1 Information and Communication Technology

In this chapter you will learn:

- how to identify data and information
- what a system is
- the systems we come across in our day to day activities
- characteristics of quality information
- Information and Communication Technology
- applications of Information and Communication Technology
- evolution of the computer

1.1 Data and Information

The numbers, words, images and symbols which do not bear a meaning, when standing alone are called data.While we can arrive at meaningful information by arranging and processing data, we can use them to make decisions also.

Example 1

It will be difficult to get an idea about the subjects and marks if names and marks are written separatly on term test results.

Ravi 78, 90, 79, 67, 76, 98 Rizwan 87, 70, 80, 75, 80, 80 Krishan 76, 78, 67, 80, 79, 76

But these names and marks can be tabulated as follows:

Name	Language	Mathematics	Science	History	Health	English
Ravi	78	90	79	67	76	78
Saman	76	78	67	80	79	76
Rizwan	87	70	80	75	80	80

This table shows some information about the marks of students. However, in order to arrive at some meaningful conclusion, this may not be sufficient:

Marks that were tabulated can be subjected to calculation.

Name	Language	Maths	Science	History	Health	English	Total	Average	Rank
Ravi	78	90	79	67	76	78	468	78	2
Saman	76	78	67	80	79	76	456	76	3
Rizwan	87	70	80	75	80	80	472	78.66	1

In this table, name and subjects such as language, maths are data and total, average and rank are information.

You can see that the teacher is able to get the required information using this table (i.e. the total score of each student, their average scores, individual skill of each student, the rank etc). The information gathered in this manner is useful for the teacher to take important decisions.

Example 2

To identify the difference between data and information, let us consider the following Figures;

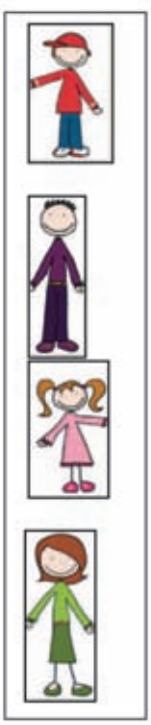


Figure 1.1 - Human figures

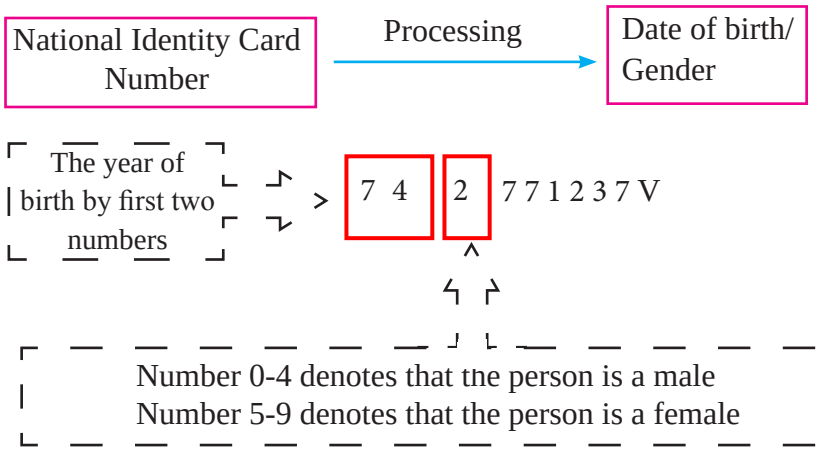
When we take each image separately, it does not convey a meaning. But when properly arranged as on the right hand side, one can understand that these are the members of one family.

Figure 1.2 - A family

Example 3

Analyzing NIC number

Take a look at the numbers in a National Identity Card. At once it looks as if it is just a number. But when you analyze it, you can obtain some meaningful information. When the NIC number is given one could find the person's age and gender.



Activity

Provide five other examples for data and information.

1.2 Information System

Once, man used to process data using a pen, pencil or other devices. But today the computer has become man's data processor. A system is a combination of components that work together to fulfil a task.

Submitting data for processing is called "Input" and the result we get after processing is called "Output." We can call the collection of all these components above a "Information System."

Storing data is an important task in information system. In some occasions, both input and stored data are used to obtain information.

Hence the purpose of a system is to receive data, process and store them and provide the results when required.

According to the figure 1.3 a computer processes the data that we input, according to the commands and provide us with the required information in the desired form. Therefore, we call the computer an ' Information System'.

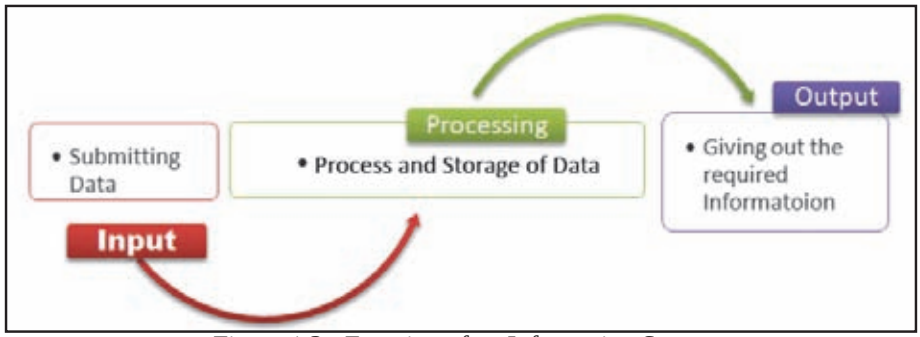


Figure 1.3 - Function of an Information System

We use many such systems in our day today activities. Let us consider some of the examples:

Example 1 - ATM Automatic Teller Machine

When the bank ATM card is inserted to ATM machine, data is processed and information regarding the account is given.

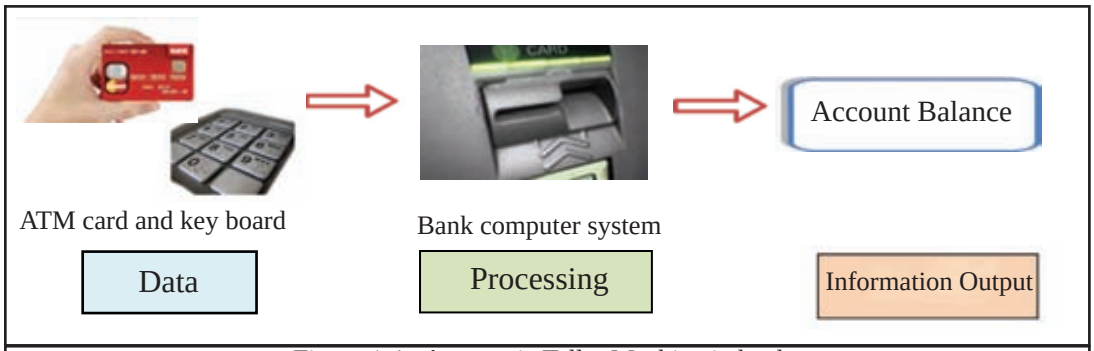


Figure 1.4 - Automatic Teller Machine in banks

Example 2 - Finger print reader to record the attendance of an organization

Figure 1.5 - Finger Print Reader