## **<u>Ring Topology</u>**

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.
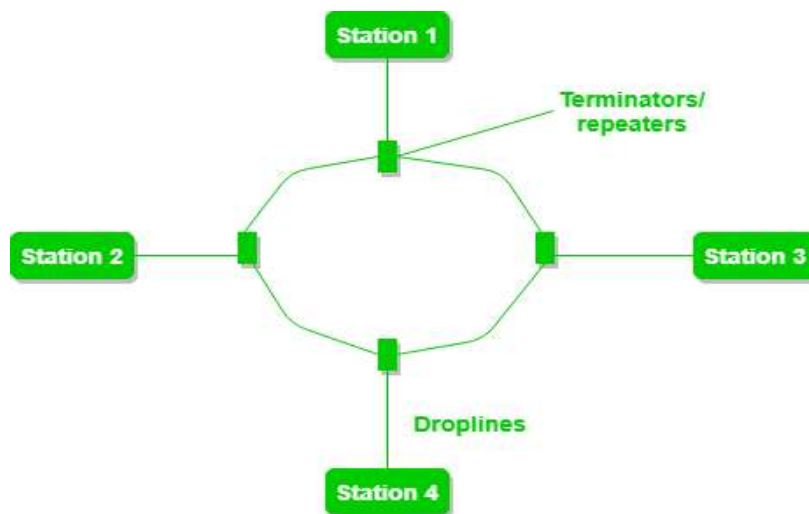


- o  Ring topology is like a bus topology, but with connected ends.
- o  The node that receives the message from the previous computer will retransmit to the next node.
- o  The data flows in one direction, i.e., it is unidirectional.
- o  The data flows in a single loop continuously known as an endless loop.
- o  It has no terminated ends, i.e., each node is connected to other node and having no termination point.
- o  The data in a ring topology flow in a clockwise direction.
- o  The most common access method of the ring topology is **token passing**.
  - o  **Token passing:** It is a network access method in which token is passed from one node to another node.
  - o  **Token:** It is a frame that circulates around the network.

## Working of Token passing

- o  A token moves around the network, and it is passed from computer to computer until it reaches the destination.

- The sender modifies the token by putting the address along with the data.
- The data is passed from one device to another device until the destination address matches. Once the token received by the destination device, then it sends the acknowledgment to the sender.
- In a ring topology, a token is used as a carrier.
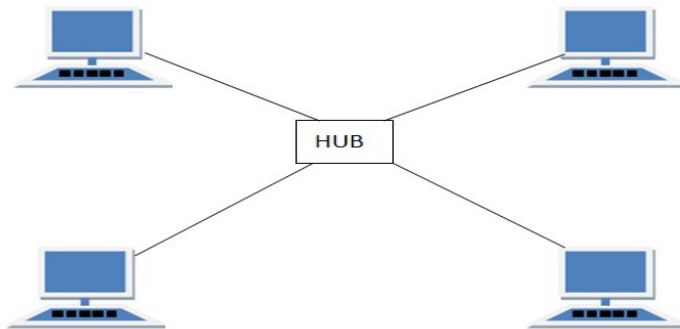
## Advantages of Ring Topology

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.

## STAR Topology

In this type of topology all the computers are connected to a single hub through a cable. This hub is the central node and all others nodes are connected to the central node.



## Features of Star Topology

1. Every node has its own dedicated connection to the hub.

2. Hub acts as a repeater for data flow.

3. Can be used with twisted pair, Optical Fibre or coaxial cable.

## Advantages of Star Topology

1. Fast performance with few nodes and low network traffic.
2. Hub can be upgraded easily.
3. Easy to troubleshoot.
4. Easy to setup and modify.
5. Only that node is affected which has failed, rest of the nodes can work smoothly.

## Disadvantages of Star Topology

1. Cost of installation is high.
2. Expensive to use.
3. If the hub fails then the whole network is stopped because all the nodes depend on the hub.
4. Performance is based on the hub that is it depends on its capacity

Exercise:

1. Define Ring topology and Star topology.
2. Compare between Ring topology and Star topology.