

How to Run Your First Spring Boot Application in Spring Tool Suite?

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Spring Tool Suite (STS) is a Java IDE tailored for developing Spring-based enterprise applications. It is easier, faster, and more convenient. Most importantly, it is based on Eclipse IDE. STS is free, open-source, and powered by VMware.

Spring Tools 4 is the next generation of Spring tooling for your favorite coding environment. Largely rebuilt from scratch, it provides world-class support for developing Spring-based enterprise applications, whether you prefer Eclipse, Visual Studio Code, or Theia IDE.

In this article, we will discuss how to run your first Spring Boot application in STS.

Prerequisite: Download and install Spring Tool Suite (Spring Tools 4 for Eclipse) IDE in your system. You may refer to this article: [How to Download and Install Spring Tool Suite \(Spring Tools 4 for Eclipse\) IDE?](#)

Procedure

1. Create a Spring Boot project in Spring Tool Suite
2. Import the Project into STS IDE
3. An entry file named Application.java will be created for STS
4. Run the application on the server.

Step 1: Create Spring Boot Project in Spring Tool Suite

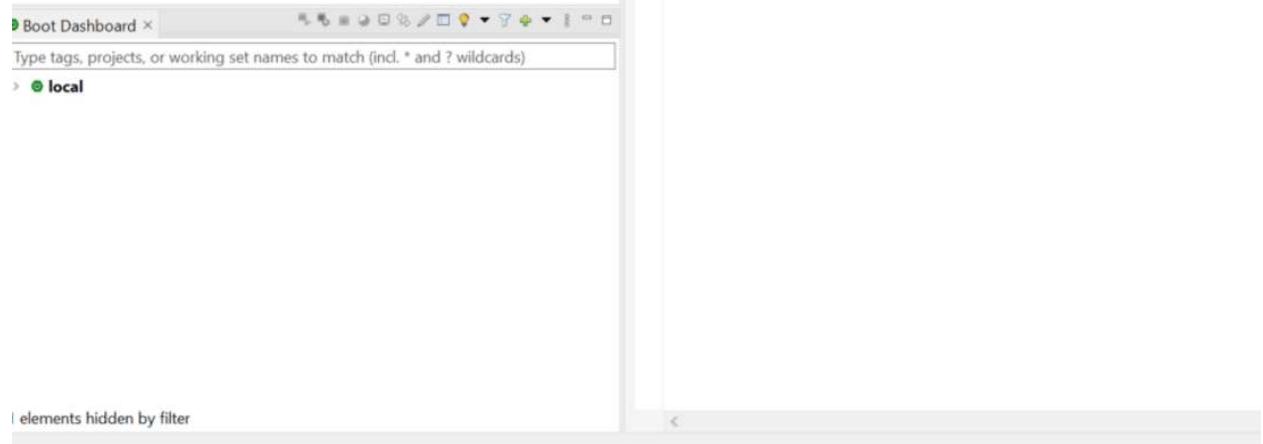
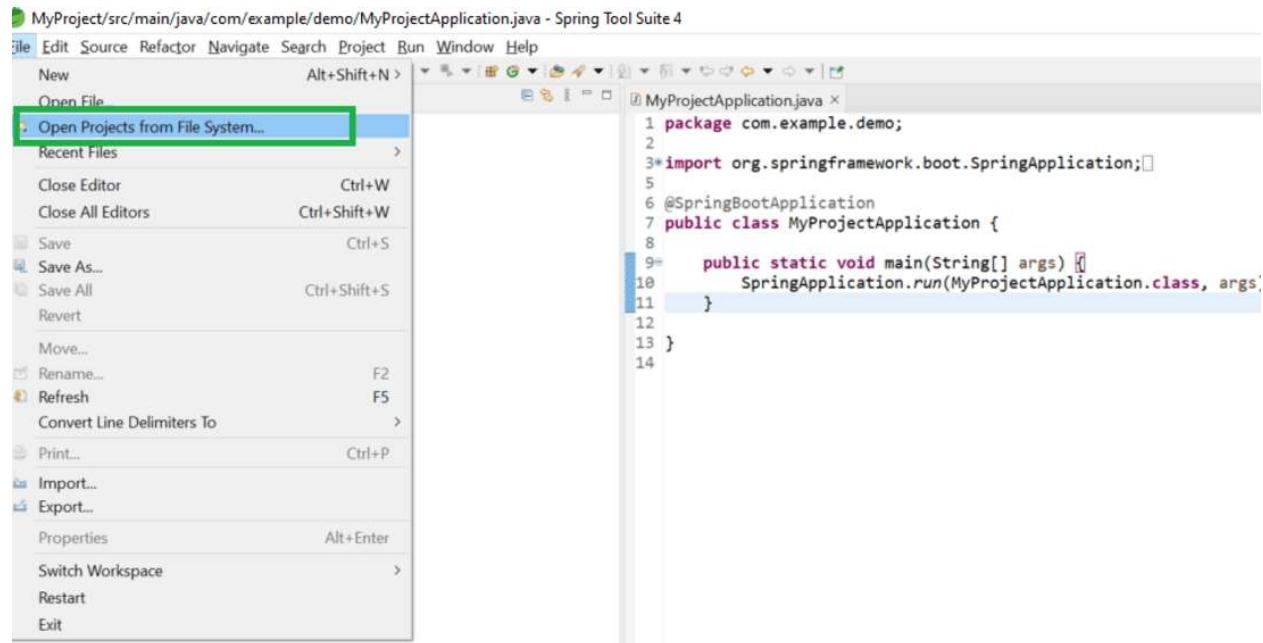
You may refer to this article, [How to Create and Setup Spring Boot Project in Spring Tool Suite](#), and create your first Spring Boot Application.

Alternatively, you can use [Spring Initializr](#) to create your project and then import it into your STS IDE.

Step 2: Import the Project into Your STS IDE

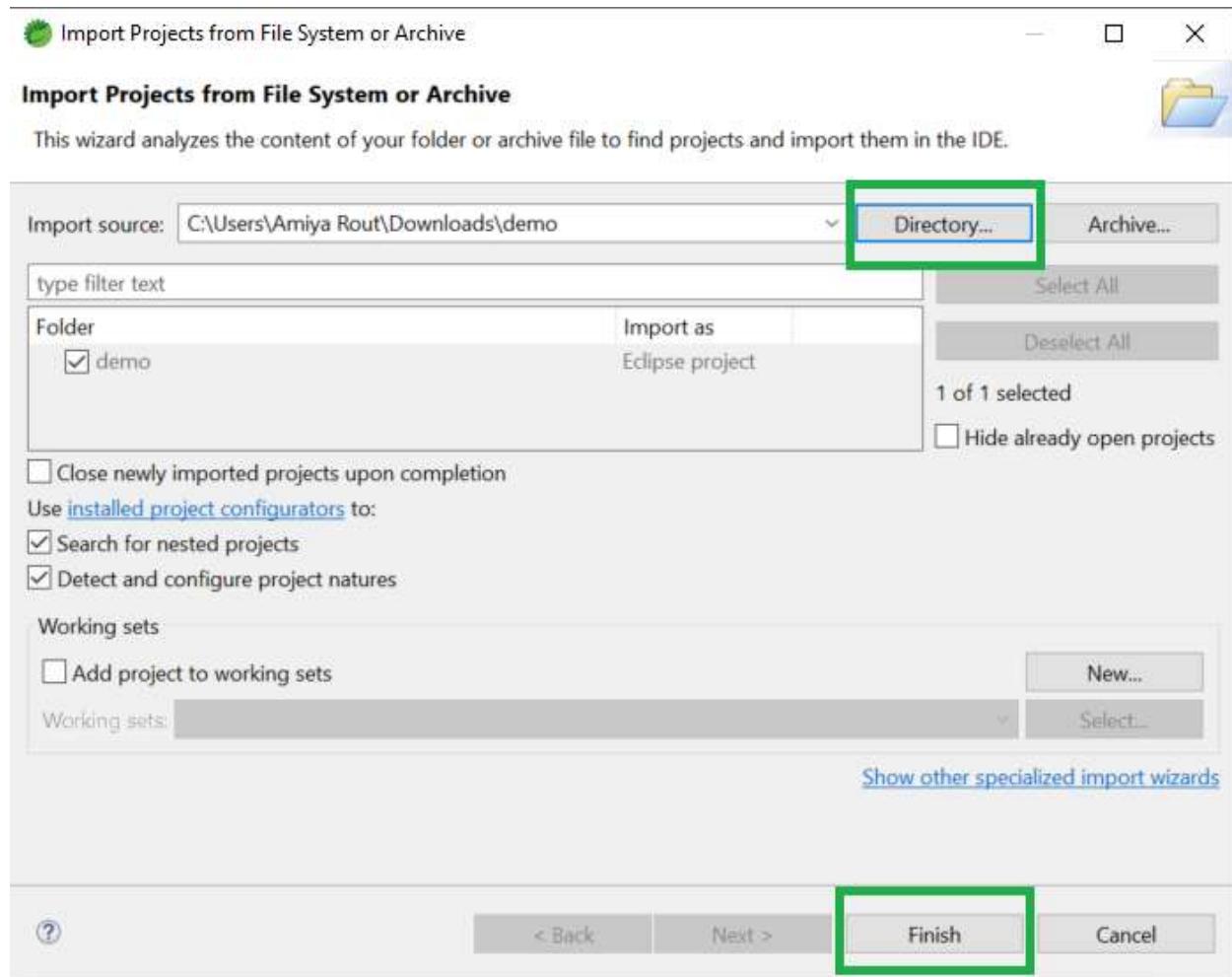
2.1: Open the Project in STS

Go to your **STS IDE > File > Open Project from File System** as shown in the below image.



2.2: Select Your Project Directory

A pop-up window will occur like the following. Here you have to choose the directory that has been generated while creating the spring boot project in Spring Initializr. And then click on the Finish button.



Step 3: Application.java

After successfully creating or importing the spring boot project a file name Application.java (here, DemoApplication) will be created automatically and this is your entry point. This file serves as the main method of your Spring Boot application.

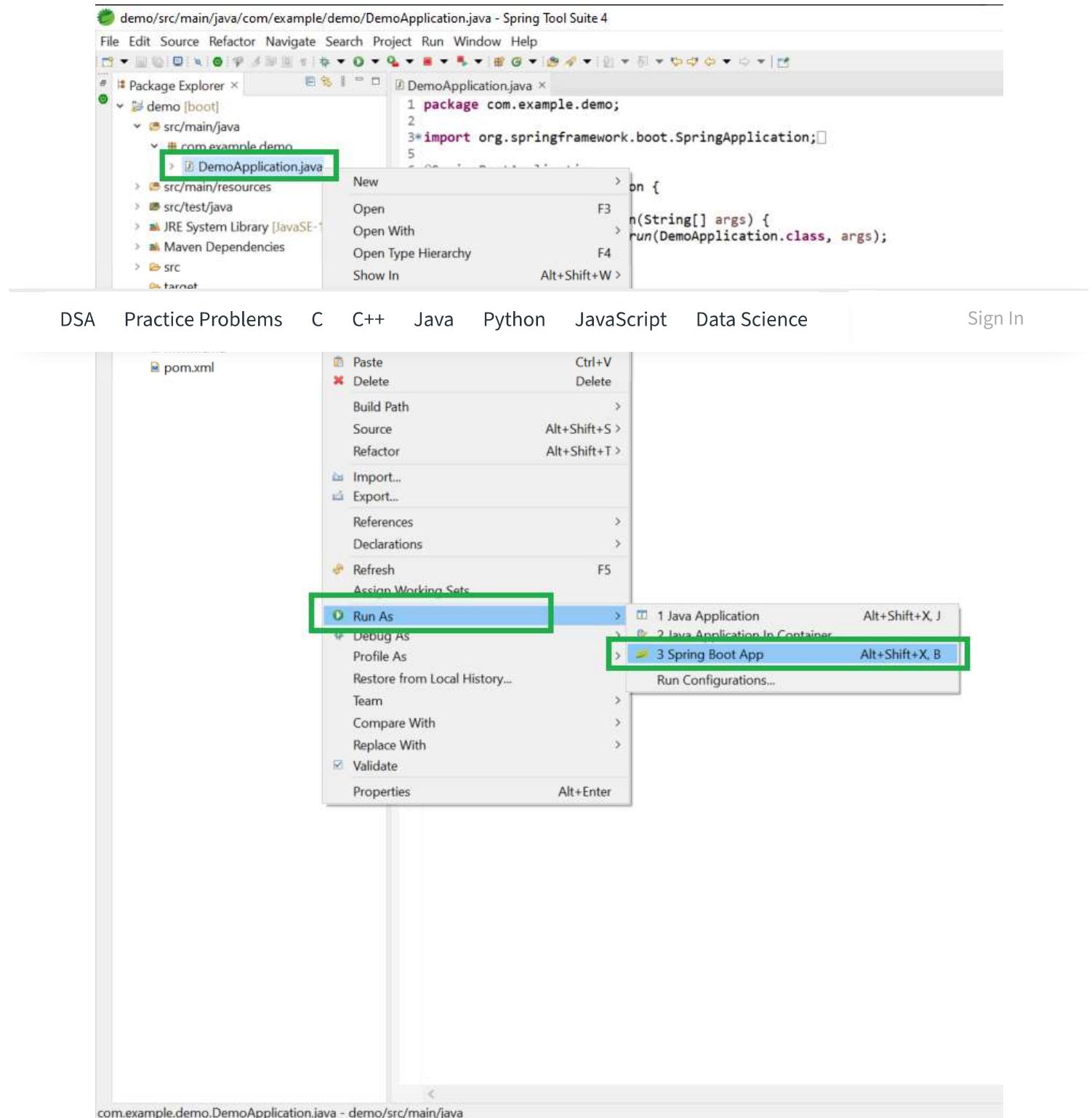


```
DemoApplication.java
1 package com.example.demo;
2
3 import org.springframework.boot.SpringApplication;
4 import org.springframework.boot.autoconfigure.SpringBootApplication;
5
6 @SpringBootApplication
7 public class DemoApplication {
8
9     public static void main(String[] args) {
10         SpringApplication.run(DemoApplication.class, args);
11     }
12 }
13
14 }
```

Step 4: Run the Spring Boot Application

4.1: Run the Application in STS

In order to run this application now, Right-click on the **DemoApplication.java** > Run As > Spring Boot App as shown in the below image.



4.2: Console Output:

After successfully running the application you can see the console where the Tomcat server starts on default port number 8080 as shown in the below image.

```

    package com.example.demo;
    import org.springframework.boot.SpringApplication;
    import org.springframework.boot.autoconfigure.SpringBootApplication;
    @SpringBootApplication
    public class DemoApplication {
        public static void main(String[] args) {
            SpringApplication.run(DemoApplication.class, args);
        }
    }
  
```

Console Output:

```

2021-11-15 20:07:14.489 INFO 16416 --- [           main] com.example.demo.DemoApplication      : Starting DemoApplication using Java 16.0.2 on LAPTOP-FT9V6MWP with PID 16416 (C:\Users\Amiya Rout\Downloads\demo\target\classes)
2021-11-15 20:07:14.492 INFO 16416 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port(s): 8080 (http)
2021-11-15 20:07:15.388 INFO 16416 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer : Starting service [Tomcat]
2021-11-15 20:07:15.394 INFO 16416 --- [           main] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2021-11-15 20:07:15.489 INFO 16416 --- [           main] o.a.c.c.C.[localhost].[/]           : Initializing Spring embedded WebApplicationContext
2021-11-15 20:07:15.493 INFO 16416 --- [           main] o.s.web.context.ContextLoader      : Root WebApplicationContext: initialization completed in 958 ms
2021-11-15 20:07:15.692 INFO 16416 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer : Started Tomcat on port(s): 8080 (http) with context path ''
2021-11-15 20:07:15.692 INFO 16416 --- [           main] com.example.demo.DemoApplication      : Started DemoApplication in 1.931 seconds (JVM running for 3.603)
  
```

Now geeks you must be wondering about what if we do not want it to be run on the default port number that is the default port of the Tomcat server is 8080. We can change the port number in the application.properties file by using the following line of code as follows:

server.port=8989

A. Now re-run the application again and you can see Your Tomcat server started on the port that you have given like the below image.

application.properties content:

```

server.port=8989
  
```

Console Output:

```

2021-11-15 20:37:46.897 INFO 636 --- [           main] com.example.demo.DemoApplication      : Starting DemoApplication using Java 16.0.3 on LAPTOP-FT9V6MWP with PID 636 (C:\Users\Amiya Rout\Downloads\demo\target\classes)
2021-11-15 20:37:46.898 INFO 636 --- [           main] com.example.demo.DemoApplication      : No active profile set, falling back to default profiles: default
2021-11-15 20:37:50.591 INFO 636 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port(s): 8989 (http)
2021-11-15 20:37:50.599 INFO 636 --- [           main] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2021-11-15 20:37:50.599 INFO 636 --- [           main] org.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/9.0.54]
2021-11-15 20:37:50.601 INFO 636 --- [           main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 71ms
2021-11-15 20:37:50.671 INFO 636 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port(s): 8989 (http) with context path ''
2021-11-15 20:37:51.053 INFO 636 --- [           main] com.example.demo.DemoApplication      : Started DemoApplication in 1.455 seconds (JVM running for 2.6)
  
```

B. If you are encountered with the following error then it is highly recommended that you should change your port number.

```

2021-11-15 20:44:07.796 INFO 9564 --- [main] com.example.demo.DemoApplication : Starting DemoApplication using Java 16.0.2 on LAPTOP-FT9V6MV with PID 9564 (C:\Users\Amiya Rout\Downloads\demo\target\classes)
2021-11-15 20:44:07.798 INFO 9564 --- [main] com.example.demo.DemoApplication : No active profile set, falling back to default profiles: default
2021-11-15 20:44:08.461 INFO 9564 --- [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port(s): 8989 (http)
2021-11-15 20:44:08.461 INFO 9564 --- [main] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2021-11-15 20:44:08.469 INFO 9564 --- [main] o.apache.catalina.core.StandardEngine : Starting Servlet Engine: [Apache Tomcat/9.0.54]
2021-11-15 20:44:08.469 INFO 9564 --- [main] o.a.c.c.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationContext
2021-11-15 20:44:08.551 INFO 9564 --- [main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 696 ms
2021-11-15 20:44:08.811 WARN 9564 --- [main] ConfigServletWebServerApplicationContext : Exception encountered during context initialization - cancelling refresh attempt: org.springframework.context.ApplicationContextException: Error starting ApplicationContext. To display the conditions report re-run your application with 'debug' enabled.
2021-11-15 20:44:08.832 INFO 9564 --- [main] o.s.b.d.LoggingFailureAnalysisReporter : *****APPLICATION FAILED TO START*****
*****Description:*****
Web server failed to start. Port 8989 was already in use.
*****Action:*****
Identify and stop the process that's listening on port 8989 or configure this application to listen on another port.

```

Note: You can access the output screen in the URL: <http://localhost:8080/>.

Note that at last provide your port number.

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