NETWORKING,BASICS UNDERSTANDING & FUNCTIONS..PART-1

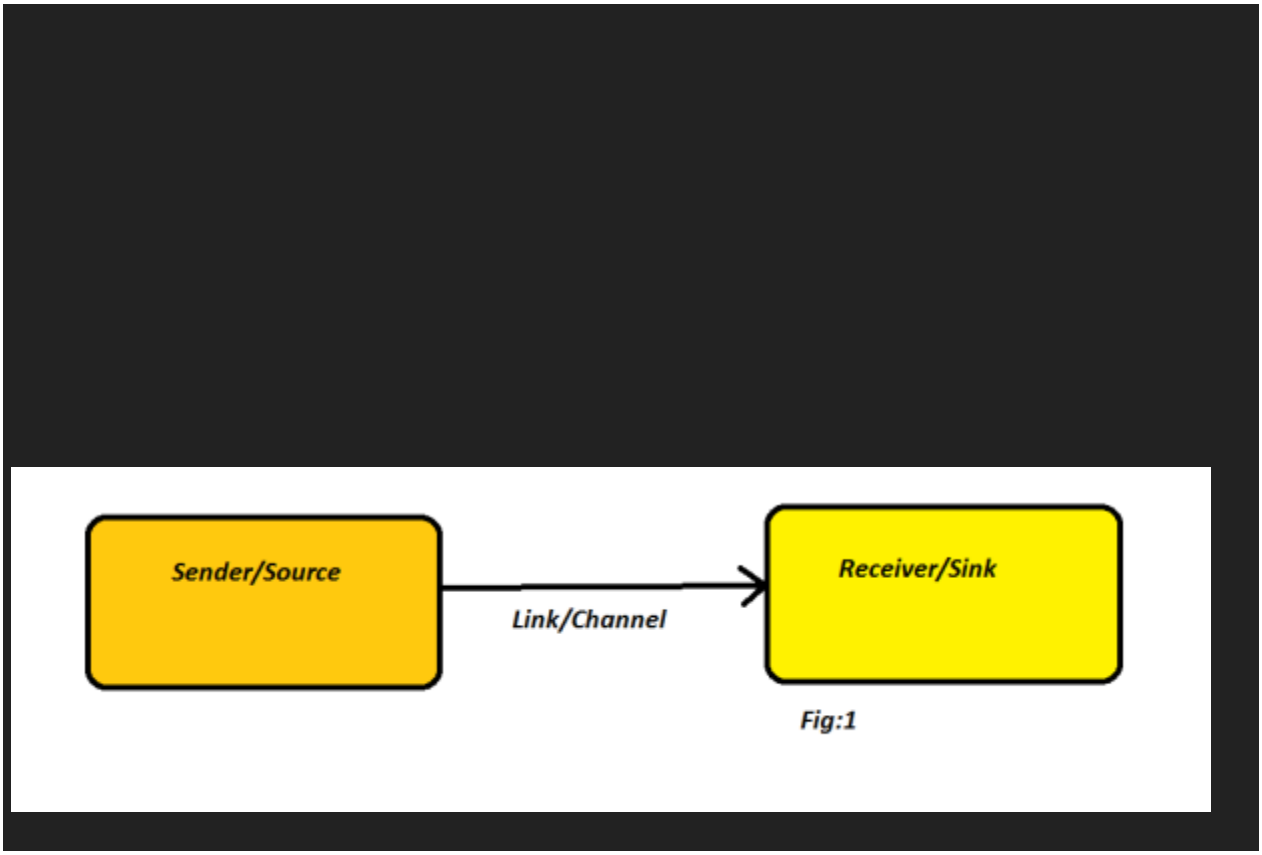

Fig:1

Network is a vital factor for successful working of information system and plays a major role in our day to day doing. Basically a network is a network of a bunch of computers located geographically at same or different places. These machines are connected in such a way that, they enable a meaningful transmission of data. The interconnection is done through a communication link, which is also called the 'PHYSICAL LAYER OF NETWORK'. The communication link is done by some software known as 'PROTOCOL'. These enable a user in one geographic location to access or control another system or database situated far away from him. First let me tell you that the so heard word 'PROTOCOL' is nothing but a 'SET OF RULES'. But for now I am not gonna write about it. Later on I would explain it in detail.

Some Basic requirements:

- *Minimum 2 or more PCs/Server/System/Peripheral devices*

v Physical transmission circuit/Network

v Some hardware which support data Communication/Transmission system (e.g. ROUTER,MODEM)

v Rules and Protocol to assure disciplined exchange of data.

Data Transmission means transfer of data within a computer. But external Data Transmission means transfer of data from one device to other. (e.g. PC to Printer, Remote PC) To accomplish data communication a medium called 'Data Communication Highway' is required. This is also known as 'DATA HIGHWAY'. For a successful transmission 3 basic things must be present.

i. Sender or Source

ii. Medium or Channel

iii. Receiver or Sink

See Fig-1

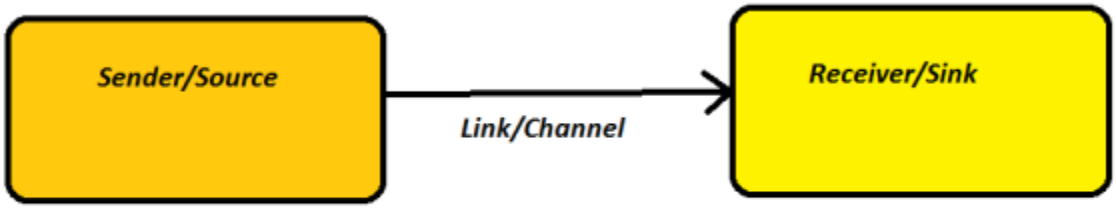

Fig:1

It is the basic thing and I don't think I have to mire explanations for it. So let's jump to 'DATA TRANSMISSION MODES'. The Data Transmission Mode is handled by 3 methods.

a) Simplex

b) Half-duplex

c) Full-duplex

1. SIMPLEX: A SIMPLEX communication system can transmit the data in one direction only. In one node there is a transmitter and in another node a receiver is present. The devices connected to such mode of transmission are generally either Send-only or Receive-only. E.g. Keyboard, Printer etc. this type of transmission is only possible when there are only one sender and one & only receiver. Data transmission always occurs from Sender to Receiver. As the flow of data is unidirectional the Sender don't get confirmed that whether the data is received by the Receiver or not, due to some problem/error. So the SIMPLEX method of Data Transmission is seldom used, as majority of the data processing applications need bidirectional communication. See fig-2

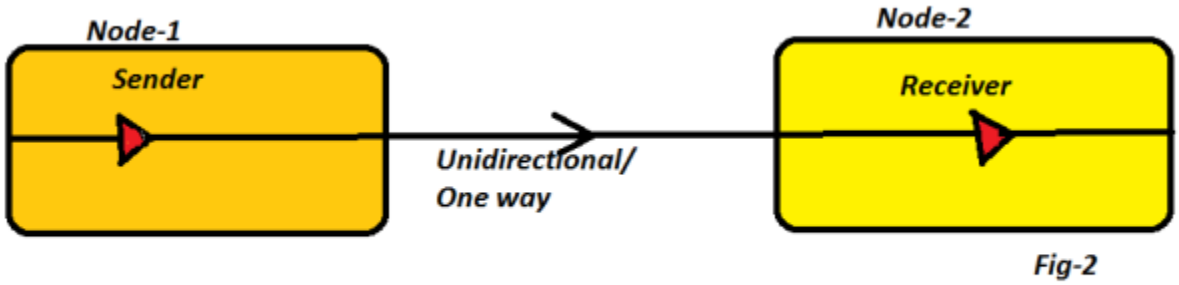

Fig-2

Simplex Method Of Data Transmission

2. HALF-DUPLEX: This type of communication mode is bidirectional. That means data can be transmitted in both directions, but not in the same time. During the data transmission session one node acts as TRANSMITTER while other one becomes RECEIVER. In this type of transmission always a switching technique takes place in between the Sender and the Receiver. That implies when switching takes place, the Sender becomes Receiver and vice versa. The major disadvantage of it is that, a lot of valuable time is lost in the process of switching. Secondly data transmission is not simultaneously bidirectional. Two communication media are required for it. It is generally used in Telephone connection. See fig-3

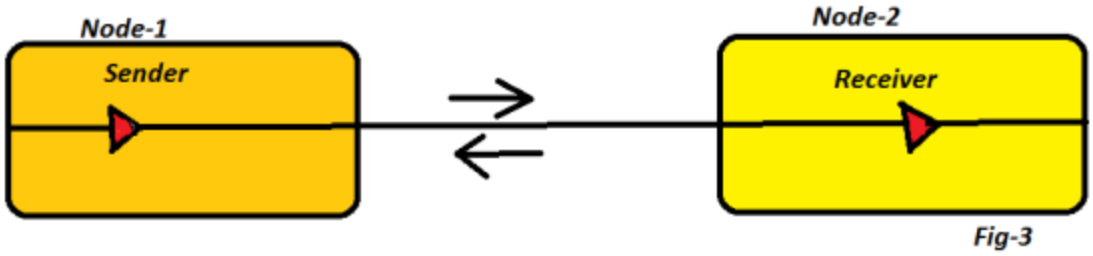

Fig-3

Half Duplex Method of Data Transmission

FULL-DUPLEX: In Full-duplex system data can be transmitted in both directions simultaneously. Efficiency improves because of the elimination of direction switching of HALF-DUPLEX system, which consumes a lot of time, thus delaying the process. This process is faster than the previous two methods. For this 4 communication media are required.

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