**Difference between JPA, Hibernate and Spring Data JPA**

**EmployeeManagementSystemApplication.java**

package com.example.ems;

import com.example.ems.model.Department;

import com.example.ems.model.Employee;

import com.example.ems.service.DepartmentService;

import com.example.ems.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;

@SpringBootApplication

public class EmployeeManagementSystemApplication implements CommandLineRunner {

@Autowired

private EmployeeService employeeService;

@Autowired

private DepartmentService departmentService;

public static void main(String[] args) {

SpringApplication.run(EmployeeManagementSystemApplication.class, args);

}

@Override

public void run(String... args) {

Department dept = new Department();

dept.setName("IT");

departmentService.saveDepartment(dept);

Employee emp = new Employee();

emp.setName("Arka Pratim Ghosh");

emp.setEmail("arkapratim@example.com");

emp.setDepartment(dept);

employeeService.saveEmployee(emp);

System.out.println("All Employees:");

employeeService.getAllEmployees().forEach(System.out::println);

}

}

**3. model/Department.java**

java

package com.example.ems.model;

import jakarta.persistence.\*;

import lombok.\*;

@Entity

@Data

@NoArgsConstructor

@AllArgsConstructor

public class Department {

@Id

@GeneratedValue(strategy = GenerationType.IDENTITY)

private Integer id;

private String name;

}

**4. model/Employee.java**

java

package com.example.ems.model;

import jakarta.persistence.\*;

import lombok.\*;

@Entity

@Data

@NoArgsConstructor

@AllArgsConstructor

public class Employee {

@Id

@GeneratedValue(strategy = GenerationType.IDENTITY)

private Integer id;

private String name;

private String email;

@ManyToOne

@JoinColumn(name = "department\_id")

private Department department;

}

**5. repository/DepartmentRepository.java**

java

package com.example.ems.repository;

import com.example.ems.model.Department;

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

public interface DepartmentRepository extends JpaRepository<Department, Integer> {

}

**6. repository/EmployeeRepository.java**

package com.example.ems.repository;

import com.example.ems.model.Employee;

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

public interface EmployeeRepository extends JpaRepository<Employee, Integer> {

}

**7. service/DepartmentService.java**

package com.example.ems.service;

import com.example.ems.model.Department;

import com.example.ems.repository.DepartmentRepository;

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

import org.springframework.stereotype.Service;

@Service

public class DepartmentService {

@Autowired

private DepartmentRepository departmentRepository;

public Department saveDepartment(Department department) {

return departmentRepository.save(department);

}

}

**8. service/EmployeeService.java**

package com.example.ems.service;

import com.example.ems.model.Employee;

import com.example.ems.repository.EmployeeRepository;

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

import org.springframework.stereotype.Service;

import java.util.List;

@Service

public class EmployeeService {

@Autowired

private EmployeeRepository employeeRepository;

public void saveEmployee(Employee employee) {

employeeRepository.save(employee);

}

public List<Employee> getAllEmployees() {

return employeeRepository.findAll();

}

}

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