Computer Networks Notes

B.Tech. CSE

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1 Computer Networks

1.1 Data Communication:

the exchange of information between two devices via some form of transmission medium, such as wired cable. The 4 fundamental characteristics of this are:

- Delivery
- Accuracy
- Time
- Jitter (variation in packet delivery time)

1.2 Components of data communication:

There are 5 components in data communication:

- Sender
- Reciever
- Message (the data to be transferred)
- Transmission medium
- Protocol(the rules and regulations to be send)

1.3 Data representation:

how we can represent data. It represents in the form of text, numbers, image, audio and video.

1.4 Data flow:

There are 3 types of data flow:

- Simplex One way: sender stays sender and reciever stays reciever. Unidirectional.
- Half-Duplex The direction can be changed but at a time there can only be one directional travel. Each station can both transmit and receive but not at the same time.
- Duplex Simultaneous Data transfer over both nodes. Both stations can transmit and receive simultaneously.

1.5 Networks:

Network is a set of devices connected by communication links. A network must be able to meet a certain number of criteria. These are:

- Performance (Throughput and latency)
- Reliability (low amount of downtime)
- Flexibility (Scalability)
- Security (There should be no data manip)

1.6 OSI model