Java 2 Week Feeder Environment Setup

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Environment Setup Week 1 Day 1 Notes

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These instructions are day 1 activities that are not tied to any specific lecture. Help is given to individuals in the July 12th through July 14th recordings. I do not recall how accurate these installation instruction are.

Readme.md

```
# Installation

**NOTE**: This guide primarily is written for those on a Windows Machine. For Mac users [this guide](https://github.com/brynportella/RAP-210308/blob/main/environment-setup/git-install-mac.md) may be more helpful.

Within this repository, the week we will first explore a tool is listed in the document name. You are expected to have those tools downloaded and configured by the end of the first Day of the week listed, though you are free to install all of the tools earlier.

For each technology listed, you need only visit the official website and download the version of the tool that is compatible with your system.

Do note that setting system environment variables differs from machine to machine. This guide shows how to set environment variables on a Windows machine.

The first thing you'll want to do is open your web browser of choice. This guide will use *Chrome*.

**Note**: Many of the tools that you will install have different system installers that are platform dependent. It is **very** important that you download the correct installer. The following list details how you should choose the installer for a program:

- If you have a 32-bit version of Windows, use the installer that is marked as the 32-bit version.
- If you have a 64-bit version of Windows, use the installer that is marked as the 64-bit version.
- If you have a Linux distribution (e.g. Debian, Ubuntu, Red Hat, Fedora), you should choose the installer that matches your distribution.
- If you have a Mac, you should choose the installer that is marked as the Mac installer.

These options will be clearly labeled on the websites you visit to download the technologies. If you're not sure how to figure out what version of the Windows operating system you're running, do the following:

1. Type "Control Panel" into the Windows search bar and click on the "Control Panel" app.
2. Select "System and Security".
3. Select "System".

You should now see the following screen:

![Image of Windows System Settings](./images/windows-system.PNG)
```

You should see your operating system listed ("Windows 10" in the above example) and the system type listed under the "System" tab (a 64-bit operating system in the above example).

Install Git Hub Terminal

Week-1_Git.md

[Week 1] - Install Git

1. Navigate in your browser to [Git's Website](https://git-scm.com/download) and click the latest download for Windows. (For those using a different OS click the appropriate OS and look for the most recent stable release.)

- Windows Install:
- https://github.com/brynportella/RAP-210308/blob/main/environment-setup/git-install-windows.md

2. Click yes to any security/firewall popup asking if you are sure you want to download the file.

3. The install file will begin downloading; most browsers will show the file that has just downloaded, click that file when it completes. If you do so skip to step 6. If the download is not apparent on your browser or disappears upon finishing go to step 4.

4. If you were not able to click the install exe file you just downloaded in your browser open your file explorer.

5. In the window that opens click the "Downloads" folder, use the search bar in the upper right to search "git", and then double click on the Git installer exe file.

6. Click yes to any security pop-ups asking you if you want to allow the installer to make changes to your computer.

7. The install wizard will open to guide you through the process of installing Git. Read the license agreement and click "Next."

8. Accept the default installation path by clicking "Next."

9. Select your components. It is recommended to add a desktop icon. Leave the other boxes in their default setting. Click "Next."

10. Leave the rest of the set up as the default configuration clicking Next until you get to the experimental options (which you should leave unchecked) and then click Install. This will run the actual install process.

11. After install you will get a a final window giving you the options to launch Git Bash and view the Readme notes. Select open Git Bash and deselect the view Readme notes. Click "Next."

12. When Git Bash opens type "git --version" and hit Enter. If it return the version of Git you installed it correctly.

Install Java 1.8

Week-1_Java.md

[Week 1] - Install Java

1. Navigate in your web browser to [Oracle's JDK 8] (https://www.oracle.com/java/technologies/javase/javase-jdk8-downloads.html?) website. NOTE: If you are experiencing errors when trying to load the webpage try another browser. If you still are having trouble, try again later.

2. In the top right of the website click "View Accounts" and then "Create an Account." (If you already have an Oracle account you can just skip to step 5)

3. Fill in the form with your information (you may type "none" for Company Name) and then click the "Create Account" button.

4. Check your e-mail account for a new message from Oracle. (This may take a few minutes.) When you receive the e-mail open it and click the "Verify Email Address" button inside. This should direct you to a success screen.

5. Return to [Oracle's JDK 8](https://www.oracle.com/java/technologies/javase/javase-jdk8-downloads.html?) website. Scroll to find the appropriate JDK for your Operating System and Architecture. (Windows 10 will be Windows x64 as shown below) and click to download.

6. A popup will ask you to review the license before continuing. Do so and click the check box and then the download button.

7. If you are not signed in a pop will appear asking you to do so. Enter your sign in information (your e-mail is your user name) and submit. The download should then begin.

8. Once the download is complete, click the file that downloads in your browser to open it and skip to step 11. If you do not see the file in your browser then proceed to step 9 to find it in your downloads folder.

9. If you could not open the JDK installer from your browser open your file explorer.

10. In the window that opens click the "Downloads" folder, search (in the top right) for "jdk" and double click the jdk installer.

11. The installer will inform you that the license has been updated from previous versions. Review the license if you have not already and click next.

12. The installer will continue and you should just accept the default setup. IMPORTANT: Make note of the file path for the installation directory! You WILL need this later. Click "Next."

13. The install will begin extracting files and will ask to confirm the installation directory of the JRE. Confirm the default directory by clicking "Next."

14. Java will finish installing and you can then click "Close."

15. Use your system search tool (next to the windows button) to look for "Edit the system environment variables" in the control panel. Be sure that you open the SYSTEM environment not the ones just for your account.

16. Click the "Environment Variables" button in the window that opens.

17. Under "System Variables" click the "New" button.

18. Name the new variable "JAVA_HOME" and give it the value of the directory where your JDK was installed to. (See Step 12.) If you are unsure of your directory path you can go to C:\Program Files\Java in your file explorer then click on the JDK folder to open it. You can then copy the path from the navigation bar at the top of the file explorer.

19. In your system variables then select the "Path" variable and click "Edit."

20. Click "New" to create a new line. Add the path to the JDK bin folder in this line, it will be the same as the path in JAVA_HOME with a "\bin" at the end.

21. Click "OK" to close the Environment Variables window.

22. Open Git Bash, type "java -version" and hit Enter. If the JDK is installed correctly you should see Java with the version number you downloaded.

Install Spring Tool Suite

Week-1_SpringToolSuite.md

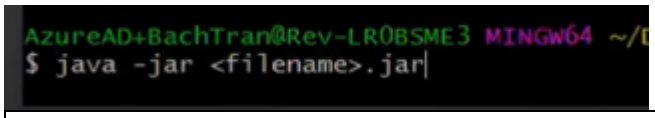
[Week 1] - Install Spring Tool Suite 4

Prerequisite
* **Completed Java Installation**

1. Navigate to the [Spring Tools] (https://spring.io/tools) website and download Spring Tools 4 for Eclipse.

2. Once the download has finished go to your download folder, search for the spring-tool-suite jar file and double click it to begin the install process. NOTE: STS will install to the directory the jar file is in when you open it. If you would like STS to install to another directory than your download directory, move the jar file before opening it.

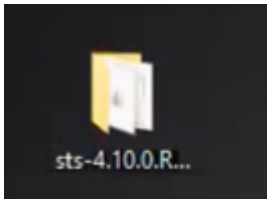
If double clicking does not work, you do not have an extract program on your machine. You can go to a GIT Bash terminal and extract the files from the jar using a command like:



java -jar <filename>.jar
Where: <filename> is the name of the jar file to extract.

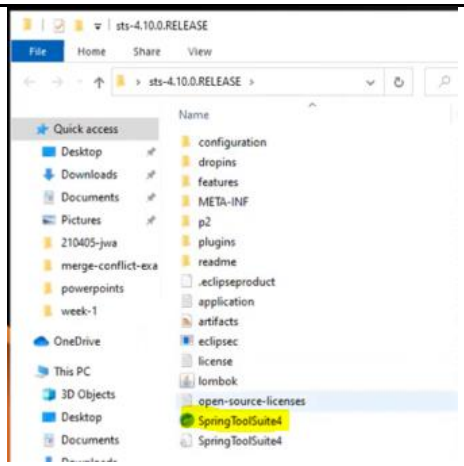
3. An unnamed progress bar will appear as STS is installed into your directory.

4. Once the install is complete you will have an STS folder in the directory. Double click it to enter it.



Folder location may vary depending on where you downloaded and extracted the files from the jar file.

5. Once inside the folder double click the SpringToolSuite4 application icon to start STS and ensure it runs correctly. If you encounter any errors check all the path variables you configured in the previous setup guides.

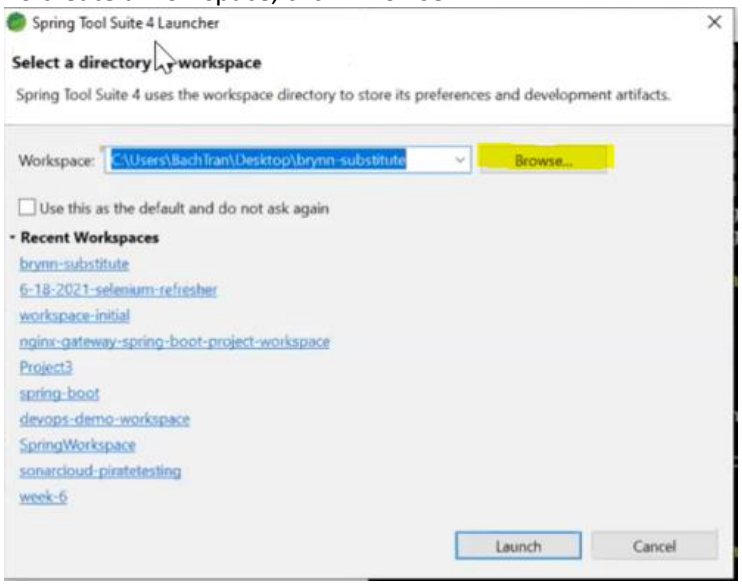


6. If STS opens without errors you will be asked to create a workspace. You can just click "Cancel" at this time.

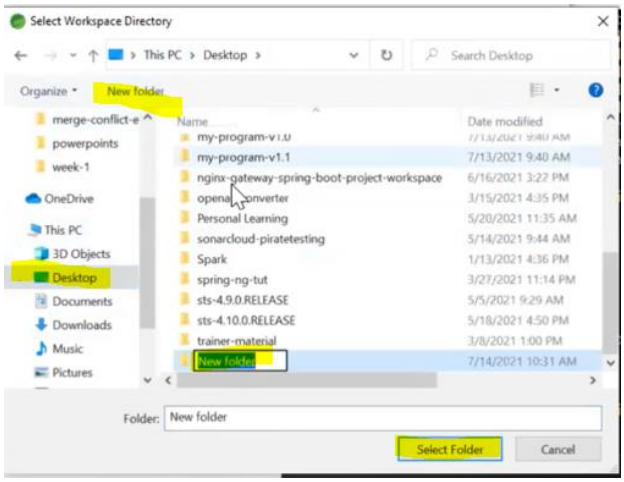
nstead of clicking Cancel, you should define a folder for you default workspace. This can be a new or existing folder on your desktop or in your documents folder. This workspace will contain project files that you will create going forward.

If you do not create a work space at this time, you can create one in the future or use the default workspace.

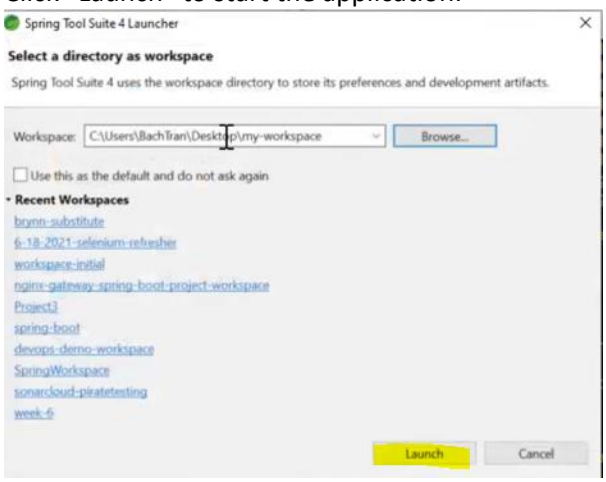
To create a workspace, click “Browse…”

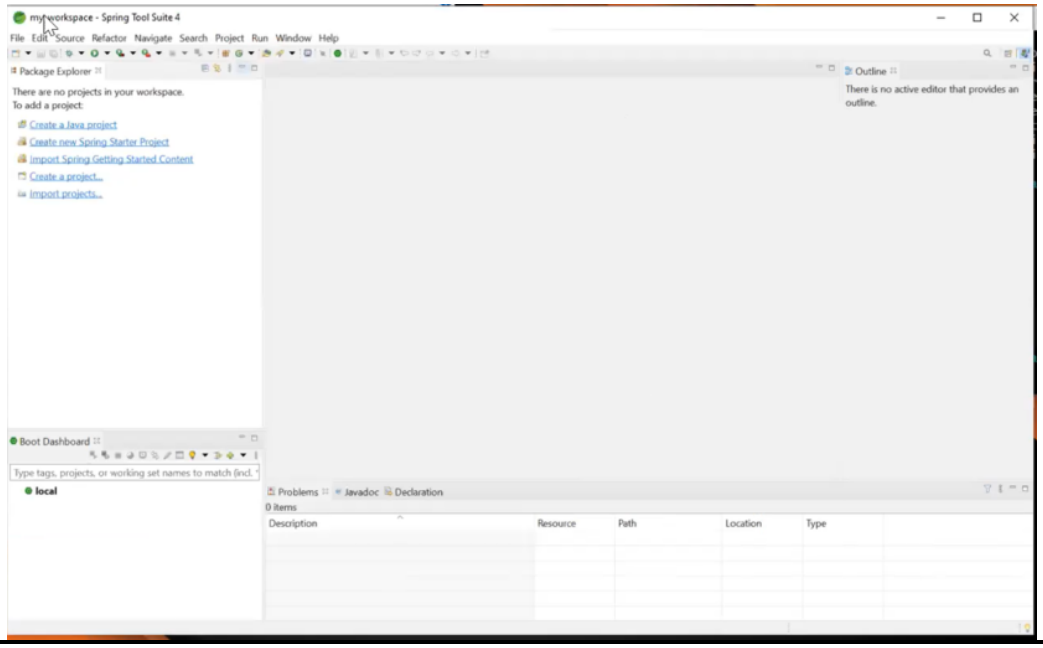


Navigate to a top level folder, like Desktop
Click on “New folder” in tool bar
Name the folder, this will be your workspace
Click “Select Folder”



Click “Launch” to start the application.





7. If you would like to place a shortcut to STS on your desktop (which is highly recommended) you can right-click the SpringToolSuite4 application, hover over "Send to" and click "Desktop (create shortcut)". You will now have a desktop icon from which you can open STS.

Install MS Visual Studio

Week-1_VisualStudioCode.md

[Week 1 - Optional Download] - Install Visual Studio Code

Visual Studio Code is a text editor that has a simple interface that can be used to resolve merge conflicts in GIT, and may be used to examine certain front-end technologies such as HTML, CSS and Javascript.

In order to download Visual Studio Code, please visit [Visual Studio Code's official website] (https://code.visualstudio.com/download).

Once you've navigated to the website, you should see the following:

Choose the installer that is compatible with your system. Once you've clicked the installer of your choice, you'll be prompted to save the file. Do so.

Once you've saved the installer, it should be located in your "Downloads" folder.

Double click the installer. Once you've done so, the installer should be launched. Accept the license agreement and proceed until you reach a menu titled "Select Additional Tasks". Once you've arrived here, be sure to check all of the boxes that are checked in the image!

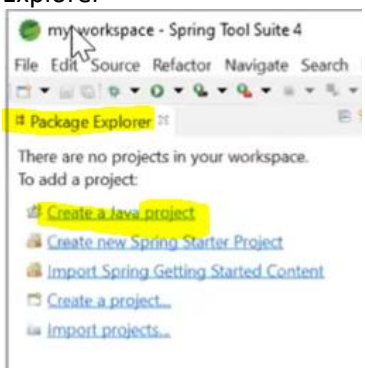
After you've done so, hit "Next" and then "Install" on the next menu. If your installation was successful, you should be able to search for "Visual Studio Code" on your machine.

Using Spring Tool Suite for the First Time

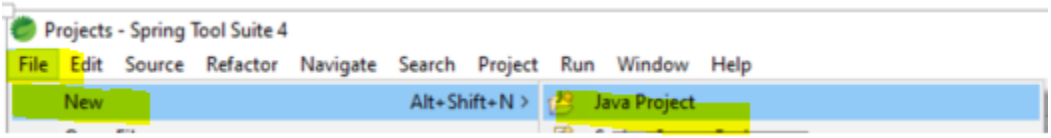
This is an example of creating a simple Java project with the application. Elements will be used in future projects like selecting the current Java version we want to use and building the application.

Create a New Java project

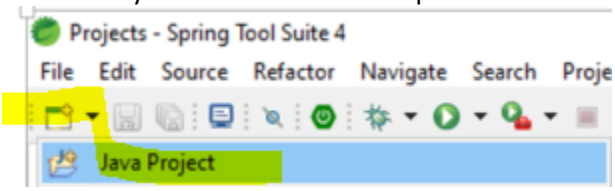
If this is your first project in the workspace, you can select the “Create a Java project” in the “Package Explorer”



You can also use the main toolbar Select File ➔New ➔ Java Project

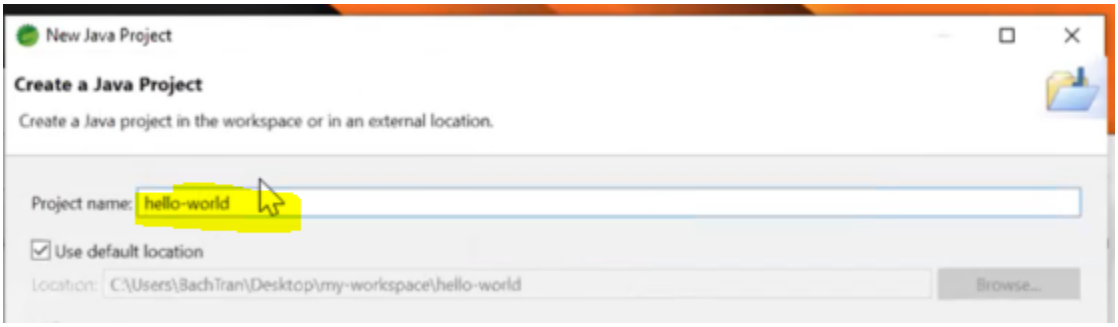


Additionally select the file icon dropdown then Java Project



Give the project a name

In this case “hello-world”

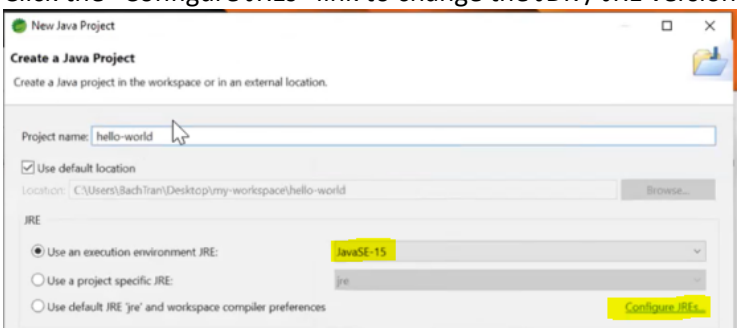


Configure the JDK / JRE

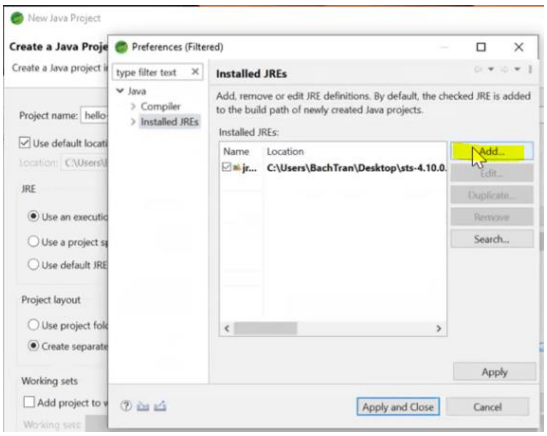
Notice the IDE has various version of the JDK / JRE. This will vary depending on the version of the Spring Tool Suite downloaded.

In previous installation steps for “Install Java 1.8” we installed a version of Java we want to use. This also can change over time.

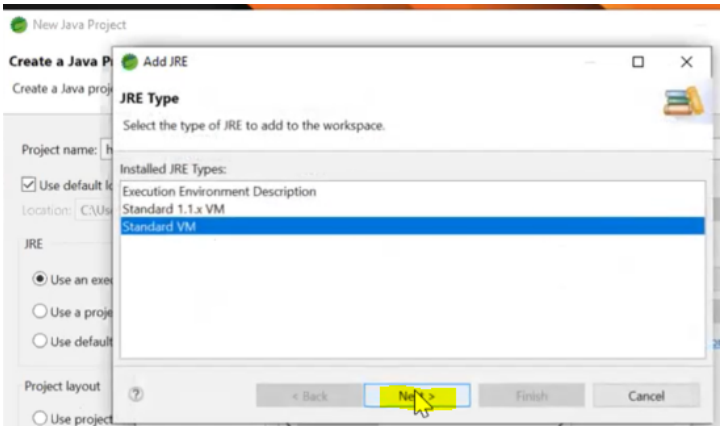
Click the “Configure JREs” link to change the JDK / JRE version to use.



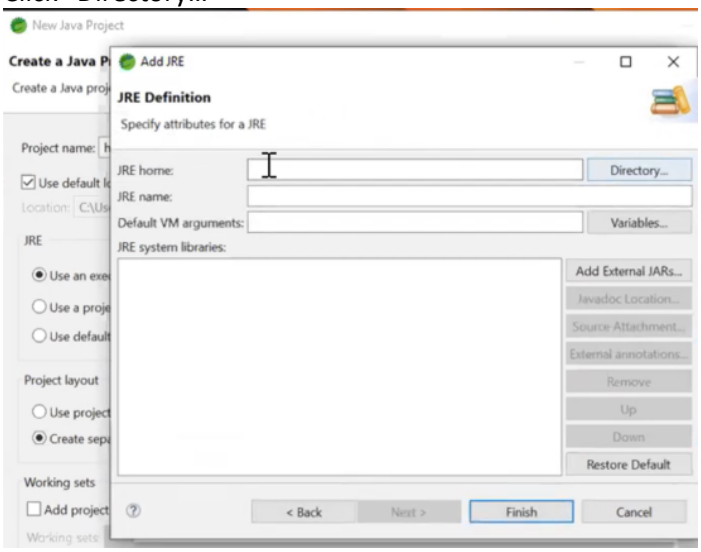
Click “Add…”



Click “Next >”



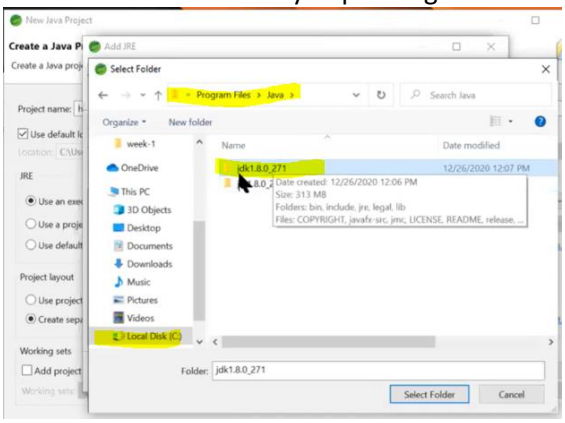
Click “Directory…”



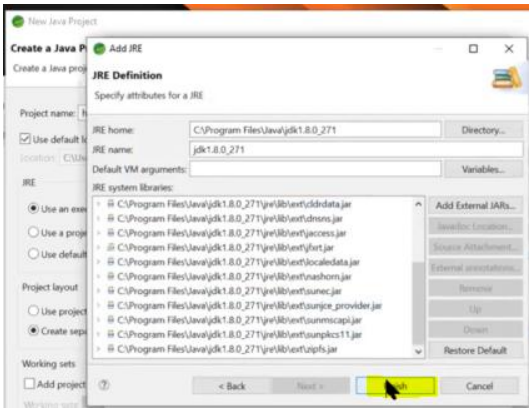
Navigate to where you installed the Java 1.8 files.
Generally this should be on the C: drive “C:\Program Files\Java”
Select the jdk folder not the jre folder: jdk1.8.0_271

- A jre is included inside the jdk folder

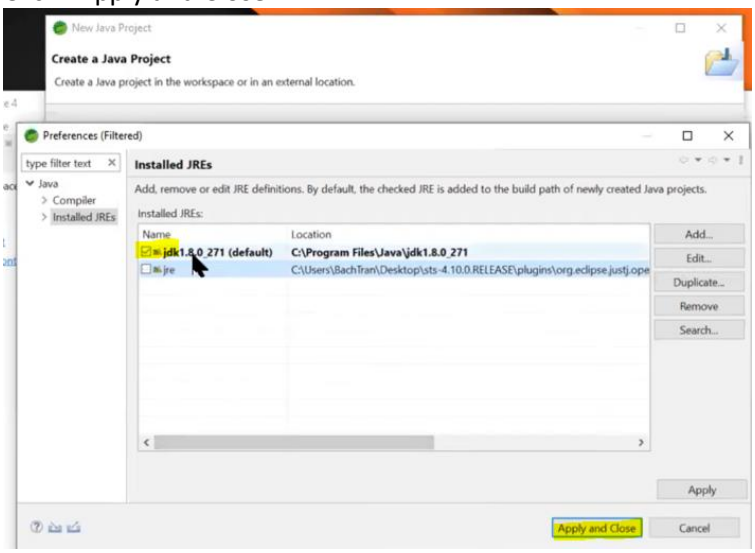
The folder name will vary depending on which version of Java was installed.



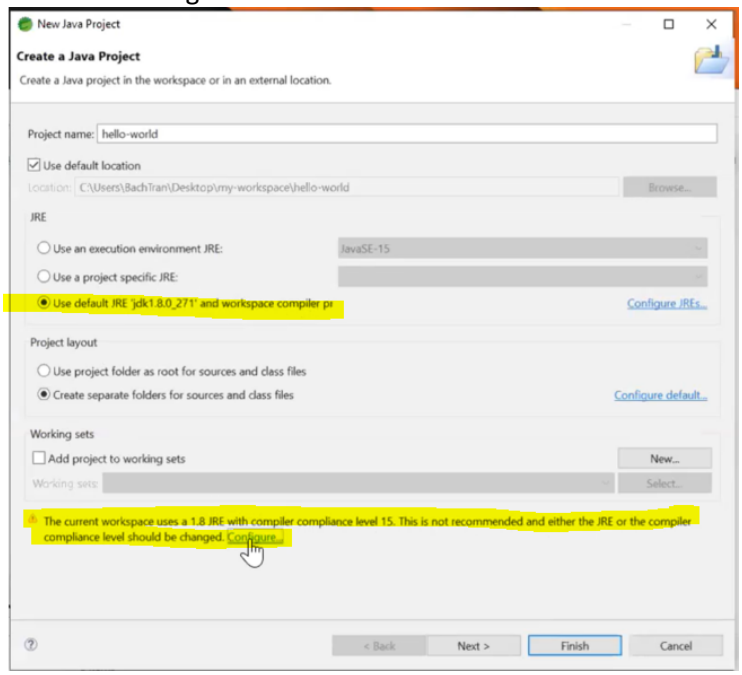
Click “Finish”



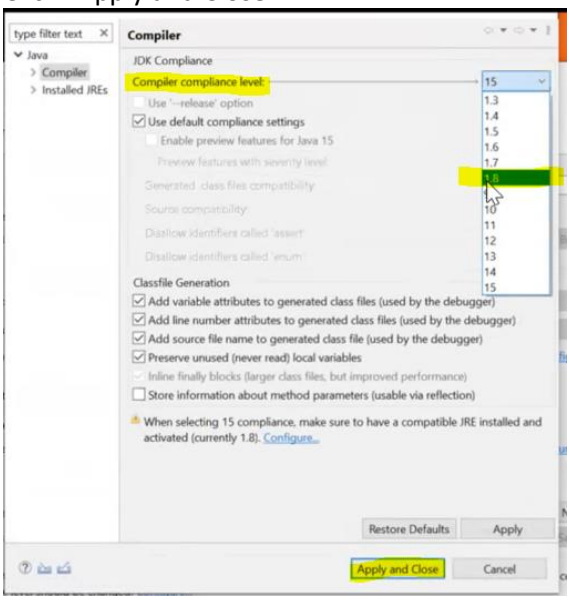
Check the checkbox for the JDK we just installed.
Click “Apply and Close”



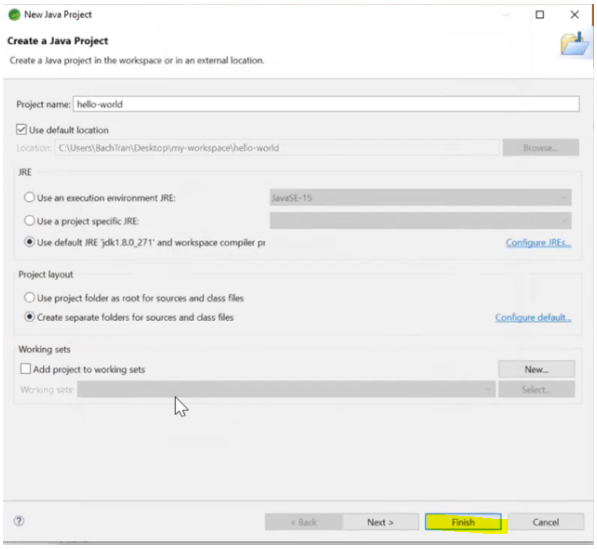
Select the radio button for the jdk 1.8 version we just installed.
Notice the warning concerning using a different jre version.
Click the “Configure” link



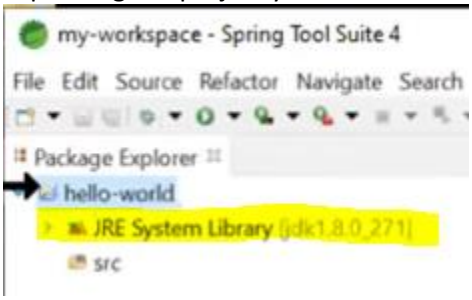
Change the “Compiler compliance level:” to 1.8
Click “Apply and Close”



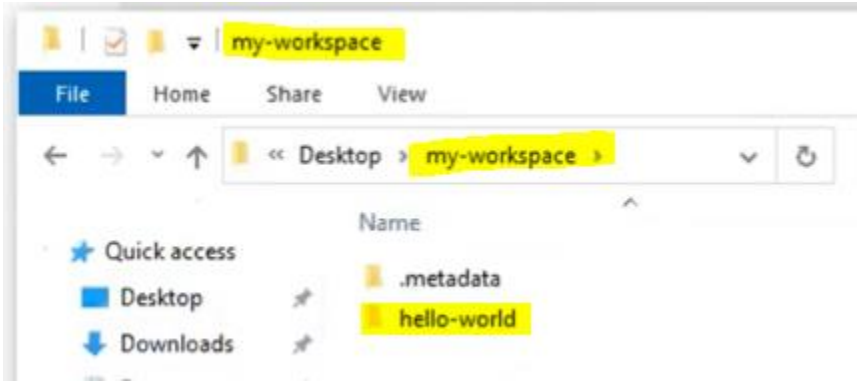
Click “Finish”



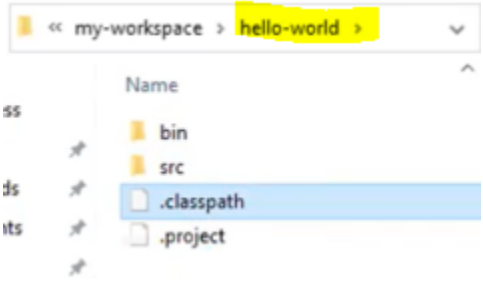
Expanding the project you can see the new JDK version



As you create new Java project, they will appear as folders in your workspace.
The folders will contain all relevant files necessary for your project.
Each project create will have a different project folder and different project files.



You will see the following when first creating a simple Java project:

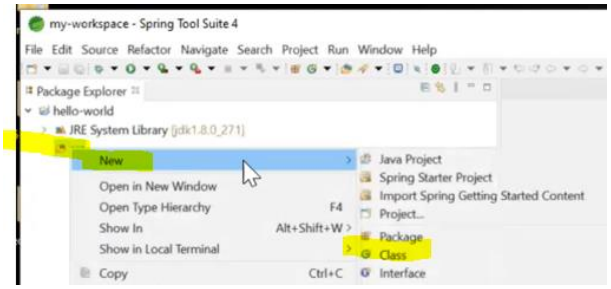


The .classpath file contains information to build the project.
The .project file is Spring Tool Suite specific information concerning the project.
The bin folder will contain the .class files containing the byte code to run the project in the JVM.
The src folder will contain the .java files containing the source code to create the .class files when compiled.

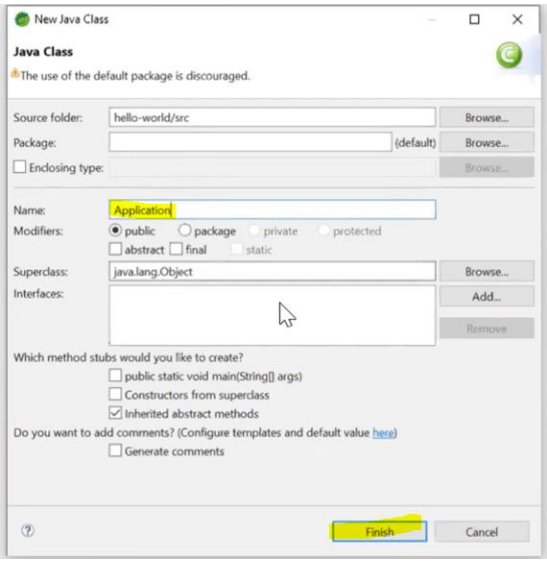
Create Project File

Create a class file

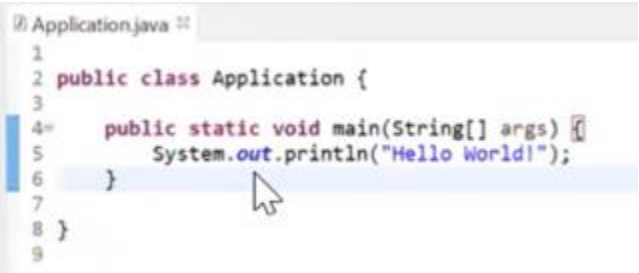
Right click on src folder
Select ➔New ➔Class



Enter a class “Name” in this case Application
Click “Finish”



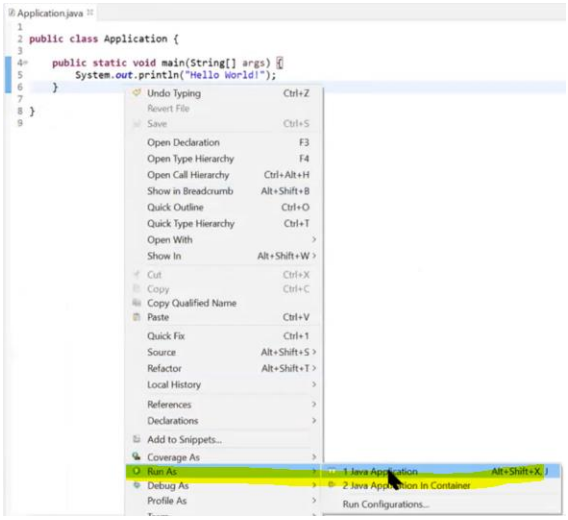
Add code to the Application class.



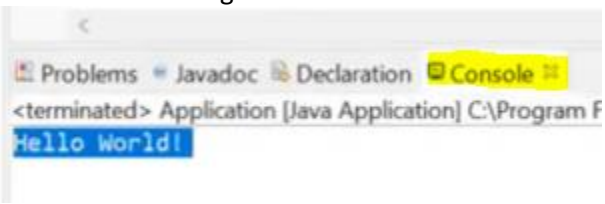

```
public class Application {
	public static void main(String[] args) {
		System.out.println("Hello World!");
	}
}
```

Run the application

Right click inside the class file
Select Run As ➔ Java Application



Examine the output in the “Console” window.
The location of the “Console” window can vary depending on you IDE setup.
It could be to the right side of the source window it could also be below the source window.



This ends the setup of a simple Java project.