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# Creating a Simple Spring Boot App

1. Creating a Spring Boot app in IntelliJ
2. Understanding the application

# 1. Creating a Spring Boot App in IntelliJ

- Overview of IntelliJ
- Creating a Spring Boot project
- Specifying project dependencies

# Overview of IntelliJ

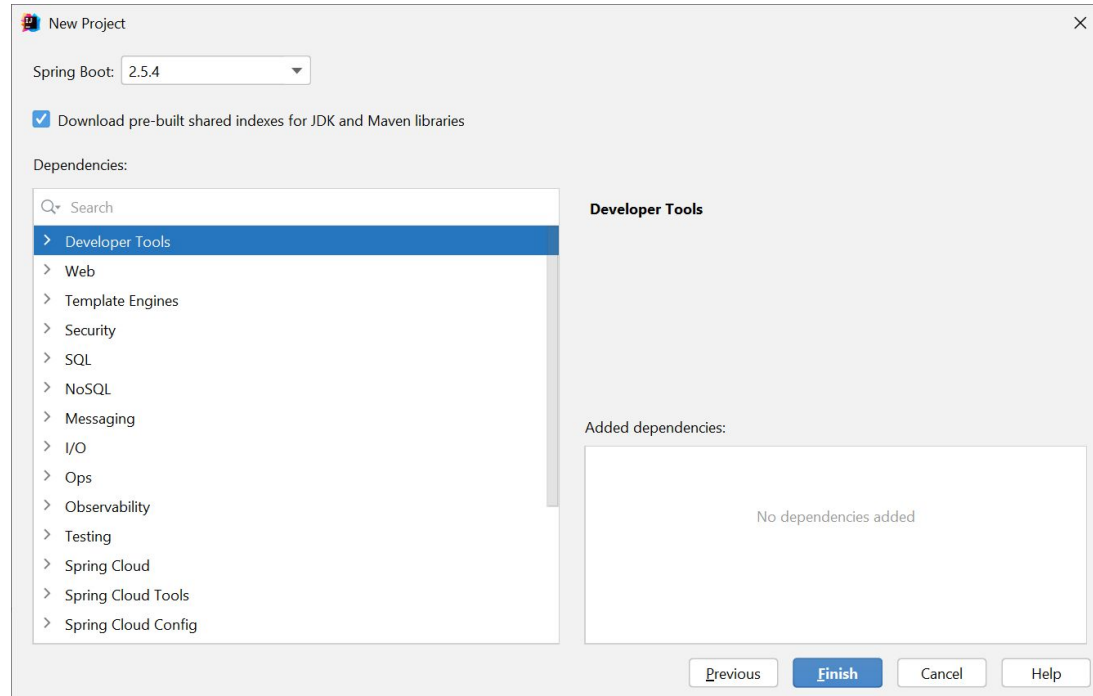
- IntelliJ IDEA Ultimate has excellent support for Spring
  - Spring Boot and Spring Framework
- IntelliJ Java dependencies:
  - JDK (e.g. JDK 11)
  - Set `JAVA_HOME` to the JDK folder
  - Set `PATH` to include the JDK binary folder

# Creating a Spring Boot Project

- Start IntelliJ, click New Project, and select Spring Initializr
- Specify project info as follows:
  - Enter a suitable project name and location
  - Language - Java
  - Enter a suitable group ID, artifact ID, and package name
  - Project SDK - Java 11
  - Java version - 11
  - Packaging - JAR
  - Then click Next

# Specifying Project Dependencies

- In the next window you can add dependencies to your project
  - We don't need any dependencies yet, so just click Finish

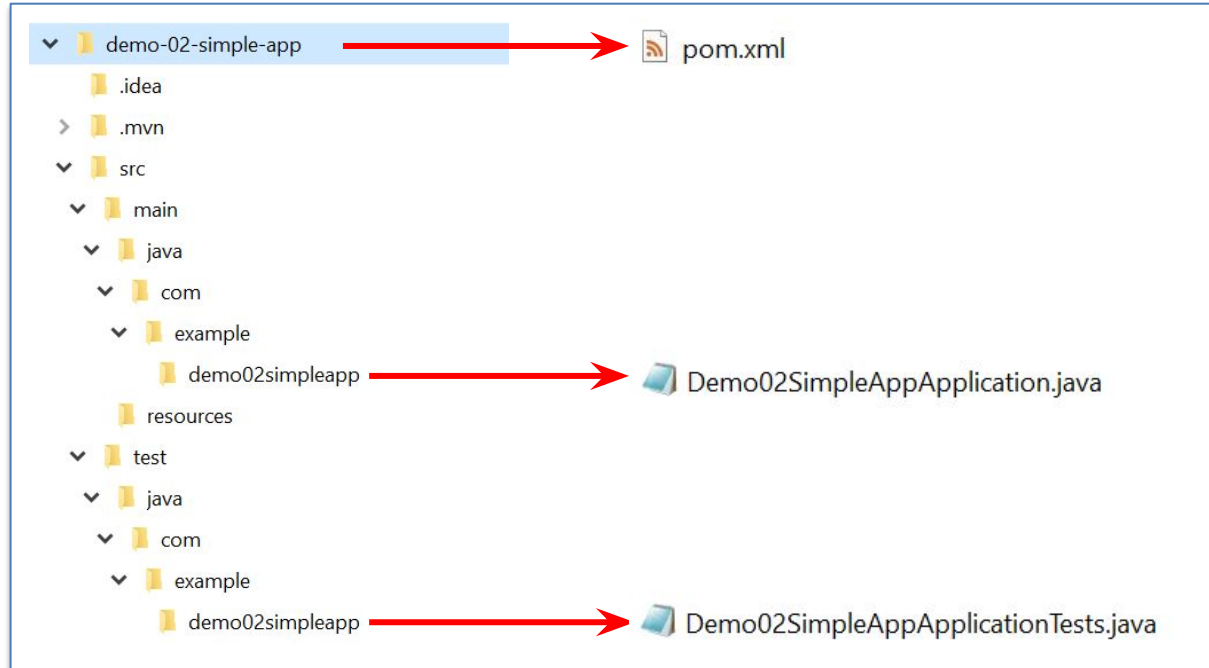


## 2. Understanding the Application

- Understanding the application structure
- Understanding the Maven POM file
- Understanding the application code
- Running the application
- Viewing the application output

# Understanding the Application Structure

- The generated application is a regular Maven project:



# Understanding the Maven POM File

- Here are the relevant sections in the Maven POM file:

```
<project ... >
  ...
  <parent>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-parent</artifactId>
    <version>2.5.4</version>
    <relativePath/>
  </parent>

  <dependencies>
    <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>
  ...
```

Parent POM

Spring Boot dependency

Spring Boot test dependency

pom.xml



# Understanding the Application Code

- Here's the generated application code:

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

@SpringBootApplication
public class DemoApplication {

    public static void main(String[] args) {
        SpringApplication.run(Demo02SimpleAppApplication.class, args);
    }

}
```

Demo02SimpleAppApplication.java

- @SpringBootApplication is equivalent to:
  - @Configuration
  - @EnableAutoConfiguration
  - @ComponentScan

# Running the Application

- You can build/run the app via the `mvn` command in the project root directory as follows:

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

- If you don't have Maven installed separately on your machine, you can run the following command instead:

```
mvnw spring-boot:run
```

- It's also possible to run the application directly in IntelliJ
  - Right-click in the main class, and click Run

# Viewing the Application Output

- This is the application output
  - Displays a "Spring Boot" banner
  - The app terminates immediately, because it's so simple 😊

```
Console Actuator
```

```
"C:\Program Files\Java\jdk-11.0.9\bin\java.exe" ...  
  
    .   ____          _            __ _ _  
   / \  /\__/\      _(__)___  /(____)\\  
  (/ )\___ \| |__|__|(____)\/ ___(____)\_  
     \//_/_ \|___/[_____]   /___/\___)_/  
      \___) \___|\___|[   ]_|__|_[___]  
=====|_|=====|___/=/_./._/_  
:: Spring Boot ::                (v2.5.4)  
  
2021-09-15 13:25:30.943 INFO 1976 --- [main] c.e.d.Demo02SimpleAppApplication : Starting Demo02SimpleAppApplication using Java 11.0.9 on Andy0-Laptop with PID 1976  
2021-09-15 13:25:30.945 INFO 1976 --- [main] c.e.d.Demo02SimpleAppApplication : No active profile set, falling back to default profiles: default  
2021-09-15 13:25:31.477 INFO 1976 --- [main] c.e.d.Demo02SimpleAppApplication : Started Demo02SimpleAppApplication in 0.915 seconds (JVM running for 2.297)  
  
Process finished with exit code 0
```

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# Summary

- Creating a Spring Boot app in IntelliJ
- Understanding the application