

Introduction to Computer(01103)

Lecture # 05

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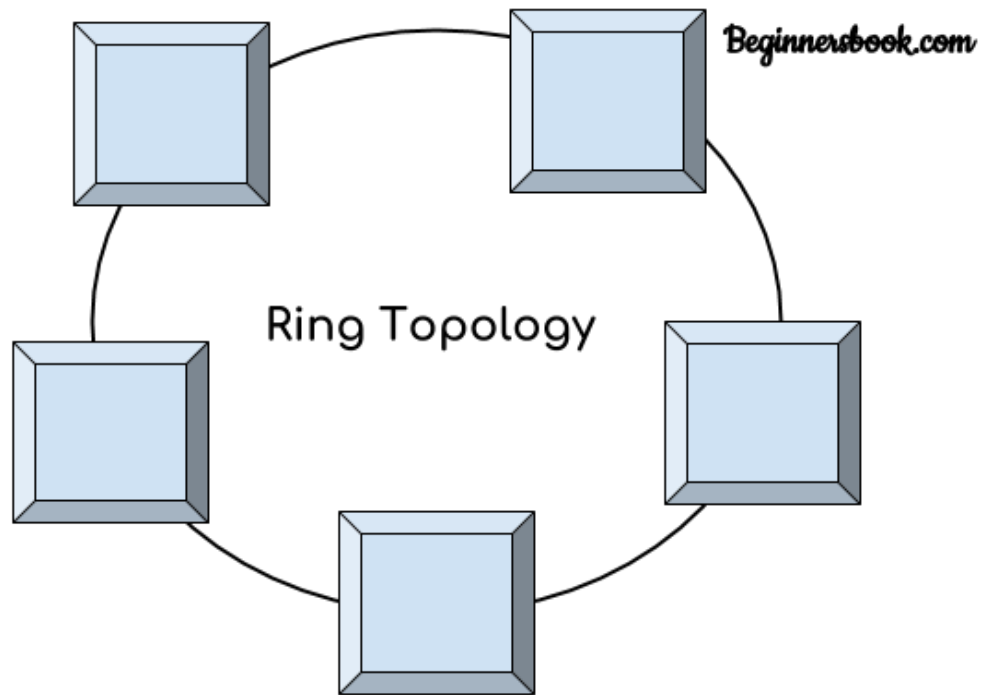
Topics

- Ring Topology
- Mesh Topology
- Hybrid Topology

Ring Topology

- In ring topology each device is connected with the two devices on either side of it. There are two dedicated point to point links a device has with the devices on the either side of it. This structure forms a ring thus it is known as ring topology. If a device wants to send data to another device then it sends the data in one direction, each device in ring topology has a repeater, if the received data is intended for other device then repeater forwards this data until the intended device receives it.

Ring Topology



Hybrid Topology

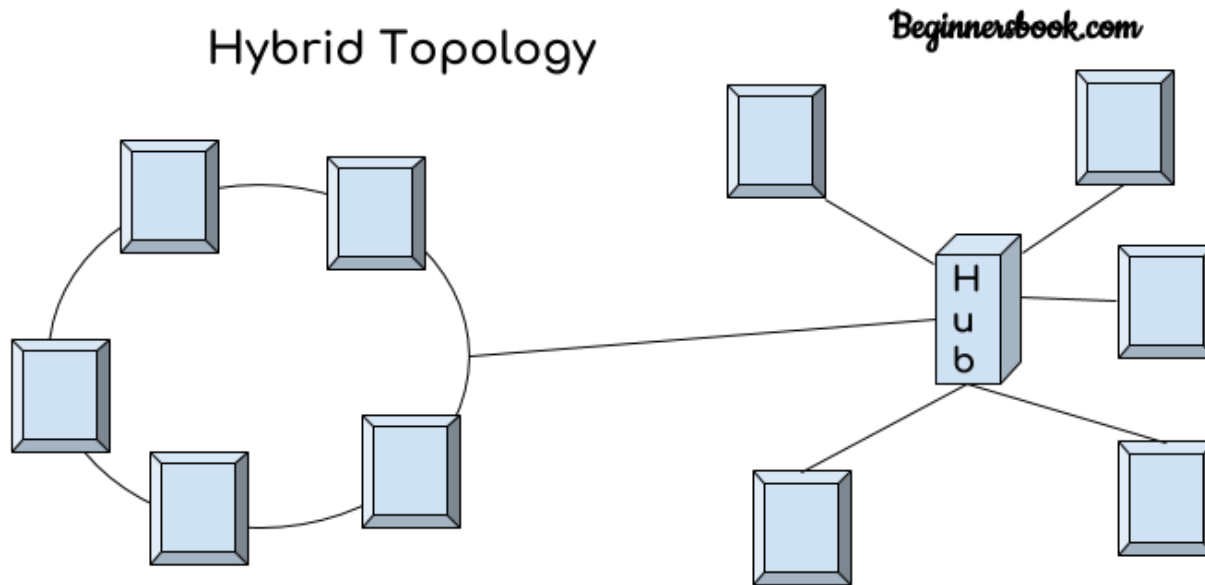
- A combination of two or more topology is known as hybrid topology. For example a combination of star and mesh topology is known as hybrid topology.
- **Advantages of Hybrid topology**
- 1. We can choose the topology based on the requirement for example, scalability is our concern then we can use star topology instead of bus technology.
- 2. Scalable as we can further connect other computer networks with the existing networks with different topologies.

Disadvantages of Hybrid topology

○ Disadvantages of Hybrid topology

1. Fault detection is difficult.
2. Installation is difficult.
3. Design is complex so maintenance is high thus expensive.

Hybrid Topology



Mesh Topology

- **Mesh Topology**

In mesh topology each device is connected to every other device on the network through a dedicated point-to-point link. When we say dedicated it means that the link only carries data for the two connected devices only. Lets say we have n devices in the network then each device must be connected with $(n-1)$ devices of the network. Number of links in a mesh topology of n devices would be $n(n-1)/2$.

Mesh Topology

- **Advantages of Mesh topology**

- 1. No data traffic issues as there is a dedicated link between two devices which means the link is only available for those two devices.
- 2. Mesh topology is reliable and robust as failure of one link doesn't affect other links and the communication between other devices on the network.
- 3. Mesh topology is secure because there is a point to point link thus unauthorized access is not possible.
- 4. Fault detection is easy.

Mesh Topology

