SNS COLLEGE OF TECHNOLOGY

An Autonomous Institution
Coimbatore-35

Department of Artificial Intelligence and Data Science

23ITT204 – Computer Networks

II B.Tech – AI&DS / IV SEMESTER

UNIT I :INTRODUCTION AND APPLICATION LAYER

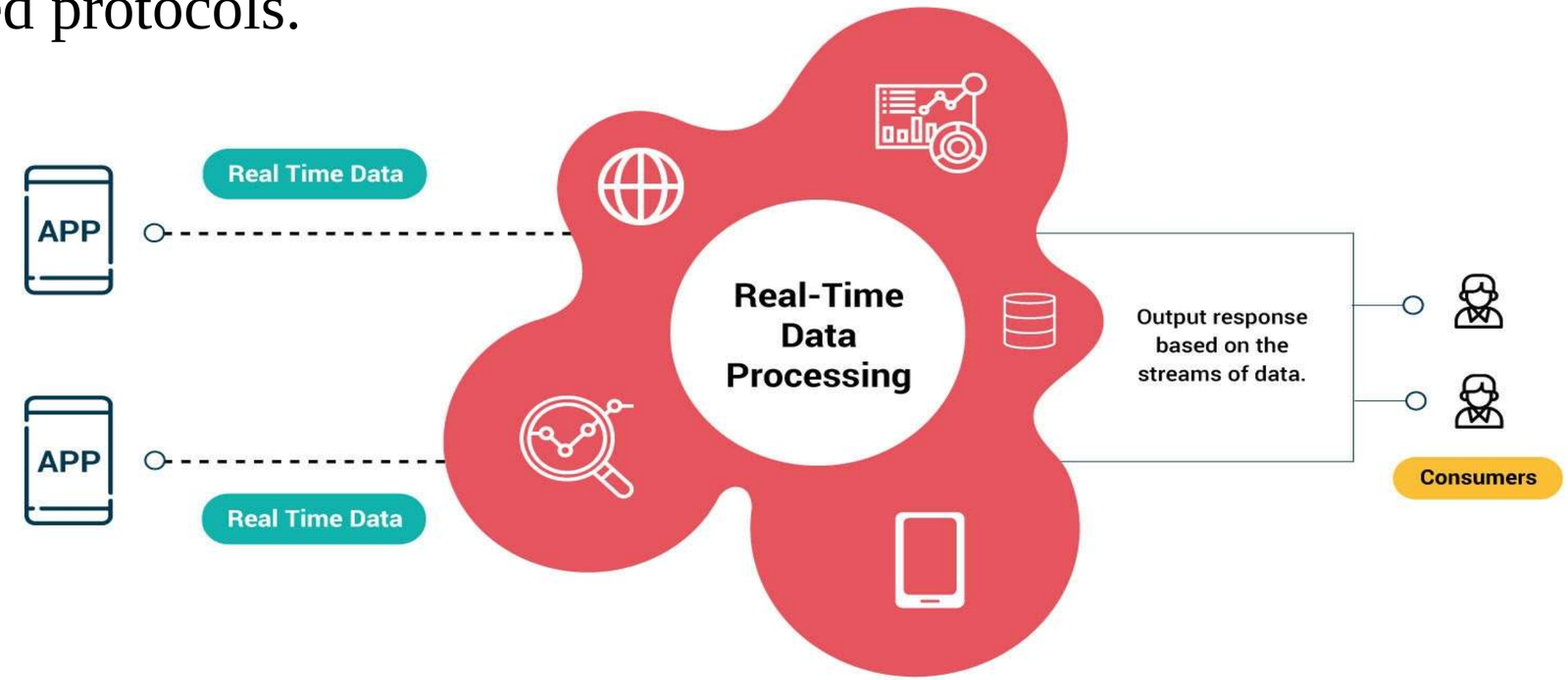
Topic 1: Data Communication & Networks

Session’s Agenda:

- Data Communication
- Communication Need
- Real Examples
- Network Meaning
- Network Importance
- Network Basics

Data Communication

Data Communication is the process of transferring data between two or more devices through a communication medium such as cables, optical fiber, or wireless signals. It enables accurate and timely exchange of information using agreed-upon rules called protocols.



Think !!!

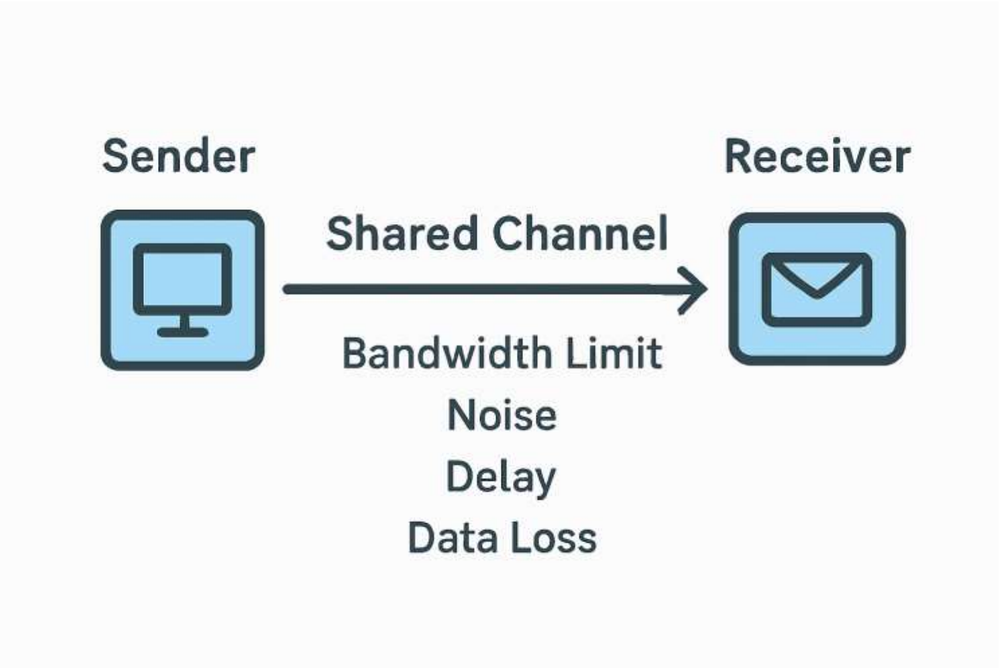
“Imagine you want to send a message to your friend who lives far away. You can choose to speak, write a letter, make a phone call, or send a text. How do you decide which method to use so that the message reaches fast, clearly, and without errors?”

Define

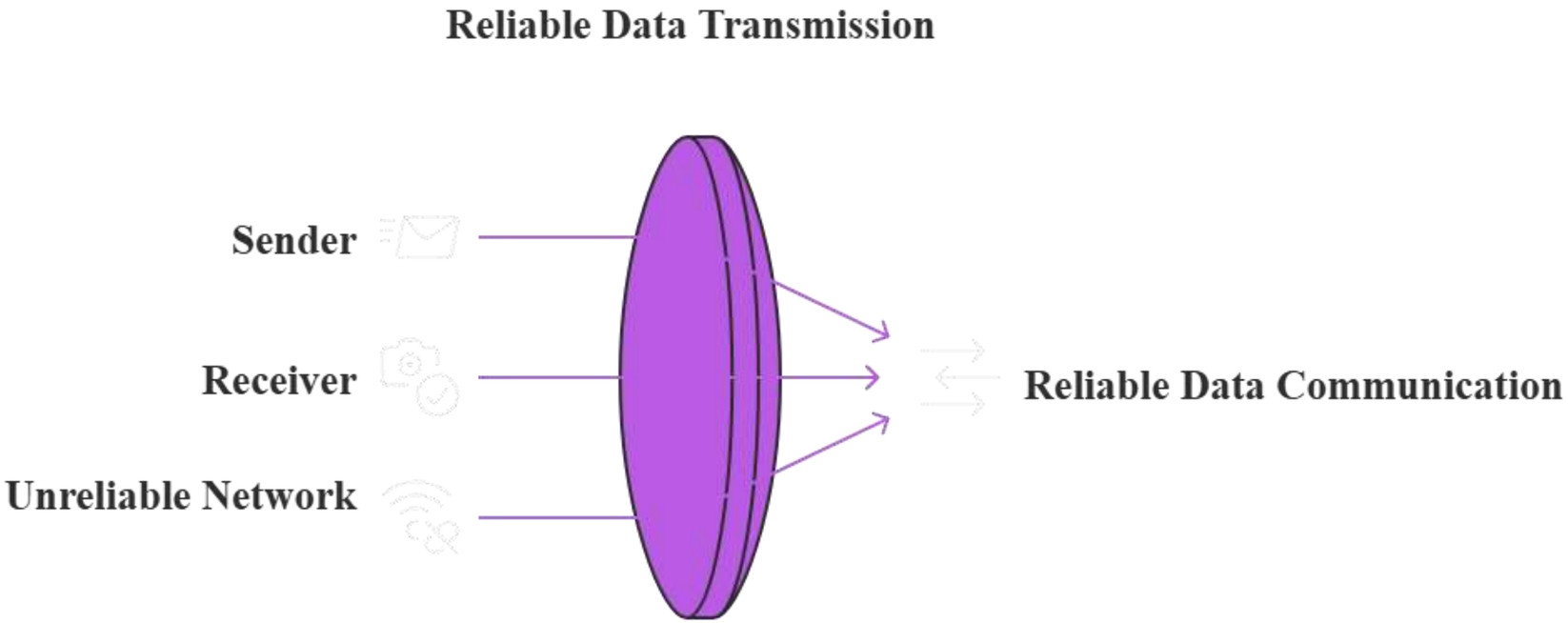
The challenge is to transmit data accurately and efficiently over limited and shared communication channels without loss or delay.

Ideate

Design reliable communication systems using protocols, transmission media, encoding techniques, and network models to ensure smooth data transfer.



Reliable Data Communication



Real time Applications Data Communication

1- Emails

3- File Transfer Protocol

5- Social Media Platforms

2- Video Conferencing

4- Voice over IP

6- Internet of Things (IoT)

Network

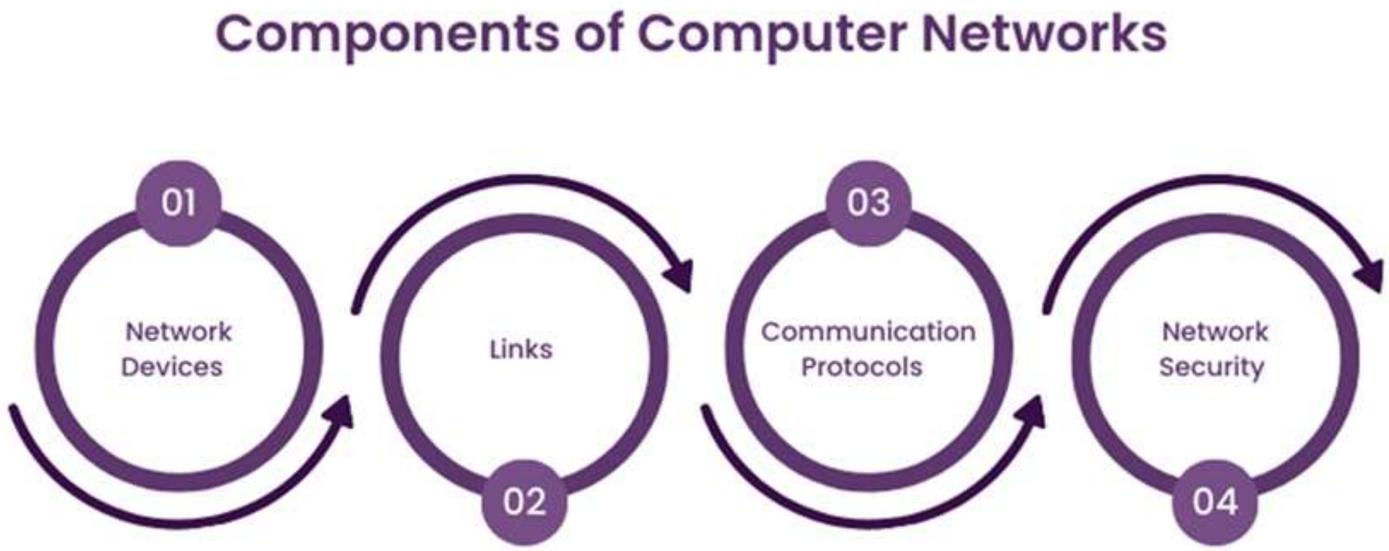
A network is a group of interconnected devices that communicate and share data. It enables fast, reliable, and resource-efficient information exchange.

Network Importance

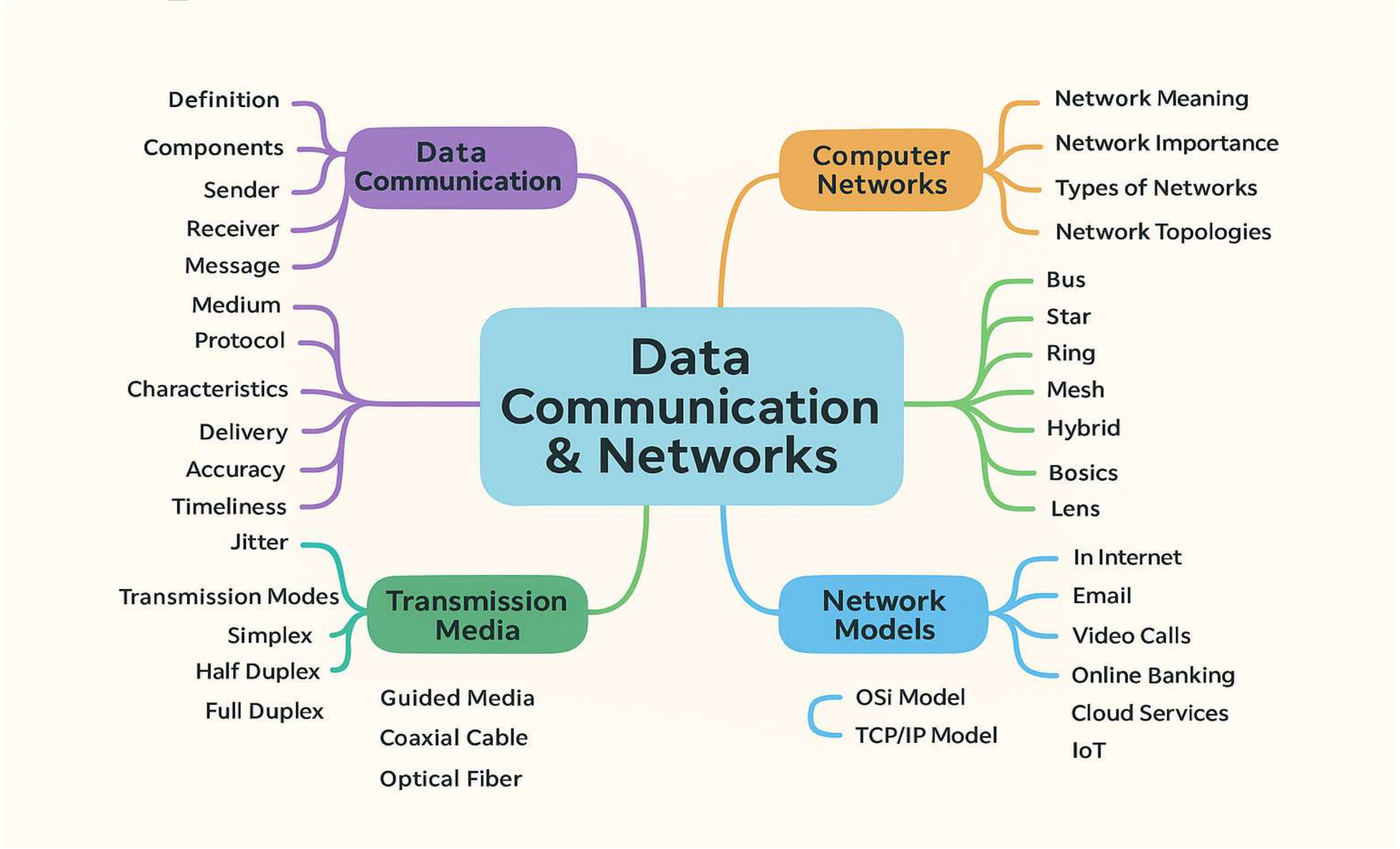
Networks enable devices to share data and resources efficiently. They support fast communication, collaboration, and access to services anytime, anywhere.

Network Basics

Network basics explain how devices connect and communicate with each other. They include understanding nodes, links, data sharing, and communication rules (protocols).



Mindmap


Data Communication & Networks
Data Communication
Definition
Components
Sender
Receiver
Message
Computer Networks
Network Meaning
Network Importance
Types of Networks
Network Topologies
Transmission Media
Medium
Protocol
Characteristics
Delivery
Accuracy
Timeliness
Jitter
Transmission Modes
Simplex
Half Duplex
Full Duplex
Guided Media
Coaxial Cable
Optical Fiber
Network Models
OSi Model
TCP/IP Model
Bus
Star
Ring
Mesh
Hybrid
Bosics
Lens
In Internet
Email
Video Calls
Online Banking
Cloud Services
IoT

Thank You