**Demonstrate writing Hibernate Query Language and Native Query**

**OrmLearnApplication.java**

package com.cognizant.ormlearn;

import com.cognizant.ormlearn.model.Employee;

import com.cognizant.ormlearn.service.EmployeeService;

import org.springframework.beans.factory.annotation.Autowired;

import org.springframework.boot.CommandLineRunner;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

import java.util.List;

*@SpringBootApplication*

public class OrmLearnApplication implements CommandLineRunner {

*@Autowired*

private EmployeeService employeeService;

public static void main(String[] args) {

SpringApplication.*run*(OrmLearnApplication.class, args);

}

*@Override*

public void run(String... args) throws Exception {

testGetAllPermanentEmployees();

testGetAverageSalary();

testGetAllEmployeesNative();

}

private void testGetAllPermanentEmployees() {

System.***out***.println("Permanent Employees with Department and Skills:");

List<Employee> employees = employeeService.getAllPermanentEmployees();

for (Employee e : employees) {

System.***out***.println("Name: " + e.getName());

System.***out***.println("Department: " + e.getDepartment().getName());

e.getSkillList().forEach(skill -> System.***out***.println("Skill: " + skill.getName()));

}

}

private void testGetAverageSalary() {

double avgSalary = employeeService.getAverageSalary(1); // departmentId = 1

System.***out***.println("Average Salary in Department 1: " + avgSalary);

}

private void testGetAllEmployeesNative() {

System.***out***.println("All Employees from Native Query:");

List<Employee> employees = employeeService.getAllEmployeesNative();

for (Employee e : employees) {

System.***out***.println("Employee: " + e.getName());

}

}

}

**Employee.java**

package com.cognizant.ormlearn.model;

import jakarta.persistence.\*;

import java.time.LocalDate;

import java.util.List;

*@Entity*

public class Employee {

*@Id*

*@GeneratedValue*(strategy = *GenerationType*.***IDENTITY***)

private int id;

private String name;

private double salary;

private boolean permanent;

*@Column*(name = "em\_date\_of\_birth")

private LocalDate dateOfBirth;

*@ManyToOne*(fetch = *FetchType*.***LAZY***)

*@JoinColumn*(name = "em\_dp\_id")

private Department department;

*@ManyToMany*(fetch = *FetchType*.***LAZY***)

*@JoinTable*(name = "employee\_skill",

joinColumns = *@JoinColumn*(name = "es\_em\_id"),

inverseJoinColumns = *@JoinColumn*(name = "es\_sk\_id"))

private List<Skill> skillList;

// 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 double getSalary() {

return salary;

}

public void setSalary(double salary) {

this.salary = salary;

}

public boolean isPermanent() {

return permanent;

}

public void setPermanent(boolean permanent) {

this.permanent = permanent;

}

public LocalDate getDateOfBirth() {

return dateOfBirth;

}

public void setDateOfBirth(LocalDate dateOfBirth) {

this.dateOfBirth = dateOfBirth;

}

public Department getDepartment() {

return department;

}

public void setDepartment(Department department) {

this.department = department;

}

public List<Skill> getSkillList() {

return skillList;

}

public void setSkillList(List<Skill> skillList) {

this.skillList = skillList;

}

}

**Department.java**

package com.cognizant.ormlearn.model;

import jakarta.persistence.\*;

import java.util.List;

*@Entity*

public class Department {

*@Id*

*@GeneratedValue*(strategy = *GenerationType*.***IDENTITY***)

private int id;

private String name;

*@OneToMany*(mappedBy = "department", fetch = *FetchType*.***LAZY***)

private List<Employee> employeeList;

// ✅ Getters and Setters (Important for Hibernate)

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 List<Employee> getEmployeeList() {

return employeeList;

}

public void setEmployeeList(List<Employee> employeeList) {

this.employeeList = employeeList;

}

}

**Skill.java**

package com.cognizant.ormlearn.model;

import jakarta.persistence.\*;

*@Entity*

public class Skill {

*@Id*

*@GeneratedValue*(strategy = *GenerationType*.***IDENTITY***)

private int id;

private String name;

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;

}

}

**EmployeeRepository.java**

package com.cognizant.ormlearn.repository;

import com.cognizant.ormlearn.model.Employee;

import org.springframework.data.jpa.repository.\*;

import org.springframework.stereotype.Repository;

import org.springframework.data.repository.query.Param;

import java.util.List;

*@Repository*

public interface EmployeeRepository extends JpaRepository<Employee, Integer> {

*@Query*("SELECT e FROM Employee e LEFT JOIN FETCH e.department LEFT JOIN FETCH e.skillList WHERE e.permanent = true")

List<Employee> getAllPermanentEmployees();

*@Query*("SELECT AVG(e.salary) FROM Employee e WHERE e.department.id = :id")

double getAverageSalary(*@Param*("id") int departmentId);

*@Query*(value = "SELECT \* FROM employee", nativeQuery = true)

List<Employee> getAllEmployeesNative();

}

**EmployeeService.java**

package com.cognizant.ormlearn.service;

import com.cognizant.ormlearn.model.Employee;

import java.util.List;

public interface EmployeeService {

List<Employee> getAllPermanentEmployees();

double getAverageSalary(int departmentId);

List<Employee> getAllEmployeesNative();

}

**EmployeeServiceImpl.java**

package com.cognizant.ormlearn.service.impl;

import com.cognizant.ormlearn.model.Employee;

import com.cognizant.ormlearn.repository.EmployeeRepository;

import com.cognizant.ormlearn.service.EmployeeService;

import org.springframework.beans.factory.annotation.Autowired;

import org.springframework.stereotype.Service;

import java.util.List;

*@Service*

public class EmployeeServiceImpl implements EmployeeService {

*@Autowired*

private EmployeeRepository employeeRepository;

*@Override*

public List<Employee> getAllPermanentEmployees() {

return employeeRepository.getAllPermanentEmployees();

}

*@Override*

public double getAverageSalary(int departmentId) {

return employeeRepository.getAverageSalary(departmentId);

}

*@Override*

public List<Employee> getAllEmployeesNative() {

return employeeRepository.getAllEmployeesNative();

}

}

**MYSQL:**

CREATE DATABASE ormlearn;

USE ormlearn;

CREATE TABLE department (

id INT PRIMARY KEY AUTO\_INCREMENT,

name VARCHAR(100)

);

CREATE TABLE skill (

id INT PRIMARY KEY AUTO\_INCREMENT,

name VARCHAR(100)

);

CREATE TABLE employee (

id INT PRIMARY KEY AUTO\_INCREMENT,

name VARCHAR(100),

salary DOUBLE,

permanent BOOLEAN,

em\_date\_of\_birth DATE,

em\_dp\_id INT,

FOREIGN KEY (em\_dp\_id) REFERENCES department(id)

);

CREATE TABLE employee\_skill (

es\_em\_id INT,

es\_sk\_id INT,

PRIMARY KEY (es\_em\_id, es\_sk\_id),

FOREIGN KEY (es\_em\_id) REFERENCES employee(id),

FOREIGN KEY (es\_sk\_id) REFERENCES skill(id)

);

INSERT INTO department(id, name) VALUES (1, 'IT'), (2, 'HR');

INSERT INTO skill(id, name) VALUES (1, 'Java'), (2, 'Spring Boot');

INSERT INTO employee(id, name, salary, permanent, em\_date\_of\_birth, em\_dp\_id)

VALUES

(1, 'John', 55000, true, '1990-05-12', 1),

(2, 'Alice', 60000, false, '1985-08-21', 2);

INSERT INTO employee\_skill(es\_em\_id, es\_sk\_id)

VALUES

(1, 1),

(1, 2);

**Output:**

