Basics of Database

1. What do you understand By Database

Ans:

Database Management Systems (DBMS) are software systems used to store, retrieve, and run queries on data.

1. What is Normalization?

Ans:

Normalization is the process of organizing data in a database. It includes creating tables and establishing relationships between those tables according to rules designed both to protect the data and to make the database more flexible by eliminating redundancy and inconsistent dependency.

1. What is Difference between DBMS and RDBMS?

Ans:

DBMS: Database Management System

RDBMS: Relation Database Management System

|  |  |
| --- | --- |
| DBMS | RDBMS |
| DBMS stores data as file. | RDBMS stores data in tabular form. |
| 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. |
| Security is less | More security measures provided. |
| It supports single user. | It supports multiple users. |
| Low software and hardware necessities. | Higher software and hardware necessities. |

1. What is MF Cod Rule of RDBMS Systems?

Ans:

Following are Codd’s Twelve Principles of Relational Databases:

1. Information is represented logically in tables.
2. Data must be logically accessible by table, primary key, and column.
3. Null values must be uniformly treated as “missing information,” not as empty strings, blanks, or zeros.
4. Metadata (data about the database) must be stored in the database just as regular data is.
5. A single language must be able to define data, views, integrity constraints, authorization, transactions, and data manipulation.
6. Views must show the updates of their base tables and vice versa.
7. A single operation must be available to do each of the following operations: retrieve data, insert data, update data, or delete data.
8. Batch and end-user operations are logically separate from physical storage and access methods.
9. Batch and end-user operations can change the database schema without having to recreate it or the applications built upon it.
10. Integrity constraints must be available and stored in the metadata, not in an application ...
11. What do you understand By Data Redundancy?

Ans:

Data redundancy in a Database Management System (DBMS) refers to the repetition of the same data in multiple places within a database.

It is a concern because it can lead to inconsistencies, update anomalies, and increased storage requirements, impacting data integrity and database performance.

1. What is DDL Interpreter?

Ans:

DDL: Data Definition Language.

A Data Definition Language (DDL) refers to a language that is used to modify data and define data structures. For instance, the DDL commands could be used to remove, add, or modify tables within a database.

A DDL (Data Definition Language) Interpreter is a component of a database management system (DBMS) that processes and executes Data Definition Language statements.

1. What is DML Compiler in SQL?

Ans:

DML: Data Manipulation Language.

A data manipulation language (DML) is a computer programming language used for adding (inserting), deleting, and modifying (updating) data in a database.

Compiler Role in SQL: In the context of SQL execution within a DBMS, the SQL compiler is responsible for parsing SQL queries, optimizing their execution plans, and generating code that the database engine can execute efficiently.

1. What is SQL Key Constraints writing an Example of SQL

Key Constraints?

Ans:

Constraints can be specified when the table is created with the CREATE TABLE statement, or after the table is created with the ALTER TABLE statement.

Ex: CREATE TABLE:

CREATE TABLE Employees (

EmployeeID INT PRIMARY KEY,

FirstName VARCHAR (50),

LastName VARCHAR (50),

);

SQL constraints are used to specify rules for the data in a table.

The following constraints are commonly used in SQL:

1. NOT NULL - Ensures that a column cannot have a NULL value
2. UNIQUE - Ensures that all values in a column are different.
3. PRIMARY KEY - A combination of a NOT NULL and UNIQUE. Uniquely identifies each row in a table
4. FOREIGN KEY - Prevents actions that would destroy links between tables
5. What is save Point? How to create a save Point write a Query?

Ans:

* Savepoint is a command in SQL that is used with the rollback command.
* It is a command in Transaction Control Language that is used to mark the transaction in a table.
* Savepoint is helpful when we want to roll back only a small part of a table and not the whole table. In simple words, we can say savepoint is a bookmark in SQL.

To create a savepoint in SQL:

SAVEPOINT savepoint\_name;

1. What is trigger and how to create a Trigger in SQL?

Ans:

A trigger in SQL is a special type of stored procedure that automatically executes in response to certain events on a particular table or view in a database. These events can include INSERT, UPDATE, or DELETE operations.

Syntax:

create trigger [trigger\_name]

[before | after]

{insert | update | delete}

on [table\_name]

[for each row]

[trigger\_body]