# *SQL MODULE*

## *LAB - 4*

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## Questions

Lab 1: Database Schema:

Consider a simple database with one table: BankAccount

BankAccount Table:

● Columns: account_id (Primary Key), account_holder_name,

account_balance

```
mysql> CREATE TABLE BankAccount;
ERROR 4028 (HY000): A table must have at least one visible column.
mysql> CREATE TABLE BankAccount (
    ->     account_id INT NOT NULL AUTO_INCREMENT,
    ->     account_holder_name VARCHAR(100) NOT NULL,
    ->     account_balance DECIMAL(15, 2) NOT NULL,
    ->     PRIMARY KEY (account_id)
    -> );
Query OK, 0 rows affected (0.31 sec)
```

Task 1: Insert Data

Write an SQL INSERT statement to insert data into the BankAccount table.

```
mysql> INSERT INTO BankAccount (account_holder_name, account_balance) VALUES
    -> ('Alice Smith', 45000.00),
    -> ('Bob Johnson', 32000.50),
    -> ('Carol Williams', 15000.75),
    -> ('David Brown', 28000.00),
    -> ('Eve Davis', 50000.00);
Query OK, 5 rows affected (0.07 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

Task 2: Retrieving Data

Write an SQL SELECT statement to retrieve the account_holder_name and

account_balance of all account holders from the BankAccount table.

```
mysql> SELECT account_holder_name, account_balance FROM BankAccount;
+---------------------+-----------------+
| account_holder_name | account_balance |
+---------------------+-----------------+
| Alice Smith         |        45000.00 |
| Bob Johnson         |        32000.50 |
| Carol Williams      |        15000.75 |
| David Brown         |        28000.00 |
| Eve Davis           |        50000.00 |
+---------------------+-----------------+
5 rows in set (0.02 sec)
```

Task 3: Filtering Data

Write an SQL SELECT statement to retrieve the account_holder_name and account_balance where the account_balance is more than 30,000.

```
mysql> SELECT account_holder_name, account_balance FROM BankAccount
    -> WHERE account_balance > 30000;
+---------------------+-----------------+
| account_holder_name | account_balance |
+---------------------+-----------------+
| Alice Smith         |        45000.00 |
| Bob Johnson         |        32000.50 |
| Eve Davis           |        50000.00 |
+---------------------+-----------------+
3 rows in set (0.01 sec)
```

Task 4: Updating Data

Write an SQL UPDATE statement to change the account_balance of the account holder whose ID is 101.

```
mysql> UPDATE BankAccount
    -> SET account_balance = 55000.00
    -> WHERE account_id = 101;
Query OK, 0 rows affected (0.01 sec)
Rows matched: 0  Changed: 0  Warnings: 0
```

ChatGPT Exercise

Using ChatGPT generates SQL queries of the below problem .

Scenario 1: In an employee database, you want to retrieve information about employees who belong to the "Sales" department and have a salary greater than 50,000.

```
mysql> SELECT *
    -> FROM employees
    -> WHERE department = 'Sales' AND salary > 50000;
+--------+------------+-----------+-----+---------------------------+----------+-----------+------------+
| emp_id | first_name | last_name | age | email                     | salary   | job_title | department |
+--------+------------+-----------+-----+---------------------------+----------+-----------+------------+
|    124 | Michael    | Brown     |  45 | michael.brown3@example.com | 55000.00 | Developer | Sales      |
+--------+------------+-----------+-----+---------------------------+----------+-----------+------------+
1 row in set (0.04 sec)
```

Scenario 2: An employee has resigned, and you need to remove their record from the "employees" table. Write an SQL DELETE query for this.

```
mysql> DELETE FROM employees
    -> WHERE emp_id = 123;
Query OK, 1 row affected (0.09 sec)
```

Scenario 3: You want to delete all orders placed before '2022-01-01' that are still in the 'Pending' status. Write an SQL DELETE query for this.

***QUERY: DELETE FROM orders***

***WHERE order_date < '2022-01-01' AND status = 'Pending';***

Scenario 4: You want to remove all products from the "Discontinued" category as they are no longer available. Write an SQL DELETE query for this.

***QUERY: DELETE FROM products***

***WHERE category = 'Discontinued';***

Scenario 5: Employees in the "Sales" department are getting a bonus, and you want to add 1000 to the bonus column for all employees in that department. Write an SQL

***QUERY: UPDATE query for this***

***ALTER TABLE employees***

***ADD COLUMN bonus DECIMAL(10, 2) DEFAULT 0;***

***QUERY*: UPDATE employees**

**SET bonus = bonus + 1000**

**WHERE department = 'Sales';**