**CHAPTER 1**

**INTRODUCTION**

* 1. **OVERVIEW**

Modern world scenario is ever changing. Data Communication and network have changed the way business and other daily affair works. Now, they highly rely on computer networks and internetwork. A set of devices often mentioned as nodes connected by media link is called a Network.

A node can be a device which is capable of sending or receiving data generated by other nodes on the network like a computer, printer etc. Computer network is a telecommunication channel using which we can share data with other computers or devices, connected to the same network. The best example of computer network is Internet. Computer network does not mean a system with one Control Unit connected to multiple other systems as its slave. That is Distributed system, not Computer Network. A network must be able to meet certain criteria, these are mentioned below:

* Performance
* Reliability
* Scalability

**1.2 BASIC COMMUNICATION MODEL**

A Communication model is used to exchange data between two parties. For example: communication between a computer, server and telephone (through modem). Figure 1.1 shows the basic communication model.

Basic Communication Model

Fig. 1.1 Basic Communication Model

## **1.3 Data Communication**

The exchange of data between two devices through a transmission medium is called Data Communication. The data is exchanged in the form of 0's and 1's. The transmission medium used is wire cable. For data communication to occur, the communication device must be a part of a communication system. Data Communication has two types - Local and Remote which are discussed below:

### **1.3.1 LOCAL DATA COMMUNICATION:**

Local communication takes place when the communicating devices are in the same geographical area, same building, or face-to-face etc.

### **Remote Data Communication:**

Remote communication takes place over a distance i.e. the devices are farther. The effectiveness of a data communication can be measured through the following features:

* Delivery: Delivery should be done to the correct destination.
* Timeliness: Delivery should be on time.
* Accuracy: Data delivered should be accurate.