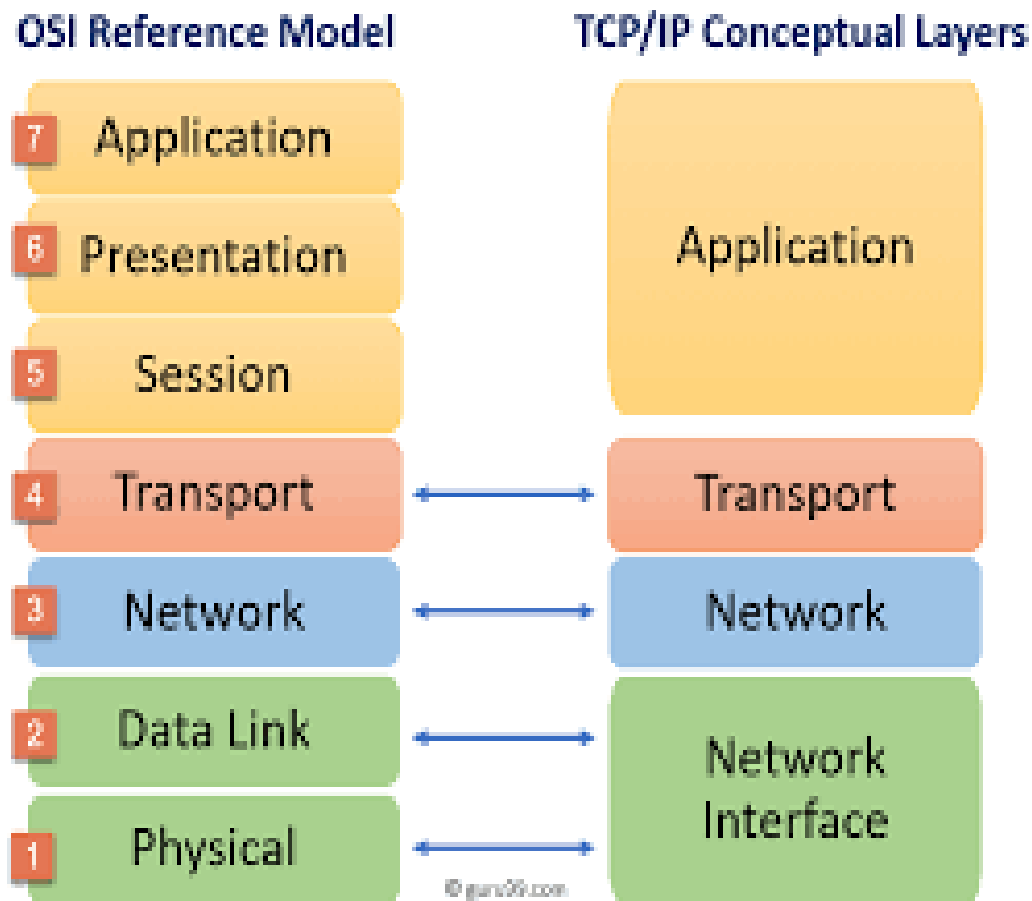OSI model is developed by ISO(International Standard Organization), whereas TCP Model is developed by ARPANET (Advanced Research Project Agency Network).
OSI has 7 layers whereas TCP/IP has 4 layers.
OSI refers to Open Systems Interconnection whereas TCP/IP refers to Transmission Control Protocol.

OSI Reference Model

7	Application
6	Presentation
5	Session
4	Transport
3	Network
2	Data Link
1	Physical

TCP/IP Conceptual Layers

Application

Transport

Network

Network Interface

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Network topology
Topology: Logic which we use to connect computers together.
Or the logical arrangement of computers is called topology.

Category of Topology:

1. Physical – The physical network topology refers to the actual connections (wires, cables, etc.) of how the network is arranged. Setup, maintenance the physical network.

2. **Logical** – The logical network topology is a higher-level *idea* of how the network is set up, including which nodes connect to each other and in which ways, as well as how data is transmitted through the network. Logical network topology includes any virtual and cloud resources.
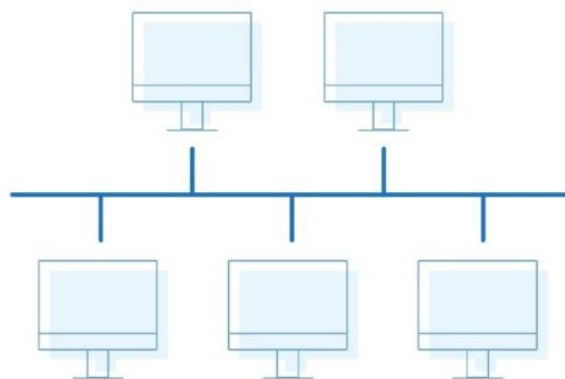
Types of Topology:

Network Topology Types
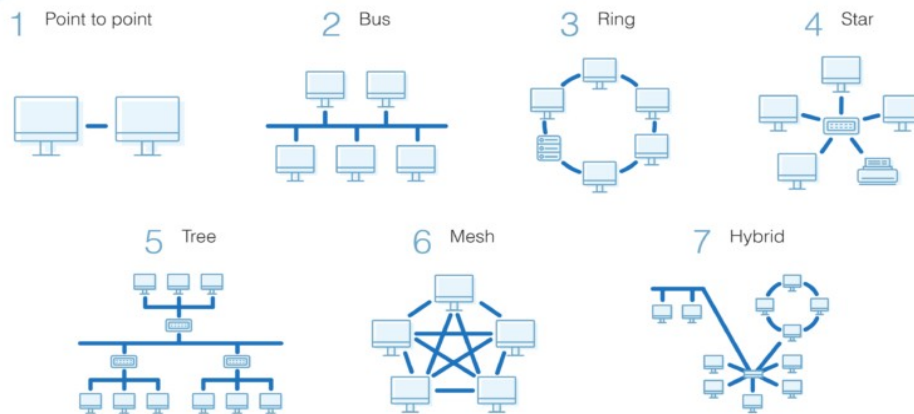
1) Point to Point
2) Bus Topology:
A bus topology orients all the devices on a network along a single cable running in a single direction from one end of the network to the other—which is why it's sometimes called a "line topology" or "backbone topology."

Bus Topology

all devices to be connected via a single coaxial or RJ45 cable.

CSMA/CD (Carrier Sense Multiple Access/ Collision Detection) is a media access control method that was widely used in Early Ethernet technology/LANs When there used to be shared Bus Topology and each node (Computers) were connected By Coaxial Cables. Now a Days Ethernet is Full Duplex and CSMA/CD is not used as Topology is either Star (connected via Switch
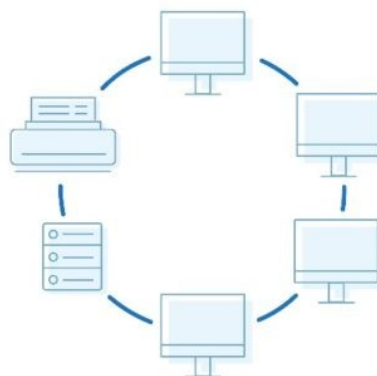
or Router)
or Point to Point (Direct Connection) but they are still supported though.

data is "half-duplex," which means it can't be sent in two opposite directions at the same time,

3)Ring Topology:
Ring topology is where nodes are arranged in a circle (or ring). The data can travel through the ring network in either one direction or both directions, with each device having exactly two neighbors.
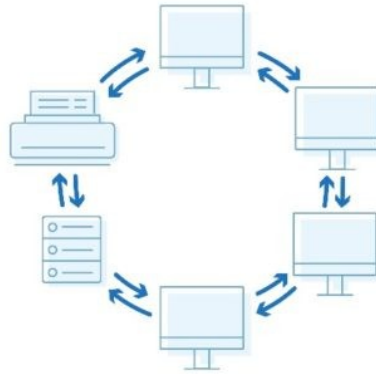
Ring Topology

Uses token ring system
https://instrumentationtools.com/token-ring-token-bus-working-animation/

What Is Dual-Ring Topology?

Dual Ring Topology

No use of Token ring.
Became full duplex.

4)Star Topology:
A star topology, the most common network topology, is laid out so every node in the network is directly connected to one central hub via coaxial, twisted-pair, or fiber-optic cable.
information sent from any node on the network has to pass through the central one to reach its destination—and functions as a repeater, which helps prevent data loss.
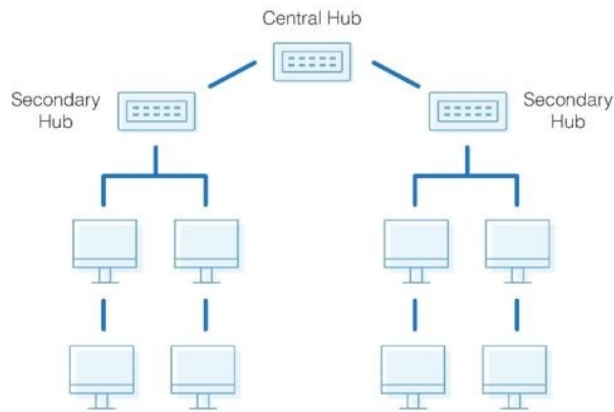
Star Topology
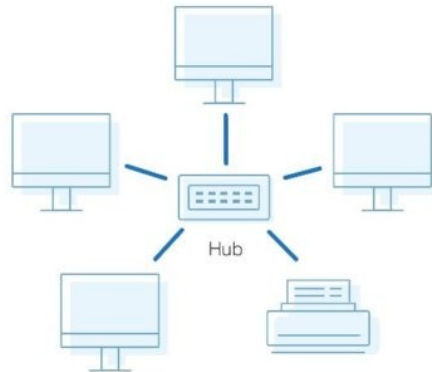
5)Tree Topology:
a tree topology has a parent-child hierarchy to how the nodes are connected. Those connected to the central hub are connected linearly to other nodes, so two connected nodes only share one mutual connection.

Tree Topology

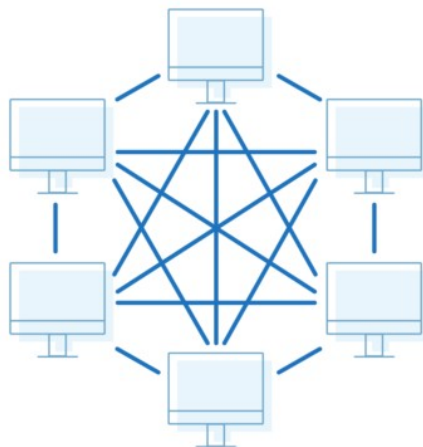
Uses three hub

6)Mesh Topology:
Mesh networks can be full or partial mesh. Partial mesh topologies are mostly interconnected, with a few nodes with only two or three connections, while full-mesh topologies are—surprise!—fully interconnected.
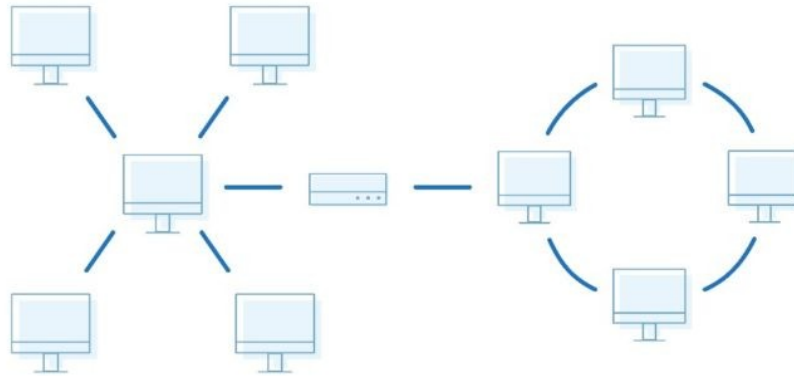
Mesh Topology

7)Hybrid Topology:
Hybrid topologies combine two or more different topology structures—the tree topology is a good example, integrating the bus and star layouts.

Hybrid Topology