* What do you understand By Database?
* Database is collection of inter-related data stored in particular space from where we can use and change the data. In that, Management System is a set of programs to store and retrieve those data.
  + For example, Amazon has lots of data of lots of products and lots of people also. They can use their data to perform their day-to-day process very easily.
* What is Normalization?
  + Normalization is the process of minimizing redundancy (duplicity) from a relation or set of relations.
  + Types Normalization
  + First Normal Form
  + First normal form(1NF)
  + Second normal form(2NF)
  + Third normal form(3NF)
  + Boyce & Code normal form (BCNF)
* What is Difference between DBMS and RDBMS?

|  |  |
| --- | --- |
| DBMS | RDBMS |
| DBMS stores data as file. | RDBMS stores data in tabular form. |
| Data elements need to access individually | Multiple data elements can be accessed at the same time. |
| No relationship between data. | Data is stored in the form of tables which are related to each other. |
| Normalization is not present | Normalization is present |
| DBMS does not support distributed database | RDBMS supports distributed database. |
| It stores data in either a navigational or hierarchical form | It uses a tabular structure where the headers are the column names, and the rows contain corresponding values. |
| It deals with small quantity of data. | It deals with large amount of data. |
| It supports single user | It supports multiple users. |
| The data in a DBMS is subject to low security levels with regards to data manipulation | There exist multiple levels of data security in a RDBMS. |
| Examples: XML, Window Registry, etc. | Examples: MySQL, PostgreSQL, SQL Server, Oracle, Microsoft Access etc |

* What is MF Cod Rule of RDBMS Systems?

A database must obey in order to be regarded as a true relational database

Dr Edgar Frank codd Makes 13 rules. These rules can be applied on any database system that manages stored data using only its relational capabilities.

Rules 0: Foundation Rule:-For any RDBMS this acts as a base for all the rules

Rule 1:Information Rule:-Everything in database must be stored in a table format(Rows & columns)

Rule 2: Guaranteed Access Rule:-Every single data element(value) is guaranteed to be accessible via:-table-name or primary key & attribute-name.

Rule 3:-Systematic Treatment of Null Values:-The null values in a database must be given systematic & uniform treatment. NULL can be interpreted as – data missing /blank space/data is not known.

Rule 4:-Active Online Catalogue:-structure description of the entire database must be stored in an online catalogue, which can be accessed by authorized users (data administrator). User can use the same query language to access the catalogue

Rule 5:-Comprehensive data sub-language rule:-A database can only be accessed using a language. RDMS uses SQL(structured query language)

Rule 6:-View Updating Rule:-All the views of database, which can theoretically be updated, must also be updatable by the system.

Example:-account view/sales view/customer view

Rule 7:-High-level insert, update and delete rule:-RDBMS must support high-level insertion update and delete.it must also support union, intersection and minus operation.

Rule 8:-Physical data independence:-The data stored in a database must be independent of the applications that access the database. For example:-Any physical changes in website should not effect to user accessing it.

Rule 9:-Logical Data Independence:-The logical data in a database must be independent of its user’s view. For example:-if two tables are merged there should be no impact on application.

Rule 10:-Integrity Independence:-Any data inserted on the table should maintain its integrity no changes in its value. For example:-if age is inserted 10 the no changes in value it must store as 10.

Rule 11:-Distribution independence:-The end user must not able to see that data is distributed over various locations. Users should always get impression that the data is located at one site only. Example:-Users may access website from different locations

Rule 12:-Non-Subversion Rule:- SQL language to store and manipulate the data in the database. If a system has a low-level or separate language other than SQL to access the database system, it should not subvert or bypass integrity to transform data.

* What do you understand By Data Redundancy?
  + Data redundancy is when multiple copies of the same information are stored in more than one place at a time.
  + Redundancy in relation may cause insertion, deletion and updation anomalies. So, it helps to minimize the redundancy in relations.
  + We have to reduce the Redundancy by using normalization.
* What is DDL Interpreter?
  + DDL stands for Data Definition Language
  + DDL Interpreter interprets the DDL statements and records the generated statements in the table containing metadata.
* What is DML Compiler in SQL?
  + DML compiler translates DML statements in a query language into a low-level instruction and the generated instruction can be understood by Query Evaluation Engine.
* What is SQL Key Constraints writing an Example of SQL Key Constraints?
  + SQL key constraints are used to define the rules for uniqueness and referential integrity in a relational database. There are several types of key constraints in SQL, including primary keys, unique keys, and foreign keys.
* What is save Point? How to create a save Point write a Query?
  + A SAVEPOINT is a point in a transaction when you can roll the transaction back to a certain point without rolling back the entire transaction.
  + The syntax for a SAVEPOINT command is as shown below.
    - SAVEPOINT SAVEPOINT\_NAME;
  + This command serves only in the creation of a SAVEPOINT among all the transactional statements.
  + The ROLLBACK command is used to undo a group of transactions.
* What is trigger and how to create a Trigger in SQL?
  + A trigger is a stored procedure in database which automatically invokes whenever a special event in the database occurs.
  + For example, a trigger can be invoked when a row is inserted into a specified table.
  + CREATE TRIGGER [Trigger\_Name]

[Trigger\_Time] [Trigger\_Event]

ON [Table\_Name]