Enterprise Architecture – 4232

Lab sheet 03

Task 04

**4. Perform CRUD Operations**

Next, we will create a class called **EmployeeDAO.java** that contains methods for performing CRUD operations.

package jdbc.example;

import java.sql.\*;

import java.util.ArrayList;

import java.util.List;

public class EmployeeDAO { // Create an employee

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's information

public static void updateEmployee(int id, String name, String position, double salary) {

String sql = "UPDATE employees SET name = ?, position = ?, salary = ? WHERE id = ?";

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();

}

}

}