

LAB 9

Q.1. Perform the following tasks:

- a). Create Student table with following attributes (STUDENT_ID , FIRST_NAME, LAST_NAME, PHONE_NUMBER, MARKS, COURSE_ID).
- b). Create Course table with following attributes (COURSE_ID, COURSE_NAME).
- c). Write a SQL statement to insert 8 records with your own value into the tables.
- d). Write a query to get the number of students with the same course.
- e). Write a query to get the student name, course name and marks of the students.
- f). Write a query to get the Average marks of students course wise.

Queries:

a). CREATE TABLE Student (
STUDENT_ID INT PRIMARY KEY,
FIRST_NAME VARCHAR(50),
LAST_NAME VARCHAR(50),
PHONE_NUMBER VARCHAR(20),
MARKS DECIMAL(5, 2),
COURSE_ID INT,
FOREIGN KEY (COURSE_ID) REFERENCES Course(COURSE_ID)
);

```
mysql> CREATE TABLE Student (  
-> STUDENT_ID INT PRIMARY KEY,  
-> FIRST_NAME VARCHAR(50),  
-> LAST_NAME VARCHAR(50),  
-> PHONE_NUMBER VARCHAR(20),  
-> MARKS DECIMAL(5, 2),  
-> COURSE_ID INT,  
-> FOREIGN KEY (COURSE_ID) REFERENCES Course(COURSE_ID)  
-> );  
Query OK, 0 rows affected (0.28 sec)
```

b).CREATE TABLE Course (COURSE_ID INT PRIMARY KEY,COURSE_NAME VARCHAR(100));

```
mysql> CREATE TABLE Course (COURSE_ID INT PRIMARY KEY,COURSE_NAME VARCHAR(100));  
Query OK, 0 rows affected (0.18 sec)
```

C). -- Insert into Course table

INSERT INTO Course (COURSE_ID, COURSE_NAME) VALUES

(1, 'Mathematics'),

(2, 'Science'),

(3, 'English'),

(4, 'History');

-- Insert into Student table

INSERT INTO Student (STUDENT_ID, FIRST_NAME, LAST_NAME, PHONE_NUMBER, MARKS, COURSE_ID) VALUES

(1, 'John', 'Doe', '123-456-7890', 85.00, 1),

(2, 'Jane', 'Smith', '987-654-3210', 90.00, 1),

(3, 'Bob', 'Johnson', '555-123-4567', 78.00, 2),

(4, 'Alice', 'Williams', '555-789-0123', 92.00, 2),

(5, 'Mike', 'Brown', '555-901-2345', 88.00, 3),

(6, 'Emily', 'Davis', '555-111-2222', 95.00, 3),

(7, 'Sarah', 'Taylor', '555-333-4444', 80.00, 4),

(8, 'Kevin', 'White', '555-666-7777', 85.00, 4);

```
mysql> -- Insert into Student table
mysql> INSERT INTO Student (STUDENT_ID, FIRST_NAME, LAST_NAME, PHONE_NUMBER, MARKS, COURSE_ID) VALUES
-> (1, 'John', 'Doe', '123-456-7890', 85.00, 1),
-> (2, 'Jane', 'Smith', '987-654-3210', 90.00, 1),
-> (3, 'Bob', 'Johnson', '555-123-4567', 78.00, 2),
-> (4, 'Alice', 'Williams', '555-789-0123', 92.00, 2),
-> (5, 'Mike', 'Brown', '555-901-2345', 88.00, 3),
-> (6, 'Emily', 'Davis', '555-111-2222', 95.00, 3),
-> (7, 'Sarah', 'Taylor', '555-333-4444', 80.00, 4),
-> (8, 'Kevin', 'White', '555-666-7777', 85.00, 4);
Query OK, 8 rows affected (0.06 sec)
Records: 8 Duplicates: 0 Warnings: 0
```

d). SELECT COURSE_ID, COUNT(*) AS Num_Students

FROM Student

GROUP BY COURSE_ID;

```
mysql> SELECT COURSE_ID, COUNT(*) AS Num_Students
-> FROM Student
-> GROUP BY COURSE_ID;
+-----+-----+
| COURSE_ID | Num_Students |
+-----+-----+
| 1         | 2           |
| 2         | 2           |
| 3         | 2           |
| 4         | 2           |
+-----+-----+
4 rows in set (0.00 sec)
```

e). SELECT s.FIRST_NAME, s.LAST_NAME, c.COURSE_NAME, s.MARKS
FROM Student s
JOIN Course c ON s.COURSE_ID = c.COURSE_ID;

```
mysql> SELECT s.FIRST_NAME, s.LAST_NAME, c.COURSE_NAME, s.MARKS  
-> FROM Student s  
-> JOIN Course c ON s.COURSE_ID = c.COURSE_ID;
```

FIRST_NAME	LAST_NAME	COURSE_NAME	MARKS
John	Doe	Mathematics	85.00
Jane	Smith	Mathematics	90.00
Bob	Johnson	Science	78.00
Alice	Williams	Science	92.00
Mike	Brown	English	88.00
Emily	Davis	English	95.00
Sarah	Taylor	History	80.00
Kevin	White	History	85.00

8 rows in set (0.00 sec)

f). SELECT c.COURSE_NAME, AVG(s.MARKS) AS Avg_Marks
FROM Student s
JOIN Course c ON s.COURSE_ID = c.COURSE_ID
GROUP BY c.COURSE_NAME;

```
mysql> SELECT c.COURSE_NAME, AVG(s.MARKS) AS Avg_Marks  
-> FROM Student s  
-> JOIN Course c ON s.COURSE_ID = c.COURSE_ID  
-> GROUP BY c.COURSE_NAME;
```

COURSE_NAME	Avg_Marks
Mathematics	87.500000
Science	85.000000
English	91.500000
History	82.500000

4 rows in set (0.00 sec)

Q.2. Create database for hospital management system & Perform the following tasks:

- a). Create HEALTH CARE WORKERS table with following attributes (EMPLOYEE_ID , FIRST_NAME, LAST_NAME, EMAIL, PHONE_NUMBER, HIRE_DATE, SALARY, DESIGNATION).
- b). Create PATIENT table with following attributes (PATIENT_ID, NAME, PHONE_NUMBER).
- c). Write a SQL statement to insert 10 records with your own value into the tables.
- d). Write a query to get the names (first_name, last_name), Designation, salary.
- e). Write a query to get the number of employees with the same Designation
- f). Write a query to get employee name who are getting salary more than 25000.
- g). Fetch HEALTH CARE WORKERS name using their employee id.

Queries:

- a). CREATE TABLE HEALTH_CARE_WORKERS (
EMPLOYEE_ID INT PRIMARY KEY, FIRST_NAME VARCHAR(50),
LAST_NAME VARCHAR(50), EMAIL VARCHAR(100),
PHONE_NUMBER VARCHAR(20), HIRE_DATE DATE,
SALARY DECIMAL(10, 2), DESIGNATION VARCHAR(50));

```
mysql> CREATE TABLE HEALTH_CARE_WORKERS (  
-> EMPLOYEE_ID INT PRIMARY KEY,  
-> FIRST_NAME VARCHAR(50),  
-> LAST_NAME VARCHAR(50),  
-> EMAIL VARCHAR(100),  
-> PHONE_NUMBER VARCHAR(20),  
-> HIRE_DATE DATE,  
-> SALARY DECIMAL(10, 2),  
-> DESIGNATION VARCHAR(50)  
-> );  
Query OK, 0 rows affected (0.24 sec)
```

- b). CREATE TABLE PATIENTS (
PATIENT_ID INT PRIMARY KEY,
NAME VARCHAR(100),
PHONE_NUMBER VARCHAR(20)
);

```
mysql> use hospital;  
Database changed  
mysql> CREATE TABLE PATIENTS (  
-> PATIENT_ID INT PRIMARY KEY,  
-> NAME VARCHAR(100),  
-> PHONE_NUMBER VARCHAR(20)  
-> );  
Query OK, 0 rows affected (0.24 sec)
```

c). -- Insert records into HEALTH_CARE_WORKERS table

```
INSERT INTO HEALTH_CARE_WORKERS (EMPLOYEE_ID, FIRST_NAME, LAST_NAME,  
EMAIL, PHONE_NUMBER, HIRE_DATE, SALARY, DESIGNATION)
```

```
VALUES
```

```
(1, 'John', 'Doe', 'johndoe@example.com', '123-456-7890', '2020-01-01', 30000.00,  
'Doctor'),  
(2, 'Jane', 'Smith', 'janesmith@example.com', '987-654-3210', '2020-02-01', 25000.00,  
'Nurse'),  
(3, 'Bob', 'Johnson', 'bobjohnson@example.com', '555-123-4567', '2020-03-01',  
35000.00, 'Doctor'),  
(4, 'Alice', 'Williams', 'alicewilliams@example.com', '555-789-0123', '2020-04-01',  
28000.00, 'Nurse'),  
(5, 'Mike', 'Davis', 'ikedavis@example.com', '555-901-2345', '2020-05-01', 32000.00,  
'Doctor'),  
(6, 'Emily', 'Taylor', 'emilytaylor@example.com', '555-111-2222', '2020-06-01',  
26000.00, 'Nurse'),  
(7, 'Sarah', 'Lee', 'arahlee@example.com', '555-333-4444', '2020-07-01', 29000.00,  
'Doctor'),  
(8, 'Kevin', 'White', 'kevinwhite@example.com', '555-555-5555', '2020-08-01',  
27000.00, 'Nurse'),  
(9, 'Lisa', 'Hall', 'lisahall@example.com', '555-666-7777', '2020-09-01', 31000.00,  
'Doctor'),  
(10, 'Tom', 'Harris', 'tomharris@example.com', '555-888-9999', '2020-10-01',  
24000.00, 'Nurse');
```

-- Insert records into PATIENTS table

```
INSERT INTO PATIENTS (PATIENT_ID, NAME, PHONE_NUMBER)
```

```
VALUES
```

```
(1, 'John Doe', '123-456-7890'),  
(2, 'Jane Smith', '987-654-3210'),  
(3, 'Bob Johnson', '555-123-4567'),  
(4, 'Alice Williams', '555-789-0123'),  
(5, 'Mike Davis', '555-901-2345'),  
(6, 'Emily Taylor', '555-111-2222'),  
(7, 'Sarah Lee', '555-333-4444'),  
(8, 'Kevin White', '555-555-5555'),  
(9, 'Lisa Hall', '555-666-7777'),  
(10, 'Tom Harris', '555-888-9999');
```

Student's ID: AF0402433

Trainer's Name: Manali Ma'am

Student's Name: Patel Abubakar Siddique Mehboob

```
mysql> -- Insert records into HEALTH_CARE_WORKERS table
mysql> INSERT INTO HEALTH_CARE_WORKERS (EMPLOYEE_ID, FIRST_NAME, LAST_NAME, EMAIL, PHONE_NUMBER, HIRE_DATE, SALARY, DESIGNATION)
-> VALUES
-> (1, 'John', 'Doe', 'johndoe@example.com', '123-456-7890', '2020-01-01', 30000.00, 'Doctor'),
-> (2, 'Jane', 'Smith', 'janesmith@example.com', '987-654-3210', '2020-02-01', 25000.00, 'Nurse'),
-> (3, 'Bob', 'Johnson', 'bobjohnson@example.com', '555-123-4567', '2020-03-01', 35000.00, 'Doctor'),
-> (4, 'Alice', 'Williams', 'alicewilliams@example.com', '555-789-0123', '2020-04-01', 28000.00, 'Nurse'),
-> (5, 'Mike', 'Davis', 'ikedavis@example.com', '555-901-2345', '2020-05-01', 32000.00, 'Doctor'),
-> (6, 'Emily', 'Taylor', 'emilytaylor@example.com', '555-111-2222', '2020-06-01', 26000.00, 'Nurse'),
-> (7, 'Sarah', 'Lee', 'arahlee@example.com', '555-333-4444', '2020-07-01', 29000.00, 'Doctor'),
-> (8, 'Kevin', 'White', 'kevinwhite@example.com', '555-555-5555', '2020-08-01', 27000.00, 'Nurse'),
-> (9, 'Lisa', 'Hall', 'lisahall@example.com', '555-666-7777', '2020-09-01', 31000.00, 'Doctor'),
-> (10, 'Tom', 'Harris', 'tomharris@example.com', '555-888-9999', '2020-10-01', 24000.00, 'Nurse');
Query OK, 10 rows affected (0.05 sec)
Records: 10 Duplicates: 0 Warnings: 0

mysql>
mysql> -- Insert records into PATIENTS table
mysql> INSERT INTO PATIENTS (PATIENT_ID, NAME, PHONE_NUMBER)
-> VALUES
-> (1, 'John Doe', '123-456-7890'),
-> (2, 'Jane Smith', '987-654-3210'),
-> (3, 'Bob Johnson', '555-123-4567'),
-> (4, 'Alice Williams', '555-789-0123'),
-> (5, 'Mike Davis', '555-901-2345'),
-> (6, 'Emily Taylor', '555-111-2222'),
-> (7, 'Sarah Lee', '555-333-4444'),
-> (8, 'Kevin White', '555-555-5555'),
-> (9, 'Lisa Hall', '555-666-7777'),
-> (10, 'Tom Harris', '555-888-9999');
Query OK, 10 rows affected (0.07 sec)
Records: 10 Duplicates: 0 Warnings: 0
```

d). SELECT FIRST_NAME, LAST_NAME, DESIGNATION, SALARY
FROM HEALTH_CARE_WORKERS;

```
mysql> SELECT FIRST_NAME, LAST_NAME, DESIGNATION, SALARY
-> FROM HEALTH_CARE_WORKERS;

+-----+-----+-----+-----+
| FIRST_NAME | LAST_NAME | DESIGNATION | SALARY |
+-----+-----+-----+-----+
| John       | Doe       | Doctor      | 30000.00 |
| Jane       | Smith     | Nurse       | 25000.00 |
| Bob        | Johnson   | Doctor      | 35000.00 |
| Alice      | Williams  | Nurse       | 28000.00 |
| Mike       | Davis     | Doctor      | 32000.00 |
| Emily      | Taylor    | Nurse       | 26000.00 |
| Sarah      | Lee       | Doctor      | 29000.00 |
| Kevin      | White     | Nurse       | 27000.00 |
| Lisa       | Hall      | Doctor      | 31000.00 |
| Tom        | Harris    | Nurse       | 24000.00 |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)
```

e). SELECT DESIGNATION, COUNT(*) AS NUM_EMPLOYEES
FROM HEALTH_CARE_WORKERS
GROUP BY DESIGNATION;

```
mysql> SELECT DESIGNATION, COUNT(*) AS NUM_EMPLOYEES
-> FROM HEALTH_CARE_WORKERS
-> GROUP BY DESIGNATION;
```

DESIGNATION	NUM_EMPLOYEES
Doctor	5
Nurse	5

```
2 rows in set (0.00 sec)
```

f). SELECT FIRST_NAME, LAST_NAME
FROM HEALTH_CARE_WORKERS

```
mysql> SELECT FIRST_NAME, LAST_NAME
-> FROM HEALTH_CARE_WORKERS;
```

FIRST_NAME	LAST_NAME
John	Doe
Jane	Smith
Bob	Johnson
Alice	Williams
Mike	Davis
Emily	Taylor
Sarah	Lee
Kevin	White
Lisa	Hall
Tom	Harris

```
10 rows in set (0.00 sec)
```

g). SELECT FIRST_NAME, LAST_NAME
FROM HEALTH_CARE_WORKERS
WHERE EMPLOYEE_ID = 3; -- Example ID, you can replace with any valid EMPLOYEE_ID

```
mysql> SELECT FIRST_NAME, LAST_NAME
-> FROM HEALTH_CARE_WORKERS
-> WHERE EMPLOYEE_ID = 3; -- Example ID, you can replace with any valid EMPLOYEE_ID
```

FIRST_NAME	LAST_NAME
Bob	Johnson

```
1 row in set (0.03 sec)
```

Q.3. Consider two tables, customers and orders, with the following structures:

Customers Table: customer_id (Primary Key) first_name Last_name

Orders Table: order_id (Primary Key) customer_id (Foreign Key) order_date

Total_amount

Write an SQL query to retrieve the first and last names of customers along with the order date and total amount of their orders.

Use an INNER JOIN to connect the two tables.

Queries:

a). CREATE TABLE departments (
 department_id INT PRIMARY KEY,
 department_name VARCHAR(255)
);

CREATE TABLE employees (
 employee_id INT PRIMARY KEY,
 first_name VARCHAR(255),
 last_name VARCHAR(255),
 department_id INT,
 FOREIGN KEY (department_id) REFERENCES departments(department_id)
);

```
mysql> use industry;  
Database changed  
mysql> CREATE TABLE departments (  
-> department_id INT PRIMARY KEY,  
-> department_name VARCHAR(255)  
-> );  
Query OK, 0 rows affected (0.41 sec)  
  
mysql>  
mysql> CREATE TABLE employees (  
-> employee_id INT PRIMARY KEY,  
-> first_name VARCHAR(255),  
-> last_name VARCHAR(255),  
-> department_id INT,  
-> FOREIGN KEY (department_id) REFERENCES departments(department_id)  
-> );  
Query OK, 0 rows affected (0.42 sec)
```

b). INSERT INTO departments (department_id, department_name)
VALUES
 (1, 'Sales'),
 (2, 'Marketing'),
 (3, 'IT');

INSERT INTO employees (employee_id, first_name, last_name, department_id)
VALUES

(1, 'John', 'Doe', 1),
(2, 'Jane', 'Smith', 1),
(3, 'Bob', 'Johnson', 2);

```
mysql> INSERT INTO departments (department_id, department_name)
-> VALUES
-> (1, 'Sales'),
-> (2, 'Marketing'),
-> (3, 'IT');
Query OK, 3 rows affected (0.13 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql>
mysql> INSERT INTO employees (employee_id, first_name, last_name, department_id)
-> VALUES
-> (1, 'John', 'Doe', 1),
-> (2, 'Jane', 'Smith', 1),
-> (3, 'Bob', 'Johnson', 2);
Query OK, 3 rows affected (0.04 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

c). SELECT

d.department_name,
e.first_name,
e.last_name

FROM

departments d

LEFT JOIN employees e ON d.department_id = e.department_id

ORDER BY

d.department_name;

```
mysql> SELECT
-> d.department_name,
-> e.first_name,
-> e.last_name
-> FROM
-> departments d
-> LEFT JOIN employees e ON d.department_id = e.department_id
-> ORDER BY
-> d.department_name;
+-----+-----+-----+
| department_name | first_name | last_name |
+-----+-----+-----+
| IT              | NULL      | NULL      |
| Marketing       | Bob       | Johnson   |
| Sales           | John      | Doe       |
| Sales           | Jane      | Smith     |
+-----+-----+-----+
4 rows in set (0.02 sec)
```

Q.4. Consider two tables, departments and employees, with the following structures:

Departments Table: department_id (Primary Key)

department_name

Employees Table:

employee_id (Primary Key) first_name last_name department_id (Foreign Key)

Write an SQL query to retrieve a list of all departments and the names of employees who belong to each department. Use a LEFT JOIN to include departments that have no employees.

Queries:

a). CREATE TABLE customers (
customer_id INT PRIMARY KEY,
first_name VARCHAR(255),
last_name VARCHAR(255)
);

CREATE TABLE orders (
order_id INT PRIMARY KEY,
customer_id INT,
order_date DATE,
total_amount DECIMAL(10, 2),
FOREIGN KEY (customer_id) REFERENCES customers(customer_id)
);

```
mysql> create database business;  
Query OK, 1 row affected (0.05 sec)  
  
mysql> use business;  
Database changed  
mysql> CREATE TABLE customers (  
-> customer_id INT PRIMARY KEY,  
-> first_name VARCHAR(255),  
-> last_name VARCHAR(255)  
-> );  
Query OK, 0 rows affected (0.20 sec)  
  
mysql>  
mysql> CREATE TABLE orders (  
-> order_id INT PRIMARY KEY,  
-> customer_id INT,  
-> order_date DATE,  
-> total_amount DECIMAL(10, 2),  
-> FOREIGN KEY (customer_id) REFERENCES customers(customer_id)  
-> );  
Query OK, 0 rows affected (0.32 sec)
```

b). INSERT INTO customers (customer_id, first_name, last_name)
VALUES

(1, 'John', 'Doe'),
(2, 'Jane', 'Smith'),
(3, 'Bob', 'Johnson');

INSERT INTO orders (order_id, customer_id, order_date, total_amount)
VALUES

(1, 1, '2022-01-01', 100.00),
(2, 1, '2022-01-15', 200.00),
(3, 2, '2022-02-01', 50.00),
(4, 3, '2022-03-01', 300.00);

```
mysql> INSERT INTO customers (customer_id, first_name, last_name)
-> VALUES
-> (1, 'John', 'Doe'),
-> (2, 'Jane', 'Smith'),
-> (3, 'Bob', 'Johnson');
Query OK, 3 rows affected (0.05 sec)
Records: 3 Duplicates: 0 Warnings: 0

mysql>
mysql> INSERT INTO orders (order_id, customer_id, order_date, total_amount)
-> VALUES
-> (1, 1, '2022-01-01', 100.00),
-> (2, 1, '2022-01-15', 200.00),
-> (3, 2, '2022-02-01', 50.00),
-> (4, 3, '2022-03-01', 300.00);
Query OK, 4 rows affected (0.03 sec)
Records: 4 Duplicates: 0 Warnings: 0
```

c). SELECT c.first_name, c.last_name, o.order_date, o.total_amount FROM
customers c
INNER JOIN orders o ON c.customer_id = o.customer_id
ORDER BY
c.last_name,
o.order_date;

```
mysql> SELECT
-> c.first_name,
-> c.last_name,
-> o.order_date,
-> o.total_amount
-> FROM
-> customers c
-> INNER JOIN orders o ON c.customer_id = o.customer_id
-> ORDER BY
-> c.last_name,
-> o.order_date;
+-----+-----+-----+-----+
| first_name | last_name | order_date | total_amount |
+-----+-----+-----+-----+
| John      | Doe      | 2022-01-01 | 100.00      |
| John      | Doe      | 2022-01-15 | 200.00      |
| Bob       | Johnson  | 2022-03-01 | 300.00      |
| Jane      | Smith    | 2022-02-01 | 50.00       |
+-----+-----+-----+-----+
4 rows in set (0.03 sec)
```

Q.5. Write a program to show JDBC connection with MYSQL and perform the following operations:

Create table Customer with following fields:

Custno, Custame,Custaddress,Phoneno, City, Pincode, Country

Insert 5 records in Customer table.

- Insert values
- Delete values
- update city name Shimla to Shilong.
- Show table in the console

Program:

```
package Abubakar;
import java.sql.*;

public class JdbcConnection {
    public static void main(String[] args) {
        // MySQL connection settings
        String dbUrl = "jdbc:mysql://localhost:3306/mydatabase";
        String username = "root";
        String password = "Abbu@05";

        // Create a connection object
        Connection conn = null;

        try {
            // Load the MySQL JDBC driver
            Class.forName("com.mysql.cj.jdbc.Driver");

            // Establish a connection to the database
            conn = DriverManager.getConnection(dbUrl, username, password);

            // Create a statement object
            Statement stmt = conn.createStatement();

            // Create the Customer table
            String createTableQuery = "CREATE TABLE IF NOT EXISTS Customer (" +
                "Custno INT PRIMARY KEY, " +
                "Custname VARCHAR(255), " +
                "Custaddress VARCHAR(255), " +
                "Phoneno VARCHAR(20), " +
                "City VARCHAR(100), " +
                "Pincode INT, " +
                "Country VARCHAR(100))";

            stmt.executeUpdate(createTableQuery);

            // Insert 5 records into the Customer table
            String insertQuery = "INSERT INTO Customer VALUES (?, ?, ?, ?, ?, ?, ?)";

            PreparedStatement pstmt = conn.prepareStatement(insertQuery);

            pstmt.setInt(1, 1);
            pstmt.setString(2, "John Doe");
            pstmt.setString(3, "123 Main St");
```

```
pstmt.setString(4, "1234567890");
pstmt.setString(5, "New York");
pstmt.setInt(6, 10001);
pstmt.setString(7, "USA");
pstmt.executeUpdate();

pstmt.setInt(1, 2);
pstmt.setString(2, "Jane Smith");
pstmt.setString(3, "456 Elm St");
pstmt.setString(4, "9876543210");
pstmt.setString(5, "Shimla");
pstmt.setInt(6, 171001);
pstmt.setString(7, "India");
pstmt.executeUpdate();

pstmt.setInt(1, 3);
pstmt.setString(2, "Bob Johnson");
pstmt.setString(3, "789 Oak St");
pstmt.setString(4, "5551234567");
pstmt.setString(5, "Chicago");
pstmt.setInt(6, 60001);
pstmt.setString(7, "USA");
pstmt.executeUpdate();

pstmt.setInt(1, 4);
pstmt.setString(2, "Alice Brown");
pstmt.setString(3, "321 Maple St");
pstmt.setString(4, "9012345678");
pstmt.setString(5, "London");
pstmt.setInt(6, 10001);
pstmt.setString(7, "UK");
pstmt.executeUpdate();

pstmt.setInt(1, 5);
pstmt.setString(2, "Mike Davis");
pstmt.setString(3, "901 Pine St");
pstmt.setString(4, "1112223333");
pstmt.setString(5, "Paris");
pstmt.setInt(6, 75001);
pstmt.setString(7, "France");
pstmt.executeUpdate();

// Delete a record from the Customer table
String deleteQuery = "DELETE FROM Customer WHERE Custno = 3";
stmt.executeUpdate(deleteQuery);

// Update the city name from Shimla to Shilong
String updateQuery = "UPDATE Customer SET City = 'Shilong' WHERE City
= 'Shimla'";
stmt.executeUpdate(updateQuery);

// Retrieve and display the Customer table
String selectQuery = "SELECT * FROM Customer";
ResultSet rs = stmt.executeQuery(selectQuery);

System.out.println("Customer Table:");
while (rs.next()) {
    System.out.println("Custno: " + rs.getInt("Custno"));
    System.out.println("Custname: " + rs.getString("Custname"));
```

Student's ID: AF0402433

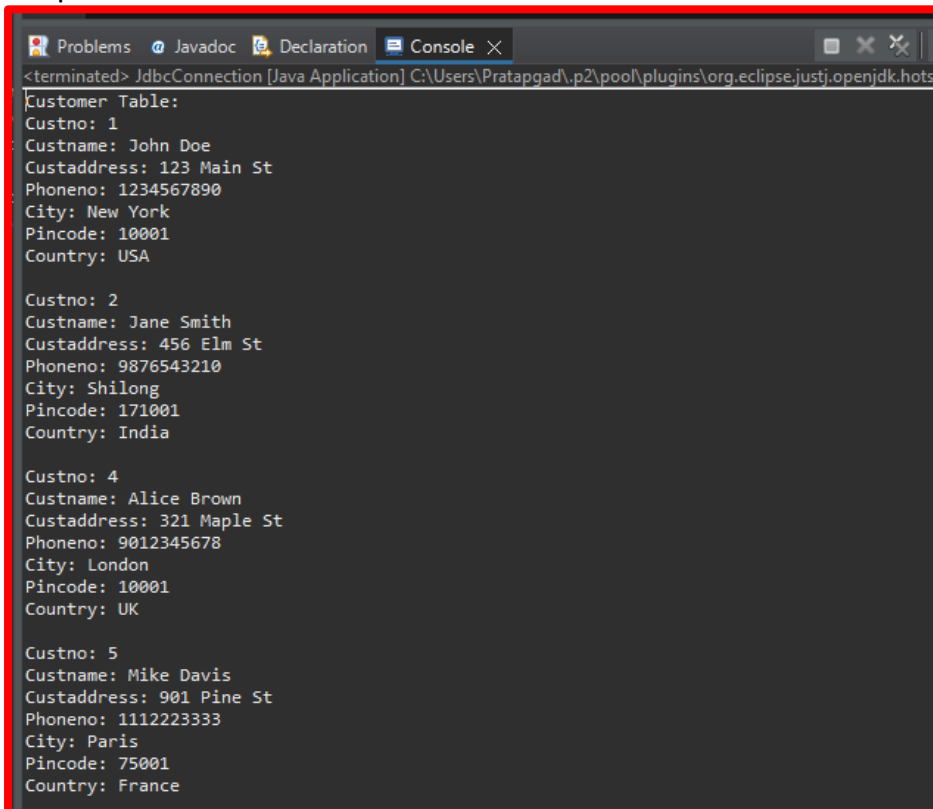
Trainer's Name: Manali Ma'am

Student's Name: Patel Abubakar Siddique Mehboob

```
        System.out.println("Custaddress: " +
rs.getString("Custaddress"));
        System.out.println("Phoneno: " + rs.getString("Phoneno"));
        System.out.println("City: " + rs.getString("City"));
        System.out.println("Pincode: " + rs.getInt("Pincode"));
        System.out.println("Country: " + rs.getString("Country"));
        System.out.println();
    }

    } catch (ClassNotFoundException e) {
        System.out.println("Error loading MySQL JDBC driver: " +
e.getMessage());
    } catch (SQLException e) {
        System.out.println("Error connecting to or querying the database: " +
e.getMessage());
    } finally {
        if (conn != null) {
            try {
                conn.close();
            } catch (SQLException e) {
                System.out.println("Error closing the database connection: "
+ e.getMessage());
            }
        }
    }
}
}
```

Output:



```
<terminated> JdbcConnection [Java Application] C:\Users\Pratapgad\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot
Customer Table:
Custno: 1
Custname: John Doe
Custaddress: 123 Main St
Phoneno: 1234567890
City: New York
Pincode: 10001
Country: USA

Custno: 2
Custname: Jane Smith
Custaddress: 456 Elm St
Phoneno: 9876543210
City: Shilong
Pincode: 171001
Country: India

Custno: 4
Custname: Alice Brown
Custaddress: 321 Maple St
Phoneno: 9012345678
City: London
Pincode: 10001
Country: UK

Custno: 5
Custname: Mike Davis
Custaddress: 901 Pine St
Phoneno: 1112223333
City: Paris
Pincode: 75001
Country: France
```

Database Output:

a). create database mydatabase;

```
mysql> create database mydatabase;  
Query OK, 1 row affected (0.06 sec)
```

```
mysql> use mydatabase;  
Database changed
```

```
mysql> show tables;
```

```
+-----+  
| Tables_in_mydatabase |  
+-----+  
| customer              |  
+-----+  
1 row in set (0.13 sec)
```

b). select * from customer;

```
mysql> select * from customer;
```

```
+-----+-----+-----+-----+-----+-----+-----+  
| Custno | Custname | Custaddress | Phoneno | City | Pincode | Country |  
+-----+-----+-----+-----+-----+-----+-----+  
| 1 | John Doe | 123 Main St | 1234567890 | New York | 10001 | USA |  
| 2 | Jane Smith | 456 Elm St | 9876543210 | Shilong | 171001 | India |  
| 4 | Alice Brown | 321 Maple St | 9012345678 | London | 10001 | UK |  
| 5 | Mike Davis | 901 Pine St | 1112223333 | Paris | 75001 | France |  
+-----+-----+-----+-----+-----+-----+-----+  
4 rows in set (0.00 sec)
```