Spring Rest

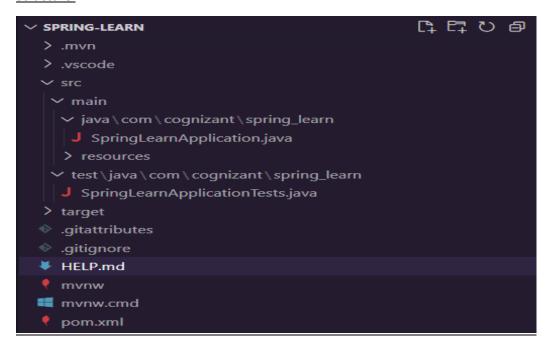
Create a Spring Web Project using Maven

Follow steps below to create a project:

- 1. Go to https://start.spring.io/
- 2. Change Group as "com.cognizant"
- 3. Change Artifact Id as "spring-learn"
- 4. Select Spring Boot DevTools and Spring Web
- 5. Create and download the project as zip
- 6. Extract the zip in root folder to Eclipse Workspace
- 7. Build the project using 'mvn clean package -Dhttp.proxyHost=proxy.cognizant.com Dhttp.proxyPort=6050 -Dhttps.proxyHost=proxy.cognizant.com -Dhttps.proxyPort=6050 Dhttp.proxyUser=123456' command in command line
- 8. Import the project in Eclipse "File > Import > Maven > Existing Maven Projects > Click Browse and select extracted folder > Finish"
- 9. Include logs to verify if main() method of SpringLearnApplication.
- 10. Run the SpringLearnApplication class.

Program:

Structure:



Pom.xml:

```
<?xml version="1.0" encoding="UTF-8"?>
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>
       <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
   <artifactId>spring-learn</artifactId>
   <version>0.0.1-SNAPSHOT
   <name>spring-learn</name>
   <description>Demo project for Spring Boot</description>
   <ur1/>
   censes>
   </licenses>
   <developers>
   </developers>
   <scm>
      <connection/>
       <developerConnection/>
       <tag/>
       <ur1/>
   properties>
       <java.version>21</java.version>
       <maven.compiler.source>21</maven.compiler.source>
       <maven.compiler.target>21</maven.compiler.target>
   </properties>
   <dependencies> Add Spring Boot Starters...
       <dependency>
          <groupId>org.springframework.boot</groupId>
           <artifactId>spring-boot-starter</artifactId>
       </dependency>
       <dependency>
          <groupId>org.springframework.boot</groupId>
          <artifactId>spring-boot-starter-test</artifactId>
          <scope>test</scope>
       </dependency>
   </dependencies>
   <build>
       <plugins>
          <plugin>
              <groupId>org.springframework.boot</groupId>
              <artifactId>spring-boot-maven-plugin</artifactId>
          </plugin>
       </plugins>
   </build>
```

SpringLearnApplication.java:

```
package com.cognizant.spring_learn;
import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication
public class SpringLearnApplication {

    Run | Debug
    public static void main(String[] args) {
        SpringApplication.run(primarySource:SpringLearnApplication.class, args);
    }
}
```

```
28-52-41.75 [mile] BFO or, springtnement, test context separal content content
```

Spring Core – Load Country from Spring Configuration XML

An airlines website is going to support booking on four countries. There will be a drop down on the home page of this website to select the respective country. It is also important to store the two-character ISO code of each country.

Code	Name
US	United States
DE	Germany
IN	India
JP	Japan

Above data has to be stored in spring configuration file. Write a program to read this configuration file and display the details.

country.xml

Country.java:

```
package com.cognizant.spring_learn;
import org.slf4j.Logger;
import org.slf4j.LoggerFactory;
public class Country {
    private static final Logger LOGGER = LoggerFactory.getLogger(clazz:Country.class);
    private String code;
    private String name;
    public Country() {
         LOGGER.debug(msg:"Inside Country Constructor.");
    public String getCode() {
        LOGGER.debug(msg:"Inside getCode()");
         return code;
    public void setCode(String code) {
   LOGGER.debug(msg:"Inside setCode()");
    public String getName() {
         LOGGER.debug(msg:"Inside getName()");
         return name;
    public void setName(String name) {
        LOGGER.debug(msg:"Inside setName()");
    @Override
    public String toString() {
    return "Country [code=" + code + ", name=" + name + "]";
```

SpringLearnApplication.java

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!!

IMPORTANT NOTE: Don't forget to include start and end log in the sayHello() method.

Try the URL http://localhost:8083/hello in both chrome browser and postman.

SME to explain the following aspects:

- In network tab of developer tools show the HTTP header details received
- In postman click on "Headers" tab to view the HTTP header details received

Program:

SpringLearnApplication.java:

```
package com.cognizant.spring_learn;
import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication
public class SpringLearnApplication {

    Run | Debug
    public static void main(String[] args) {
        SpringApplication.run(primarySource:SpringLearnApplication.class, args);
    }
}
```

HelloController.java:

```
package com.cognizant.spring_learn.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(clazz:HelloController.class);

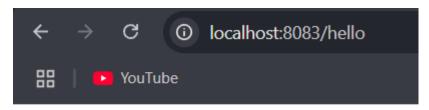
    @GetMapping("/hello")
    public String sayHello() {

        LOGGER.info(msg:"START - sayHello()");
        String response = "Hello World!!";
        LOGGER.info(msg:"END - sayHello()");
        return response;
    }
}
```

pom.xml:

```
<dependency>
     <groupId>org.springframework.boot</groupId>
     <artifactId>spring-boot-starter-web</artifactId>
</dependency>
```

Output:



Hello World!!

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"
```

SME to explain the following aspects:

- What happens in the controller method?
 - How the bean is converted into JSON reponse?
 - In network tab of developer tools show the HTTP header details received
 - In postman click on "Headers" tab to view the HTTP header details received

Program:

SpringLearnApplication.java:

CountryController.java:

```
package com.cognizant.spring_learn.controller;
import com.cognizant.spring_learn.model.Country;
import org.slf4j.Logger;
import org.slf4j.LoggerFactory;
import org.springframework.context.ApplicationContext;
import org.springframework.context.support.ClassPathXmlApplicationContext;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RestController;

@RestController
public class CountryController {
    private static final Logger LOGGER = LoggerFactory.getLogger(clazz:CountryController.class);
    @RequestMapping("/country")
    public country getCountryIndia() {
        LOGGER.info(msg:"START - getCountryIndia()");
        ApplicationContext context = new ClassPathXmlApplicationContext(configLocation:"country.xml");
        Country country = (country) context.getBean(name:"in");
        LOGGER.info(msg:"END - getCountryIndia()");
        return country;
    }
}
```

pom.xml:

```
<dependency>
     <groupId>org.springframework.boot</groupId>
     <artifactId>spring-boot-starter-web</artifactId>
</dependency>
```

Create a Spring Web Project using Maven

Follow steps below to create a project:

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- 9. Include logs to verify if main() method of SpringLearnApplication.
- 10. Run the SpringLearnApplication class.

Program:

HomeController.java

```
import org.springframework.stereotype.Controller;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.ui.Model;

@Controller
public class HomeController {

    @RequestMapping("/")
    public String home(Model model) {
        model.addAttribute("message", "Welcome to Spring MVC!");
        return "home";
    }
}
```

web.xml:

```
package com.example.controller;
import org.springframework.stereotype.Controller;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.ui.Model;

@Controller
public class HomeController {

    @RequestMapping("/")
    public String home(Model model) {
        model.addAttribute("message", "Welcome to Spring MVC!");
        return "home";
    }
}
```

dispactcher-servlet.xml

Home.jsp:

pom.xml:

```
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
   <modelVersion>4.0.0</modelVersion>
   <groupId>com.example</groupId>
   <artifactId>spring-web-demo</artifactId>
   <version>1.0-SNAPSHOT</version>
   <packaging>war</packaging>
   <name>Spring Web Demo</name>
       <!-- Spring Web MVC -->
          <groupId>org.springframework</groupId>
          <artifactId>spring-webmvc</artifactId>
          <version>5.3.32
       </dependency>
          <groupId>javax.servlet
          <artifactId>jstl</artifactId>
          <version>1.2</version>
       </dependency>
       <!-- Servlet API -->
          <groupId>javax.servlet
          <artifactId>javax.servlet-api</artifactId>
          <version>4.0.1
          <scope>provided</scope>
       </dependency>
   </dependencies>
   <build>
       <finalName>spring-web-demo</finalName>
   </build>
</project>
```

```
Sulful Scanning from projects...

| Intel Scanning from projects...
| Intel Scanning from central: https://repo.aaven.apache.org/naven/org/apache/naven/plugins/naven-var-plugin/3.4.4/naven-var-plugin-3.4.0.pom
| Intel Scanning from central: https://repo.aaven.apache.org/naven/org/spring-naven/spring-apach/asache/plugins/naven-var-plugin/3.4.4/naven-var-plugin-3.4.0.pom
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| Intel Scanning from central: https://repo.aaven.apache.org/naven/org/spring-framework/spring-apach/s.3.22/spring-apach-3.3.22/pom (2.0 kB at 63 kB/s)
| Intel Scanning from central: https://repo.aaven.apache.org/naven/org/spring-framework/spring-apach/s.3.22/spring-apach-3.3.22/pom (2.0 kB at 63 kB/s)
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```
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Commoding from central: https://repo.maven.apache.org/maven2/org/springframework/spring-expression/5.3.32/spring-expression.5.3.32.jar

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```

```
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Downloading from central: https://repo.maven.apache.org/maven2/org/junit/junit-bom/5.9.1/junit-bom-5.9
Downloaded from central: https://repo.maven.apache.org/maven2/org/junit/junit-bom/5.9.1/junit-bom-5.9.
Oownloading from central: https://repo.maven.apache.org/maven2/com/github/luben/zstd-jni/1.5.5-2/zstd-
Downloaded from central: https://repo.maven.apache.org/maven2/com/github/luben/zstd-jni/1.5.5-2/zstd-j
Ownloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-mapping/
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-mapping/3
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-archiver/3.6.0/m
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-archiver/3.6.0/ma
Ownloading from central: https://repo.maven.apache.org/maven2/<mark>org/codehaus/plexus/plexus-io/3.4.0/ple</mark>
ownloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-archiver/4.7
Ownloading from central: https://repo.maven.apache.org/maven2/org/apache/commons/commons-compress/1.2
Oownloading from central: https://repo.maven.apache.org/maven2/com/github/luben/zstd-jni/1.5.5-2/zstd-
Downloading from central: https://repo.maven.apache.org/maven2/commons-io/commons-io/2.13.0/commons-io
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-io/3.4.0/plex
Oownloading from central: https://repo.maven.apache.org/maven2/<mark>org/apache/maven/shared/maven-mapping/</mark>
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-mapping/3.
Oownloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-archiver/4.7
Downloaded from central: https://repo.maven.apache.org/maven2/commons-io/commons-io/2.13.0/commons-io-
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/commons/commons-compress/1.2
Downloaded from central: https://repo.maven.apache.org/maven2/com/github/luben/zstd-jni/1.5.5-2/zstd-j
[INFO] Packaging webapp
[INFO] Assembling webapp [spring-web-demo] in [E:\CTS\WEEK_04\spring-web-demo\target\spring-web-demo]
INFO] Processing war project
INFO] Copying webapp resources [E:\CTS\WEEK_04\spring-web-demo\src\main\webapp]
INFO] Building war: E:\CTS\WEEK 04\spring-web-demo\target\spring-web-demo.war
       --- install:3.1.2:install (default-install) @ spring-web-demo ---
INFO] Installing E:\CTS\WEEK_04\spring-web-demo\pom.xml to C:\Users\Abhinithaa\.m2\repository\com\exa
[INFO] Installing E:\CTS\WEEK_04\spring-web-demo\target\spring-web-demo.war to C:\Users\Abhinithaa\.m2
emo-1.0-SNAPSHOT.war
INFO] BUILD SUCCESS
INFO
INFO] Total time: 22.261 s
INFO] Finished at: 2025-07-08T19:11:56+05:30
 INFO]
INFO]
```