**Hands on 1 : Write queries on country table using Query Methods**

**OrmLearnApplication.java :-**

package com.cognizant.orm\_learn;

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

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

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

import org.slf4j.Logger;

import org.slf4j.LoggerFactory;

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

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

import jakarta.annotation.PostConstruct;

import java.util.List;

*@SpringBootApplication*

public class OrmLearnApplication {

private static final Logger ***LOGGER*** = LoggerFactory.*getLogger*(OrmLearnApplication.class);

*@Autowired*

private CountryService countryService;

public static void main(String[] args) {

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

}

*@PostConstruct*

public void test() {

testAddCountry();

testSearchByPartialName();

testSearchByPartialNameSorted();

testSearchByAlphabet();

}

private void testAddCountry() {

***LOGGER***.info("Start - testAddCountry");

Country newCountry = new Country("XX", "TestLand");

countryService.addCountry(newCountry);

try {

Country retrieved = countryService.findCountryByCode("XX");

***LOGGER***.debug("Added Country: {}", retrieved);

} catch (CountryNotFoundException e) {

***LOGGER***.error("Exception: {}", e.getMessage());

}

***LOGGER***.info("End - testAddCountry");

}

private void testSearchByPartialName() {

***LOGGER***.info("Start - testSearchByPartialName");

List<Country> countries = countryService.searchByPartialName("ou");

countries.forEach(c -> ***LOGGER***.debug("Match: {} - {}", c.getCode(), c.getName()));

***LOGGER***.info("End - testSearchByPartialName");

}

private void testSearchByPartialNameSorted() {

***LOGGER***.info("Start - testSearchByPartialNameSorted");

List<Country> countries = countryService.searchByPartialNameSorted("ou");

countries.forEach(c -> ***LOGGER***.debug("Sorted Match: {} - {}", c.getCode(), c.getName()));

***LOGGER***.info("End - testSearchByPartialNameSorted");

}

private void testSearchByAlphabet() {

***LOGGER***.info("Start - testSearchByAlphabet");

List<Country> countries = countryService.searchByStartingLetter("Z");

countries.forEach(c -> ***LOGGER***.debug("Starts With Z: {} - {}", c.getCode(), c.getName()));

***LOGGER***.info("End - testSearchByAlphabet");

}

}

**CountryNotFoundException.java :-**

package com.cognizant.orm\_learn.service;

public class CountryNotFoundException extends Exception {

public CountryNotFoundException(String message) {

super(message);

}

}

**CountryService.java :-**

package com.cognizant.orm\_learn.service;

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

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

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

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

import org.springframework.stereotype.Service;

import org.springframework.transaction.annotation.Transactional;

import java.util.List;

import java.util.Optional;

*@Service*

public class CountryService {

*@Autowired*

private CountryRepository repository;

*@Transactional*

public Country findCountryByCode(String code) throws CountryNotFoundException {

Optional<Country> result = repository.findById(code);

if (!result.isPresent()) {

throw new CountryNotFoundException("Country with code " + code + " not found");

}

return result.get();

}

*@Transactional*

public void addCountry(Country country) {

repository.save(country);

}

public List<Country> searchByPartialName(String keyword) {

return repository.findByNameContainingIgnoreCase(keyword);

}

public List<Country> searchByPartialNameSorted(String keyword) {

return repository.findByNameContainingIgnoreCaseOrderByNameAsc(keyword);

}

public List<Country> searchByStartingLetter(String letter) {

return repository.findByNameStartingWithIgnoreCase(letter);

}

}

**Country.java :-**

package com.cognizant.orm\_learn.model;

import jakarta.persistence.\*;

*@Entity*

*@Table*(name = "country")

public class Country {

*@Id*

*@Column*(name = "co\_code")

private String code;

*@Column*(name = "co\_name")

private String name;

public Country() {}

public Country(String code, String name) {

this.code = code;

this.name = name;

}

public String getCode() { return code; }

public void setCode(String code) { this.code = code; }

public String getName() { return name; }

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

*@Override*

public String toString() {

return "Country [code=" + code + ", name=" + name + "]";

}

}

**CountryRepository.java :-**

package com.cognizant.orm\_learn.repository;

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

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

import org.springframework.stereotype.Repository;

import java.util.List;

*@Repository*

public interface CountryRepository extends JpaRepository<Country, String> {

List<Country> findByNameContainingIgnoreCase(String keyword);

List<Country> findByNameContainingIgnoreCaseOrderByNameAsc(String keyword);

List<Country> findByNameStartingWithIgnoreCase(String letter);

}

**Application.properties :-**

# Logging (Optional)

logging.level.org.springframework=info

logging.level.com.cognizant=debug

logging.level.org.hibernate.SQL=debug

# DB Configuration

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

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

spring.datasource.username=root

spring.datasource.password=root

# Hibernate Dialect

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

# DDL behavior: none, update, create, create-drop, validate

spring.jpa.hibernate.ddl-auto=validate

**pom.xml :-**

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

<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 https://maven.apache.org/xsd/maven-4.0.0.xsd">

<modelVersion>4.0.0</modelVersion>

<parent>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-parent</artifactId>

<version>3.5.3</version>

<relativePath/> <!-- lookup parent from repository -->

</parent>

<groupId>com.cognizant</groupId>

<artifactId>orm-learn</artifactId>

<version>0.0.1-SNAPSHOT</version>

<name>orm-learn</name>

<description>Demo project for Spring Data JPA and Hibernate</description>

<url/>

<licenses>

<license/>

</licenses>

<developers>

<developer/>

</developers>

<scm>

<connection/>

<developerConnection/>

<tag/>

<url/>

</scm>

<properties>

<java.version>21</java.version>

</properties>

<dependencies>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-data-jpa</artifactId>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-devtools</artifactId>

<scope>runtime</scope>

<optional>true</optional>

</dependency>

<dependency>

<groupId>mysql</groupId>

<artifactId>mysql-connector-java</artifactId>

<version>8.0.33</version> <!-- or latest -->

</dependency>

<dependency>

<groupId>com.mysql</groupId>

<artifactId>mysql-connector-j</artifactId>

<scope>runtime</scope>

</dependency>

<dependency>

<groupId>jakarta.persistence</groupId>

<artifactId>jakarta.persistence-api</artifactId>

<version>3.1.0</version><!--$NO-MVN-MAN-VER$-->

</dependency>

</dependencies>

<build>

<plugins>

<plugin>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-maven-plugin</artifactId>

</plugin>

</plugins>

</build>

</project>

Output :-



