Lesson 01 Demo 01

Create Spring Boot Project with Spring Initializr

Objective: To create a Spring Boot application using the Spring Initializr to view the application created

Tools Required: Eclipse IDE and Visual Studio Code

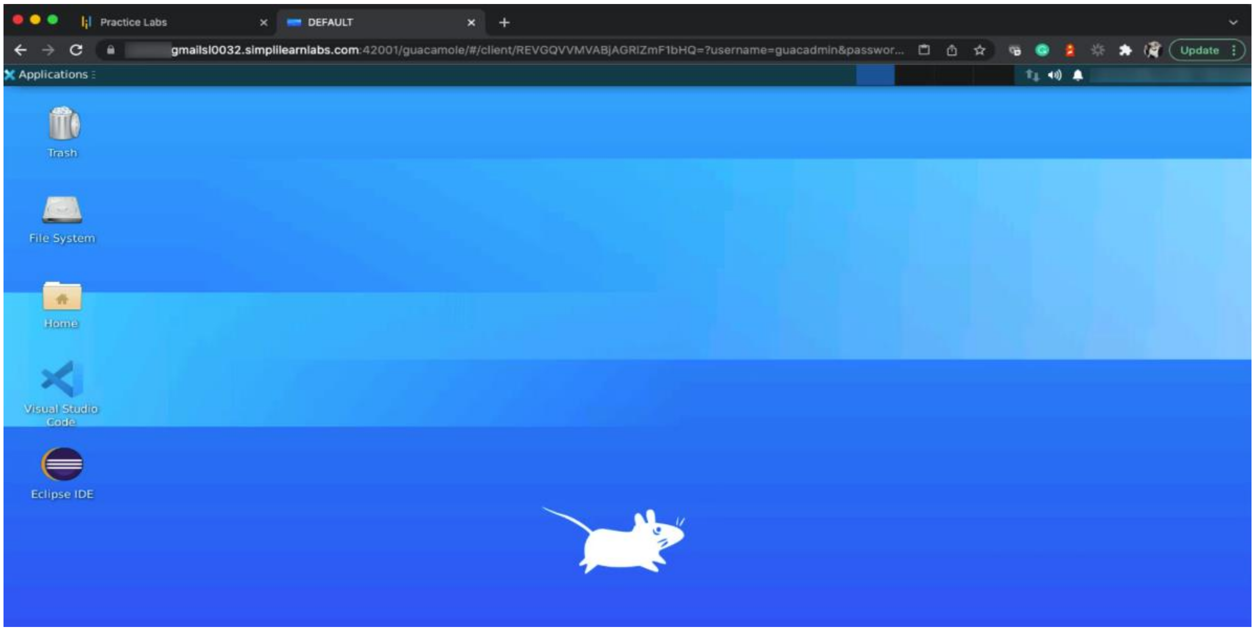
Prerequisites: None

Steps to be followed:

1. Configuring the project from the Spring Initializr website
2. Extracting the downloaded project
3. Building and running the project

Step 1: Configuring the project from the Spring Initializer website

1.1 Open **Eclipse IDE**


Practice Labs
DEFAULT
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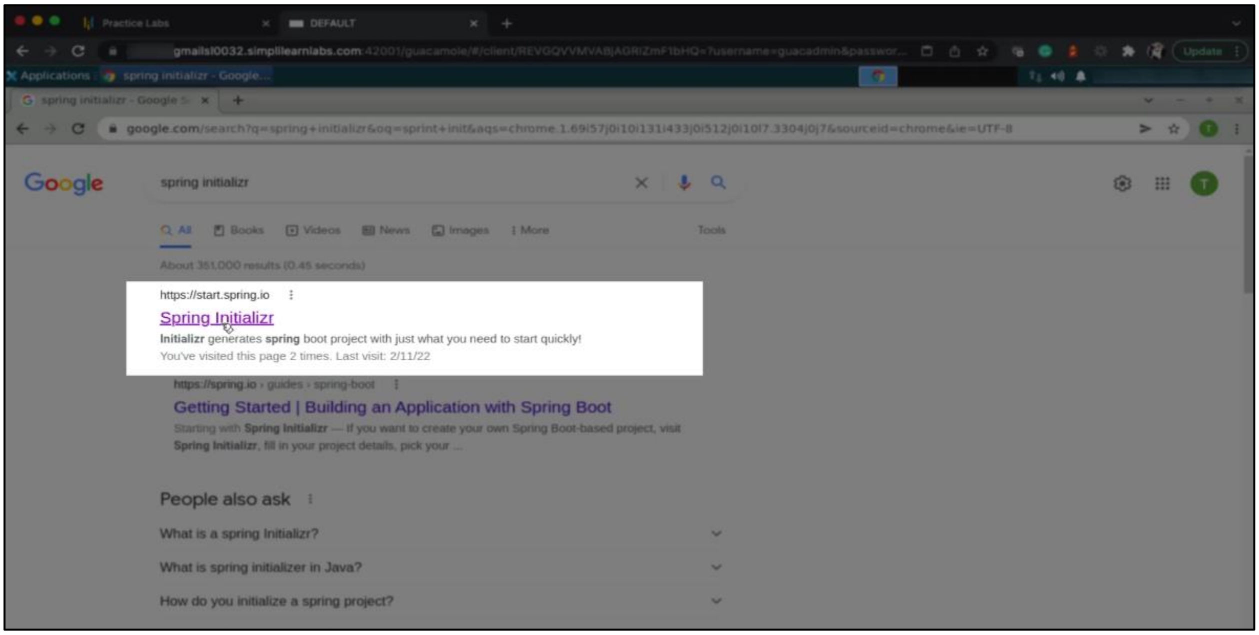
Update
Applications
Trash
File System
Home
Visual Studio Code
Eclipse IDE

1.2 Search for **Spring Initializr** in the browser and **select** the first official link to generate the Spring Boot project with the configuration



google.com/search?q=spring+initializr&oq=sprint+init&aqs=chrome.1.69i57j0i10l131i433j0i512j0i10l7.3304j0j7&sourceid=chrome&ie=UTF-8

spring initializr

About 351,000 results (0.45 seconds)

https://start.spring.io

Spring Initializr

Initializr generates **spring** boot project with just what you need to start quickly!

You've visited this page 2 times. Last visit: 2/11/22

https://spring.io › guides › spring-boot

Getting Started | Building an Application with Spring Boot

Starting with **Spring Initializr** — If you want to create your own Spring Boot-based project, visit **Spring Initializr**, fill in your project details, pick your ...

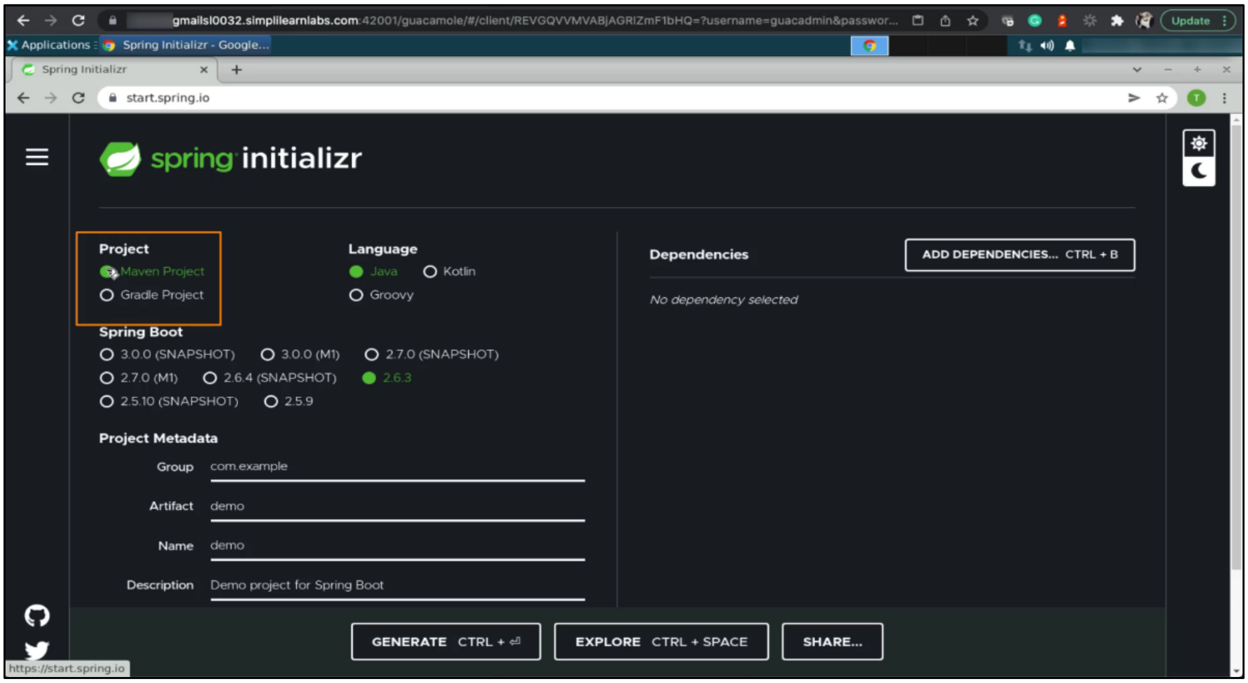
People also ask

What is a spring Initializr?

What is spring initializer in Java?

How do you initialize a spring project?

1.3 Select the build tool for the project as **Maven Project**



start.spring.io

spring initializr

Project

● Maven Project

○ Gradle Project

Language

● Java ○ Kotlin

○ Groovy

Spring Boot

○ 3.0.0 (SNAPSHOT) ○ 3.0.0 (M1) ○ 2.7.0 (SNAPSHOT)

○ 2.7.0 (M1) ○ 2.6.4 (SNAPSHOT) ● 2.6.3

○ 2.5.10 (SNAPSHOT) ○ 2.5.9

Project Metadata

Group com.example

Artifact demo

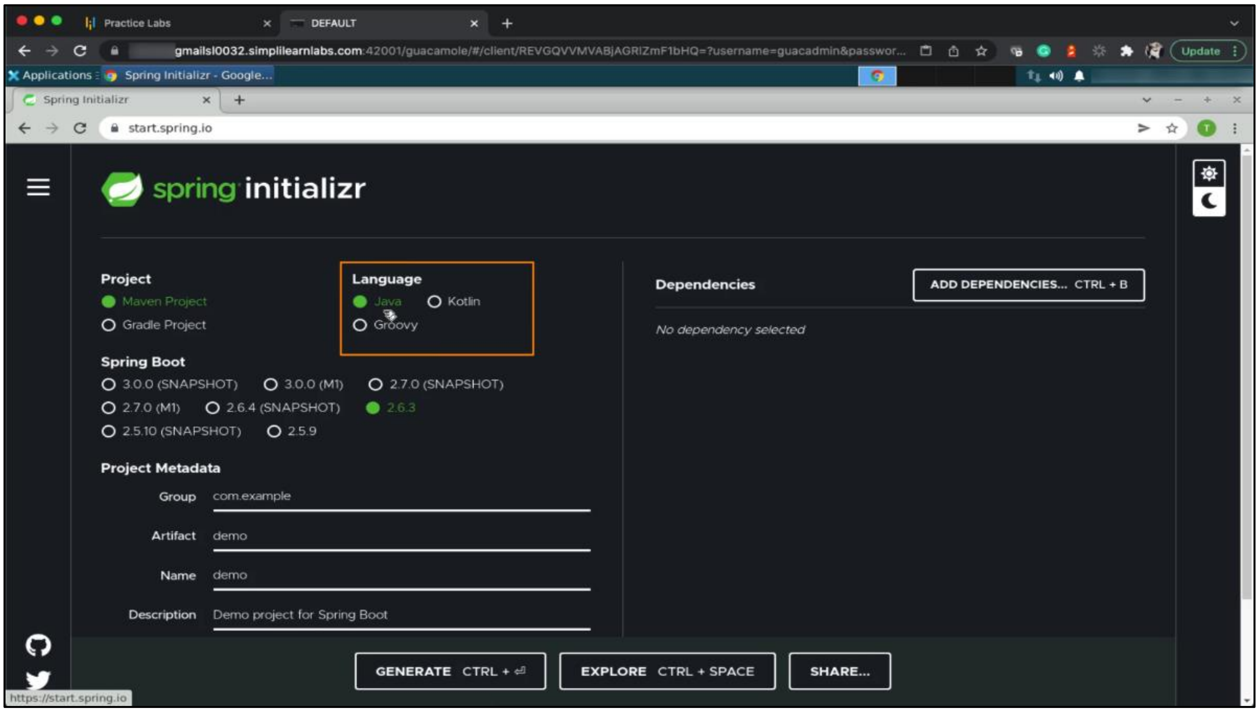
Name demo

Description Demo project for Spring Boot

Dependencies

No dependency selected

1.4 Select **Java** for the language preference. The optional languages provided are Kotin and Groovy, so if you wish to work with Kotin or Groovy you can use them.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Update
Applications
Spring Initializr - Google...
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spring initializr
ADD DEPENDENCIES... CTRL + B
GENERATE CTRL + ⏎
EXPLORE CTRL + SPACE
SHARE...
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Project
● Maven Project
○ Gradle Project

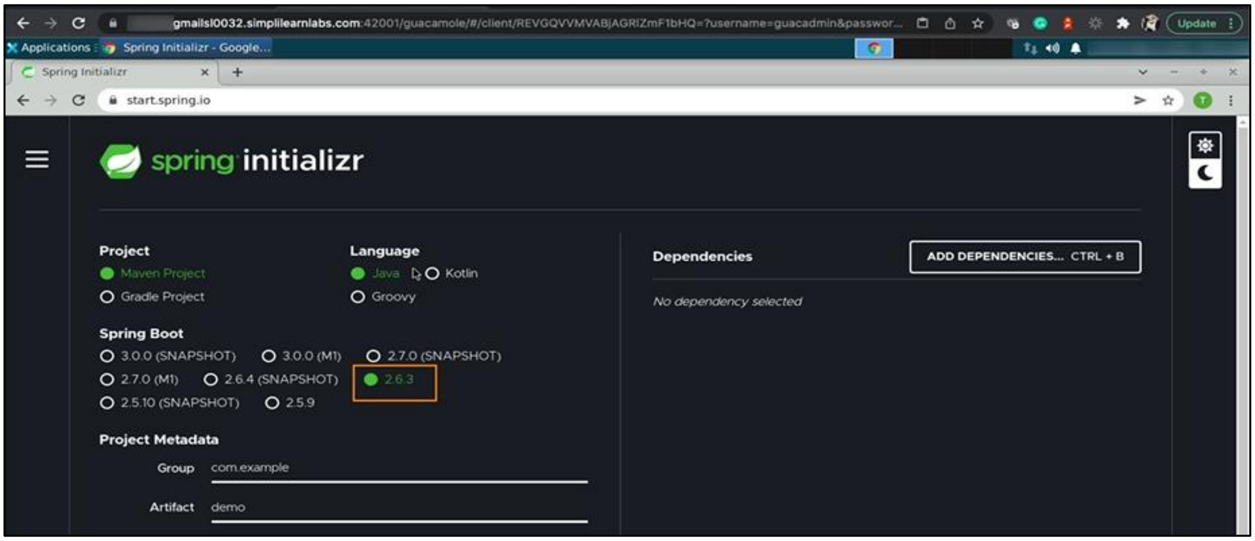
Language
● Java ○ Kotlin
○ Groovy

Spring Boot
○ 3.0.0 (SNAPSHOT) ○ 3.0.0 (M1) ○ 2.7.0 (SNAPSHOT)
○ 2.7.0 (M1) ○ 2.6.4 (SNAPSHOT) ● 2.6.3
○ 2.5.10 (SNAPSHOT) ○ 2.5.9

Project Metadata
Group com.example
Artifact demo
Name demo
Description Demo project for Spring Boot

Dependencies
No dependency selected

1.5 Next, select a **stable version** of Spring Boot that you want to use. **2.6.3** is selected by default as one of the stable versions.


gmailsl0032.simplilearnlabs.com:42001/guacamole/#/client/REVGQVVMVABJAGRIZmF1bHQ=?username=guacadmin&passwor...
Update
Applications
Spring Initializr - Google...
Spring Initializr
start.spring.io
spring initializr
ADD DEPENDENCIES... CTRL + B

Project
● Maven Project
○ Gradle Project

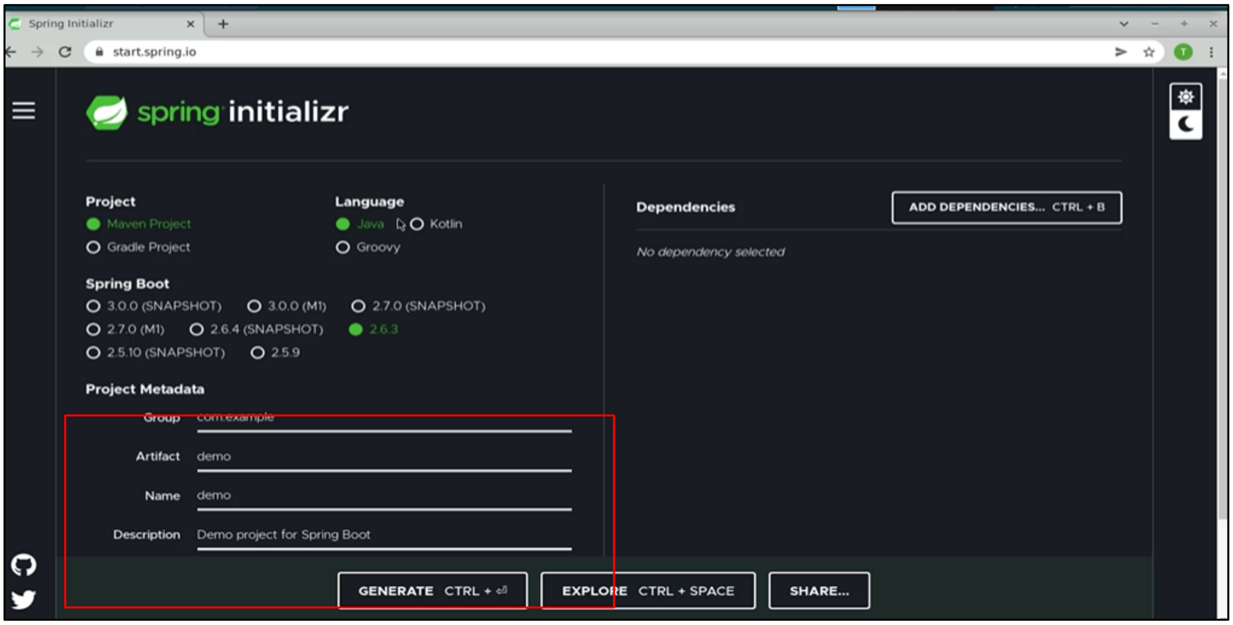
Language
● Java ○ Kotlin
○ Groovy

Spring Boot
○ 3.0.0 (SNAPSHOT) ○ 3.0.0 (M1) ○ 2.7.0 (SNAPSHOT)
○ 2.7.0 (M1) ○ 2.6.4 (SNAPSHOT) ● 2.6.3
○ 2.5.10 (SNAPSHOT) ○ 2.5.9

Project Metadata
Group com.example
Artifact demo

Dependencies
No dependency selected

1.6 Next, fill up Project Metadata. Name the **Group** and **Artifact ID** of the project



Project
● Maven Project
○ Gradle Project

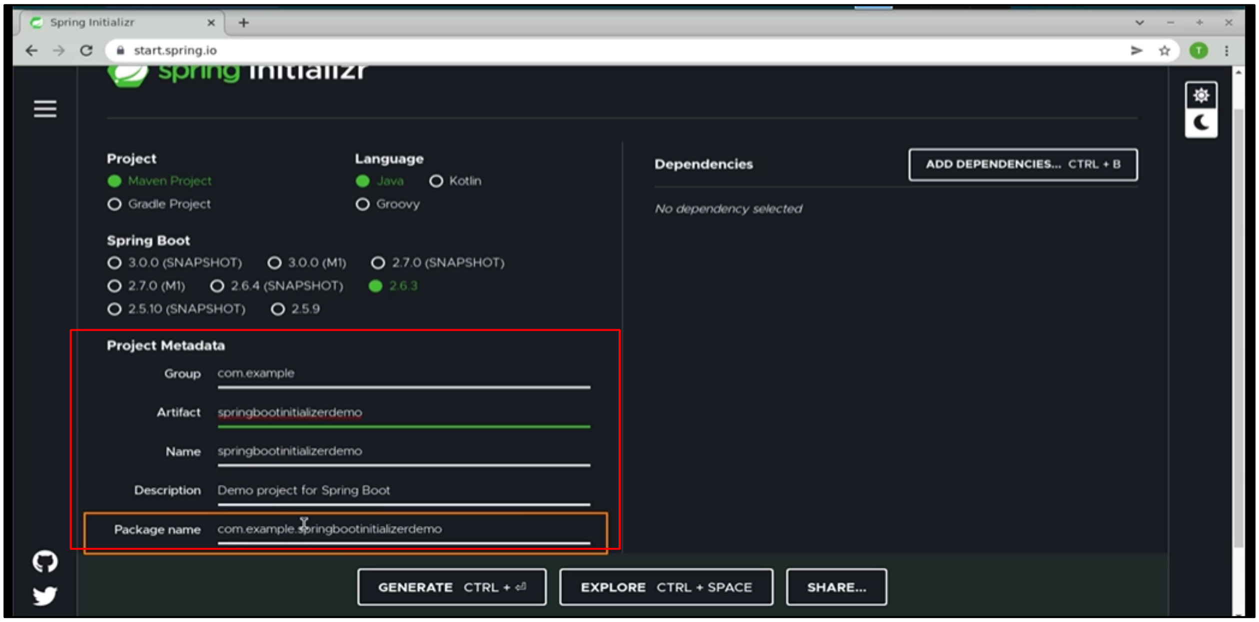
Language
● Java
○ Kotlin
○ Groovy

Spring Boot
○ 3.0.0 (SNAPSHOT) ○ 3.0.0 (M1) ○ 2.7.0 (SNAPSHOT)
○ 2.7.0 (M1) ○ 2.6.4 (SNAPSHOT) ● 2.6.3
○ 2.5.10 (SNAPSHOT) ○ 2.5.9

Project Metadata
Group: com.example
Artifact: demo
Name: demo
Description: Demo project for Spring Boot

Dependencies
No dependency selected

1.7 The **Group** is the company's domain name in reverse order and **Artifact ID** is the project name; for now, name it **springbootinitializerdemo**



Project
● Maven Project
○ Gradle Project

Language
● Java
○ Kotlin
○ Groovy

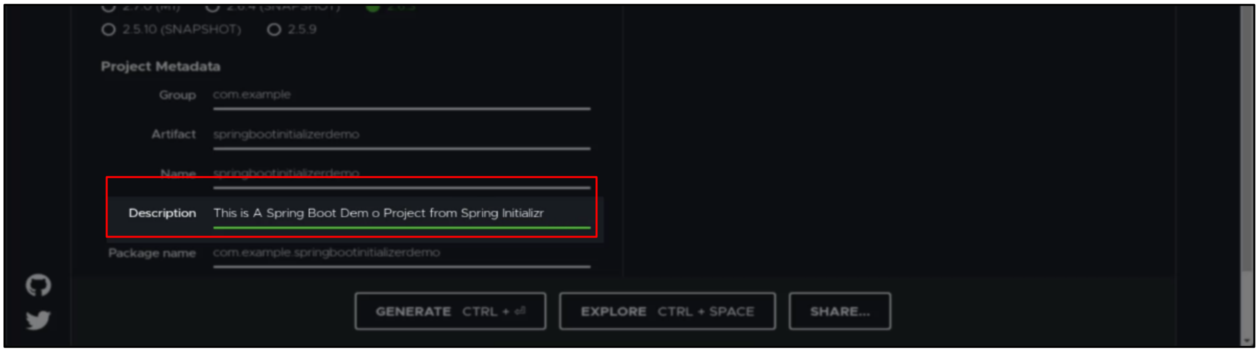
Spring Boot
○ 3.0.0 (SNAPSHOT) ○ 3.0.0 (M1) ○ 2.7.0 (SNAPSHOT)
○ 2.7.0 (M1) ○ 2.6.4 (SNAPSHOT) ● 2.6.3
○ 2.5.10 (SNAPSHOT) ○ 2.5.9

Project Metadata
Group: com.example
Artifact: springbootinitializerdemo
Name: springbootinitializerdemo
Description: Demo project for Spring Boot
Package name: com.example.springbootinitializerdemo

Dependencies
No dependency selected

Note: Whatever artifact name you choose will automatically become your application name, and the package name will be configured accordingly.

1.8 Write the **Description** as **This is a Spring Boot Demo Project from Spring Initializer**



○ 2.5.10 (SNAPSHOT) ○ 2.5.9

Project Metadata

Group: com.example

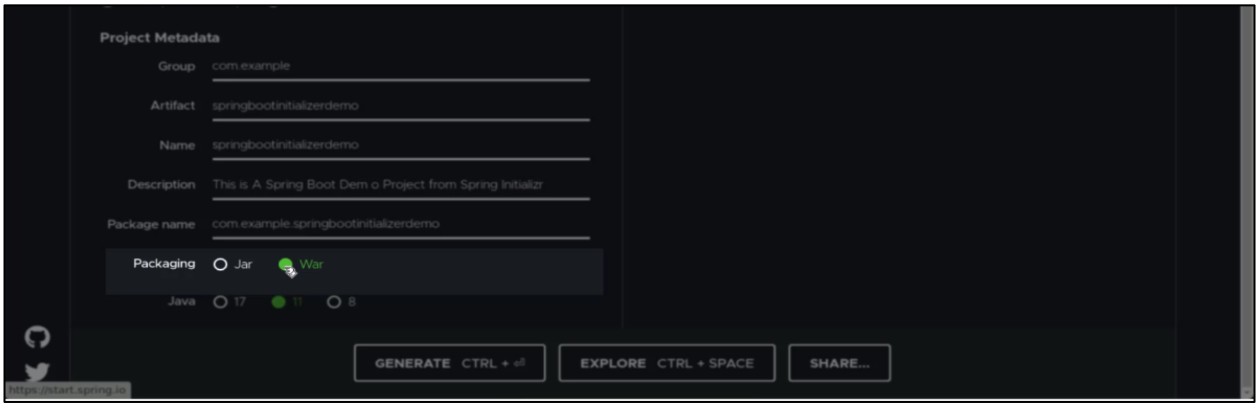
Artifact: springbootinitializerdemo

Name: springbootinitializerdemo

Description: This is A Spring Boot Dem o Project from Spring Initializr

Package name: com.example.springbootinitializerdemo

1.9 Now, the **Packaging** of your project will be a jar or a war. If you are developing a web application, you need to select **War**.



Project Metadata

Group: com.example

Artifact: springbootinitializerdemo

Name: springbootinitializerdemo

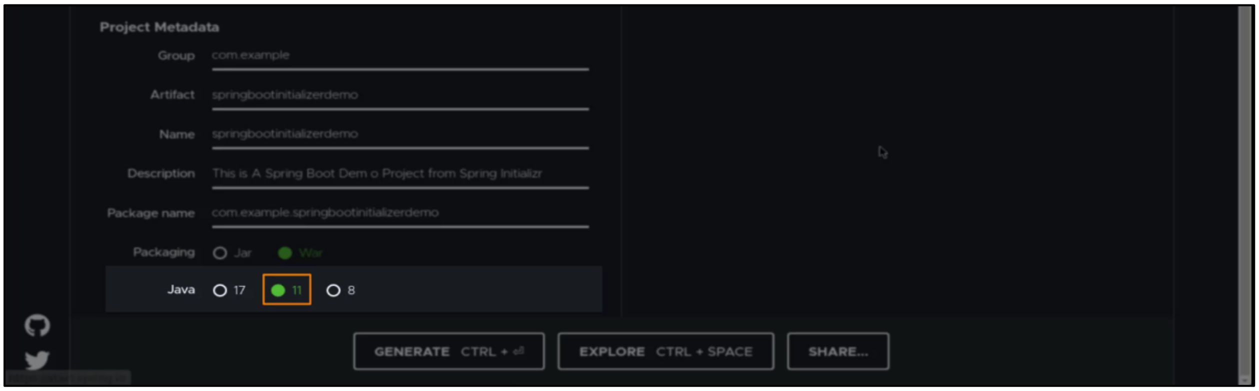
Description: This is A Spring Boot Dem o Project from Spring Initializr

Package name: com.example.springbootinitializerdemo

Packaging: ○ Jar ● War

Java: ○ 17 ● 11 ○ 8

1.10 Select **Java version 11**



Project Metadata

Group: com.example

Artifact: springbootinitializerdemo

Name: springbootinitializerdemo

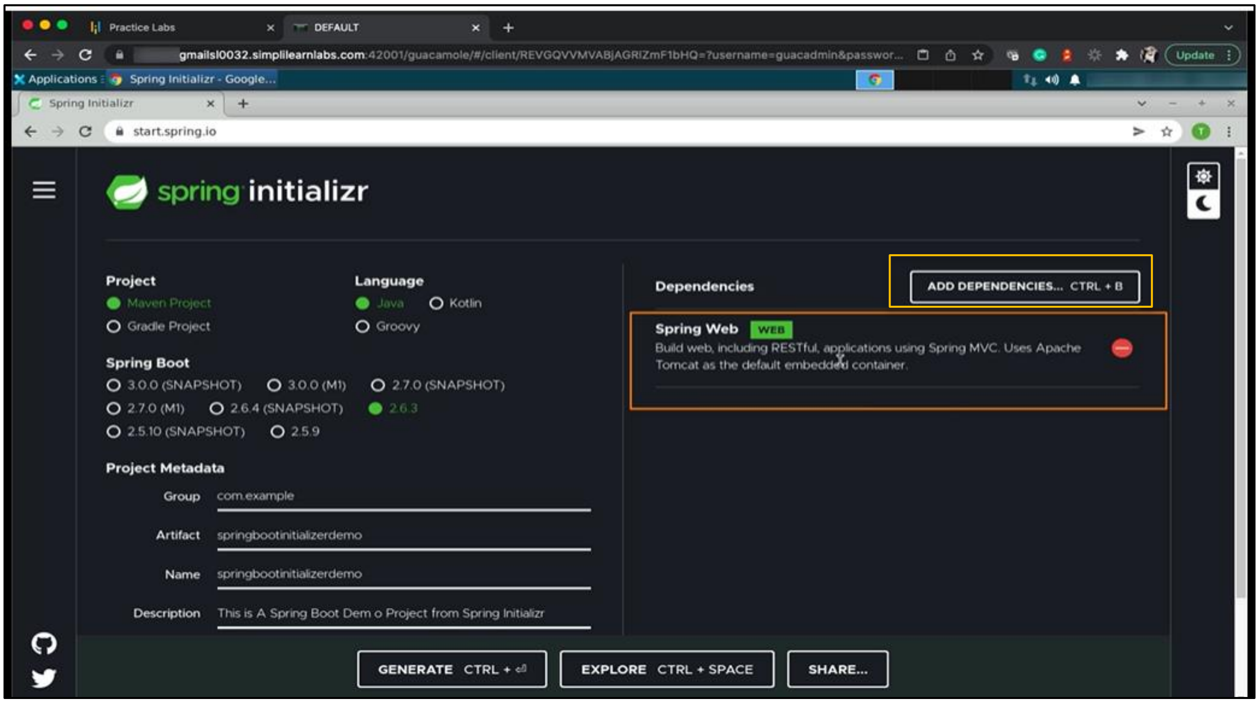
Description: This is A Spring Boot Dem o Project from Spring Initializr

Package name: com.example.springbootinitializerdemo

Packaging: ○ Jar ● War

Java: ○ 17 ● 11 ○ 8

1.11 Click the **ADD DEPENDENCIES** option, search for the web, and get the **Spring Web** added



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Project: ● Maven Project ○ Gradle Project

Language: ● Java ○ Kotlin ○ Groovy

Spring Boot: ○ 3.0.0 (SNAPSHOT) ○ 3.0.0 (M1) ○ 2.7.0 (SNAPSHOT) ○ 2.7.0 (M1) ○ 2.6.4 (SNAPSHOT) ● 2.6.3 ○ 2.5.10 (SNAPSHOT) ○ 2.5.9

Project Metadata

Group: com.example

Artifact: springbootinitializerdemo

Name: springbootinitializerdemo

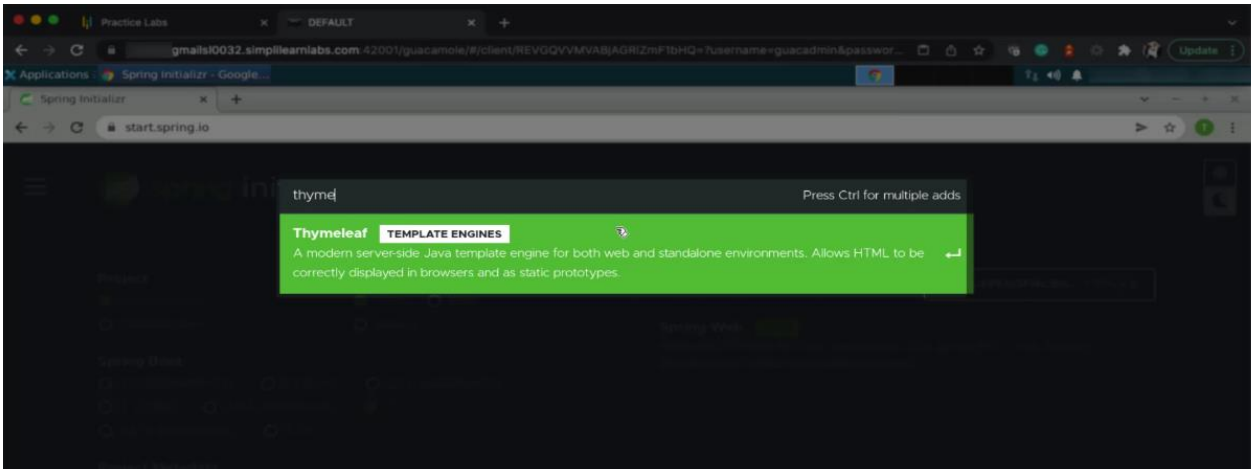
Description: This is A Spring Boot Dem o Project from Spring Initializr

Dependencies

Spring Web WEB
Build web, including RESTful, applications using Spring MVC. Uses Apache Tomcat as the default embedded container.

Note: You can configure the project's dependencies when creating your project rather than doing the configuration in the POM.xml file later.

1.12 Click **ADD DEPENDENCIES**, search for **Thymeleaf**, and select it for template engines



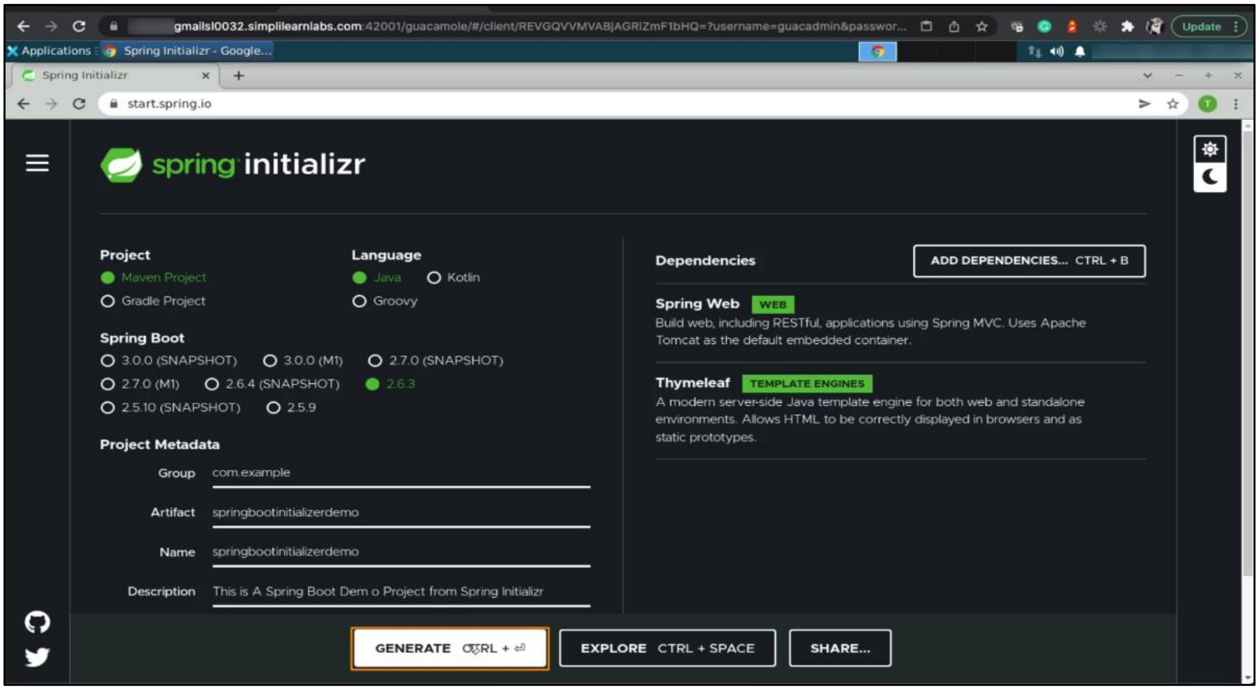
thyme

Press Ctrl for multiple adds

Thymeleaf TEMPLATE ENGINES

A modern server-side Java template engine for both web and standalone environments. Allows HTML to be correctly displayed in browsers and as static prototypes.

1.13 Now that the project structure is completed, click **Generate**



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Update
Applications
Spring Initializr - Google...
Spring Initializr
start.spring.io
spring initializr

Project

● Maven Project

○ Gradle Project

Language

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○ Groovy

Spring Boot

○ 3.0.0 (SNAPSHOT) ○ 3.0.0 (M1) ○ 2.7.0 (SNAPSHOT)

○ 2.7.0 (M1) ○ 2.6.4 (SNAPSHOT) ● 2.6.3

○ 2.5.10 (SNAPSHOT) ○ 2.5.9

Project Metadata

Group: com.example

Artifact: springbootinitializerdemo

Name: springbootinitializerdemo

Description: This is A Spring Boot Dem o Project from Spring Initializr

Dependencies

ADD DEPENDENCIES... CTRL + B

Spring Web WEB

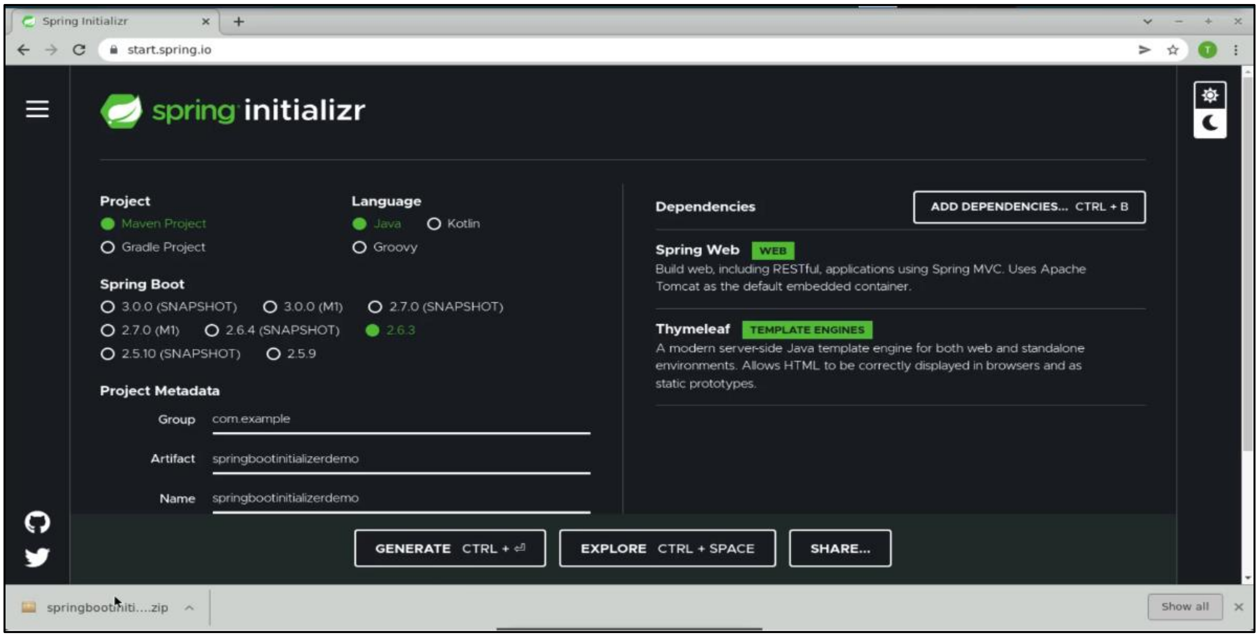
Build web, including RESTful, applications using Spring MVC. Uses Apache Tomcat as the default embedded container.

Thymeleaf TEMPLATE ENGINES

A modern server-side Java template engine for both web and standalone environments. Allows HTML to be correctly displayed in browsers and as static prototypes.

Step 2: Extracting the downloaded project

2.1 After generating the created project, a **zip file** will be downloaded.



Spring Initializr

start.spring.io

spring initializr

Project
● Maven Project
○ Gradle Project

Language
● Java ○ Kotlin
○ Groovy

Spring Boot
○ 3.0.0 (SNAPSHOT) ○ 3.0.0 (M1) ○ 2.7.0 (SNAPSHOT)
○ 2.7.0 (M1) ○ 2.6.4 (SNAPSHOT) ● 2.6.3
○ 2.5.10 (SNAPSHOT) ○ 2.5.9

Project Metadata

Group: com.example

Artifact: springbootinitializerdemo

Name: springbootinitializerdemo

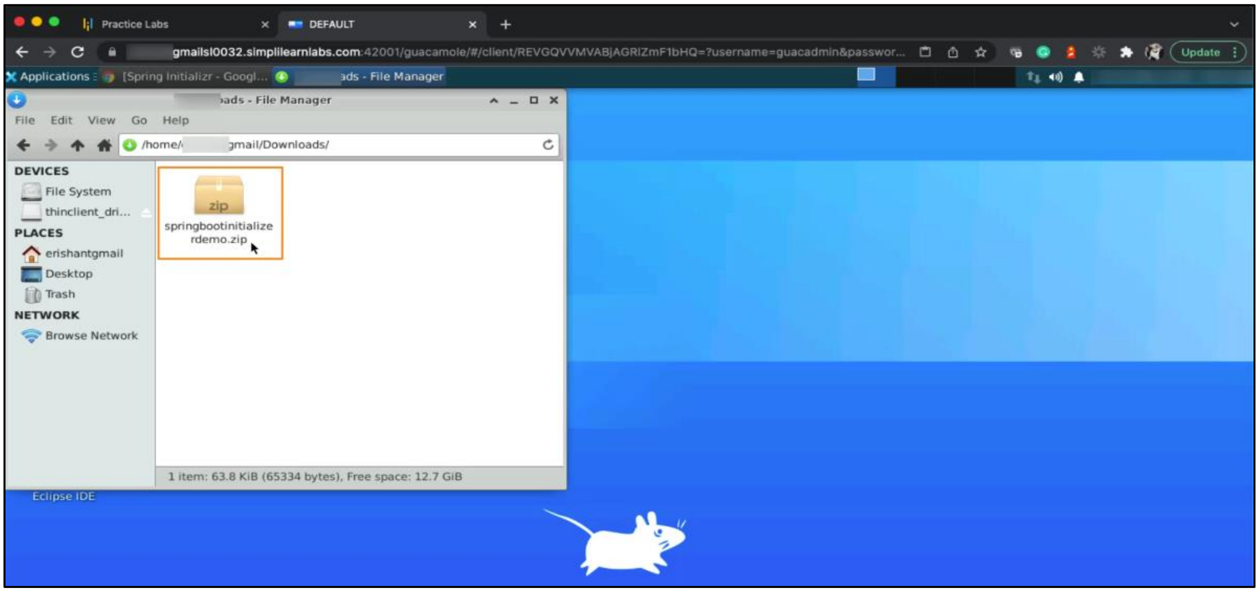
Dependencies

ADD DEPENDENCIES... CTRL + B

Spring Web WEB
Build web, including RESTful, applications using Spring MVC. Uses Apache Tomcat as the default embedded container.

Thymeleaf TEMPLATE ENGINES
A modern server-side Java template engine for both web and standalone environments. Allows HTML to be correctly displayed in browsers and as static prototypes.

2.2 Open the **Downloads** directory. The downloaded zip package will be available.



[redacted]gmailsl0032.simplilearnlabs.com:42001/guacamole/#/client/REVGQVVMVABjAGRlZmF1bHQ=?username=guacadmin&passwor...

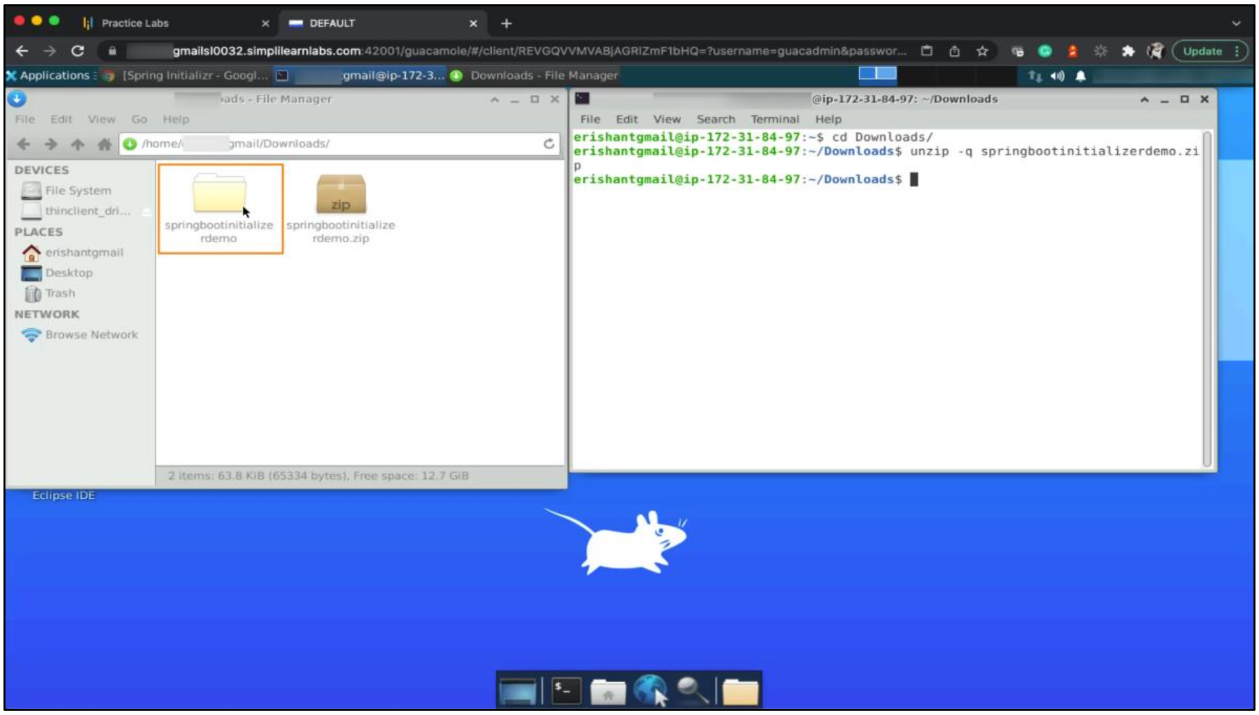
[redacted]ads - File Manager

/home/[redacted]gmail/Downloads/

springbootinitializerdemo.zip

1 item: 63.8 KiB (65334 bytes), Free space: 12.7 GiB

2.3 **Unzip** the downloaded package by executing the command **unzip –q <packagename>**
Now, the highlighted folder will be extracted.

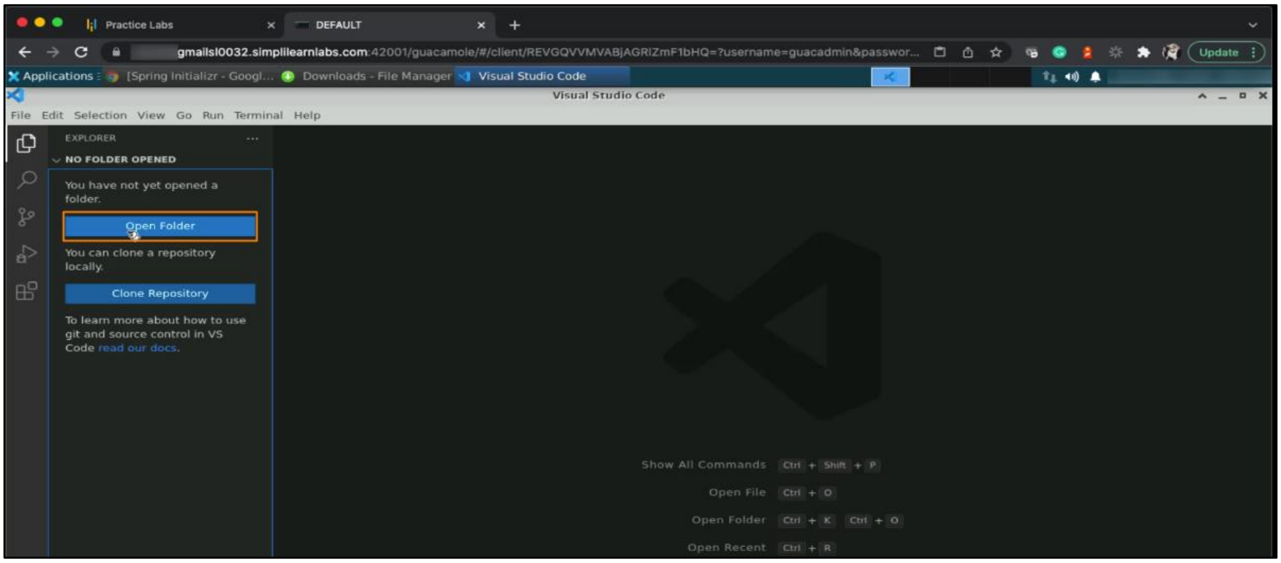


```
erishantgmail@ip-172-31-84-97:~$ cd Downloads/
erishantgmail@ip-172-31-84-97:~/Downloads$ unzip -q springbootinitializerdemo.zi
p
erishantgmail@ip-172-31-84-97:~/Downloads$ 
```

Practice Labs
DEFAULT
[redacted]gmailsl0032.simplilearnlabs.com:42001/guacamole/#/client/REVGQVVMVABjAGRlZmF1bHQ=?username=guacadmin&passwor...
Applications
[Spring Initializr - Googl...
[redacted]gmail@ip-172-3...
Downloads - File Manager
[redacted]ads - File Manager
/home/[redacted]gmail/Downloads/
DEVICES
File System
thinclient_dri...
PLACES
erishantgmail
Desktop
Trash
NETWORK
Browse Network
springbootinitializerdemo
springbootinitializerdemo.zip
2 items: 63.8 KiB (65334 bytes), Free space: 12.7 GiB
[redacted]@ip-172-31-84-97: ~/Downloads
File Edit View Search Terminal Help
Eclipse IDE

Step 3: Building and running the project

3.1 Open the **Visual Studio code** and click **Open Folder** in the downloads directory



EXPLORER

NO FOLDER OPENED

You have not yet opened a folder.

Open Folder

You can clone a repository locally.

Clone Repository

To learn more about how to use git and source control in VS Code read our docs.

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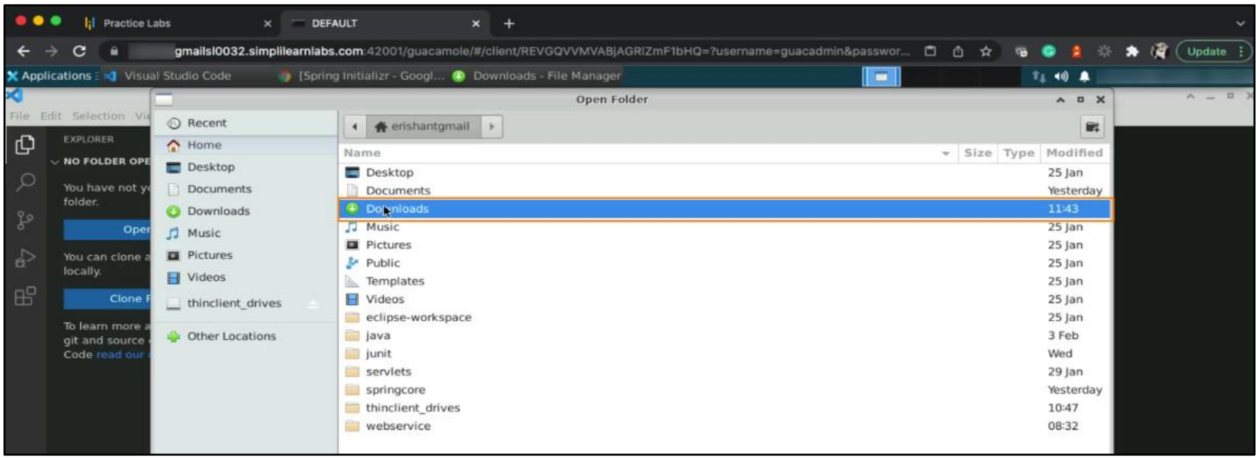
Applications
[Spring Initializr - Googl...
Downloads - File Manager
Visual Studio Code
File Edit Selection View Go Run Terminal Help
Show All Commands Ctrl + Shift + P
Open File Ctrl + O
Open Folder Ctrl + K Ctrl + O
Open Recent Ctrl + R

3.2 Select **Downloads,** select the **springbootinitializerdemo**, and click **Ok**



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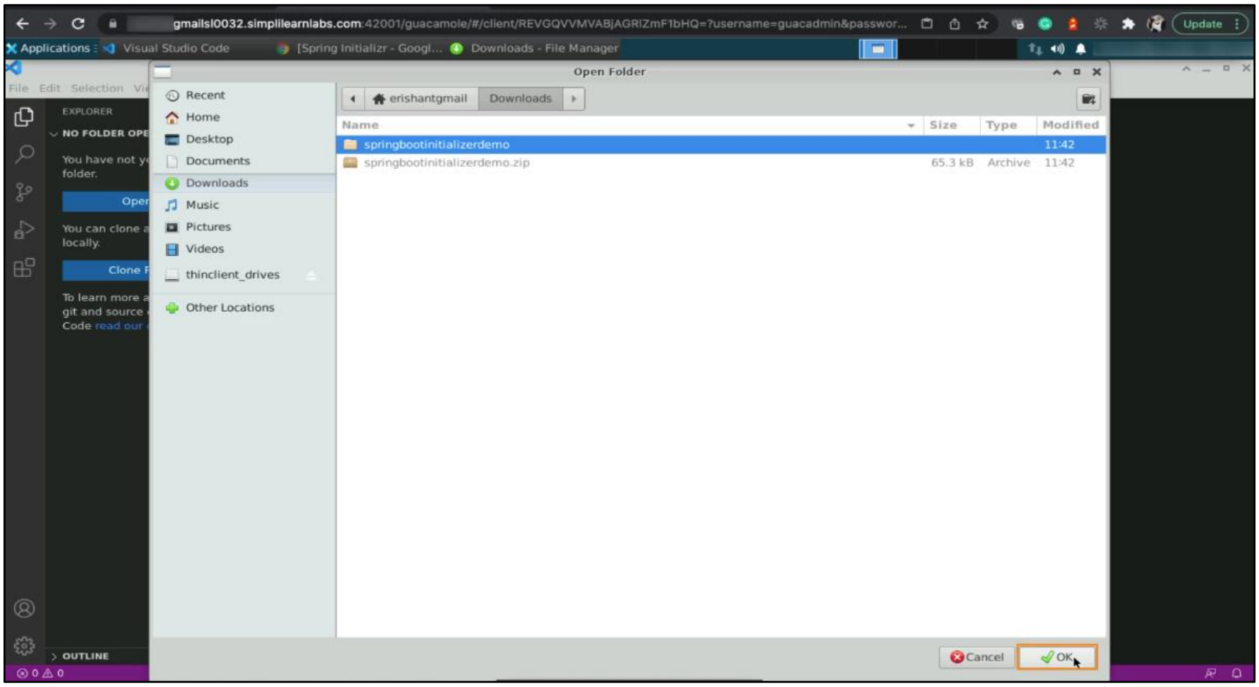
Open Folder

erishantgmail

Name	Size	Type	Modified
Desktop			25 Jan
Documents			Yesterday
Downloads			11:43
Music			25 Jan
Pictures			25 Jan
Public			25 Jan
Templates			25 Jan
Videos			25 Jan
eclipse-workspace			25 Jan
java			3 Feb
junit			Wed
servlets			29 Jan
springcore			Yesterday
thinclient_drives			10:47
webservice			08:32



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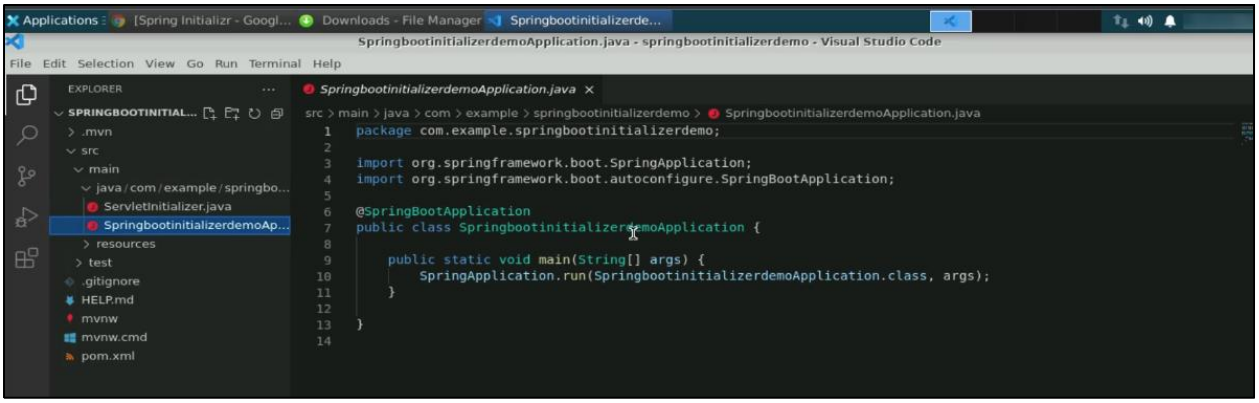
Open Folder

erishantgmail › Downloads

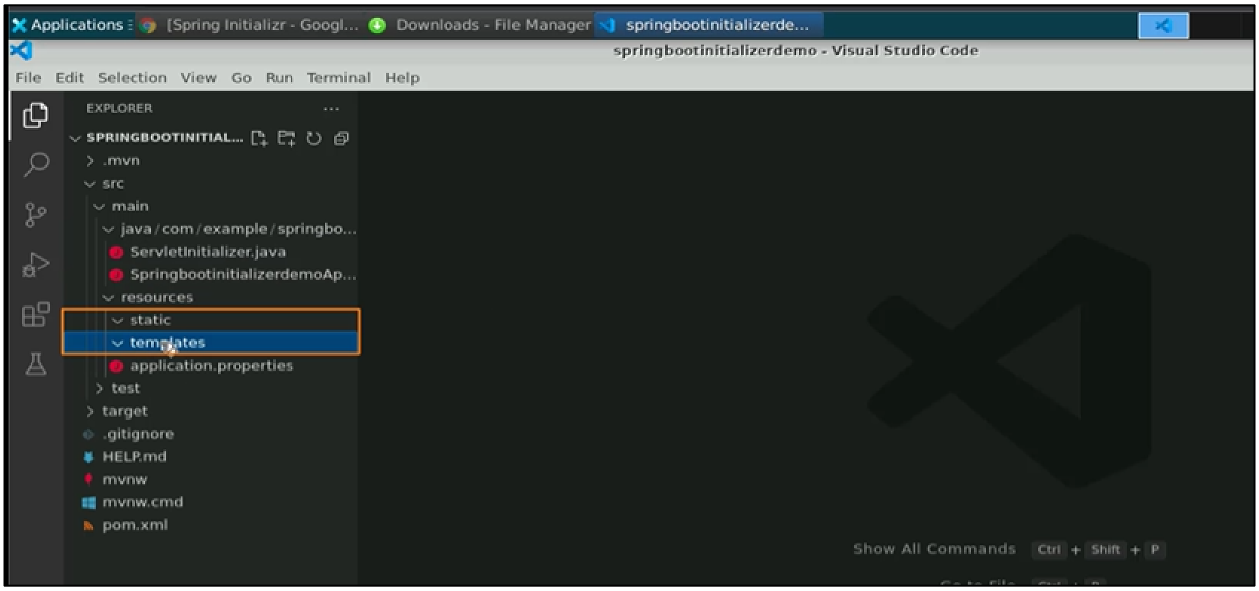
Name	Size	Type	Modified
springbootinitializerdemo			11:42
springbootinitializerdemo.zip	65.3 kB	Archive	11:42

3.3 Select the **maven project**. Navigate to the **src>main**. Select **Application.java** from the two directories


Applications
[Spring Initializr - Googl...
Downloads - File Manager
Springbootinitializerde...
SpringbootinitializerdemoApplication.java - springbootinitializerdemo - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
SPRINGBOOTINITIAL...
.mvn
src
main
java / com / example / springbo...
ServletInitializer.java
SpringbootinitializerdemoAp...
resources
test
.gitignore
HELP.md
mvnw
mvnw.cmd
pom.xml
SpringbootinitializerdemoApplication.java
src > main > java > com > example > springbootinitializerdemo > SpringbootinitializerdemoApplication.java

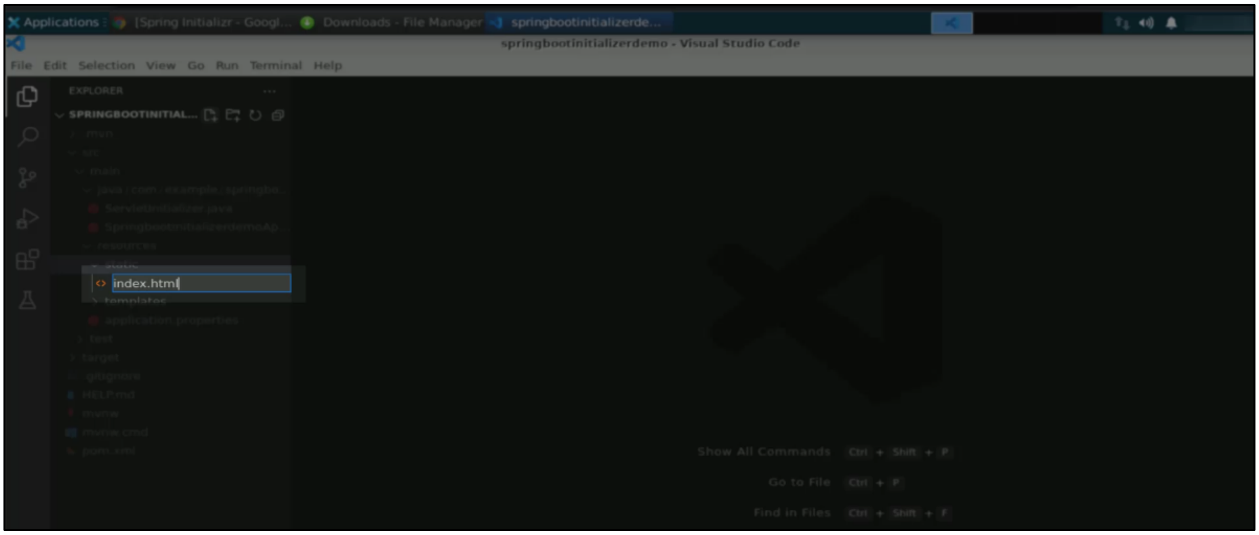
```java
package com.example.springbootinitializerdemo;

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

@SpringBootApplication
public class SpringbootinitializerdemoApplication {

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

}
```

3.4 Select **resources**. You will find that two directories are empty now. Select static

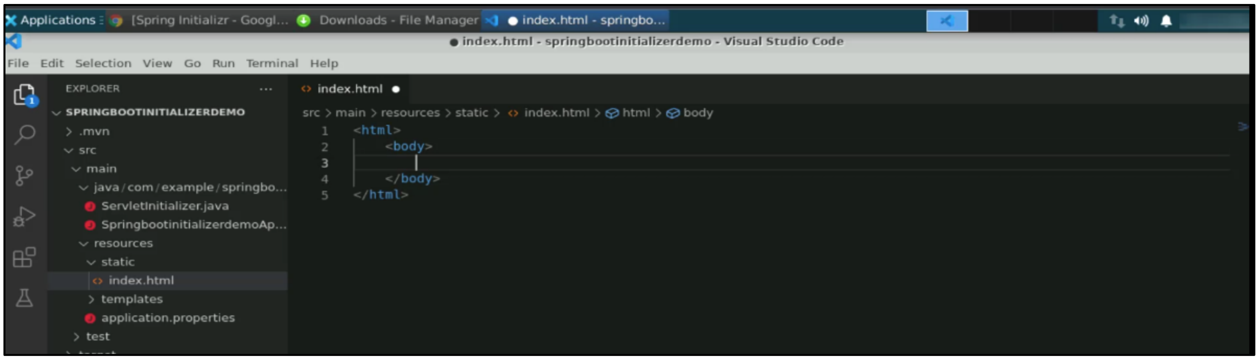

Applications
[Spring Initializr - Googl...
Downloads - File Manager
springbootinitializerde...
springbootinitializerdemo - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
SPRINGBOOTINITIAL...
.mvn
src
main
java / com / example / springbo...
ServletInitializer.java
SpringbootinitializerdemoAp...
resources
static
templates
application.properties
test
target
.gitignore
HELP.md
mvnw
mvnw.cmd
pom.xml
Show All Commands Ctrl + Shift + P

Note: You can create your HTML web pages in the static directory. In templates, you can create your HTML webpages, but these are the templates that would be used by your controller in the Spring Boot Web MVC package.

3.5 Create a **new file** and name the file **index.html**


Applications
[Spring Initializr - Googl...
Downloads - File Manager
springbootinitializerde...
springbootinitializerdemo - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
SPRINGBOOTINITIAL...
index.html
Show All Commands Ctrl + Shift + P
Go to File Ctrl + P
Find in Files Ctrl + Shift + F

3.6 Start with the root tag as HTML, create one body tag, and type the **<html> and <body> tag**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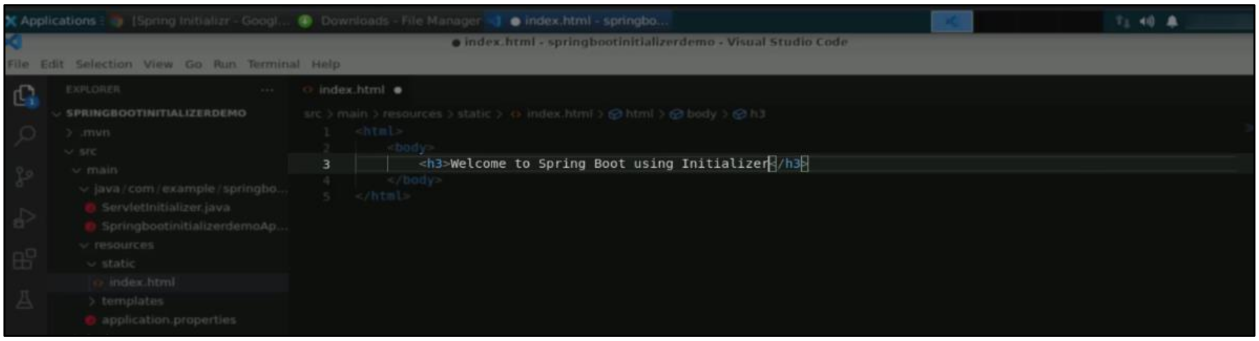
Downloads - File Manager
● index.html - springbo...
● index.html - springbootinitializerdemo - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
SPRINGBOOTINITIALIZERDEMO
.mvn
src
main
java / com / example / springbo...
ServletInitializer.java
SpringbootinitializerdemoAp...
resources
static
index.html
templates
application.properties
test
index.html ●
src > main > resources > static > index.html > html > body

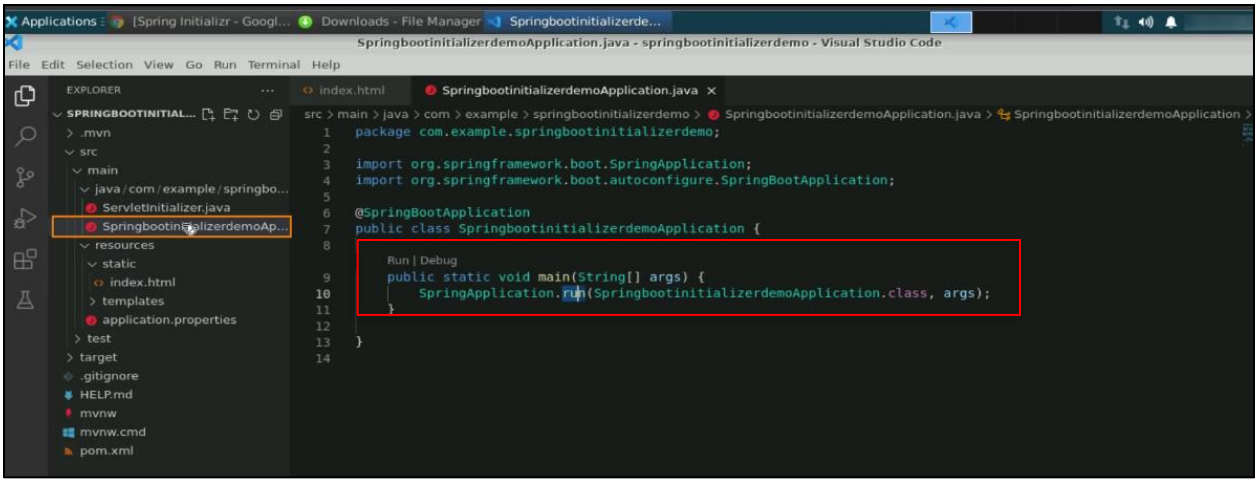
```
<html>
    <body>

    </body>
</html>
```

3.7 Create an h3 tag as **Welcome to Spring Boot using Initializer**. A basic HTML page will be created.


index.html - springbootinitializerdemo - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
SPRINGBOOTINITIALIZERDEMO
src > main > resources > static > index.html > html > body > h3

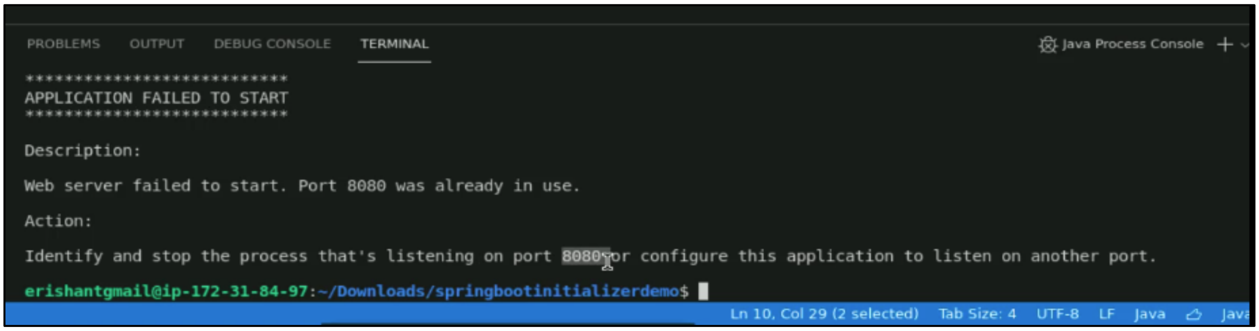
```
<html>
    <body>
        <h3>Welcome to Spring Boot using Initializer</h3>
    </body>
</html>
```

3.8 Select the **Application.java** file from the source directory and click on the **Run**


SpringbootinitializerdemoApplication.java - springbootinitializerdemo - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
SPRINGBOOTINITIAL...
.mvn
src
main
java / com / example / springbo...
ServletInitializer.java
SpringbootinitializerdemoAp...
resources
static
index.html
templates
application.properties
test
target
.gitignore
HELP.md
mvnw
mvnw.cmd
pom.xml
Run | Debug

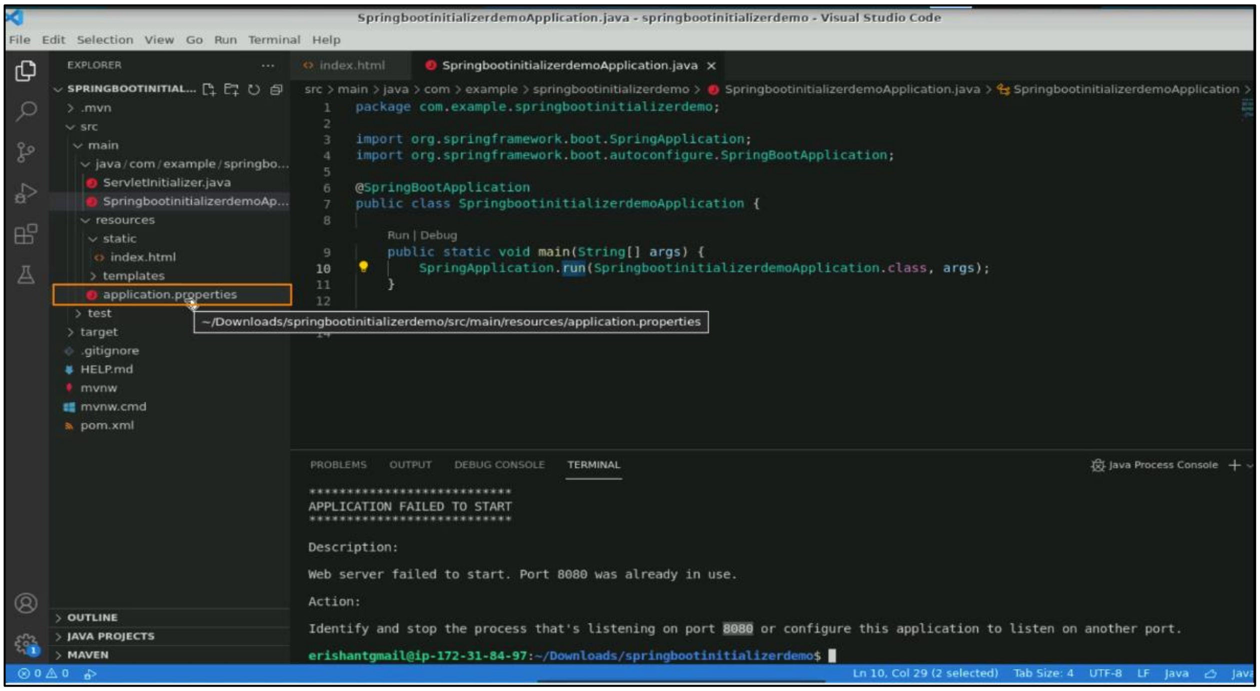
```
package com.example.springbootinitializerdemo;

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

@SpringBootApplication
public class SpringbootinitializerdemoApplication {

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

}
```

The output can of the Application.java be executed in the **Terminal tab.**



```
***************************
APPLICATION FAILED TO START
***************************

Description:

Web server failed to start. Port 8080 was already in use.

Action:

Identify and stop the process that's listening on port 8080 or configure this application to listen on another port.

erishantgmail@ip-172-31-84-97:~/Downloads/springbootinitializerdemo$
```

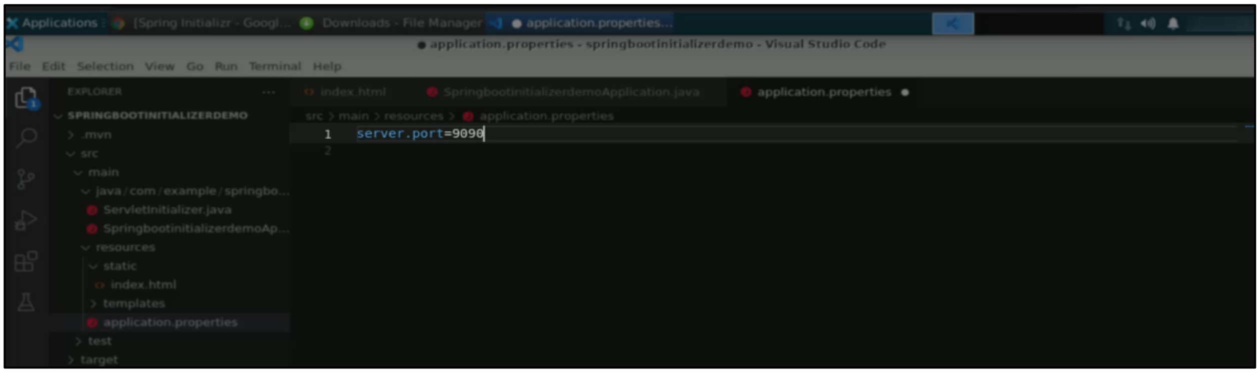
3.9 Now select the **application.properties** file. In this file, **write** the server port's number as **9090** and **save** the file and repeat step 3.8.



SpringbootinitializerdemoApplication.java - springbootinitializerdemo - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
SPRINGBOOTINITIAL...
.mvn
src
main
java / com / example / springbo...
ServletInitializer.java
SpringbootinitializerdemoAp...
resources
static
index.html
templates
application.properties
test
target
.gitignore
HELP.md
mvnw
mvnw.cmd
pom.xml
OUTLINE
JAVA PROJECTS
MAVEN
index.html
SpringbootinitializerdemoApplication.java
src > main > java > com > example > springbootinitializerdemo > SpringbootinitializerdemoApplication.java > SpringbootinitializerdemoApplication
~/Downloads/springbootinitializerdemo/src/main/resources/application.properties
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
Java Process Console
Ln 10, Col 29 (2 selected)
Tab Size: 4
UTF-8
LF
Java

```java
package com.example.springbootinitializerdemo;

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

@SpringBootApplication
public class SpringbootinitializerdemoApplication {

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

```

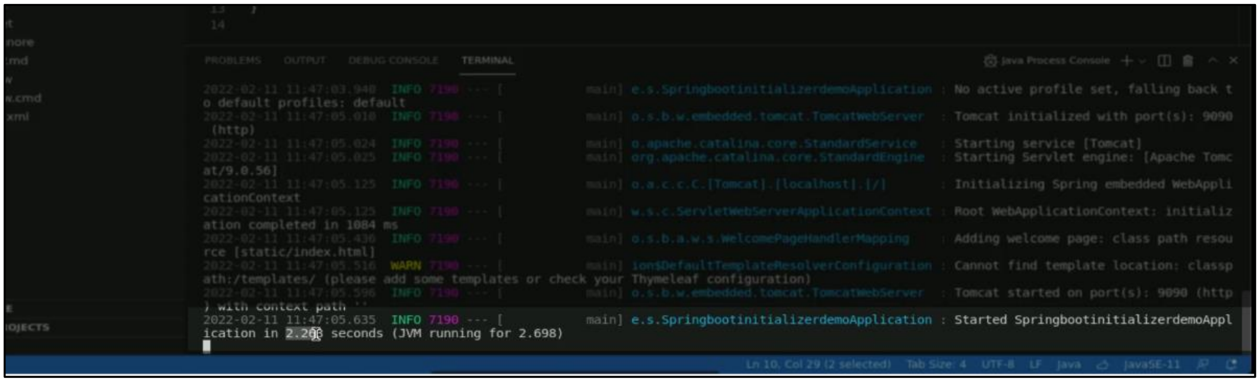
```
***************************
APPLICATION FAILED TO START
***************************

Description:

Web server failed to start. Port 8080 was already in use.

Action:

Identify and stop the process that's listening on port 8080 or configure this application to listen on another port.

erishantgmail@ip-172-31-84-97:~/Downloads/springbootinitializerdemo$
```



Applications
[Spring Initializr - Googl...
Downloads - File Manager
application.properties...
● application.properties - springbootinitializerdemo - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
SPRINGBOOTINITIALIZERDEMO
.mvn
src
main
java / com / example / springbo...
ServletInitializer.java
SpringbootinitializerdemoAp...
resources
static
index.html
templates
application.properties
test
target
index.html
SpringbootinitializerdemoApplication.java
application.properties ●
src > main > resources > application.properties

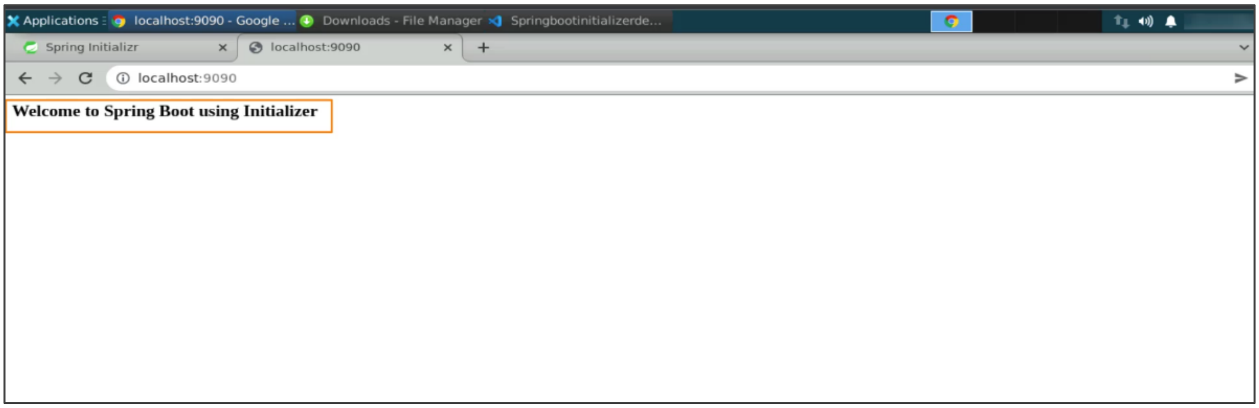
```
server.port=9090
```

The following output can now be seen on the **Terminal tab**.



```
2022-02-11 11:47:03.948  INFO 7190 --- [           main] e.s.SpringbootinitializerdemoApplication : No active profile set, falling back t
o default profiles: default
2022-02-11 11:47:05.010  INFO 7190 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat initialized with port(s): 9090
 (http)
2022-02-11 11:47:05.024  INFO 7190 --- [           main] o.apache.catalina.core.StandardService   : Starting service [Tomcat]
2022-02-11 11:47:05.025  INFO 7190 --- [           main] org.apache.catalina.core.StandardEngine  : Starting Servlet engine: [Apache Tomc
at/9.0.56]
2022-02-11 11:47:05.125  INFO 7190 --- [           main] o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spring embedded WebAppli
cationContext
2022-02-11 11:47:05.125  INFO 7190 --- [           main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initializ
ation completed in 1084 ms
2022-02-11 11:47:05.436  INFO 7190 --- [           main] o.s.b.a.w.s.WelcomePageHandlerMapping    : Adding welcome page: class path resou
rce [static/index.html]
2022-02-11 11:47:05.516  WARN 7190 --- [           main] ion$DefaultTemplateResolverConfiguration : Cannot find template location: classp
ath:/templates/ (please add some templates or check your Thymeleaf configuration)
2022-02-11 11:47:05.596  INFO 7190 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat started on port(s): 9090 (http
) with context path ''
2022-02-11 11:47:05.635  INFO 7190 --- [           main] e.s.SpringbootinitializerdemoApplication : Started SpringbootinitializerdemoAppl
ication in 2.20[illegible] seconds (JVM running for 2.698)
```

3.10 To view the application, go to the browser and search **localhost:9090** in the search bar. The following output can be seen on the browser's tab:



Welcome to Spring Boot using Initializer

This is how you can create a basic Spring Boot web application project through the Spring Initializer.