**LAB**

Q 1. Perform the following tasks:

1. Create Student table with following attributes (STUDENT\_ID , FIRST\_NAME, LAST\_NAME, PHONE\_NUMBER, MARKS, COURSE\_ID).

Code:-

create database School;

show databases;

use School;

CREATE TABLE Student (

STUDENT\_ID INT PRIMARY KEY,

FIRST\_NAME VARCHAR(50),

LAST\_NAME VARCHAR(50),

PHONE\_NUMBER VARCHAR(15),

MARKS DECIMAL(5, 2),

COURSE\_ID INT

);

Query OK, 0 rows affected (0.00 sec)

1. Create Course table with following attributes (COURSE\_ID, COURSE\_NAME).

Code:-

CREATE TABLE Course (

COURSE\_ID INT PRIMARY KEY,

COURSE\_NAME VARCHAR(50)

);

Query OK, 0 rows affected (0.00 sec)

1. Write a SQL statement to insert 8 records with your own value into the tables.

Code:-

INSERT INTO Student (STUDENT\_ID, FIRST\_NAME, LAST\_NAME, PHONE\_NUMBER, MARKS, COURSE\_ID) VALUES

(1, 'Ramesh', 'Shah', '123-456-7890', 85.5, 1),

(2, 'Baban', 'Kamble', '123-555-7890', 92.0, 2),

(3, 'Chandan', 'Shetty', '123-456-7891', 78.5, 3),

(4, 'Dharam', 'Jangad', '123-555-7891', 88.0, 4),

(5, 'Emma', 'Almeida', '123-456-7892', 91.5, 1),

(6, 'Farahan', 'Das', '123-555-7892', 74.0, 5),

(7, 'Govind', 'Mahto', '123-456-7893', 80.5, 2),

(8, 'Heena', 'Waghmare', '123-555-7893', 85.0, 6);

INSERT INTO Course (COURSE\_ID, COURSE\_NAME) VALUES

(1, 'Mathematics'),

(2, 'Physics'),

(3, 'Chemistry'),

(4, 'Biology'),

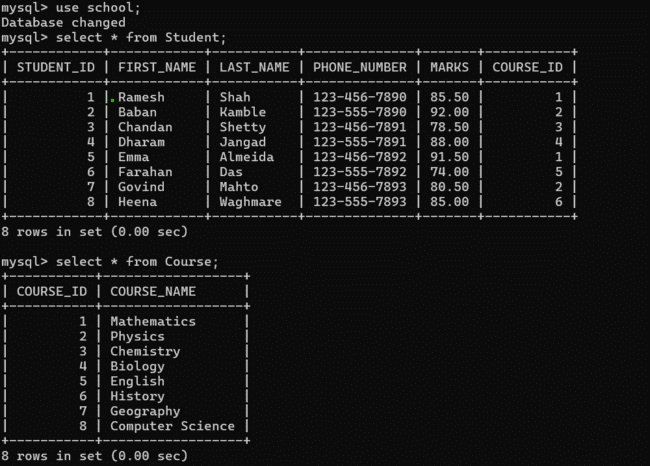
(5, 'English'),

(6, 'History'),

(7, 'Geography'),

(8, 'Computer Science');

Output:-



1. Write a query to get the number of students with the same course.

Code:-

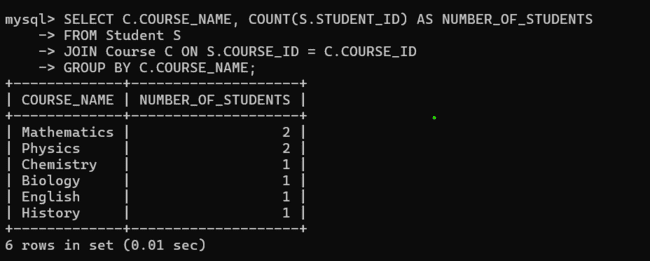
SELECT C.COURSE\_NAME, COUNT(S.STUDENT\_ID) AS NUMBER\_OF\_STUDENTS

FROM Student S

JOIN Course C ON S.COURSE\_ID = C.COURSE\_ID

GROUP BY C.COURSE\_NAME;

Output:-



1. Write a query to get the student name, course name and marks of the students.

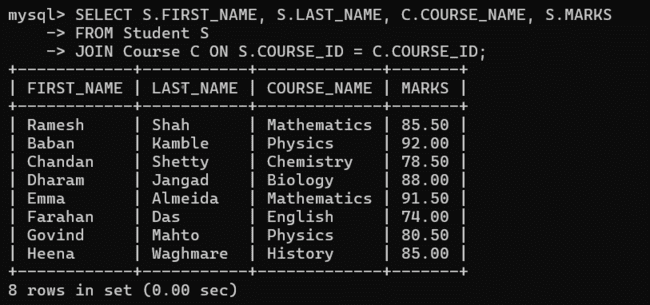
Code:-

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;

Output:-



1. Write a query to get the Average marks of students course wise.

Code:-

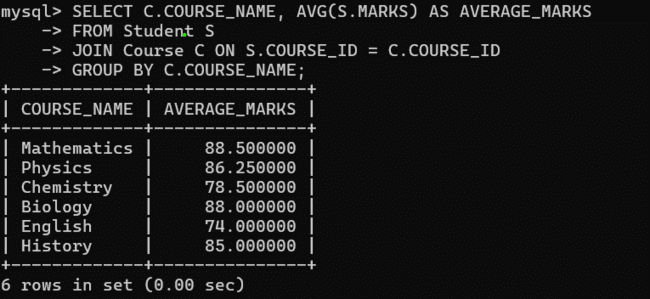
SELECT C.COURSE\_NAME, AVG(S.MARKS) AS AVERAGE\_MARKS

FROM Student S

JOIN Course C ON S.COURSE\_ID = C.COURSE\_ID

GROUP BY C.COURSE\_NAME;

Output:-



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).

Code:-

create database hospitalmanagmentsystem;

use hospitalmanagmentsystem;

CREATE TABLE HEALTH\_CARE\_WORKERS (

EMPLOYEE\_ID INT PRIMARY KEY,

FIRST\_NAME VARCHAR(50),

LAST\_NAME VARCHAR(50),

EMAIL VARCHAR(100),

PHONE\_NUMBER VARCHAR (15),

HIRE\_DATE DATE,

SALARY DECIMAL(10, 2),

DESIGNATION VARCHAR(50)

);

Query OK, 0 rows affected (0.00 sec)

b. Create PATIENT table with following attributes (PATIENT\_ID,NAME, PHONE\_NUMBER).

Code:-

CREATE TABLE PATIENT (

PATIENT\_ID INT PRIMARY KEY,

NAME VARCHAR(100),

PHONE\_NUMBER VARCHAR(15)

);

Query OK, 0 rows affected (0.00 sec)

c. Write a SQL statement to insert 10 records with your own value into the tables.

Code:-

INSERT INTO HEALTH\_CARE\_WORKERS (EMPLOYEE\_ID, FIRST\_NAME, LAST\_NAME, EMAIL, PHONE\_NUMBER, HIRE\_DATE, SALARY, DESIGNATION) VALUES

(1, 'Jyant', 'Das', 'jayant.das@gamil.com', '123-456-7890', '2020-01-15', 30000.00, 'Doctor'),

(2, 'Jamuna', 'Sharma', 'jamuna.sharma@gamil.com', '123-456-7891', '2021-03-22', 25000.00, 'Nurse'),

(3, 'Aman', 'Jhangad', 'aman.jhangad@gamil.com', '123-456-7892', '2022-05-30', 32000.00, 'Doctor'),

(4, 'Bhavar', 'Bind', 'bhavar.bind@gamil.com', '123-456-7893', '2019-07-12', 27000.00, 'Nurse'),

(5, 'Ehshan', 'Dutt', 'ehshan.dutt@gamil.com', '123-456-7894', '2021-09-15', 26000.00, 'Technician'),

(6, 'Chaman', 'Waghmare', 'chaman.waghmare@gamil.com', '123-456-7895', '2020-11-10', 35000.00, 'Doctor'),

(7, 'Deepak', 'Mishra', 'deepak.mishra@gamil.com', '123-456-7896', '2018-08-23', 28000.00, 'Nurse'),

(8, 'Devdas', 'Singh', 'devdas.singh@gamil.com', '123-456-7897', '2021-06-17', 29000.00, 'Technician'),

(9, 'Harmanpreet', 'Singh', 'harmanpreet.singh@gamil.com', '123-456-7898', '2023-01-10', 31000.00, 'Doctor'),

(10, 'Palak', 'Gupta', 'palak.gupta@gamil.com', '123-456-7899', '2019-12-25', 22000.00, 'Nurse');

INSERT INTO PATIENT (PATIENT\_ID, NAME, PHONE\_NUMBER) VALUES

(1, 'Mahesh Ajad', '321-654-0987'),

(2, 'Sarah Sharma', '321-654-0988'),

(3, 'Jagdish Patil', '321-654-0989'),

(4, 'Twinkle Khanna', '321-654-0990'),

(5, 'Emma Evans', '321-654-0991'),

(6, 'Leo Das', '321-654-0992'),

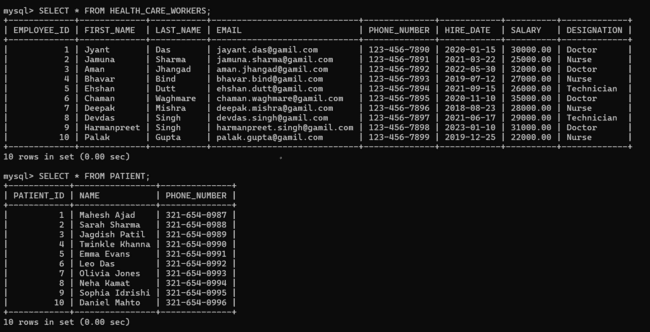
(7, 'Olivia Jones', '321-654-0993'),

(8, 'Neha Kamat', '321-654-0994'),

(9, 'Sophia Idrishi', '321-654-0995'),

(10, 'Daniel Mahto', '321-654-0996');

Output:-



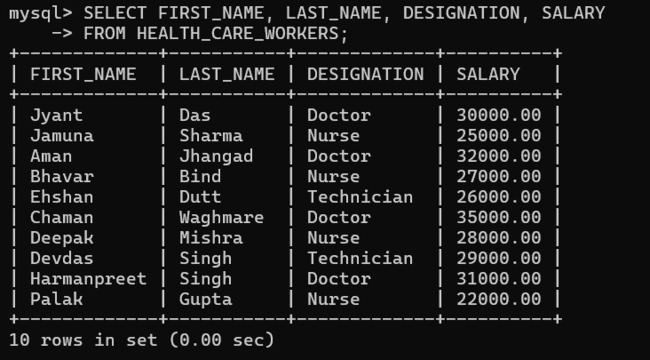
d. Write a query to get the names (first\_name, last\_name),Designation, salary.

Code:-

SELECT FIRST\_NAME, LAST\_NAME, DESIGNATION, SALARY

FROM HEALTH\_CARE\_WORKERS;

Output:-



e. Write a query to get the number of employees with the same Designation.

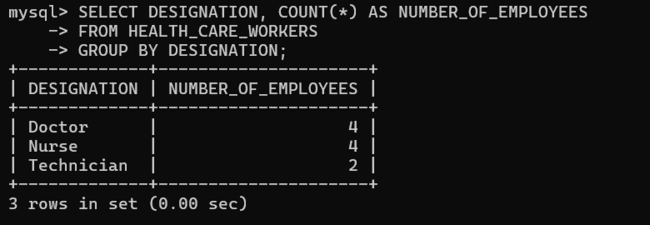
Code:-

SELECT DESIGNATION, COUNT(\*) AS NUMBER\_OF\_EMPLOYEES

FROM HEALTH\_CARE\_WORKERS

GROUP BY DESIGNATION;

Output:-



f. Write a query to get employee name who are getting salary more than 25000.

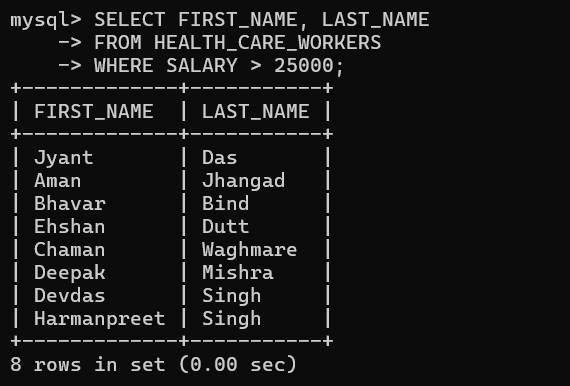
Code:-

SELECT FIRST\_NAME, LAST\_NAME

FROM HEALTH\_CARE\_WORKERS

WHERE SALARY > 25000;

Output:-



1. Fetch HEALTH CARE WORKERS name using their employee id.

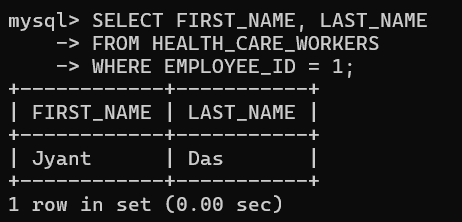
Code:-

SELECT FIRST\_NAME, LAST\_NAME

FROM HEALTH\_CARE\_WORKERS

WHERE EMPLOYEE\_ID = 1;

Output:-



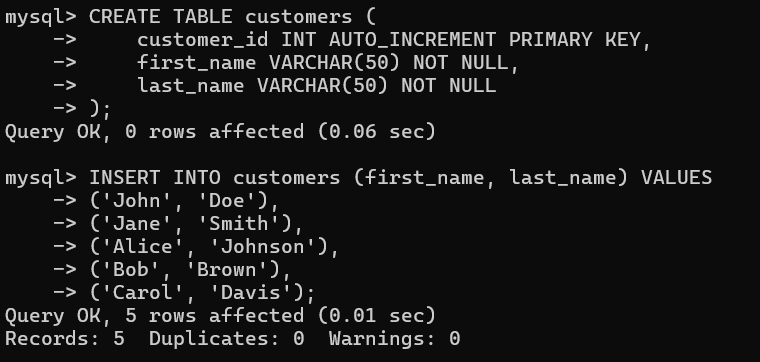
3.Consider two tables, customers and orders, with the following structures:

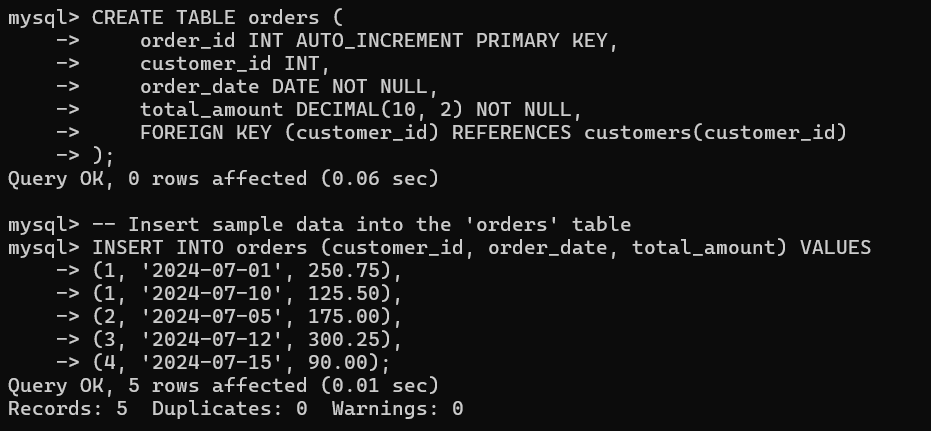
Customers Table: customer\_id (Primary Key) first\_name Last\_name

Orders Table: order\_id (Primary Key) customer\_id (Foreign Key) order\_date Total\_amount

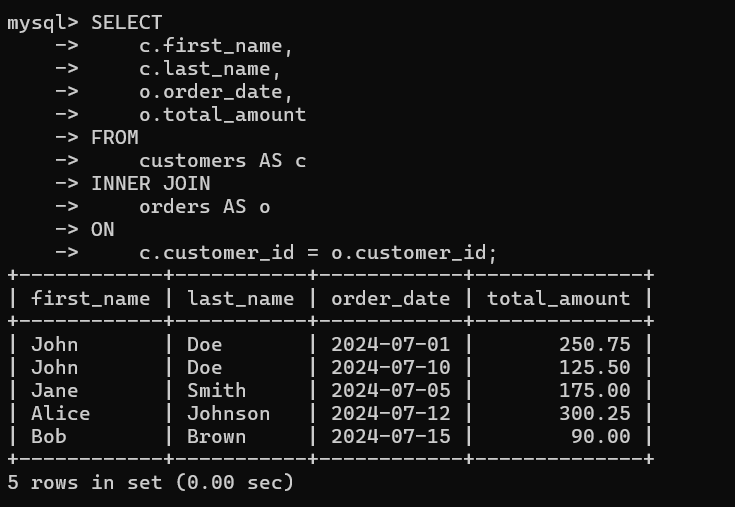
Write an SQL query to retrieve the first and last names of customers along with the order date and total amount of their orders.

Program:-





Use an INNER JOIN to connect the two tables.

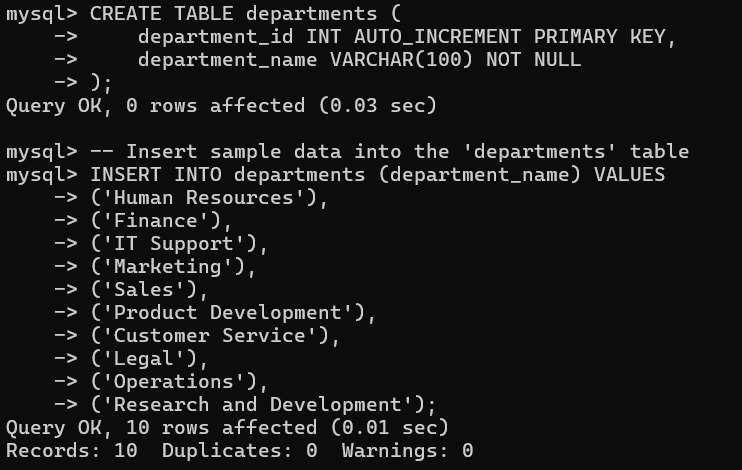


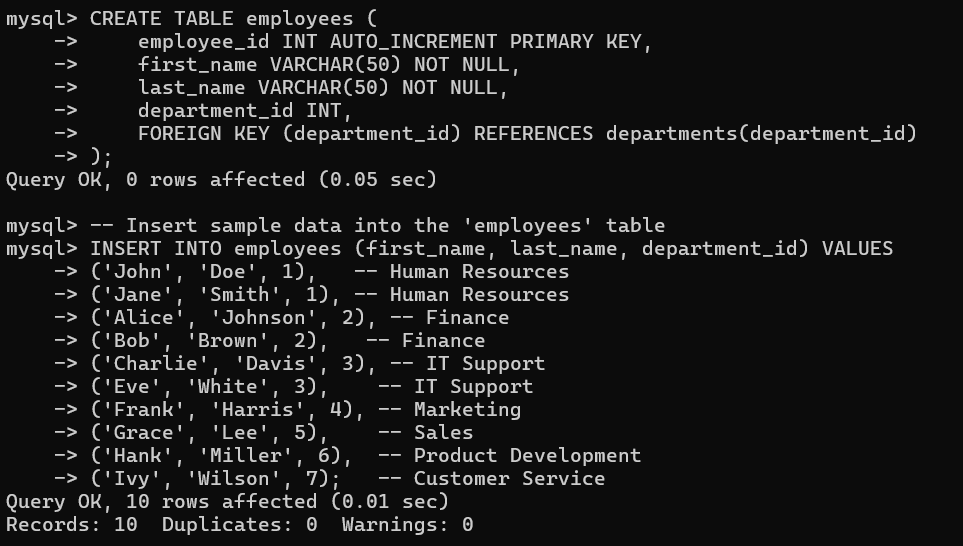
4.Consider two tables, departments and employees, with the following structures:

Departments Table: department\_id (Primary Key) department\_name

Employees Table: employee\_id (Primary Key) first\_name last\_name department\_id (Foreign Key)

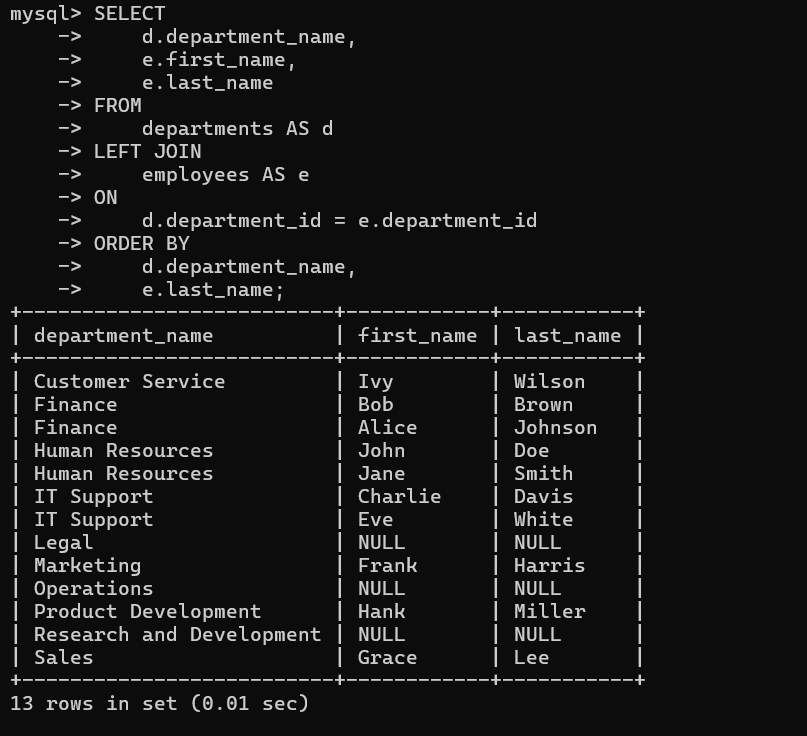
Program:-





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.

Output:-



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.

Code:-

**package** DataStructure;

**import** java.sql.\*;

**import** java.sql.Connection;

**import** java.sql.DriverManager;

**import** java.sql.ResultSet;

**import** java.sql.Statement;

**public** **class** Create {

**public** **static** **void** main(String[] args) {

String url = "jdbc:mysql://localhost:3306/school ";

String user = "root";

String password = "123456789";

//Table creation is here..

**try** {

Class.*forName*("com.mysql.cj.jdbc.Driver");

Connection con = DriverManager.*getConnection*(url, user, password);

Statement stmt = con.createStatement();

//Table values insertion is here...

String insert = "INSERT INTO customer\_detail VALUES ('CUST001', 'John Doe', '123 Main St', '+1234567890', 'New York', '10001', 'USA'),('CUST002', 'Jane Smith', '456 Elm St', '+1987654321', 'Los Angeles', '90001', 'USA'),('CUST003', 'Alice Johnson', '789 Oak Ave', '+4455667788', 'London', 'SW1A 1AA', 'UK'),('CUST004', 'Juan Martinez', '234 Calle Principal', '+1122334455', 'Madrid', '28001', 'Spain'),('CUST005', 'Hiroshi Tanaka', '567 Ginza Street', '+81987654321', 'Tokyo', '100-0001', 'Japan')";

stmt.addBatch(insert);

stmt.executeBatch();

//System.out.println("Record Inserted Successfully.");

//Table Record Deletion is here...

/\*

String delete = "DELETE customer\_detail WHERE country = 'UK'";

stmt.addBatch(delete);

stmt.executeBatch();

System.out.println("Record Deleted Successfully.");

/\*String update ="UPDATE customer\_detail SET city = 'Shilong' WHERE city = 'Shimla'";

stmt.addBatch(update);

stmt.executeBatch();

System.out.println("Record Updated Successfully.");

\*/

String sql = "SELECT cust\_no, cust\_name, cust\_address, phoneno, city, pincode, country FROM customer\_detail";

ResultSet rs = stmt.executeQuery(sql);

// 4. Printing the table header

System.***out***.println("+-----------+-----------------+----------------------+-------------+---------------+------------+--------------+");

System.***out***.println("| Cust No | Cust Name | Cust Address | Phone No | City | Pincode | Country |");

System.***out***.println("+-----------+-----------------+----------------------+-------------+---------------+------------+--------------+");

// 5. Iterating through the result set and printing each row

**while** (rs.next()) {

String custNo = rs.getString("cust\_no");

String custName = rs.getString("cust\_name");

String custAddress = rs.getString("cust\_address");

String phoneNo = rs.getString("phoneno");

String city = rs.getString("city");

String pincode = rs.getString("pincode");

String country = rs.getString("country");

// Print each row of data

System.***out***.printf("| %-9s | %-15s | %-20s | %-11s | %-13s | %-10s | %-12s |\n",

custNo, custName, custAddress, phoneNo, city, pincode, country);

}

// 6. Printing the table footer

System.***out***.println("+-----------+-----------------+----------------------+-------------+---------------+------------+--------------+");

rs.close();

stmt.close();

con.close();

}**catch**(Exception e) {

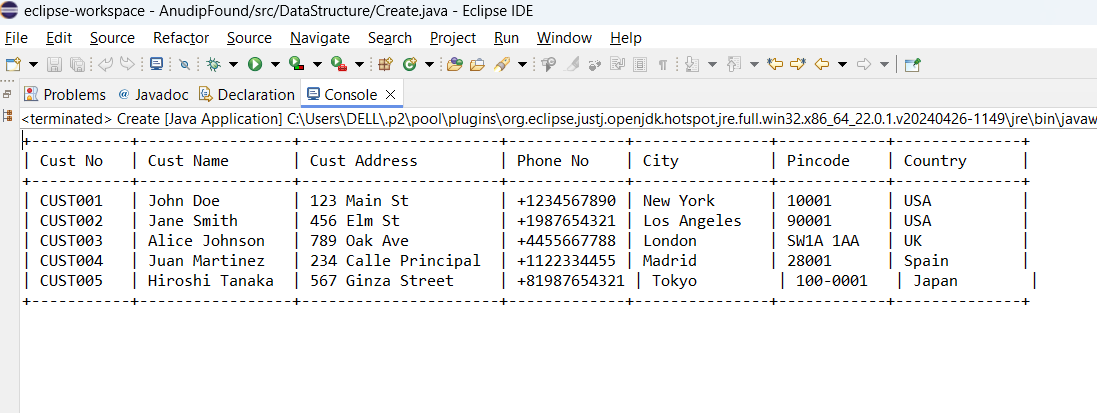
System.***err***.println(e);

}

}

}

Output:-



1. Insert values

Code:-

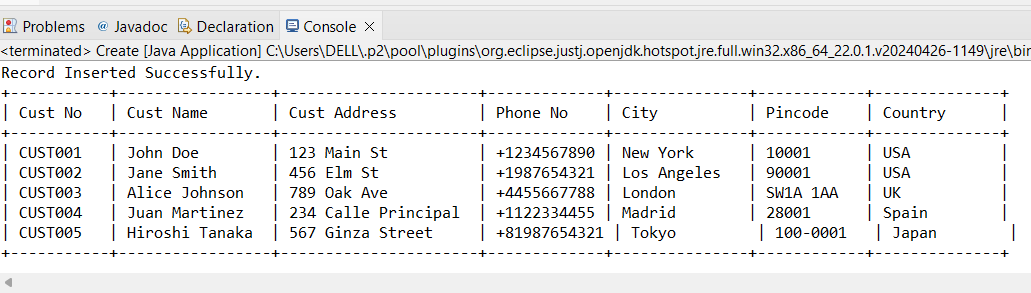
String insert = "INSERT INTO customer\_detail VALUES ('CUST001', 'John Doe', '123 Main St', '+1234567890', 'New York', '10001', 'USA'),('CUST002', 'Jane Smith', '456 Elm St', '+1987654321', 'Los Angeles', '90001', 'USA'),('CUST003', 'Alice Johnson', '789 Oak Ave', '+4455667788', 'London', 'SW1A 1AA', 'UK'),('CUST004', 'Juan Martinez', '234 Calle Principal', '+1122334455', 'Madrid', '28001', 'Spain'),('CUST005', 'Hiroshi Tanaka', '567 Ginza Street', '+81987654321', 'Tokyo', '100-0001', 'Japan')";

stmt.addBatch(insert);

stmt.executeBatch();

System.out.println("Record Inserted Successfully.");

Output:-



1. Delete values

Code:-

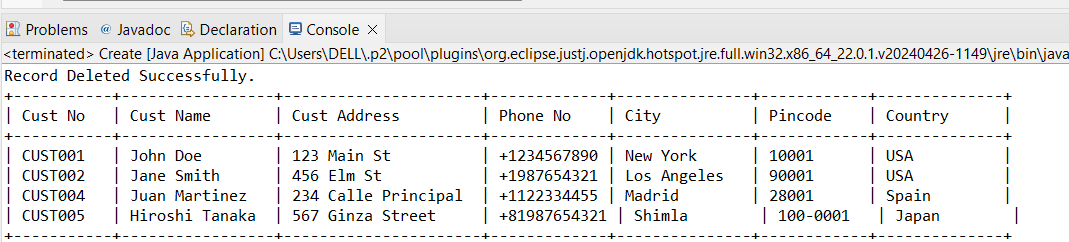
String delete = "DELETE customer\_detail WHERE country = 'UK'";

stmt.addBatch(delete);

stmt.executeBatch();

System.***out***.println("Record Deleted Successfully.");

Output:-



1. update city name Shimla to Shilong.

Code:-

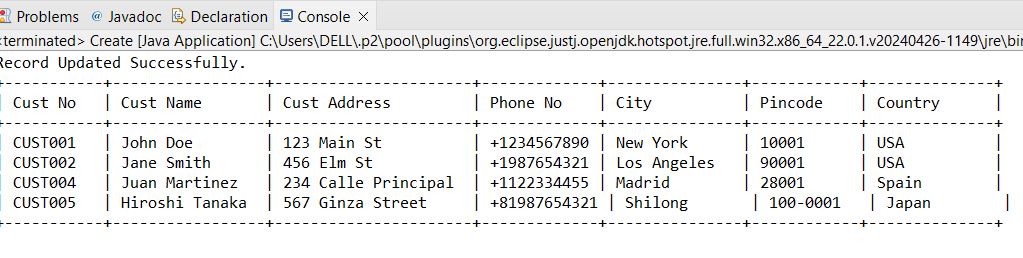
String update ="UPDATE customer\_detail SET city = 'Shilong' WHERE city = 'Shimla'";

stmt.addBatch(update);

stmt.executeBatch();

System.out.println("Record Updated Successfully.");

Output:-



d.    Show table in the console

Ouput:-

