Bangladesh Army University of Engineering & Technology

CSE-3215
Data Communication

Lecture-01

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What is Data Communications?

Exchange of data between two devices via some forms of transmission medium(such as wire cable) is Data Communications.

For data communications to occur, the communicating devices must be part of a communication system made of a combination of hardware and software.

The effectiveness of a data communication system depends on four fundamental characteristics:- delivery, accuracy, timeliness and jitter.

Fundamental Characteristics

The effectiveness of a data communication system depends on four fundamental characteristics

✓Delivery

- The system must deliver data to the correct destination.

✓Accuracy

- Accurately- without errors/ alteration/ duplication/ missing

✓Timeliness

- Data delivered late are useless.
  - *in the same order that they are produced,*
  - *without significant delay.*
  - *This kind of delivery is called Real-time transmission.*

✓Jitter

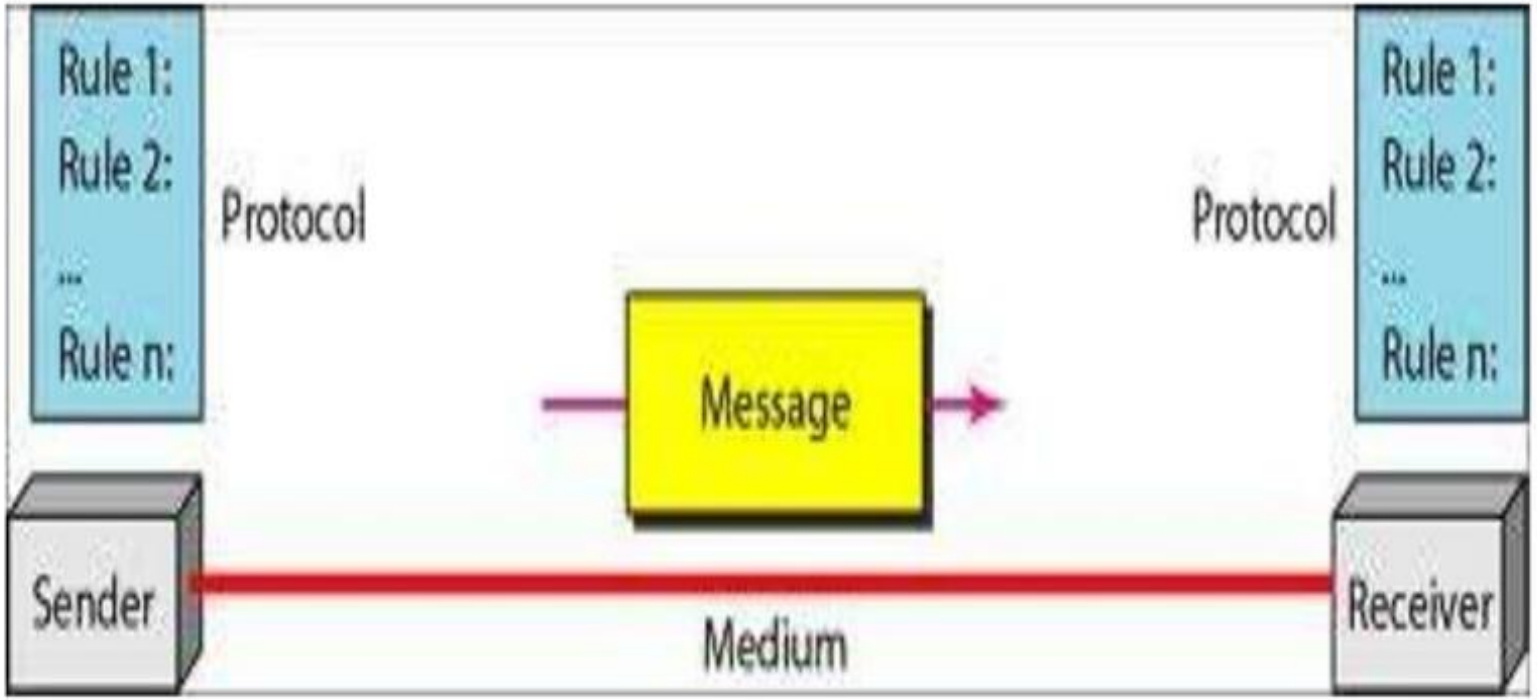
- Variation in the arrival time of packets. Uneven delay in delivery of packets may cause data disruption .

In short, we can say :-

- Delivery : The system must deliver data to the correct destination
- Accuracy : The system must deliver data accurately
- Timeliness : The system should transfer data within time .
- Jitter : It refers to the variation in the packets arrival time .

Components of Data Communication:

1.Sender 2.Receiver 3.Message 4.Tramsmission Medium
5. Protocol



The five components of data communication are:

1. **Message** - It is the information to be communicated. Popular forms of information include text, pictures, audio, video etc.
2. **Sender** - It is the device which sends the data messages. It can be a computer, workstation, telephone handset etc.
3. **Receiver** - It is the device which receives the data messages. It can be a computer, workstation, telephone handset etc.
4. **Transmission Medium** - It is the physical path by which a message travels from sender to receiver. Some examples include twisted-pair wire, coaxial cable, radio waves etc.
5. **Protocol** - It is a set of rules that governs the data communications. It represents an agreement between the communicating devices. Without a protocol, two devices may be connected but not communicating.

Thank You