**3. spring-rest-handson**

**Spring XML Configuration – employee.xml**

<?xml version="1.0" encoding="UTF-8"?>

<beans xmlns="http://www.springframework.org/schema/beans"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://www.springframework.org/schema/beans

http://www.springframework.org/schema/beans/spring-beans.xsd">

<!-- Skills -->

<bean id="skill1" class="com.cognizant.model.Skill">

<property name="id" value="1"/>

<property name="name" value="Java"/>

</bean>

<bean id="skill2" class="com.cognizant.model.Skill">

<property name="id" value="2"/>

<property name="name" value="Spring Boot"/>

</bean>

<!-- Departments -->

<bean id="department1" class="com.cognizant.model.Department">

<property name="id" value="1"/>

<property name="name" value="Human Resources"/>

</bean>

<bean id="department2" class="com.cognizant.model.Department">

<property name="id" value="2"/>

<property name="name" value="Technology"/>

</bean>

<!-- Employees List -->

<bean id="employeeList" class="java.util.ArrayList">

<constructor-arg>

<list>

<bean class="com.cognizant.model.Employee">

<property name="id" value="101"/>

<property name="name" value="John"/>

<property name="salary" value="60000"/>

<property name="permanent" value="true"/>

<property name="department" ref="department1"/>

<property name="skills">

<list>

<ref bean="skill1"/>

<ref bean="skill2"/>

</list>

</property>

</bean>

<bean class="com.cognizant.model.Employee">

<property name="id" value="102"/>

<property name="name" value="Emma"/>

<property name="salary" value="75000"/>

<property name="permanent" value="false"/>

<property name="department" ref="department2"/>

<property name="skills">

<list>

<ref bean="skill2"/>

</list>

</property>

</bean>

<!-- Add more employee beans similarly -->

</list>

</constructor-arg>

</bean>

<!-- Department List -->

<bean id="departmentList" class="java.util.ArrayList">

<constructor-arg>

<list>

<ref bean="department1"/>

<ref bean="department2"/>

</list>

</constructor-arg>

</bean>

</beans>

**Model Classes**

**1.Employee.java**

package com.cognizant.model;

import java.util.List;

public class Employee {

private int id;

private String name;

private double salary;

private boolean permanent;

private Department department;

private List<Skill> skills;

// Getters, Setters, toString()

}

**2. Department.java**

package com.cognizant.model;

public class Department {

private int id;

private String name;

// Getters, Setters, toString()

}

**3.Skill.java**

package com.cognizant.model;

public class Skill {

private int id;

private String name;

// Getters, Setters, toString()

}

**DAO Layer**

1. **EmployeeDao.java**

package com.cognizant.dao;

import com.cognizant.model.Employee;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

import org.springframework.stereotype.Repository;

import java.util.List;

@Repository

public class EmployeeDao {

private static List<Employee> EMPLOYEE\_LIST;

public EmployeeDao() {

ApplicationContext context = new ClassPathXmlApplicationContext("employee.xml");

EMPLOYEE\_LIST = context.getBean("employeeList", List.class);

}

public List<Employee> getAllEmployees() {

return EMPLOYEE\_LIST;

}

}

1. **DepartmentDao.java**

package com.cognizant.dao;

import com.cognizant.model.Department;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

import org.springframework.stereotype.Repository;

import java.util.List;

@Repository

public class DepartmentDao {

private static List<Department> DEPARTMENT\_LIST;

public DepartmentDao() {

ApplicationContext context = new ClassPathXmlApplicationContext("employee.xml");

DEPARTMENT\_LIST = context.getBean("departmentList", List.class);

}

public List<Department> getAllDepartments() {

return DEPARTMENT\_LIST;

}

}

**Service Layer**

**1.EmployeeService.java**

package com.cognizant.service;

import com.cognizant.dao.EmployeeDao;

import com.cognizant.model.Employee;

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

import org.springframework.stereotype.Service;

import javax.transaction.Transactional;

import java.util.List;

@Service

public class EmployeeService {

@Autowired

private EmployeeDao employeeDao;

@Transactional

public List<Employee> getAllEmployees() {

return employeeDao.getAllEmployees();

}

}

**2.DepartmentService.java**

package com.cognizant.service;

import com.cognizant.dao.DepartmentDao;

import com.cognizant.model.Department;

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

import org.springframework.stereotype.Service;

import java.util.List;

@Service

public class DepartmentService {

@Autowired

private DepartmentDao departmentDao;

public List<Department> getAllDepartments() {

return departmentDao.getAllDepartments();

}

}

**Controller Layer**

**1.EmployeeContoller.java**

package com.cognizant.controller;

import com.cognizant.model.Employee;

import com.cognizant.service.EmployeeService;

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

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

import java.util.List;

@RestController

public class EmployeeController {

@Autowired

private EmployeeService employeeService;

@GetMapping("/employees")

public List<Employee> getAllEmployees() {

return employeeService.getAllEmployees();

}

}

**2. DepartmentController.java**

package com.cognizant.controller;

import com.cognizant.model.Department;

import com.cognizant.service.DepartmentService;

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

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

import java.util.List;

@RestController

public class DepartmentController {

@Autowired

private DepartmentService departmentService;

@GetMapping("/departments")

public List<Department> getAllDepartments() {

return departmentService.getAllDepartments();

}

}

**OUTPUT:**

**GET /employees**

http://localhost:8083/employees

**JSON Response:**

[

{

"id": 101,

"name": "John",

"salary": 60000.0,

"permanent": true,

"department": {

"id": 1,

"name": "Human Resources"

},

"skills": [

{

"id": 1,

"name": "Java"

},

{

"id": 2,

"name": "Spring Boot"

}

]

},

{

"id": 102,

"name": "Emma",

"salary": 75000.0,

"permanent": false,

"department": {

"id": 2,

"name": "Technology"

},

"skills": [

{

"id": 2,

"name": "Spring Boot"

}

]

}

]

**Response Headers:**

Status Code: 200 OK

Content-Type: application/json

Content-Length: (depends on the list size)

**GET /departments**

http://localhost:8083/departments

**JSON Response:**

[

{

"id": 1,

"name": "Human Resources"

},

{

"id": 2,

"name": "Technology"

}

]

**Response Headers:**

Status Code: 200 OK

Content-Type: application/json

Content-Length: (depends on size)