Peer to Peer Network :-

→ In peer to peer network each computer is responsible for making its own resources available to other the Computer on the network.

→ Each computer is responsible for setting up and maintaining its own security for these resources.

→ Also each computer is responsible for accessing the required network resources from peer to peer relationship.
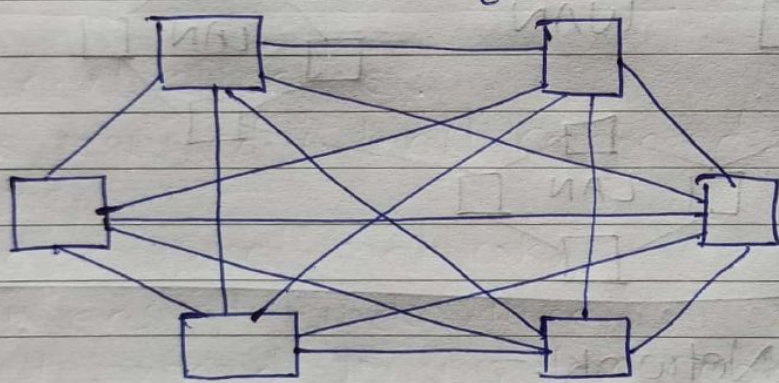
→ peer to peer network is useful for a small network containing less than 10 computers on a single LAN.

8.00

→ In peer to peer network each computer can function as both client and server.

9.00

10.00 → Peer to peer networks do not have a central control system. There are no servers in peer networks.

11.00

→ Peer networks are amplified into home group.

12.00

01.00

02.00

03.00

Peer to peer network
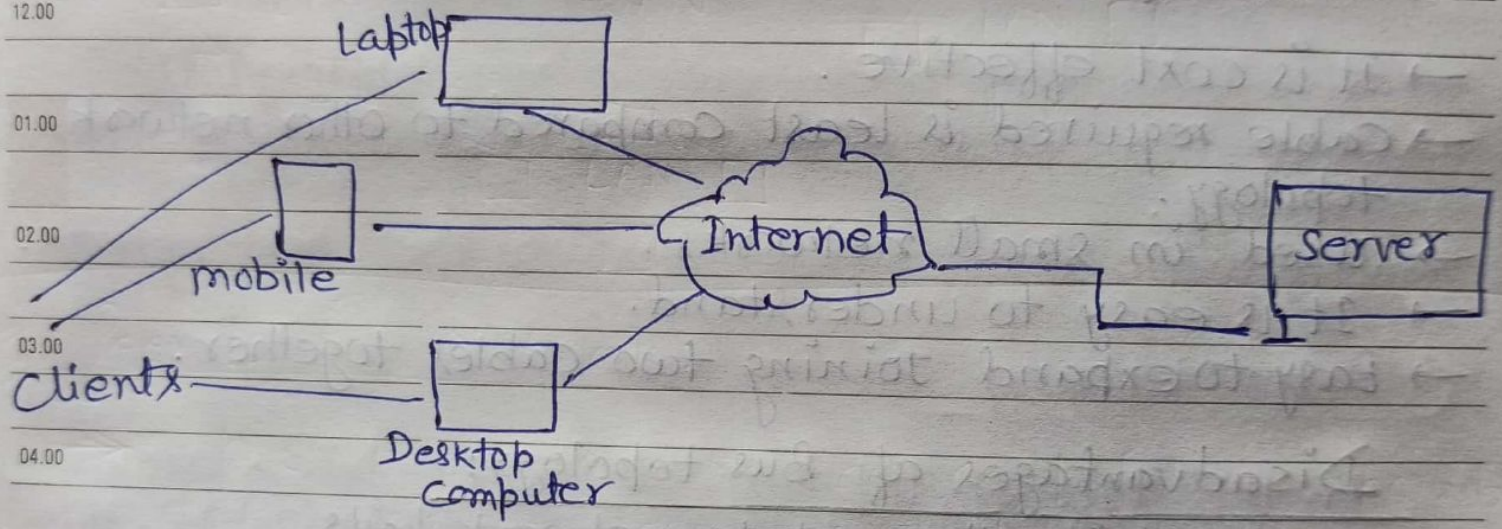
Client Server Network :-

07

→ In client-server network relationships, certain computers act as server and other act as clients. A server is simply a computer, that available the network resources and provides service to other computers when they request it. A client is the computer running a program that requests the service from a server.

→ Local area network (LAN) is based on client-server network relationship.

→ A client-server network is one which all network resources such as files, directories, applications and shared devices, are centrally managed and hosted and then are accessed by client.
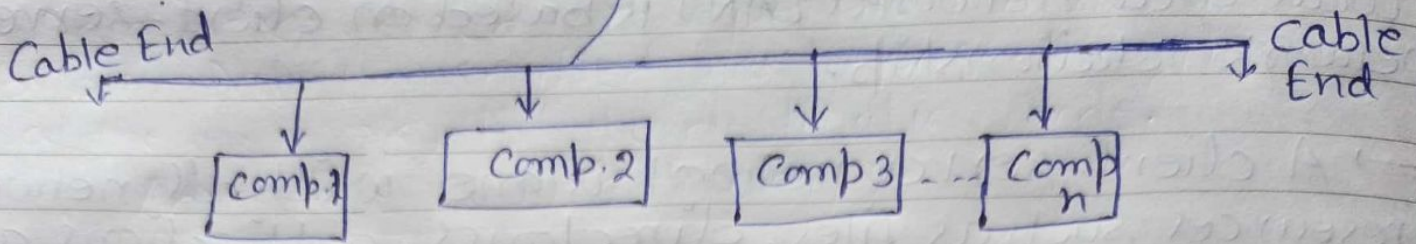
→ Client-server network are defined by the presence of server on a network that provide security and administration of the network.

→ Laptop
→ mobile
Clients
→ Desktop Computer
→ Internet
→ Server

Topologies

① **Bus Topology :-** Bus topology is a network type in which every computer and network device is connected to single cable. when it has exactly two endpoints, then it is called Linear Bus topology.

Bus

Cable End

Cable End

| Comp.1 | Comp.2 | Comp 3 | .... | Comp n |

Features of Bus topology :-

→ It transmits data only in one direction.
→ Every device is connected to a single cable.

Advantages of Bus topology :-

→ It is cost effective.
→ Cable required is least compared to other network topology.
→ used in small networks.
→ It is easy to understand.
→ Easy to expand joining two cables together.

Disadvantages of Bus topology :-

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

② Ring topology :-

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

Ring Topology

Features of Ring topology :-

→ A number of repeaters are used for Ring topology with large number of nodes, because if someone wants to send some data to the last node in the ring topology with 100 nodes, then the data will have to pass through 99 nodes to reach the 100th node. Hence to prevent data loss repeaters are used in the network.

→ The transmission is unidirectional, but it can be bidirectional by having 2 connections between each network node, it is called Dual Ring topology.

→ In Dual Ring topology, two rings networks are formed, and data flow is in opposite direction in them. Also, if one ring fails, the second ring can act as a backup, to keep the network up.

→ Data is transferred in a sequential manner that is bit by bit, Data transmitted, has to pass through each node of the network, till the destination node.
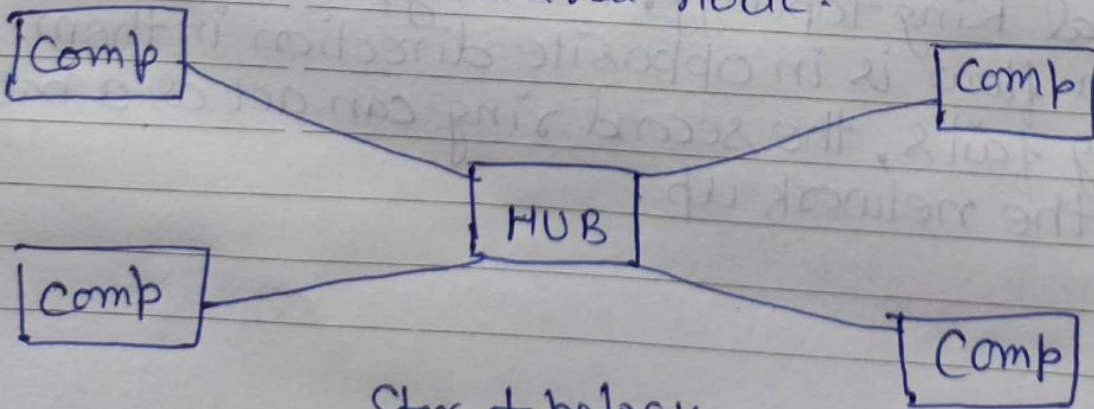
Advantages of Ring topology :-

→ Transmitting network is not affected by high traffic or by adding more nodes, as only the nodes having tokens can transmit data.

→ Cheap to install and expand.

Disadvantages of Ring Topology :-

→ Troubleshooting is difficult in ring topology.

→ Adding or deleting the computers disturbs the network activity.

→ Failure of one computer disturbs the whole network.

③ 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 other nodes are connected to the central node.

Star topology

Features of star topology:-

* Every node has its own dedicated connection to the hub.
* Hub acts as a repeater for data flow.
* Can be used with twisted pair, optical fiber or coaxial cable.

Advantages of star topology:-

→ Fast performance with few nodes and low network traffic
→ Hub can be upgraded easily.
→ Easy to troubleshoot.
→ Easy to setup and modify.
→ only the node is affected which has failed, rest of the nodes can work smoothly.

Disadvantages of star topology:-

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