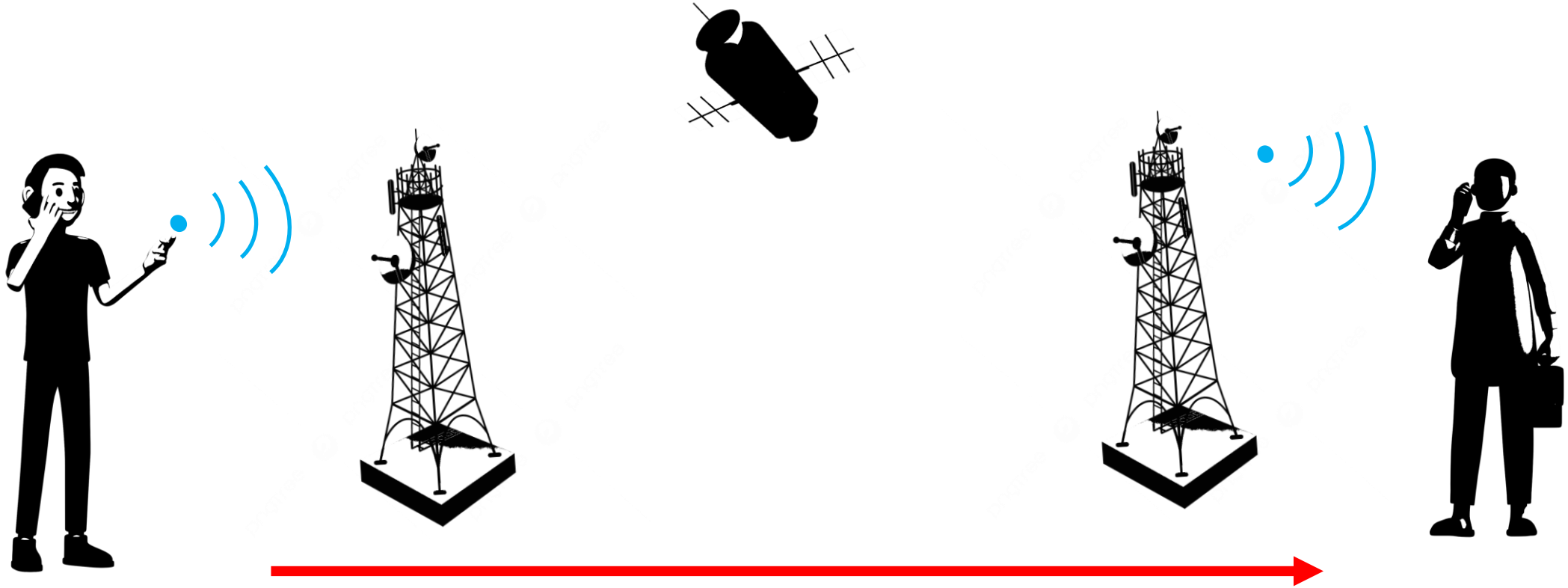
DATA COMMUNICATION

-2024 GIT SEMINAR DAY 01-

- **Basic Components in Data Communication**



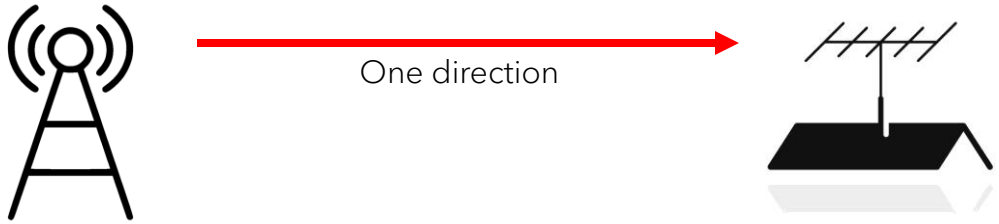
1.Sender/Source

2.Medium

3.Receiver/Destination

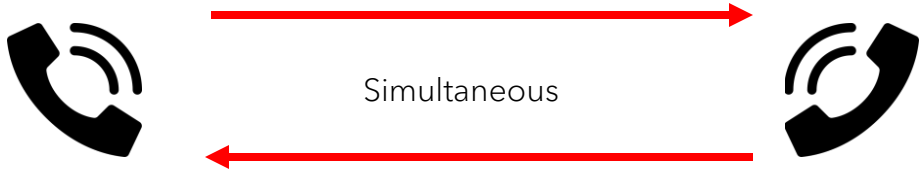
• Data Transmission Modes

1. **Simplex Mode**

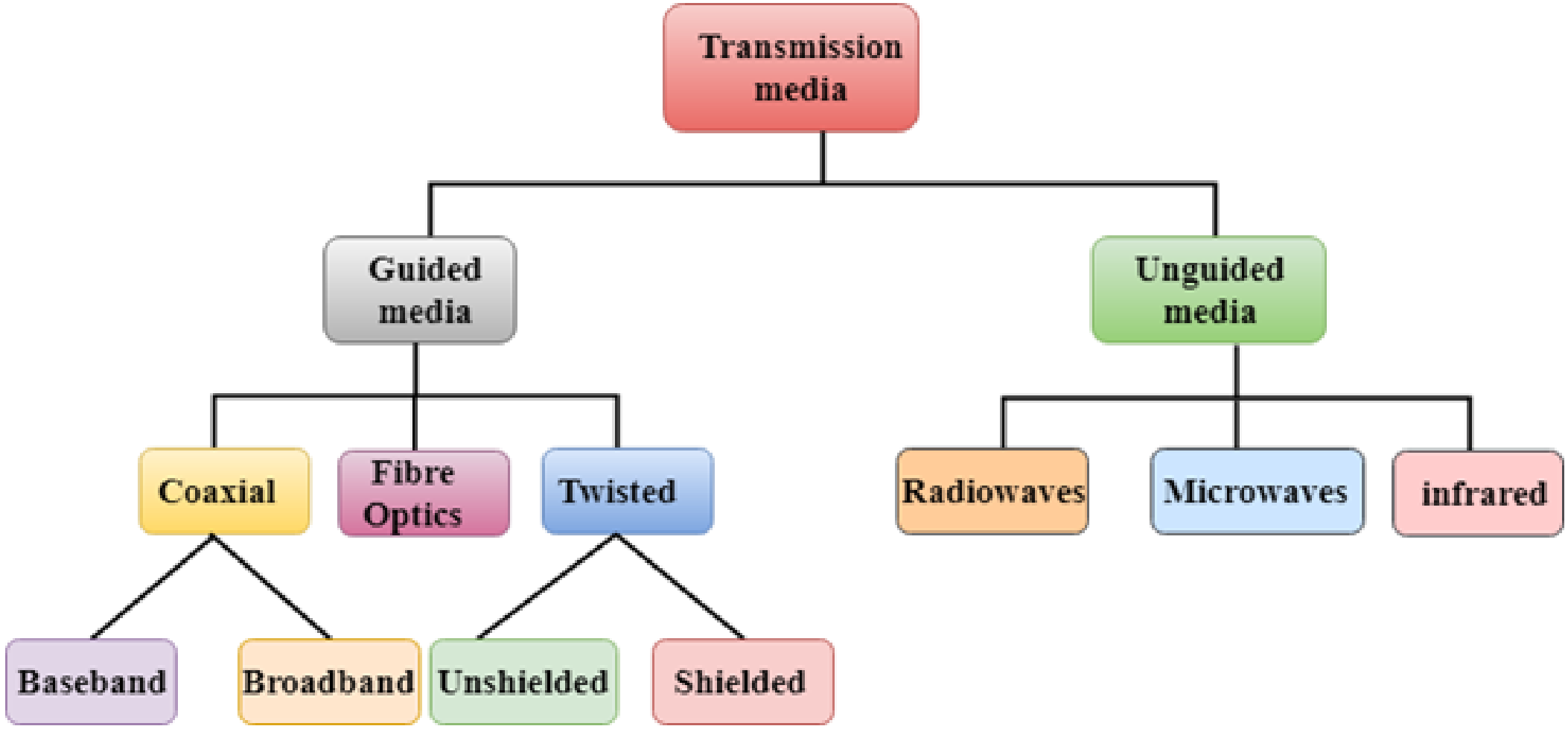


2. **Half-Duplex Mode**

3. **Full-Duplex Mode**



- **Data Transmission Media**

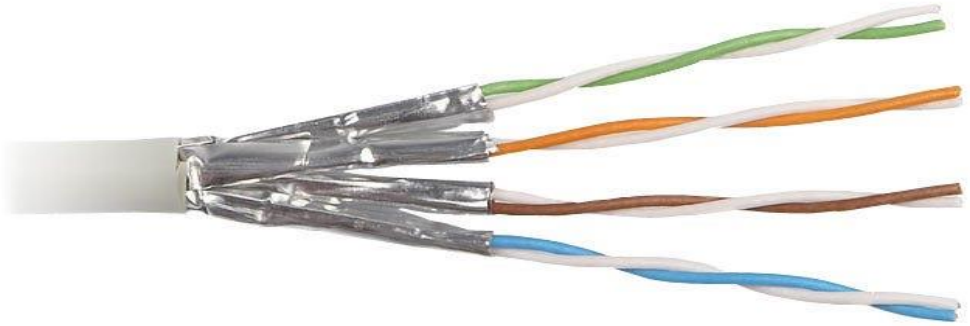


Picture 2.1

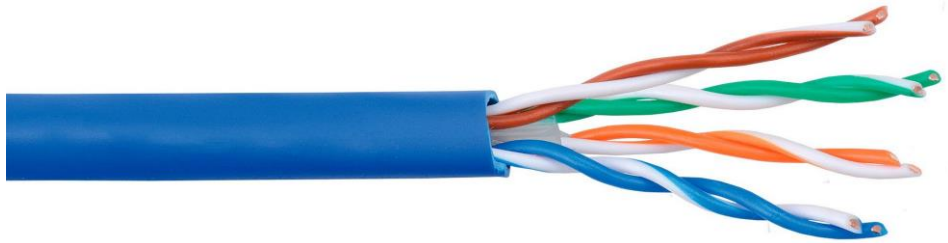
Guided Media

1. **Twisted Pair**

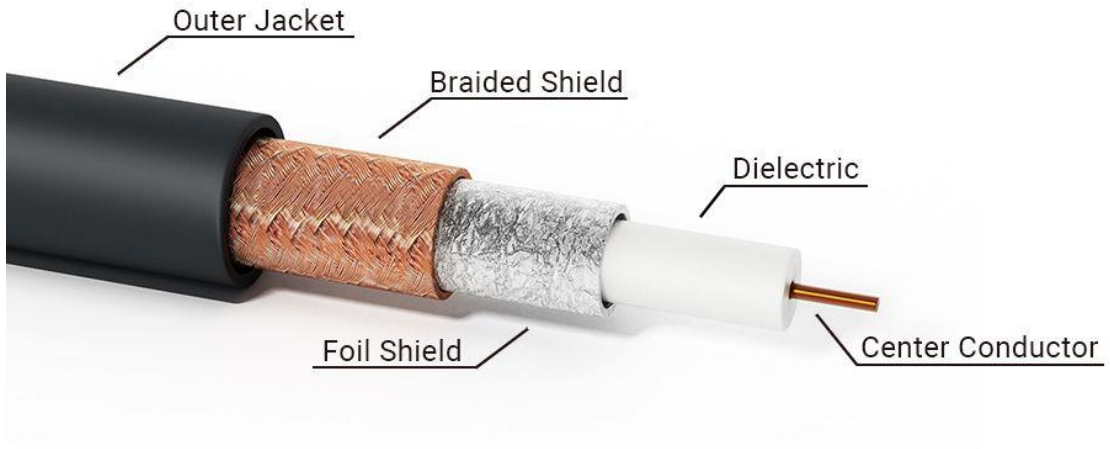
   - **Shielded twisted pair (STP)**



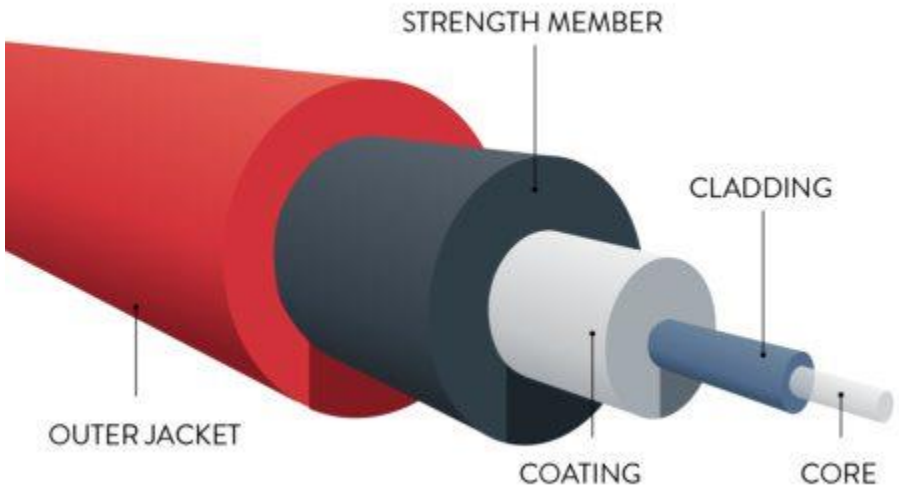
   - **Unshielded twisted pair (UTP)**

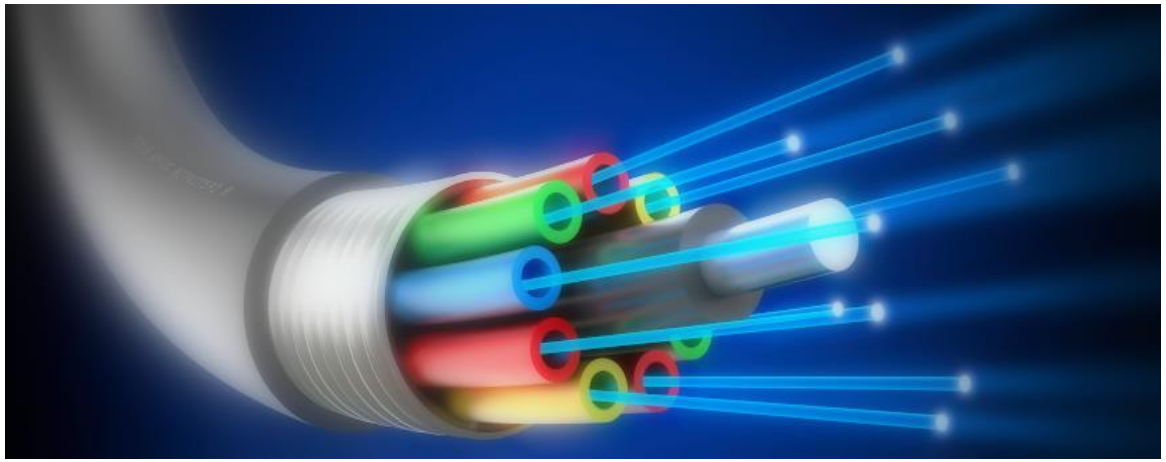


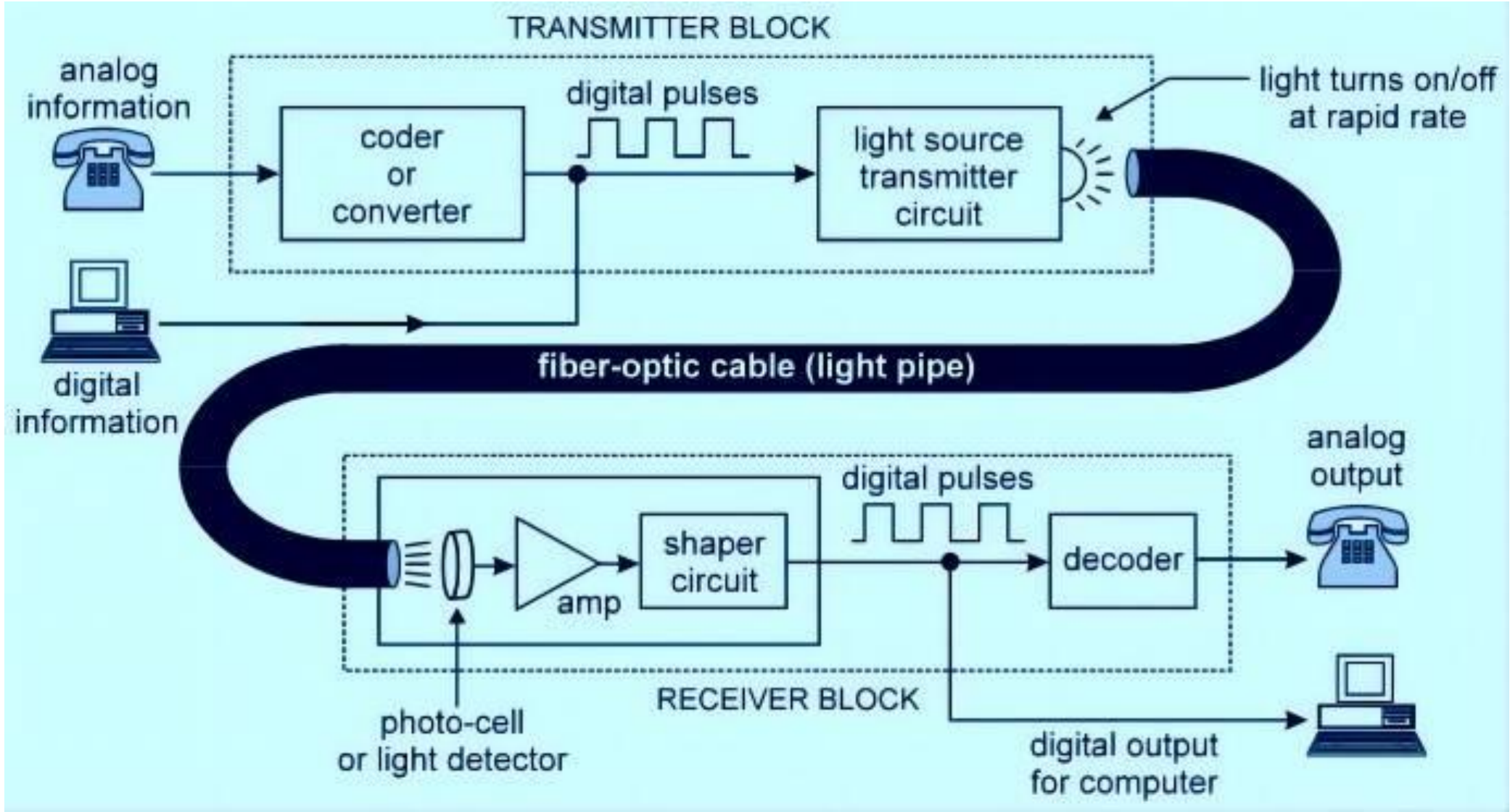
2. Coaxial Cable



3. Fiber Optic Cable



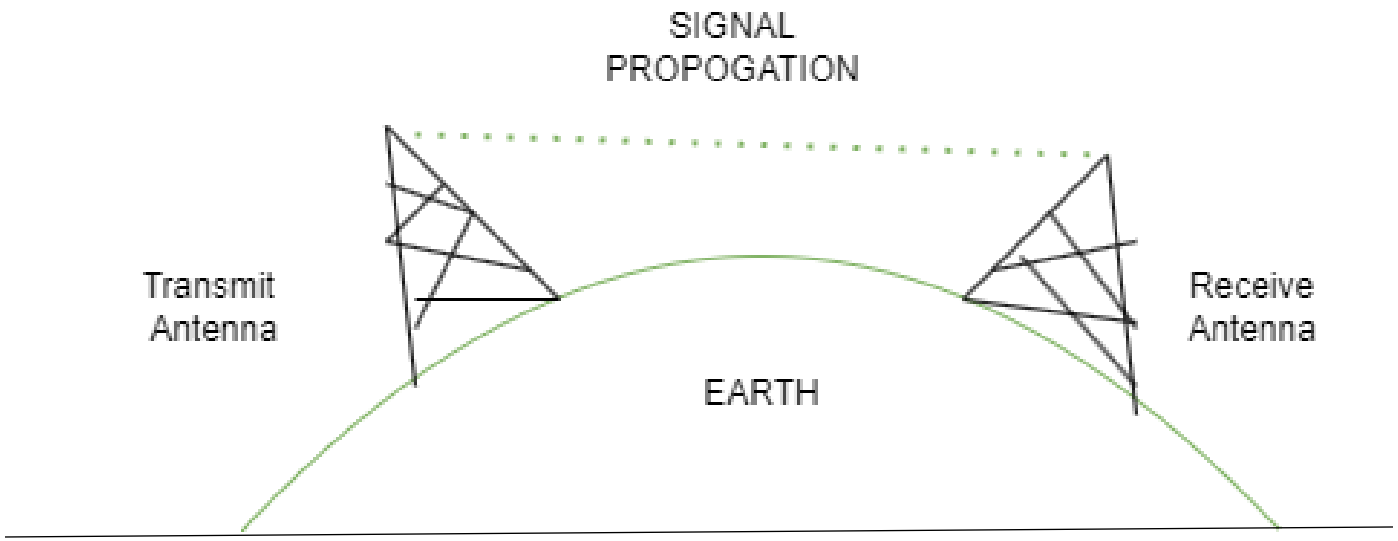


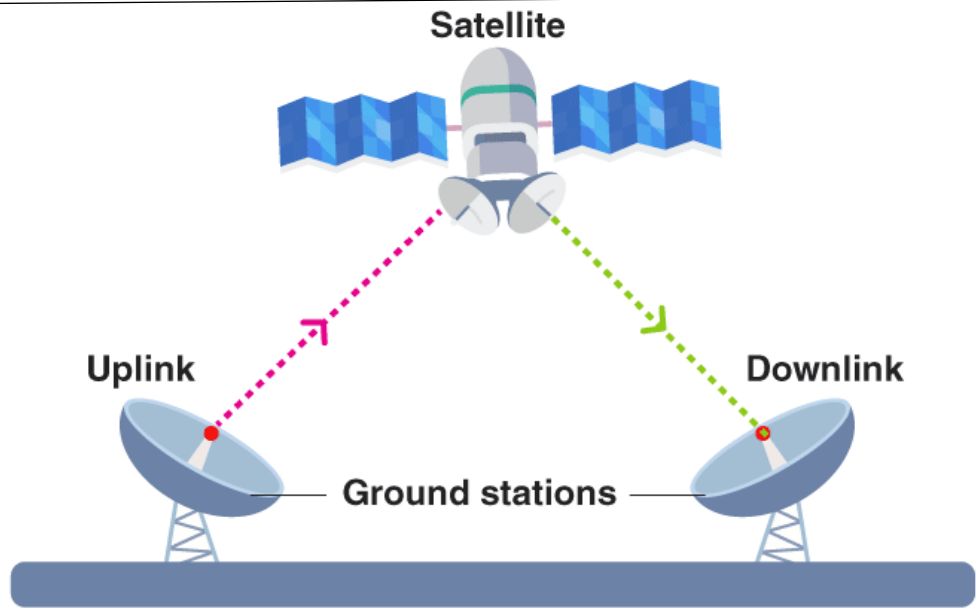

TRANSMITTER BLOCK
analog information
digital pulses
coder or converter
light source transmitter circuit
light turns on/off at rapid rate
digital information
fiber-optic cable (light pipe)
analog output
digital pulses
shaper circuit
amp
decoder
RECEIVER BLOCK
photo-cell or light detector
digital output for computer

Unguided Media

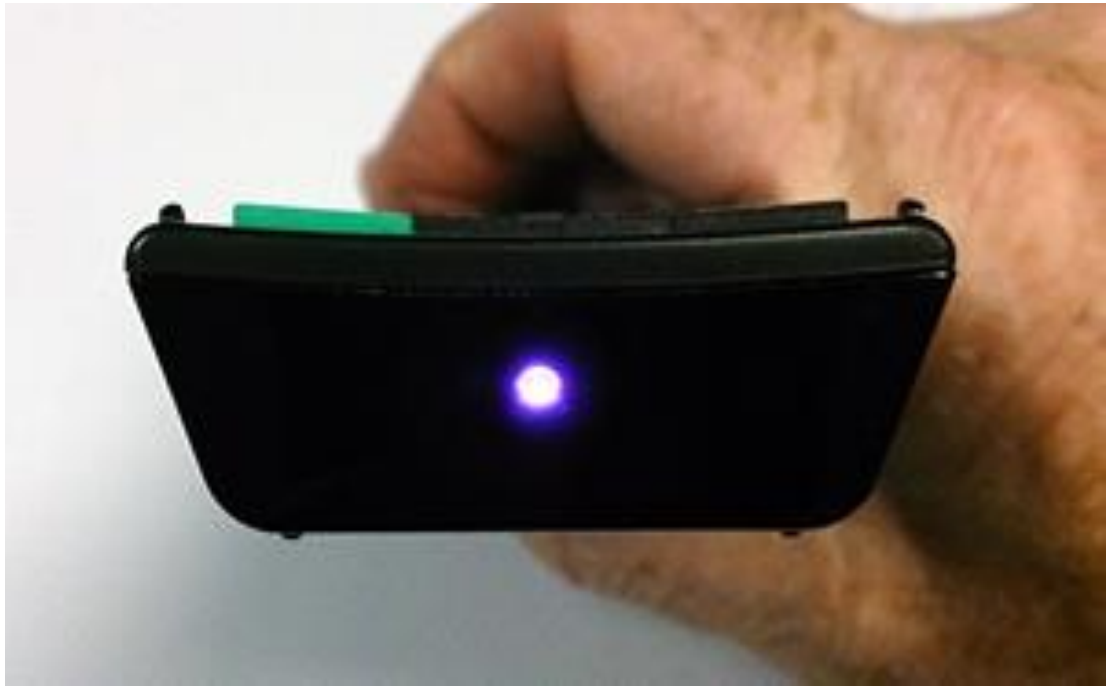
1. **Radio Waves**

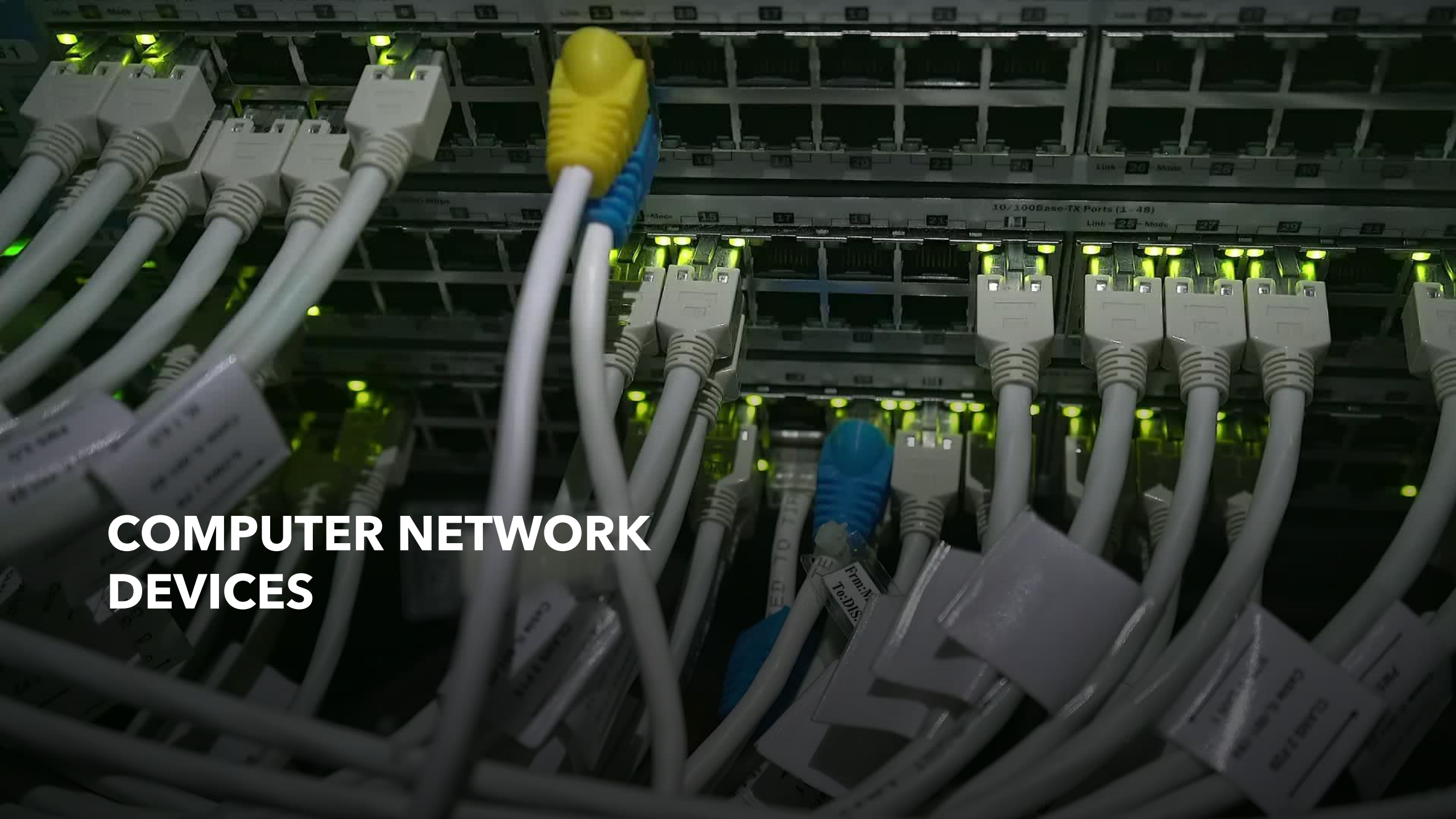
2. Microwaves





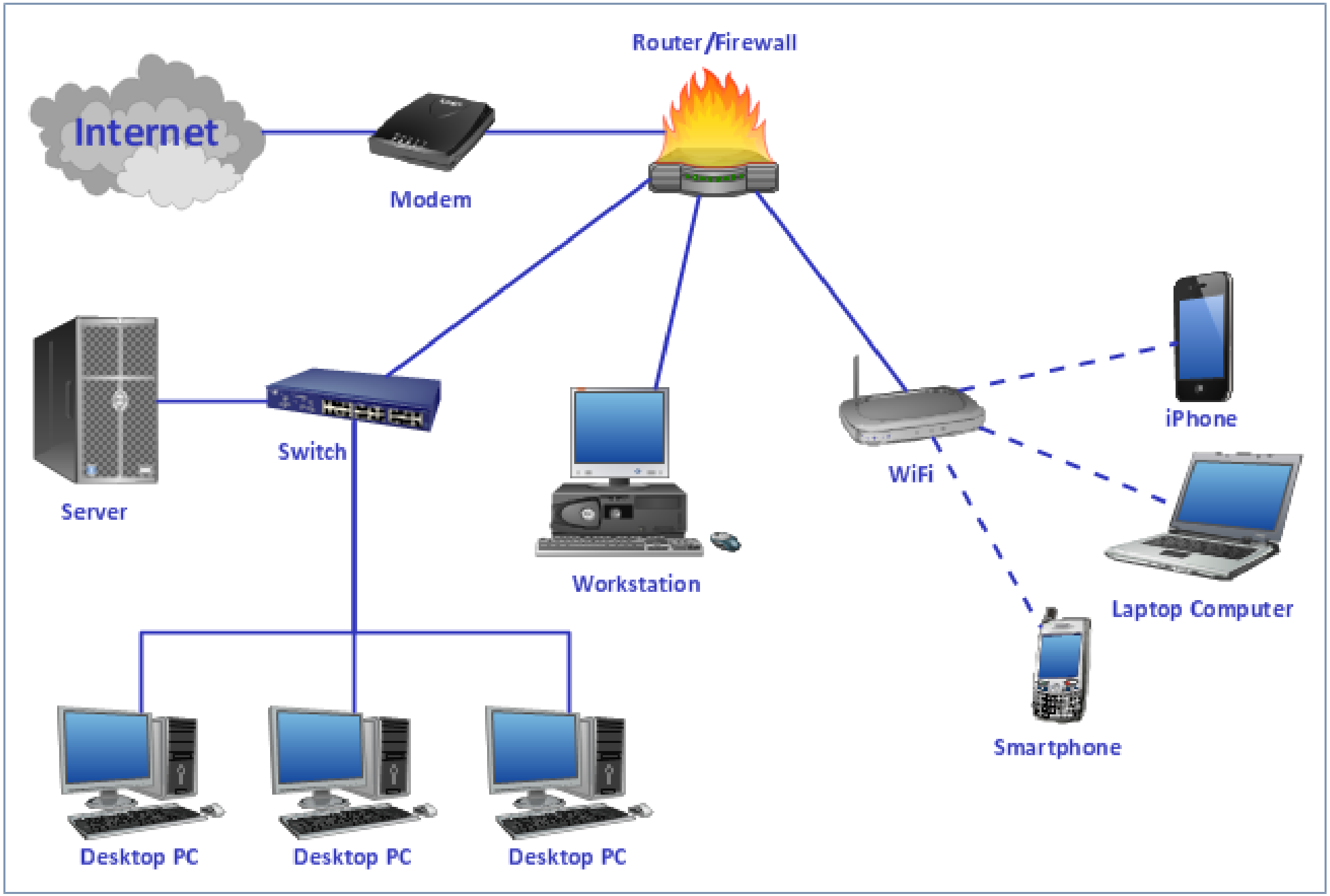
3. Infrared (IR)





COMPUTER NETWORK DEVICES

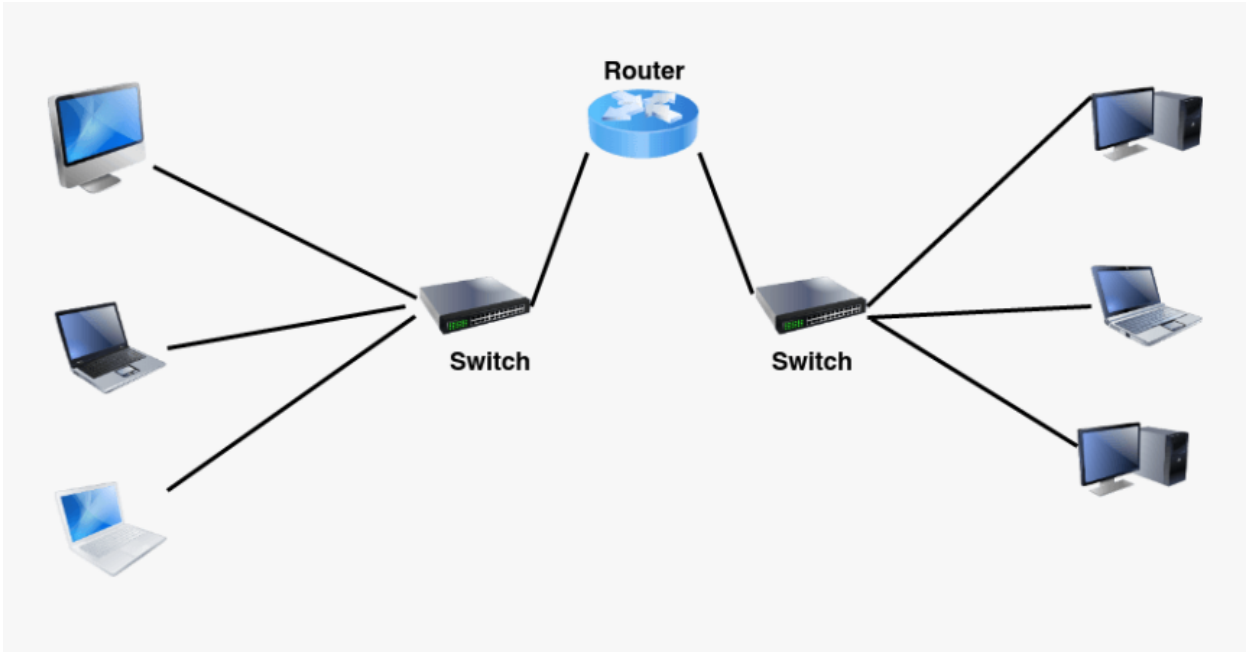
COMPUTER NETWORK



- **Network HUB**

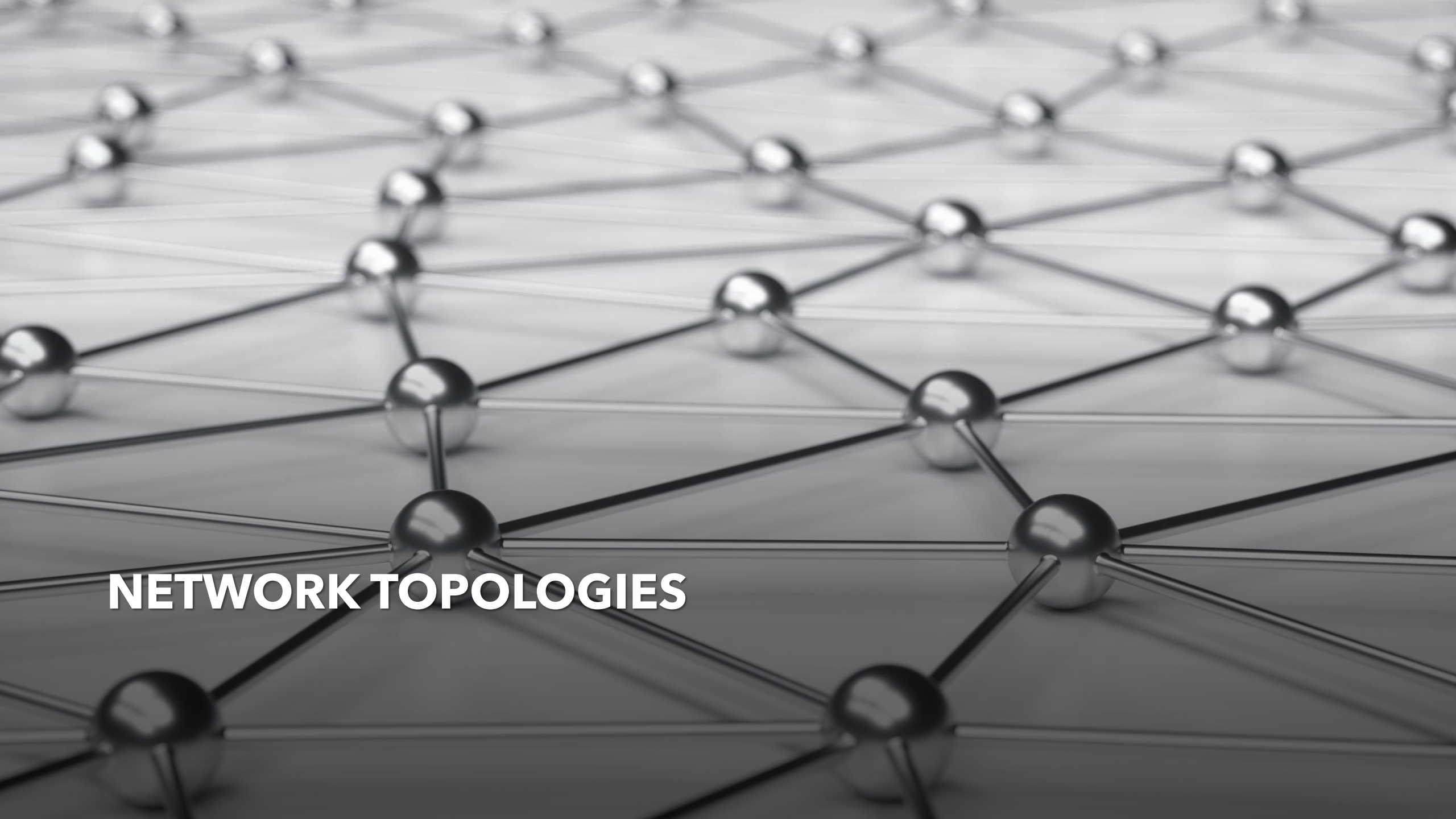
- **Network Switch**

- **Router**

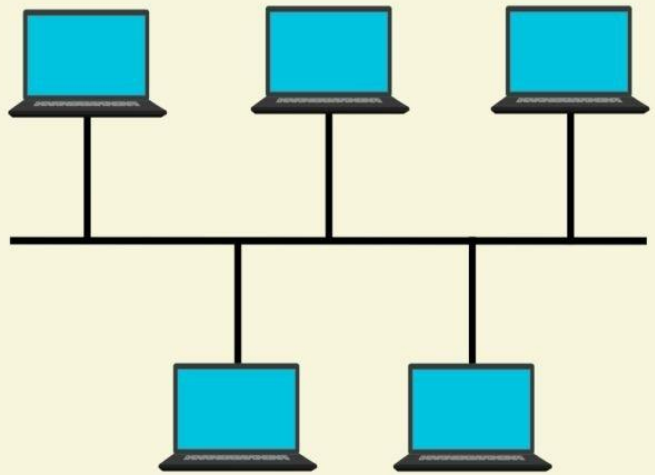


- **Modem**

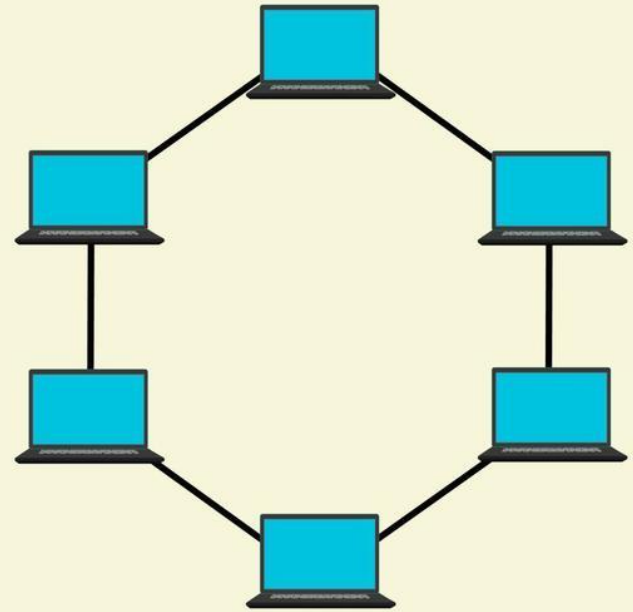
- **Network Interface Card (NIC)**



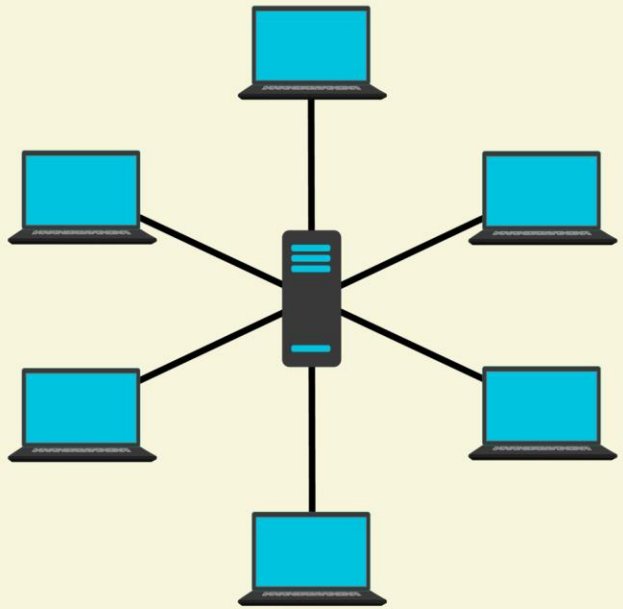
NETWORK TOPOLOGIES



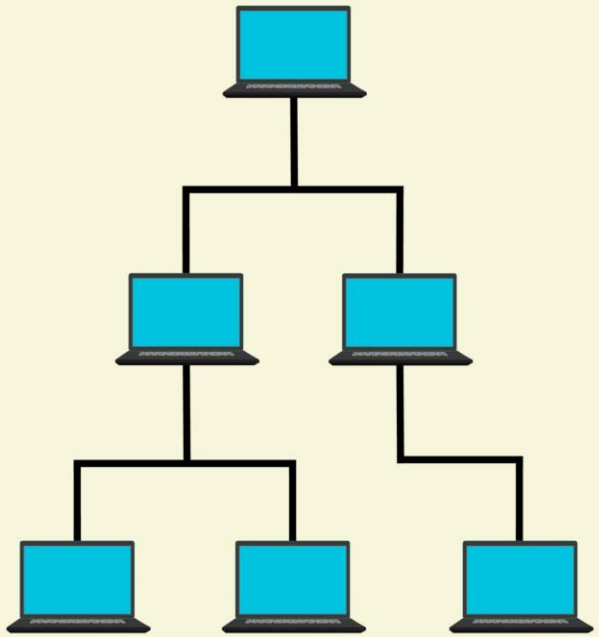
BUS TOPOLOGY



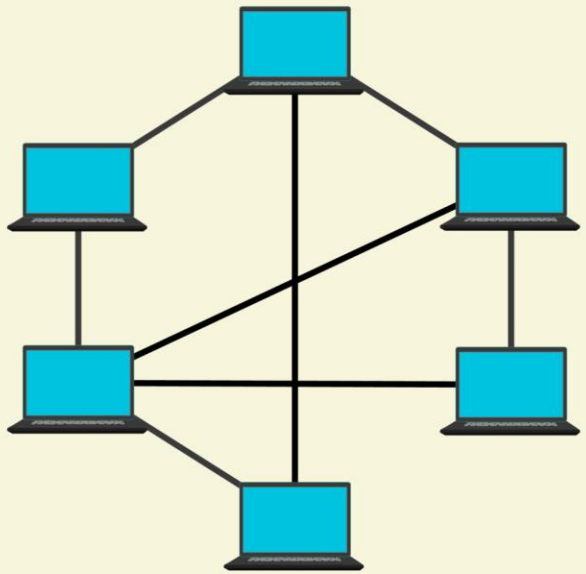
RING TOPOLOGY



STAR TOPOLOGY



TREE TOPOLOGY



MESH TOPOLOGY

Internet services

- **World Wide Web (WWW)**

- **Email**

- **Social Media**

- **Cloud Computing**

- **Cloud based services**