

Using a landline telephone means you're using a wire telephone line. A wire is connected from the sender to the receiver.



Using a cell phone without any wires connected means that you are using wireless communication. The most popular means of wireless communication is the using of Wi-Fi for internet and data communication.

You can use your cell phone, laptop, iPad or any wireless devices to use the Wi-Fi services and communicate using your voice, text or video.

### Mode of transmission

The way in which data is transmitted from one device to another is called the data transmission mode. It also indicates the direction of the flow of information.

Different types of data transmission modes are as follows:

i. Simplex Mode

In simplex mode, data can flow in only one direction. In this mode, a sender can only send data and cannot receive it. Similarly, a receiver can only receive data but cannot send it.

Examples of simplex communication modes are Radio and T.V transmissions.



ii. Half-Duplex Mode

In half-duplex mode, data can flow in both directions but only in one direction at a time. In this mode, data is sent and received alternatively (not simultaneous).

Internet browsing is an example of half duplex mode. The user sends a request to a Web server for a web page. It means that information flows from user's computer to the web server. Web server receives the request and sends data of the requested page.



iii. Full-Duplex Mode

In full duplex-mode, data can flow in both directions at the same time. It is the fastest directional mode of data communication.

The telephone communication system is an example of full-duplex communication mode, since two people can talk at the same time or simultaneously.

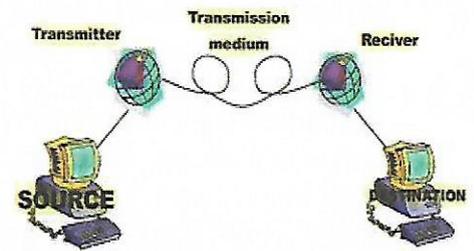


Data communication is the sending or receiving (transmission) of digital messages. At home, we can see many examples of data communication at work. The TV and radio system, the home phone and even our computer all work based on varying types of data transmissions. The process of transmitting a message occurs millions of times daily yet most of us are not aware of it.

## 2. Main data communication components

A Data Communication system has the following components:

- i. **Message:** It is the information or data to be sent or received. It can consist of text, numbers, pictures, sound or video or any combination of these.
- ii. **Sender or Source:** It is the device or computer that generates and sends that message.
- iii. **Receiver:** It is the device or computer that receives the message. The location of receiver computer is generally different from the sender computer.
- iv. **Medium:** It is the channel or physical path through which the message is carried from sender to the receiver. The medium can be wired like a network, telephone and fibre-optic cable OR wireless like laser, radio waves, and microwaves.
- v. **Protocol:** It is a set of rules that govern communication between devices. Both sender and receiver follow same rules (protocols) to communicate with each other.



### Activity 1.6

1. Outline the main components of data communication.
2. Describe each of the main components of data communication.