2. spring-rest-handson

Hello World RESTful Web Service

Write a REST service in the spring learn application created earlier, that returns the text "Hello World!!" using Spring Web Framework. Refer details below:

Method: GET
URL: /hello
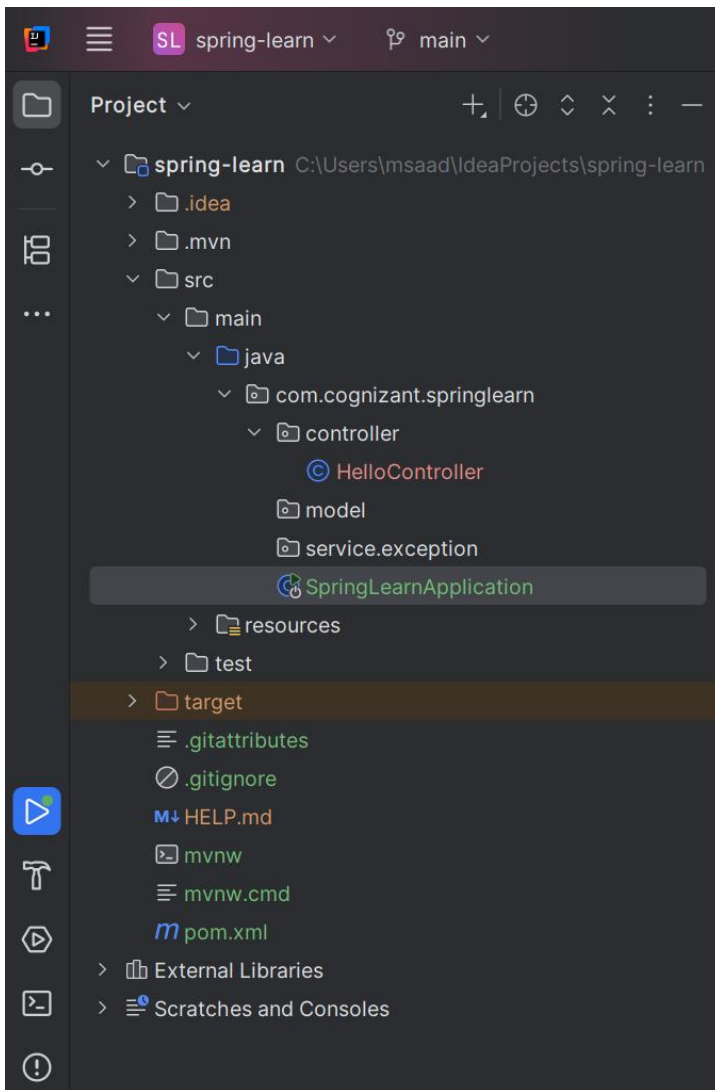**Controller:** com.cognizant.spring-learn.controller.HelloController
Method Signature: public String sayHello()
Method Implementation: return hard coded string "Hello World!!"
Sample Request: http://localhost:8083/hello
Sample Response: Hello World!!

Folder Structure:

HelloController.java

package com.cognizant.springlearn.controller;

import org.slf4j.Logger;
import org.slf4j.LoggerFactory;
import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.RestController;

@RestController
public class HelloController {

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

   @GetMapping("/hello")
   public String sayHello() {
     LOGGER.info("START - sayHello()");
     LOGGER.info("END - sayHello()");
     return "Hello World!!";

```
    }
}
```

SpringLearnApplication.java

```java
package com.cognizant.springlearn;

import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication
public class SpringLearnApplication {

    public static void main(String[] args) {
        SpringApplication.run(SpringLearnApplication.class, args);
    }

}
```

Run the SpringLearnApplication.java

Then, open any browser and type: **http://localhost:8080/hello**

Output:

REST - Country Web Service

Write a REST service that returns India country details in the earlier created spring learn application.

URL: /country
Controller: com.cognizant.spring-learn.controller.CountryController
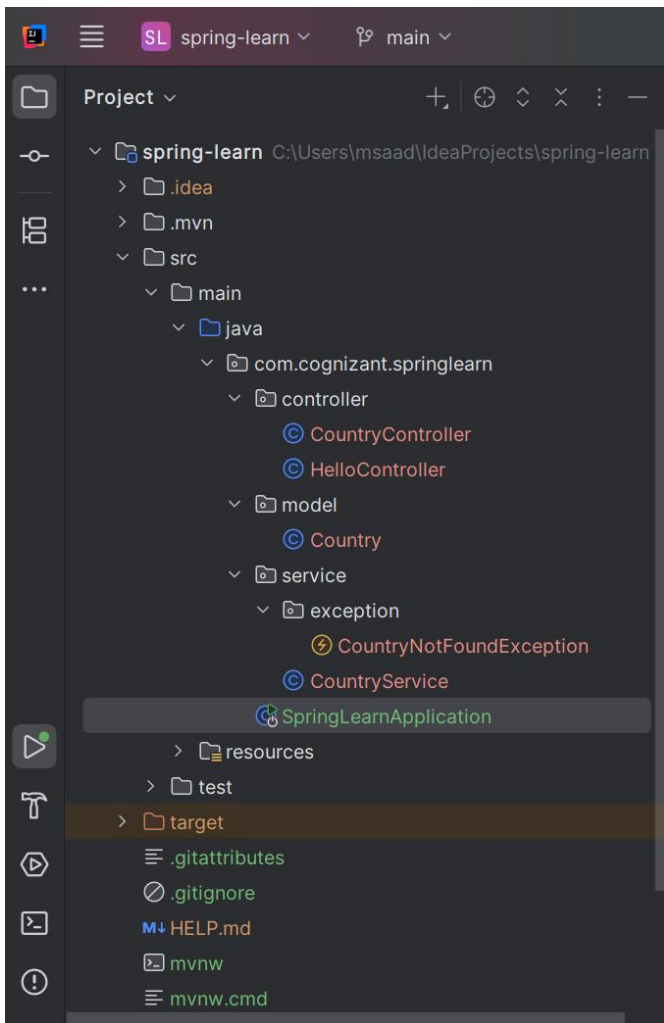**Method Annotation**: @RequestMapping
Method Name: getCountryIndia()
Method Implementation: Load India bean from spring xml configuration and return
Sample Request: http://localhost:8083/country
Sample Response:

```
{
  "code": "IN",
  "name": "India"
}
```

Folder Structure:

Create 4 packages,

      1)controller

      2)model

      3)service

      4)service.exception

CountryController.java (in controller package)

package com.cognizant.springlearn.controller;

import com.cognizant.springlearn.model.Country;
import com.cognizant.springlearn.service.CountryService;
import com.cognizant.springlearn.service.exception.CountryNotFoundException;
import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.web.bind.annotation.*;

```java
import java.util.List;

@RestController
public class CountryController {

    @Autowired
    private CountryService countryService;

    // GET: /country → returns India
    @GetMapping("/country")
    public Country getCountryIndia() {
        return new Country("IN", "India");
    }

    // GET: /countries → returns all countries
    @GetMapping("/countries")
    public List<Country> getAllCountries() {
        return countryService.getAllCountries();
    }

    // GET: /countries/{code} → returns a country by code
    @GetMapping("/countries/{code}")
    public Country getCountry(@PathVariable String code) throws CountryNotFoundException {
        return countryService.getCountry(code);
    }
}
```

Country.java (in model package)

```java
package com.cognizant.springlearn.model;

public class Country {
    private String code;
    private String name;

    public Country() {}

    public Country(String code, String name) {
        this.code = code;
        this.name = name;
    }

    public String getCode() {
        return code;
    }
```

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

    public String getName() {
        return name;
    }

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

CountryService.java (in service package)

```java
package com.cognizant.springlearn.service;

import com.cognizant.springlearn.model.Country;
import com.cognizant.springlearn.service.exception.CountryNotFoundException;
import org.springframework.stereotype.Service;

import java.util.Arrays;
import java.util.List;

@Service
public class CountryService {

    private static final List<Country> countries = Arrays.asList(
            new Country("IN", "India"),
            new Country("US", "United States"),
            new Country("JP", "Japan"),
            new Country("DE", "Germany")
    );

    public Country getCountry(String code) throws CountryNotFoundException {
        return countries.stream()
            .filter(c -> c.getCode().equalsIgnoreCase(code))
            .findFirst()
            .orElseThrow(() -> new CountryNotFoundException("Country not found"));
    }

    public List<Country> getAllCountries() {
        return countries;
    }
}
```

CountryNotFoundException.java (in service.exception package)
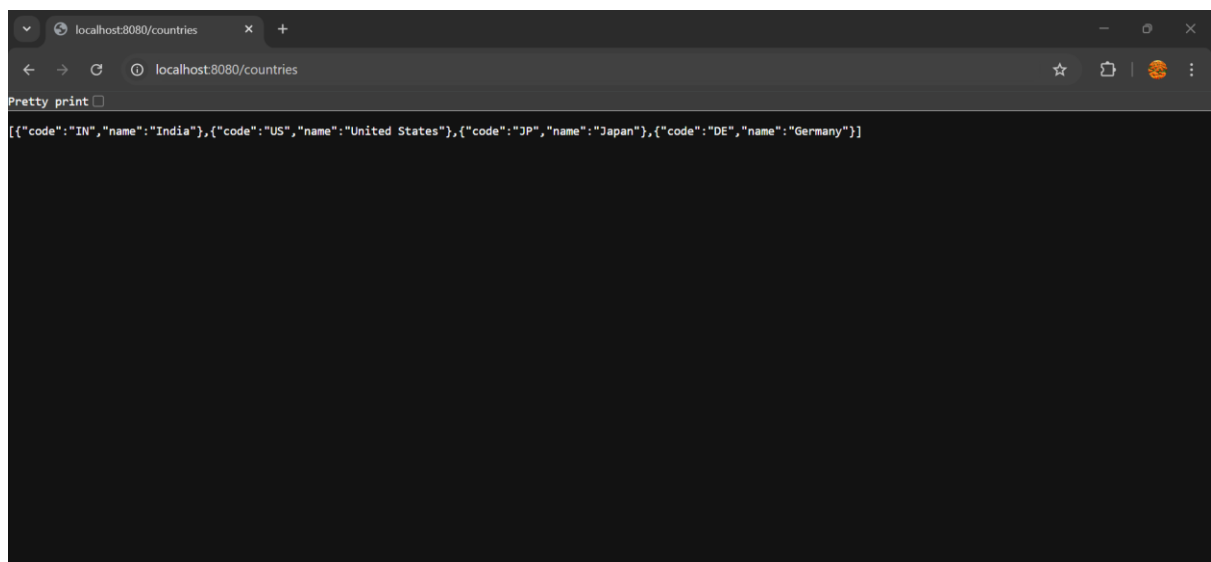
package com.cognizant.springlearn.service.exception;

import org.springframework.http.HttpStatus;
import org.springframework.web.bind.annotation.ResponseStatus;

@ResponseStatus(value = HttpStatus.*NOT_FOUND*, reason = "Country not found")
public class CountryNotFoundException extends Exception {
    public CountryNotFoundException(String message) {
        super(message);
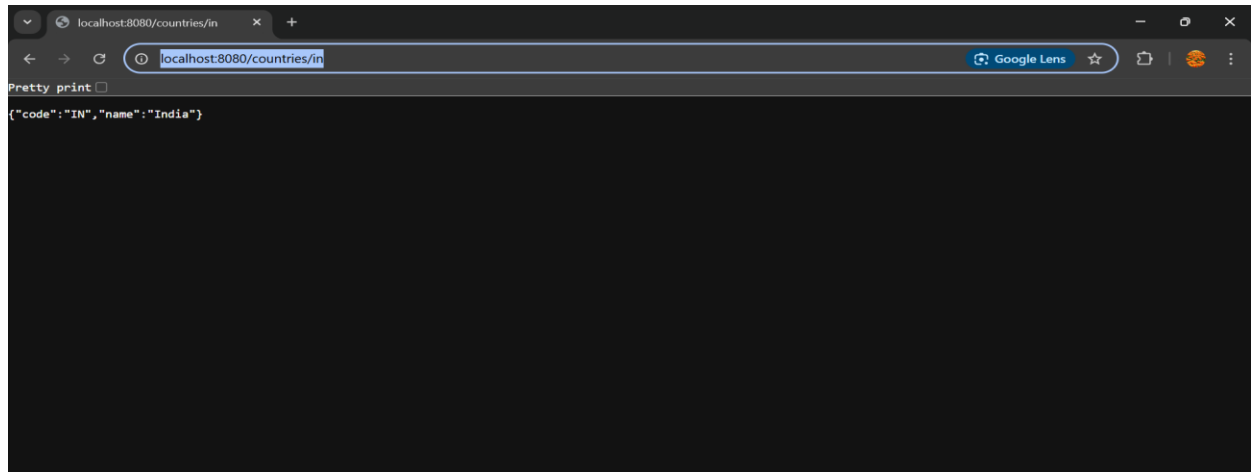   }
}

Now, run the SPringLearnApplication.java

Then, go to any browser and type,

      1) **http://localhost:8080/countries** **(to display all countries)**

      2) **http://localhost:8080/countries/in** **(to display specific country)**

REST - Get country based on country code

Write a REST service that returns a specific country based on country code. The country code should be case insensitive.

Controller: com.cognizant.spring-learn.controller.CountryController
Method Annotation: @GetMapping("/countries/{code}")
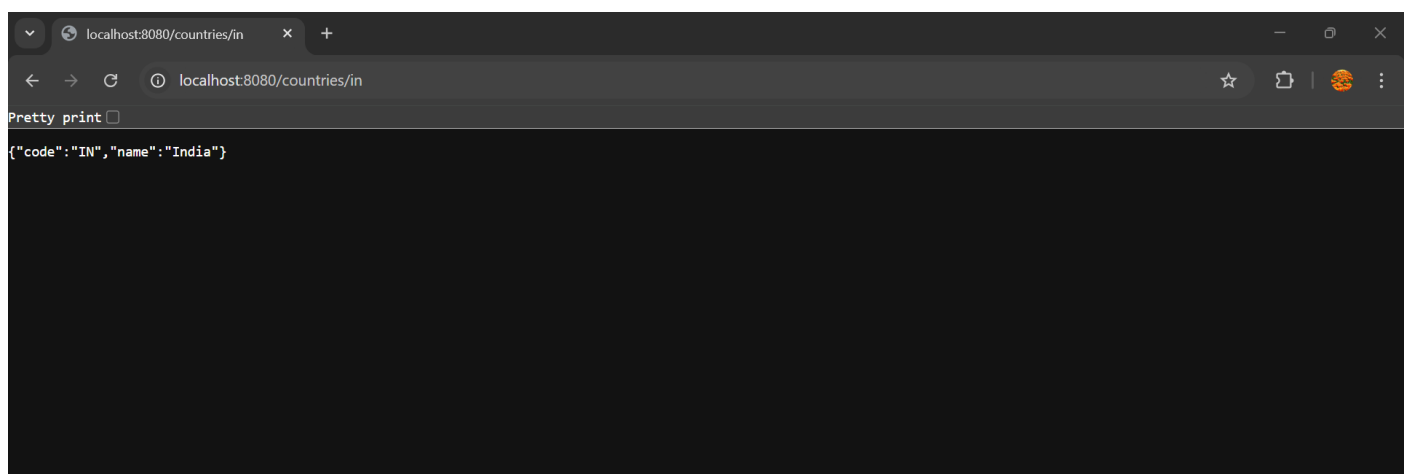**Method Name**: getCountry(String code)
Method Implemetation: Invoke countryService.getCountry(code)
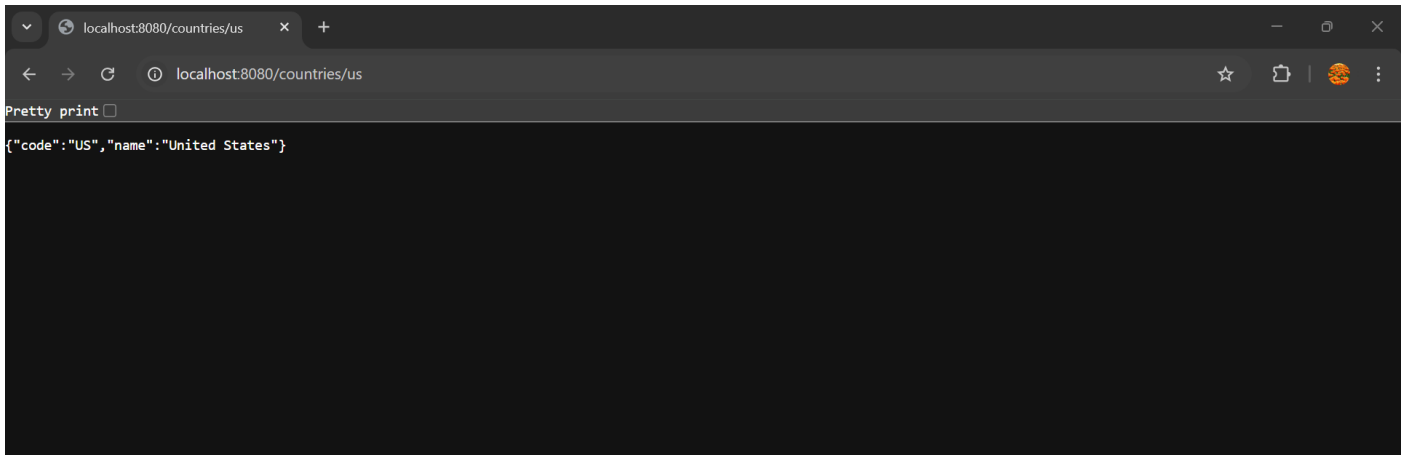**Service Method:** com.cognizant.spring-learn.service.CountryService.getCountry(String code)

The folder structure and all the packages and classes remain the same which are used for the exercise above which is REST- Country Web Service
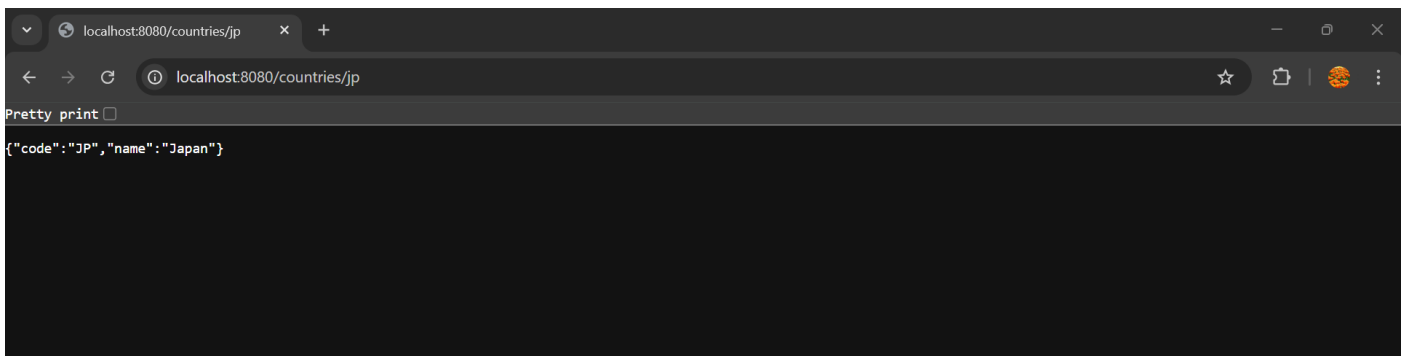
Output:

http://localhost:8080/countries/in

http://localhost:8080/countries/us

localhost:8080/countries/us

localhost:8080/countries/us

Pretty print

{"code":"US","name":"United States"}

http://localhost:8080/countries/jp

localhost:8080/countries/jp

localhost:8080/countries/jp

Pretty print

{"code":"JP","name":"Japan"}

Thank You