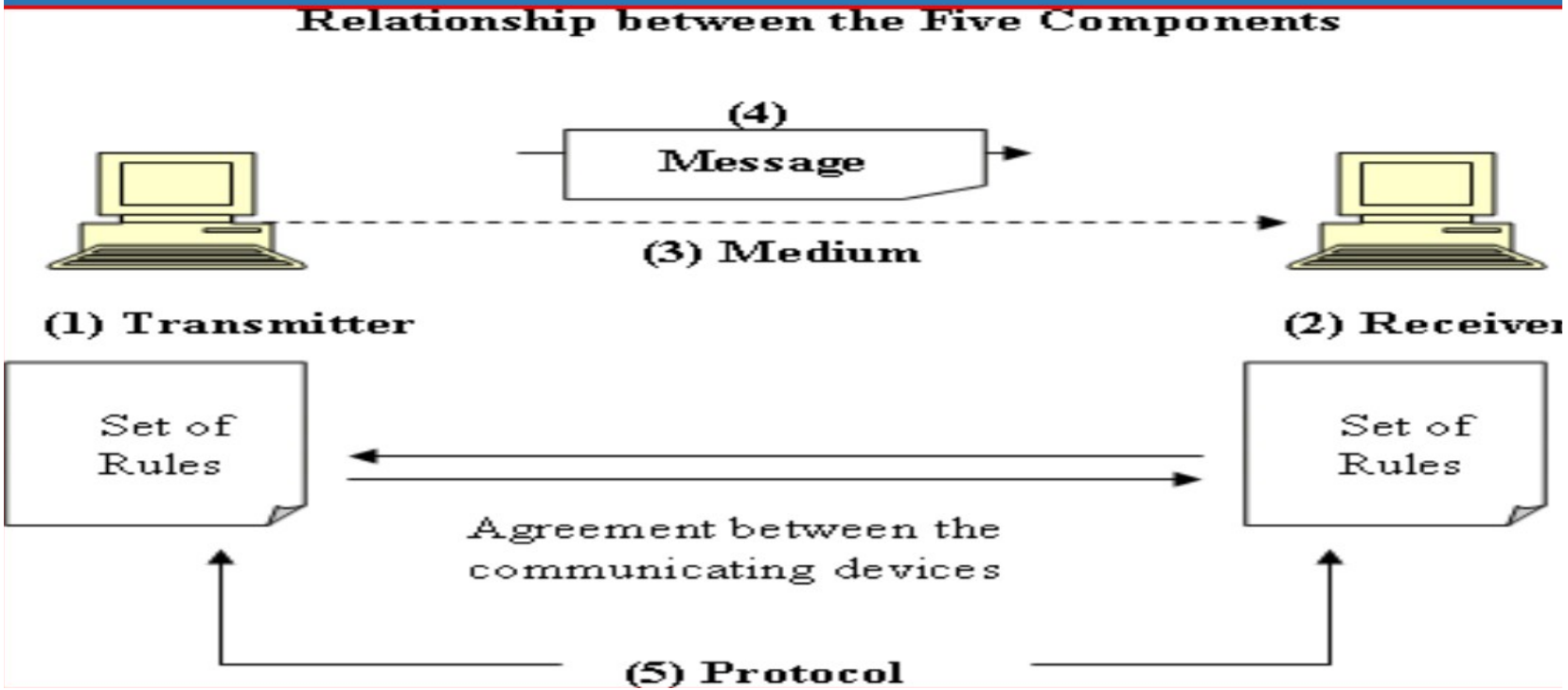
SAFALTA CLASS™
An Initiative by अमर उजाला

COMPUTER NETWORKING PART -1

By: Dheerendra Sir


NETWORKING
SLOW

COMPONENTS OF DATA COMMUNICATION



COMPONENTS OF DATA COMMUNICATION

- **Message-** The message is the information to be communicated. Information include text, numbers, pictures, audio and video.
- **Sender-** The sender is the device that sends the data message. It can be a computer, workstation, telephone, video camera etc.
- **Receiver-** The receiver is the device that receives the message. It can be a computer, workstation, telephone, video camera etc.
- **Transmission medium-** is the physical path by which a message travels from sender and to receiver. Example are twisted pair cable, fiber-optic etc.
- **Protocol-** A protocol is a set of rules (written in the form of program) to perform specific task or action eg. Http, ftp etc. that govern data communication.

MODES OF TRANSMISSION

Data can be transmitted by following three ways : -

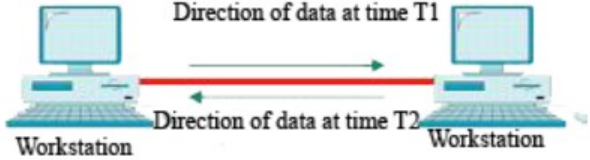
- **Simplex**
- **Half Duplex**
- **Full Duplex**

➢ **Simplex-** It is one way data transmission. e.g pager, radio, T.V.

SIMPLEX MODE

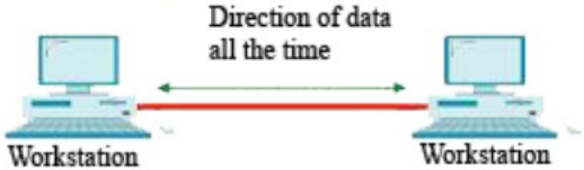
MODES OF TRANSMISSION

- **Half-Duplex-** In Half- Duplex, each station can both transmit and receive but not at the same time. e.g:- Wireless, Walky-talky



HALF DUPLEX

- **Full-Duplex-** In Full-Duplex mode, data can be transmit and receive at the same time. It is a two way data transmission simultaneously. e.g Telephone, video conferencing.



FULL DUPLEX

COMMUNICATION MEDIUM

- The most basic hardware is the media through which data is transferred.

- Types of Medium
  1. **Guided Medium**
  2. **Un-guided Medium**

GUIDED MEDIA

➢Coaxial cable:

A coaxial cable consist of a solid conductor running coaxial inside a solid or braided outer annular conductor. A coaxial cable can be used over a distance about 1 KM and can achieve a transfer rate of up to 100 mbps.

➢Types of coaxial cable :-

- ➢75ohm cable : used by cable TV operator
- ➢50 ohm cable : used in high speed broadband.

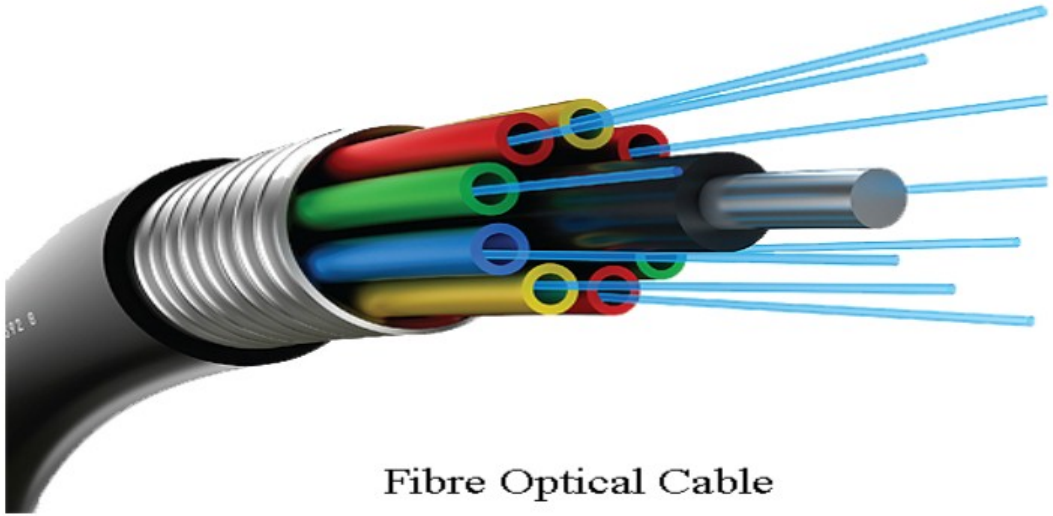
co-axial cable construction

➢**Twisted pair cable-** A twisted pair consists of insulated conductors that are twisted together. It is used for communication up to distance of 1 K.M and can achieve transfer rate of 1-2 mbps. Twisted pair cable widely used in telephone network.

Twisted Pair Cable

GUIDED MEDIA

- **Fiber optical cable-** A fiber optics cable carries signals in the form of fluctuating light in a glass or plastic fiber. It has very high data transfer rates of about 1000 mbps.



Fibre Optical Cable

UN-GUIDED MEDIA

- **Radio wave , microwave and satellite-** Radiowave, microwave, satellite channels use electromagnetic propagation in open space. It covers large geographical area. These are known as un-guided media.

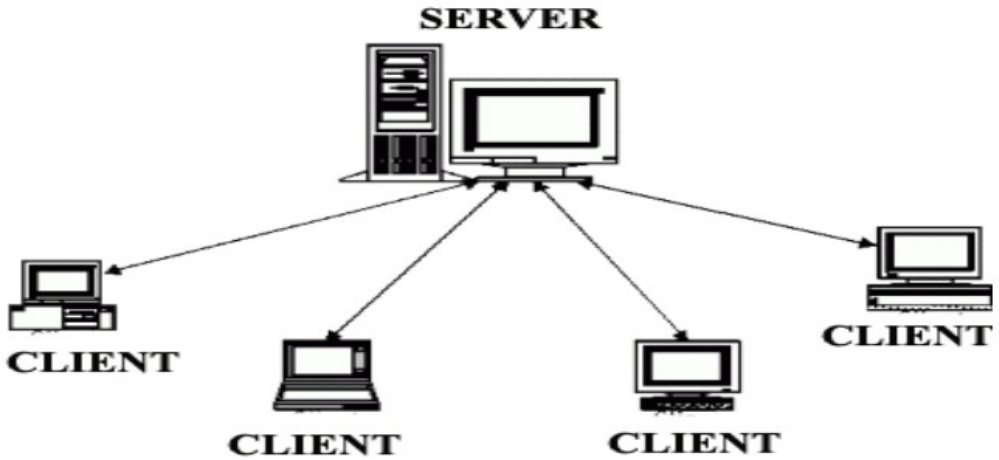
Radio wave, microwave and satellite

NETWORK ARCHITECTURE

- **Peer to Peer-** It is a type of decentralized and distributed network architecture in which individual nodes in the network (called *"peers"*) act as both suppliers and consumers of resources.
- In contrast to the centralized client–server model where client nodes request access to resources provided by central servers.

NETWORK ARCHITECTURE

- **Client Server Architecture-** In communication networks, a node is a connection point. The device used to communicate a data communication network is called workstations.
- These workstation may be terminal, printer ,telephone in other communication devices. A workstation known as terminal, client or slave.

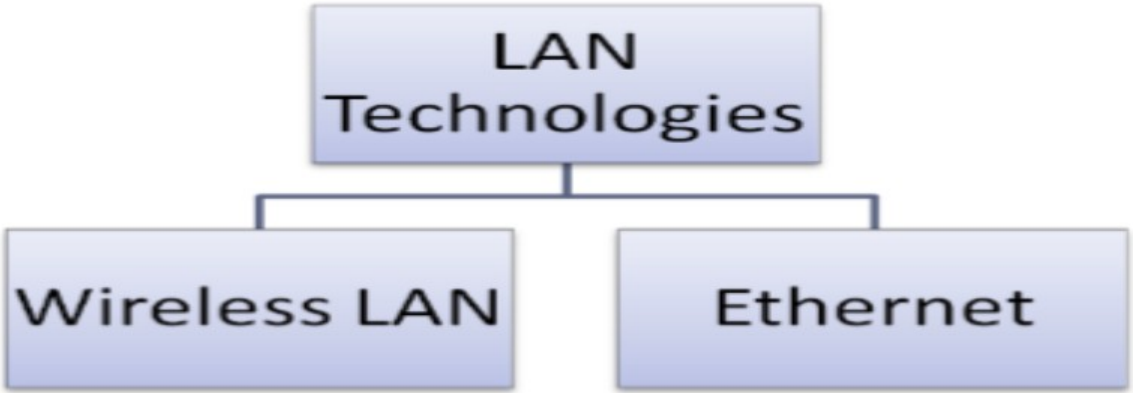


CLASSIFICATION OF NETWORKS

- **LAN**(Local Area Network)
- **MAN**(Metropolitan Area Network)
- **WAN**(Wide Area Network)
- **PAN** (Personal Area Network)
- **CAN** (Campus Area Network)

Local Area Network (LAN)

- small geographic area (e.g. room, office)
- controlled by one administrative authority
- usually high speed
- always shared



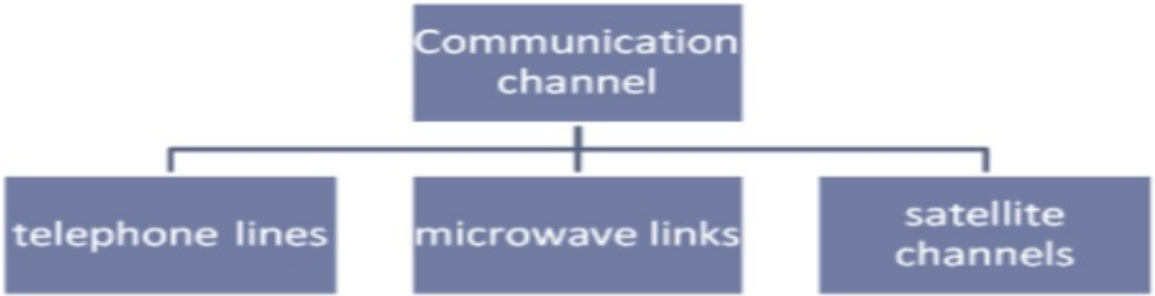
COMMUNICATION DEVICES : LAN

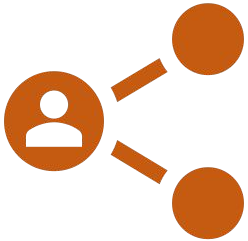
Wi-Fi : Wireless fidelity

- Radio waves instead of cables
- Three standards :
  802.11a, 802.11b and 802.11g

Wide Area Network (WAN)

- computer network that covers a broad area
- crosses metropolitan, regional, or national boundaries





Don’t Forget to Like / Comment & Share this video