

## Advantage and Disadvantage of Topologies:

1. **Bus Topology: Number of cables:  $N+1$  & Multipoint connection**
  - **Advantage:**
    - (a) Easy installation
    - (b) Less cabling
    - (c) Multipoint connection
  - **Disadvantage:**
    - (a) Difficult fault identification and isolation
    - (b) Weaker signal at farther distance
    - (c) Difficult reconnection
    - (d) Degradation in quality
2. **Ring Topology: Number of cables:  $N$  (If unidirectional) & point-to-point connection**
  - **Advantage:**
    - (a) Easy to install and reconfigure
    - (b) Add or delete is easier
    - (c) Fault isolation is simplified
  - **Disadvantage:**
    - (a) Unidirectional traffic
    - (b) Point-to-point connection
    - (c) A break in the ring can disable the network
3. **Star Topology: Number of cables:  $N$  & point-to-point connection**
  - **Advantage:**
    - (a) Less Expensive than mesh
    - (b) Easy to install and reconfigure
    - (c) Easy fault identification and isolation
  - **Disadvantage:**
    - (a) Point-to-point connection to a central controller (hub)
    - (b) Does not allow direct traffic between devices
    - (c) Dependency on hub
4. **Mesh Topology: Number of cables:  $(N*(N-1))/2$  & point-to-point connection**
  - **Advantage:**
    - (a) Each connection can carry out its own data load
    - (b) Robust: One connection failure does not affect others
    - (c) Better privacy or security
    - (d) Easy fault identification and isolation
  - **Disadvantage:**
    - (a) Huge amount of cabling is needed
    - (b) Hard to install and reconfigure
    - (c) Costly and required more space