

Have You Made Full Use of the OCR Feature?

Make a scan, enhance it and save it. Are these all the features you know about CamScanner? If so, you have missed too many cool experiences.



CamScanner offers you lots of features rather than scanning. What we are sharing today is the OCR (Optical Character Recognition) feature.

What can you do with OCR feature?

1. Searching

What can you do if you want to search for a document but just can't remember the names of some docs? Use this feature to recognize all the texts on your scans. Next time you just need to enter some key words in the search box and all the documents within the words will be found.

2. Text extraction

Just purchase the one-time paid version and you can enjoy the text extraction for lifetime! Ever want to edit some texts on a paper document or a PDF file? Import it into CamScanner and all texts can be extracted as .txt file after OCR!

Why wait? Follow the steps to start using OCR!

1. Sign in to CamScanner to sync all your docs → All texts will be auto recognized after syncing.

2. If you don't want to sign in, you can open one single page of any doc → Tap the Recognize button → All recognized texts will be shown in a dialog box → Tap Share to export the texts.

CH: 2 Computer NetworkComputer Network:-

Computer network is a way for connecting one or more computer or devices together. So that we can transfer our data from one computer to other using computer network. we can do following work:-

1. Communicating e-mail, video, audio etc
2. It enable multiple user to share a single hardware device like printer or scanner
3. It allow for sharing of software on remote system
4. Using computer network we can make easy of sharing a particular information to multiple users.

Types of Computer Network :-

There are following types of network

1. Local Area Network (LAN)
2. Personal Area Network (PAN)
3. Home Area Network (HAN)
4. Wide Area Network (WAN)
5. Campus Network
6. Metropolitan Area Network (MAN)
7. Back Bone Network
8. Global Area Network (GAN)

01. Local Area Network (LAN) :-

A Local area Network that interconnects computers within a limited area such as office, laboratory or a particular region. It can connect a computer upto a range 1 Km

02. Personal Area Network (PAN) :-

Personal Area Network is the interconnection of information through which we can connect one device to other device via bluetooth or other connecting media. It can work upto 10 metres.

04. Wide Area Network (WAN):-

WAN is a Network that exists over a large scale of geographical area. A WAN connects different smaller LAN and metropolitan area Network (MAN).

05. Campus Network:-

A Campus Network can connect multiple computer or device or smaller LAN to other LAN in a limited geographical area and it has range upto 300-400 metres.

06. Metropolitan AREA Network:-

The metropolitan Area Network can connect all the computers over a range of 50 Km. It can connect LAN, PAN, MAN and Campus Network.

07. Back Bone Network:-

on a large scale a Backbone Network is a set of pathway to which other connect for a long distance. For this the backbone network can use multiple devices like router, bridge, switch wireless media cable and satellite. Using Backbone Network all types Network can work.

08. Global Area Network :-

A Global Area Network refers to a network composed of different interconnecting networks that cover unlimited geographical area that is using WAN can communicate data over a entire world. It is also known as Internet.

Protocol & Standards :-

* Protocol :-

In Information Technology a protocol is a special set of rules that the end point can communicate after setting the connection. In the communication system there are several protocols exist at different level so that the connecting nodes can communicate easily.

There are following key elements of protocol.

1. Syntax :-

It defines the structure of data.

2. Semantic :-

It defines meaning of the field that is meaning of data to be send

3. Timing :-

When data should be send and what would be speed. so that the communicating device can exchange this data at proper speed.

Example of Protocol :-

HTTP, TCP/IP etc.

Standards :-

Standard provide guidelines to manufactures vendors. or govt. agency which are responsible for manufacturing the protocols used in communication system and ensure the proper connectivity. There are following organization which follow the standards in communication system :-

1. ISO (International Standards Organisation)

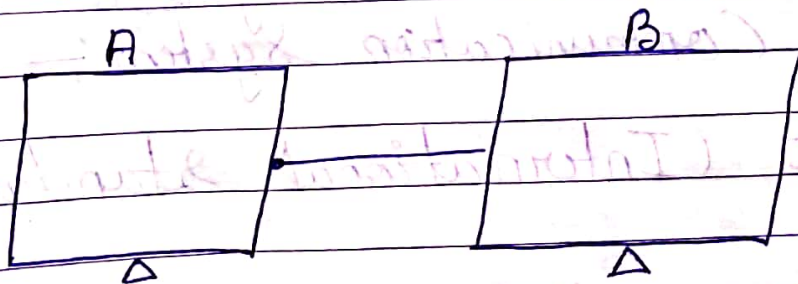
2. ITU (International Telecommunication Union)
3. IEEE (Institute of Electrical and Electronics Engineers)
4. ANSI (American National Standard Institute)

* Line/Link Configuration :-

In a network, is two or more devices connected through a link or line. that is a line is a communication pathways that transfer data b/w two devices.

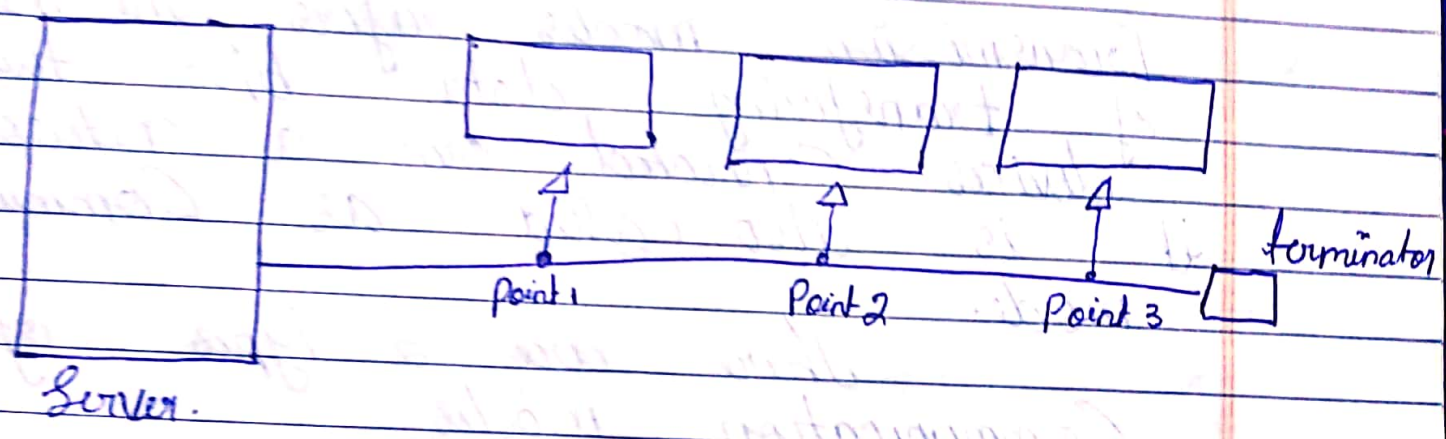
1. Point to point line Configuration :-

In such type of line configuration only two devices are connected at the end point of a particular line to transfer data b/w two devices.





2. Multipoint line Configuration



Multipoint line Configuration is a type of line Configuration in which the main links is shared by multiple devices or Computers

Transmission Mode:-

Transmission modes refers the mechanism of transferring data b/w two devices connected over a network it is also called as communication mode.

There are 3 Types of Communication modes:

1. Simplex Mode:-

In such type of mode the transfer of data takes place b/w two devices. One is sender and other is receiver but in such mode sender can send data to the receiver but the receiver can't be revert data to the sender.

for example:-

In the Computer System the input devices can feed data to the Computer but the Computer cannot send data to the input devices.

2. Half Duplex :-

In such mode the data can be transferred in both side but not at a same time
for example:-

The Walkie talky can place message both side but not at a same time

3. Full Duplex :-

In full Duplex transmission mode the two devices can communicate with each other at a same time i.e. data transferred takes place in both direction at a same time
for example:-

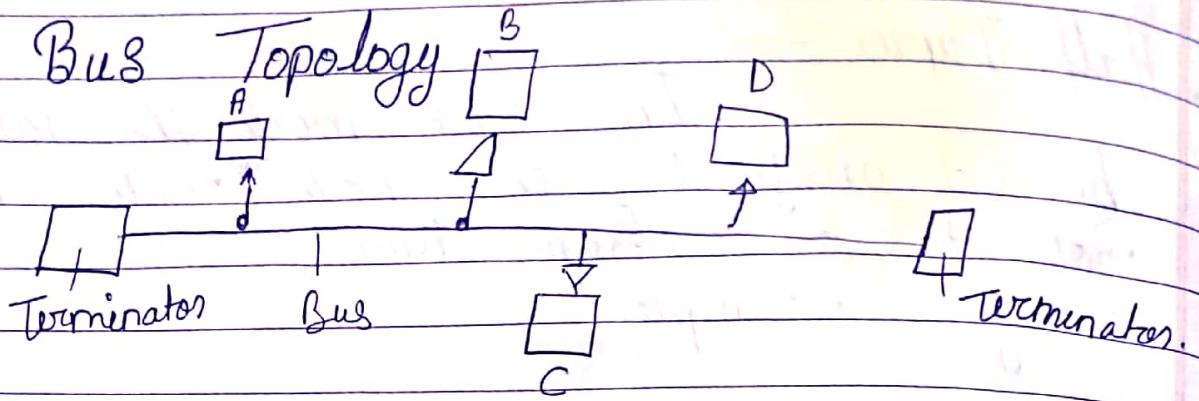
Communication between two cellphones is an example of full Duplex.

* Topology :-

Topology defines the manner or structure of a network in which we connect two or more computer in a same network.

There are following Topology used in a Computer

1. Bus Topology



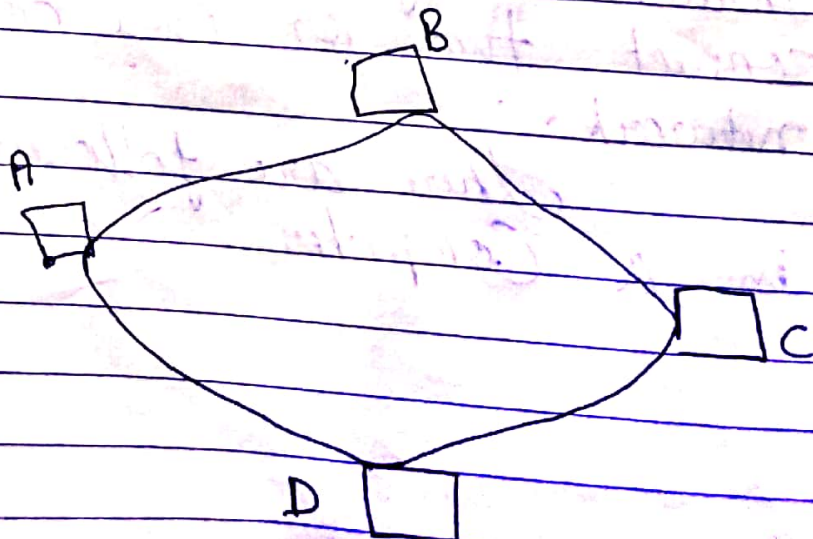
* it is a multipoint Connection line Configuration.

* it is easy to install and generally used for small network.

* it is slow as one system can transmit data to other system at a point.

* the faulty cable bring down full network.

2. Ring topology:-



* In this type of topology in this each computer is connected with computer two the last one connected two first

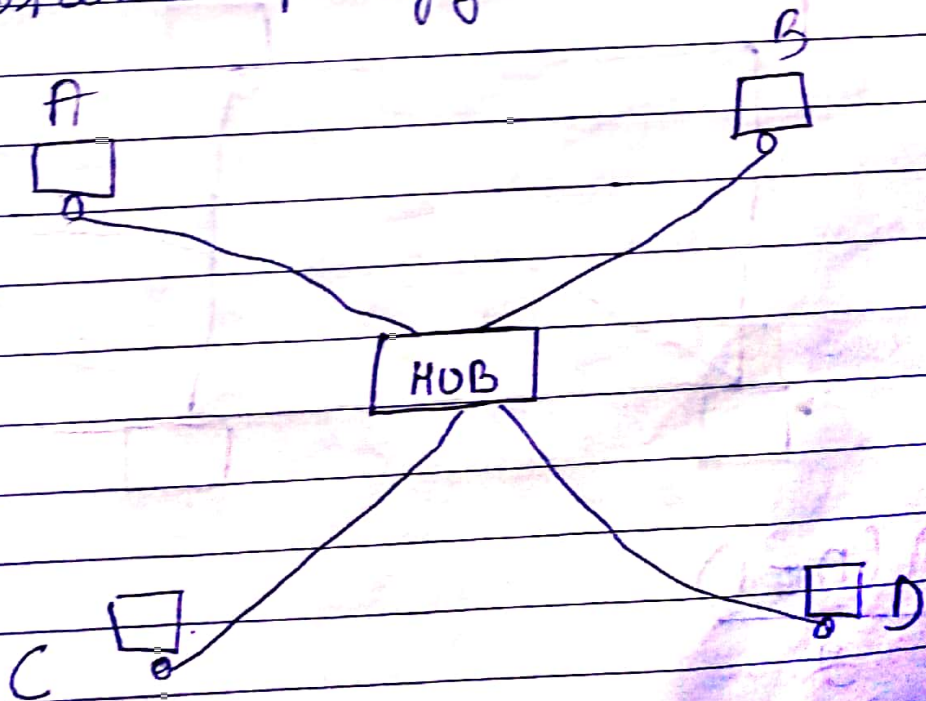
* it is also a multipoint connection

* the data token is passing in Hall network.

* the fault in any links Disable the entire network.

* it is also used in small network.

3# Star topology :-



* all wire from the Computer goes through
 @ a central location having a
 device known as Hub

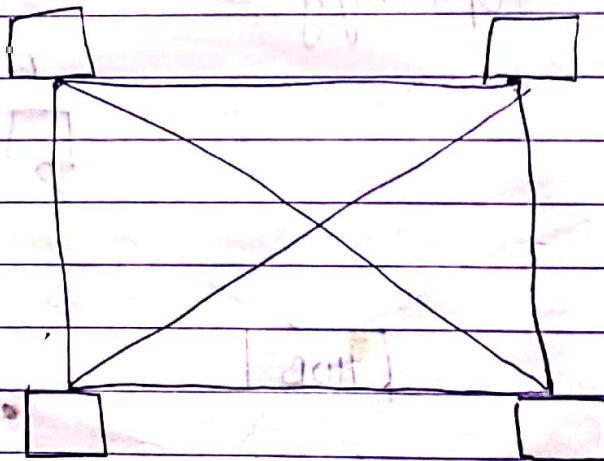
* all communication goes through this Hub

* if the Central Hub fails the
 network will fail

* Such type of topology is more
 useful in large network.

* The Cable Costing is ^{more} higher than
 Bus or Ring topology.

Mesh topology:-



total wire $\frac{n(n-1)}{2}$

where \rightarrow 1

$n =$ No of computers.

* The mesh topology uses the point to point links to every other device

* due to dedicated links there is no traffic problem

* due to failure of any link does not affect the entire network.

* it is more secure and private network.

* it is expensive due to higher cabling cost

* we can find the number of cables used to configure such type of network using following formula

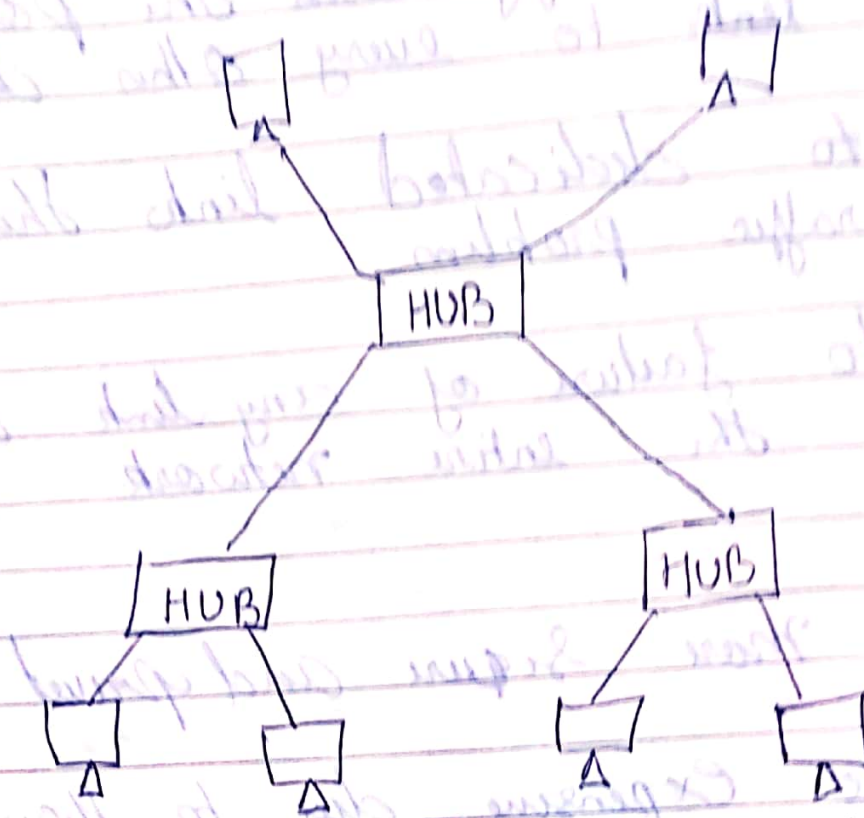
$$\frac{n(n-1)}{2}$$

$$\text{total No of cables} = \frac{n(n-1)}{2}$$

where n = no of computers.

Date: / /

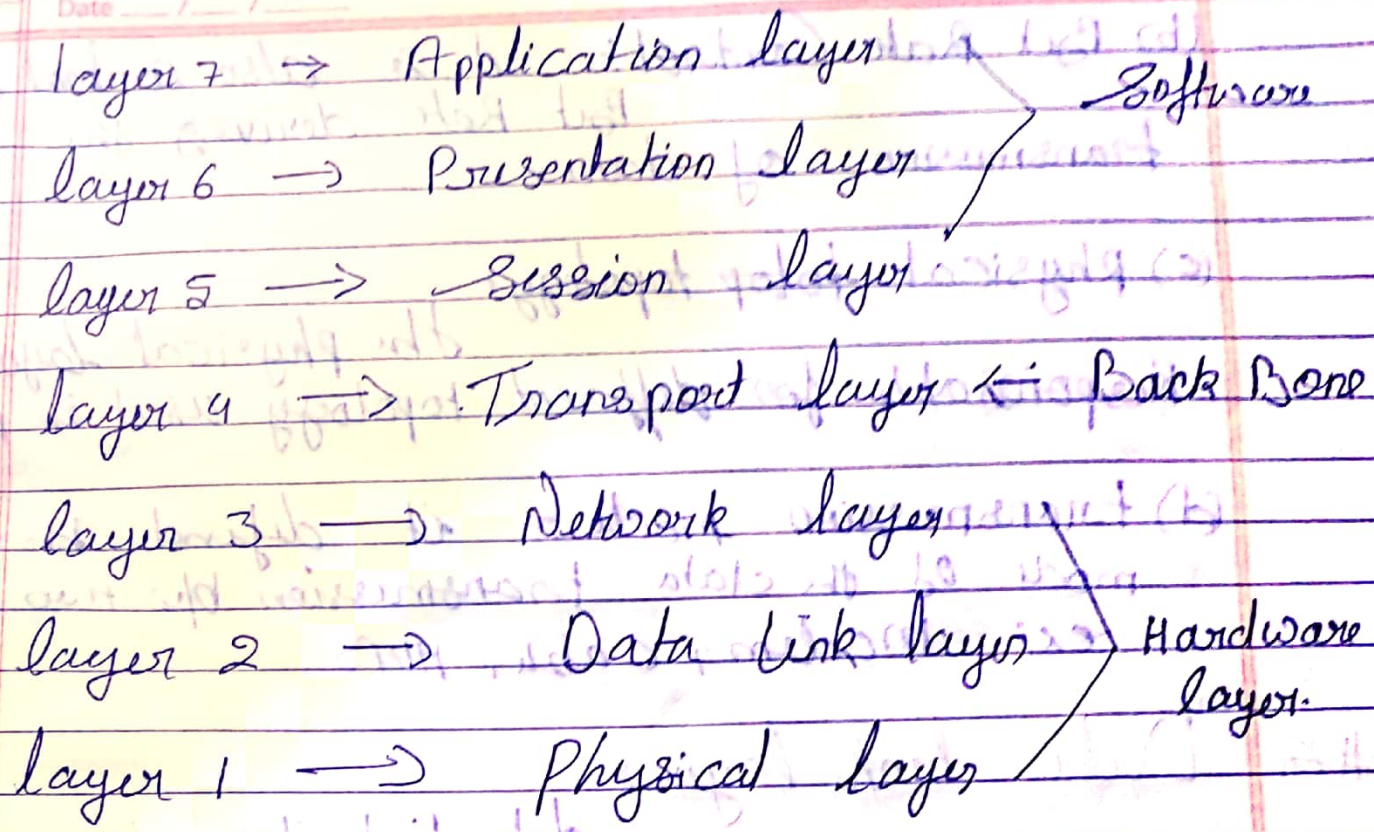
(5) Tree Topology :-



it is variation of star the nodes in center the tree topology in line to center the labeling task is more than the provision if the control HUB this field then entire will down.

OSI Model (open system Inter connect)

OSI model has been develop by ISO it is developing 1964. this model, has 7 layer. this layers communicated data together so that we can same data from one computer to the other computer.



(1) Physical layer :- it is lowest layer of the OSI model. it is responsible for physical connection b/w device. physical layer contains the information in the Bits. When receiving data this layer converts it into 0,1 and send to data link layer. there are following main function of the physical layer.

(i) Bits Synchronization → The physical layer provide the synchronization of bit with the clock pulse.

(b) Bit Rate Control :- it is also control of Bit Rate deriving the transmission of data.

(c) physical topology :- The physical layer also responsible for different topology used in network.

(d) transmission mode :- it defines the transmission mode of the data transmission b/w two devices.
ex: modem, cable, HUB

#2 Data link layer :-

data link layer is responsible for node to node transmission of data. The main function of this layer is to make function of data transfer in over free the main function of data link layer.

(a) Framing :- The framing is a function of data link layer if provide the group of bit in the form of frame which has a particular meaning of network layer.

(b) Physical Addressing :-

it is also responsible for physical addressing that is address of the Receiver in the frame.

(c) Error Control :- The data link layer provide the mechanism of error control in which it detect the error and transmit a correct data.

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3# Network Layer:-

The network layer is the main layer of OSI model it decides the storage route for the transmission of Data - the main functions of Network layer are:-

- (i) Routing:- The network layer decides which route is suitable from source to destination.
- (ii) Logical Address:- The Network layer a logical address of the computer which is known as IP Address.
- (iii) Device used in Network:- Routers.

4# Transport Layer:-

Transport layer is a backbone layer of the OSI model and is dedicated for application layer. The transport layer provides service to application layer. The data in the transport layer referred as a segment. It is responsible for end to end delivery of a complete message. It also acknowledges the sender of successful data transmission. They are following main functions of transport layer.

- (i) Segmentation & assembly

Segmentation & assembly:-

In such process the transport layer breaks a complete message into small segments so that they can transfer without any error. This process is known as segmentation. In segmentation process is performed at sender side.

• And at the receiver side the small segments are assembled to make a complete message.

* (iii) Source Point Addressing:-

In order to provide service the transport layer assign port number or application number to the application so that it can deliver message or data to a particular application. Number

5# Session layer :-

The session layer is responsible for establishment of connection, maintenance of session and provide security hence the session layer perform the following main functions :-

(i) Connection establishment

(ii) dialog control :-

it is responsible for start communication b/w two system.

The communication is performed in the form of half duplex, full duplex

6# Presentation layer :-

These are following main functions

(i) encryption and decryption

The presentation layer encrypt and decrypt the complete message so that we can provide security over our message

(ii) formatting :-

it is the main function of the presentation layer in which a

Complete message is converted into a particular format so that user can read the message and this message is provided application layer.

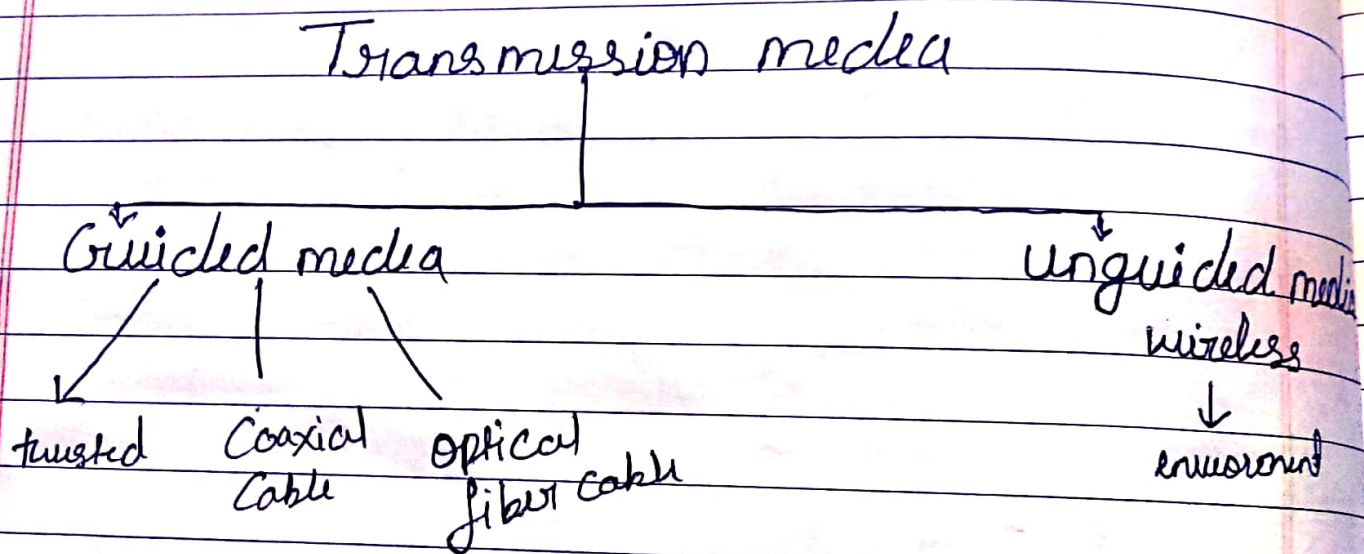
7# Application Layer:

A Application layer is a top layer of a OSI model. The main function of the Application layer is to provide window for the application service. * It is also responsible for file transfer and file management system. The main source is also provided by application layer.

#

Transmission media:-

Transmission media can be defined as physical path b/w transmitter and receiver in a data transmission system.



(1) Guided media :-

depends upon a medium, length and whether the medium is point to point or multipoint

- Ex: twisted Pair Cable Coaxial Cable Optical fiber Cable

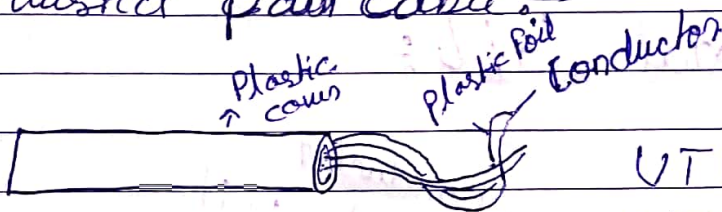
(ii) Unguided media :-

it provides transmission of electromagnetic signal that is infrared signal, microwave signals.

Such type of signal can be transmit through the air

ex:- environment

④ twisted pair cable :-



UTP (unshielded twisted pair)
STP (Shielded twisted pair)

In the twisted pair cable there are two wires are twisted together to reduce interference b/w two conductors.

Such type of wire can carry the analog and digital signal and it can transfer the data @ sound MBPS.

it has long distance upto 1 Km and transfer data at high speed.

generally the twisted pair cable used in LAN and it is oldest cheapest media used in transmission of data.

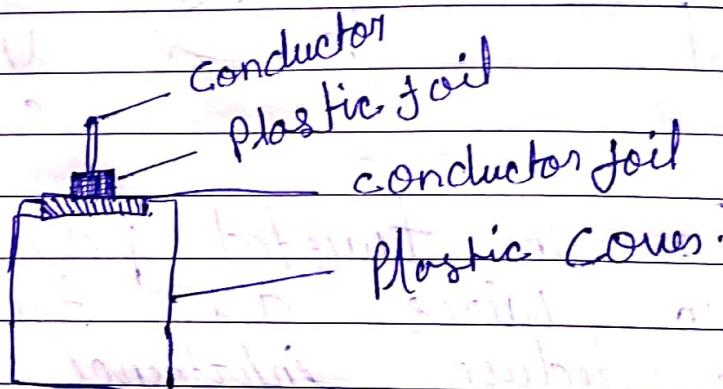
(i) UTP (unshielded twisted pair):

In the UTP there are only plastic cover used in the twisted pair

(ii) STP (Shielded twisted pair):

Such type of wire is shielded with metal foil to reduce interference and data loss and it is more costly than UTP

Coaxial Cable:



It consist Soling wire grounded by one or more foil. it is suitable for high speed communication and widely used in television. it better than twisted pair and as it can transmit data at high speed upto 400 MBPS. In the above figure the conductor is covered by plastic foil and it is shielded by conductor foil and all the structure is covered by plastic cover which protect the

win from environment

(iii) fiber optics :-

it consist of an inner glass core surrounded by a material which has lower refractive index. it has following part

(i) Core :-

it is glass / optical plastic through which light travels.

(ii) Cladding :-

it is used to reflect the light back to the core and it has lower refractive index.

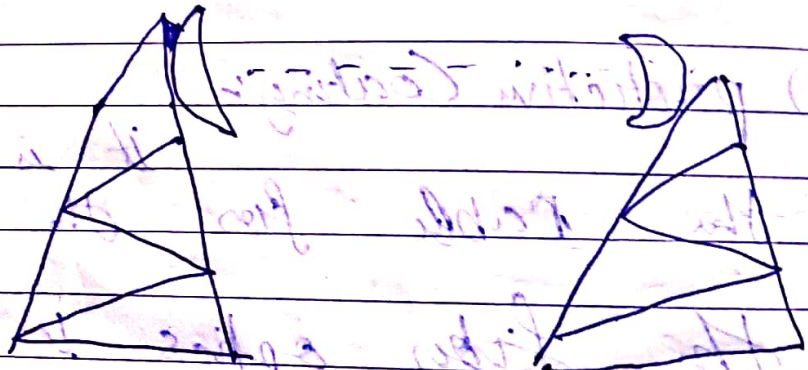
(iii) protection coating :-

it is used to protect the cable from the environment.

The fiber optics is highly suitable for difficult environment and it has secure transmission and specially used in broadband transmission.

(ii) Unguided media

Unguided transmission we use in the data transmission media in the form wireless that is it is specially used in those places where it is not possible to connect two point through the cable. In the Unguided transmission infrared signal is used for short distances (across the room or building). In the long distances we generally use microwave which has distance upto 10 km. In such media we use antenna in ∇ ends and success side.



Transmitter Receiver

The unguided media is affected by clouds, rain, lightning etc.

it ~~uses~~ uses the higher tower for the greater range.

it has frequency upto 6 GHz and using unguided media we can transfer the bandwidth above 1000

And it is expensive in those cases where
has long distances

Advantages:-

- (i) it is cheaper than Cable
- (ii) The Communication is easy in using unguided media
- (iii) it gives greater freedom to from land acquisition

Transmission Impairments:-

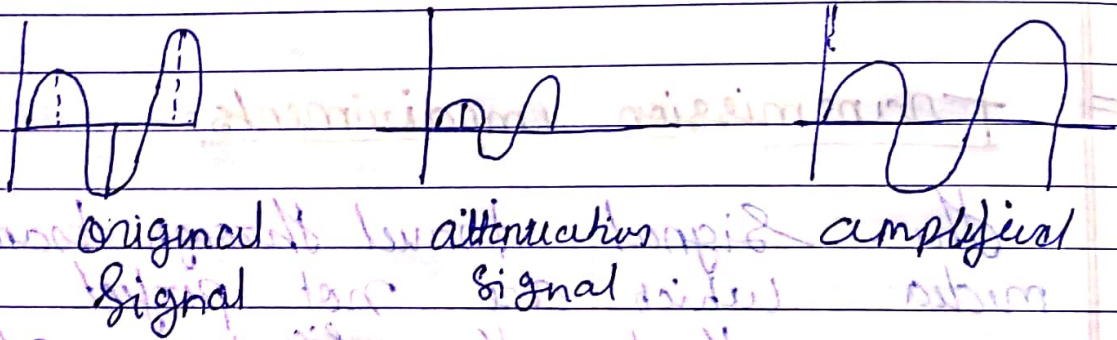
The signal travel through transmission media which are not perfect this means that the signal at the beginning the media is not equal to signal at the media that is what is send is not equal to what is received

There are 3 types of impairments

- (i) Attenuation
- (ii) Distortion
- (iii) Noise

(i) Attenuation:-

Attenuation means loss of energy. When signal travels through a medium, it loses some energy during the resistance. That is why a wire carrying signal get warm. Some of electrical energy is converted into heat. To compensate for this loss we use amplifier to amplify the signal.



The attenuation is measured in Decibel (dB) and we can define the Decibel in terms of relative signal from one point to other and it is express as follow.

$$dB = 10 \log_{10} \left(\frac{P_2}{P_1} \right)$$

where P_1 and P_2 are power of signal at two point of media if value of

dB is negative then it shows that the signal is attenuated and the positive value of dB shows that the signal is amplified

$$10 \log_{10} \left(\frac{P_2}{P_1} \right)$$

Performance of media :-

Performance of medium of data communication depends upon following points

(i) Bandwidth :-

It is one of the characteristics that measured the network performance. Bandwidth is measured in Hertz or bit per sec. It is the range of frequency contained in a composite signal that can pass through a channel.

We can say that Bandwidth of telephone line is 4 KHz. The Bandwidth can also be referred to the number of Bit per sec that can transmit over a channel.

(ii) Throughput :-

The throughput is a measure of actual data transfer over a network.

For example :- A Network having Bandwidth B mbps but we can send T mbps that is $T < B$. In other words the

Throughput measured the actual data transmission. But it always less than its Bandwidth.

(III) Latency:

Latency or delay defines how long it takes for entire message to completely arrive at the destination from the source. We can say that latency depends upon generally propagation time, processing delay, etc.

We can define propagation time and distance/propagation speed where

Distance is actual path length source to destination and propagation speed is actual speed of data transfer.

Transmission time required for transmission of message depends upon size of message and bandwidth.

That is $\text{Transmission time} = \frac{\text{message size}}{\text{Bandwidth of channel}}$