MODULE : 5

( DATABASE)

BASICS OF DATATYPES.

1. **What do you understand by database ?**

**Ans:** **A database is information is set up for easy access, management and updating .computer database typically store aggregation of data records or file that contain information ,such as sales transactions , customer data ,financials and product information**.

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?**

|  |  |
| --- | --- |
| DBMS | RDBMS |
| Data is stored in a database management system (DBMS) as a file. | Tables are used to store information. |
| Data is stored in a database management system (DBMS) in either a navigational or hierarchical format | RDBMS employs a tabular format, with column names as headers and associated data as rows. |
| Only a single user is supported by the DBMS | It may be used by numerous people |
| Normalization is not supported by DBMS. | A relational database management system (RDBMS) can be normalised. |
| individual data items must be accessed. | SQL queries make it simple to retrieve data. |
| Distributed databases are not supported by DBMS | Distributed databases are supported by RBMS |
| Client-server architecture is not supported by DBMS | Client-server architecture is supported by RDBMS |

1. **What is MF Cod Rule of RDBMS Systems?**

Ans :

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 is 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:** A Data Definition Language (DDL) refers to .a language that is used to modify data and defined the structure For instance, the DDL commands could be used to remove, add, or modify tables within a database. The DDLs used in DB applications are considered to be a subset of the Structured Query Language.

1. **What is DML Compiler in SQL?**

**ANS:** A DML data manipulation language refers to a computer programming language that allows you to add (insert),delete(delete) and alter (update) data in a database

. A DML is typically a sublanguage of a larger database language like SQL, with the DML containing some of the language's operators.

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

**ANS:**

|  |  |
| --- | --- |
| Constraint | Description |
| NOT NULL | values cannot be null |
| UNIQUE | values cannot match any older value |
| PRIMARY KEY | used to uniquely identify a row |
| FOREIGN KEY | references a row in another table |
| CHECK | validates condition for new value |
| DEFAULT | set default value if not passed |
| CREATE INDEX | used to speedup the read process |

**9. What is save Point? How to create a save Point write a Query?**

**Ans : SAVEPOINT** creates points within the groups of transactions in which to ROLLBACK.   
A SAVEPOINT is a point in a transaction in which you can roll the transaction back to a certain point without rolling back the entire transaction.

**Syntax for Save point command:**

*SAVEPOINT SAVEPOINT\_NAME;*

This command is used only in the creation of SAVEPOINT among all the transactions.   
In general ROLLBACK is used to undo a group of transactions.

**Syntax for rolling back to Save point Command:**

*ROLLBACK TO SAVEPOINT\_NAME:*

**Que – 10) What is trigger and how to create a Trigger in SQL?**

**Ans)** In SQL, a trigger is a special type of stored procedure that automatically executes in response to certain events or actions occurring in the database. These events can include INSERT, UPDATE, DELETE operations on a table, or even database schema changes. Triggers are useful for enforcing business rules, maintaining data integrity, and automating tasks within the database.

**Example :**

CREATE [OR REPLACE] TRIGGER trigger\_name

{BEFORE | AFTER | INSTEAD OF} {INSERT | UPDATE | DELETE} ON table\_name

[FOR EACH ROW]

[WHEN condition]

BEGIN

-- SQL statements to execute when the trigger fires

END;

CREATE OR REPLACE TRIGGER employee\_audit

BEFORE INSERT OR UPDATE OR DELETE ON employees

FOR EACH ROW

BEGIN

IF INSERTING THEN

INSERT INTO audit\_table (action, employee\_id, action\_date)

VALUES ('INSERT', :NEW.employee\_id, SYSDATE);

ELSIF UPDATING THEN

INSERT INTO audit\_table (action, employee\_id, action\_date)

VALUES ('UPDATE', :OLD.employee\_id, SYSDATE);

ELSIF DELETING THEN

INSERT INTO audit\_table (action, employee\_id, action\_date)

VALUES ('DELETE', :OLD.employee\_id, SYSDATE);

END IF;

END;