Name : Anushree Gattani
Roll No. : 31404
Batch : K4
DBMSL

Assignment 8

Write a program to implement MySQL/Oracle database connectivity with any front end language to implement Database navigation operations (add, delete, edit etc.)

Program-

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;
import java.sql.Statement;
import java.sql.ResultSet;
import java.util.Scanner;

public class JDBC {

    public static void main(String[] args) throws Exception {
        String url = "jdbc:mysql://10.10.13.97:3306/te31404_db";
        String user = "te31404";
        String password = "te31404";
        Scanner scanner = new Scanner(System.in);
        Connection connection = null;

        try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            connection = DriverManager.getConnection(url, user, password);
            System.out.println("Connection established");
            while (true) {
                System.out.println("\nMenu:");
                System.out.println("1. Insert ");
                System.out.println("2. Update ");
                System.out.println("3. Delete ");
                System.out.println("4. Show Table");
                System.out.println("5. Exit");
                System.out.print("Choose option: ");
                int choice = scanner.nextInt();
                scanner.nextLine();

                switch (choice) {
                    case 1:
                        insertData(connection, scanner);
                        break;
                    case 2:
                        updateData(connection, scanner);
                        break;
                    case 3:
                        deleteData(connection, scanner);
                        break;
                    case 4:
                        showTable(connection);
                        break;
                    case 5:
                        System.out.println("Exiting...");
                        return;
                    default:
System.out.println("Invalid choice. Please enter a number between 1 and 5.");
```

```
                }
            }

        } catch (SQLException e) {
            System.err.println("SQL error occurred.");
            e.printStackTrace();
        }
        finally {
            if (connection != null) {
                try {
                    connection.close();
                } catch (SQLException e) {
                    System.err.println("Failed to close the connection.");
                    e.printStackTrace();
                }
            }
            scanner.close();
        }
    }

    private static void insertData(Connection connection, Scanner scanner)
throws SQLException {
        System.out.println("Enter name:");
        String name = scanner.nextLine();
        System.out.println("Enter roll number:");
        int roll = scanner.nextInt();
        scanner.nextLine();
        System.out.println("Enter class:");
        String cls = scanner.nextLine();
         String sql = "INSERT INTO student1 (name, roll, cls) VALUES ('" +
name + "', " + roll + ", '" + cls + "')";
        Statement statement = connection.createStatement();
        int result = statement.executeUpdate(sql);
        if (result == 1) {
            System.out.println("Inserted successfully.");
        } else {
            System.out.println("Insertion failed.");
        }
    }

    private static void updateData(Connection connection, Scanner scanner)
throws SQLException {
        System.out.println("Enter roll number of the student to update:");
        int roll = scanner.nextInt();
        scanner.nextLine();
        System.out.println("Enter new name:");
        String name = scanner.nextLine();
        System.out.println("Enter new class:");
        String cls = scanner.nextLine();
        System.out.println("Enter new roll number:");
        int rollNew = scanner.nextInt();
        scanner.nextLine();
         String sql = "UPDATE student1 SET name = '" + name + "', cls = '"
+ cls + "', roll = " + rollNew + " WHERE roll = " + roll;
        Statement statement = connection.createStatement();
        int result = statement.executeUpdate(sql);
        if (result == 1) {
            System.out.println("Updated successfully.");
        } else {
            System.out.println("Update failed or no record found.");
        }
    }
```

```
    private static void deleteData(Connection connection, Scanner scanner)
throws SQLException {
        System.out.println("Enter roll number of the student to delete:");
        int roll = scanner.nextInt();
        scanner.nextLine();  // Consume newline
        String sql = "DELETE FROM student1 WHERE roll = " + roll;
        Statement statement = connection.createStatement();
        int result = statement.executeUpdate(sql);
        if (result == 1) {
            System.out.println("Deleted successfully.");
        } else {
            System.out.println("Deletion failed or no record found.");
        }
    }

     private  static  void  showTable(Connection  connection)  throws
SQLException {
        String sql = "SELECT * FROM student1";
        Statement statement = connection.createStatement();
        ResultSet resultSet = statement.executeQuery(sql);

        System.out.println("\nStudent Table:");
        System.out.println("Name\tRoll Number\tClass");
        while (resultSet.next()) {
            String name = resultSet.getString("name");
            int roll = resultSet.getInt("roll");
            String cls = resultSet.getString("cls");
            System.out.println(name + "\t" + roll + "\t" + cls);
        }
    }
}
```

Output -

```
JDBC (1) [Java Application] /snap/eclipse/95/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.linux.x86_64_21.0.3.v20240426-1530/jre/bin/java (11 Sept 2024, 10:00:44 am) [pid: 11032]
Connection established

Menu:
1. Insert
2. Update
3. Delete
4. Show Table
5. Exit
Choose option: 4

Student Table:
Name    Roll Number     Class
Anushree        31404   TE4
Siddhi  31408   TE4
Dhanshree       31412   TE4

Menu:
1. Insert
2. Update
3. Delete
4. Show Table
5. Exit
Choose option: 2
```

```
Menu:
1. Insert
2. Update
```

```
Menu:
1. Insert
2. Update
3. Delete
4. Show Table
5. Exit
Choose option: 3
Enter roll number of the student to delete:
31408
Deleted successfully.

Menu:
1. Insert
2. Update
3. Delete
4. Show Table
5. Exit
Choose option: 4

Student Table:
Name    Roll Number     Class
Anushree        31404   TE2
Dhanshree       31412   TE2
```