**WEEK-3**

**Spring Data JPA with Spring Boot, Hibernate**

**Hands On-6: Find a country based on country code**

**1.pom.xml:**

<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

         http://maven.apache.org/xsd/maven-4.0.0.xsd">

    <modelVersion>4.0.0</modelVersion>

    <groupId>com.cognizant</groupId>

    <artifactId>spring-learn</artifactId>

    <version>0.0.1-SNAPSHOT</version>

    <packaging>jar</packaging>

    <name>spring-learn</name>

    <description>Spring Boot Country Code Finder</description>

    <parent>

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

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

        <version>3.1.3</version>

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

    </parent>

    <properties>

        <java.version>17</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-starter-web</artifactId>

        </dependency>

        <dependency>

            <groupId>com.h2database</groupId>

            <artifactId>h2</artifactId>

            <scope>runtime</scope>

        </dependency>

        <dependency>

            <groupId>jakarta.persistence</groupId>

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

            <version>3.1.0</version>

        </dependency>

        <dependency>

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

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

        </dependency>

    </dependencies>

    <build>

        <plugins>

            <plugin>

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

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

            </plugin>

        </plugins>

    </build>

</project>

**2.application.properties:**

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

spring.datasource.driver-class-name=org.h2.Driver

spring.datasource.username=sa

spring.datasource.password=

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

spring.sql.init.mode=always

spring.sql.init.schema-locations=classpath:schema.sql

spring.jpa.show-sql=true

spring.jpa.hibernate.ddl-auto=none

logging.level.com.cognizant.spring\_learn=DEBUG

**3.schema.sql:**

CREATE TABLE country (

    code VARCHAR(2) PRIMARY KEY,

    name VARCHAR(100)

);

INSERT INTO country (code, name) VALUES ('IN', 'India');

INSERT INTO country (code, name) VALUES ('US', 'United States');

**4.OrmLearnApplication.java:**

package com.cognizant.spring\_learn;

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

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

import com.cognizant.spring\_learn.service.exception.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 org.springframework.context.ApplicationContext;

@SpringBootApplication

public class OrmLearnApplication {

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

    private static CountryService countryService;

    public static void main(String[] args) throws CountryNotFoundException {

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

        countryService = context.getBean(CountryService.class);

        getAllCountriesTest();

    }

    private static void getAllCountriesTest() throws CountryNotFoundException {

        LOGGER.info("Start");

        Country country = countryService.findCountryByCode("IN");

        LOGGER.debug("Country: {}", country);

        LOGGER.info("End");

    }

}

**5.Country.java:**

package com.cognizant.spring\_learn.model;

import jakarta.persistence.Entity;

import jakarta.persistence.Id;

import jakarta.persistence.Table;

@Entity

@Table(name = "country")

public class Country {

    @Id

    private String code;

    private String name;

    public Country() {}

    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 + "]";

    }

}

**6.CountryService.java:**

package com.cognizant.spring\_learn.service;

import java.util.Optional;

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

import org.springframework.stereotype.Service;

import org.springframework.transaction.annotation.Transactional;

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

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

import com.cognizant.spring\_learn.service.exception.CountryNotFoundException;

@Service

public class CountryService {

    @Autowired

    private CountryRepository countryRepository;

    @Transactional

    public Country findCountryByCode(String countryCode) throws CountryNotFoundException {

        Optional<Country> result = countryRepository.findById(countryCode);

        if (!result.isPresent()) {

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

        }

        return result.get();

    }

}

**7.CountryNotFoundException.java:**

package com.cognizant.spring\_learn.service.exception;

public class CountryNotFoundException extends Exception {

    public CountryNotFoundException(String message) {

        super(message);

    }

}

**8.CountryRepository.java:**

package com.cognizant.spring\_learn.repository;

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

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

public interface CountryRepository extends JpaRepository<Country, String> {

}

**Output:**

