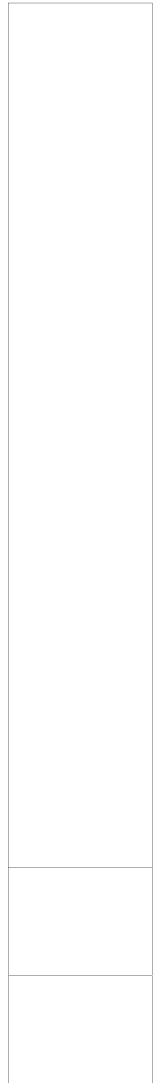
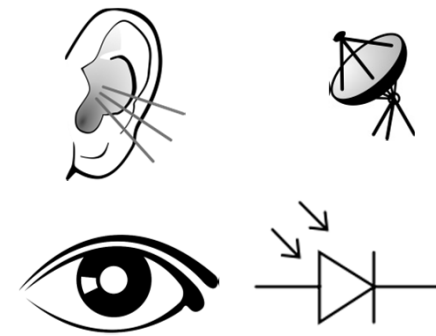
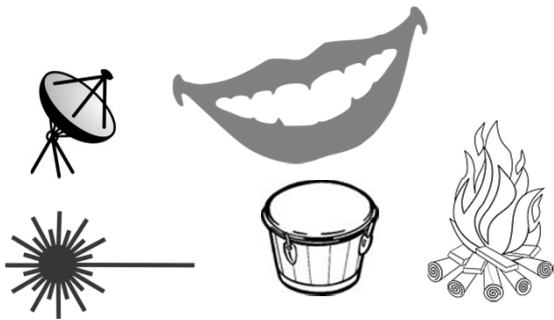


Topologies of computer networks

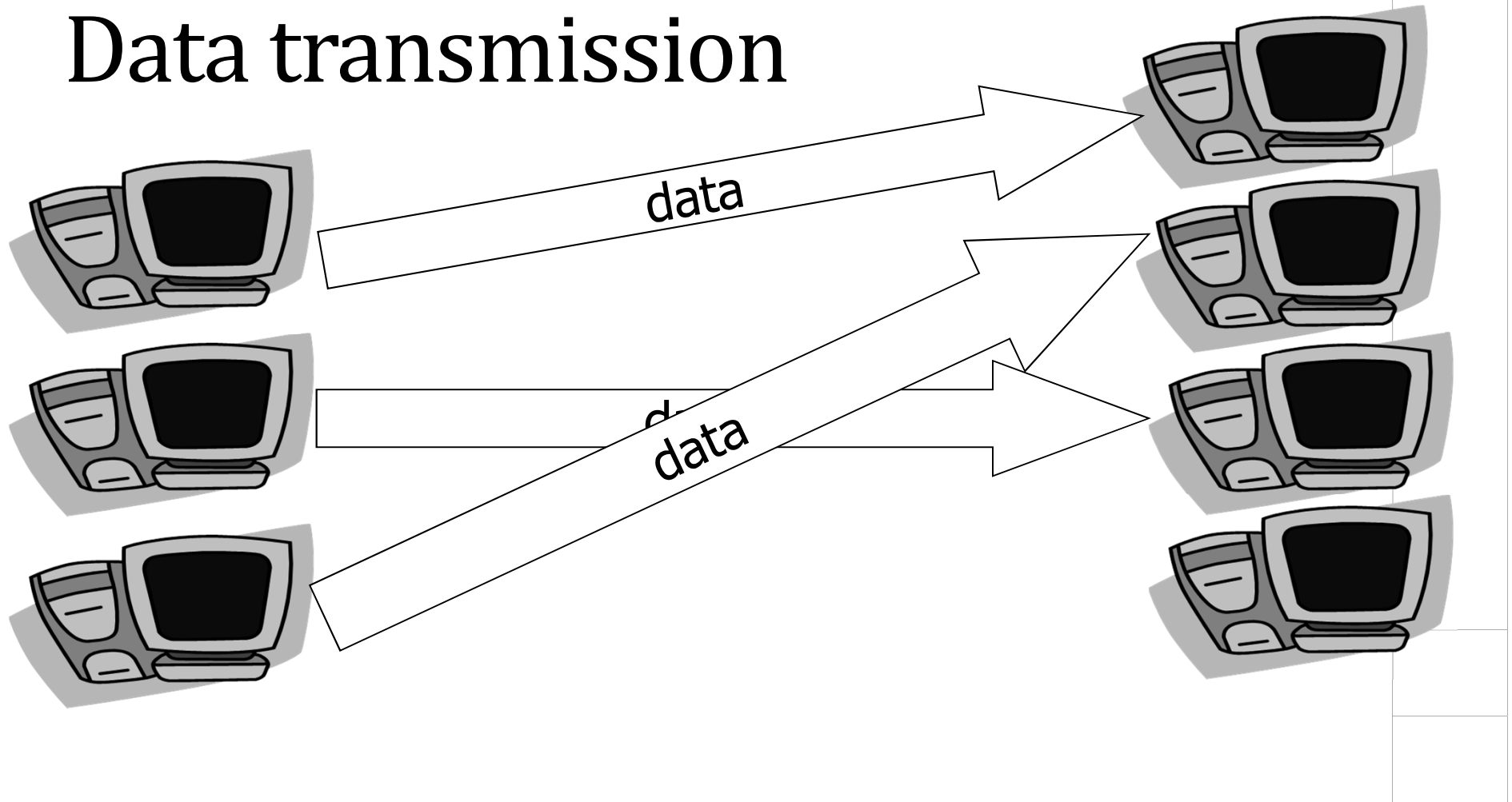
Foundations of computer networks



Communication

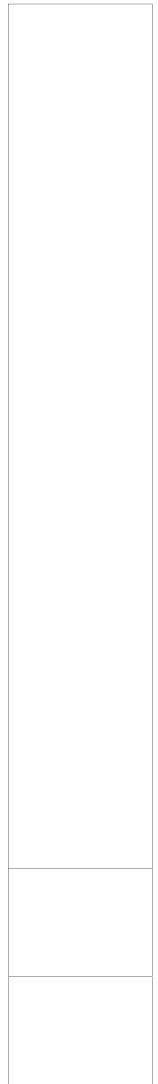
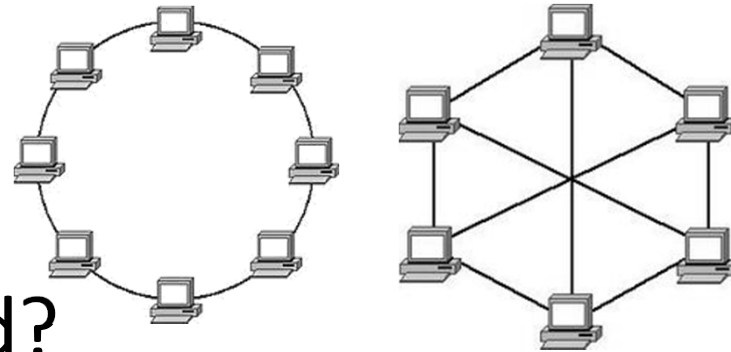


Data transmission



Classifications of computer network topologies

- Physical
 - How is it connected?
- Logical
 - How does it work?

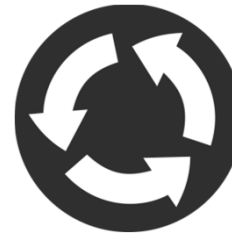


Typical topologies

- Bus



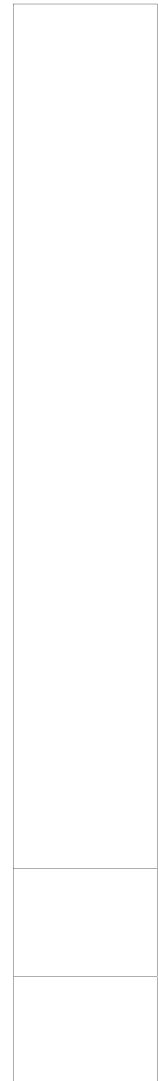
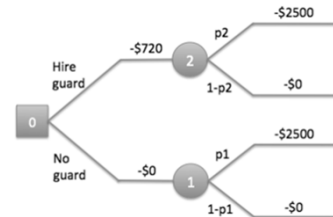
- Ring



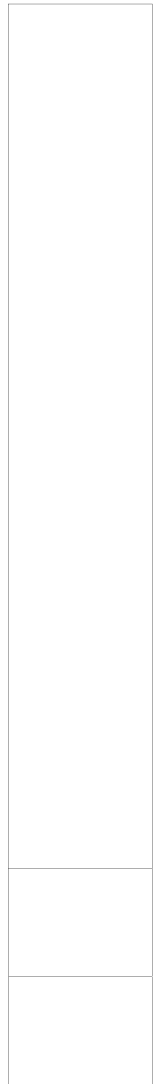
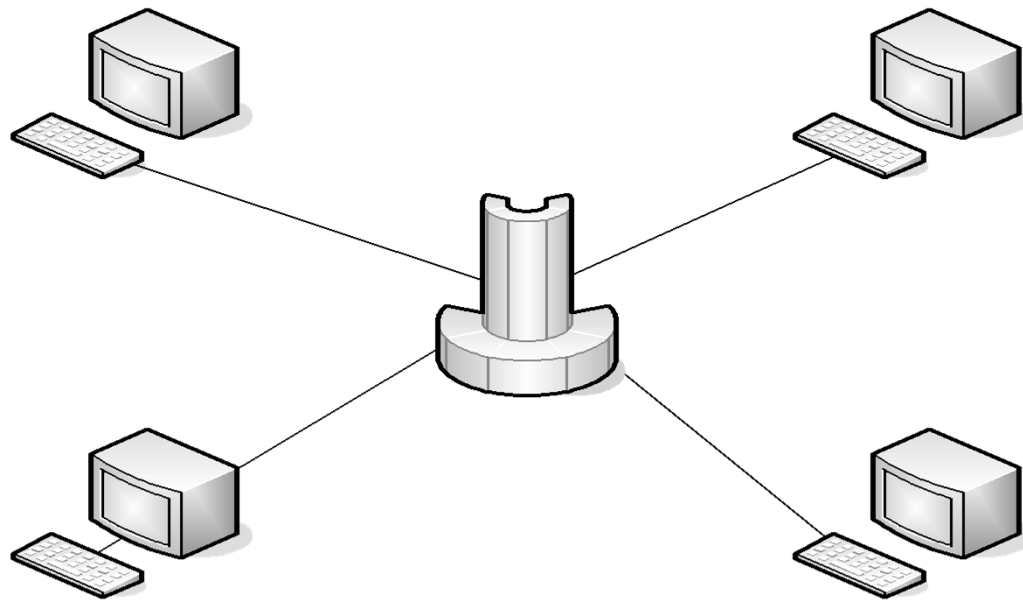
- Star



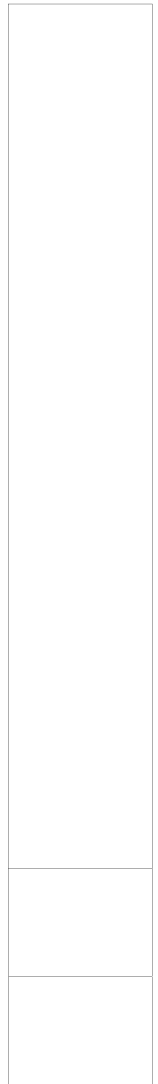
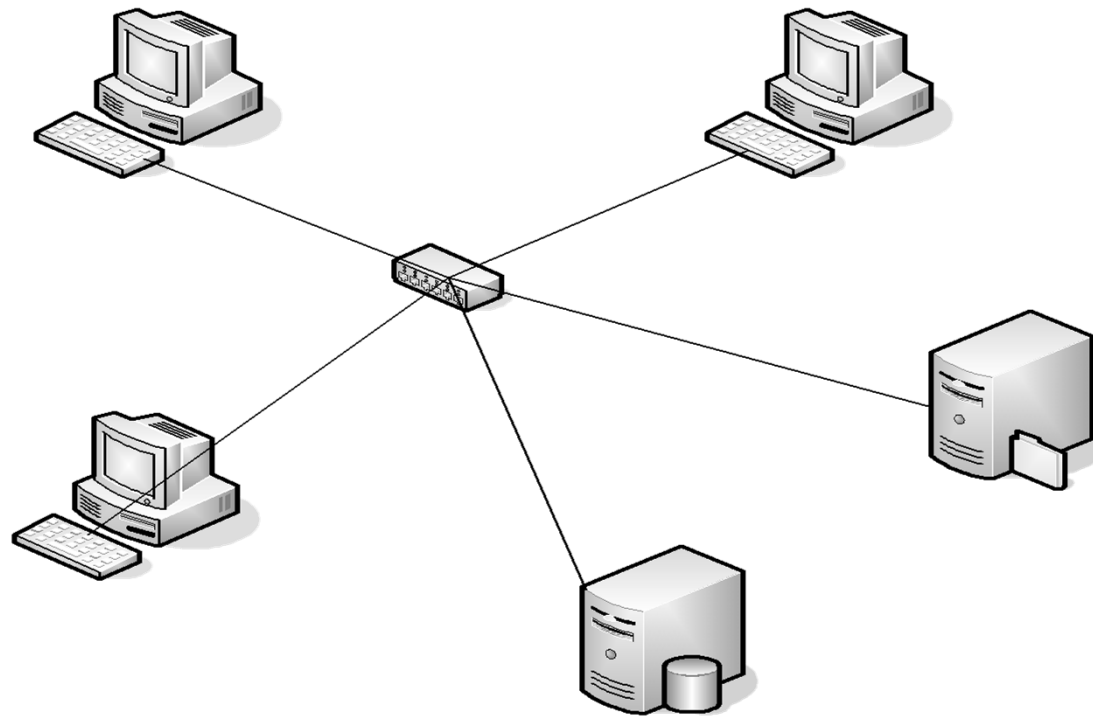
- Tree



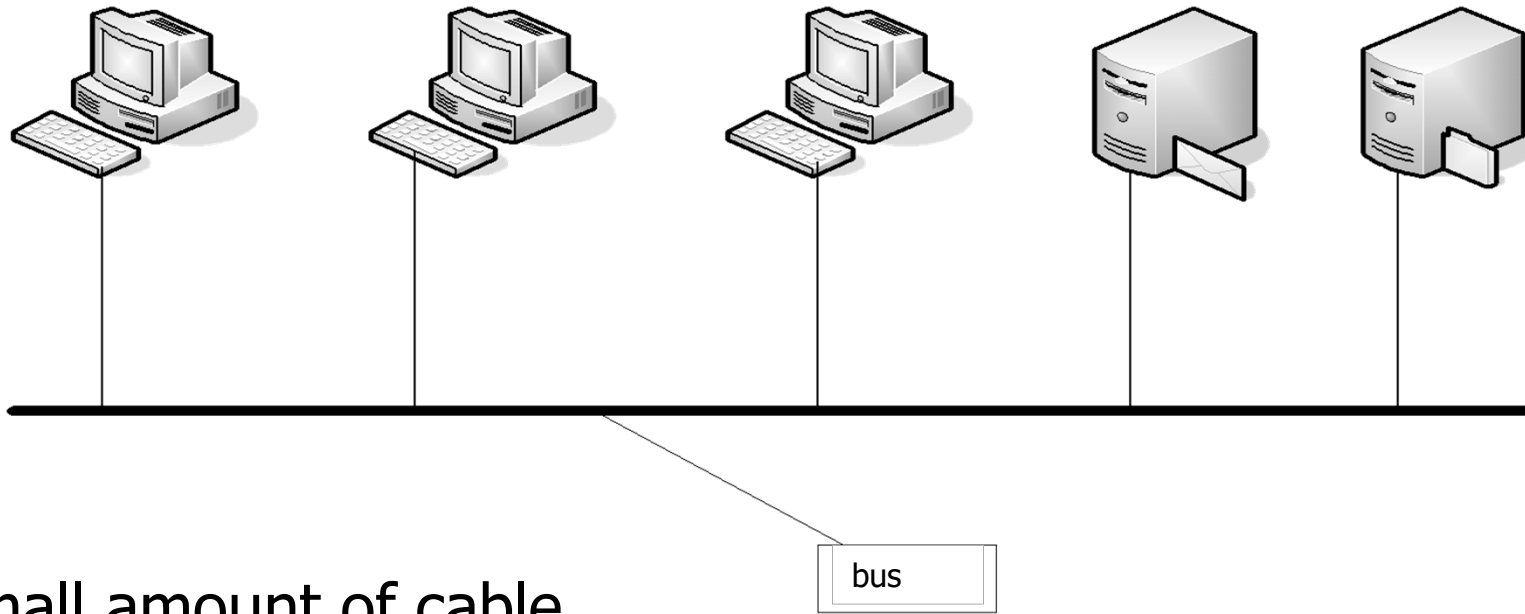
Logical star topology



Physical star topology

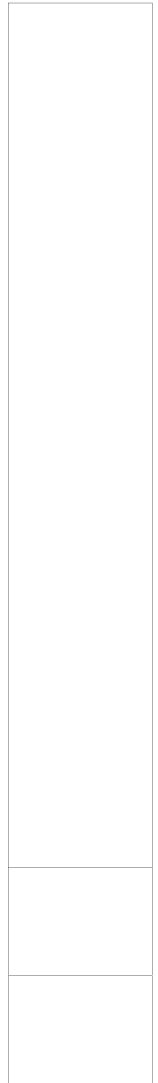
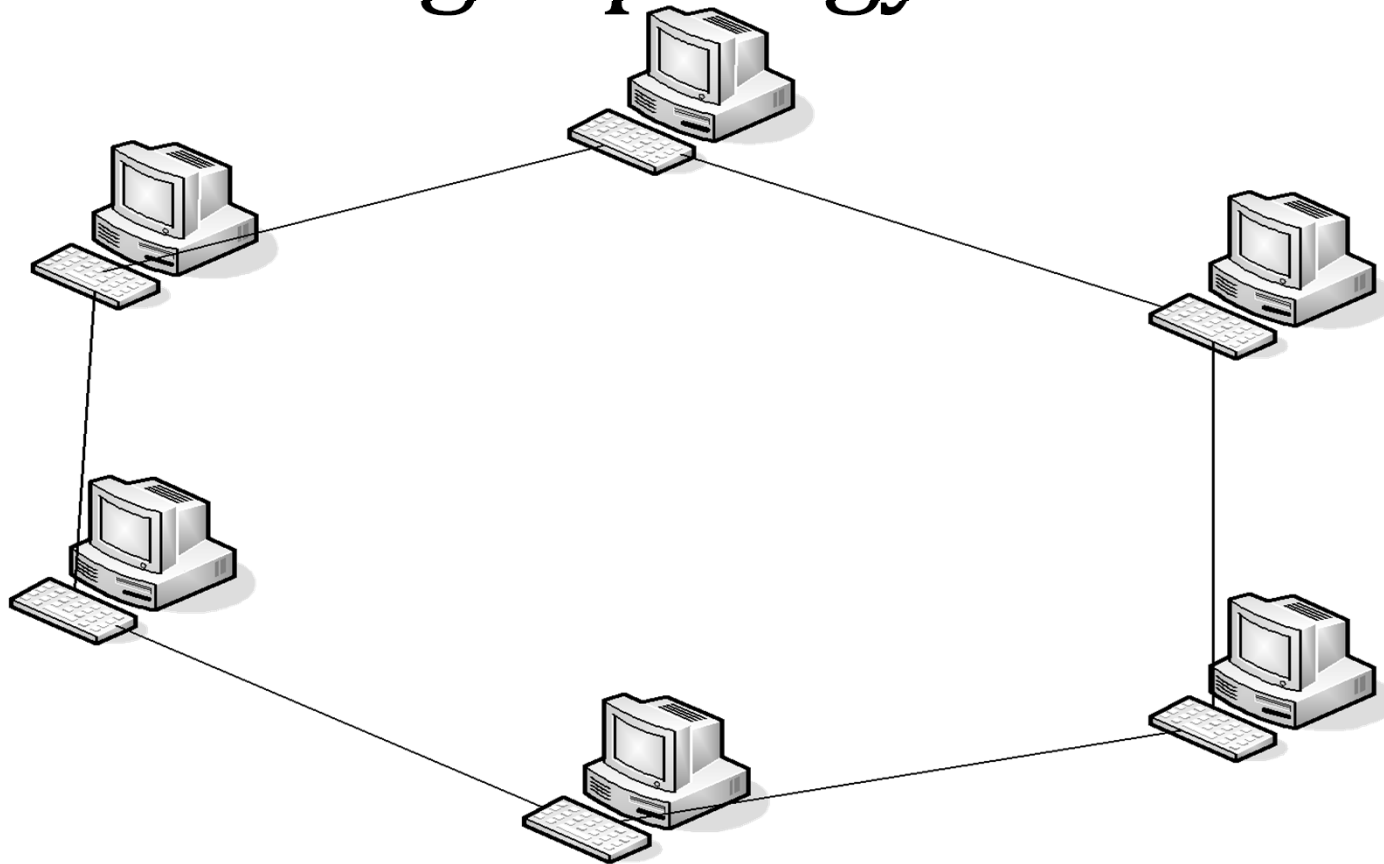


Physical bus topology

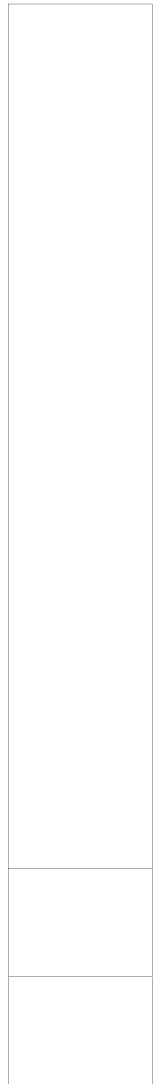
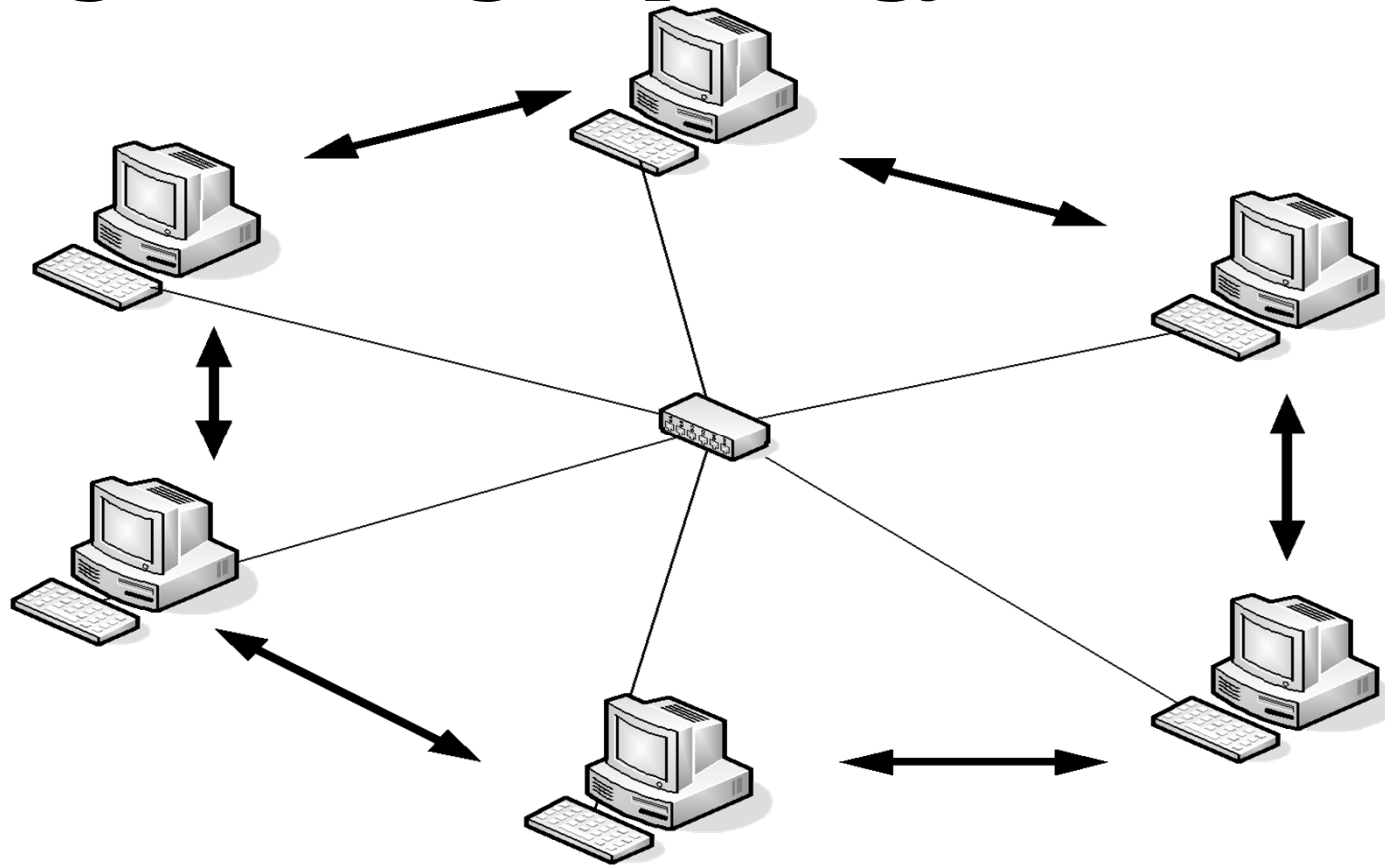


- small amount of cable
- high failure

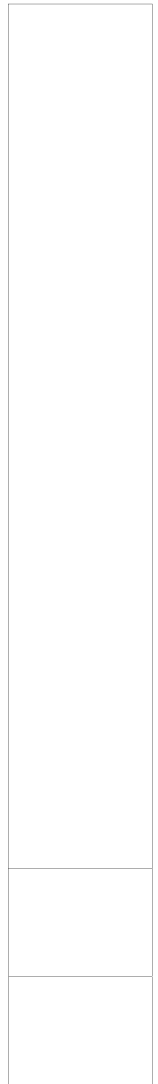
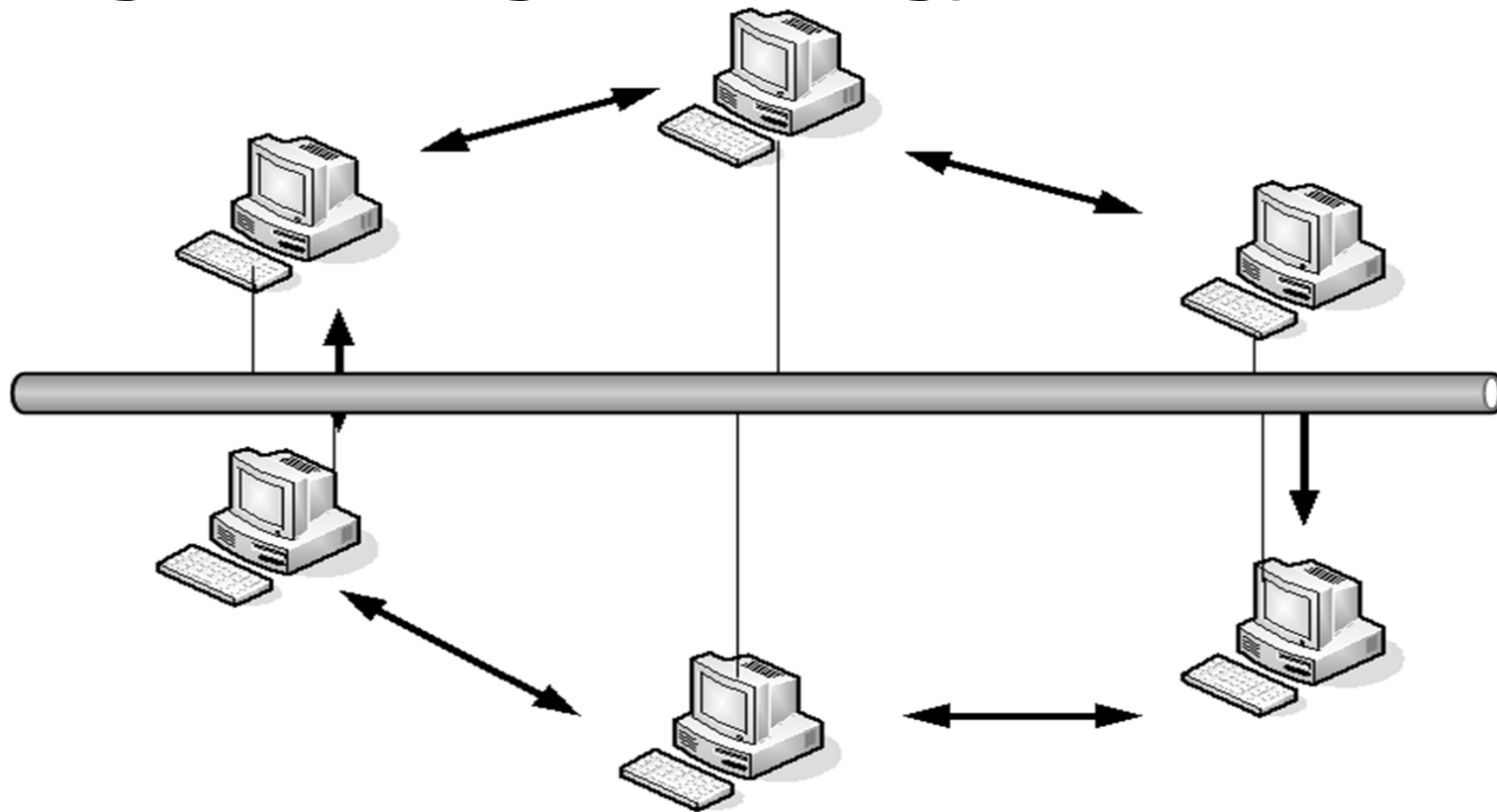
Physical ring topology



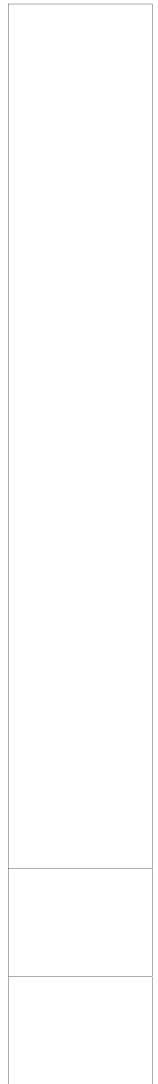
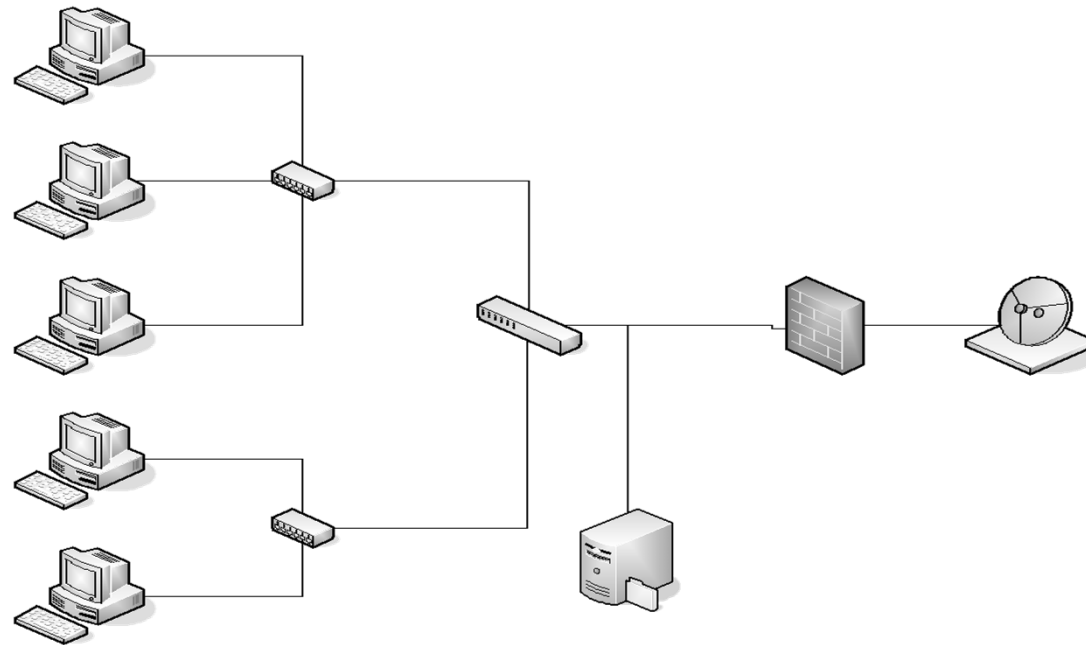
Logical ring topology



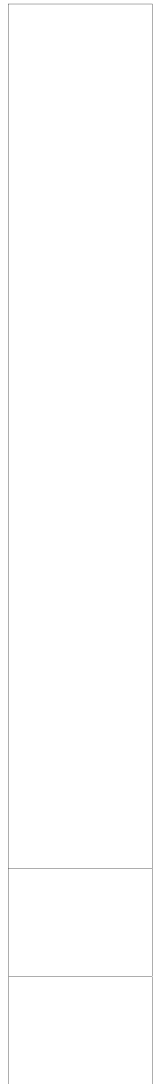
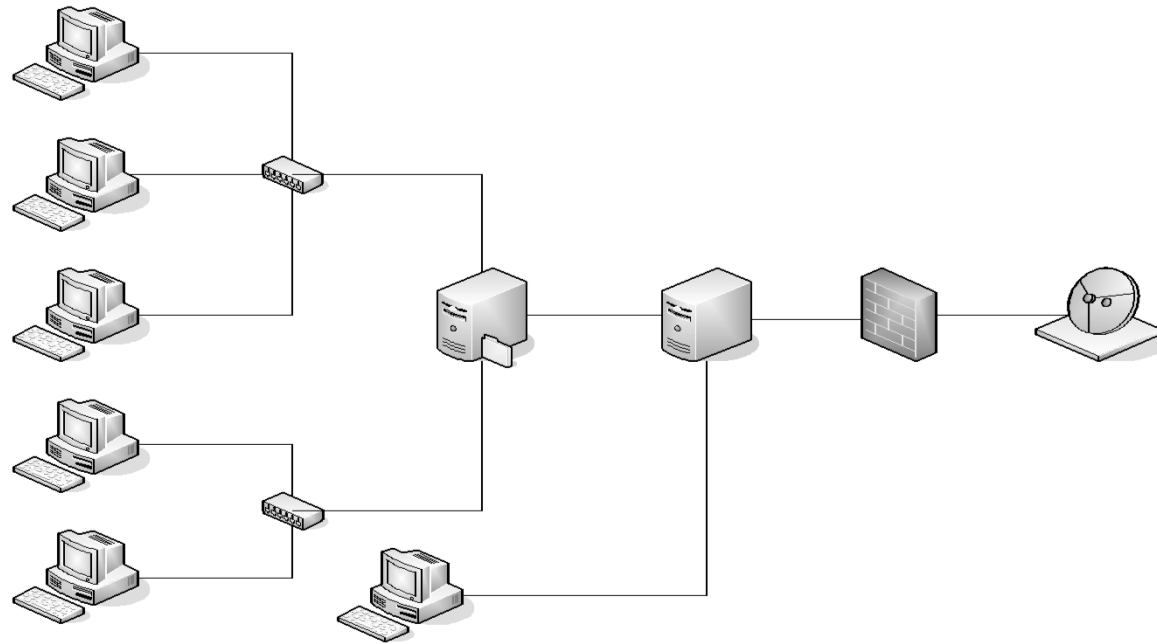
Logical ring topology



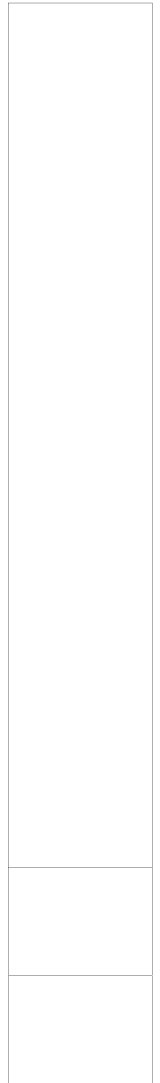
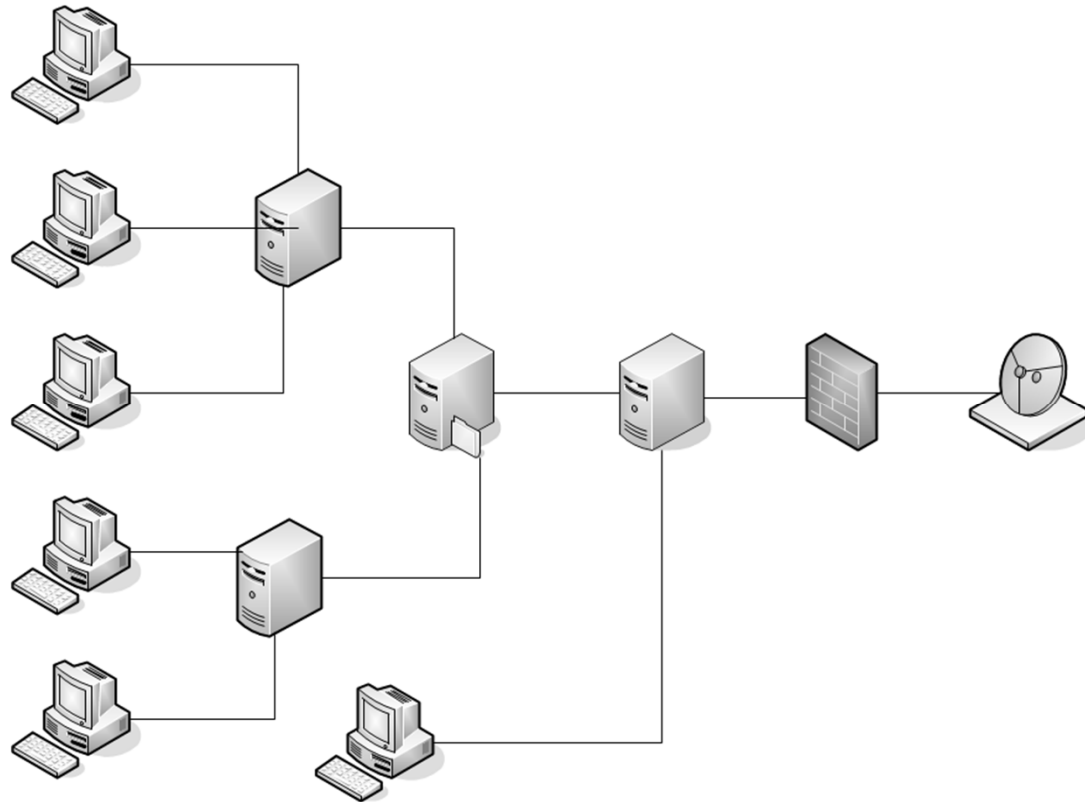
Tree topology



Tree topology

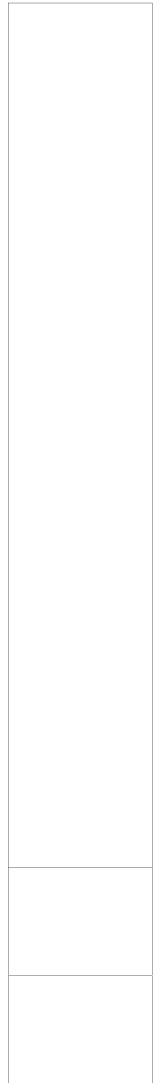


Tree topology



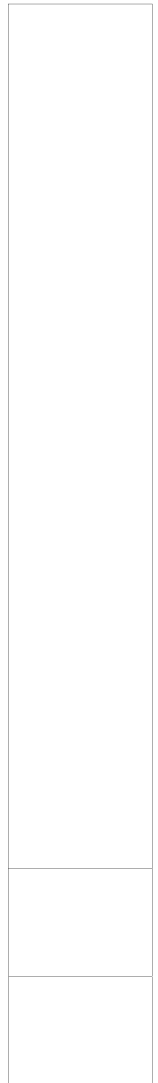
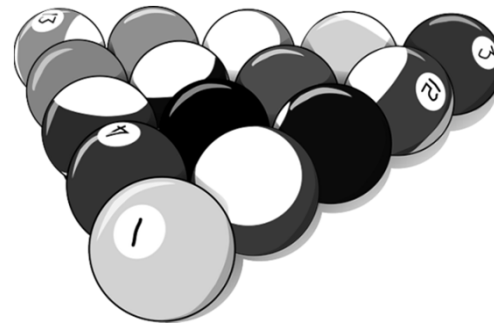
Media access algorithms

Foundations of computer networks

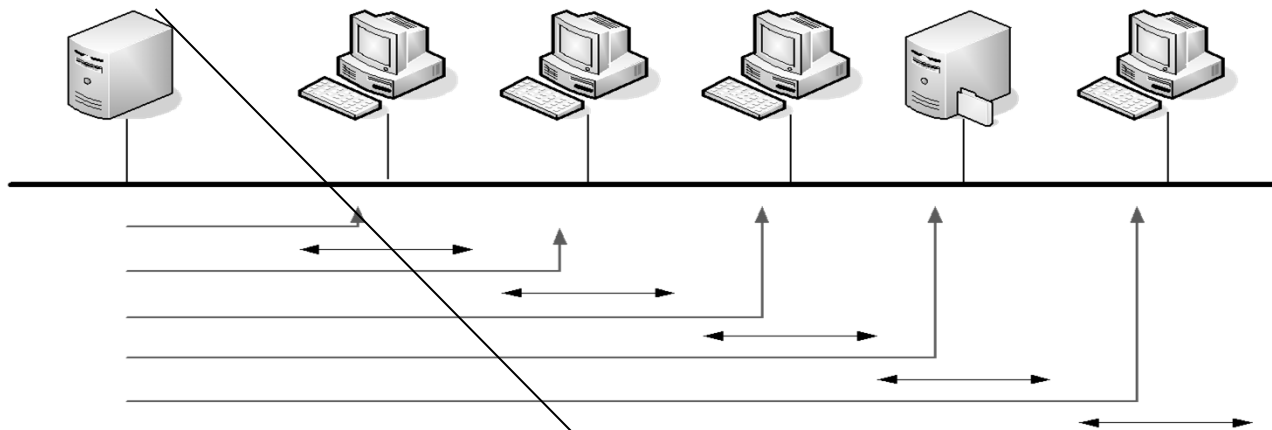


Media access classification

- Deterministic
 - polling
 - token
- Competition
 - CSMA/CD
 - CSMA/CA



Polling



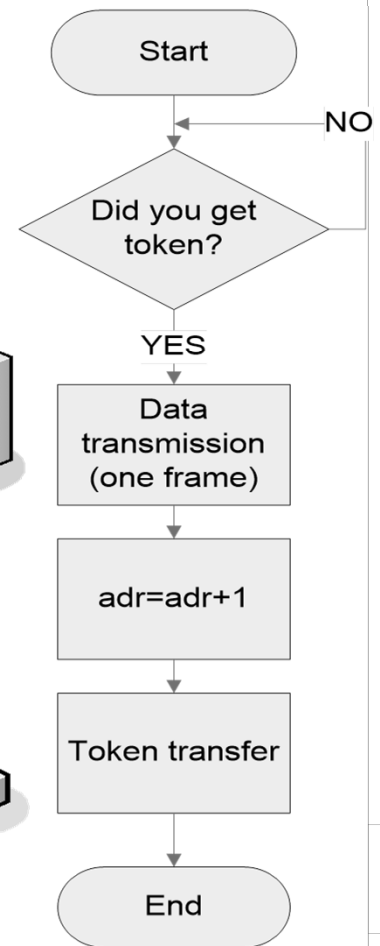
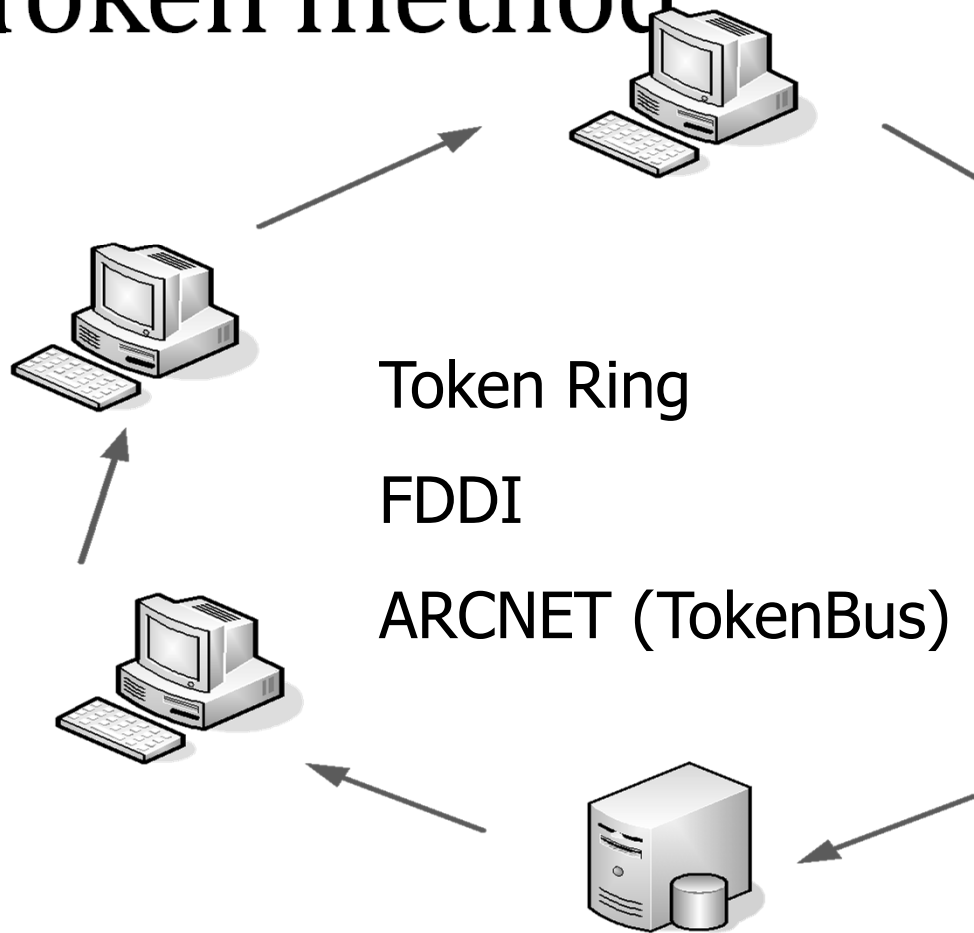
Waiting time (period):

$$T_{\max} = N \cdot (T_{\text{wyw}} + T_{\text{nad-max}})$$

server,
intelligent hub,
selected host

100VG-AnyLAN (HP) - DPAM

Token method



CSMA/CD

Draft of Ethernet network by
Robert Metcalf - 1976

