Network Topology:

Its connection with nodes or peripheral devices In each other.
To communicate all the nodes with each other.

Types:

- ➢ Bus Topology
- ➢ Star Topology
- ➢ Ring Topology
- ➢ Tree Topology
- ➢ Mesh Topology   etc....

1.Bus Topology:

In Bus topology all the nodes/devices are connected with each
other in single cable the.
The cable may be backbone cable.

Advantages:

- In Bus topology when one device or node is fail that not be
  affected on all nodes whose are connected with them.
- The cable of bus topology is small to compare with ring
  topology.
- Less expansive.
- It's can easily be understandable.
- It's mostly use for LAN.

Disadvantages:

- If main cable is break, then all the nodes are disconnected.
- If the network is fail with some reason's than its very difficult to be understand.
- Decreasing efficiency of network to increase no. of nodes.
- It's not suitable for large networks.
- One node can send data at one time if the network is free.

2.Star Topology:

In star topology several nodes/peripheral are directly connected   with common central device using cable.

The central device can be switch/hub.

All the nodes are connected indirectly.

When we were send the data from one node to another then the data first goes to switch/hub and then the switch/hub were transfer that data to their sending location.

Advantages:

- To easily enter a new device in star topology.
- Star topology can easily set up or install and can easily modify.
- In star topology every problem can easily be troubleshooting.
- When one node has fail or in problem then the other cannot be effected.

Disadvantages:

- If the main switch or hub has detected in problem or fail than all of the nodes whose connected with them are not be working.

3. Ring Topology:

In ring topology all the nodes/peripheral are connected with each other with single cable in closing loop.
And this close loop like ring for this reason this is called ring topology.in ring topology not necessary hub/switch.
In ring topology data send one node to another up to destination node.
It's mostly used in office school or building.
All the messages send with same direction in ring.

Advantages:

- In ring topology hub/switch is not necessary.
- In ring topology had not been effected or low performance with add new device.
- When one node will be fail then message can be send in another direction.
- Data send in one direction Clock wise or in clock wise.

Disadvantages:

- Ring topology is slow to sending the data to compare star topology.
- Activity disturbing to add new node.

4.Tree Topology:

Tree topology is the combination of Bus topology.

And its look like tree for this reason it's called tree topology.

All the buses nodes are connected with single cable.

Advantages:

- It's can be easily expanding.
- When one bus topology is fail in tree topology then it's not effected on the tree topology.
- The fault can easily be identify.
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Advantages:

- When backbone cable is fail then all the tree network is fail.
- When devices are much more than than the maintenance is difficult.
- It's very difficult to set up network and cabling.

5.   Mesh Topology:

In mesh topology all the nodes are connected with each other point to point interconnect directly.

The data easily send in directly to its destination point because its directly connected.

Mesh topology is coastal with the other topology because there are very much cables are used.

Advantages:

- If the one node is fail, then it's not effected on the other because each node has more than one cable.
- To satisfy a node with safely with no disturbance on the other nodes.
- It's provides security and privacy because node is connected with point to point.
- The fault can be easily identifying by its point to point connection.

Disadvantages:

- Mesh topology is costly.
- Its difficult to set up and manage the network.