Instructions for setting up Java on your own machine

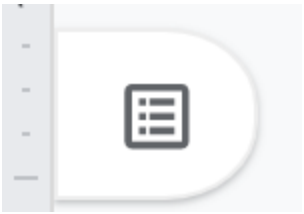
Intro

In this class, you will be writing in Java. This page contains information on how to use it on your machine, split up by instructions for Mac and instructions for Windows.

If you have any questions or issues, feel free to reach out to anyone on the staff.

Outline

Additionally, you can click the Outline button to the left of this document to get a more detailed outline.



Mac Instructions

To run most things on Mac, you will use an application called `Terminal`, which should already be downloaded onto your computer. Here is a quick tutorial on how to use the `Terminal`, however you will be going over the basics in lecture / lab, so this is just if you want to explore beyond what's in class.

NOTE: One thing to note throughout these instructions is that whenever a `Terminal` command is offered, don't include the "$" in the command - that is there to signal to you that it is a terminal command.

Java

You will be editing your code and running it in 2 separate locations.

Getting Java on Your Machine

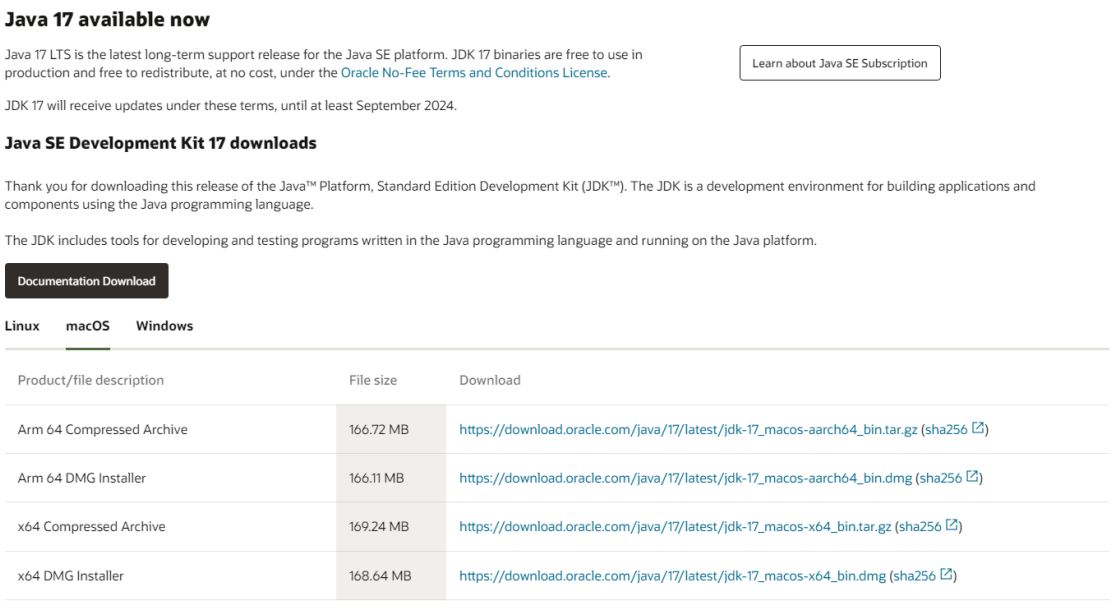
To check if you have Java, type the following command in your `Terminal`:

```
$ java --version
```

It should give you a version number that is 13 or higher. We highly recommend installing the latest version of Java.

If it doesn't list a number 13 or above, or if an error gets produced saying there is "No Java runtime present", then you need to get the updated version.

To do that, go to this link. Click on the macOS tab. Next, click the link next to the "x64 DMG Installer".



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Thank you for downloading this release of the Java™ Platform, Standard Edition Development Kit (JDK™). The JDK is a development environment for building applications and components using the Java programming language.

The JDK includes tools for developing and testing programs written in the Java programming language and running on the Java platform.

Documentation Download

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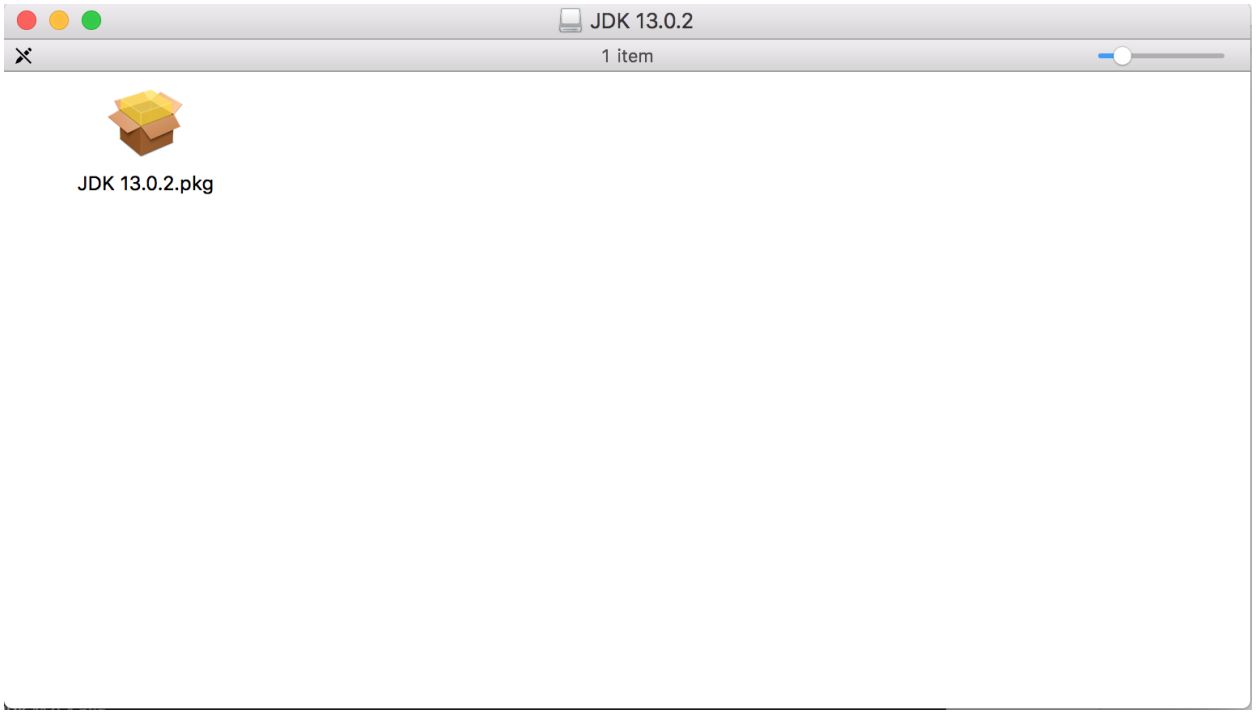
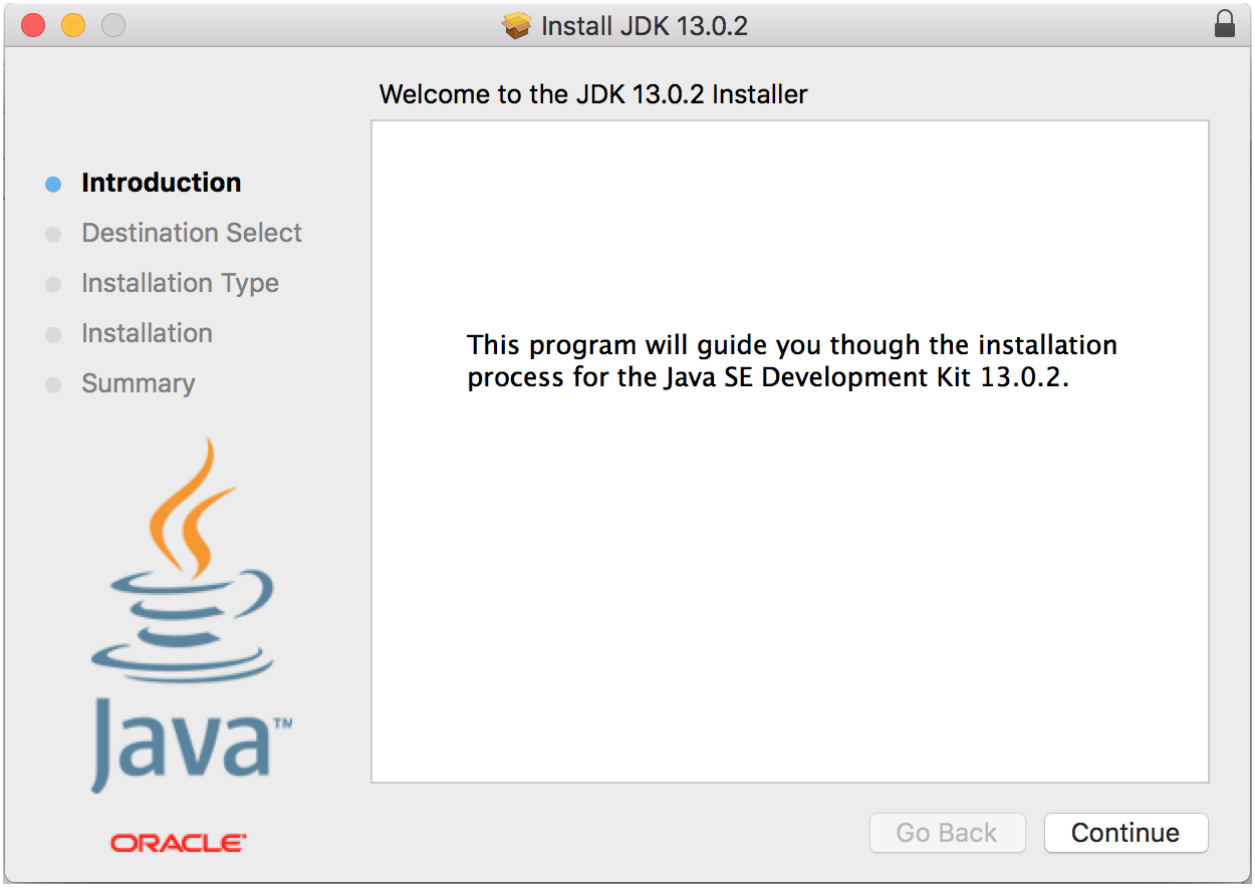
Product/file description	File size	Download
Arm 64 Compressed Archive	166.72 MB	https://download.oracle.com/java/17/latest/jdk-17_macos-aarch64_bin.tar.gz (sha256)
Arm 64 DMG Installer	166.11 MB	https://download.oracle.com/java/17/latest/jdk-17_macos-aarch64_bin.dmg (sha256)
x64 Compressed Archive	169.24 MB	https://download.oracle.com/java/17/latest/jdk-17_macos-x64_bin.tar.gz (sha256)
x64 DMG Installer	168.64 MB	https://download.oracle.com/java/17/latest/jdk-17_macos-x64_bin.dmg (sha256)

When you’ve finished the download, click it and follow the installer. You might also have to double click the box (shown in the first photo below) to start the installer. You can move the installer to the trash when it’s done.





Re-run the following java version command to make sure you have the correct version:

```
$ java --version
```

After running this command you should see:

```
java 13.0.2 2020-01-14
Java(TM) SE Runtime Environment (build 13.0.2+8)
Java HotSpot(TM) 64-Bit Server VM (build 13.0.2+8, mixed mode, sharing)
```

If you see this then you have correctly installed Java!

Editing Java Code

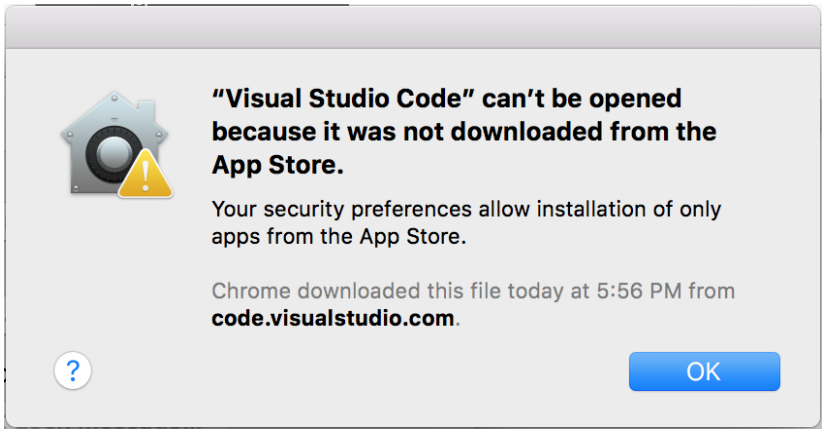
To edit your Java code, we recommend the Visual Studio Code text editor.

Visual Studio Code

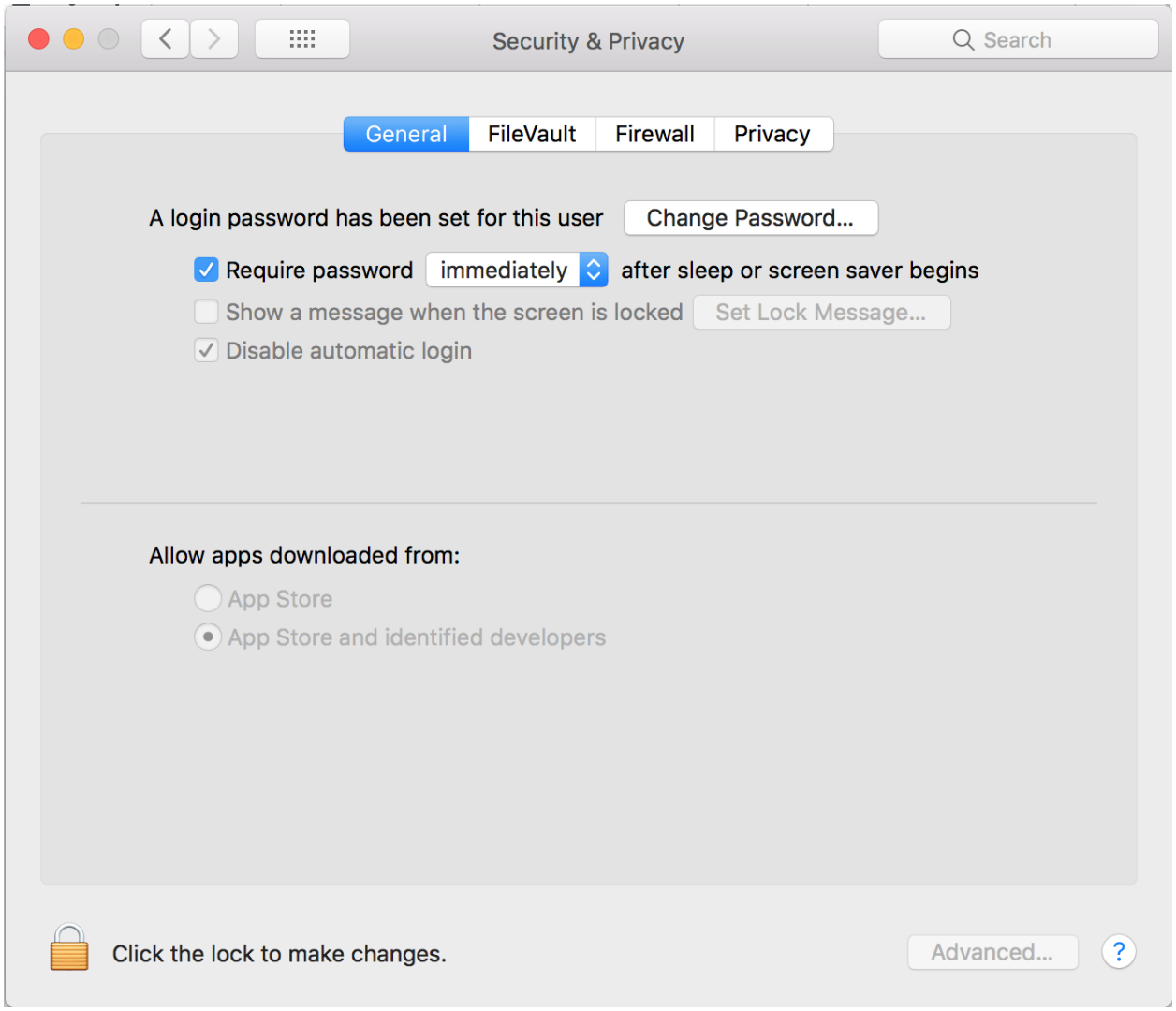
Follow this link, and click the Mac Download button:

Open the downloaded file once it's done, and follow the instructions there on how to finish the download.

A possible error that may occur when trying to open VS Code is the following:



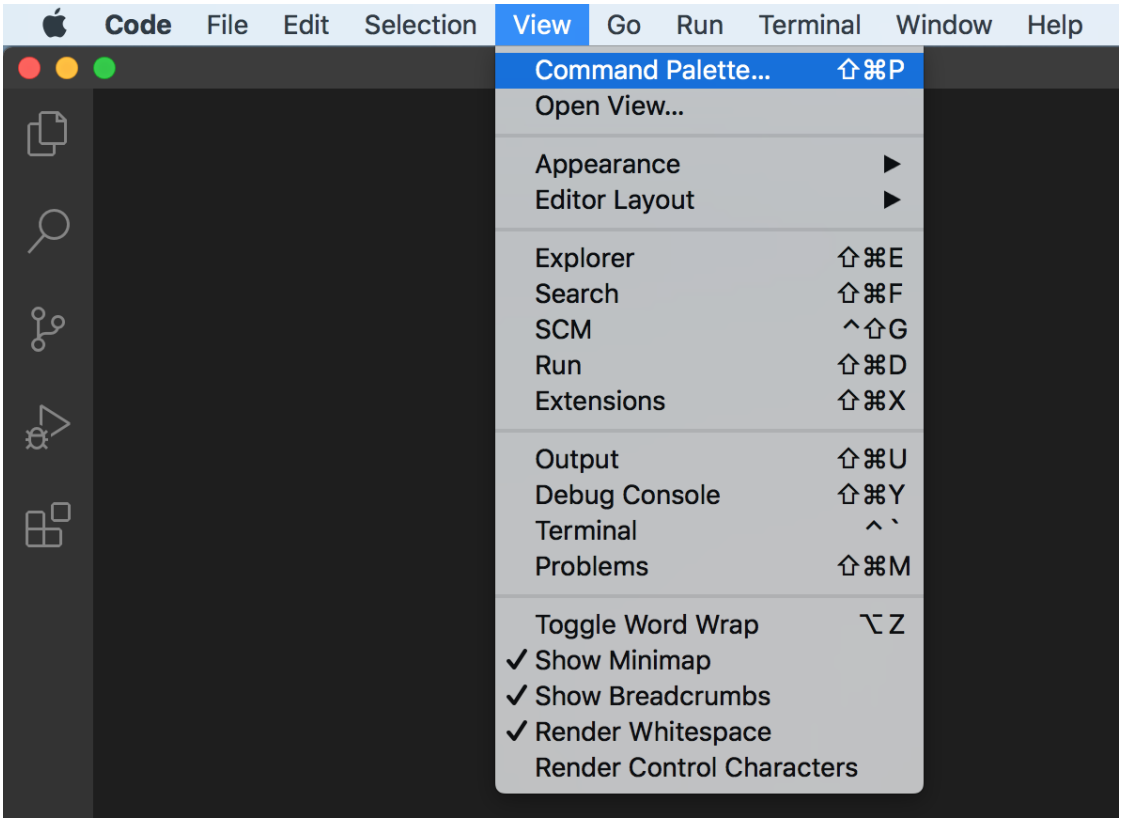
To fix this, do the following:
Open System Preferences through Spotlight Search
Click on Security and Privacy
Click on the lock symbol in the bottom left followed by entering your password
Then change the setting under "Allow apps downloaded from:" from App store to App Store and identified developers. Below is a screenshot of the correct setting
Finally, click the lock on the bottom left to lock the settings
You should now be able to run the VS Code application



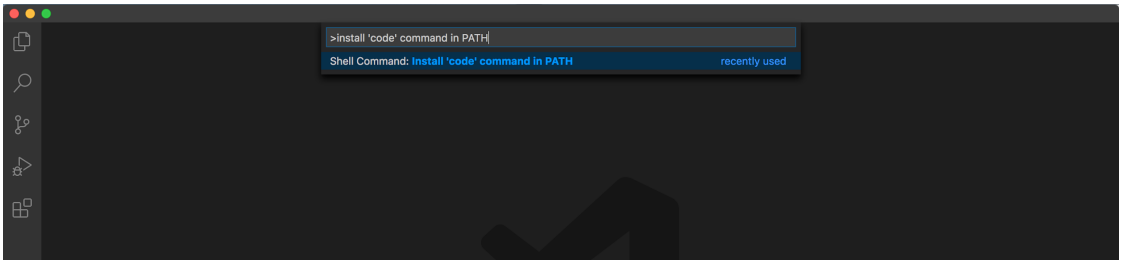
To open files in VS Code, there are two ways to do this.

- One way is to open VS Code itself first. From there, go to `File > Open`, and choose the file you wish to edit.
- To run it from `Terminal`, it is slightly more complicated (you need to do one step first to make it always work. Note that this step only needs to be performed the first time you open VS Code).

- First, open up the command palette within VS Code (type ⇧⌘P) or click view on the top bar followed by the command palette option. Below is a screenshot of this



- Next type “Install 'code' command in PATH” into the command palette and hit enter. Below is a screenshot of this



- Now you can run the `Terminal` command. Open `Terminal`, and navigate to the folder where your file is located and type `code` followed by your file’s name:

```
$ code fileName.java
```

For example, if I have a file called helloWorld.java, then I would type the following to open it in VS Code:

```
$ code helloWorld.java
```

Running Java Code

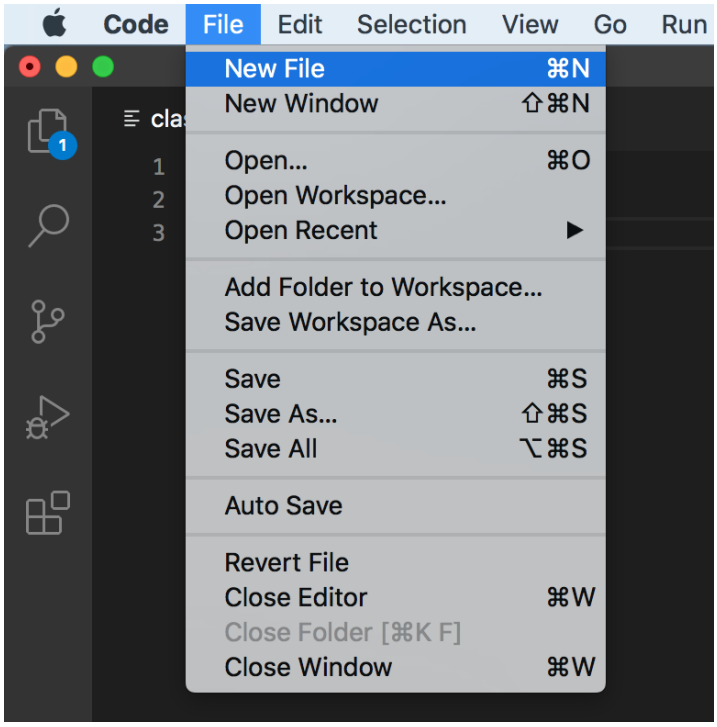
The last step to getting Java to work is making sure you know how to run Java files. This will be covered in class, but will be here as a reminder.

First open your preferred text editor by clicking the application icon or typing the following in terminal to open either VS Code or Atom:

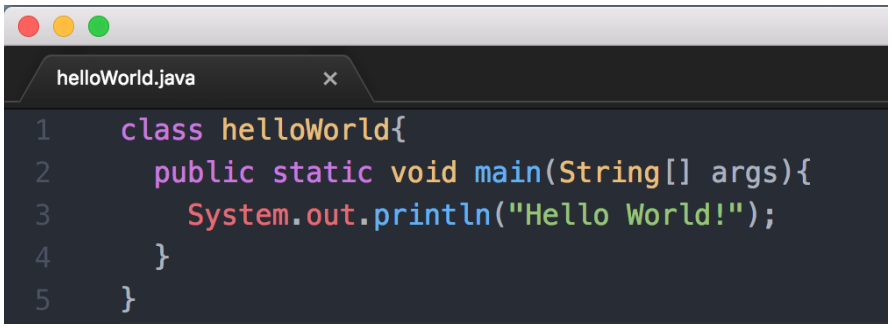
```
$ code
```

Once the text editor is open, we will begin by making a java file. Below are screenshots of how to do this in VS Code.

In VS Code click on File followed by New File:



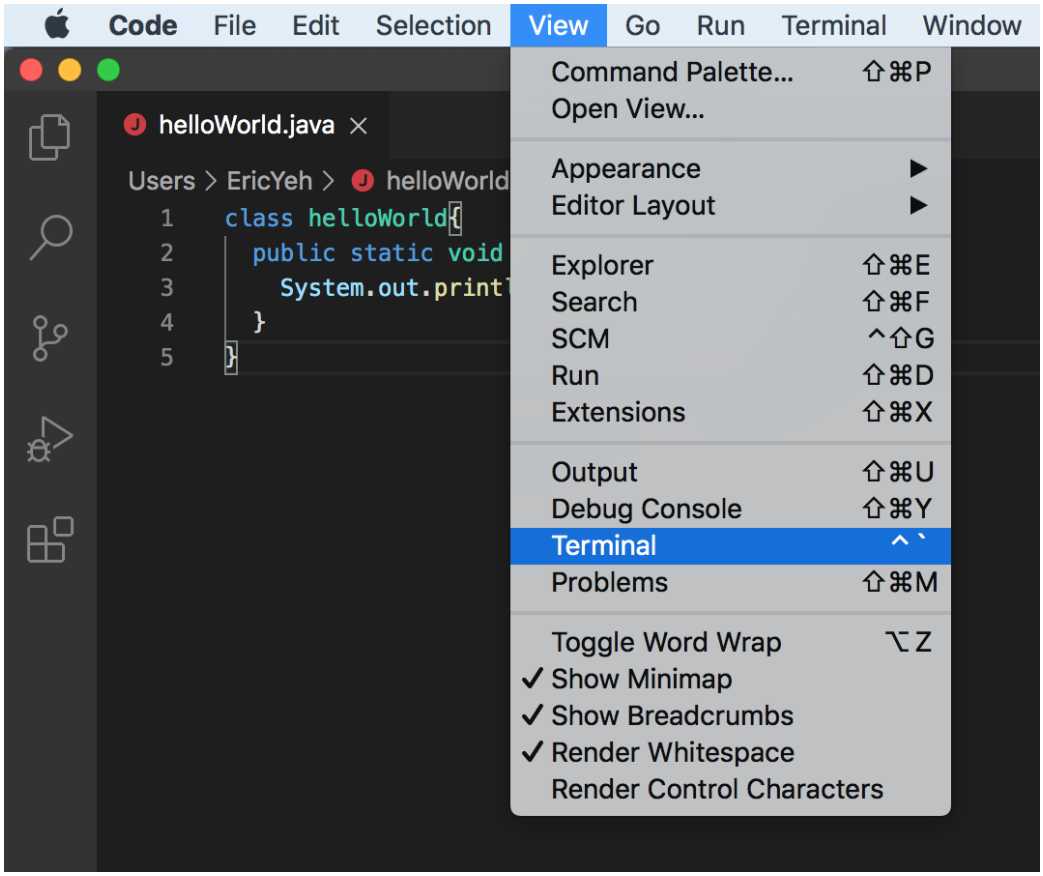
Once you have a new file open, type the following code into the file. Do note that it is case sensitive so make sure there are no typos before moving onto the next step:



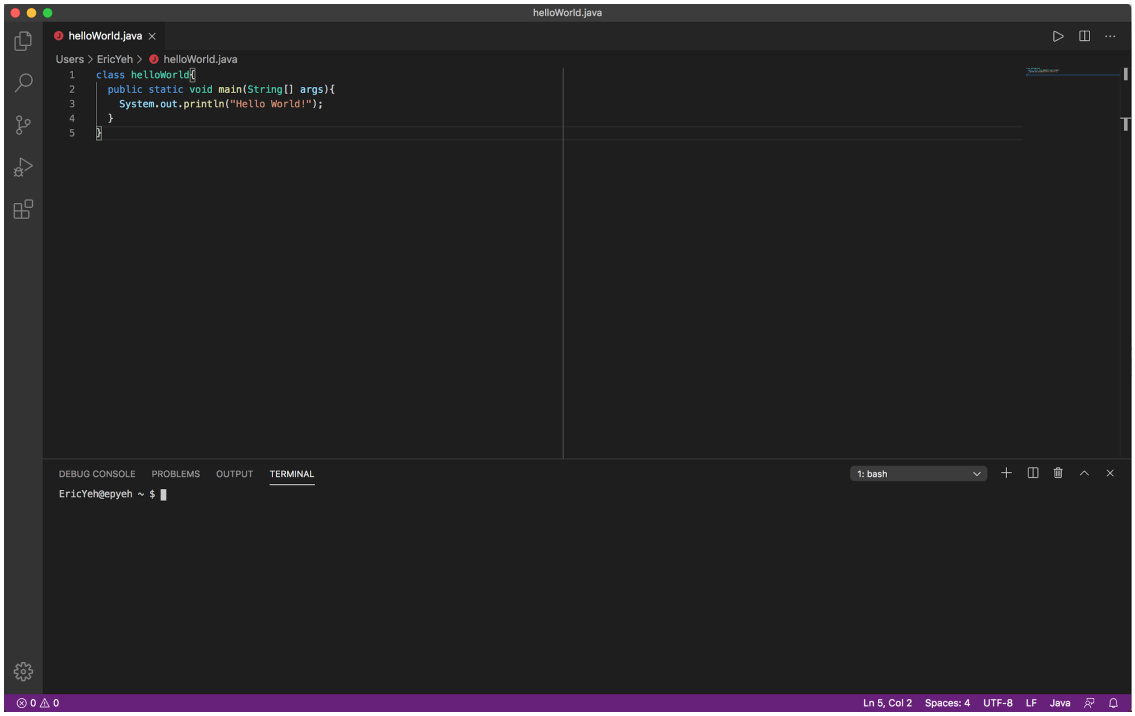
Make sure to save your file by clicking on File followed by save!

Next we will open the in-built terminal.

In VS Code it is opened by clicking View followed by Terminal. Below is a screenshot illustrating this.



After clicking this your VS Code should now look like the following with a terminal tab:



After you have successfully opened the terminal in either VS Code, we will now *compile* our java code by typing the following into the in-built terminal

```
$ javac helloWorld.java
```

This will produce a file named `helloWorld.class`, which will store information about the file you just compiled.

Finally, to run the file, type the following (make sure you do *not* add the ".java" part at the end of the file name):

```
$ java helloWorld
```

If everything is working correctly, you should see Hello World be printed to the console!

And you're done! Congratulations on writing your first Hello World program in Java!

Windows Instructions

These instructions will have you run commands in the `Command Prompt`, which comes with Windows and can be found by searching for it in the Search Bar.

NOTE: One thing to note throughout these instructions is that whenever a `Command Prompt` command is offered, don't include the "$" in the command - that is there to signal to you that it is a command.

Java

You will be editing your code and running it in 2 separate applications.

Getting Java on Your Machine

To check if you have Java, type the following command in your `Command Prompt`:

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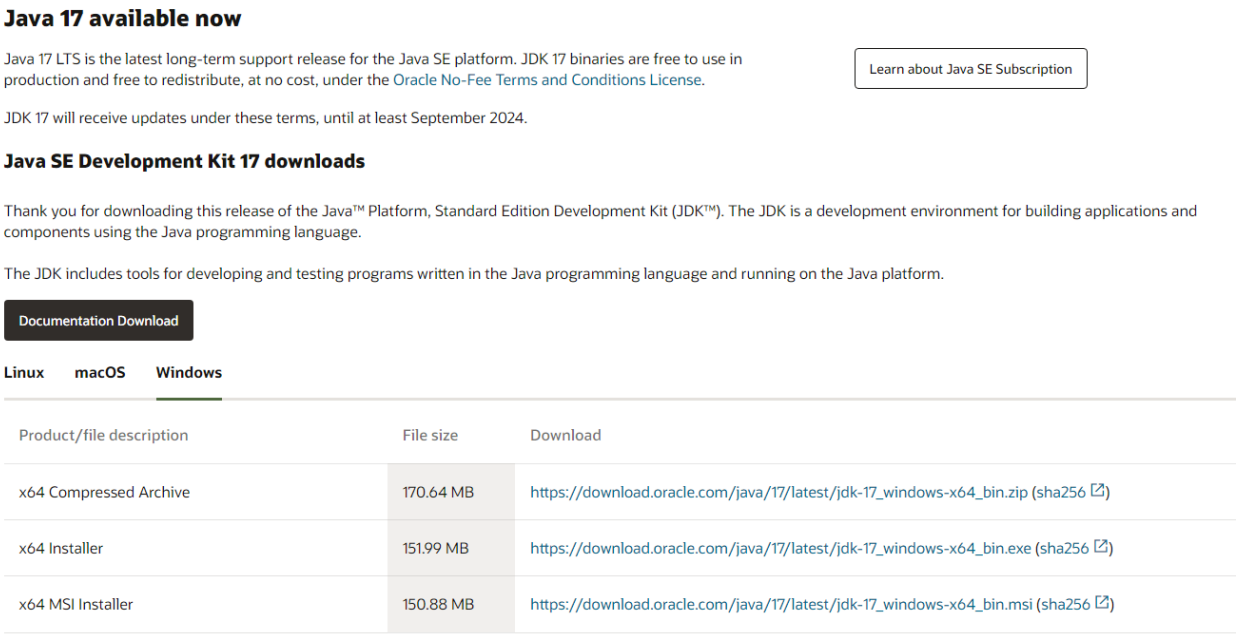

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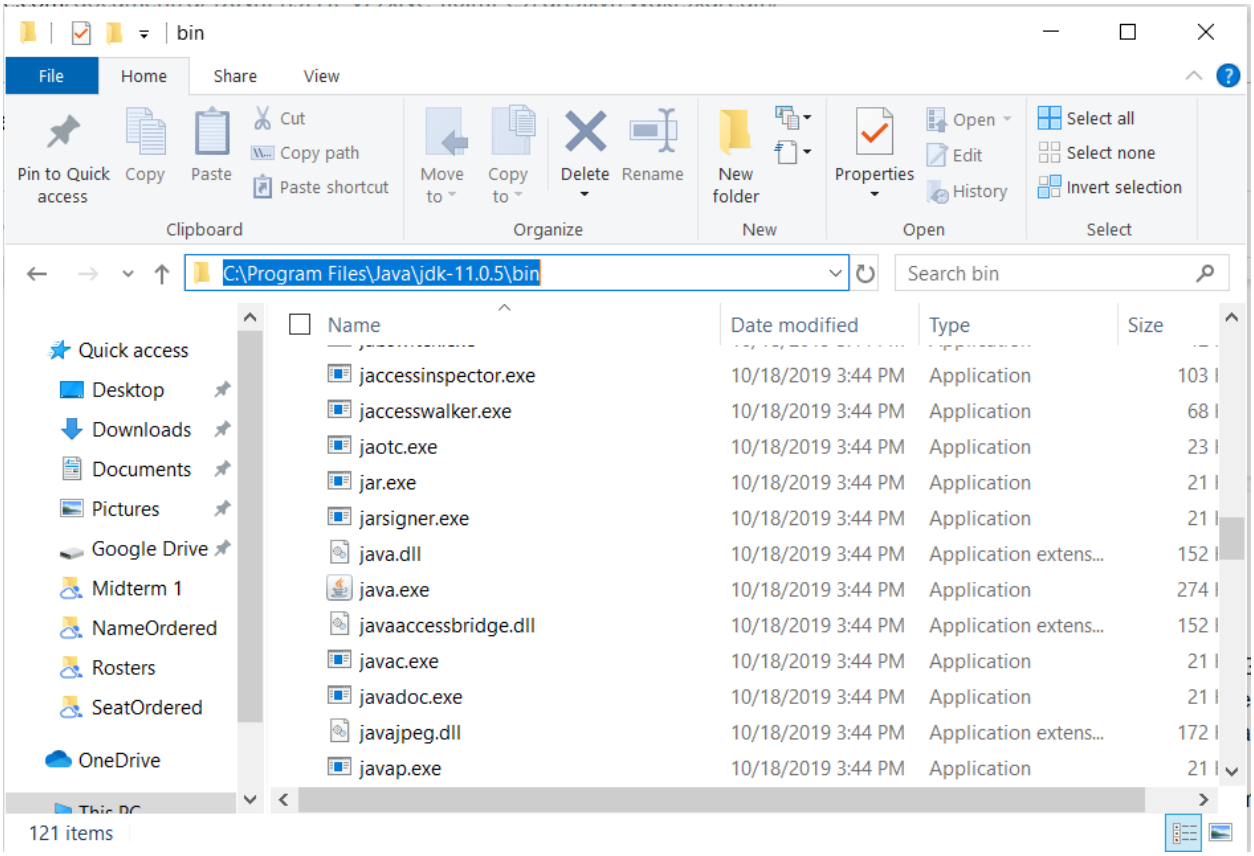
x64 Compressed Archive	170.64 MB	https://download.oracle.com/java/17/latest/jdk-17_windows-x64_bin.zip (sha256)
x64 Installer	151.99 MB	https://download.oracle.com/java/17/latest/jdk-17_windows-x64_bin.exe (sha256)
x64 MSI Installer	150.88 MB	https://download.oracle.com/java/17/latest/jdk-17_windows-x64_bin.msi (sha256)

When you've finished the download, click it and follow the installer.

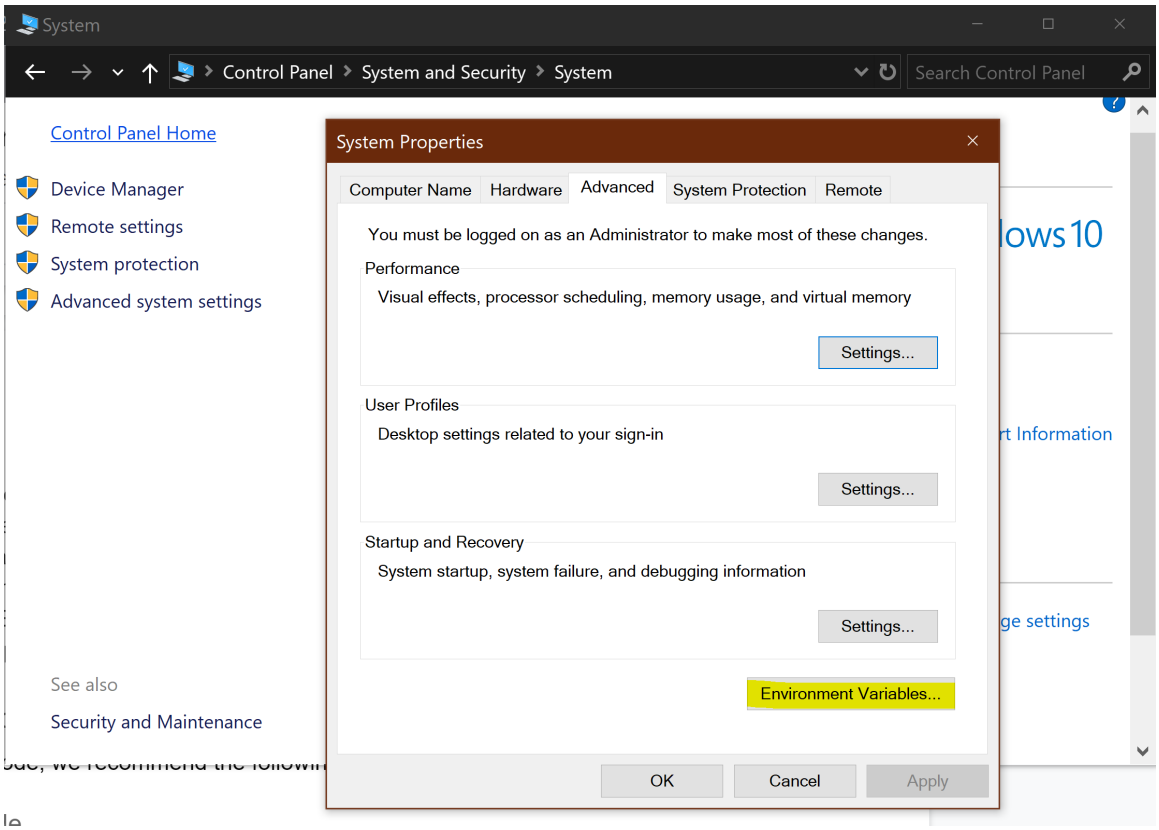
Re-run the "java" command from above to make sure you have the correct version.

Type `javac` in the command prompt and see the output, if you get javac is not recognized as an internal or external command, this means the JDK Path is not set. To do this do the following:

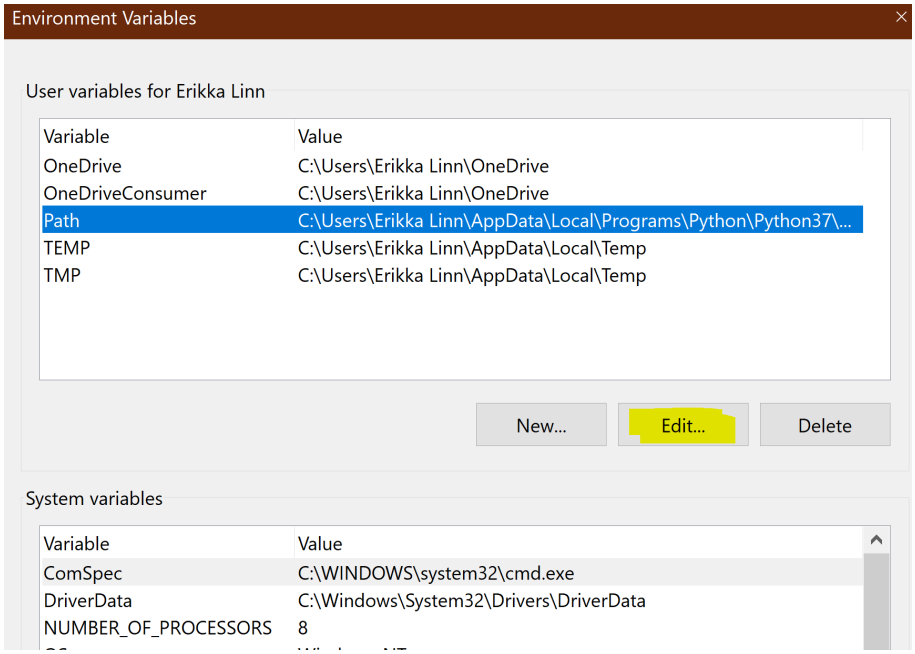
1. Find the location of your Java folder. Go into the folder of the java version you just installed, and then go into the bin folder, which is inside that folder. In the bin folder you should see the files javac.exe and java.exe. Highlight the path and copy it



2. Open Control Panel and Select System and Security
3. Select System
4. Select Advanced System Settings
5. Select Environment Variables



6. Select and Edit Path Environment variable



7. Click new and paste the path to your Java folder. Click ok.
8. Finally, open a *new* command prompt window again type `javac`

Editing Java Code

To edit your Java code, we recommend the Visual Studio Code text editor.

Visual Studio Code

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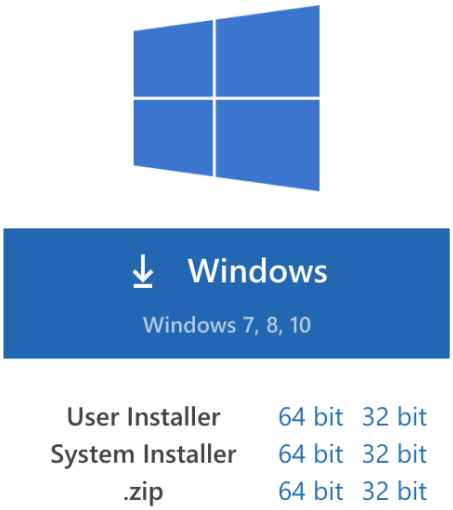

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```