**Hands on 4 : Difference between JPA, Hibernate and Spring Data JPA**

**Employee.java:**

package com.cognizant.orm\_learn.model;

import jakarta.persistence.\*;

@Entity

@Table(name = "employee")

public class Employee {

@Id

@GeneratedValue(strategy = GenerationType.IDENTITY)

private Integer id;

private String name;

private Double salary;

public Employee() {}

public Employee(String name, Double salary) {

this.name = name;

this.salary = salary;

}

// getters & setters

public Integer getId() { return id; }

public String getName() { return name; }

public Double getSalary() { return salary; }

public void setName(String name) { this.name = name; }

public void setSalary(Double salary) { this.salary = salary; }

@Override

public String toString() {

return id + " : " + name + " : " + salary;

}

}

**EmployeeRepository.java:**

package com.cognizant.orm\_learn.repository;

import com.cognizant.orm\_learn.model.Employee;

import org.springframework.data.jpa.repository.JpaRepository;

import org.springframework.stereotype.Repository;

@Repository

public interface EmployeeRepository extends JpaRepository<Employee, Integer> { }

**EmployeeService.java:**

package com.cognizant.orm\_learn.service;

import com.cognizant.orm\_learn.model.Employee;

import com.cognizant.orm\_learn.repository.EmployeeRepository;

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

import org.springframework.stereotype.Service;

import org.springframework.transaction.annotation.Transactional;

import java.util.List;

@Service

public class EmployeeService {

@Autowired

private EmployeeRepository repo;

@Transactional

public void addEmployee(Employee emp) {

repo.save(emp); // one‑liner save

}

public List<Employee> getAllEmployees() {

return repo.findAll();

}

}

**OrmLearnApplication.java:**

package com.cognizant.orm\_learn;

import com.cognizant.orm\_learn.model.Employee;

import com.cognizant.orm\_learn.service.EmployeeService;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

import org.springframework.context.ApplicationContext;

@SpringBootApplication

public class OrmLearnApplication {

private static EmployeeService employeeService;

public static void main(String[] args) {

ApplicationContext ctx = SpringApplication.run(OrmLearnApplication.class, args);

employeeService = ctx.getBean(EmployeeService.class);

demoEmployeeCrud();

}

private static void demoEmployeeCrud() {

System.out.println("=== Employee Demo ===");

employeeService.addEmployee(new Employee("Ravi", 72000.0));

employeeService.getAllEmployees()

.forEach(System.out::println);

}

}

**application.properties:**

# MySQL

spring.datasource.url=jdbc:mysql://localhost:3306/ormlearn

spring.datasource.username=root

spring.datasource.password=root

spring.datasource.driver-class-name=com.mysql.cj.jdbc.Driver

# JPA / Hibernate

spring.jpa.hibernate.ddl-auto=validate

spring.jpa.properties.hibernate.dialect=org.hibernate.dialect.MySQLDialect

# (optional) show SQL

logging.level.org.hibernate.SQL=trace

**SQL:**

USE ormlearn;

CREATE TABLE employee (

id INT AUTO\_INCREMENT PRIMARY KEY,

name VARCHAR(50),

salary DOUBLE

);

INSERT INTO employee (name, salary) VALUES

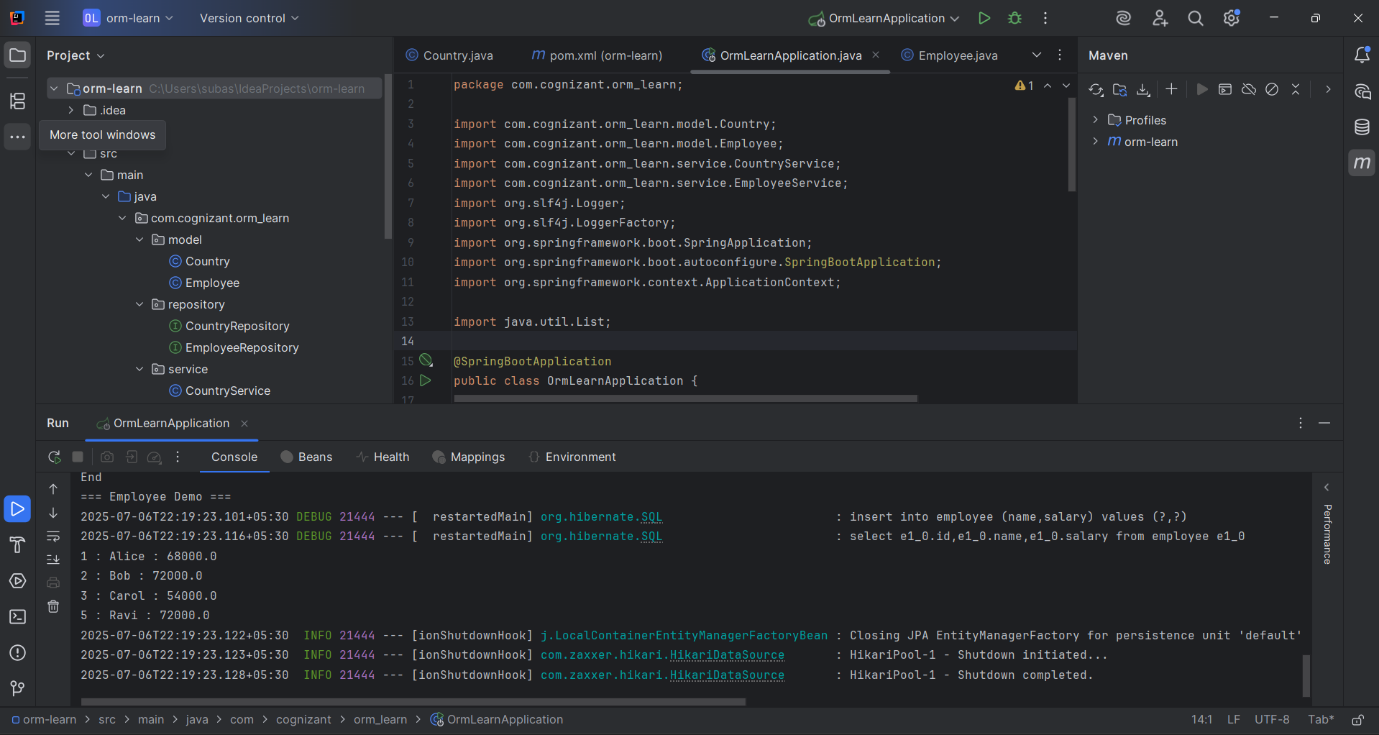
('Alice', 68000),

('Bob', 72000),

('Carol', 54000),

('Ravi', 72000):

**OUTPUT :**

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