

# NIELIT Gorakhpur

**Course Name: O Level (2nd Sem)**

**Topic: Network Topologies**

**Subject: ICT**

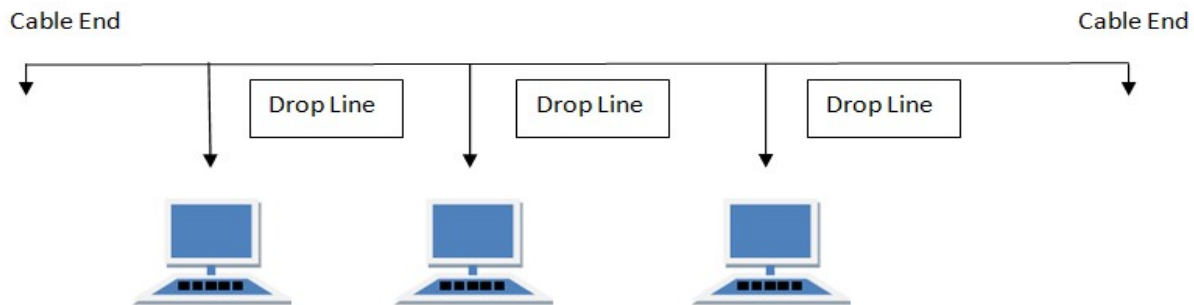
**Date: 13-05-20**

## **BUS Topology:**

The bus topology is designed in such a way that all the stations are connected through a single cable known as a backbone cable.

Each node is either connected to the backbone cable by drop cable or directly connected to the backbone cable.

When a node wants to send a message over the network, it puts a message over the network. All the stations available in the network will receive the message whether it has been addressed or not.



### **Advantages of Bus Topology:**

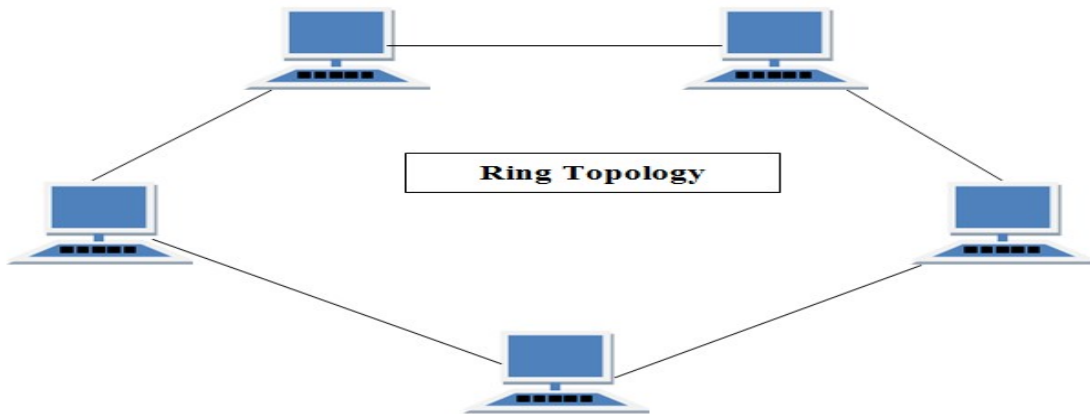
1. It is cost effective.
2. Cable required is least compared to other network topology.
3. Used in small networks.
4. Easy to expand joining two cables together.

### **Disadvantages of Bus Topology:**

1. Cables fails then whole network fails.
2. If network traffic is heavy or nodes are more the performance of the network decreases.
3. Cable has a limited length.
4. It is slower than the ring topology

## **RING Topology:**

It is called ring topology because it forms a ring as each computer is connected to another computer, with the last one connected to the first. Exactly two neighbours for each device.



## **Advantages of Ring Topology:**

1. Transmitting network is not affected by high traffic or by adding more nodes, as only the nodes having tokens can transmit data.
2. Cheap to install and expand

## **Disadvantages of Ring Topology:**

1. Troubleshooting is difficult in ring topology.
2. Adding or deleting the computers disturbs the network activity.
3. Failure of one computer disturbs the whole network.

## **HYBRID Topology:**

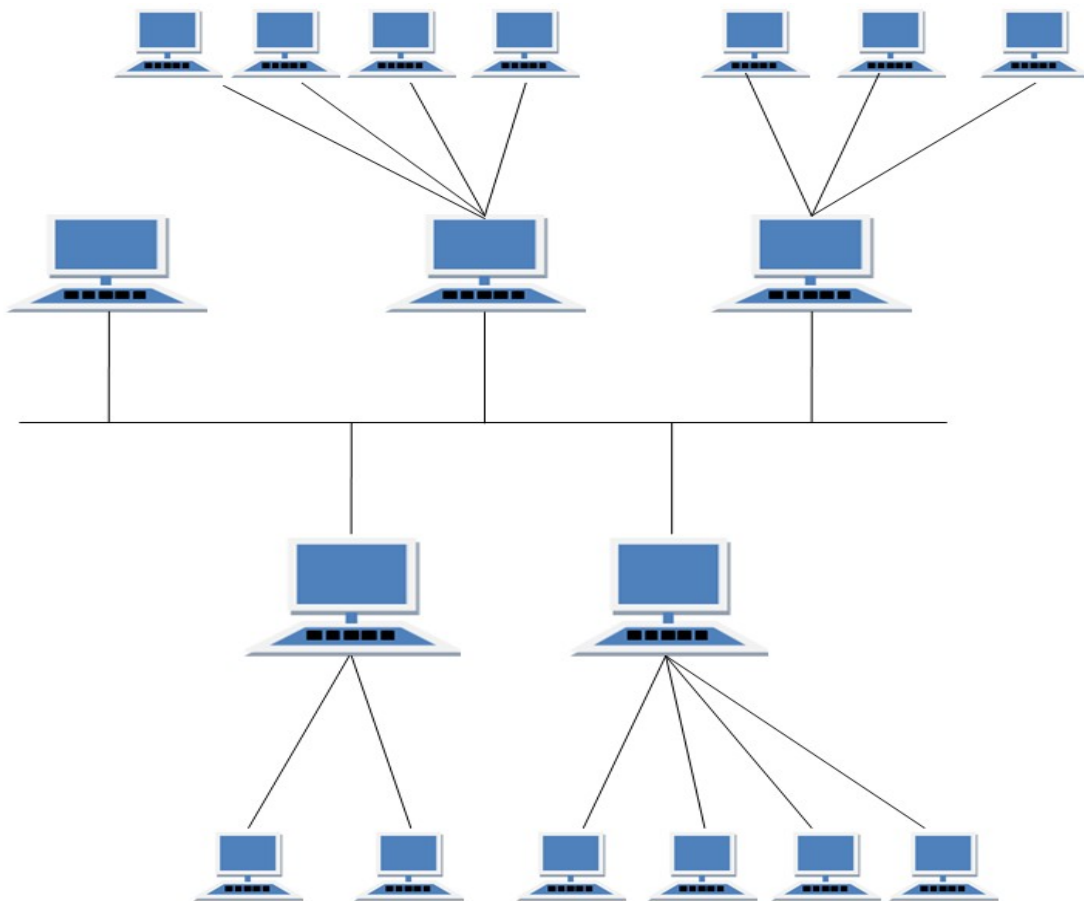
It is two different types of topologies which is a mixture of two or more topologies. For example if in an office in one department ring topology is used and in another star topology is used, connecting these topologies will result in Hybrid Topology.

### **Advantages of Hybrid Topology:**

1. Reliable as Error detecting and trouble shooting is easy.
2. Effective.
3. Scalable as size can be increased easily.
4. Flexible.

### **Disadvantages of Hybrid Topology:**

1. Complex in design.
2. Costly.



### **Exercise:**

1. Write the difference between ring and bus topology.
2. What is hybrid topology? Explain.