Creating a Hello World REST API with Java and Spring Boot

Estimated Time Needed: 30 mins

In this lab, you will create your first REST API `Hello World` application using the Spring Boot.

Learning objectives

After completing this lab, you will be able to:

- Create a simple web application using Spring Boot initializr
- Access the REST API endpoints of your application through the browser

Install Spring Initializr

Spring Initializr is a extension that helps developers quickly bootstrap Spring Boot applications by providing a simple interface to select project dependencies, build tools (Maven/Gradle), Java version, and other project metadata. It generates a project template with all the selected configurations and dependencies preconfigured, saving developers time in setting up the initial project structure and build configuration.

1. Click Extensions on IDE.

2. Now on search bar, type `Spring Initializr` and click `install`, as show below.

Make sure to click the Right extension.

3. Confirm if `Spring Initializr Plugin` is installed. The `unistall` button appears in place of `install`, as shown below.

Generate Spring Boot Template

Now we have installed `Spring Initializr Plugin`. Let's generate template using same.

1. Press `Ctrl + Shift + P` to open the **Command Palette**

2. Type `Spring Initializr` and select `Spring Initializr: Create a Maven Project..`

3. Follow the prompts to configure the project:

    1. Select Spring boot version: Choose `3.4.4`
    2. Language: Choose `Java`
    3. Group ID: Enter your package name `com.practice`
    4. Artifact ID: Enter name of project `helloworld`
    5. Package Type: select `Jar`
    6. Java Version: 21
    7. Dependecies : Search `Spring Web`, click to select it, then press Enter, and click `Generate into this folder`

4. Verify project generated in `Explorer: Projects`.

5. Build and generate the project to check. Then, navigate to the directory `/home/project/helloworld` using the Terminal.

```
cd /home/project/helloworld
```

Now, run the following Maven build command in the Terminal:

```
mvn clean install
```

You will see the `Build Success` message on terminal.

Creating Hello World Rest API

1. On your Terminal, Create a Java file with name `HelloWorldController.java` in
`/home/project/helloworld/src/main/java/com/practice/helloworld/HelloWorldController.java`.

   `touch /home/project/helloworld/src/main/java/com/practice/helloworld/HelloWorldController.java`

   Open **HelloWorldController.java** in IDE

2. Paste the following code in `HelloWorldController.java`:

   ```
   package com.practice.helloworld;
   import org.springframework.web.bind.annotation.GetMapping;
   import org.springframework.web.bind.annotation.RestController;
   @RestController
   public class HelloWorldController {
       @GetMapping("/")
       public String index() {
           return "Hello World!";
       }
   }
   // starts at default port 8080
   ```

3. Run the application using Maven using command `mvn spring-boot:run`.

```
mvn spring-boot:run
```

This will take a few seconds to run.

After that, you will see below output on terminal. App running on port 8080

6. To access the REST API endpoint through the browser, click the following button, which will open a new browser page with the string that is transferred back by the server application.

Hello World Application

Congratulations! You just created your first REST API with Java and Spring Boot.

Author(s)

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