

Section – A: Theory Questions

1. **What are the two main ways to execute an SQL script, either by pasting it into the command line or running it from a file and how do they differ in terms of the process used to run the script?**

- **Command-Line Interface (CLI):** The SQL script can be executed directly from the command line by passing it to the command-line interface (CLI) of a database management system, such as MySQL or PostgreSQL.
- **Graphical User Interface (GUI):** The SQL script can also be executed through a graphical user interface (GUI) tool, such as phpMyAdmin or SQL Workbench. These tools provide a user-friendly interface for executing SQL scripts and managing databases.

2. **What is the difference between SQL and MySQL?**

SQL (Structured Query Language) is a standard programming language used for managing and manipulating relational databases. It is used to insert, update, and retrieve data from databases, as well as to create, modify, and delete database structures like tables and indexes.

MySQL is an open-source relational database management system (RDBMS) that uses SQL as its primary language for querying and manipulating data. It provides a graphical user interface, as well as a command-line interface, for working with databases.

In other words, SQL is the language used to interact with databases, while MySQL is one of many implementations of a database management system that uses SQL. Other popular RDBMSs include PostgreSQL, Microsoft SQL Server, and Oracle Database.

So, the difference between SQL and MySQL is that SQL is a language and MySQL is a database management system that uses SQL as its primary language.

3. Explain the concept of SQL commands and how many types.

A SQL command is a set of instructions written in the SQL language that is used to interact with a database. These commands are used to insert, update, and retrieve data from databases, as well as to create, modify, and delete database structures like tables and indexes.

There are several types of SQL commands:

- **Data Definition Language (DDL) commands:** These commands are used to define the database schema, such as CREATE TABLE, ALTER TABLE, and DROP TABLE.
- **Data Manipulation Language (DML) commands:** These commands are used to manipulate data stored in the database, such as SELECT, INSERT, UPDATE, and DELETE.
- **Data Control Language (DCL) commands:** These commands are used to control access to the data stored in the database, such as GRANT and REVOKE.
- **Transaction Control (TCL) commands:** These commands are used to manage transactions, such as COMMIT and ROLLBACK.

4. What is the ALTER command in SQL and what are its various types used for?

The ALTER command in SQL is used to modify the structure of a database, such as adding, modifying, or deleting columns in a table.

There are several types of ALTER commands, including:

- **ALTER TABLE ADD COLUMN:** This type of ALTER command is used to add a new column to a table.
- **ALTER TABLE MODIFY COLUMN:** This type of ALTER command is used to modify an existing column in a table, such as changing the data type or default value.
- **ALTER TABLE DROP COLUMN:** This type of ALTER command is used to remove a column from a table.
- **ALTER TABLE RENAME:** This type of ALTER command is used to change the name of a table.

5. Explain the differences between the TRUNCATE and DROP commands in SQL, including their unique functions and uses.

The TRUNCATE and DROP SQL commands are both used to delete data, but they have different effects on the database.

TRUNCATE is used to remove all data from a table without destroying the table itself. TRUNCATE is faster than DELETE because it is an optimized operation for dropping and re-creating the table, which is much faster than deleting rows one by one, especially for large tables.

The DROP command, on the other hand, is used to remove a table completely, including its data and structure. The DROP command also deletes any related objects associated with the table, such as indexes and constraints.

In conclusion, TRUNCATE is used to remove all data from a table, while DROP is used to remove the entire table and its related objects.

Section – B: Practice Questions

1. **Create a database called "employee_db" in SQL Workbench Or Command-Line Interface (not applicable using code eval)**

```
CREATE DATABASE employee_db;
```

2. **What command can be used in SQL Workbench to display a list of all databases in a MySQL connection? (not applicable using code eval)**

```
SHOW DATABASES;
```

3. **How to check whether the database is selected and What is the process for selecting the database named 'employee_db' in SQL Workbench? (not applicable using code eval)**

```
SELECT DATABASE();
```

```
USE employee_db;
```

4. **Rename the “emp” database to “employees” in SQL Workbench Or Command-Line Interface (not applicable using code eval)**

```
RENAME TABLE emp TO employees;
```

5. **How to describe the columns for a table named 'employees' in SQL? (not applicable using code eval)**

```
DESCRIBE employees;
```

```
SHOW COLUMNS FROM `employee_db`.employees; (Optional)
```

6. **How can we change the data type of the name column in SQL? (not applicable using code eval)**

```
ALTER TABLE employees MODIFY COLUMN name VARCHAR(50) NOT NULL;
```

7. **What is the process for dropping a database and verifying its deletion in SQL? (not applicable using code eval)**

```
DROP DATABASE employee_db;
```

```
SHOW DATABASES;
```