

COMPUTER SCIENCE

below:

#1) Simplex Mode:

In this type of mode, data can be sent in one direction only. Hence the communication mode is unidirectional. Here, we can just send data and we can't expect to receive any response to it.

Example: Speakers, CPU, monitor, television broadcasting, etc.

#2) Half-Duplex Mode:

Half-duplex mode means data can be transmitted in both the directions on a single carrier frequency, but not at the same time.

Example: Walkie-talkie – In this, the message can be sent in both the directions but only one at a time.

#3) Full-Duplex Mode:

Full duplex means that the data can be sent in both the directions simultaneously.

Example: Telephone – in which both the people using it can talk and listen at the same time.

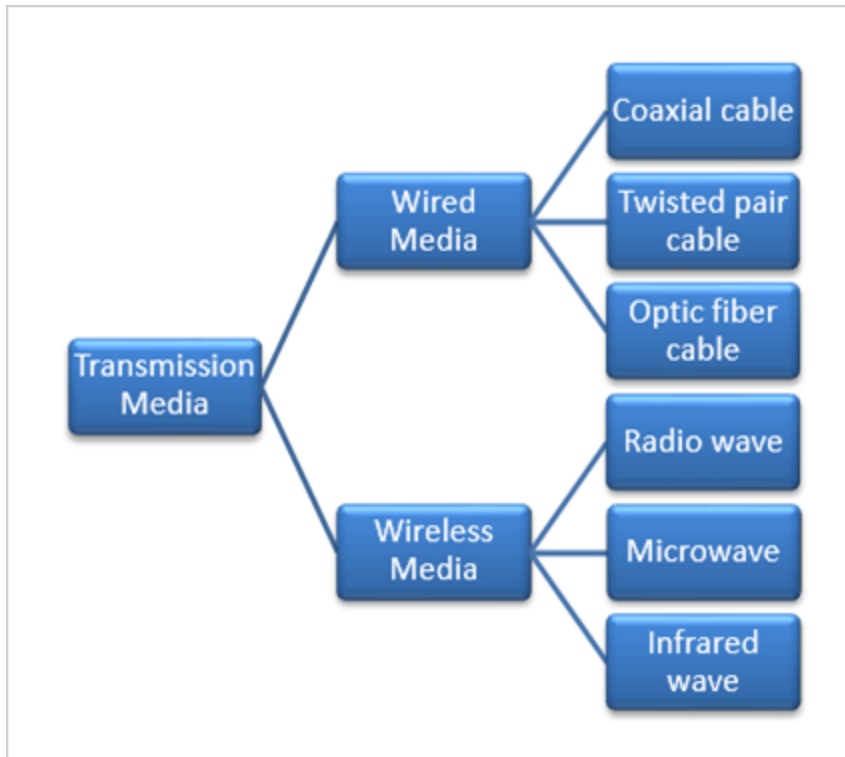
Transmission Mediums in Computer Networks

Transmission media is the medium through which we will exchange data in the form of voice/message/video between the source and destination point.

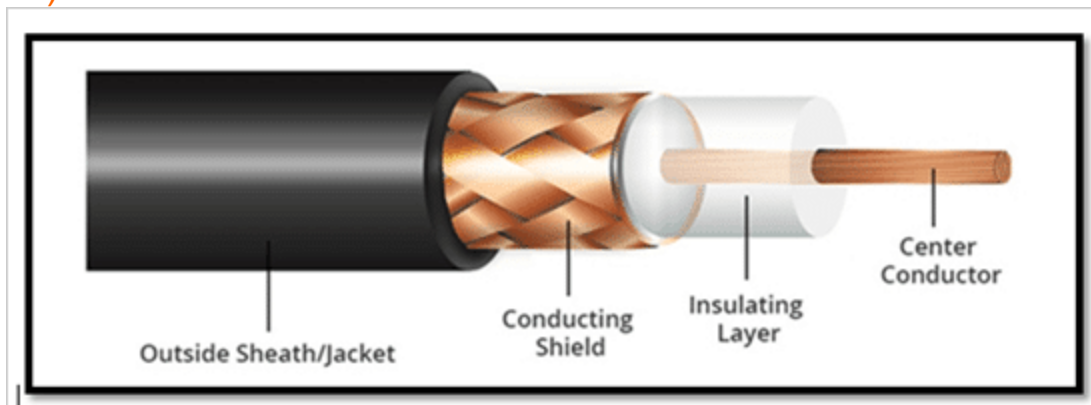
The first layer of the OSI layer i.e. the physical layer plays an important role of providing the transmission media to send data from the sender to receiver or exchange data from one point to another. We will further study this in detail about it.

Depending upon the factors like the type of network, cost & ease of installation, environmental conditions, the need of the business and the distances between sender & receiver, we will decide which transmission medium will be suitable for an exchange of data.

Types of Transmission Media:



#1) Coaxial Cable:

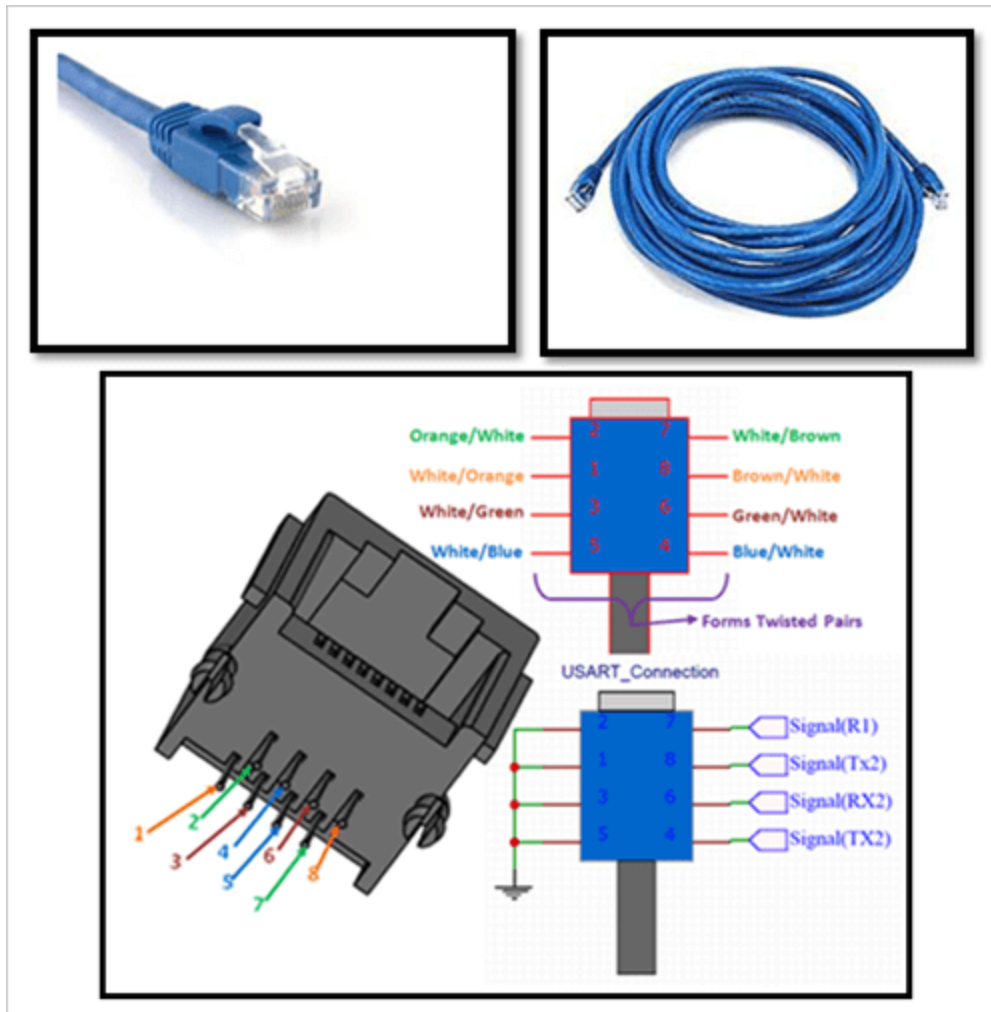


Coaxial cable is basically two conductors which are parallel to each other. Copper is mainly used in the coaxial cable as a central conductor and it can be in the form of solid line wire. It is surrounded by a PVC installation in which a shield is having an outer metallic wrapping.

The outer part is used as a shield against the noise and also as a conductor which completes the whole circuit. The outermost part is a plastic cover which is used to protect the overall cable.

It was used in the analog communication systems where a single cable network can carry 10K voice signals. Cable TV network providers also widely use the Coaxial cable in the entire TV network.

#2) Twisted Pair Cable:



It is the most popular wired transmission medium and is used very widely. It is cheap and is easier to install than coaxial cables.

It consists of two conductors (commonly copper is used), each having their own plastic insulation and twisted with each other. One is grounded and the other is used to carry signals from the sender to the receiver. Separate pairs are used for sending and receiving.

There are two types of twisted pair cables, i.e. Unshielded twisted pair and Shielded twisted pair cable. In the telecommunication systems, RJ 45 connector cable which is a combination of 4 pairs of cables are widely used.

It is used in LAN communication and telephone landline connections as it has a high-bandwidth capacity and provides high data and voice rate connections.