



# SNS COLLEGE OF TECHNOLOGY

Coimbatore-35  
An Autonomous Institution



Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade  
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

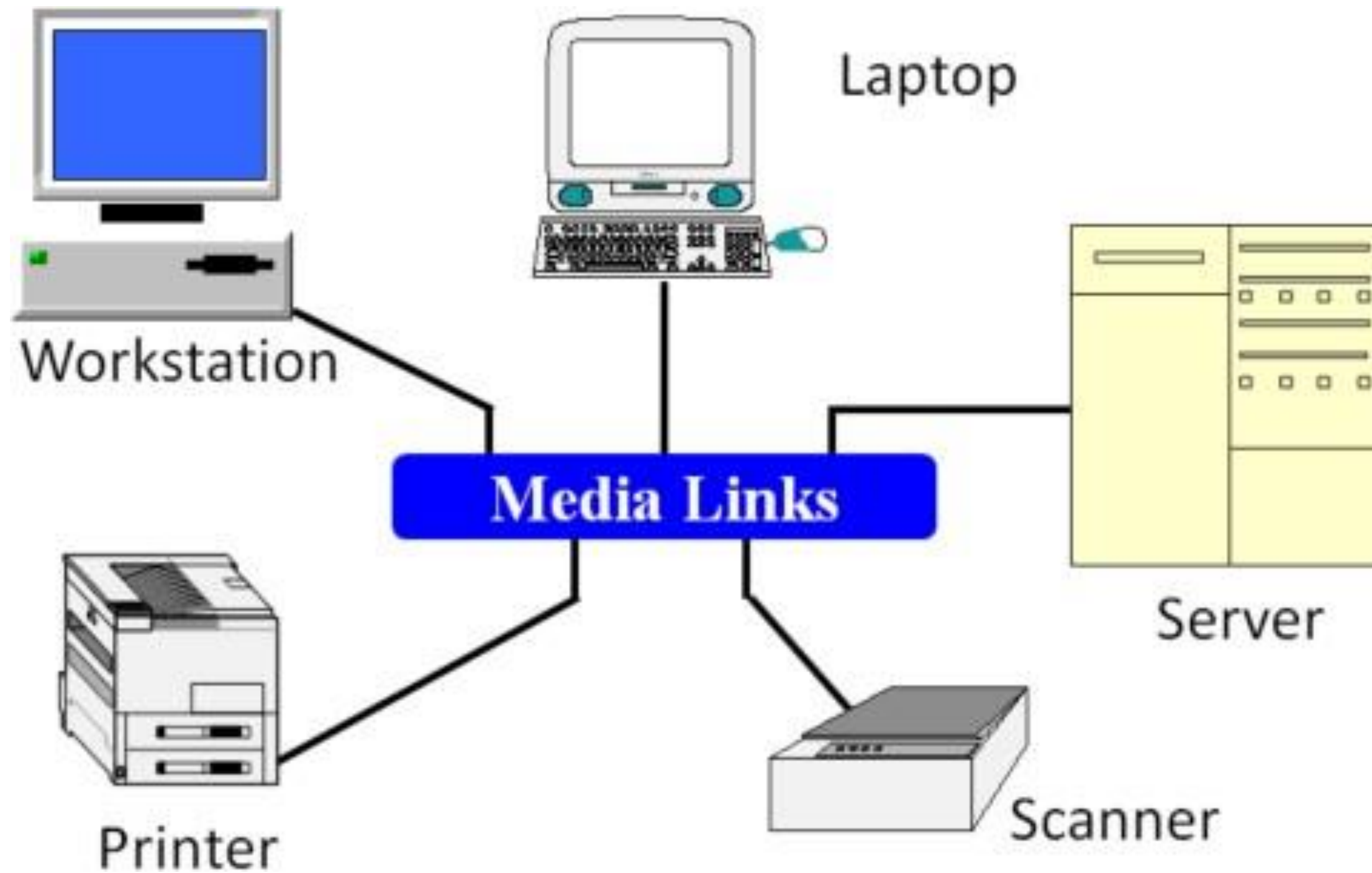
### 19ECT301- COMMUNICATION NETWORKS

#### UNIT 1 – INTRODUCTION TO NETWORKS AND LAYERED ARCHITECTURE

#### TOPIC 3 – TRANSMISSION MEDIA



# NETWORKS





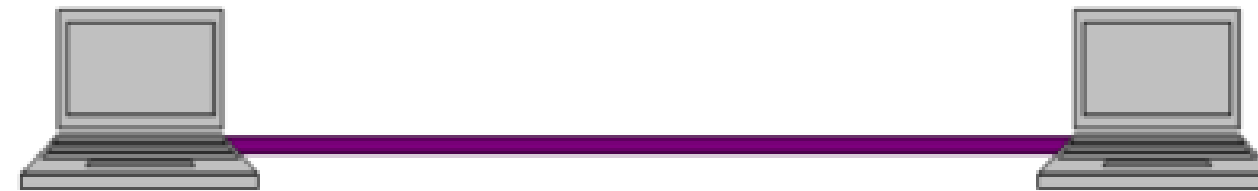
# TYPES OF CONNECTIONS



**Point-to-point**

**Multipoint (Multidrop)**

Point-to-point

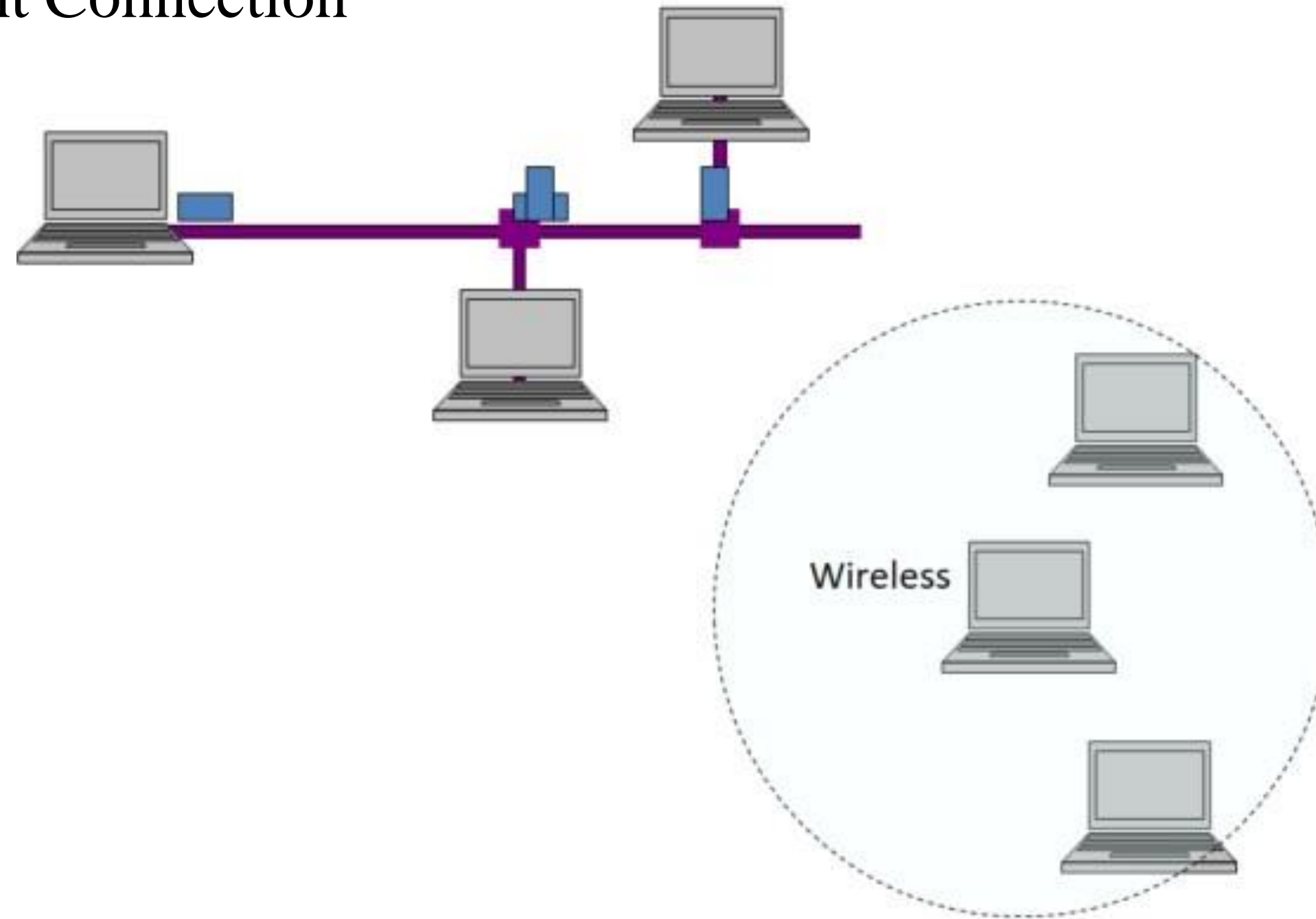




# TYPES OF CONNECTIONS



## Multipoint Connection





# TOPOLOGY

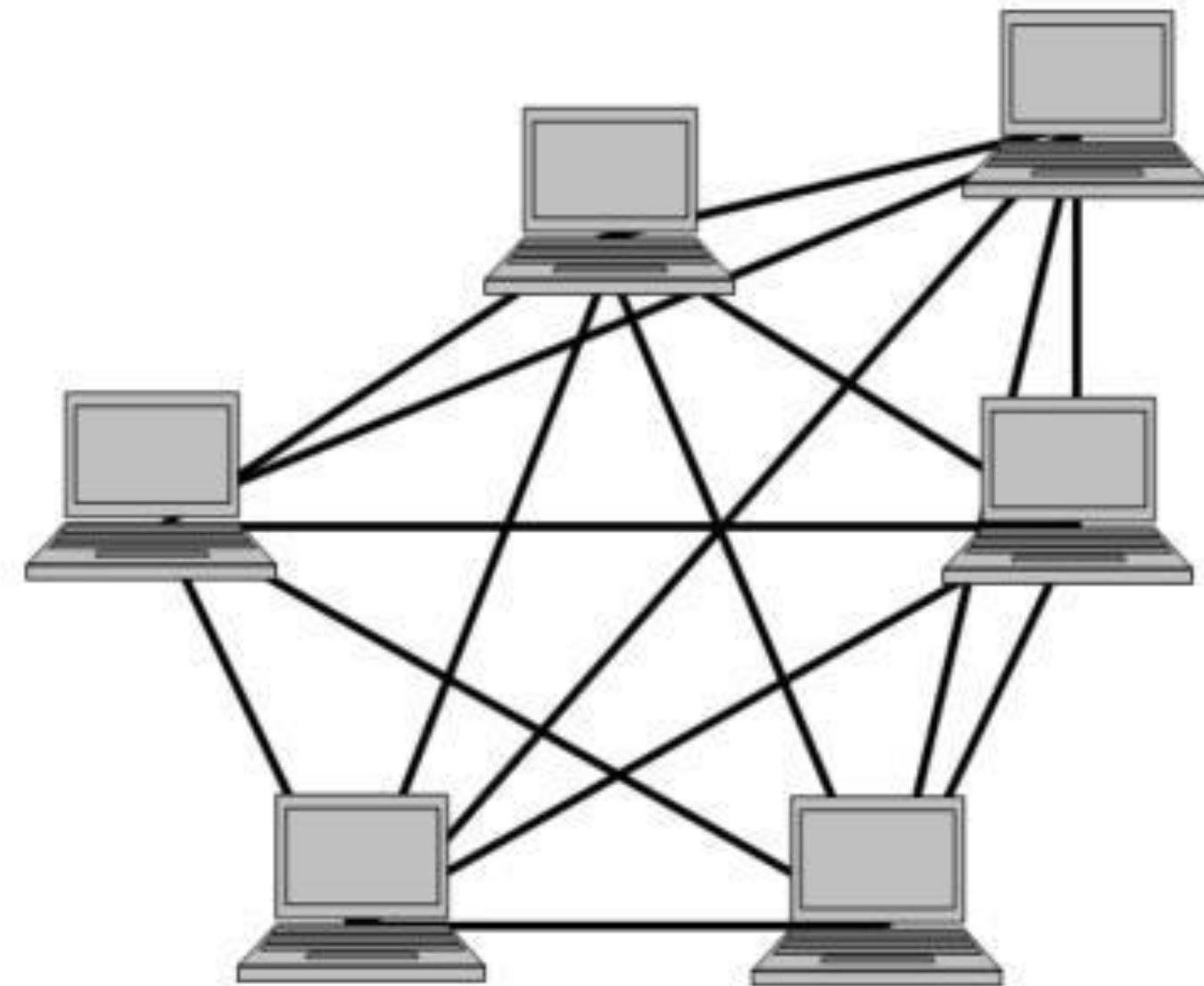
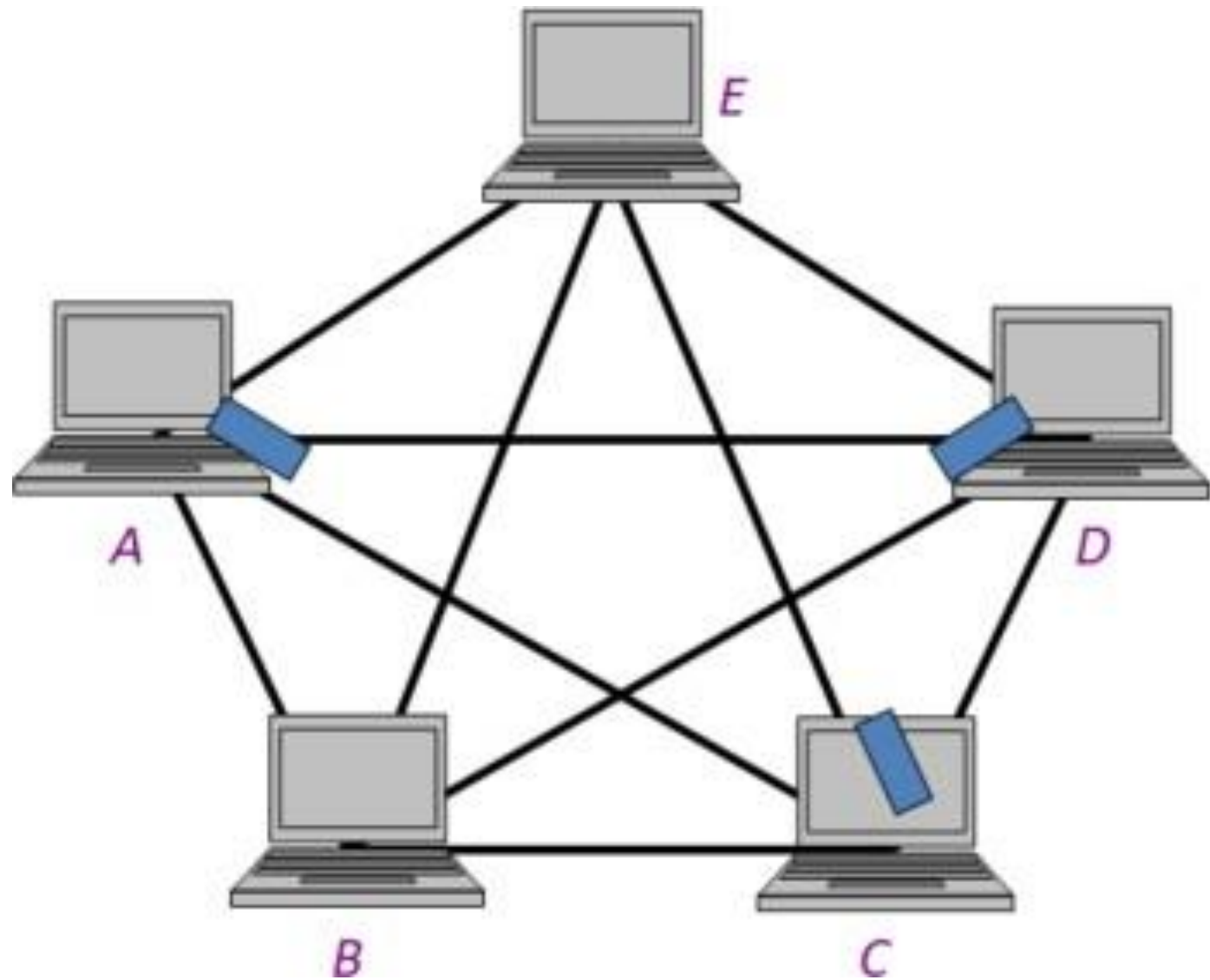


Topology: physical or logical arrangement of devices

- Point-to-point
- Mesh
- Star
- Bus
- Ring
- Hybrid



# FULLY CONNECTED MESH TOPOLOGY





# PROTOCOLS

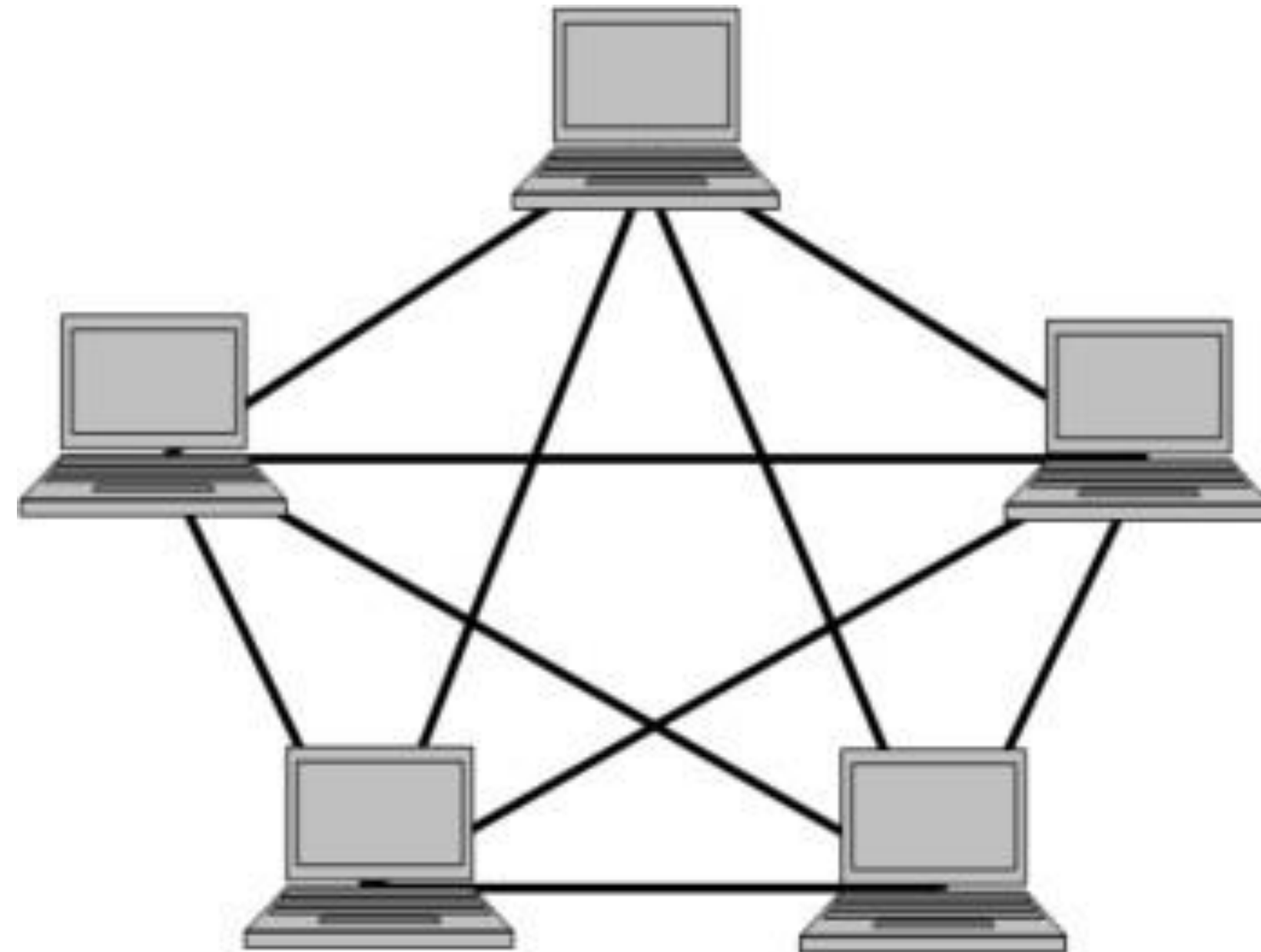


## Pros:

- Dedicated links
- Robustness
- Privacy
- Easy to identify fault

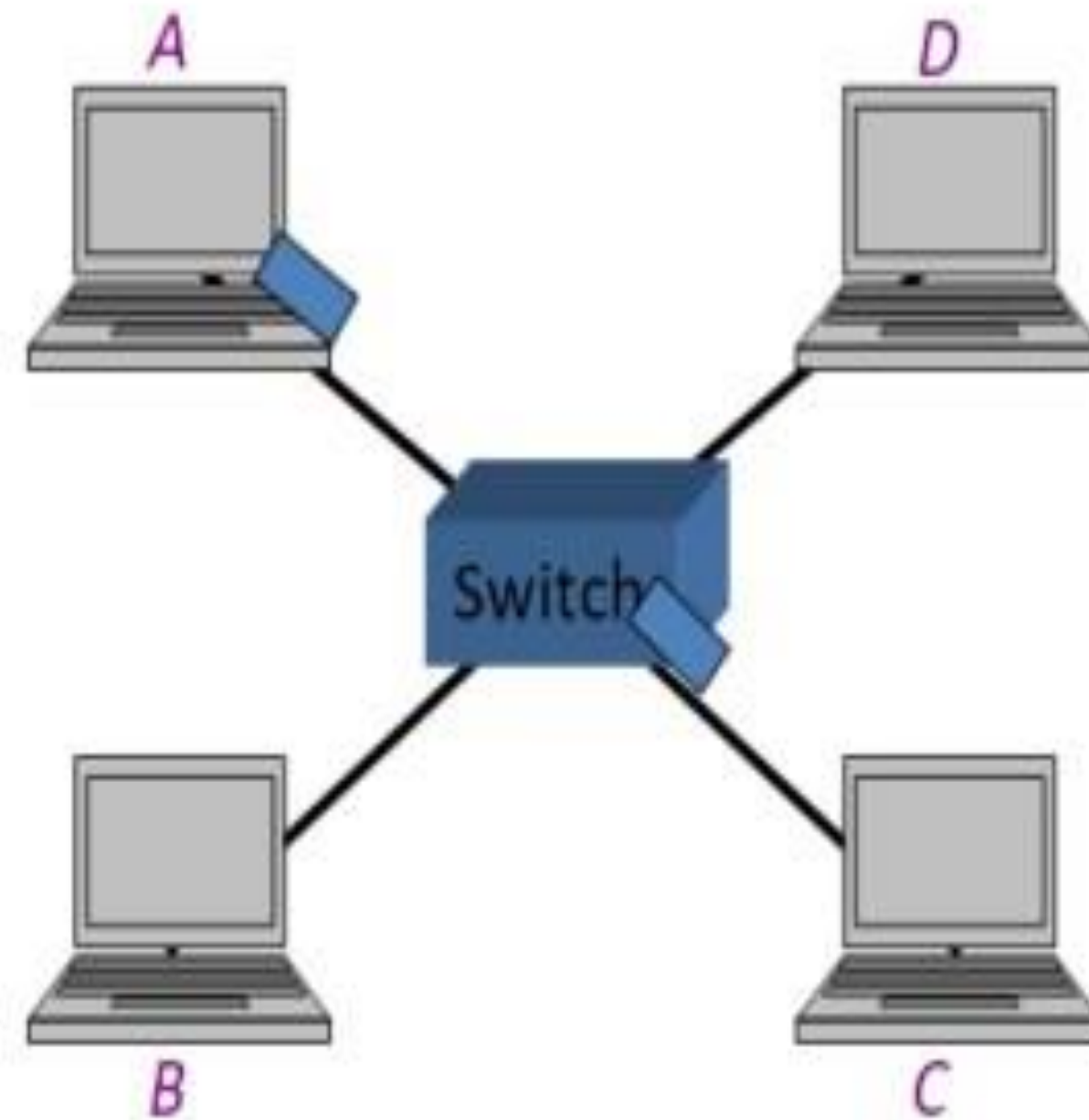
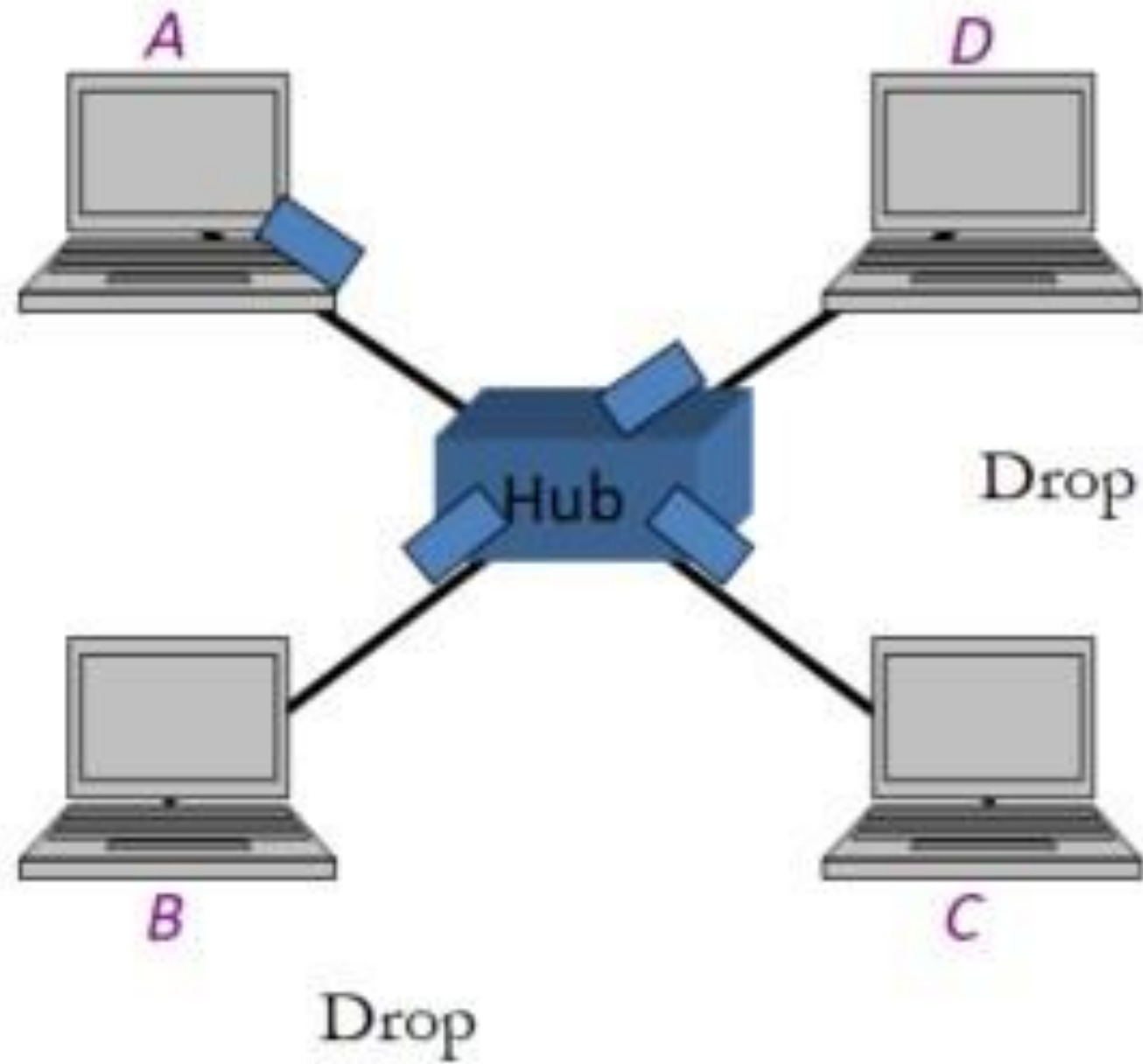
## Cons:

- A lot of cabling
- I/O ports
- Difficult to move





# STAR TOPOLOGY







# STAR TOPOLOGY

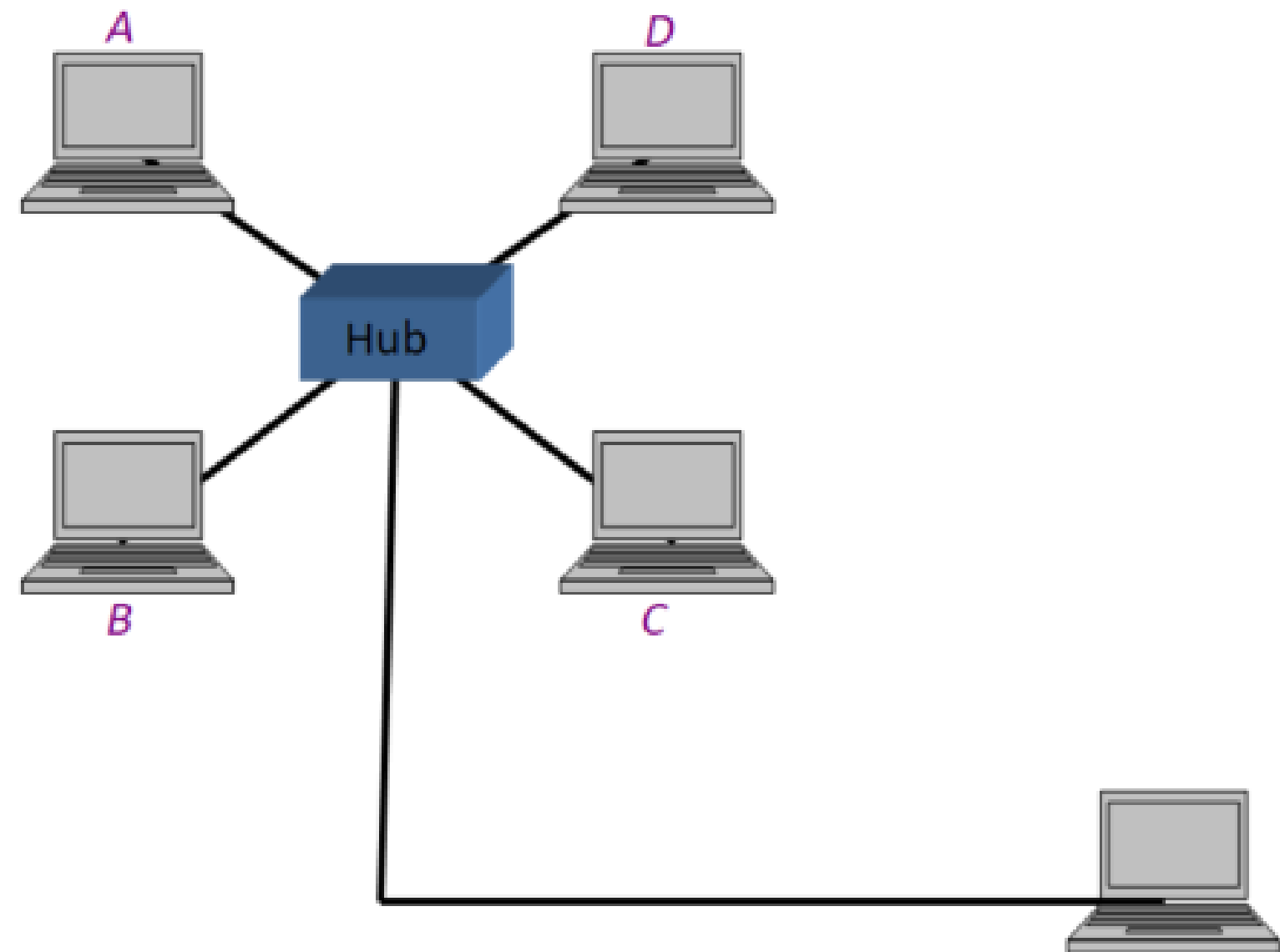


## Pros:

- One I/O port per device
- Little cabling
- Easy to install
- Robustness
- Easy to identify fault

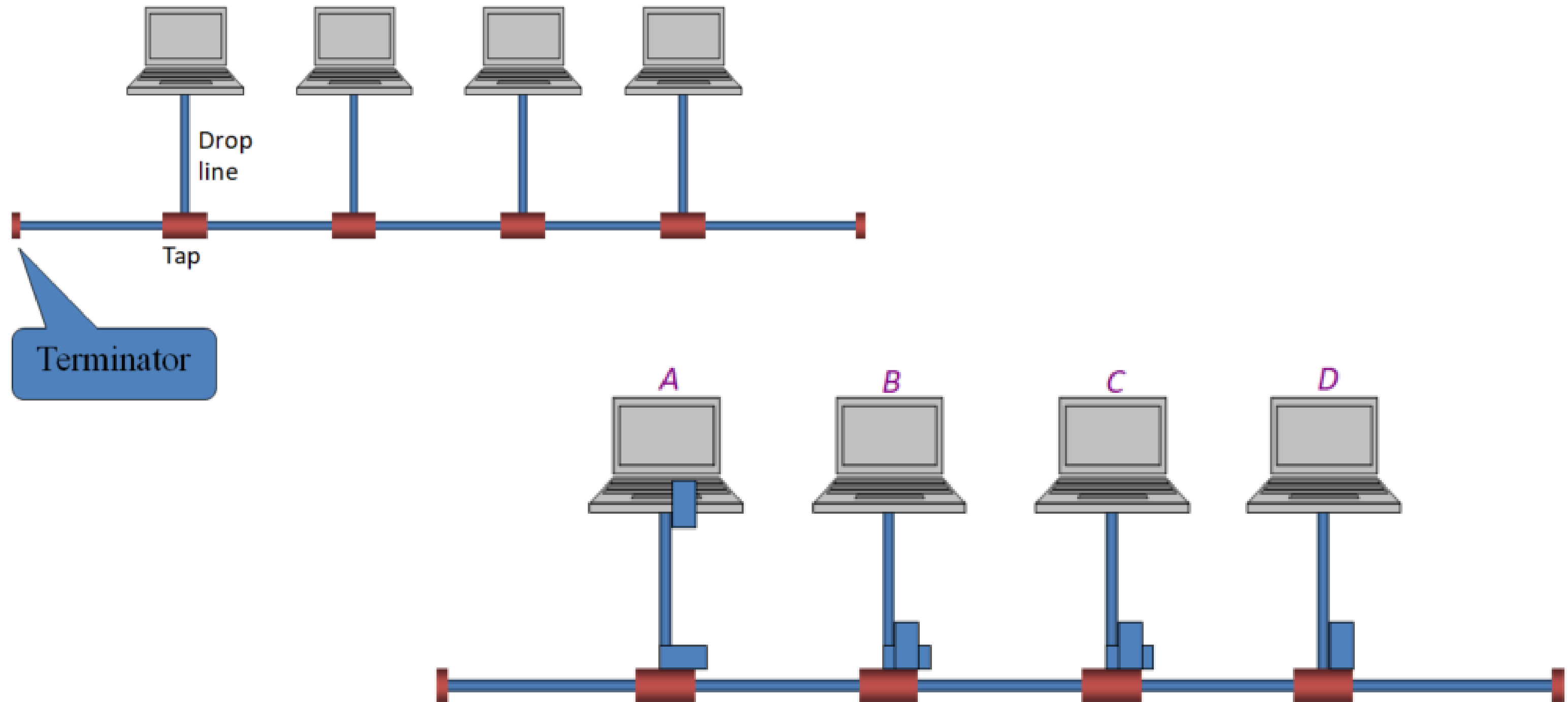
## Cons:

- Single point of failure
- More cabling still required





# BUS TOPOLOGY





## DIRECTION OF DATA FLOW

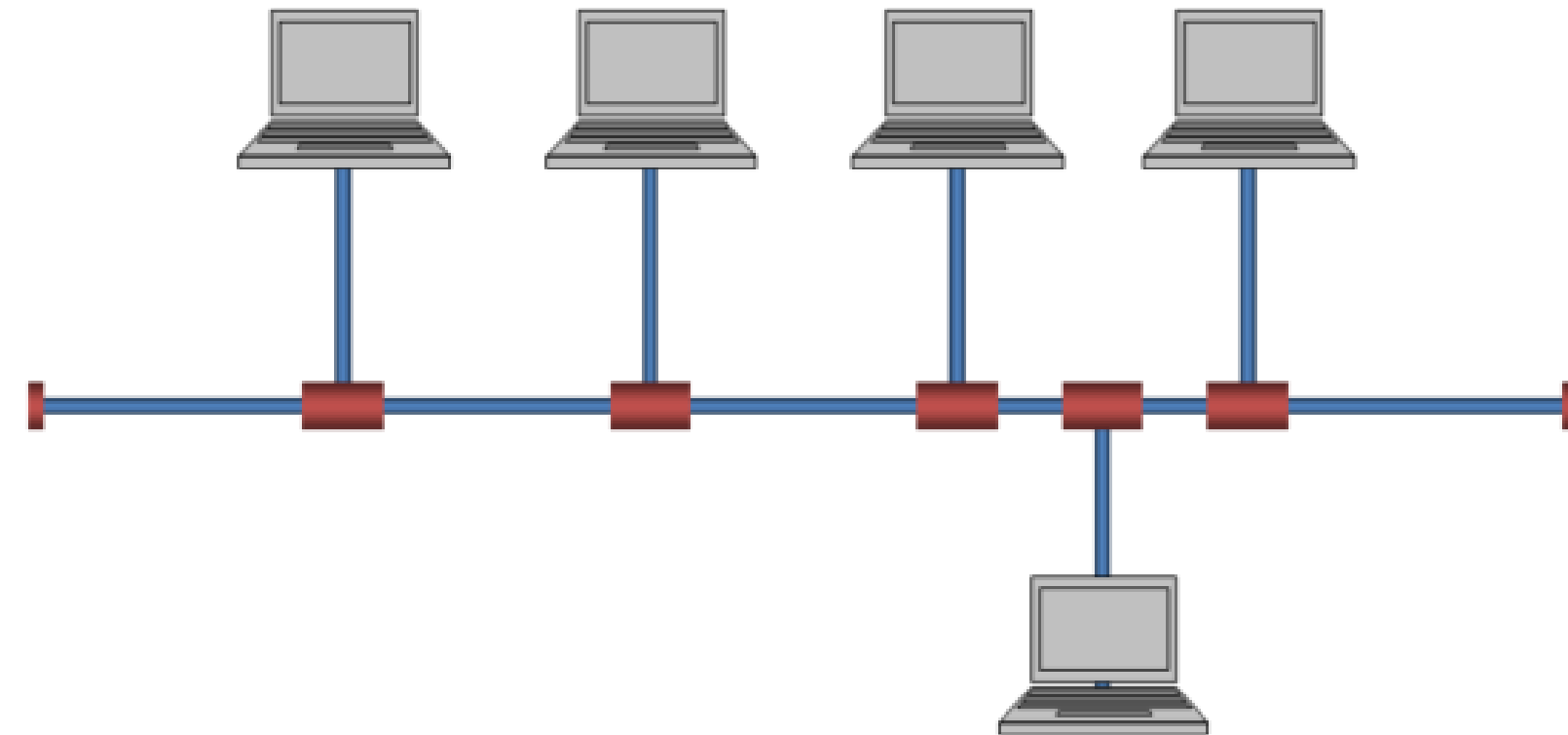


### Pros:

- Little cabling
- Easy to install

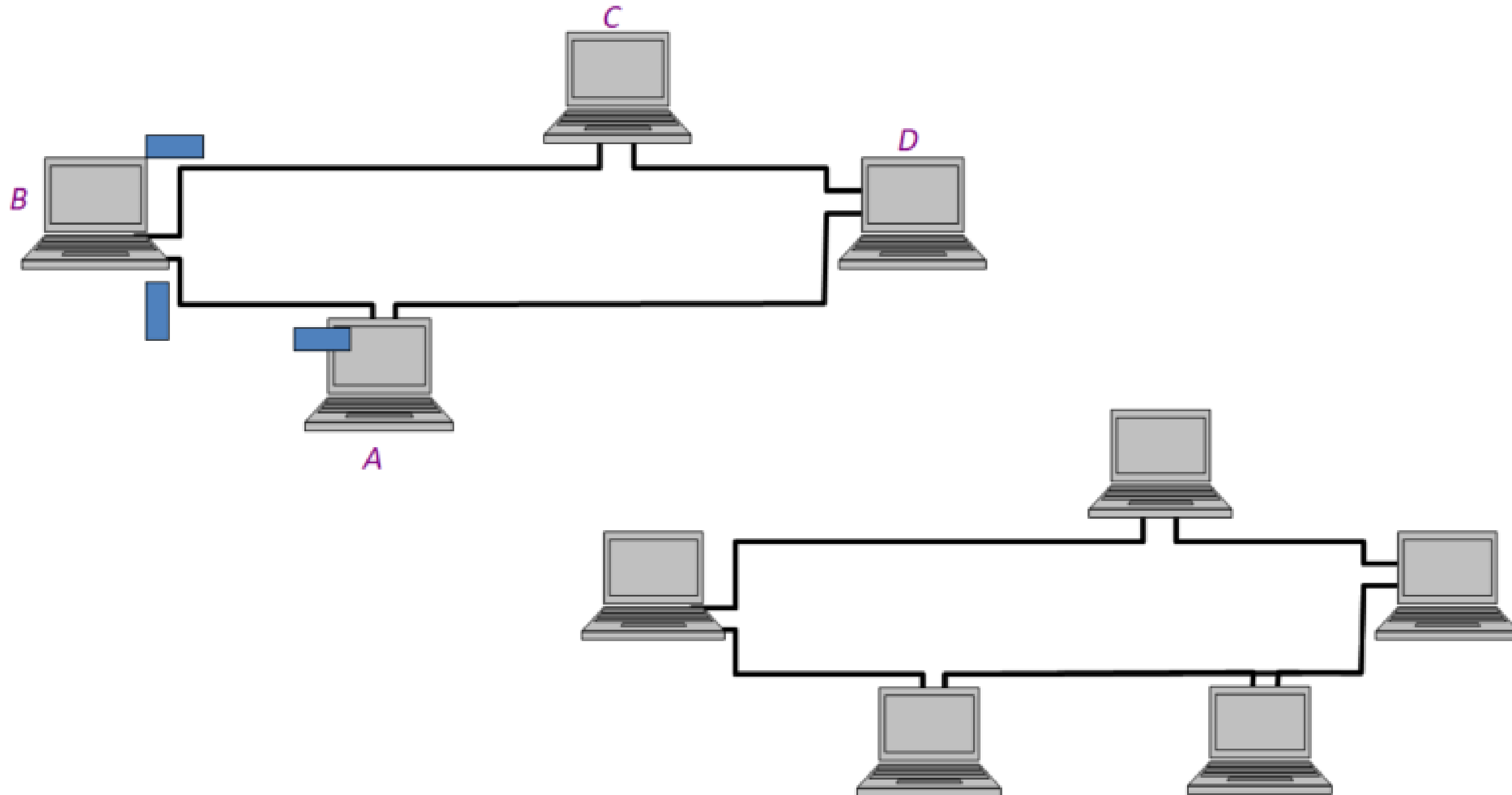
### Cons:

- Difficult to modify
- Difficult to isolate fault
- Break in the bus cable stops all transmission





# RING TOPOLOGY





# RING TOPOLOGY



## **Pros:**

Easy to install

Easy to identify fault

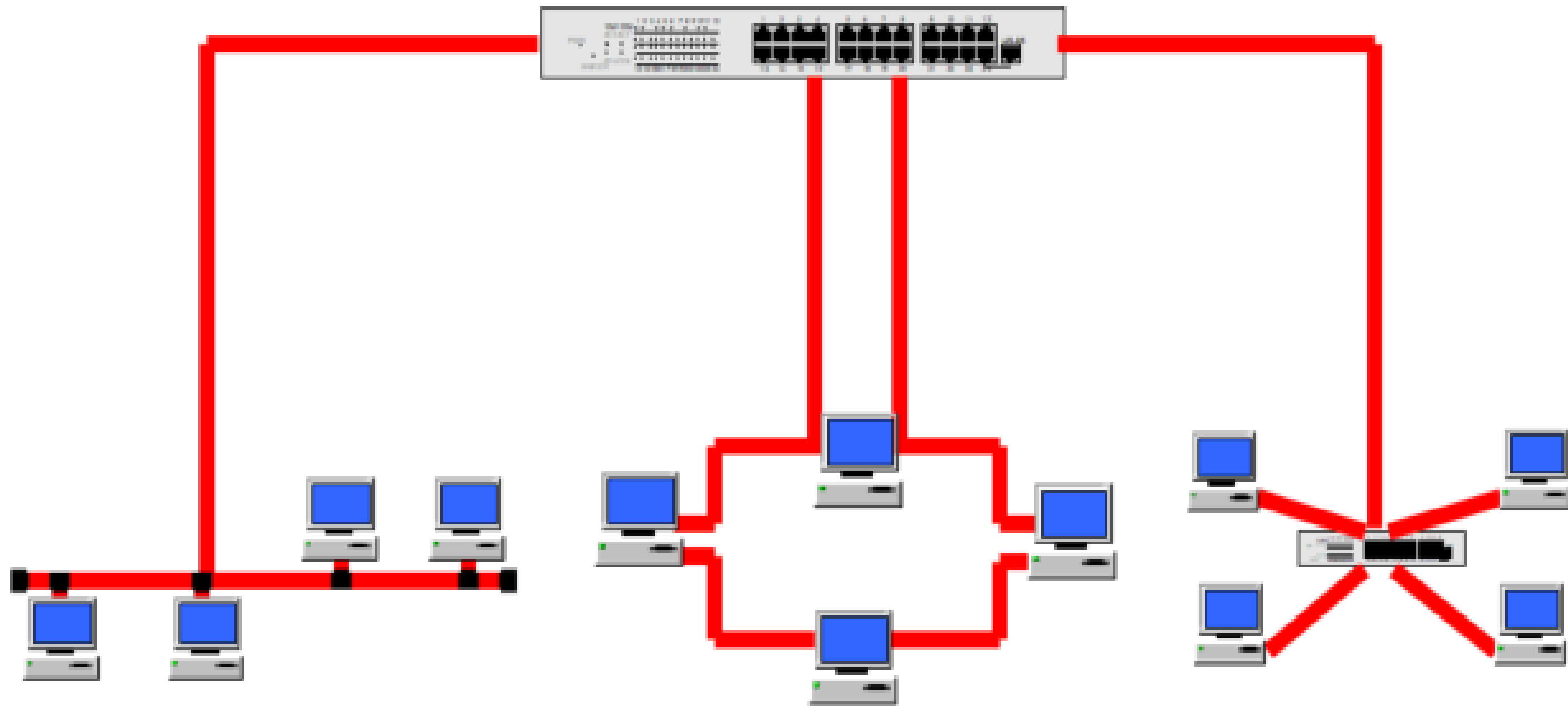
## **Cons:**

Delay in large ring

Break in the ring stops all transmission



# HYBRID TOPOLOGY





# NETWORK CATEGORIES



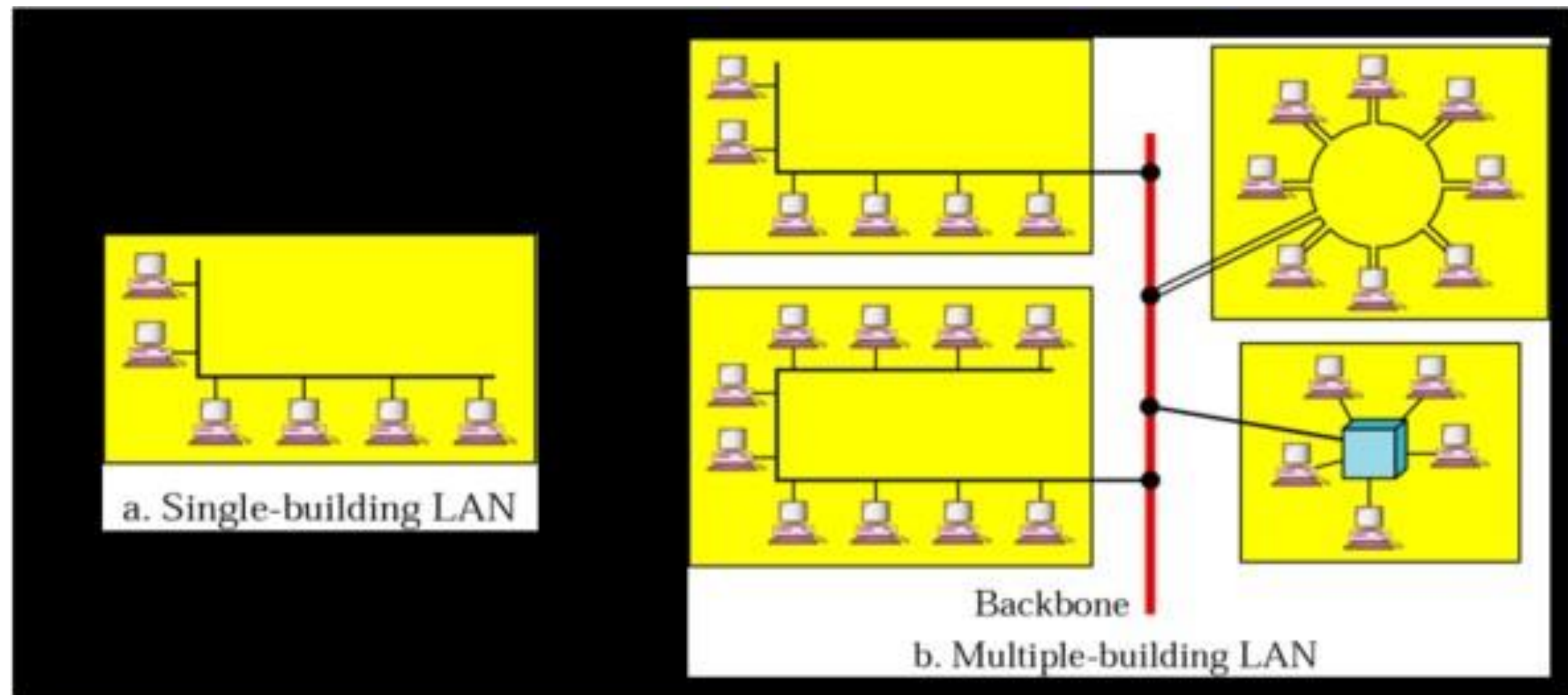
- Local Area Network (LAN)
- Wide Area Network (WAN)
- Metropolitan Area Network (MAN)



# LOCAL AREA NETWORK



Network in a single office, building, or campus



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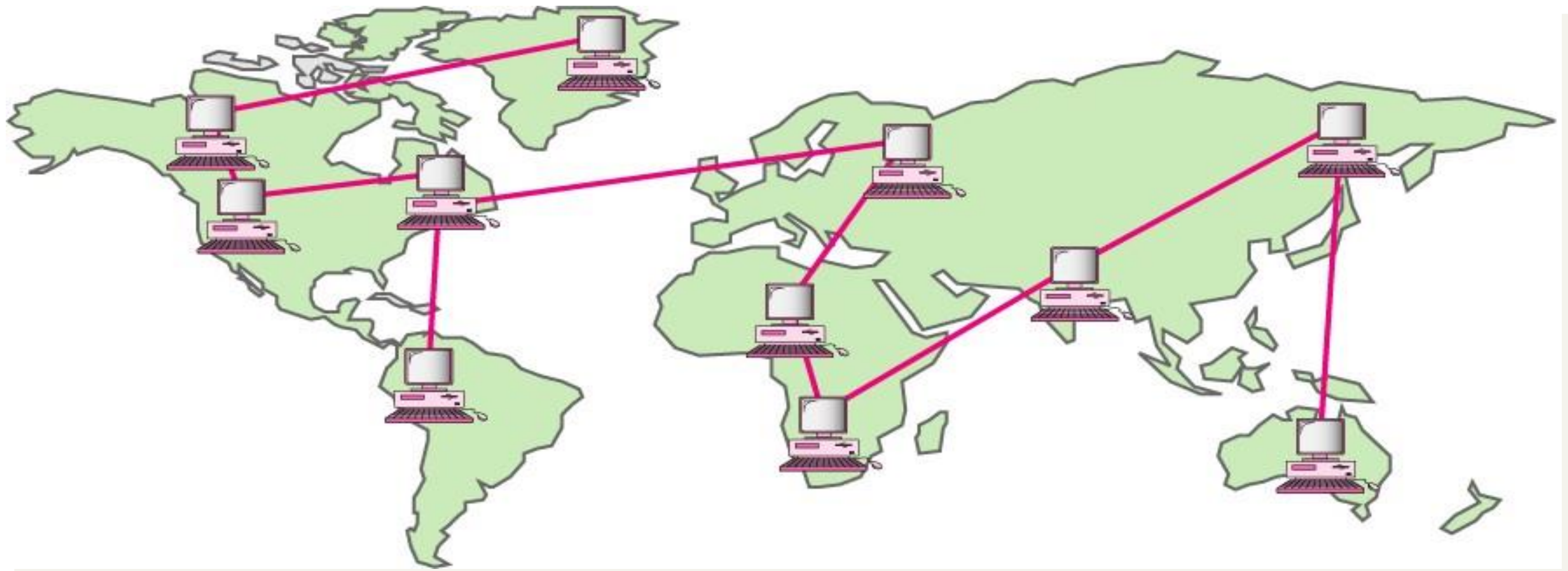




# WIDE AREA NETWORK



Network providing long-distance communication over a country, a continent, or the whole world





# WAN TECHNOLOGIES



## Circuit Switching

Physical links are dedicated between two points

## Packet Switching

Data are put in packets which are stored and forwarded at each node

## Virtual Circuit Switching

Virtual links are established between two points

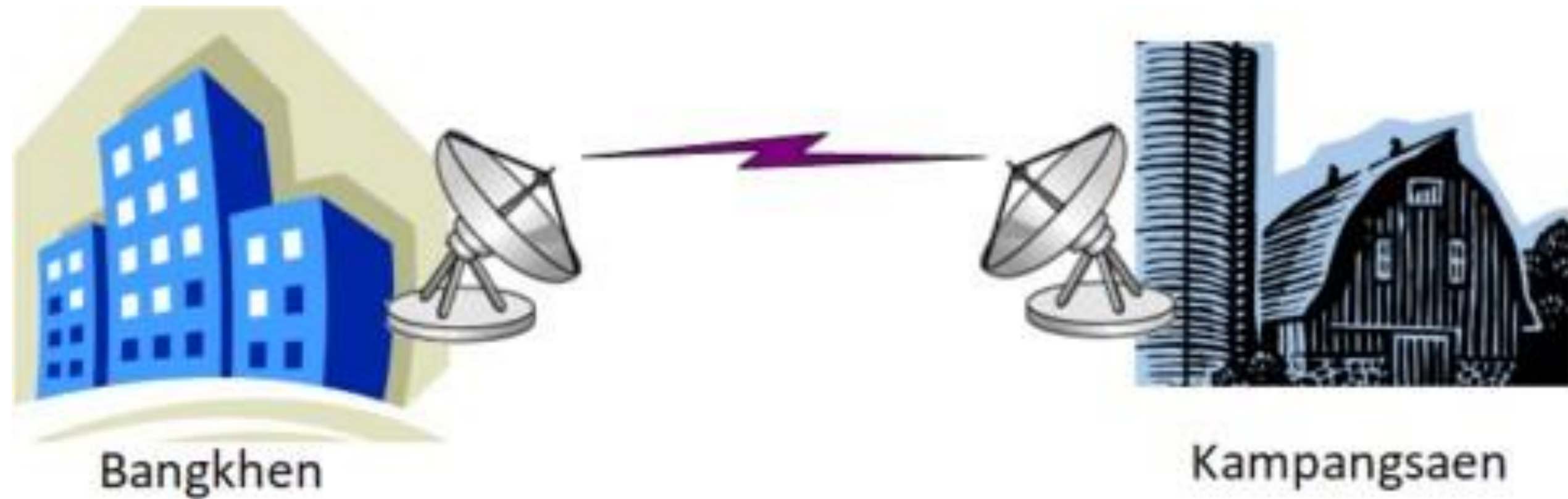
→ **Frame Relay and ATM (Asynchronous Transfer Mode)**



# METROPOLITAN AREA NETWORKS



Network extended over an entire city





# Assessment



## **How do radio waves function as a transmission medium in wireless communication?**

Radio waves are a type of electromagnetic wave used in wireless communication to transmit data over the air.

They function by modulating the data onto the wave, which is then transmitted and received by antennas.

Radio waves can travel long distances and through obstacles, making them suitable for various wireless technologies like Wi-Fi, Bluetooth, and cellular networks.



**THANK YOU**