15. Network Topology

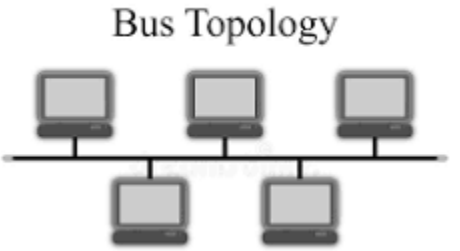
Important Key

Network Topology

A Network Topology is the physical and logical arrangement of nodes and connections in a network, Nodes usually include device such as switches, routers and software with switch and router features.

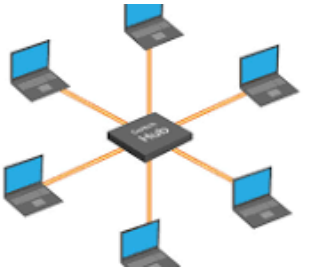
TYPES OF TOPOLOGIES

BUS Topology



- The simplest Network topology
- In bus topology, all nodes are connected to a central cable called bus.
- It is a topology in which every node is connected to a single cable, all devices share a single communication line.
- Failure of one device will not affect other devices in bus topology.
- In bus topology all nodes are connected in a single cable.
- In bus topology if the network cable breaks, the entire network will be down.

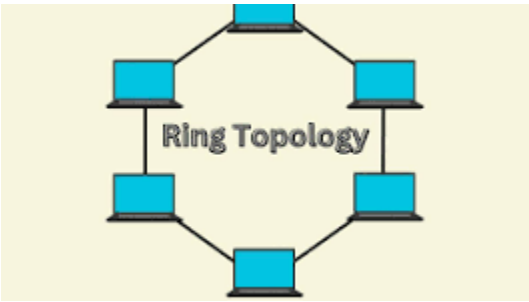
Star Topology



- Star Topology is where all the nodes are connected to a central system called switch.
- In star topology, every node has its own dedicated communication to the Hub.

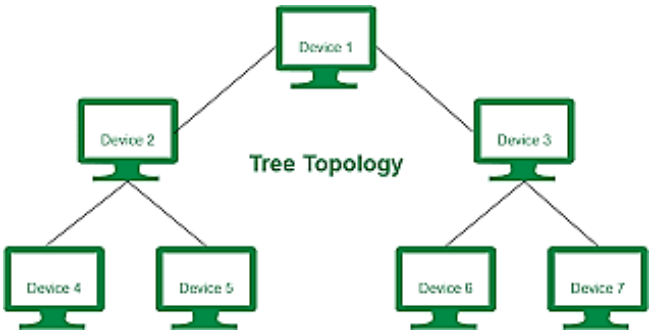
- In star topology, central computer acts as a server.

Ring Topology



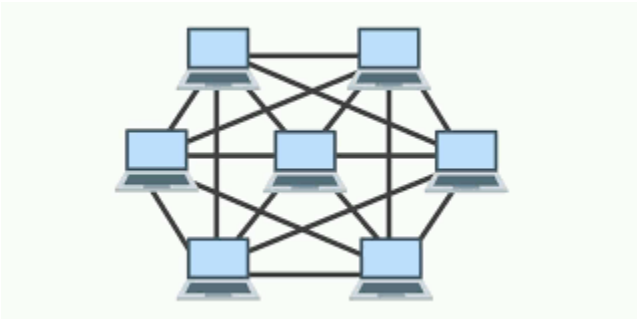
- All the nodes are connected each other in such a way that they make a close loop in ring topology.
- Failure of any node results in the failure of whole ring in ring topology.
- Repeater are used in ring topology.

Tree Topology



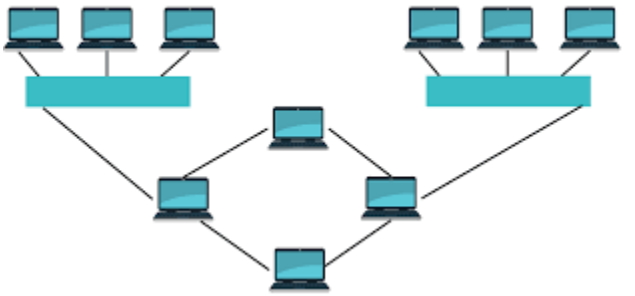
- Tree topology is the combination of bus topology and star topology.
- In tree topology, number of star networks are connected using bus.

Mesh Topology



- Topology in which each node is connected to all other nodes.
- The topology which is a point-to-point **Connection to the other nodes or devices is Mesh Topology.**
- In Mesh Topology with n devices, if a new device is added,_____ new links are needed. N-1.
- When nine devices are arranged in a mesh topology, each device needs 8 input/output ports.

Hybrid Topology



- This topology is combination of various different topologies.

Booster-1

1. In _____ topology, each communicating device is connected with every other device in the network.
   (a) Mesh Topology
   (b) Ring Topology
   (c) Star Topology
   (d) Bus Topology
2. Such a group of wires by which data is transmitted from one part of the computer to another is called.
   (a) Data Bus (b) Control Bus
   (c) Address Bus (d) System Bus
3. Which network topology requires a 'HUB' to function?
   (a) Mesh (b) Bus
   (c) Star (d) Ring
4. Consider a LAN in which all computers are connected to a central switch. What is the network topology of this LAN?
   (a) Mesh (b) Ring
   (c) Bus (d) Star
5. What name is given to the physical layout of a computer network?
   (a) Network Topology
   (b) Network Architecture
   (c) Network Protocol
   (d) Network Configuration
6. What is the network configuration called in which all the data/information is sent through a central computer?
   (a) Central Network (b) Star Network
   (c) Hub Network (d) Bus Network
7. A _____ Topology is a bus topology in a closed loop where data travels around the ring in one direction.
   (a) Star (b) Mesh

(c) Ring (d) Tree

8. Which topology is an arrangement of networks in which each node is connected to a central hub or central computer?
   (a) Mesh (b) Ring
   (c) Bus (d) Star Topology
9. If computers in a LAN are connected along a single cable, then the name given to such a topology is.
   (a) Star (b) Ring
   (c) Bus Topology (d) Mesh
10. A linear LAN architecture in which transmissions from various stations on the network are reproduced over the length of the medium and are accepted by all other stations on the network is known as:
    (a) Ring (b) Bus Topology
    (c) Star (d) Mesh
11. The topology in which every node is connected only to its immediate neighbors is called.
    (a) Ring (b) Mesh
    (c) Bus (d) Star
12. The most reliable network configuration is_____.
    (a) Mesh (b) Ring
    (c) Bus (d) Star
13. Network topology in which the concept of a central node is used for rebroadcasting of the signal received from the peripheral node?
    (a) Bus (b) Star Topology
    (c) Mesh (d) Ring
14. From the connection of the whole n nodes in a mesh topology network, the number of keys is.
    (a) n(n-1)/2 (b) n-1
    (c) 2^n (d) n^2
15. In which network topology, a failure on one node can disbalance the whole network?
    (a) Ring (b) Mesh
    (c) Bus (d) Star
16. The topology in which every node is connected only to its immediate neighbors is called,
    (a) Ring (b) Mesh
    (c) Bus Topology (d) Star
17. Which topology uses multipoint connection?
    (a) Bus Topology (b) Star
    (c) Ring (d) Mesh
18. If all devices are connected to a central hub, then the topology is called.
    (a) Mesh (b) Star Topology
    (c) Bus (d) Ring
19. The geometric arrangement of devices on the network is called.
    (a) Network Topology
    (b) Network Architecture
    (c) Network Layout
    (d) Network Structure
20. Ethernet uses
    (a) Bus Topology (b) Ring Topology
    (c) Mesh Topology (d) Star Topology
21. Which is the name of the network topology in which there are bi-directional links between each possible nod?
    (a) MESH (b) STAR
    (c) RING (d) BUS
22. A topology that involves Tokens.
    (a) Mesh (b) Ring
    (c) Bus (d) Star
23. Which network topology requires a central controller or hub?
    (a) Mesh (b) Ring
    (c) Star (d) Bus

24. _____ topology required a multipoint connection.
    (a) Mesh (b) Bus
    (c) Ring (d) Star

25. Another name for fully interconnected network setup is.
    (a) Mesh (b) Star
    (c) Tree (d) Ring

26. What is the name of a network topology in which each possible note has bidirectional links?
    (a) Ring (b) Star
    (c) Tree (d) Mesh

27. Which one the following is not a valid network topology?
    (a) Random (b) Star
    (c) Ring (d) Bus

28. In which of the following topologies all networks' junctions (network nodes) are individually connected to a central switch, hub, or computer that acts as a central point of transmission for passing on messages?
    (a) star topology (b) Bus topology
    (c) Ring topology (d) Hybrid topology

29. Which of the following devise is used to connect computers in star topology?
    (a) Hub (b) Repeaters
    (c) Bridge (d) Router

30. In which of the following network topologies, each computer and network device is connected by a single cable?
    (a) Star Topology (b) Mesh Topology
    (c) Ring Topology (d) Bus Topology

31. Which of the following network topology provides a central hub/computer from which the rest of the computers are directly connected?
    (a) Mesh (b) Star
    (c) Ring (d) Bus

32. In which of the following network topology is the communication between any two nodes very fast?
    (a) Ring (b) Bus
    (c) Mesh (d) Star

33. Which of the following is not a topology?
    (a) Circle (b) Mesh
    (c) Ring (d) Star

34. Which of the following network topology has more complex structure?
    (a) Bus (b) Star
    (c) Mesh (d) Hybrid

Booster-1

Answer Key

1	**A**	11	**A**	21	**A**	31	**B**
2	**A**	12	**A**	22	**B**	32	**C**
3	**C**	13	**B**	23	**C**	33	**A**
4	**D**	14	**A**	24	**B**	34	**C**
5	**A**	15	**A**	25	**A**		
6	**B**	16	**A**	26	**D**		
7	**C**	17	**A**	27	**A**		
8	**D**	18	**B**	28	**A**		
9	**C**	19	**A**	29	**A**		
10	**B**	20	**A**	30	**D**		