

SQL LAB-4

RDBMS, MYSQL

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QUESTIONS

Lab 1: Database Schema:

Consider a simple database with one tables: BankAccount

BankAccount Table:

- Columns: account_id (Primary Key), account_holder_name, account_balance

Task 1: Insert Data

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

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.

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.

Task 4: Updating Data

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

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.

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

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.

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.

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

UPDATE query for this

Lab 1: Database Schema:

Consider a simple database with one tables: BankAccount

BankAccount Table:

- Columns: account_id (Primary Key), account_holder_name, account_balance

Code:-

```
mysql> -- Creating the BankAccount table
mysql> CREATE TABLE BankAccount (
  ->   account_id INT PRIMARY KEY, -- Unique identifier for each bank account
  ->   account_holder_name VARCHAR(100), -- Name of the account holder
  ->   account_balance DECIMAL(15, 2) -- Balance of the bank account, with two decimal places
  -> );
Query OK, 0 rows affected (0.10 sec)
```

Output:-

```
mysql> desc BankAccount;
+-----+-----+-----+-----+-----+-----+
| Field                | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| account_id           | int           | NO   | PRI | NULL    |       |
| account_holder_name  | varchar(100)  | YES  |     | NULL    |       |
| account_balance      | decimal(15,2) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.05 sec)
```

Task 1: Insert Data

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

Code:-

```
mysql> -- Inserting data into the BankAccount table
mysql> INSERT INTO BankAccount (account_id, account_holder_name, account_balance) -- Specifying the columns to insert data into
  -> VALUES
  ->   (1, 'John Doe', 1000.00), -- Inserting data for the first bank account
  ->   (2, 'Jane Smith', 2500.50), -- Inserting data for the second bank account
  ->   (3, 'Alice Johnson', 1500.75); -- Inserting data for the third bank account
Query OK, 3 rows affected (0.05 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

Output:-

```
mysql> Select *from BankAccount;
+-----+-----+-----+
| account_id | account_holder_name | account_balance |
+-----+-----+-----+
|          1 | John Doe           |          1000.00 |
|          2 | Jane Smith         |          2500.50 |
|          3 | Alice Johnson      |          1500.75 |
+-----+-----+-----+
3 rows in set (0.00 sec)
```

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> -- Retrieving the account_holder_name and account_balance of all account holders
mysql> SELECT account_holder_name, account_balance
    -> FROM BankAccount;
```

account_holder_name	account_balance
John Doe	1000.00
Jane Smith	2500.50
Alice Johnson	1500.75

3 rows in set (0.01 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> -- Retrieving account_holder_name and account_balance for account holders with a balance greater than 30000
mysql> SELECT account_holder_name, account_balance
    -> FROM BankAccount
    -> WHERE account_balance > 30000;
```

account_holder_name	account_balance
Alice Johnson	45000.00

1 row in set (0.00 sec)

Task 4: Updating Data

Write an SQL UPDATE statement to change the account_balance of the account holder whose ID is 1.

Code:-

-- Updating the account_balance to 25000 for the bank account with account_id = 1

```
mysql> Update BankAccount set account_balance=25000 where account_id =1;
Query OK, 1 row affected (0.03 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

Output:-

```
mysql> select *from BankAccount;
```

account_id	account_holder_name	account_balance
1	John Doe	25000.00
2	Jane Smith	2500.50
3	Alice Johnson	45000.00

3 rows in set (0.00 sec)

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> Use Employee;
Database changed
mysql> -- Creating the Employee table
mysql> CREATE TABLE Employee (
  -> emp_id INT PRIMARY KEY, -- Unique identifier for each employee
  -> first_name VARCHAR(50), -- First name of the employee
  -> last_name VARCHAR(50), -- Last name of the employee
  -> department VARCHAR(50), -- Department of the employee
  -> salary DECIMAL(15, 2) -- Salary of the employee with two decimal places
  -> );
Query OK, 0 rows affected (0.04 sec)

mysql> -- Inserting records into the Employee table
mysql> INSERT INTO Employee (emp_id, first_name, last_name, department, salary)
  -> VALUES
  -> (1, 'John', 'Doe', 'Sales', 60000.00), -- Record for first employee
  -> (2, 'Jane', 'Smith', 'Marketing', 55000.00), -- Record for second employee
  -> (3, 'Alice', 'Johnson', 'Sales', 70000.00), -- Record for third employee
  -> (4, 'Bob', 'Brown', 'HR', 45000.00), -- Record for fourth employee
  -> (5, 'Charlie', 'Davis', 'Sales', 52000.00); -- Record for fifth employee
Query OK, 5 rows affected (0.02 sec)
Records: 5 Duplicates: 0 Warnings: 0

mysql> desc Employee;
```

Field	Type	Null	Key	Default	Extra
emp_id	int	NO	PRI	NULL	
first_name	varchar(50)	YES		NULL	
last_name	varchar(50)	YES		NULL	
department	varchar(50)	YES		NULL	
salary	decimal(15,2)	YES		NULL	

5 rows in set (0.04 sec)

```
mysql> select *from Employee;
```

emp_id	first_name	last_name	department	salary
1	John	Doe	Sales	60000.00
2	Jane	Smith	Marketing	55000.00
3	Alice	Johnson	Sales	70000.00
4	Bob	Brown	HR	45000.00
5	Charlie	Davis	Sales	52000.00

5 rows in set (0.03 sec)

Code & output:-

```
mysql> -- Retrieving information about employees in the "Sales" department with a salary greater than 50,000
mysql> SELECT emp_id, first_name, last_name, department, salary
  -> FROM Employee
  -> WHERE department = 'Sales' AND salary > 50000;
```

emp_id	first_name	last_name	department	salary
1	John	Doe	Sales	60000.00
3	Alice	Johnson	Sales	70000.00
5	Charlie	Davis	Sales	52000.00

3 rows in set (0.02 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.

Code:-

```
mysql> -- Deleting an employee record who has resigned
mysql> DELETE FROM Employee
    --> WHERE emp_id = 1; -- Specify the employee ID of the resigned employee
Query OK, 1 row affected (0.03 sec)
```

Output:-

```
mysql> Select *from Employee;
+-----+-----+-----+-----+-----+-----+-----+
| emp_id | first_name | last_name | department | salary | resigned | bonus |
+-----+-----+-----+-----+-----+-----+-----+
| 2 | Jane | Smith | Marketing | 55000.00 | 0 | 300.00 |
| 3 | Alice | Johnson | Sales | 70000.00 | 0 | 700.00 |
| 4 | Bob | Brown | HR | 45000.00 | 0 | 250.00 |
| 5 | Charlie | Davis | Sales | 52000.00 | 0 | 400.00 |
| 6 | John | Doe | Sales | 60000.00 | 0 | 500.00 |
| 7 | Jane | Smith | Marketing | 55000.00 | 0 | 300.00 |
| 8 | Alice | Johnson | Sales | 70000.00 | 0 | 700.00 |
| 9 | Bob | Brown | HR | 45000.00 | 0 | 250.00 |
| 10 | Charlie | Davis | Sales | 52000.00 | 0 | 400.00 |
+-----+-----+-----+-----+-----+-----+-----+
9 rows in set (0.02 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.

Code:-

```
mysql> -- Deleting orders placed before '2022-01-01' that are still in 'Pending' status
mysql> DELETE FROM Orders
    --> WHERE order_date < '2022-01-01' AND order_status = 'Pending';
Query OK, 3 rows affected (0.01 sec)
```

Output:-

```
mysql> Select *from Orders;
+-----+-----+-----+-----+
| order_id | order_date | order_status | employee_id |
+-----+-----+-----+-----+
| 3 | 2022-02-01 | Completed | 3 |
+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

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.

Code:-

```
mysql> -- Deleting all products from the 'Discontinued' category
mysql> DELETE FROM Products
      -> WHERE product_category = 'Discontinued';
Query OK, 3 rows affected (0.01 sec)
```

Output:-

```
mysql> Select *from Products;
+-----+-----+-----+-----+
| product_id | product_name | product_category | price |
+-----+-----+-----+-----+
|          2 | Product B    | Active           | 15.00 |
|          4 | Product D    | Active           | 20.00 |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

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

UPDATE query for this

Code:-

```
mysql> -- Adding 1000 to the bonus column for all employees in the "Sales" department
mysql> UPDATE Employee
      -> SET bonus = bonus + 1000
      -> WHERE department = 'Sales';
Query OK, 3 rows affected (0.03 sec)
Rows matched: 3  Changed: 3  Warnings: 0
```

Output:-

```
mysql> Select *from Employee;
+-----+-----+-----+-----+-----+-----+
| emp_id | first_name | last_name | department | salary | resigned | bonus |
+-----+-----+-----+-----+-----+-----+
|      1 | John      | Doe      | Sales      | 60000.00 | 0        | 1500.00 |
|      2 | Jane      | Smith    | Marketing  | 55000.00 | 0        | 300.00  |
|      3 | Alice     | Johnson  | Sales      | 70000.00 | 0        | 1700.00 |
|      4 | Bob       | Brown    | HR         | 45000.00 | 0        | 250.00  |
|      5 | Charlie   | Davis    | Sales      | 52000.00 | 0        | 1400.00 |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```