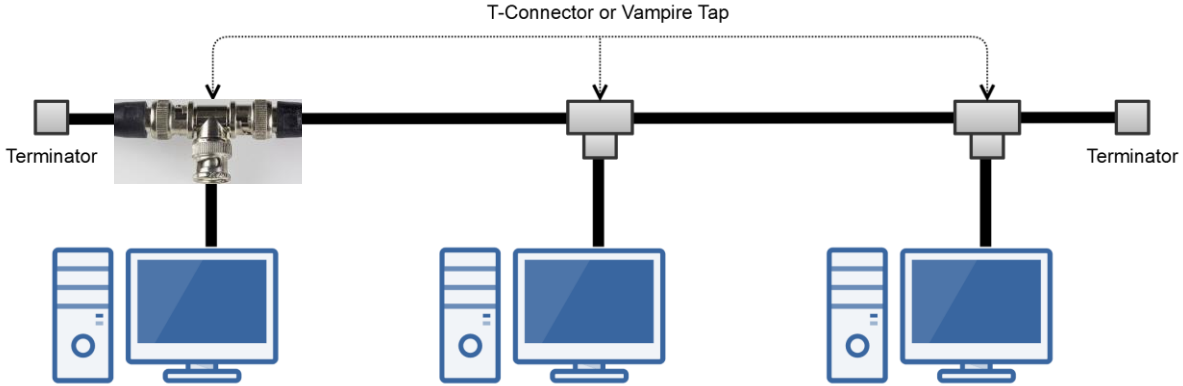
Wired Network Topologies

- Four Specific Topologies:
  - Bus
  - Ring
  - Star
  - Mesh

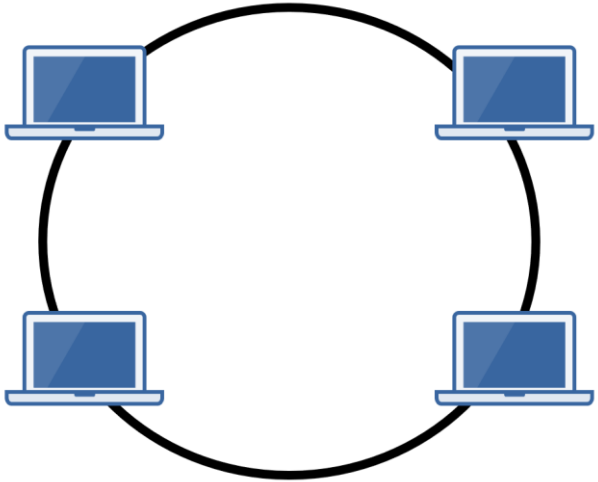
Bus Topology

- All devices are connected to a single coaxial network cable.
  - Devices are connected via a vampire tap or T-Connector.
  - Terminators are required at both ends of the cable to prevent signal bounce.
  - Antiquated technology.
- Only one end device can be active on the network at a time.
  - Data signals travel in both directions and are received by all devices on the network.
- A single break in the cable can take down the entire network.



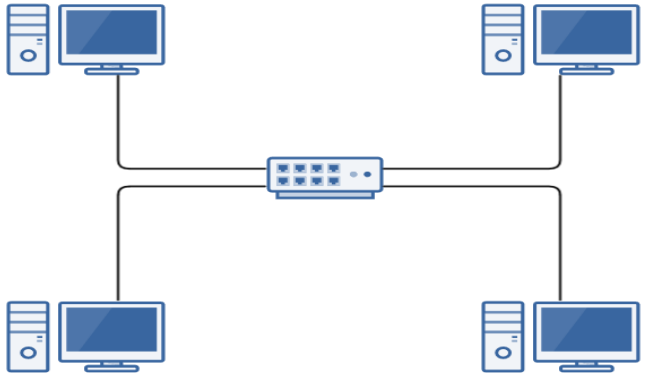
Ring Topology

- All devices are connected in a circular fashion.
- Each computer is connected to two other computers.
- Data travels from node-to-node with each computer handling data, either unidirectional or bidirectional.
- Each device (node) in the ring regenerates the signal, acting as a repeater.
- Failure of a single node can take down the entire network.
- Fiber Distributed Data Interface (FDDI) uses two counter-rotating ring topologies for redundancy.



Star Topology

- All devices are connected to a central connecting device, which is usually a switch.
- Devices send data to the switch, which forwards it to the appropriate destination device.
- Popular topology in today's networks.
- Used in most large and small networks.
- Central device is a single point of failure.



INSTRUCTOR
ALTON

Mesh Topology

- Each device is connected to every other device by separate cabling.
- Highly redundant and fault-tolerance.
- Expensive to install.
- Commonly used in Enterprise Networks & WANs.
- Two Types:
  - Partial Mesh
  - Full Mesh