Exercise 1: Employee Management System - Overview and Setup

application.properties

# H2 DB Configuration

spring.datasource.url=jdbc:h2:mem:testdb

spring.datasource.driverClassName=org.h2.Driver

spring.datasource.username=sa

spring.datasource.password=password

spring.jpa.database-platform=org.hibernate.dialect.H2Dialect

# JPA Behavior

spring.jpa.show-sql=true

spring.jpa.hibernate.ddl-auto=update

# H2 Console

spring.h2.console.enabled=true

spring.h2.console.path=/h2-console

Department.java

package com.example.ems.model;

import jakarta.persistence.\*;

import lombok.Data;

@Entity

@Data

public class Department {

@Id

@GeneratedValue(strategy = GenerationType.IDENTITY)

private Long id;

private String name;

}

Employee.java

package com.example.ems.model;

import jakarta.persistence.\*;

import lombok.Data;

@Entity

@Data

public class Employee {

@Id

@GeneratedValue(strategy = GenerationType.IDENTITY)

private Long id;

private String name;

@ManyToOne

@JoinColumn(name = &quot;department\_id&quot;)

private Department department;

}

DepartmentRepository.java

package com.example.ems.repository;

import com.example.ems.model.Department;

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

public interface DepartmentRepository extends JpaRepository&lt;Department, Long&gt; {

}

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&lt;Employee, Long&gt; {

}

EmployeeController.java

package com.example.ems.controller;

import com.example.ems.model.Employee;

import com.example.ems.repository.EmployeeRepository;

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

import org.springframework.web.bind.annotation.\*;

import java.util.List;

@RestController

@RequestMapping(&quot;/employees&quot;)

public class EmployeeController {

@Autowired

private EmployeeRepository employeeRepository;

@GetMapping

public List&lt;Employee&gt; getAllEmployees() {

return employeeRepository.findAll();

}

@PostMapping

public Employee createEmployee(@RequestBody Employee employee) {

return employeeRepository.save(employee);

}

}

DepartmentController.java

package com.example.ems.controller;

import com.example.ems.model.Department;

import com.example.ems.repository.DepartmentRepository;

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

import org.springframework.web.bind.annotation.\*;

import java.util.List;

@RestController

@RequestMapping(&quot;/departments&quot;)

public class DepartmentController {

@Autowired

private DepartmentRepository departmentRepository;

@GetMapping

public List&lt;Department&gt; getAllDepartments() {

return departmentRepository.findAll();

}

@PostMapping

public Department createDepartment(@RequestBody Department department) {

return departmentRepository.save(department);

}

}

EmployeeManagementSystemApplication.java

package com.example.ems;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication

public class EmployeeManagementSystemApplication {

public static void main(String[] args) {

SpringApplication.run(EmployeeManagementSystemApplication.class, args);

}

}

Output:

