Web and Internet

Class Six

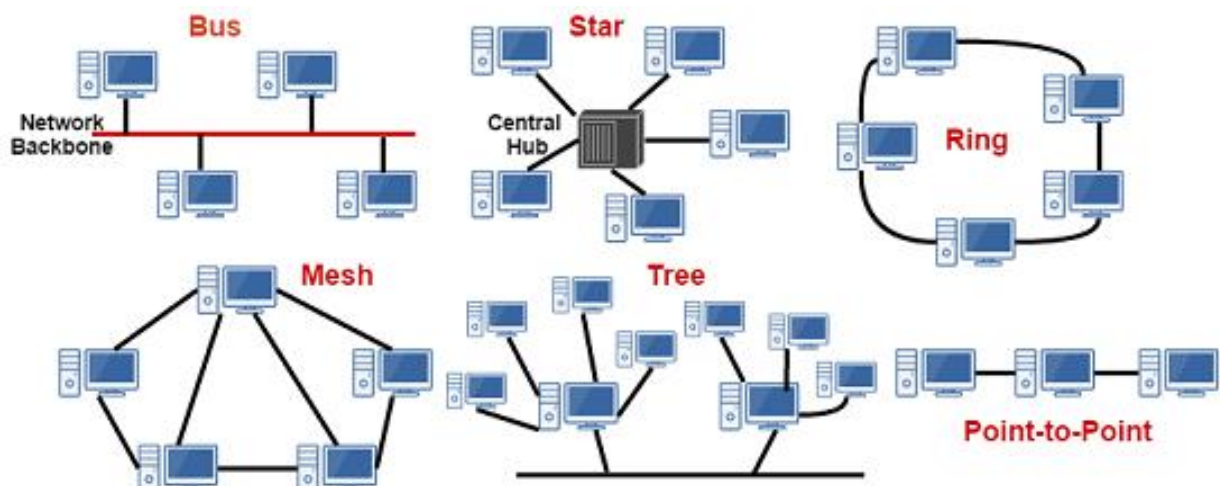Lab 8

Network Topology

A Network Topology is the arrangement with which computer systems or network devices are connected to each other.
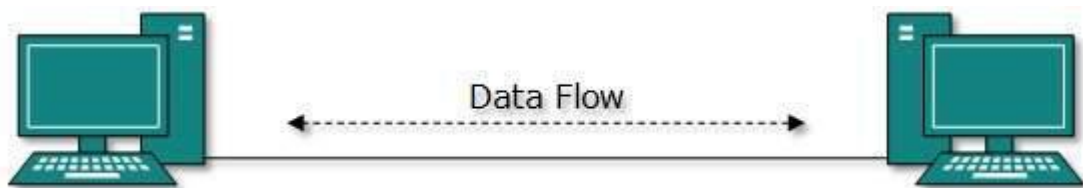
Topologies may define both physical and logical aspect of the network.
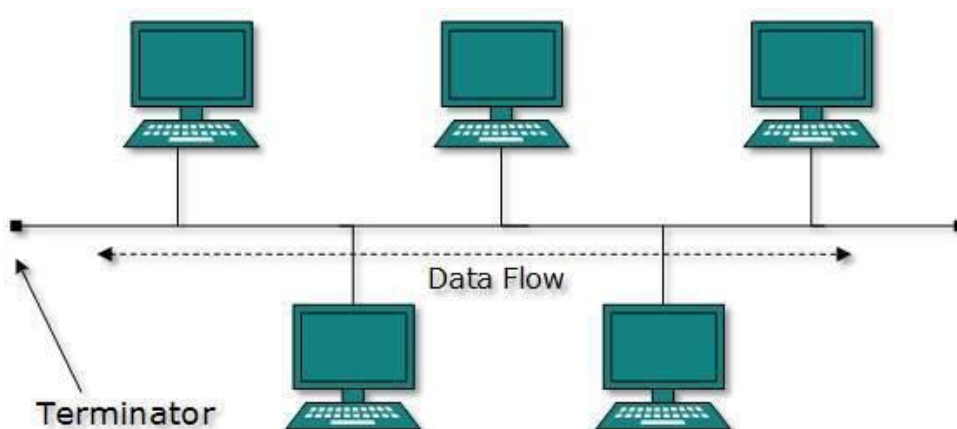
Point-to-Point

Point-to-point networks contains exactly two hosts such as computer, switches or routers, servers connected back to back using a single piece of cable.

Often, the receiving end of one host is connected to sending end of the other and vice-versa.

Bus Topology

In case of Bus topology, all devices share single communication line or cable.It is one of the simple forms of networking where a failure of a device does not affect the other devices.

But failure of the shared communication line can make all other devices stop functioning.
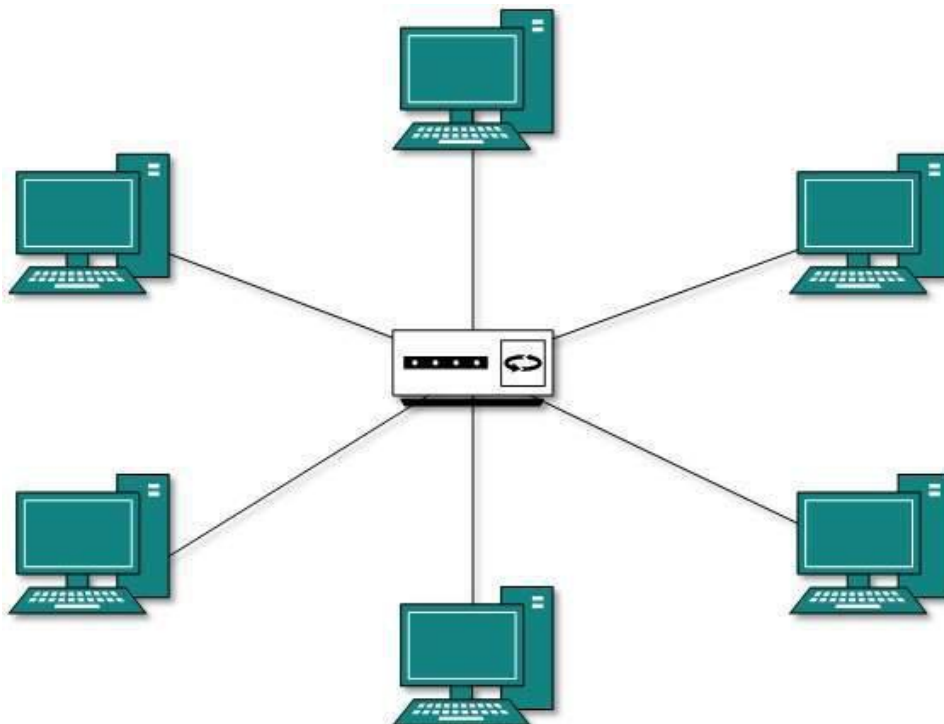
Star Topology

All hosts in Star topology are connected to a central device, known as hub device, using a point-to-point connection.

That is, there exists a point to point connection between hosts and hub. The hub device can be any of the following:

Layer-1 device such as hub or repeater

Layer-2 device such as switch or bridge

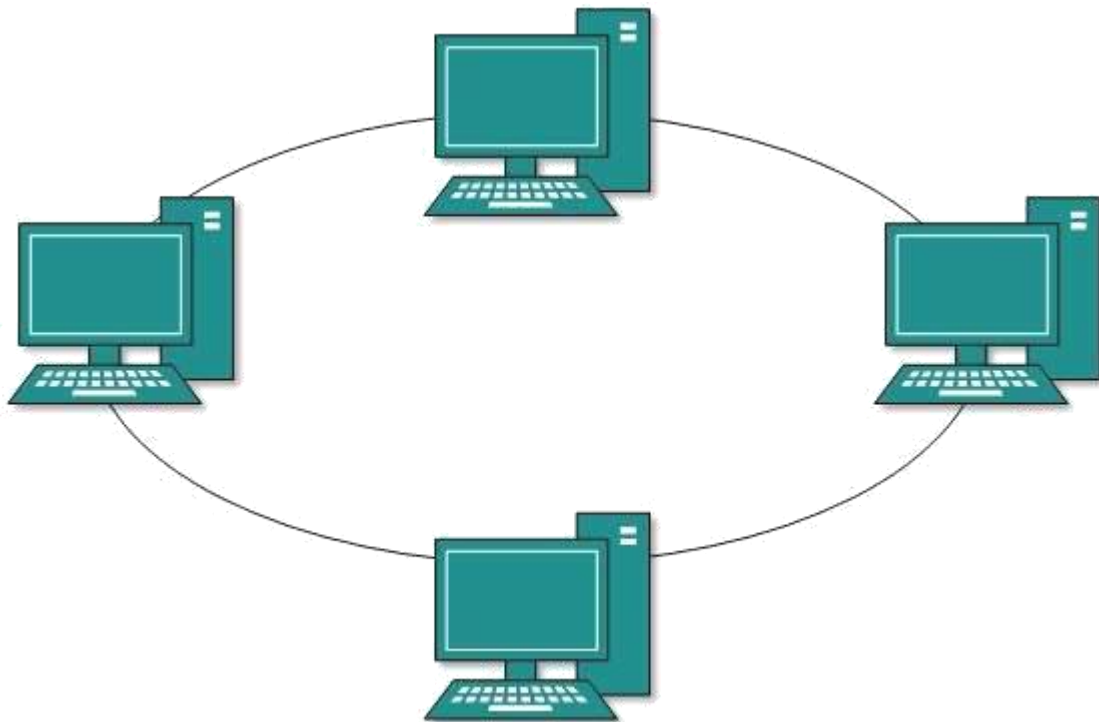Layer-3 device such as router or gateway

As in Bus topology, hub acts as single point of failure. If hub fails, connectivity of all hosts to all other hosts fails.

Ring Topology

In ring topology, each host machine connects to exactly two other machines, creating a circular network structure.


When one host tries to communicate or send message to a host which is not adjacent to it, the data travels through all intermediate hosts.

Failure of any host results in failure of the whole ring.Thus, every connection in the ring is a point of failure.

Mesh Topology

In this type of topology, a host is connected to one or multiple hosts.This topology has hosts in point-to-point connection with every other host or may also have hosts which are in point-to-point connection to few hosts only.
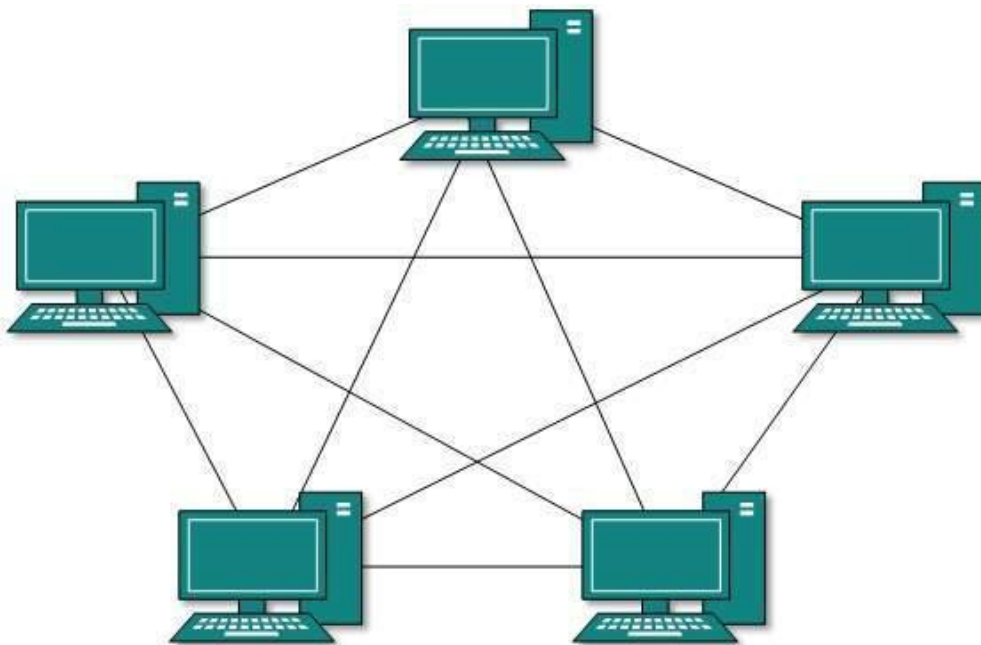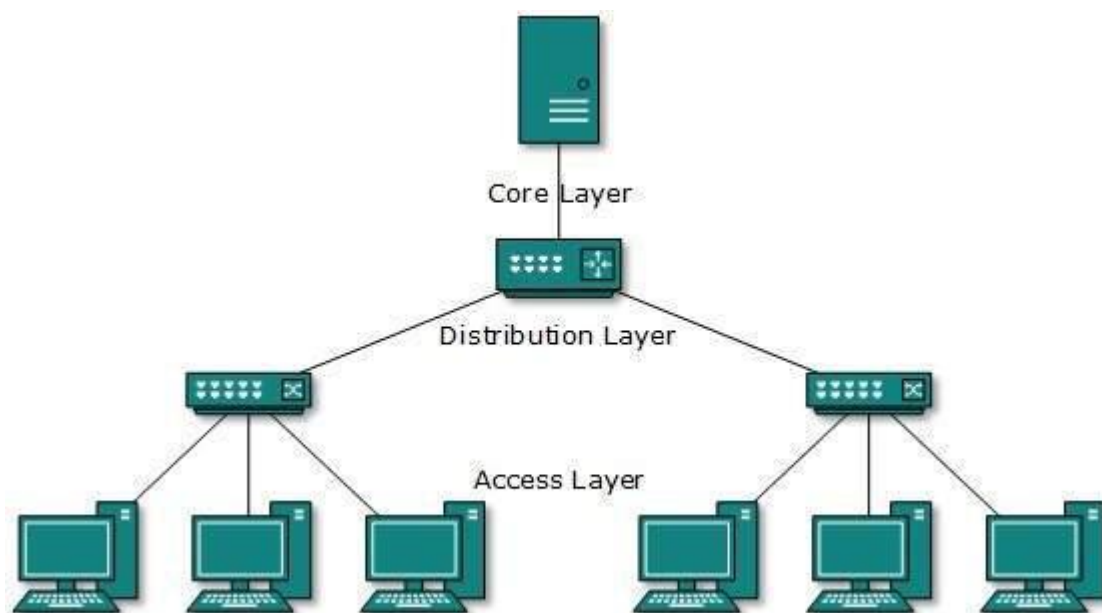
Tree Topology

Also known as Hierarchical Topology, this is the most common form of network topology in use presently.This topology imitates as extended Star topology and inherits properties of bus topology.

This topology divides the network into multiple levels/layers of network.

All neighboring hosts have point-to-point connection between them.Similar to the Bus topology, if the root goes down, then the entire network suffers even though it is not the single point of failure.