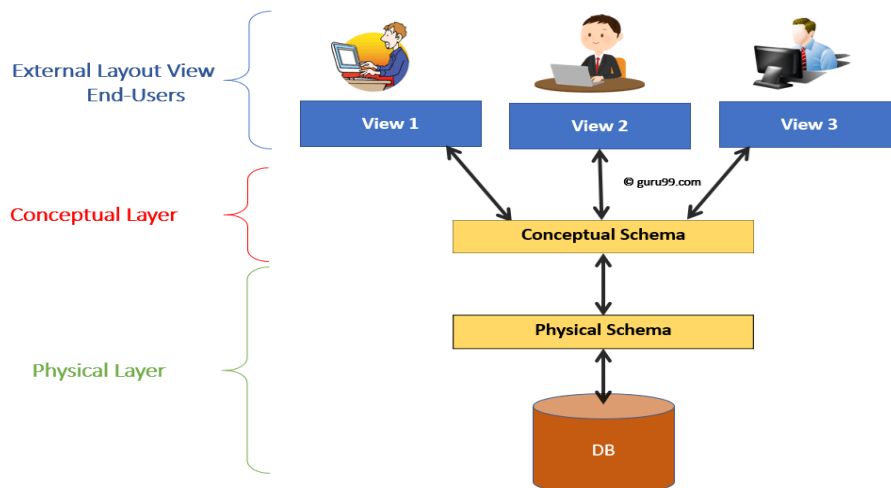


Unit-1

1. What is data and information in DBMS?

***Data is raw, unprocessed, unorganized facts that are seemingly random and do not yet carry any significance or meaning.**

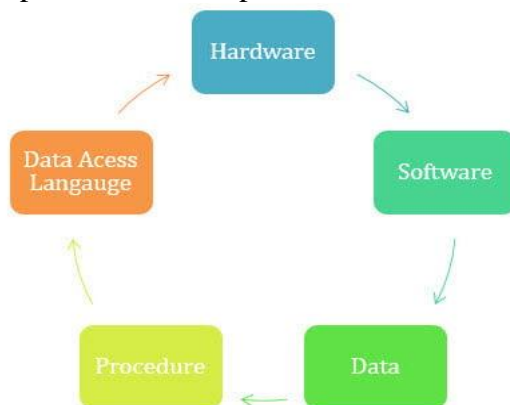
***Information refers to data that has been organized, interpreted, and contextualized by a human or machine so that it possess relevance and purpose.**



2. What is database with an example?

A database is a collection of interrelated data which helps in the efficient retrieval, insertion, and deletion of data from the database and organizes the data in the form of tables, views, schemas, reports, etc. For Example, a university database organizes the data about students, faculty, admin staff, etc. which helps in the efficient retrieval, insertion, and deletion of data from it. (or)

Databases often store information about people, such as customers or users. For example, social media platforms use databases to store user information, such as names, email addresses and user behavior. The data is used to recommend content to users and improve the user experience.

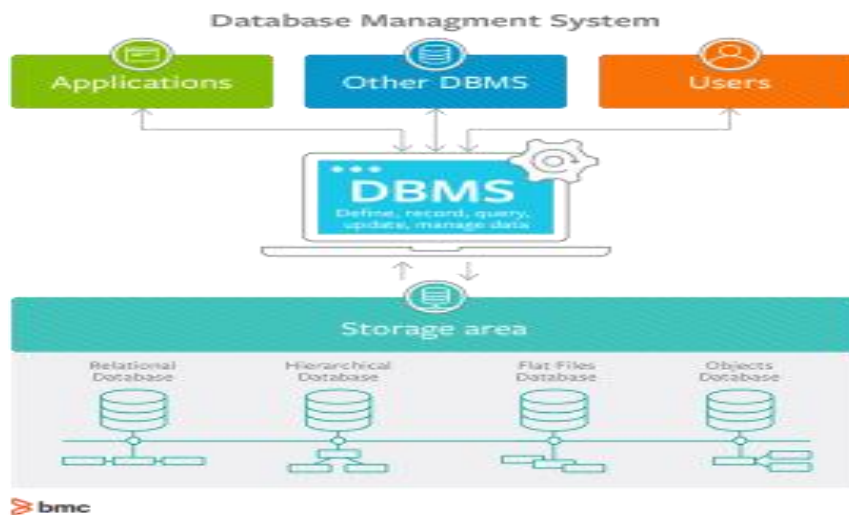


3. what is DATABASE MANAGEMENT SYSTEM?

A Database Management System (DBMS) is a software system that is designed to manage and organize data in a structured manner. It allows users to create, modify, and query a database, as well as manage the security and access controls for that database.

purpose of the DBMS:

A database management system (DBMS) is a software tool that enables users to manage a database easily. It allows users to access and interact with the underlying data in the database. These actions can range from simply querying data to defining database schemas that fundamentally affect the database structure.



4. what are the Objectives of database management system?

1. Mass Storage

DBMS can store a lot of data in it. So for all the big firms, DBMS is really ideal technology to use. It can store thousands of records in it and one can fetch all that data whenever it is needed.

2. Removes Duplicity

If you have lots of data then data duplicity will occur for sure at any instance. DBMS guarantee it that there will be no data duplicity among all the records. While storing new records, DBMS makes sure that same data was not inserted before.

3. Multiple Users Access

No one handles the whole database alone. There are lots of users who are able to access database. So this situation may happen that two or more users are accessing database. They can change whatever they want, at that time DBMS makes it sure that they can work concurrently.

4.Data Protection

Information such as bank details, employee's salary details and sale purchase details should always be kept secured. Also all the companies need their data secured from unauthorized use. DBMS gives a master level security to their data. No one can alter or modify the information without the privilege of using that data.

5.Data Backup and recovery

Sometimes database failure occurs so there is no option like one can say that all the data has been lost. There should be a backup of database so that on database failure it can be recovered. DBMS has the ability to backup and recover all the data in database.

6.Everyone can work on DBMS

There is no need to be a master of programming language if you want to work on DBMS. Any accountant who is having less technical knowledge can work on DBMS. All the definitions and descriptions are given in it so that even a non-technical background w=person can work on it.

7.Integrity

Integrity means your data is authentic and consistent. DBMS has various validity checks that make your data completely accurate and consistence.

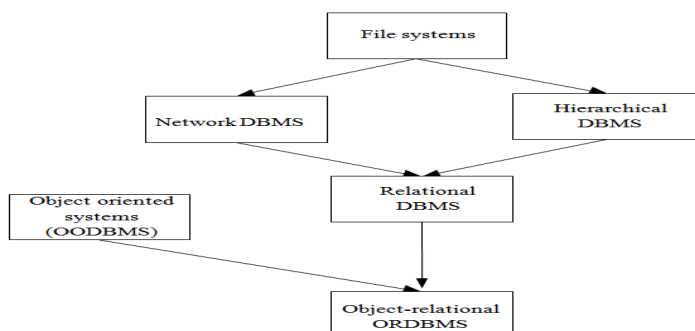
8.Platform Independent

One can run dbms at any platform. No particular platform is required to work on database management system.

5. What is evolution of DBMS?

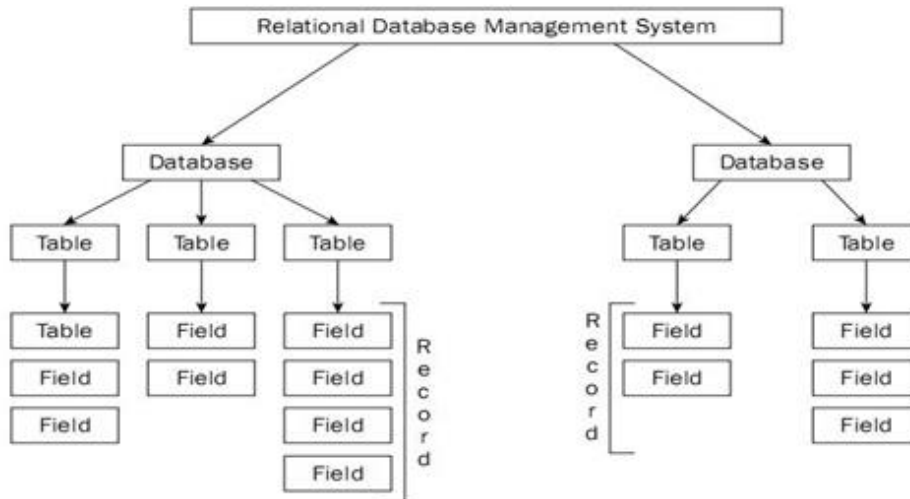
DBMS is a structured system of collection of programs that enable users to create and maintain a data base and interfaces with the various users as data base administrator, online users, application programmers and users.

There are various database management systems available in the market. Each type has its features and can be used for varied purposes. The large number of DBMS makes it difficult to choose the DBMS that should be implemented to solve our problem. To choose the most suitable DBMS, we need to evaluate from various systems. We perform a structured approach to evaluate the database systems.

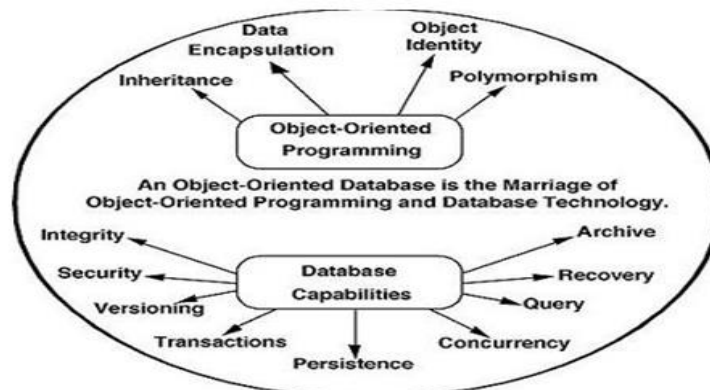


6.explain the classification of database management system?

Relational database – This is the most popular data model used in industries. It is based on the SQL. They are table oriented which means data is stored in different access control tables, each has the key field whose task is to identify each row. The tables or the files with the data are called as relations that help in designating the row or record, and columns are referred to attributes or fields. Few examples are MYSQL(Oracle, open source), Oracle database (Oracle), Microsoft SQL server(Microsoft) and DB2(IBM).



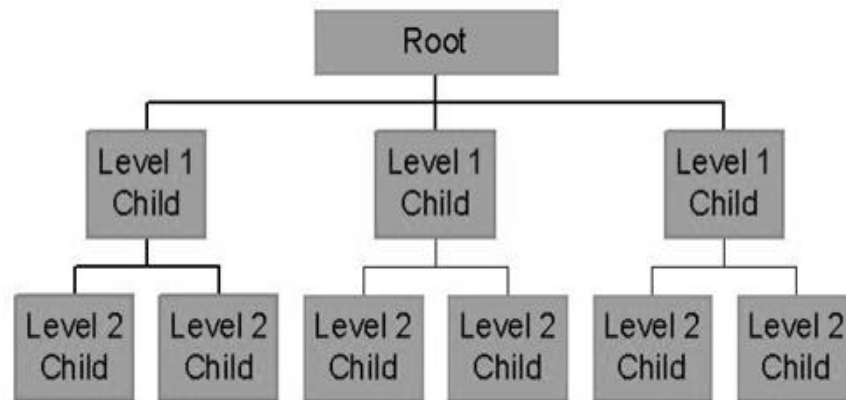
Object oriented database – The information here is in the form of the object as used in object oriented programming. It adds the database functionality to object programming languages. It requires less code, use more natural data and also code bases are easy to maintain. Examples are ObjectDB (ObjectDB software).



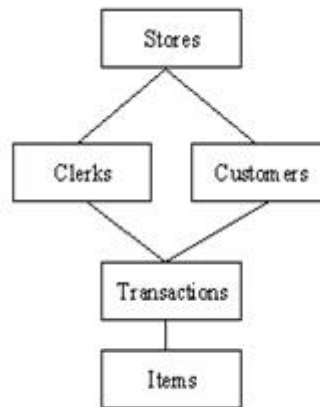
Object relational database – Relational DBMS are evolving continuously and they have been incorporating many concepts developed in object database leading to a new class called extended relational database or object relational database.

Hierarchical database – In this, the information about the groups of parent or child relationships is present in the records which is similar to the structure of a tree. Here the data follows a series of records, set of values attached to it. They are used in industry on mainframe platforms. Examples are IMS(IBM), Windows registry(Microsoft).

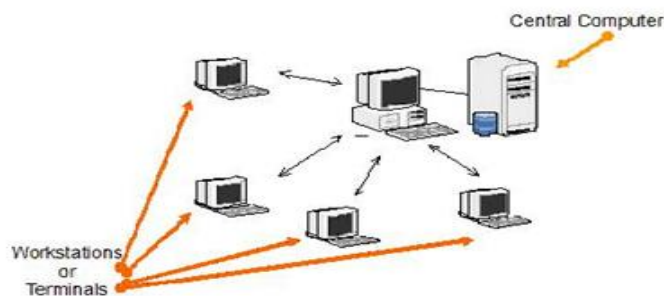
Hierarchical Database Model



Network database – Mainly used on a large digital computers. If there are more connections, then this database is efficient. They are similar to hierarchical database, they look like a cobweb or interconnected network of records. Examples are CA-IDMS(COMPUTER associates), IMAGE(HP).

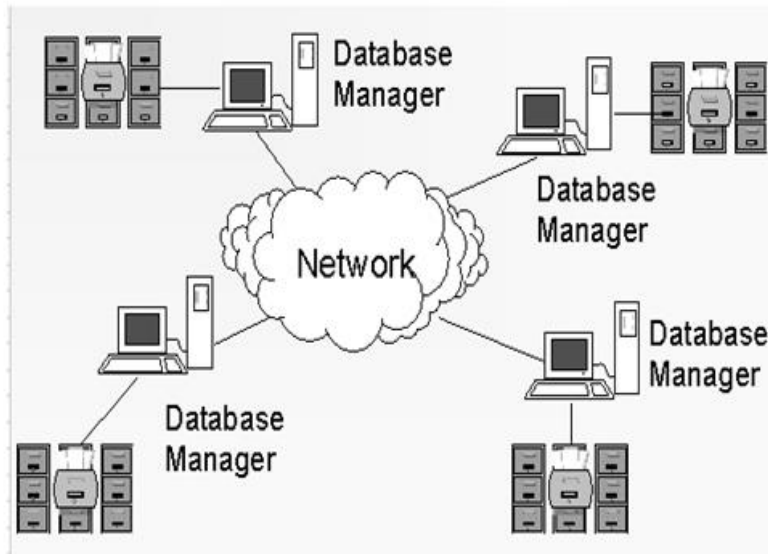


Centralized database system – The DBMS and database are stored at the single site that is used by several other systems too. We can simply say that data here is maintained on the centralized server.



Parallel network database system – This system has the advantage of improving processing input and output speeds. Majorly used in the applications that have query to larger database. It holds the multiple central processing units and data storage disks in parallel.

Distributed database system – In this data and the DBMS software are distributed over several sites but connected to the single computer.



Single user – As the name itself indicates it can support only one user at a time. It is mostly used with the personal computer on which the data resides accessible to a single person. The user may design, maintain and write the database programs.

Multiple users – It supports multiple users concurrently. Data can be both integrated and shared, a database should be integrated when the same information is not need be recorded in two places. For example a student in the college should have the database containing his information.