

DBMS

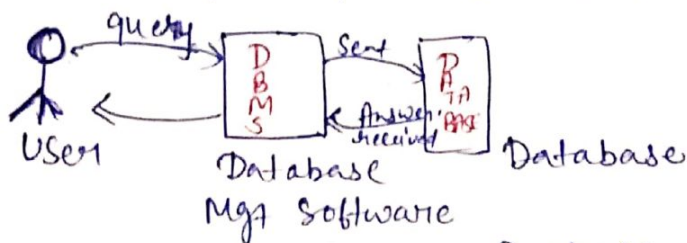
Introduction to Database Management System

Database is collection of logically interrelated data and a description of data, designed to meet the information needs of an organisation.

Features of data in a database.

- + Shared - Can be shared among different users.
- + Persistence - Data is permanently stored.
- + Validity - Correct/valid data should be there in DB.
- + Security → Unauthorised access protection.
- + Consistency → Consistent.
- + Non-redundancy - No 2 data item in DB represent the same entity.
- + Independence - There are 3 levels of Database, & each level data should be independent.

DBMS → Represents Database + Database Software



DBMS is a software package designed to define, manipulate, retrieve & manage data in a database.

Some DBMS examples includes.

- MySQL
- Oracle
- Foxpro
- SQL Server.

Advantage of using DBMS.

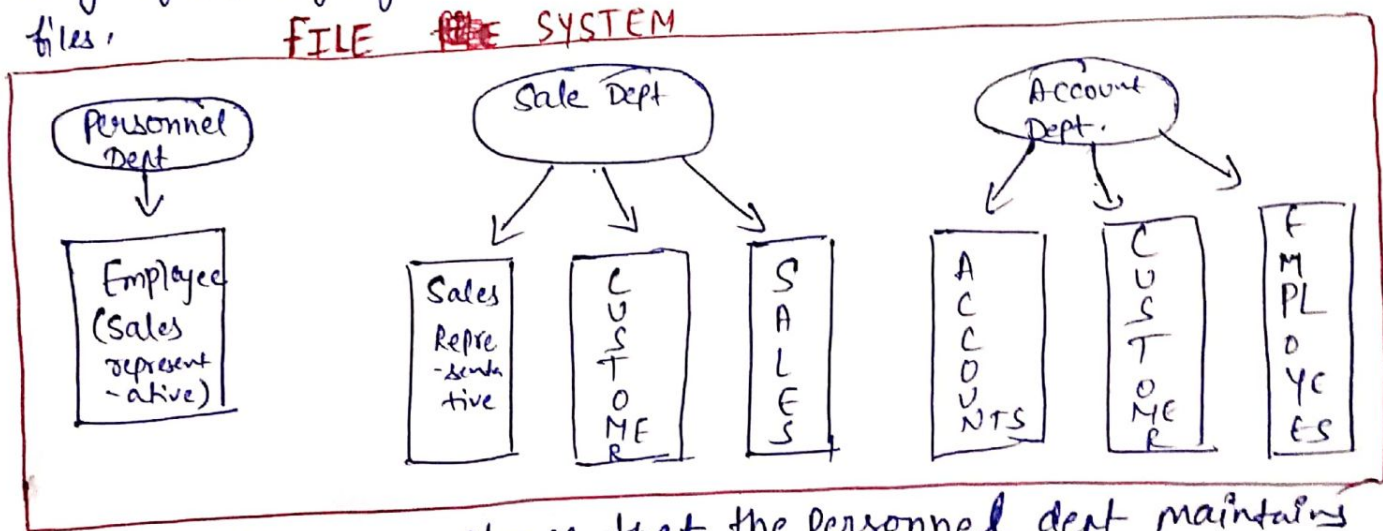
- Reduced Data Redundancy.
- Easier data access.
- Lower overall cost
- Data Security

Disadvantage of DBMS.

- High initial cost: Cost of setting up & hiring skilled people to design, analyse, develop & administer database requires higher initial investment.
- Complexity: DBMS is complex in nature, require technical knowledge.
- Security Issue:
- Problem of slower response: Sometimes so many user accessing data at same time which may create slow down problem.

Traditional file system.

Traditional file system is a system, which the user insert, update, delete, retrieve files to Database manually or through computers. It is one of the basic way of managing database which is in the form of files.



The above diagram, shows that the personnel dept maintains employee records (including sales representatives), which are again maintained at accounts & sales dept heading to duplication of employees records. Similarly customer record are also maintained in 2 different dept as well (sales, acc dept).

DATA Redundancy: The above Duplication of data in separate file by different department is known as Data Redundancy.

DATA INTEGRITY

Data integrity is the degree to which the data in the files of various dept are accurate & consistent.

Example:

Suppose a customer change his address & he inform the same to sales dept, that dept update his address. but somehow the address of the customer is not updated by the accounts dept. In this case, the same organisation has 2 different addresses of same customer. The Accs dept continue to send bills or any other information on old address, that will create problem to maintain Data Integrity.

Advantage of Traditional file system:

- No need of external central storage system.
- No need of highly technical person to handle the database
- Processing speed of accessing data is higher.

Disadvantage of Traditional file system:

- Data security is difficult.
- Create data redundancy
- Updating database is complex.
- Unable to answer sudden query.
- More cost requires for data storage because of data redundancy.

Traditional file system Vs. Database Mgt System.

Traditional file system

DBMS.

1. C, C++ and COBOL languages were used to design the files. (Small system)

② Cheap

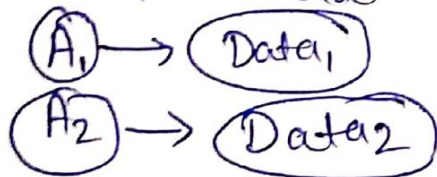
③ Simple structure

④ Very low designing

⑤ Not secured

⑥ Single user

⑦ Isolated data.
Means each application has its own data.



⑧ Backup Mechanism is so simple
[Just Copy, & Paste]
to store it somewhere else

①. Large system (Oracle)
(Can be use by small or large businesses)

② costly

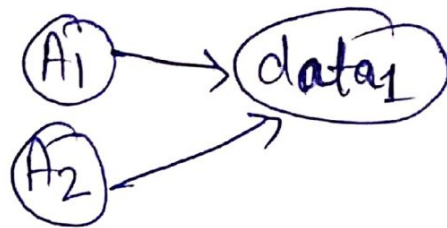
③ Complex structure.

④ Designing is important in DBMS.

⑤ Secured.

⑥ Multi user.

⑦ Shared data



⑧ Complex Backup mechanism as whole structure need to copy & save other.