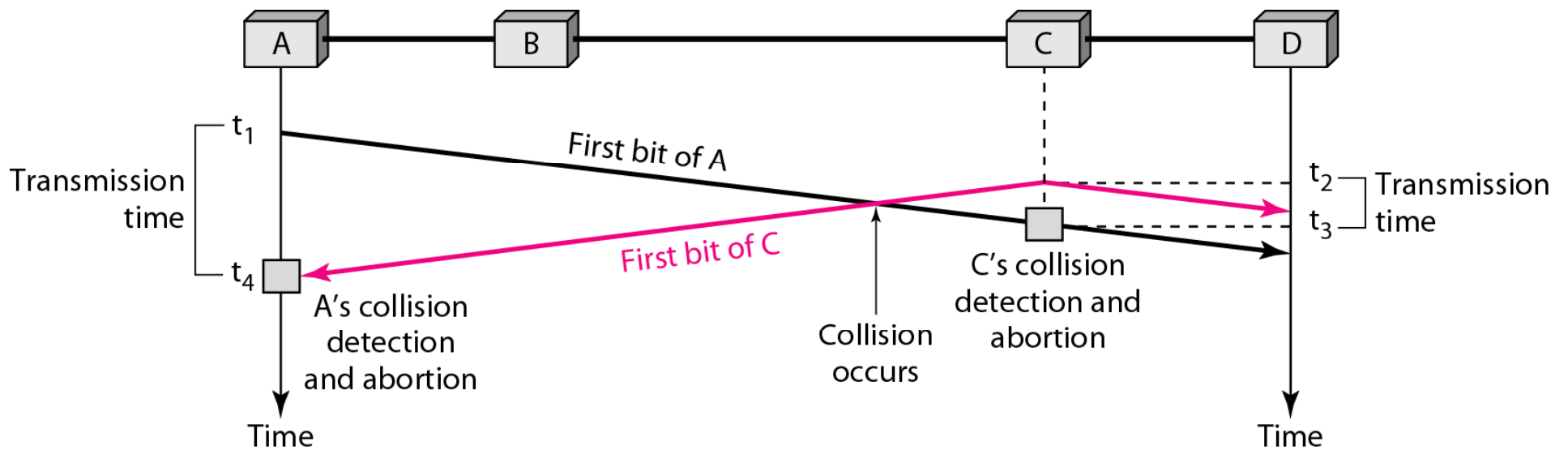


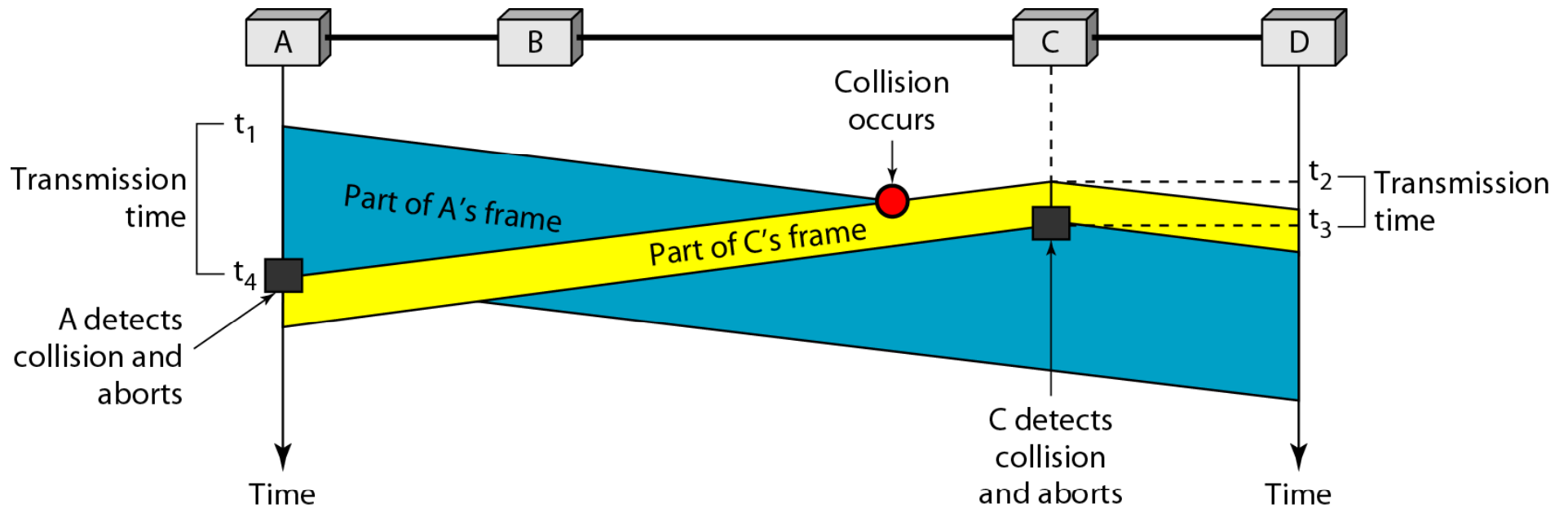
Local Area Network:  
Protocols for Multiple Access Control  
(continued)

By Nidhi Jindal

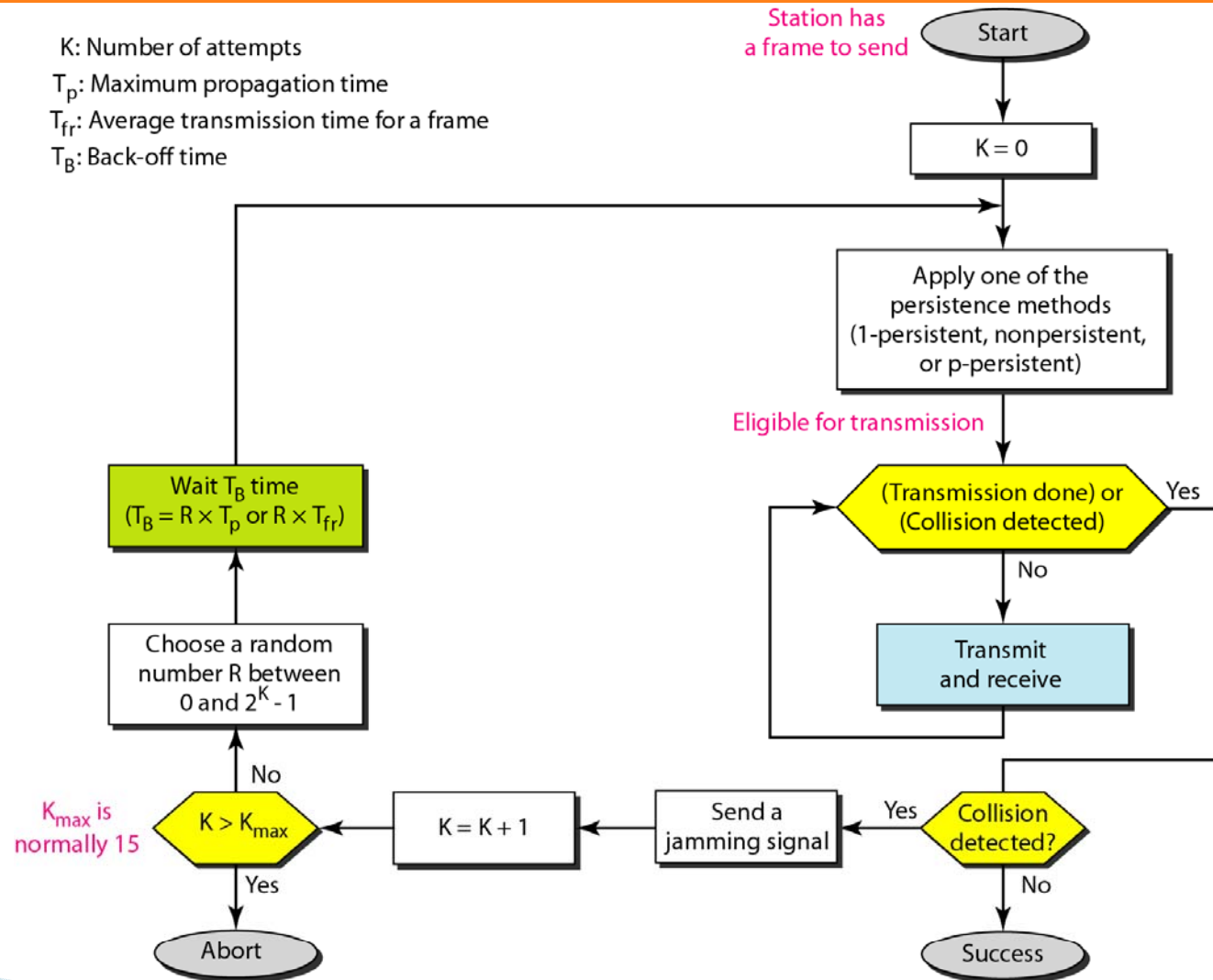
# Collision of the first bit in CSMA/CD



# Collision and abortion in CSMA/CD



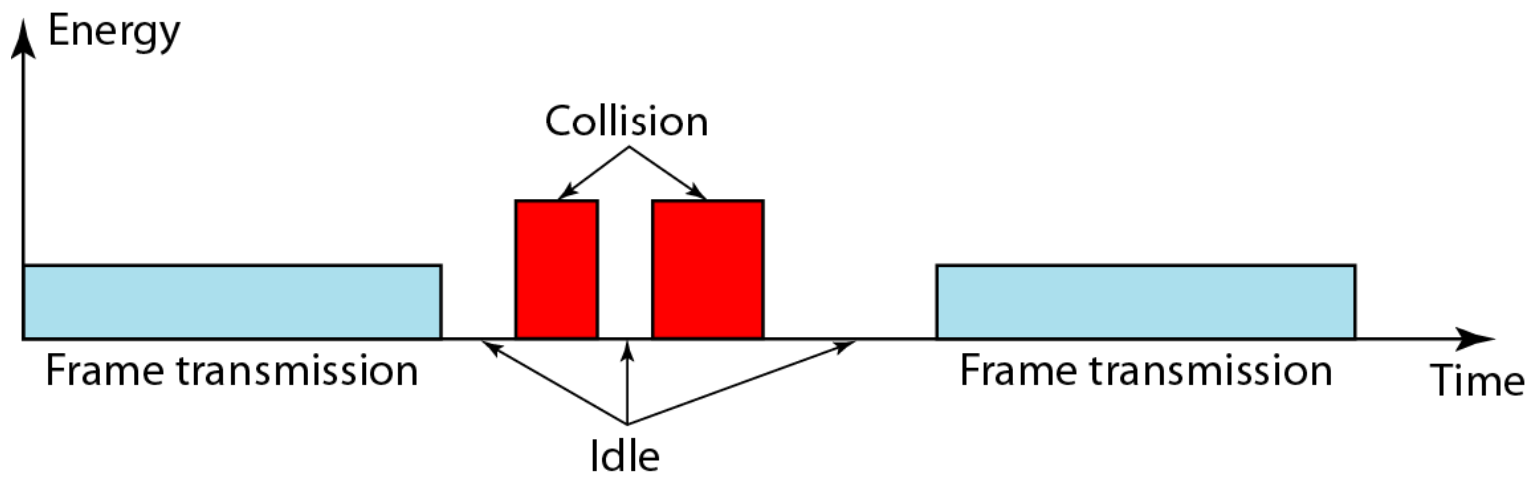
# Flow diagram for the CSMA/CD



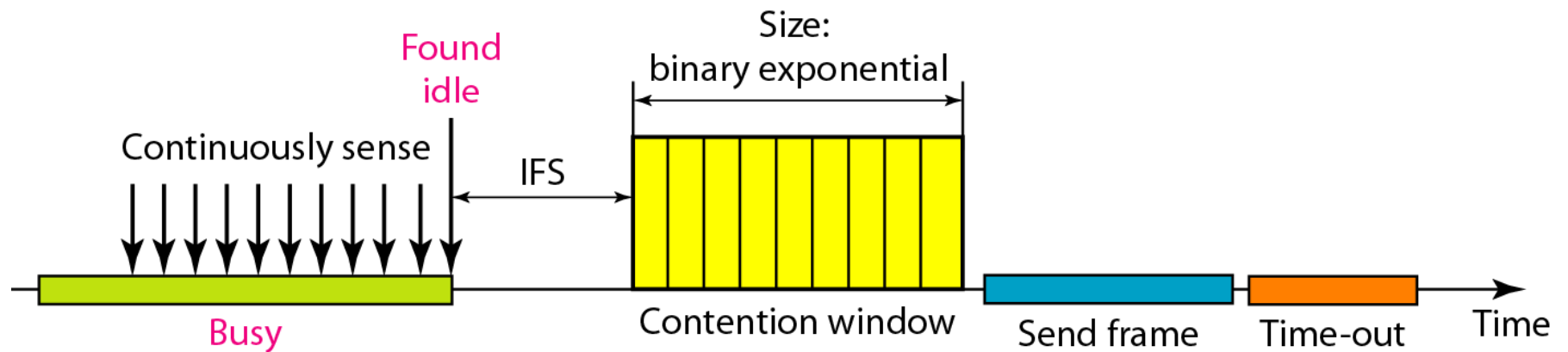
---

# Energy level during transmission, idleness, or collision

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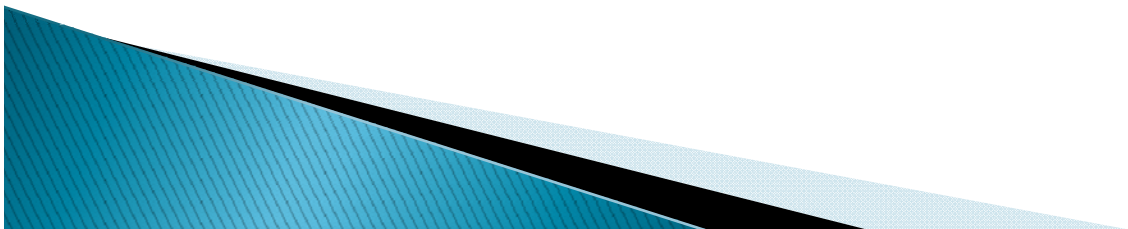
# Timing in CSMA/CA





Note

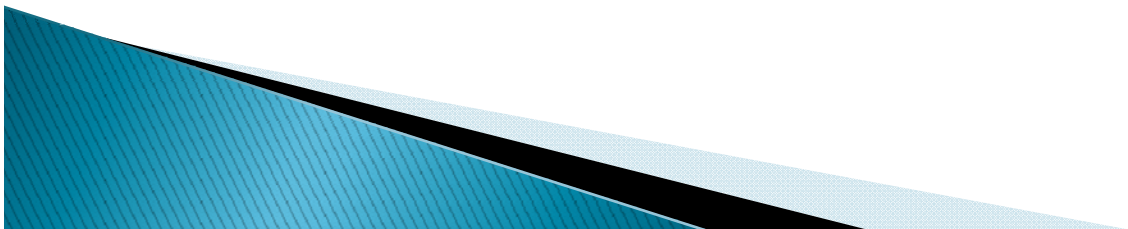
In CSMA/CA, the IFS can also be used to define the priority of a station or a frame.





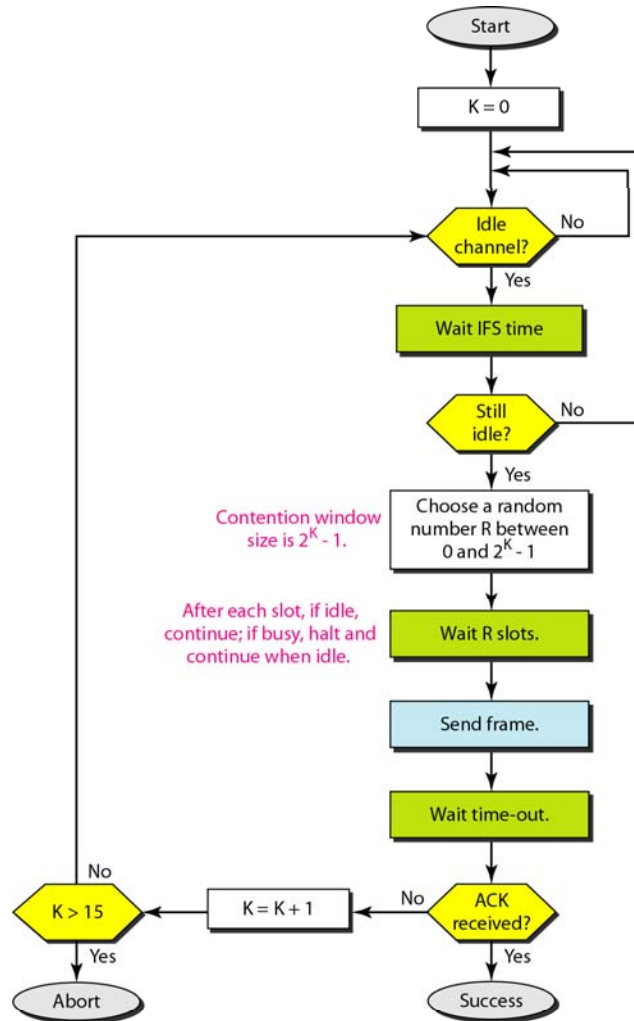
### Note

In CSMA/CA, if the station finds the channel busy, it does not restart the timer of the contention window; it stops the timer and restarts it when the channel becomes idle.





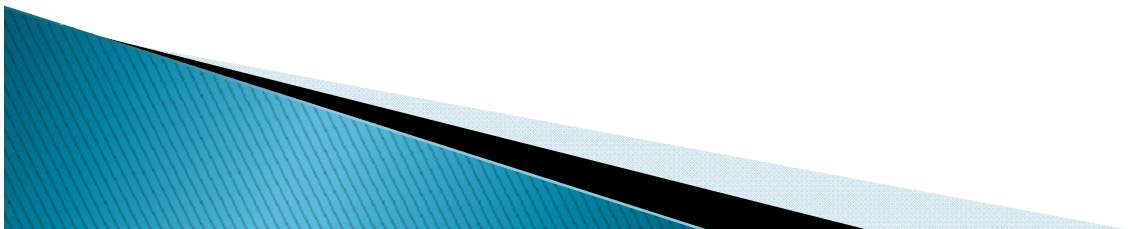
# Flow diagram for CSMA/CA



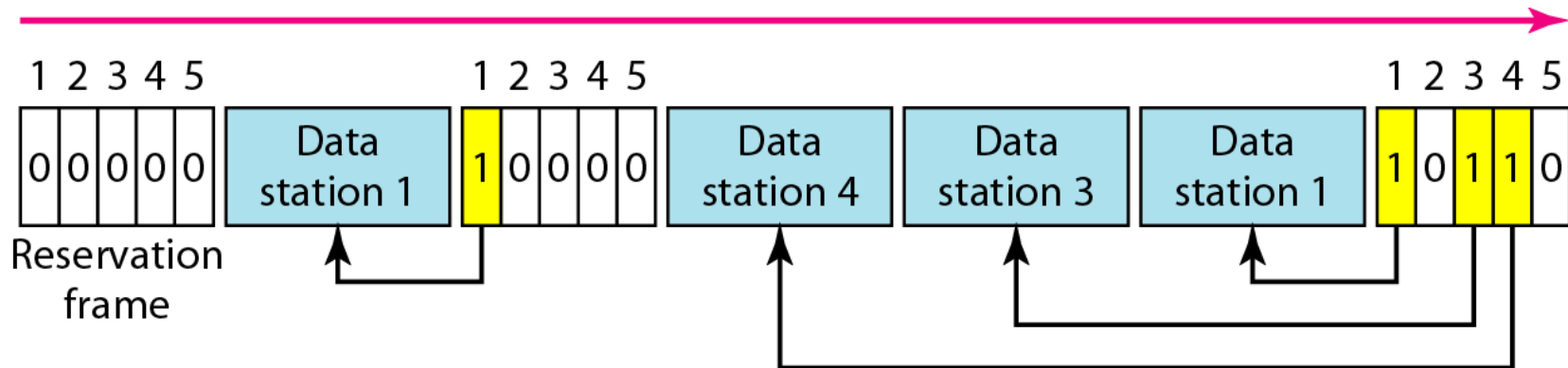
# CONTROLLED ACCESS

In **controlled access**, the stations consult one another to find which station has the right to send. A station cannot send unless it has been authorized by other stations. We discuss three popular controlled-access methods, which are:

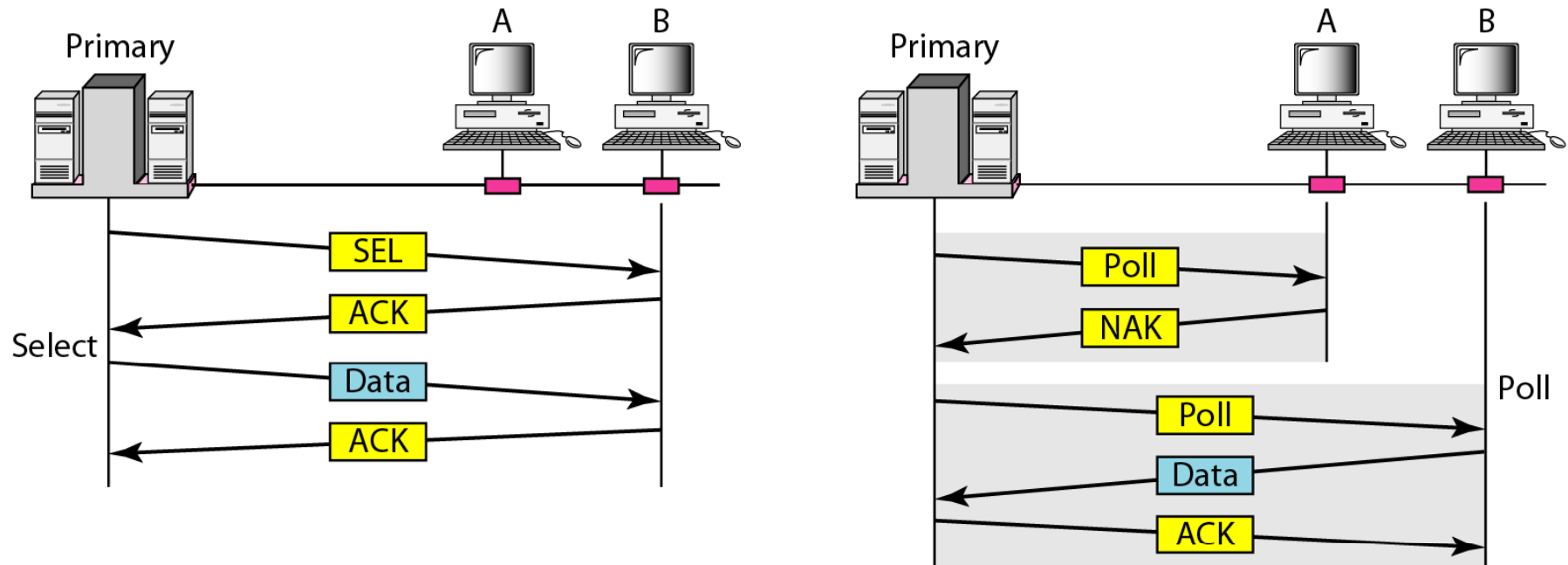
- Reservation
- Polling
- Token Passing



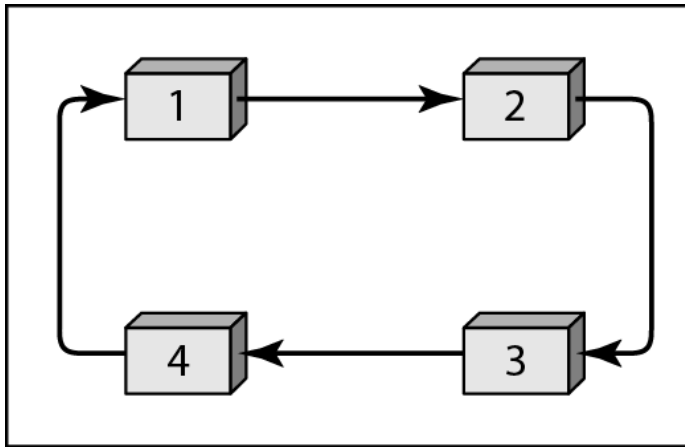
# Reservation access method



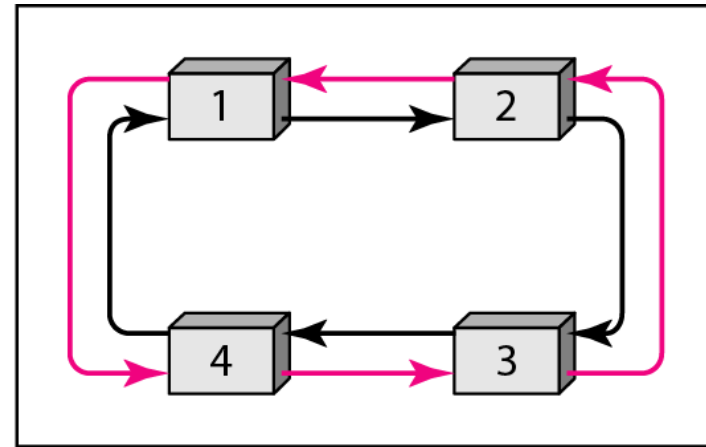
# Select and poll functions in polling access m



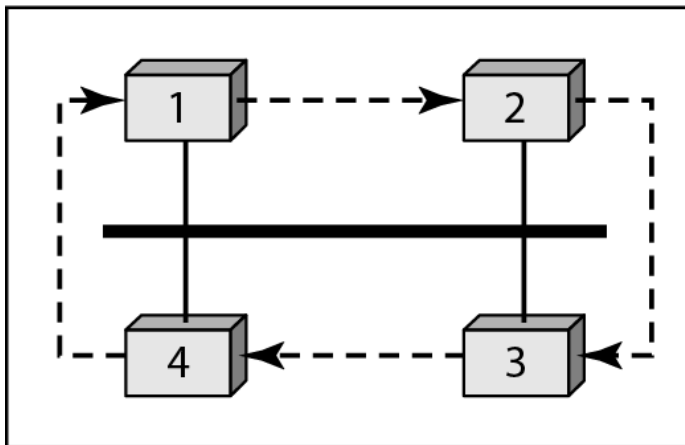
# Logical ring and physical topology in token-passing access method



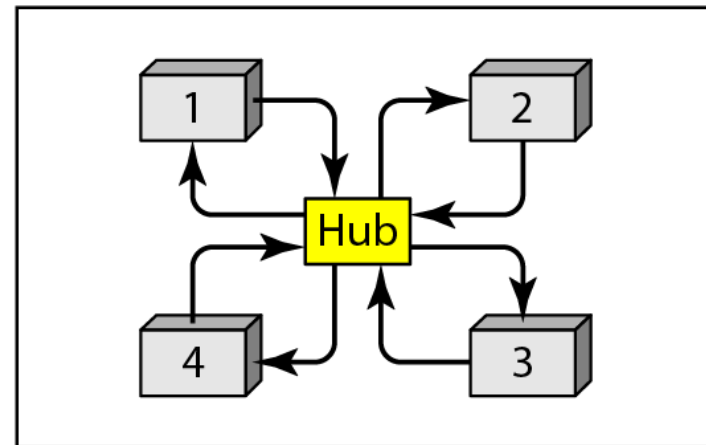
a. Physical ring



b. Dual ring



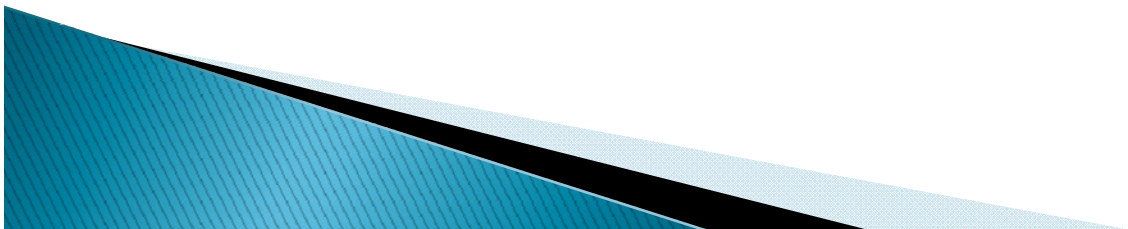
c. Bus ring



d. Star ring

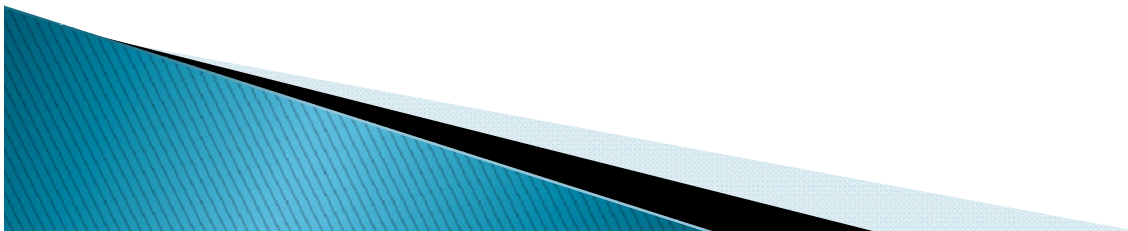
# Application

- ▶ Multiple Access Protocols are used in case of shared media/ shared channels
- ▶ These protocols are applicable in wireless communications



# Scope of Research

- ▶ Protocol Support for 3G and 4G networks
- ▶ MAC algorithms for mobile networks
- ▶ MAC algorithms for wireless networks



# Assignment 18

- ▶ How token passing is used for media access?
- ▶ In which type of LANs Token passing is used as an access method?
- ▶ In which type of LANs CSMA/CD is used as an access method?
- ▶ In which type of LANs CSMA/CA is used as an access method?

