

Lab sheet -03

```
CREATE DATABASE employee_db;
```

```
USE employee_db;
```

```
CREATE TABLE employees (
```

```
id INT PRIMARY KEY AUTO_INCREMENT,
```

```
name VARCHAR(100),
```

```
position VARCHAR(100),
```

```
salary DECIMAL(10, 2)
```

```
);
```

```
-- Insert some sample data
```

```
INSERT INTO employees (name, position, salary) VALUES ('John Doe', 'Software Engineer', 75000);
```

```
INSERT INTO employees (name, position, salary) VALUES ('Jane Smith', 'HR Manager', 65000);
```

```
INSERT INTO employees (name, position, salary) VALUES ('Steve Brown', 'Team Lead', 85000);
```

```
//Code for DatabaseConnection.java:
```

```
package jdbcexample;
```

```
import java.sql.Connection;
```

```
import java.sql.DriverManager;
```

```
import java.sql.SQLException;
```

```
/**
```

```
 *
```

```
 * @author student
```

```
 */
```

```
public class DatabaseConnection {
```

```
private static final String URL = "jdbc:mysql://localhost:3306/employee_db"; // Database URL
```

```
private static final String USER = "root";
```

```
private static final String PASSWORD = "";
```

```

public static Connection getConnection() throws SQLException {

    try {

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

        return DriverManager.getConnection(URL, USER, PASSWORD);
    }
    catch (ClassNotFoundException | SQLException e) {
        System.out.println("Connection failed:" + e.getMessage());
        throw new SQLException("Failed to establish connection.");
    }
}
}

```

1. Open NetBeans IDE 8.2.

2. Create a new Java application:

- Go to File > New Project.
- Select Java as the project type, and choose Java Application.
- Name your project JDBCExample.
- 3. Add MySQL JDBC Driver to your project:
- Right-click on the project in the Projects pane.
- Select Properties.
- In the Libraries tab, click Add JAR/Folder.
- Navigate to the location of your mysql-connector-java-x.x.xx.jar file and add it.

//Code for EmployeeDAO.java:

```

package jdbcexample;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.SQLException;

/**

```

```

*

* @author student

*/

public class DatabaseConnection {

    private static final String URL = "jdbc:mysql://localhost:3306/employee_db"; // Database URL
    private static final String USER = "root"; // Your MySQL username
    private static final String PASSWORD = ""; // Your MySQL password
    public static Connection getConnection() throws SQLException {
        try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            return DriverManager.getConnection(URL, USER, PASSWORD);
        }
        catch (ClassNotFoundException | SQLException e) {
            System.out.println("Connection failed:" + e.getMessage());
            throw new SQLException("Failed to establish connection.");
        }
    }
}

//Code for EmployeeDAO.java:

package jdbcexample;

import java.sql.*;

import java.util.ArrayList;

import java.util.List;

/**
 *
 * @author student
 */

public class EmployeeDAO {

    public static void addEmployee(String name, String position, double salary) {

```

```

String sql = "INSERT INTO employees (name, position, salary) VALUES(?, ?, ?)";
try (Connection conn = DatabaseConnection.getConnection();
    PreparedStatement stmt = conn.prepareStatement(sql)) {
    stmt.setString(1, name);
    stmt.setString(2, position);
    stmt.setDouble(3, salary);
    int rowsAffected = stmt.executeUpdate();
    System.out.println("Employee added successfully. Rows affected:" + rowsAffected);
} catch (SQLException e) {
    e.printStackTrace();
}

// Read all employees
public static List<Employee>getAllEmployees() {
    List<Employee> employees = new ArrayList<>();
    String sql = "SELECT * FROM employees";
    try (Connection conn = DatabaseConnection.getConnection();
        Statement stmt = conn.createStatement();
        ResultSet rs = stmt.executeQuery(sql)) {
        while (rs.next()) {
            Employee employee = new Employee(

                rs.getInt("id"),
                rs.getString("name"),
                rs.getString("position"),
                rs.getDouble("salary")
            );
            employees.add(employee);
        }
    }
}

```

```

    } catch (SQLException e) {
        e.printStackTrace();
    }
    return employees;
}

// Update an employee information
public static void updateEmployee(int id, String name, String position,
double salary) {
    String sql = "UPDATE employees (name , position , salary)VALUES(?,?,?)";

    try (Connection conn = DatabaseConnection.getConnection();
        PreparedStatement stmt = conn.prepareStatement(sql)) {
        stmt.setString(1, name);
        stmt.setString(2, position);
        stmt.setDouble(3, salary);
        stmt.setInt(4, id);
        int rowsAffected = stmt.executeUpdate();
        System.out.println("Employee updated successfully. Rows affected:" + rowsAffected);
    } catch (SQLException e) {
        e.printStackTrace();
    }
}

// Delete an employee
public static void deleteEmployee(int id) {
    String sql = "DELETE FROM employees WHERE id = ?";
    try (Connection conn = DatabaseConnection.getConnection();
        PreparedStatement stmt = conn.prepareStatement(sql)) {
        stmt.setInt(1, id);
        int rowsAffected = stmt.executeUpdate();
    }
}

```

```
System.out.println("Employee deleted successfully. Rows affected:" + rowsAffected);  
} catch (SQLException e) {  
    e.printStackTrace();  
}  
}  
}
```

//Code for Employee.java:

```
public class Employee {  
  
    private int id;  
    private String name;  
    private String position;  
    private double salary;  
    public Employee(int id, String name, String position, double salary) {  
        this.id = id;  
        this.name = name;  
        this.position = position;  
        this.salary = salary;  
    }  
    // Getters and setters  
    public int getId() { return id; }  
    public void setId(int id) { this.id = id; }  
    public String getName() { return name; }  
    public void setName(String name) { this.name = name; }  
    public String getPosition() { return position; }  
    public void setPosition(String position) { this.position = position; }  
    public double getSalary() { return salary; }  
    public void setSalary(double salary) { this.salary = salary; }  
    @Override
```

```

public String toString() {
    return "Employee{id=" + id + ", name=" + name + ", position=" + position + ", salary =" + salary + '}';
}
}

//Code for JDBCExample.java:
package jdbcexample;

import java.util.List;

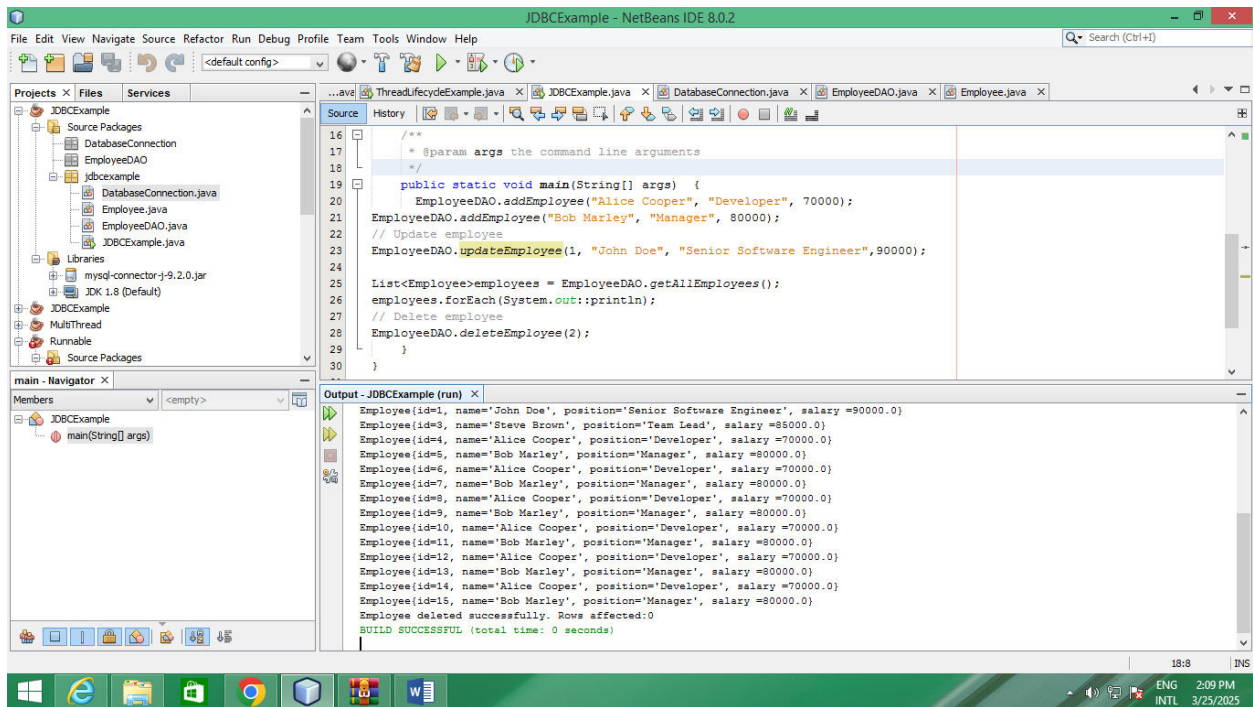
/**
 *
 * @author student
 */
public class JDBCExample {

    /**
     * @param args the command line arguments
     */
    public static void main(String[] args) {
        EmployeeDAO.addEmployee("Alice Cooper", "Developer", 70000);
        EmployeeDAO.addEmployee("Bob Marley", "Manager", 80000);
        EmployeeDAO.updateEmployee(1, "John Doe", "Senior Software Engineer", 90000);

        List<Employee> employees = EmployeeDAO.getAllEmployees();
        employees.forEach(System.out::println);
        EmployeeDAO.deleteEmployee(2);
    }
}

```

## OUT PUT



## DATABASE UPDATE

