		Subject: 1-Introduction to computer networks communication 2- General preview over element of communication
Communication and computer networks		
4th Stage	Lecture No. : 1	Class room no.: 6
Lecture time: Sunday/ 10:30-12:30 AM		College of science for women
Instructor: Hussein A.Lafta		Department of computer science

Introduction:

Communication is the process of transmitting the messages that carrying information, where the two computers can be communicated with each other if the two conditions are available:

1- Translating the data into the signals can be transmitted between the two computers.

2- Providing a communication channel between them for transmitting and receiving the signals through it.

A Generic Communication Model:

The fundamental purpose of a communications system is the exchange of data between two parties. Figure 1.1.b presents one particular example, which is the communication between a workstation and a server over a public telephone network. Another example is the exchange of voice signals between two telephones over the same network. The key elements of the model are:
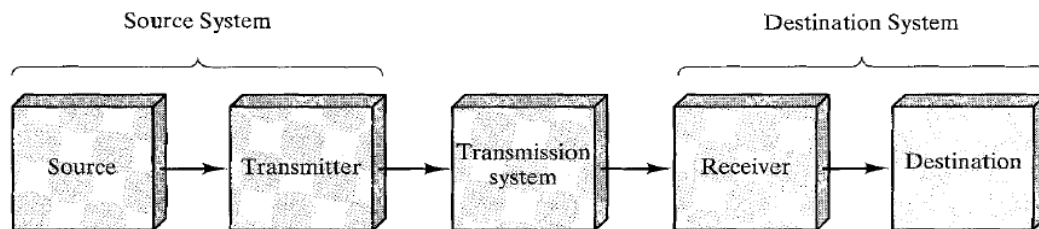
Source: This device generates the data to be transmitted; examples are telephones and personal computers.

Transmitter: Usually, the data generated by a source system are not transmitted directly in the form in which they were generated. Rather, a transmitter transforms and encodes the information in such a way as to produce electromagnetic signals that can be transmitted across some sort of transmission system. For example, a modem takes a digital bit stream from an attached device such as a personal computer and transforms that bit stream into an analog signal that can be handled by the telephone network.
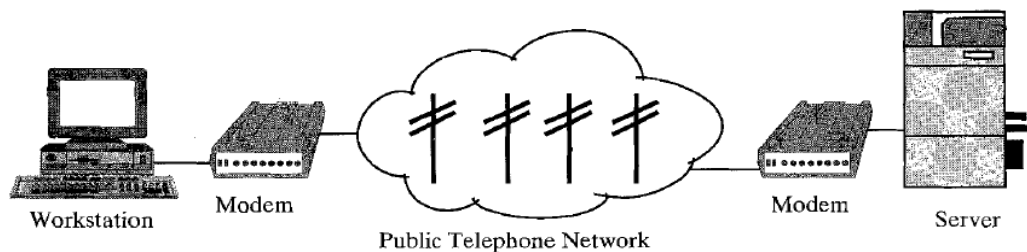
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Transmission System: This can be a single transmission line (channel) or a complex network connecting source and destination.

Receiver: The receiver accepts the signal from the transmission system and converts it into a form that can be handled by the destination device. For example, a modem will accept an analog signal coming from a network or transmission line and convert it into a digital bit stream.

**Destination:** Takes the incoming data from the receiver.

FIGURE 1.1 Simplified communications model.

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2.1- __The Element of communication:__

Communication begins with a message, or information, that must be sent from one individual or device to another. There are eight elements in common:
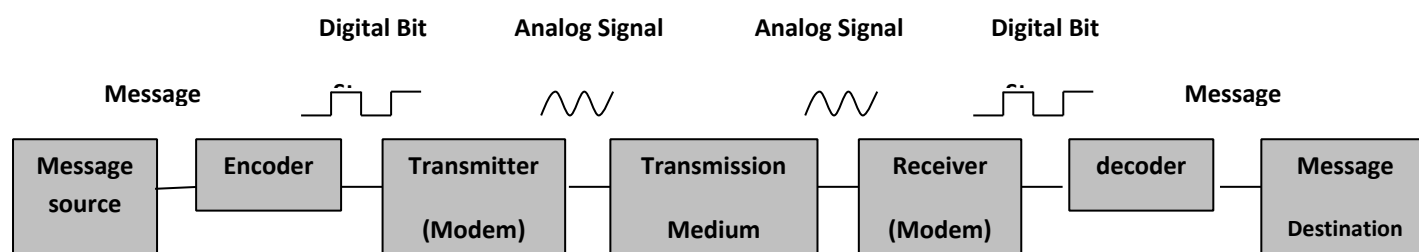
Figure(2) : Element of Communication

1-Message source (or sender): are peoples, or electronic devices, that need to send a message to other individuals or devices.

2-Encoder: It converts the message (text, image, voice,) to digital bit stream (0 and 1).

3-Transmitter (Modem): It converts the digital bit stream to analog signals.

4-Transmission Medium (channel): consists of the media that provides the pathway over which the message can travel from source to destination. The media is usually a type of cable, or a wireless transmission.

5-Reciever (Modem): It converts the analog signal to digital bit stream.

6-Decoder: It converts the digital bits to the original message.

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7-Message Destination: It is the People or electronic devices that receive the message.

8- Protocols: Rules which are govern the data flow from the sender to receiver through the channel.