**Hands-on 6: Find a Country Based on Country Code**

**Step-by-Step Implementation**

**1. Create a Custom Exception**

**Package:**  
com.cognizant.springlearn.service.exception

**File:** CountryNotFoundException.java

package com.cognizant.springlearn.service.exception;

public class CountryNotFoundException extends Exception {

public CountryNotFoundException(String message) {

super(message);

}

}

**2. Add a New Method in CountryService**

**Method Signature:**

@Transactional

public Country findCountryByCode(String countryCode) throws CountryNotFoundException;

**Method Implementation:**

@Transactional

public Country findCountryByCode(String countryCode) throws CountryNotFoundException {

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

if (!result.isPresent()) {

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

}

return result.get();

}

**3. Add a Test Method in OrmLearnApplication**

**Method:**

private static void testFindCountryByCode() {

LOGGER.info("Start");

try {

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

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

} catch (CountryNotFoundException e) {

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

}

LOGGER.info("End");

}

**4. Modify the main() Method in OrmLearnApplication.java**

public static void main(String[] args) {

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

countryService = context.getBean(CountryService.class);

testGetAllCountries(); // Optional: Existing test

testFindCountryByCode(); // New test method for this hands-on

}

**Notes on @Transactional Annotation**

* The @Transactional annotation is used to indicate that the method should be executed within a database transaction.
* Spring handles:
  + Opening and closing of the Hibernate session
  + Transaction management (commit/rollback)
* Ensures **data consistency** and **automatic rollback** in case of exceptions.
* Recommended for all **data access methods in the service layer** that involve querying or modifying data.

**Expected Console Output (Sample)**

Start

Country: Country [code=IN, name=India]

End

If the country code is not found:

Start

Exception: Country not found with code: XX

End