**Create a Spring Web Project using Maven**

**Code:**

**Step 1:** Install Required Tools

🔹 1.1 Install Java Development Kit (JDK)

* Required: Java 17 or newer (for Spring Boot 3)
* [Download JDK 17](https://www.oracle.com/java/technologies/javase/jdk17-archive-downloads.html) or use OpenJDK via [Adoptium](https://adoptium.net/)
* After installation, check in terminal:

bash

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java -version

javac -version

🔹 1.2 Install Apache Maven

* [Download Maven](https://maven.apache.org/download.cgi)
* Set environment variable:
  + MAVEN\_HOME = path\_to\_maven
  + Add bin to your PATH
* Verify:

bash

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mvn -version

🔹 1.3 Install VS Code

* [Download VS Code](https://code.visualstudio.com/)

🔹 1.4 Install VS Code Extensions

Search and install from Extensions panel:

* Java Extension Pack (includes Maven, Debugger, IntelliSense)
* Spring Boot Extension Pack (includes Spring Boot tools)
* Language Support for Java(TM) by Red Hat
* Maven for Java

**Step 2:** Create Spring Boot Project Using Spring Initializr

Option 1: Use [Spring Initializr](https://start.spring.io/) (Easier)

1. Go to: <https://start.spring.io/>
2. Project: Maven
3. Language: Java
4. Spring Boot: 3.2.x
5. Group: com.example
6. Artifact: demo
7. Dependencies:
   * Spring Web
   * (Optional: Spring Boot DevTools)
8. Click Generate
9. Extract ZIP and open in VS Code.

Option 2: Use Spring Boot Extension in VS Code

1. Press Ctrl+Shift+P → type: Spring Initializr: Generate
2. Select options (same as above)
3. Choose dependencies
4. Choose folder to save
5. VS Code will open the project

**Step 3:** Project Structure

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demo

├── src

│ └── main

│ ├── java

│ │ └── com.example.demo

│ │ └── DemoApplication.java

│ └── resources

│ ├── application.properties

├── pom.xml

**Step 4:** Create REST Controller

🔹 DemoController.java

Create a new Java file:  
src/main/java/com/example/demo/controller/DemoController.java

java

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package com.example.demo.controller;

import org.springframework.web.bind.annotation.\*;

@RestController

@RequestMapping("/api")

public class DemoController {

@GetMapping("/hello")

public String sayHello() {

return "Hello from Spring Boot 3!";

}

@GetMapping("/greet/{name}")

public String greetUser(@PathVariable String name) {

return "Hello, " + name + "!";

}}

**Output:**





