

CHARACTERISTICS OF DBMS

- To incorporate the requirements of the organization, system should be designed for easy maintenance.
- Information systems should allow interactive access to data to obtain new information without writing fresh programs.
- System should be designed to co-relate different data to meet new requirements.
- An independent central repository, which gives information and meaning of available data is required.
- Integrated database will help in understanding the inter-relationships between data stored in different applications.
- The stored data should be made available for access by different users simultaneously.
- Automatic recovery feature has to be provided to overcome the problems with processing system failure.

DBMS Utilities

- A data loading utility:
Which allows easy loading of data from the external format without writing programs.
- A backup utility:
Which allows to make copies of the database periodically to help in cases of crashes and disasters.
- Recovery utility:
Which allows to reconstruct the correct state of database from the backup and history of transactions.
- Monitoring tools:
Which monitors the performance so that internal schema can be changed and database access can be optimized.

- File organization:

Which allows restructuring the data from one type to another?

Difference between File system & DBMS

File System

1. File system is a collection of data. Any management with the file system, user has to write the procedures
2. File system gives the details of the data representation and Storage of data.
3. In File system storing and retrieving of data cannot be done efficiently.
4. Concurrent access to the data in the file system has many problems like
 - a. Reading the file while other deleting some information, updating some information
5. File system doesn't provide crash recovery mechanism.

Eg. While we are entering some data into the file if System crashes then content of the file is lost.
6. Protecting a file under file system is very difficult.

DBMS

1. DBMS is a collection of data and user is not required to write the procedures for managing the database.
2. DBMS provides an abstract view of data that hides the details.
3. DBMS is efficient to use since there are wide varieties of sophisticated techniques to store and retrieve the data.
4. DBMS takes care of Concurrent access using some form of locking.
5. DBMS has crash recovery mechanism, DBMS protects user from the effects of system failures.
6. DBMS has a good protection mechanism.

DBMS = Database Management System

RDBMS = Relational Database Management System