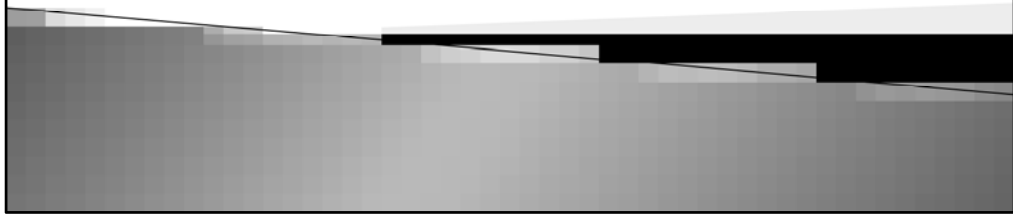


# Network Fundamentals

Week Four  
Dannelly's Sections



## Basic Network Types

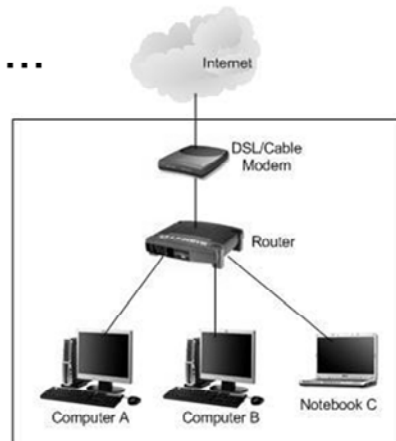
- ▶ **LAN** – Local Area Network
  - small area (e.g. a building)
  - small number of machines
  
- ▶ **WAN** – Wide Area Network
  - large area
  - usually a collection of LANS
  
- ▶ Textbook also includes
  - PAN – personal area network
  - MAN – metropolitan area network

# Network Topologies

- ▶ **Bus Network**
  - advantage : not much wiring
  - disadvantage : a wire break stops the network
- ▶ **Token Ring**
  - advantage : cheap
  - disadvantage : one down computer stops the entire network
- ▶ **Star**
  - Ethernet is the most popular type of LAN
  - advantage : hard to crash it
  - disadvantage : LOTS of wires

# Network Devices

- ★ ▶ Switch
- ★ ▶ Router
  - ▶ Bridge, Repeater, ...
  - ▶ Printers
  - ▶ Servers



# Transmission Media

- ▶ **Twisted-Pair**
  - used in your house for the phone
  - used by a DSL Modem
- ▶ **Coaxial Cable**
  - used in your house for cable TV
  - used by a Cable Modem
- ▶ **Radio / WiFi**
- ▶ **Fiber Optic**

# Networking your Home or Office

## ▶ Home

- you supply the router
- your phone or cable company probably supplies the modem (DSL or Cable modem, respectively)
- you configure the security settings on your router

## ▶ Office

- for your LAN, you'll probably use Ethernet
- if you need a WAN, it may be best to set up a "Virtual Private Network"