**Data Base**

**What is Data ?**

Data is measured, collected and reported, and analyzed, whereupon it is often visualized using graphs, images or other analysis tools. Raw data (“unprocessed data”) may be a collection of numbers or characters before it’s been “cleaned” and corrected by researchers. It must be corrected so that we can remove outliers, instrument or data entry errors. Data processing commonly occurs by stages, and therefore the “processed data” from one stage could also be considered the “raw data” of subsequent stage. Field data is data that’s collected in an uncontrolled “in situ” environment. Experimental data is the data that is generated within the observation of scientific investigations.

Data can be generated by:

* Humans
* Machines
* Human-Machine combines.

It can often generated anywhere where any information is generated and stored in structured or unstructured formats.

**Why data is important ?**

* Data helps in make better decisions.
* Data helps in solve problems by finding the reason for underperformance.
* Data helps one to evaluate the performance.
* Data helps one improve processes.
* Data helps one understand consumers and the market.

**Data base :**

**Definition:** A database is a collection of data that is organized, which is also called structured data. It can be accessed or stored in a computer system. It can be managed through a Database Management System (DBMS), a software used to manage data. Database refers to related data in a structured form.

**Form:** in a database, data is organized into tables consisting of rows and columns and it is indexed so data can be updated, expanded, and deleted easily.

**Traditional file system:** Before the use of a computer, a manual file system was used to maintain the records and files. Data were stored and processed using a traditional file system and it makes it easy to find any information. In this traditional file system, each file is independent of other file and data in the different file can be integrated only by writing an individual program for each application. The data and application program that uses the data are arranged that any change to data requires modification of all the programs that use the data. Sometimes, it is not possible to identify all the programs using data and identified on trial and error basis. All functional areas in the organization create, processes its own files.

The files such as inventory and payroll generate separate files and do not communicate with each other. The organization was simple to generate and had better local control but the data of an organization is dispersed throughout the functional subsystem.

## **What Does Relational Database (RDB) Mean?**

A relational database (RDB) is a collective set of multiple data sets organized by tables, records and columns. RDBs establish a well-defined relationship between database tables. Tables communicate and share information, which facilitates data searchability, organization and reporting.

RDBs use Structured Query Language (SQL), which is a standard user application that provides an easy programming interface for database interaction.

## What is DBMS?

**Database Management System (DBMS)** is software for storing and retrieving users’ data while considering appropriate security measures. It consists of a group of programs that manipulate the database. The DBMS accepts the request for data from an application and instructs the operating system to provide the specific data. In large systems, a DBMS helps users and other third-party software store and retrieve data.

## **What is RDBMS?**

RDBMS stands for Relational Database Management System.

RDBMS is a program used to maintain a relational database.

RDBMS is the basis for all modern database systems such as MySQL, Microsoft SQL Server, Oracle, and Microsoft Access.

RDBMS uses [SQL queries](https://www.w3schools.com/sql/default.asp) to access the data in the database.