JDBC CRUD OPERATION LAB

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Q.1 You need to create a table named employees in the database to store employee information. Write a Java program using JDBC to create the employees table with the following columns:

id of type INT, which is the primary key and auto-incremented.

first_name of type VARCHAR(50) to store the employee's first name.

last_name of type VARCHAR(50) to store the employee's last name.

age of type INT to store the employee's age.

Program:

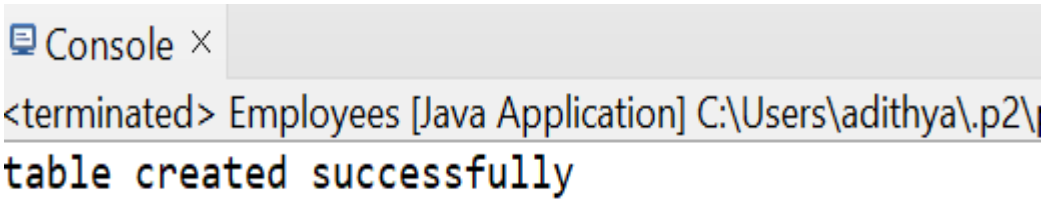
```
package com.akhila.jdbc;
import java.sql.*;
public class Employees {

    public static void main(String[] args) throws Exception {
        // TODO Auto-generated method stub
        // step 1
     Class.forName("com.mysql.cj.jdbc.Driver"); //");
        // query to create employee table
  String create_query = "create table employee(employee_id int primary key auto_increment,first_name varchar(30),last_name varchar(50),age int )";

     Connection con=DriverManager.getConnection("jdbc:mysql://localhost:3306/crud_lab","root","root");
        // step 3 : simple state
         Statement st = con.createStatement();
        //executing query
            st.executeUpdate(create_query);
            System.out.println("table created successfully");
            con.close();

    }

}
```



Output:

```
mysql> USE crud_lab;
Database changed
mysql> show tables;
+--------------------+
| Tables_in_crud_lab |
+--------------------+
| employee           |
+--------------------+
1 row in set (0.03 sec)

mysql> select * from employee;
Empty set (0.02 sec)

mysql> desc employee;
+-------------+-------------+------+-----+---------+----------------+
| Field       | Type        | Null | Key | Default | Extra          |
+-------------+-------------+------+-----+---------+----------------+
| employee_id | int         | NO   | PRI | NULL    | auto_increment |
| first_name  | varchar(30) | YES  |     | NULL    |                |
| last_name   | varchar(50) | YES  |     | NULL    |                |
| age         | int         | YES  |     | NULL    |                |
+-------------+-------------+------+-----+---------+----------------+
4 rows in set (0.01 sec)
```

Q.2 The employees table in the database has the following columns: id, first_name, last_name, and age. Write a Java program using JDBC to insert a new employee record into the table. The employee's first name is "John," last name is "Doe," and age is 30.

Program:

```
package com.akhila.jdbc;
import java.sql.*;
public class InsertingEmployeesTable {

    public static void main(String[] args) throws Exception {
        // TODO Auto-generated method stub
        Class.forName("com.mysql.cj.jdbc.Driver");
        Connection con=DriverManager.getConnection("jdbc:mysql://localhost:3306/crud_lab","root","root");
        //insering values into employee table
        String insert_query = "insert into employee values(101,'John','Doe',30)";
        //statement
        Statement st=con.createStatement();
        //to know the number of records inserted
        int countOfInsertedRows=st.executeUpdate(insert_query);
        System.out.println("record inserted successfully");
        System.out.println("No of records inseted : "+countOfInsertedRows);
         con.close();
    }
}
```

```
Console ×
<terminated> InsertingEmployeesTable [Java Application] C:\Users\ac
record inserted successfully
No of records inseted : 1
```

Output:

```
mysql> select * from employee;
+-------------+------------+-----------+------+
| employee_id | first_name | last_name | age  |
+-------------+------------+-----------+------+
|         101 | John       | Doe       |   30 |
+-------------+------------+-----------+------+
1 row in set (0.00 sec)
```

Q.3 Write a Java program that updates the age and designation of an employee with the given name. Assume that the connection to the database is established using the provided url, username, and password. The program should update the age and designation columns for the employee specified by their name.

Program:

```
package com.akhila.jdbc;
import java.sql.*;
public class UpdateEmployeesTable {
    public static void main(String[] args) throws Exception {
        // TODO Auto-generated method stub
        Class.forName("com.mysql.cj.jdbc.Driver");
        String url = "jdbc:mysql://localhost:3306/crud_lab";
        String UserName = "root";
        String Password = "root";
        Connection con=DriverManager.getConnection(url,UserName,Password);
        //to add designation column
        String alter_query = "alter table employee add Designation varchar(50)";
        Statement st=con.createStatement();
        //executing alter query
        st.executeUpdate(alter_query);
        System.out.println("designation column added successfully");
        //update query to do updates
        String update_query="update employee set age=25,Designation='software developer' where employee_id = 101";
        //executing update query
        st.executeUpdate(update_query);
        System.out.println("record updated successfully");
         con.close();
    }
}
```

```
Console ×
<terminated> UpdateEmployeesTable [Java Application] C:\Users\ad
designation column added successfully
record updated successfully
```

Output:

```
mysql> select * from employee;
+-------------+------------+-----------+------+--------------------+
| employee_id | first_name | last_name | age  | Designation        |
+-------------+------------+-----------+------+--------------------+
|         101 | John       | Doe       |   25 | software developer |
+-------------+------------+-----------+------+--------------------+
1 row in set (0.00 sec)
```

Q.4 Write Java program fetching data from emp table query using jdbc with mysql.

Program:

```
package com.akhila.jdbc;
import java.sql.*;
public class FetchEmployeesTable {

    public static void main(String[] args) throws Exception{
        // TODO Auto-generated method stub
        Class.forName("com.mysql.cj.jdbc.Driver");
        String url = "jdbc:mysql://localhost:3306/crud_lab";
        String UserName = "root";
        String Password = "root";
        Connection con=DriverManager.getConnection(url,UserName,Password);
        //sql query to display entire table
        String select_query="select * from employee";
        Statement st=con.createStatement();
        ResultSet rs =st.executeQuery(select_query);
        //displaying the table
        while(rs.next())
        {
        System.out.println(rs.getInt(1)+"\t"+rs.getString(2)+"\t"+rs.getString(3)+"\t"+rs.getInt(4)+"\t"+rs.getString(5));
        }
         con.close();
    }
}
```

```
Console ×
<terminated> FetchEmployeesTable [Java Application] C:\Users\adithya\.p2\p
101     John    Doe     25      software developer
```

Q.5 Write Java program for deleting data from emp table using jdbc with mysql.

Program:

```java
package com.akhila.jdbc;
import java.sql.*;
public class DeletingRecord {

    public static void main(String[] args) throws Exception {
    // TODO Auto-generated method stub
        Class.forName("com.mysql.cj.jdbc.Driver");
        String url = "jdbc:mysql://localhost:3306/crud_lab";
        String UserName = "root";
        String Password = "root";
        Connection con=DriverManager.getConnection(url,UserName,Password);
        //delete query to delete all records
        String delete_query = "delete from employee";
        Statement st=con.createStatement();
        //counting number of records deleted;
        int deleteCount=st.executeUpdate(delete_query);
        System.out.println("records deleted successfully");
        System.out.println("number of record deleted:"+deleteCount);
        con.close();
    }

}
```

```
Console ×
<terminated> DeletingRecord [Java Applicat
records deleted successfully
number of record deleted:1
```

Output:

```
mysql> select * from employee;
Empty set (0.00 sec)
```