# Computer Network

ONE SHOT

# Q.1 What is Network ?

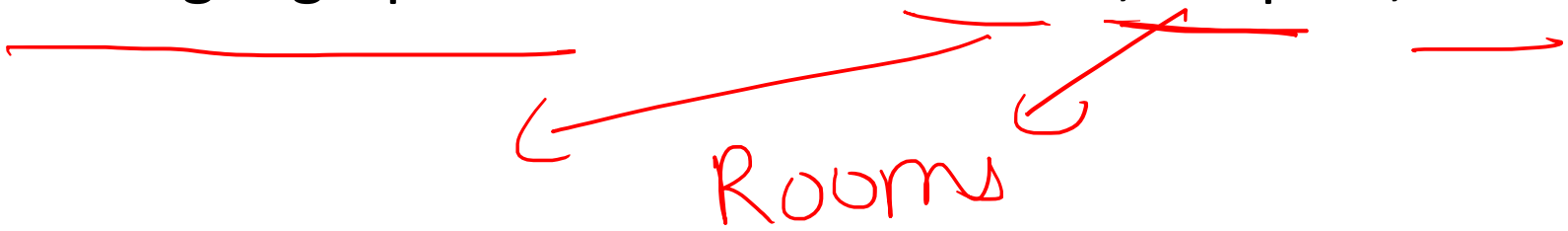
A network is a collection of devices connected to each other to allow the sharing of data.

# Q.2 What is PAN ?

Its range limit is up to 10 meters. It is created for personal use. Generally, personal devices are connected to this network. For example computers, telephones, fax, printers, etc.

# Q.3 What is LAN ?

It is used for a small geographical location like office, hospital, school, etc.



# Q.4 What is MAN ?

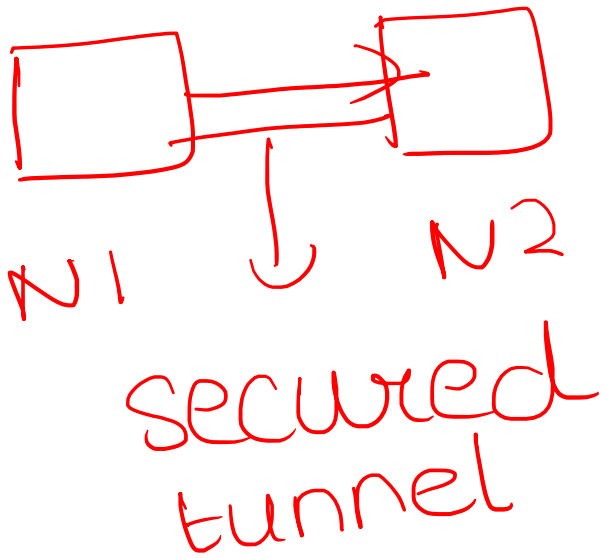
It is used to connect the devices which span to large cities like metropolitan cities over a wide geographical area

# Q.5 What is WAN ?

It is used over a wide geographical location that may range to connect cities and countries.

# Q.6 What is VPN ?

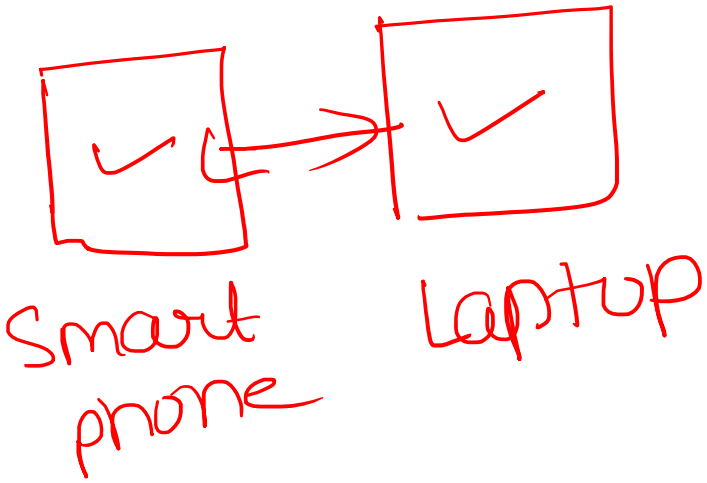
VPN or the Virtual Private Network is a private WAN (Wide Area Network) built on the internet. It allows the creation of a secured tunnel (protected network) between different networks using the internet



# Q.7 What are nodes and links ?

Node: Any communicating device in a network is called a Node. Node is the point of intersection in a network.

Link: A link or edge refers to the connectivity between two nodes in the network.



# Q.8 Different Types of Network Topology ?

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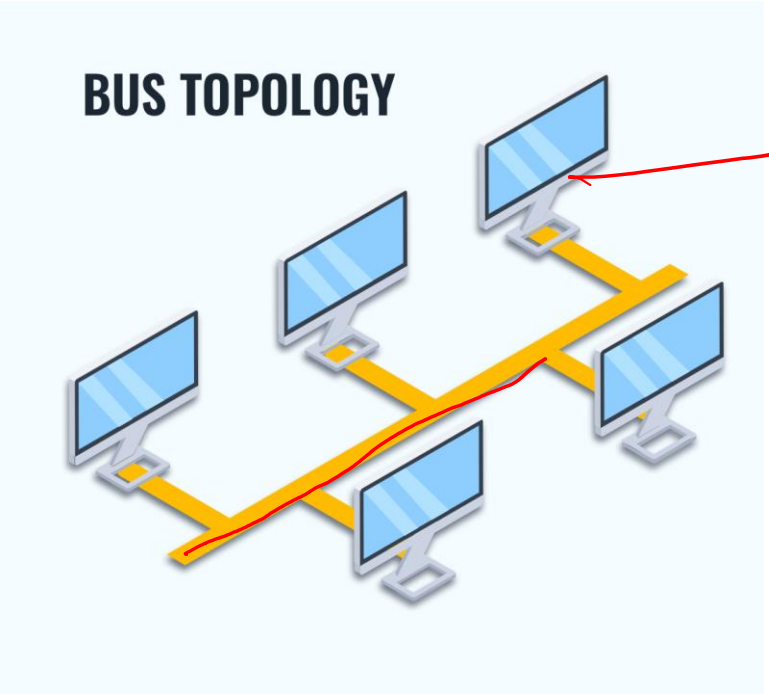
Bus Topology :-

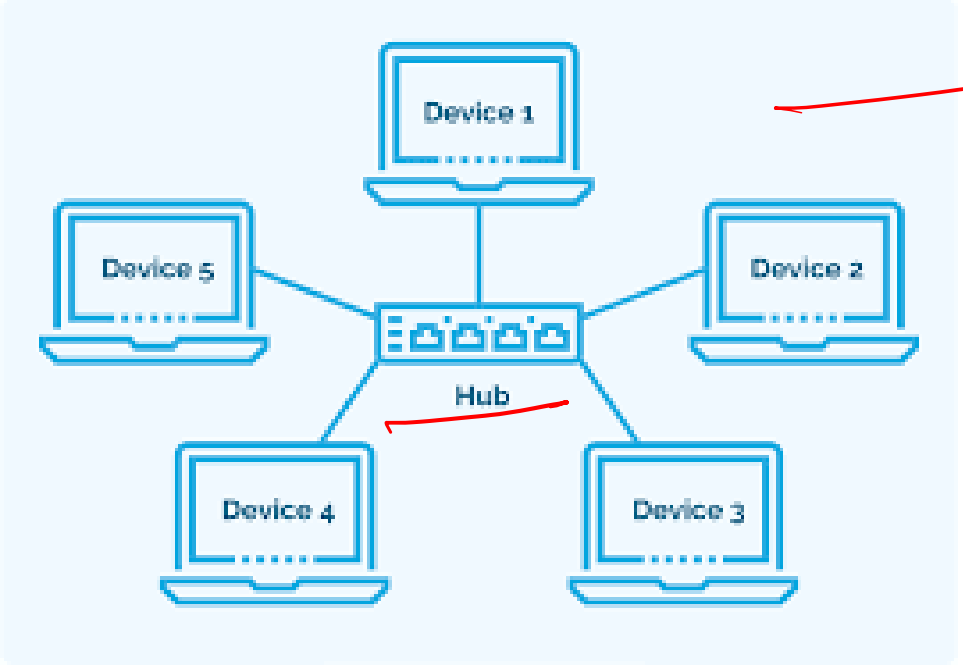
All the nodes are connected using the central link known as the bus.




>Failed

# Star Topology :-

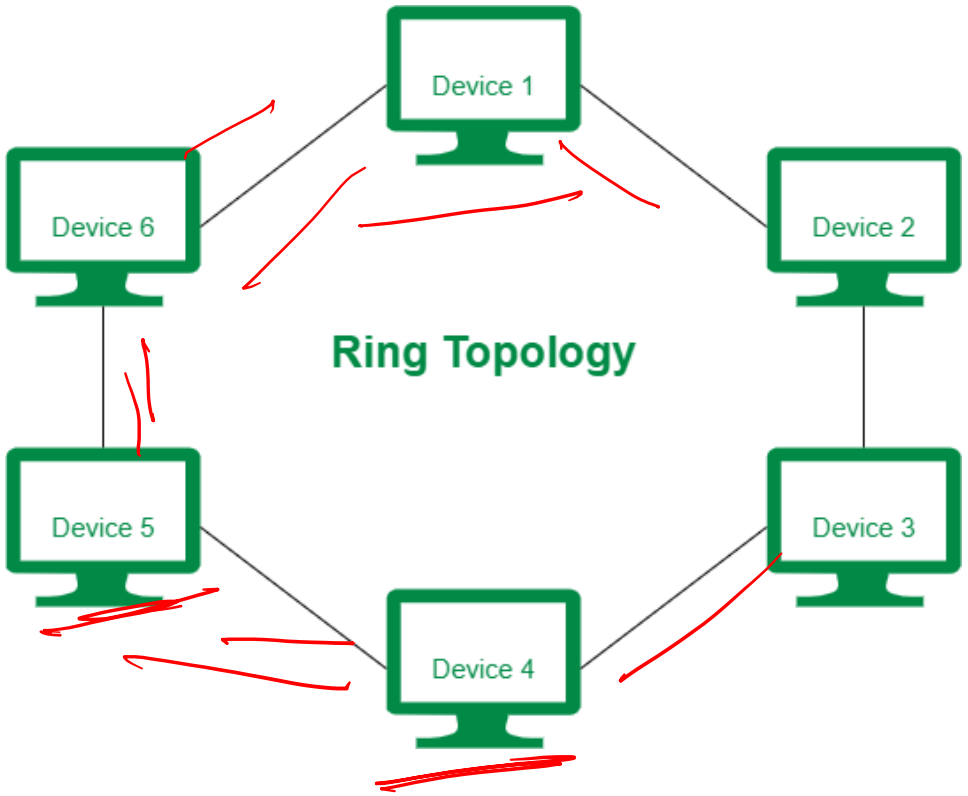
All the nodes are connected to one single node known as the central node.




System fails

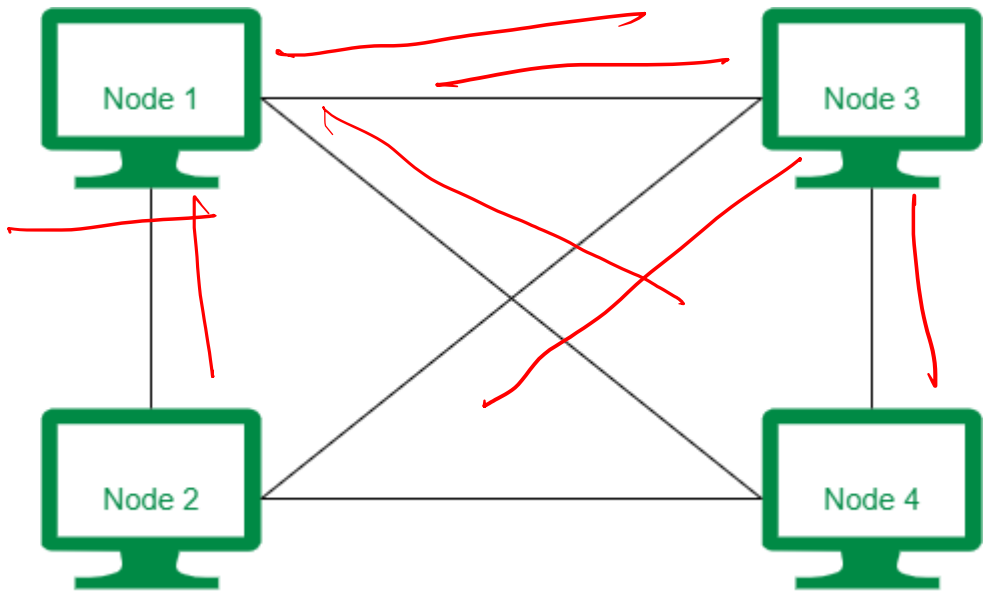
# Ring Topology :-

Each node is connected to exactly two nodes forming a ring structure



# Mesh Topology :-

Each node is connected to one or many nodes.

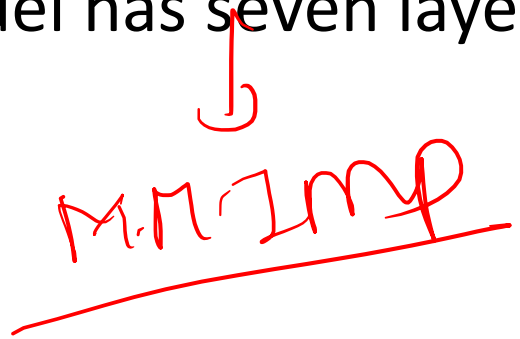



Mesh Topology

# Q.9 What is OSI ?

It is a network architecture model based on the ISO standards. It is called the OSI model as it deals with connecting the systems that are open for communication with other systems.

The OSI model has seven layers :-

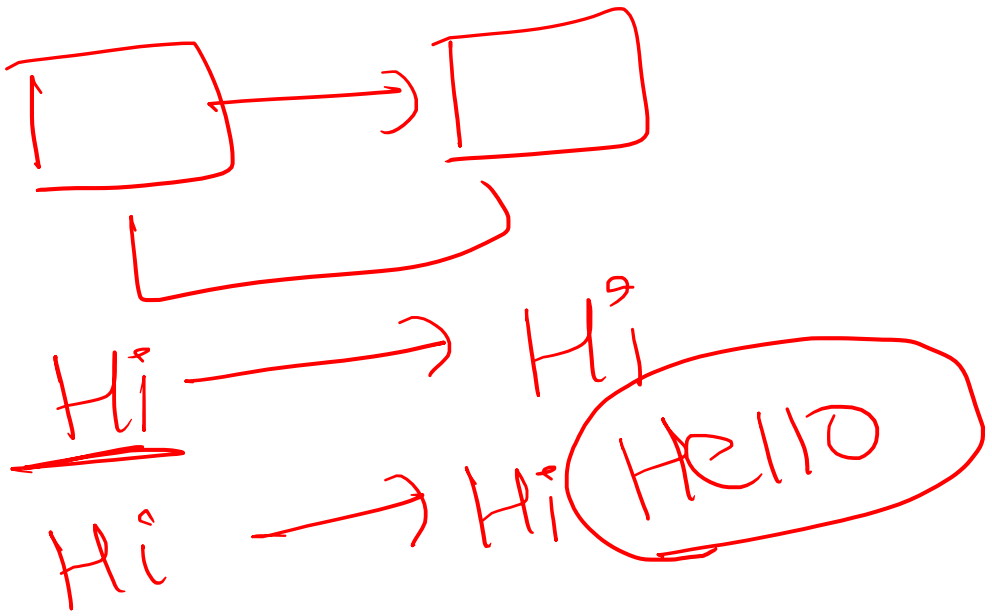


# Physical Layer:-

- It is the lowest layer of the OSI reference model.
- It is used for the transmission of an unstructured raw bit stream over a physical medium.

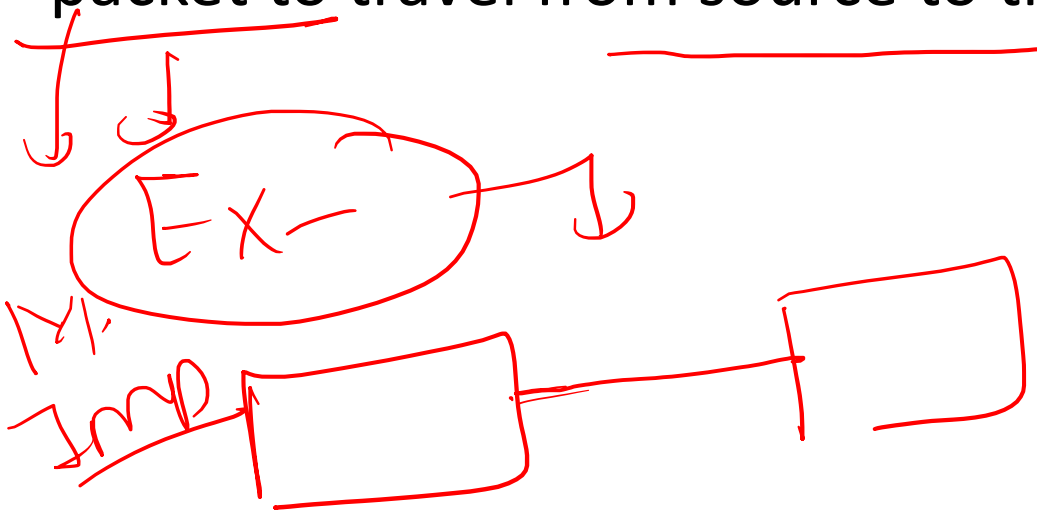
# Data Link Layer:-

- It is used for transferring the data from one node to another node.
- It enables the error-free transfer of data from one node to another node.



# Network Layer:-

- Network layer converts the logical address into the physical address.
- The routing concept means it determines the best route for the packet to travel from source to the destination.

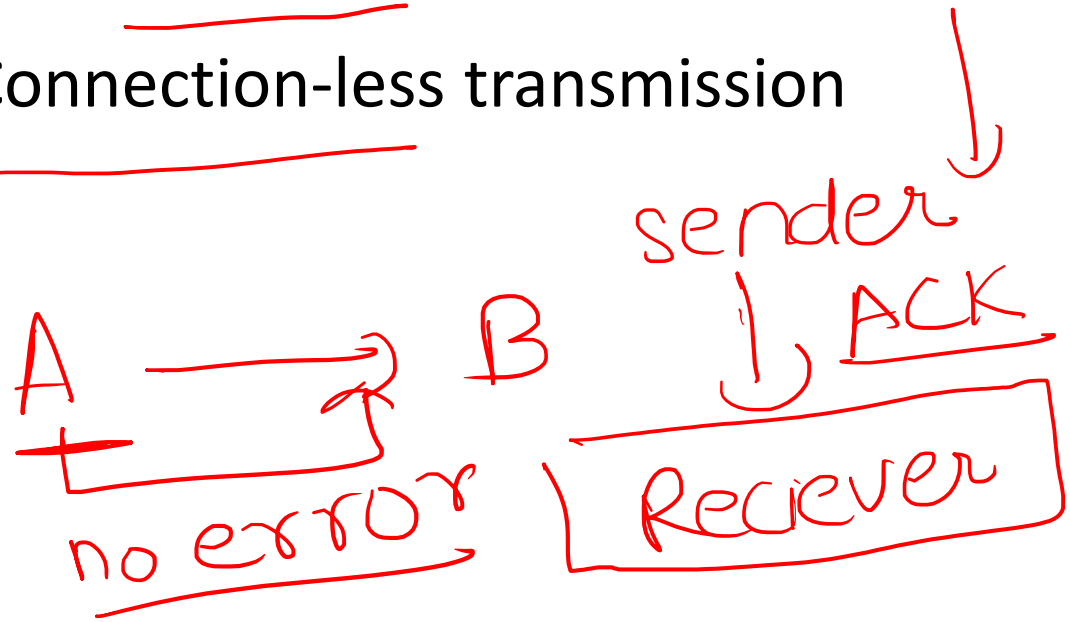


# Transport Layer:-

It delivers the message through the network and provides error checking so that no error occurs during the transfer of data.

It provides two kinds of services:

- Connection-oriented transmission
- Connection-less transmission



# Session Layer:-

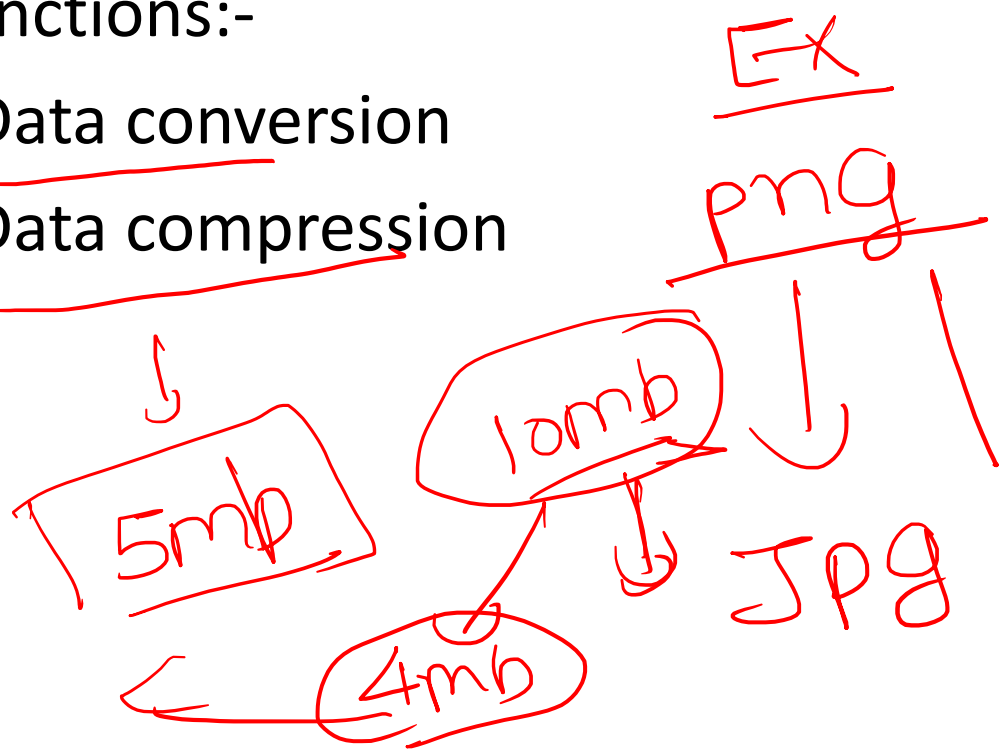
The main responsibility of the session layer is beginning, maintaining and ending the communication between the devices

# Presentation Layer:-

The presentation layer is also known as a Translation layer as it translates the data from one format to another format.

Functions:-

- Data conversion
- Data compression



# Application Layer:-

- It is the topmost layer of the OSI reference model.
- Application layer protocols are file transfer protocol, simple mail transfer protocol, domain name system, etc.

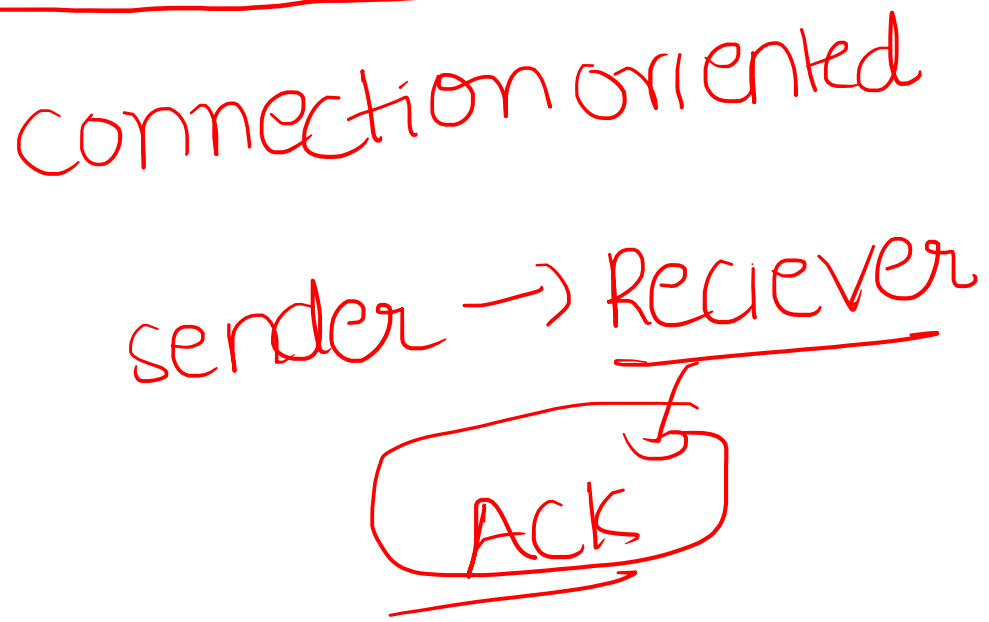
# Q.10 What is HTTP and HTTPS ?

HTTP is the HyperText Transfer Protocol which defines the set of rules and standards on how the information can be transmitted on the World Wide Web (WWW). It helps the web browsers and web servers for communication.

HTTPS is the HyperText Transfer Protocol Secure or Secure HTTP. It is an advanced and secured version of HTTP

# Q.11 What is TCP and UDP ?

The main difference between TCP (transmission control protocol) and UDP (user datagram protocol) is that TCP is a connection-based protocol and UDP is connectionless. While TCP is more reliable, it transfers data more slowly. UDP is less reliable but works more quickly



# Q.12 What is the ICMP protocol?

ICMP is the Internet Control Message Protocol. It is a network layer protocol used for error handling. It is mainly used by network devices like routers for diagnosing the network connection issues and crucial for error reporting.

# Q.13 What is ARP ?

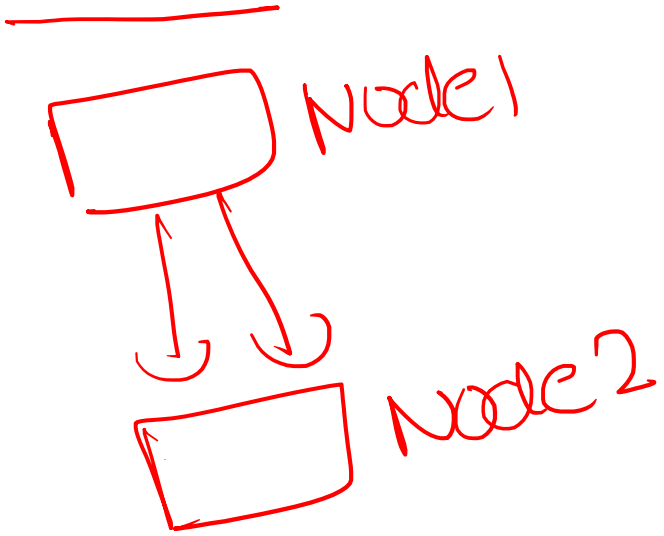
ARP is Address Resolution Protocol. It is a network-level protocol used to convert the logical address i.e. IP address to the device's physical address i.e. MAC address.

# Q.14 What is IP and MAC Address ?

MAC addresses are used to verify the computer's physical address While IP addresses are used to uniquely identify a device's network connection

# Q.15 What is FTP ?

FTP is a File Transfer Protocol. It is an application layer protocol used to transfer files and data reliably and efficiently between hosts.



# Q.16 What is the DNS?

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DNS is the Domain Name System. It is considered as the devices/services directory of the Internet. It is a decentralized and hierarchical naming system for devices/services connected to the Internet. It translates the domain names to their corresponding IPs.