## Chapter 3<sup>rd</sup> [Networking Concepts]

## Transmission modes:-

➢ This is the way in which data is transmitted from one device to another device is known as **transmission mode**.
➢ The transmission mode is also known as the communication mode.
➢ Each communication channel has a direction associated with it, and transmission media provide the direction. Therefore, the transmission mode is also known as a directional mode.
➢ The transmission mode is defined in the physical layer.

## The Transmission mode is divided into three categories:

➢ Simplex mode
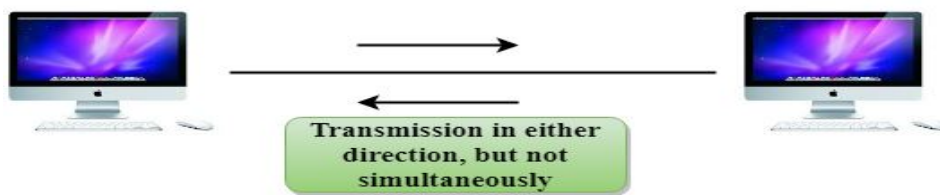➢ Half-duplex mode
➢ Full-duplex mode
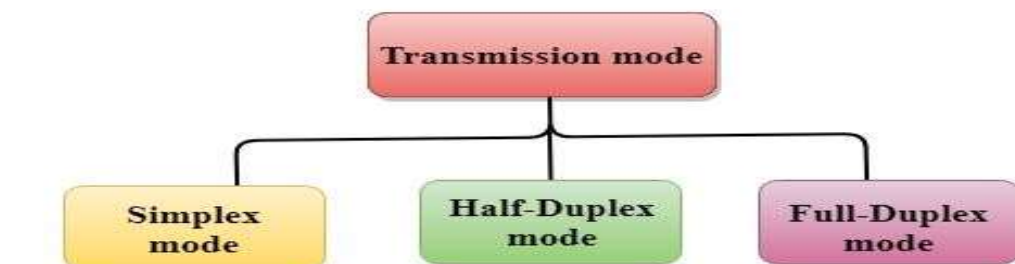


## Simplex mode

➢ In Simplex mode, the communication is unidirectional, i.e., the data flow in one direction.
➢ A device can only send the data but cannot receive it or it can receive the data but cannot send the data.
➢ This transmission mode is not very popular as mainly communications require the two-way exchange of data. The simplex mode is used in the business field as in sales that do not require any corresponding reply.
➢ The radio station is a simplex channel as it transmits the signal to the listeners but never allows them to transmit back.

     ➢ Examples of simplex Mode are loudspeakers, television broadcasting, television and remote, keyboard and monitor etc.

- The main advantage of the simplex mode is that the full capacity of the communication channel can be utilized during transmission.
- In simplex mode, the station can utilize the entire bandwidth of the communication channel, so that more data can be transmitted at a time.

Transmission in only one direction
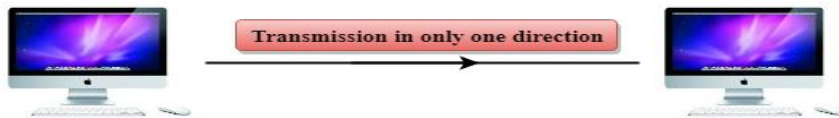
## Half-Duplex mode

- In a Half-duplex channel, direction can be reversed, i.e., the station can transmit and receive the data as well.
- Messages flow in both the directions, but not at the same time.
- The entire bandwidth of the communication channel is utilized in one direction at a time.
- In half-duplex mode, it is possible to perform the error detection, and if any error occurs, then the receiver requests the sender to retransmit the data.
- A Walkie-talkie is an example of the Half-duplex mode. In Walkie-talkie, one party speaks, and another party listens. After a pause, the other speaks and first party listens. Speaking simultaneously will create the distorted sound which cannot be understood.
- In half-duplex mode, both the devices can send and receive the data and also can utilize the entire bandwidth of the communication channel during the transmission of data.

Transmission in either direction, but not simultaneously

## Full-duplex mode

- In Full duplex mode, the communication is bi-directional, i.e., the data flow in both the directions.
- Both the stations can send and receive the message simultaneously.

- Full-duplex mode has two simplex channels. One channel has traffic moving in one direction, and another channel has traffic flowing in the opposite direction.
- The Full-duplex mode is the fastest mode of communication between devices.
- The most common example of the full-duplex mode is a telephone network. When two people are communicating with each other by a telephone line, both can talk and listen at the same time.

Transmission in both the directions simultaneously.
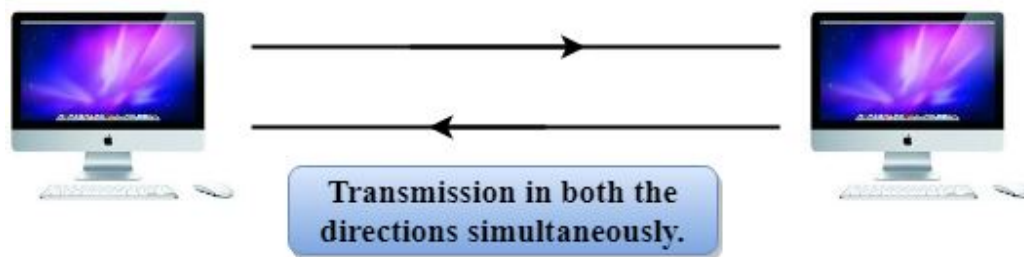
# Assignment:-

1. What is transmission modes and its type?

2. Write Differences b/w Simplex, Half-duplex and Full-duplex mode.