

Learning Objectives

At the completion of this chapter, the student will be able to know

- the concept of a database and relational database.
- different components of the database.
- types of database models.
- types of relationship.
- the concepts of relational algebra.

Introduction

A database is an organized collection of data, generally stored and accessed electronically from a computer system. The term "database" is also used to refer to any of the DBMS, the database system or an application associated with the database. Because of the close relationship between them, the term "database" is often used casually to refer to both a database and the DBMS used to manipulate it. A school class register is a database where names are arranged alphabetically. Databases have been around since people started recording things. Here we tend to focus on electronic ones.

11.1 Data

Data are raw facts stored in a computer. A data may contain any character, text, word or a number.

Example : 600006, DPI Campus, SCERT, Chennai, College Road

11.2 Information

Information is processed data, which allows to be utilized in a significant way.

Example

SCERT
College Road
DPI Campus
Chennai 600006

As you can see from the example above, data appears as a set of



words and numbers. However, when the data is processed, organized and formatted, it gives a meaningful information about the SCERT institution contact address.

11.3 Database

Database is a repository collection of related data organized in a way that data can be easily accessed, managed and updated. Database can be a software or hardware based, with one sole purpose of storing data.

11.4 DataBase Management System (DBMS)

A DBMS is a software that allows us to create, define and manipulate database, allowing users to store, process and analyze data easily. DBMS provides us with an interface or a tool, to perform various operations to create a database, storing of data and for updating data, etc. DBMS also provides protection and security to the databases. It also maintains data consistency in case of multiple users.

Examples of DBMS softwares : Foxpro, dbase.