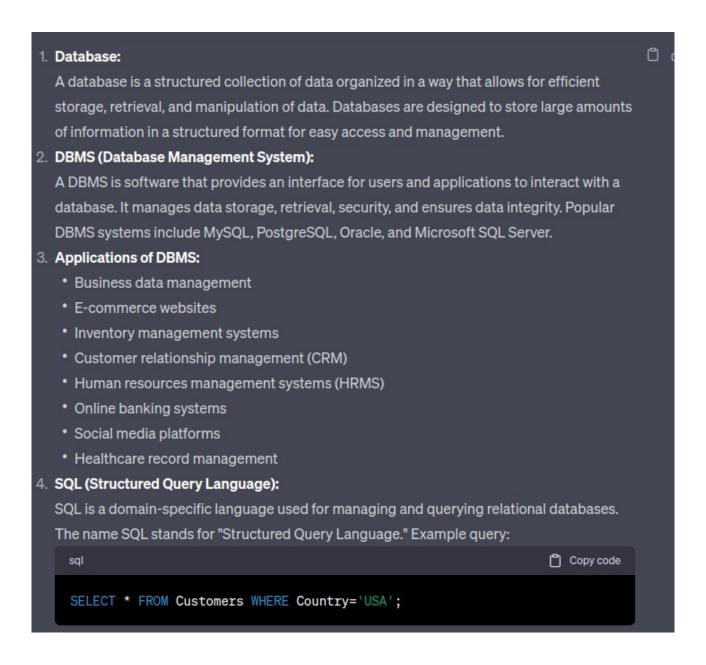
# **ADBMS LAB EXAM VIVA QUESTION ANSWERS**



#### 5. Relational Database:

A relational database is a type of database that uses a tabular structure with rows and columns to store and manage data. Data is organized into tables, and relationships between tables are established using keys.

#### 6. SQL Languages:

- DDL (Data Definition Language): Used for defining and managing the structure of the database.
  - Syntax: CREATE TABLE, ALTER TABLE, DROP TABLE, etc.
- DML (Data Manipulation Language): Used for querying and manipulating data.
  - Syntax: SELECT, INSERT, UPDATE, DELETE, etc.
- DCL (Data Control Language): Used for controlling access to data.
  - Syntax: GRANT, REVOKE, etc.

#### 7. View and Index:

- View: A virtual table derived from one or more tables. It presents data from the underlying tables in a specific way.
- Index: A database structure that improves the speed of data retrieval operations on a table.

## 8. Difference between Truncate and Drop:

- Truncate: Removes all rows from a table while keeping the table structure intact. It can't be rolled back.
- **Drop:** Deletes an entire table, including its structure. It can be rolled back if used within a transaction.

# 9. Different Datatypes in SQL:

Common data types include INT, VARCHAR, DATE, FLOAT, BOOLEAN, etc.

## 10. Different Types of Keys and Their Uses:

- Primary Key: Uniquely identifies each row in a table.
- Foreign Key: Establishes a link between two tables by referring to the primary key of another table.
- Unique Key: Ensures that values in a column are unique.
- Composite Key: Combines two or more columns to create a unique key.

## 11. Aggregate Functions (MIN, MAX, AVG, SUM, COUNT):

- . MIN: Returns the minimum value in a set.
- MAX: Returns the maximum value in a set.
- AVG: Returns the average value of a set.
- SUM: Returns the sum of values in a set.
- COUNT: Returns the number of rows in a set.
- 12. **Date Functions:** SQL provides functions for working with date and time data, such as DATEADD, DATEDIFF, NOW, etc.

#### 13. Set Operations (UNION, IN, NOT IN):

- UNION: Combines the results of two or more SELECT queries.
- IN: Tests if a value matches any value in a subquery or list.
- NOT IN: Tests if a value does not match any value in a subquery or list.

## 14. LIKE Operator:

• Used for pattern matching in WHERE clauses. It allows the use of wildcard characters like '%' and ' '.

#### 15. ORDER BY and GROUP BY:

- ORDER BY: Sorts the result set based on specified columns.
- · GROUP BY: Groups rows with similar values in specified columns.

#### 16. Different Types of Joins:

 INNER JOIN, LEFT JOIN (or LEFT OUTER JOIN), RIGHT JOIN (or RIGHT OUTER JOIN), FULL JOIN (or FULL OUTER JOIN), CROSS JOIN.

## 17. PL/SQL (Procedural Language SQL):

 PL/SQL is an extension of SQL that adds procedural capabilities. It is often used for writing stored procedures, functions, and triggers in Oracle databases.

#### 18. Use of Procedures and Functions in SQL:

- Procedures: Used for executing a sequence of SQL statements.
- Functions: Return a single value and can be used in SQL statements.

## 19. Trigger (Syntax and Use):

 A trigger is a database object that automatically executes when certain events (e.g., INSERT, UPDATE, DELETE) occur in a table.

## 20. Cursor (Syntax and Use):

 A cursor is a database object used to retrieve and manipulate data row by row, typically within stored procedures or functions.

#### 21. Comparison between MySQL and MongoDB:

Please provide specific notes for a detailed comparison.

## 22. Different Functions in MongoDB:

 MongoDB uses functions like `find`, `insert`, `update`, and `delete` for data manipulation. It also has aggregation framework functions for complex data analysis.

#### 23. Different Data Models:

 Relational, Entity-Relationship (ER), Object-Oriented, Document-Based, Graph-Based, Key-Value, Columnar, etc.

## 24. Data Independence (Physical, Logical, View):

- Physical Independence: Changes in the physical storage structure should not affect the application.
- Logical Independence: Changes in the logical schema should not require changes to the application.
- View Independence: Changes in views (virtual tables) should not affect the underlying schema or application.

# 25. ACID Properties of SQL and CAP Properties of NoSQL:

- ACID (Atomicity, Consistency, Isolation, Durability) ensures data integrity in SQL databases.
- CAP (Consistency, Availability, Partition Tolerance) is a trade-off in NoSQL databases, meaning they prioritize two out of the three properties.

# 26. Different Types of Relationships (One-to-One, One-to-Many, etc.):

- One-to-One: Each record in one table is related to one record in another table.
- One-to-Many: Each record in one table can be related to multiple records in another table.
- Many-to-Many: Multiple records in one table can be related to multiple records in another table. Requires a junction table.