Setting Up Eclipse Development Environment

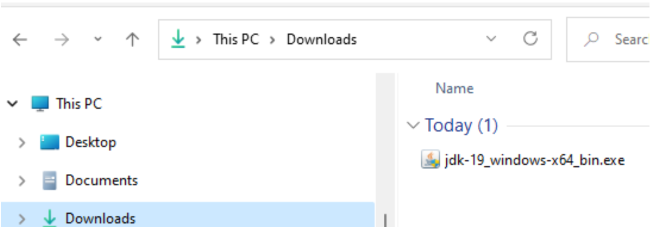
Setting up Eclipse

- You should first have your git repository set up.
- I am providing the JDK and Eclipse versions from Fall 2024 since changes won't affect what we are doing in this class.
- Take your time reading instructions so you do not need to do it over.
- Find a partner to set up together if you can.
- See windows set up below or go to Mac Set Up

Windows Setup

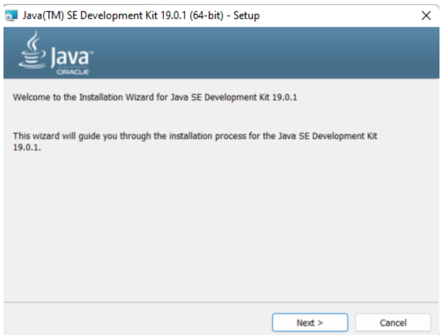
Step 1: Download SE Development Kit and Install

1. Download this JDK-22 file
2. Once the download completes, start the installation by double clicking on the downloaded .exe in the browser or in the directory it is saved in.



3. You will be asked if you want to allow this app to make changes to your device - click **Yes**. Note: The installation can take a bit to get started – it can be slow - so be patient.

4. You will see the **Welcome** dialog – click **Next** to start download



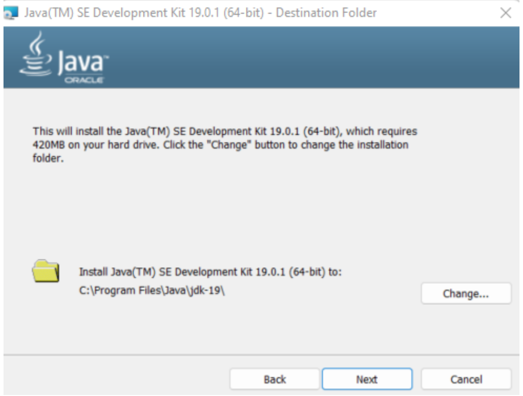
Welcome to the Installation Wizard for Java SE Development Kit 19.0.1

This wizard will guide you through the installation process for the Java SE Development Kit 19.0.1.

5. The next dialog offers some options – click **Next**.

○ Notice that the JDK will be installed in the **Program Files** directory

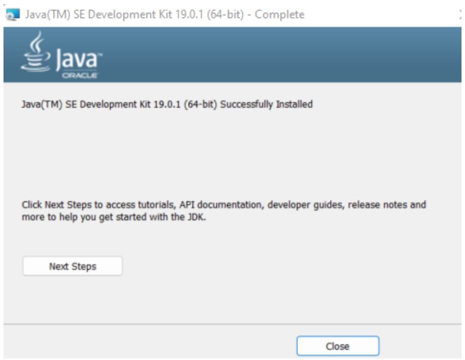
o This is where it should be installed so don't change the location


Java(TM) SE Development Kit 19.0.1 (64-bit) - Destination Folder
Java ORACLE
Change...
Back
Next
Cancel

This will install the Java(TM) SE Development Kit 19.0.1 (64-bit), which requires 420MB on your hard drive. Click the "Change" button to change the installation folder.

Install Java(TM) SE Development Kit 19.0.1 (64-bit) to:
C:\Program Files\Java\jdk-19\

6. When installing the status window may or may not display. – be patient, it takes time to get started. When the window shows successfully installed click close.



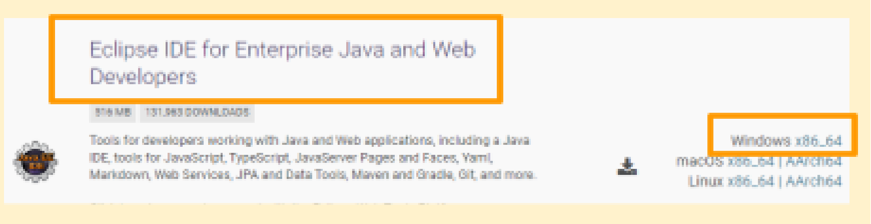
Java(TM) SE Development Kit 19.0.1 (64-bit) Successfully Installed

Click Next Steps to access tutorials, API documentation, developer guides, release notes and more to help you get started with the JDK.

Step 2: Download Eclipse (Windows)

Your Workspace files will be stored in git and not in the Eclipse Folder

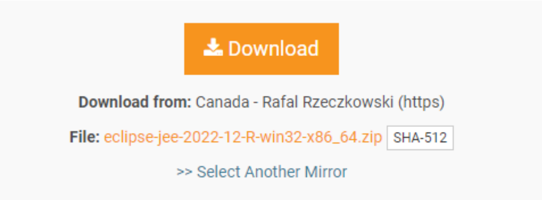
1. Install Eclipse IDE 2024-06 R Packages
2. Scroll down to **Eclipse IDE for Enterprise Java and Web Developers** (DO NOT use the installer)


Eclipse IDE for Enterprise Java and Web Developers

516 MB 131,983 DOWNLOADS

Tools for developers working with Java and Web applications, including a Java IDE, tools for JavaScript, TypeScript, JavaServer Pages and Faces, Yaml, Markdown, Web Services, JPA and Data Tools, Maven and Gradle, Git, and more.

3. You should end up on a page with a big download button - click that button!

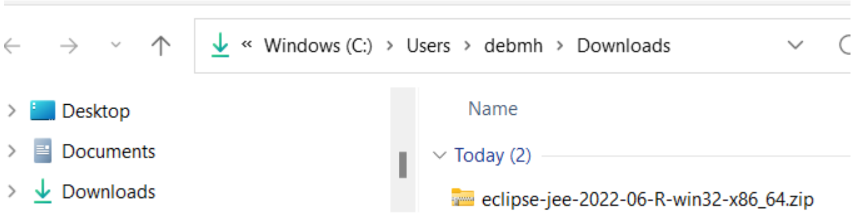


Download from: Canada - Rafal Rzeczkowski (https)

File: eclipse-jee-2022-12-R-win32-x86_64.zip SHA-512

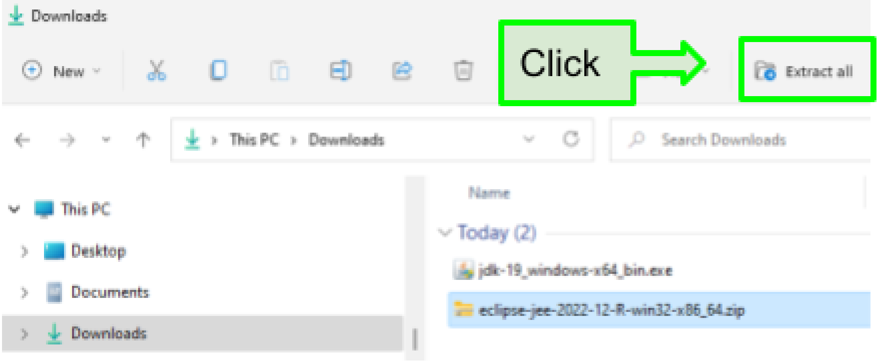
>> Select Another Mirror

4. Windows The **Eclipse zip** file will download into the **default download location** (the “download” folder in your “user” account) unless you have set up your browser to save to a different location.


Windows (C:) › Users › debmh › Downloads

eclipse-jee-2022-06-R-win32-x86_64.zip

5. Eclipse is a bit different since you don’t actually “install” it. Instead, because it is a zip file you will **extract** it to a directory of your choice.



jdk-19_windows-x64_bin.exe

eclipse-jee-2022-12-R-win32-x86_64.zip

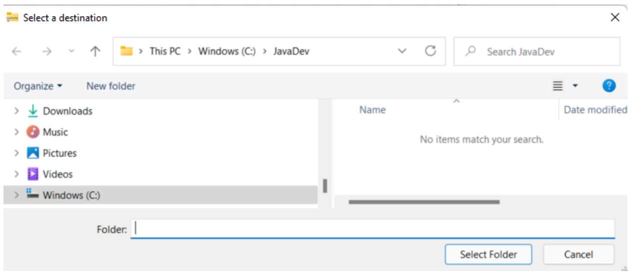
6. The “**Select a Destination and Extract Files**” dialog will be displayed. In the dialog, select where to place Eclipse. Click Browse and read below. Select show extracted files when complete. The unzip will start after you click extract– this could take a while depending on your system.

○ On my personal systems, my preference is to create a "**JavaDev**" directory on my C drive and unzip Eclipse there - **C:\JavaDev. DO NOT PUT IT IN YOU GIT REPOSITORY>**

o When you start to do more development, having a development directory on your machine helps keep all development tools in one place.

o **NOTE: Placing the eclipse file too deep into the file structure causes an error.**

You can click new folder to create a JavaDev folder



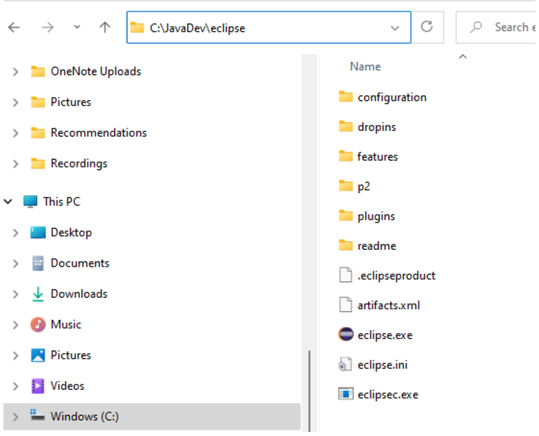
No items match your search.

7. When the unzip completes, go to the location you selected and view all the files

○ On my system that location is **C:\JavaDev\eclipse**

o Note: if you ever need to uninstall Eclipse, just delete the eclipse directory.

o Note, when reinstalling or updating eclipse your workspace will be backed up in your git folder!



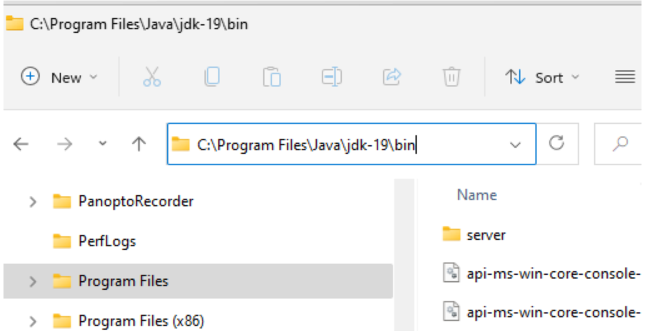
configuration
dropins
features
p2
plugins
readme
.eclipseproduct
artifacts.xml
eclipse.exe
eclipse.ini
eclipsec.exe

Step 3: Setup Environment Variables

Remember to go slow and pay attention to details.

1. Find where the JDK is on your hard drive. It should be in the **Program Files** directory in the **Java** directory: **C:\Program Files\Java\jdk-22**

2. Go one more level down to the **bin** directory

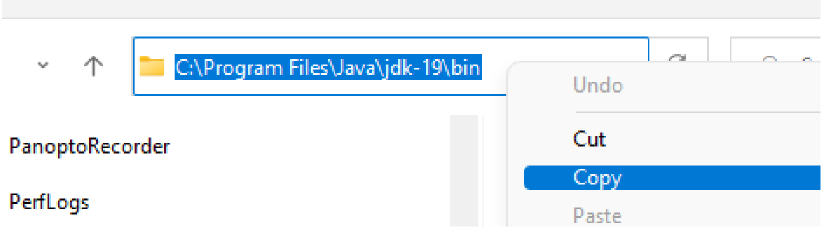


C:\Program Files\Java\jdk-19\bin

3. In the File Explorer window, click in the little window where the path is shown which will highlight the path.

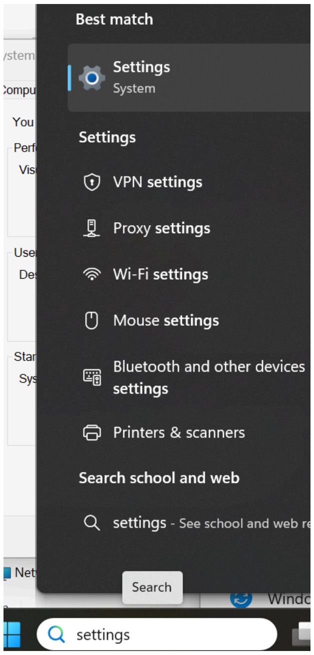
o Make sure the path includes the **bin** directory: **C:\Program Files\Java\jdk-22\bin**

o Copy the path to the **bin** directory (since it's highlighted use CTRL-C to save it in the buffeR or right click to copy.)



C:\Program Files\Java\jdk-19\bin

4. Go to settings. You can Search for settings

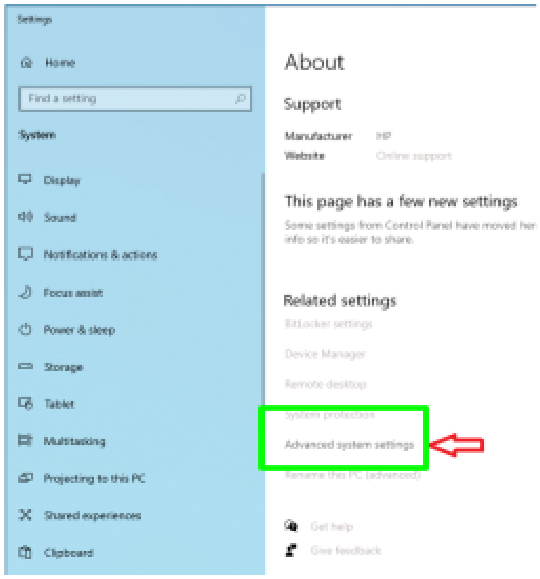


settings

5. A new window will appear showing your system information. On the right, scroll down to **Related Settings** and click “**Advanced system settings**”. Might be different based on the OS version so see below for windows 10 and windows 11.

o windows 10

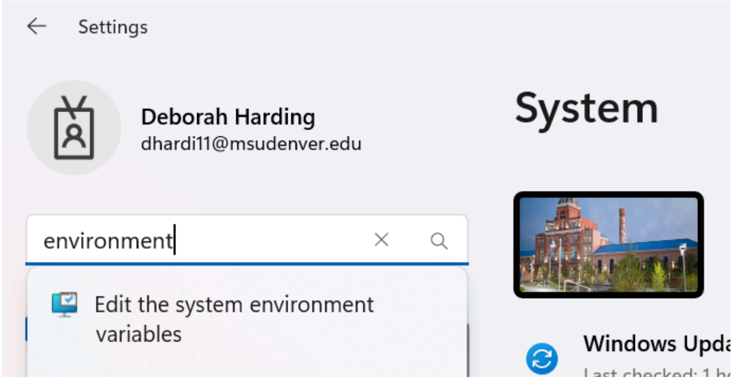
Windows 10



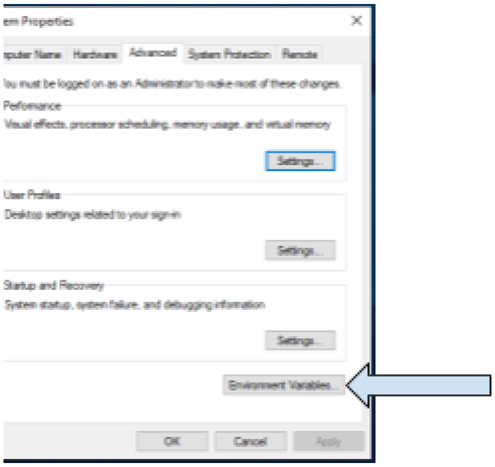
This page has a few new settings

Some settings from Control Panel have moved her info so it's easier to share.

o Note if you have Windows 11, I searched for environment and selected Edit the system environment variables.



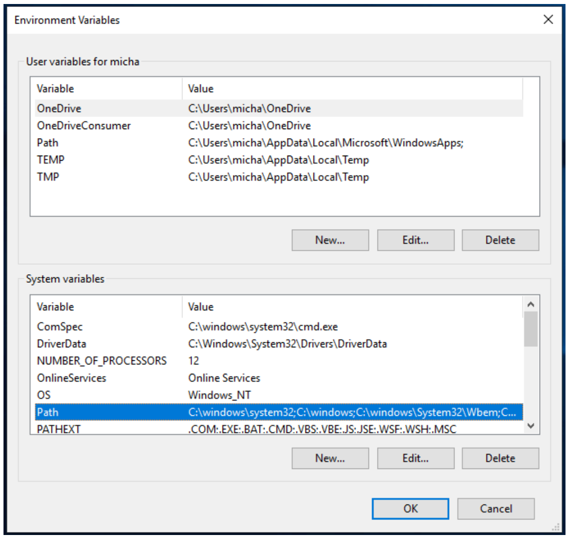
6. In the System Properties window, click the “**Environment Variables…**” button



ou must be logged on as an Administrator to make most of these changes.

Performance
Visual effects, processor scheduling, memory usage, and virtual memory
Settings...
User Profiles
Desktop settings related to your sign-in
Settings...
Startup and Recovery
System startup, system failure, and debugging information
Settings...
Environment Variables...
OK
Cancel
Apply

7.	The **Environment Variables** window will display. In the lower window - "System Variables" - find "**Path**" and single click on it to highlight



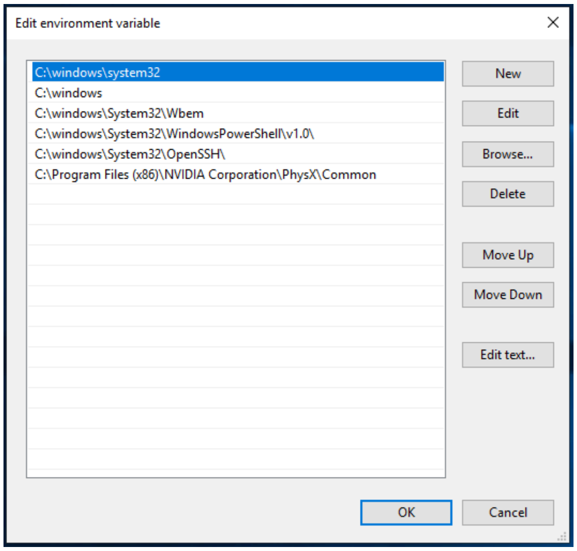
User variables for micha

Variable	Value
OneDrive	C:\Users\micha\OneDrive
OneDriveConsumer	C:\Users\micha\OneDrive
Path	C:\Users\micha\AppData\Local\Microsoft\WindowsApps;
TEMP	C:\Users\micha\AppData\Local\Temp
TMP	C:\Users\micha\AppData\Local\Temp

System variables

Variable	Value
ComSpec	C:\windows\system32\cmd.exe
DriverData	C:\Windows\System32\Drivers\DriverData
NUMBER_OF_PROCESSORS	12
OnlineServices	Online Services
OS	Windows_NT
Path	C:\windows\system32;C:\windows;C:\windows\System32\Wbem;C...
PATHEXT	.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC

8.	Once "Path" is highlighted, click **Edit** and this window will appear.



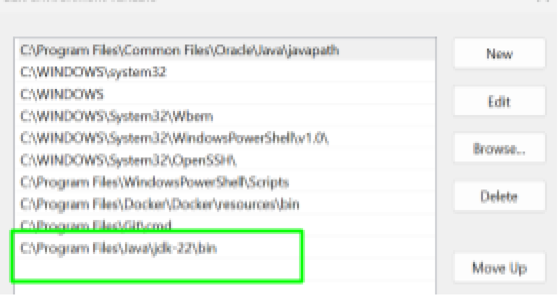
C:\windows\system32
C:\windows
C:\windows\System32\Wbem
C:\windows\System32\WindowsPowerShell\v1.0\
C:\windows\System32\OpenSSH\
C:\Program Files (x86)\NVIDIA Corporation\PhysX\Common

9.	Click **New**. Paste the path for the **JDK bin** directory into the little window adding it to your path.

o	Click on the little window

o	 Use CTRL-V to paste the path saved in the buffer into the little window

o	Close all those windows by clicking OK. You can close this window.



C:\Program Files\Common Files\Oracle\Java\javapath
C:\WINDOWS\system32
C:\WINDOWS
C:\WINDOWS\System32\Wbem
C:\WINDOWS\System32\WindowsPowerShell\v1.0\
C:\WINDOWS\System32\OpenSSH\
C:\Program Files\WindowsPowerShell\Scripts
C:\Program Files\Docker\Docker\resources\bin
C:\Program Files\Git\cmd
C:\Program Files\Java\jdk-22\bin

Step 4: Set Eclipse Windows

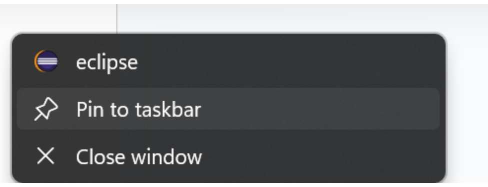
1. Go to the directory where you extracted Eclipse (on my system that would be **c:\JavaDev\eclipse**).

2. Double click the **eclipse.exe** file

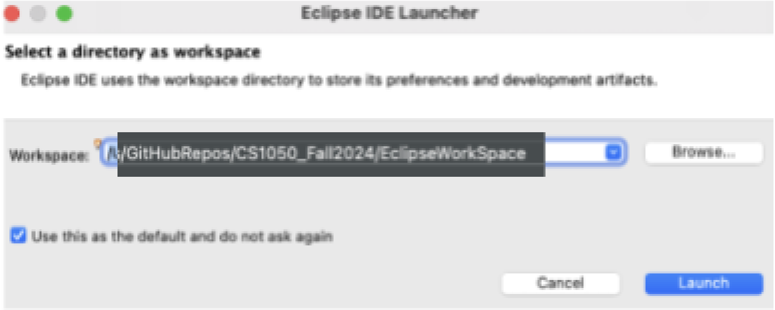
○ If you don’t see the **.exe** file extension – double click the file with the round purple icon

○ To see file extensions in file explorer, click “**View**” then check “**File name extensions**”

o You can right click eclipse and pin to taskbar to make it easier to launch



3. Eclipse will ask where you want your **workspace**. A **workspace** is where the .java and .class files for your class work and assignments will be stored. You will put this in the EclipseWorkSpaceFolder you created in your git repo ([Part 3: Git Repos Organize in Folders](#)) so you can version the files using git and back up on the GitHub server. Click use this as the default.



Eclipse IDE Launcher

Select a directory as workspace

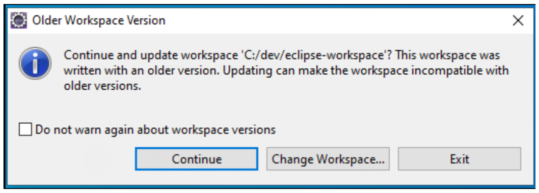
Eclipse IDE uses the workspace directory to store its preferences and development artifacts.

Workspace: /GitHubRepos/CS1050_Fall2024/EclipseWorkSpace

☑ Use this as the default and do not ask again

4. Click launch **Note: if you’re updating the version of Eclipse on your machine you will see the following dialog**

○ Note: **Before you update Eclipse** to a newer version make a backup copy of your current workspace in case you run into issues.

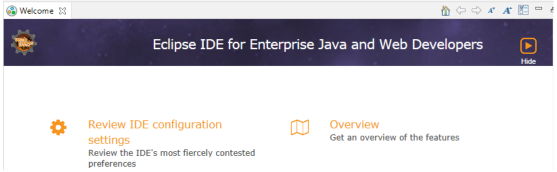


Older Workspace Version

Continue and update workspace 'C:/dev/eclipse-workspace'? This workspace was written with an older version. Updating can make the workspace incompatible with older versions.

□ Do not warn again about workspace versions

5. The Welcome screen for Eclipse will appear. Click the **Hide** icon on the right side.


Welcome
Eclipse IDE for Enterprise Java and Web Developers
Hide
Review IDE configuration settings
Review the IDE's most fiercely contested preferences
Overview
Get an overview of the features

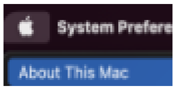
6. You are now set up to create, compile and run Java programs! Go to [Creating a Java Program in Eclipse (Windows and Mac)](#)

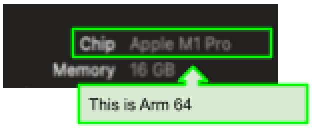
Mac Set Up

Step 1: Download Java SE Development Kit

1. First you need to find out if your Mac is using X64 (x86-64) architecture or ARM 64 (M1 or M2).

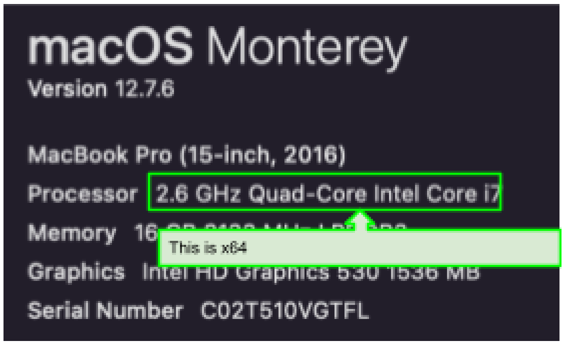
○ Click apple and select about this Mac. If the chip is M1 or M2 you are using ARM 64.




Chip Apple M1 Pro

Memory 16 GB

This is Arm 64


macOS Monterey

Version 12.7.6

MacBook Pro (15-inch, 2016)

Processor 2.6 GHz Quad-Core Intel Core i7

Memory 16

This is x64

Graphics Intel HD Graphics 530 1536 MB

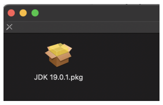
Serial Number C02T510VGTFL

2. Here are the versions I will be using for you to download.

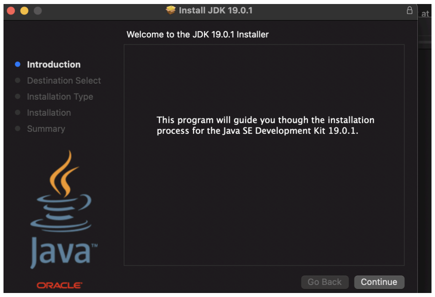
○ if using M1 or M2 chip download the [ARM 64 download this file]

○ otherwise download this file [jdk-22_macos-x64_bin.dmg]

3. Double click the JKD pkg

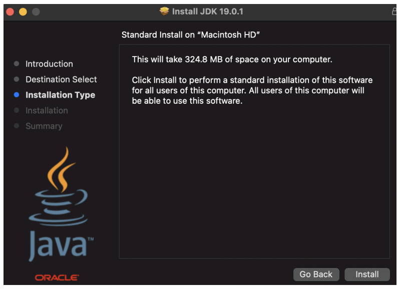


4. The install window will appear. Click continue and then install. Enter password to install the software. Then click close



Welcome to the JDK 19.0.1 Installer

This program will guide you though the installation process for the Java SE Development Kit 19.0.1.

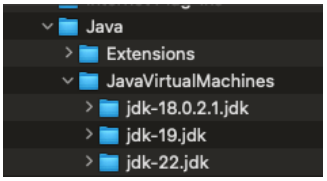


Standard Install on "Macintosh HD"

This will take 324.8 MB of space on your computer.

Click Install to perform a standard installation of this software for all users of this computer. All users of this computer will be able to use this software.

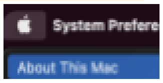
5. Here is where the JDK is located. You may have more than one installed. This will be addressed later.

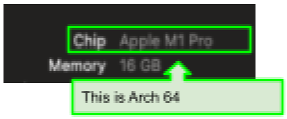


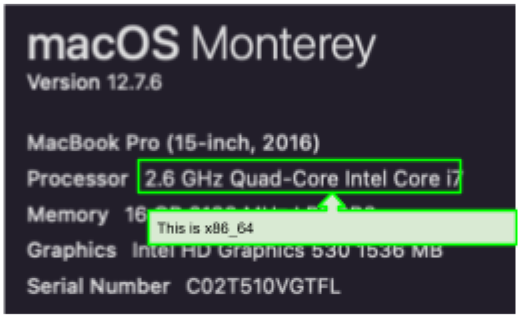
Step 2: Set Up Eclipse

Your Workspace files will be stored in git and not in the Eclipse Folder

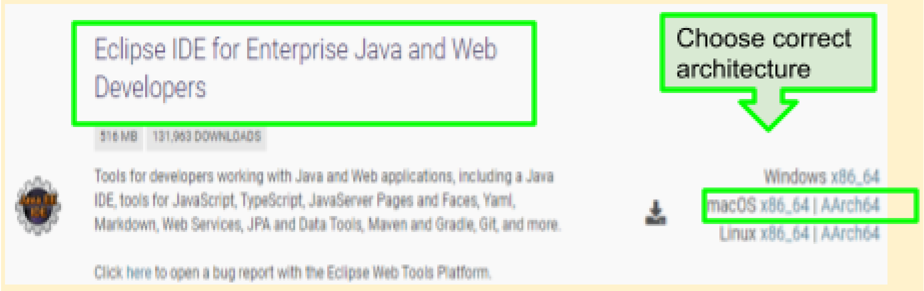
1. Go to: Eclipse IDE 2024-06 R Packages
2. Scroll down to **Eclipse IDE for Enterprise Java and Web Developers** (DO NOT use the installer)
3. On the right-hand side, click "Mac OS X86_64 or if new core processor AArch64")




Chip Apple M1 Pro
Memory 16 GB
This is Arch 64


macOS Monterey
Version 12.7.6

MacBook Pro (15-inch, 2016)
Processor 2.6 GHz Quad-Core Intel Core i7
Memory 16
This is x86_64
Graphics Intel HD Graphics 530 1536 MB
Serial Number C02T510VGTFL


Eclipse IDE for Enterprise Java and Web Developers

516 MB 131,963 DOWNLOADS

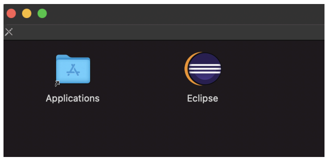
Tools for developers working with Java and Web applications, including a Java IDE, tools for JavaScript, TypeScript, JavaServer Pages and Faces, Yaml, Markdown, Web Services, JPA and Data Tools, Maven and Gradle, Git, and more.

Click here to open a bug report with the Eclipse Web Tools Platform.

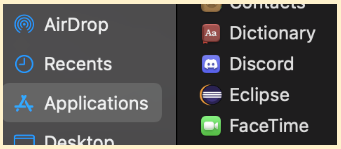
Choose correct architecture

Windows x86_64
macOS x86_64 | AArch64
Linux x86_64 | AArch64

4. You should end up on a page with a big download button - click that button!
5. Go to the download location. Double click dmg file.
6. Drag eclipse into your application folder.

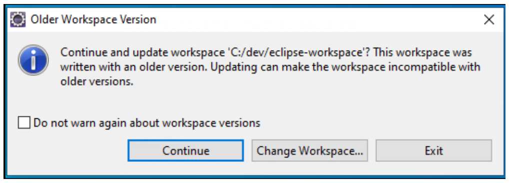


7. You can go to your applications folder to open Eclipse



Note: if you're updating the version of Eclipse on your machine you will see the following dialog

○ **Before you update Eclipse** to a newer version make a backup copy of your current workspace in case you run into issues.

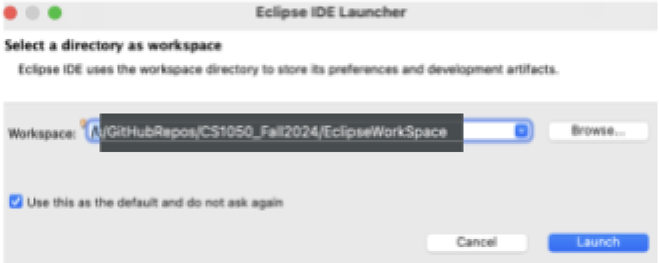


Older Workspace Version

Continue and update workspace 'C:/dev/eclipse-workspace'? This workspace was written with an older version. Updating can make the workspace incompatible with older versions.

☐ Do not warn again about workspace versions

8. Eclipse will ask where you want your **workspace**. A **workspace** is where the .java and .class files for your class work and assignments will be stored. You will put this in the EclipseWorkSpaceFolder you created when setting up git repo: [Part 3: Organize in Folders](). Click use this as the default.



Eclipse IDE Launcher

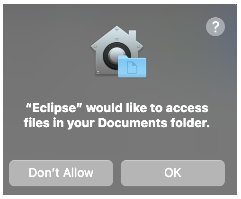
Select a directory as workspace

Eclipse IDE uses the workspace directory to store its preferences and development artifacts.

Workspace: /GitHubRepos/CS1050_Fall2024/EclipseWorkSpace

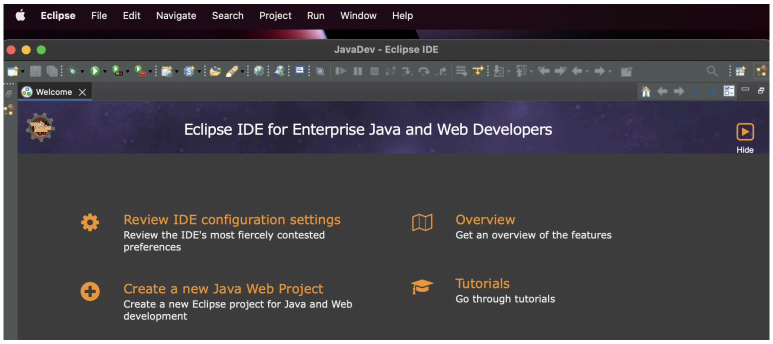
☑ Use this as the default and do not ask again

9. Click ok to allow eclipse access.



"Eclipse" would like to access files in your Documents folder.

10. The Welcome screen for Eclipse will appear. Click the **Hide** icon on the right side.



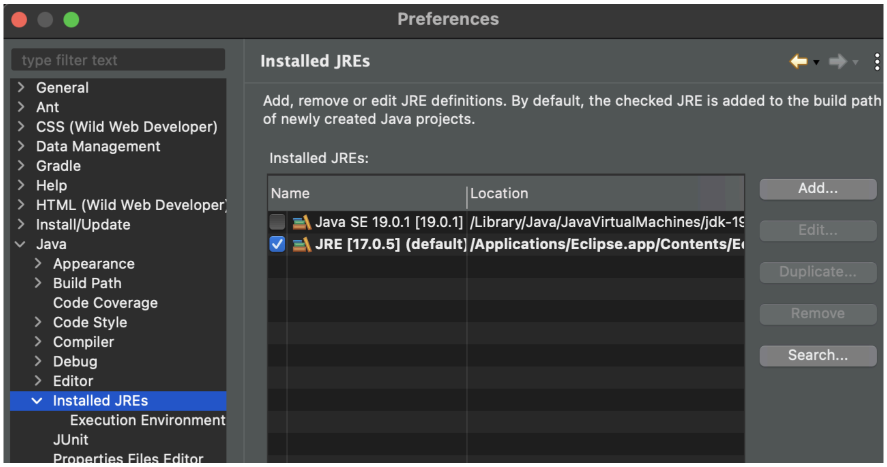
Review IDE configuration settings
Review the IDE's most fiercely contested preferences

Overview
Get an overview of the features

Create a new Java Web Project
Create a new Eclipse project for Java and Web development

Tutorials
Go through tutorials

11. Set up JRE. Go to Eclipse menu, select Preferences and navigate to Java -> Installed JREs



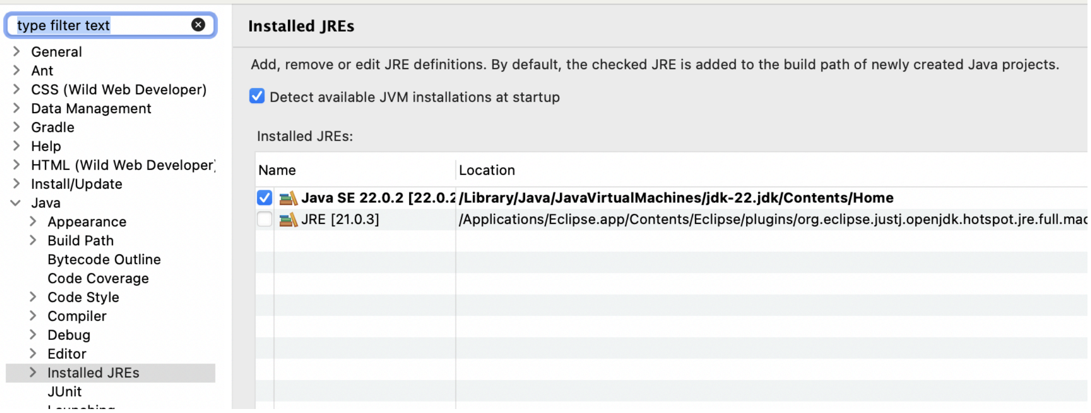
Installed JREs

Add, remove or edit JRE definitions. By default, the checked JRE is added to the build path of newly created Java projects.

Installed JREs:

Name	Location
☐ Java SE 19.0.1 [19.0.1]	/Library/Java/JavaVirtualMachines/jdk-19
☑ JRE [17.0.5] (default)	/Applications/Eclipse.app/Contents/E

12. Scroll down to Java->Installed JREs. Select Java SE22. Click apply and close. THIS STEP IS A PLACE MANY DO NOT SELECT SE - you do not want JRE.



Installed JREs

Add, remove or edit JRE definitions. By default, the checked JRE is added to the build path of newly created Java projects.

☑ Detect available JVM installations at startup

Installed JREs:

Name	Location
☑ Java SE 22.0.2 [22.0.2	/Library/Java/JavaVirtualMachines/jdk-22.jdk/Contents/Home
☐ JRE [21.0.3]	/Applications/Eclipse.app/Contents/Eclipse/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.mac

13. Now that the Java SE is set go to Creating a Java Program in Eclipse (Windows and Mac) below.

Creating a Java Project and Program in Eclipse (Windows or Mac

Here are the steps for creating a simple Java program to get started

- Quick look at programming from a general view
- Everything will be covered in more detail in later lectures

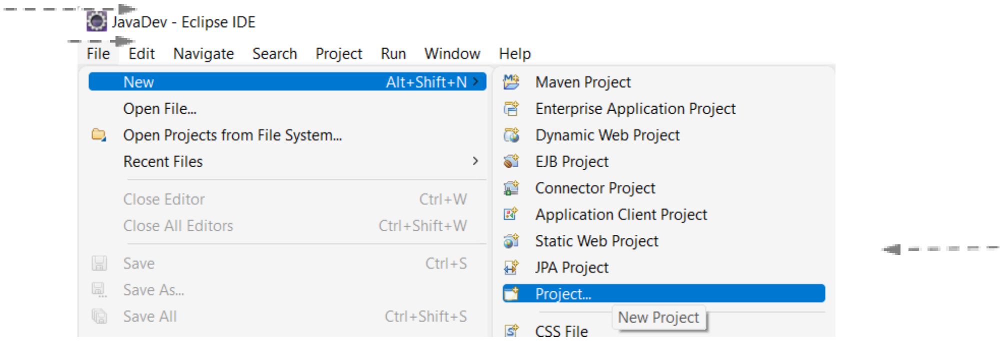
Step 1: In Eclipse Create a Java Project

Take your time!

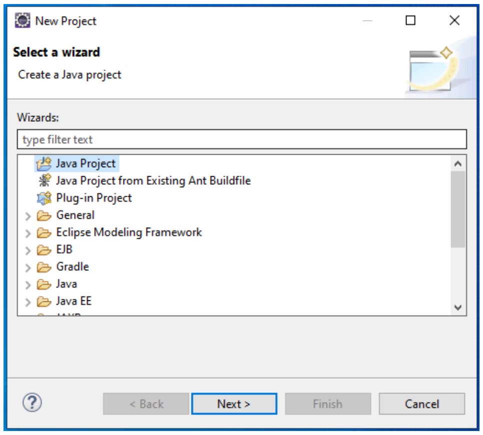
It is important to organize your work. One way is to create Java Project folders based on the module.

1. The first time you create a project you will see a slightly different menu than on future creations.

2. On the top menu, select **File->New-> Project** to display the New project dialog

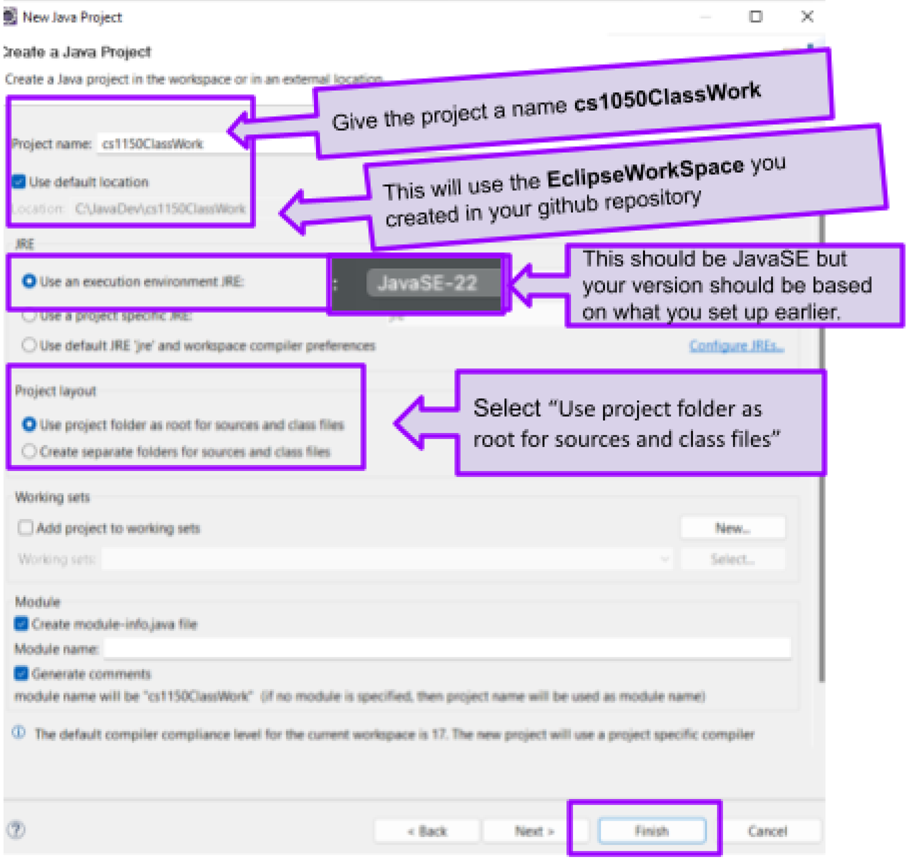


3. In the New Project dialog, select **Java Project** then click **Next**.



4. Set the following in the **Create Java Project** dialog and then click **finish**.

You will use this same process to create future projects for other class assignments.


New Java Project

Create a Java Project

Create a Java project in the workspace or in an external location.

Project name: cs1150ClassWork

☑ Use default location

Location: C:\JavaDev\cs1150ClassWork

JRE

● Use an execution environment JRE: JavaSE-22

○ Use a project specific JRE:

○ Use default JRE 'jre' and workspace compiler preferences

Project layout

● Use project folder as root for sources and class files

○ Create separate folders for sources and class files

Working sets

☐ Add project to working sets

Working sets:

Module

☑ Create module-info.java file

Module name:

☑ Generate comments

module name will be "cs1150ClassWork" (if no module is specified, then project name will be used as module name)

ⓘ The default compiler compliance level for the current workspace is 17. The new project will use a project specific compiler

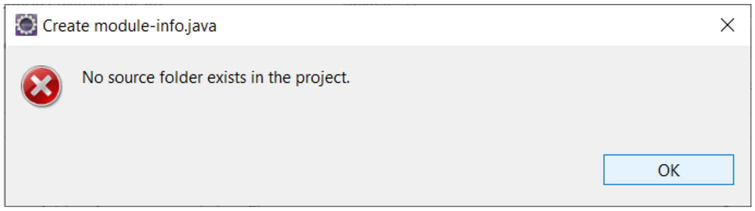
Give the project a name **cs1050ClassWork**

This will use the **EclipseWorkSpace** you created in your github repository

This should be JavaSE but your version should be based on what you set up earlier.

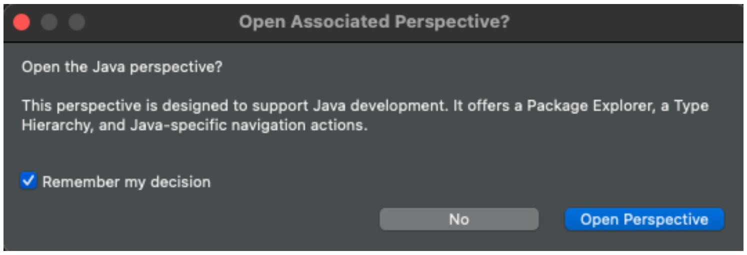
Select "Use project folder as root for sources and class files"

5. If you see the following dialog – click “OK”



No source folder exists in the project.

6. You may also see a dialog that asks you about the Java perspective. Click Remember by decision and click “Open Perspective”



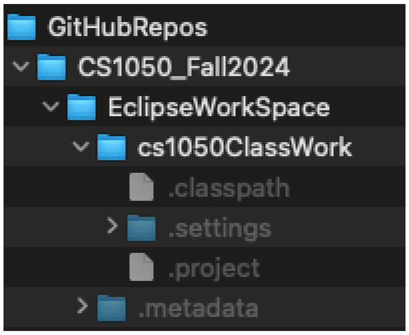
Open the Java perspective?

This perspective is designed to support Java development. It offers a Package Explorer, a Type Hierarchy, and Java-specific navigation actions.

☑ Remember my decision

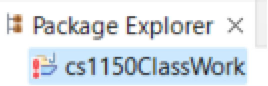
7. If Welcome appears close it

8. If you go to your local repository you will see the project was created in the EclipseWorkSpace



IMPORTANT NOTE: before proceeding please read:

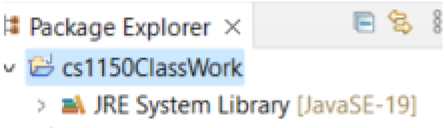
○ If there is a red ! next to the project name in Eclipse, your environment is **NOT** set up properly. See the troubleshooting section at the end of this document for simple steps to fix this **before you create a Java class**. If you don’t resolve this issue, you will be unable to get your code to work. After you fix this go to the next step to create a java class.



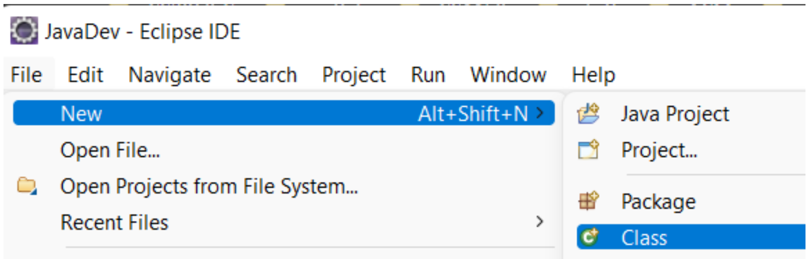
Step 2: Create, Compile and Run a Java Class File

You will create a new java class in the project folder you want. You must do the following every time you want to create a new java source file.

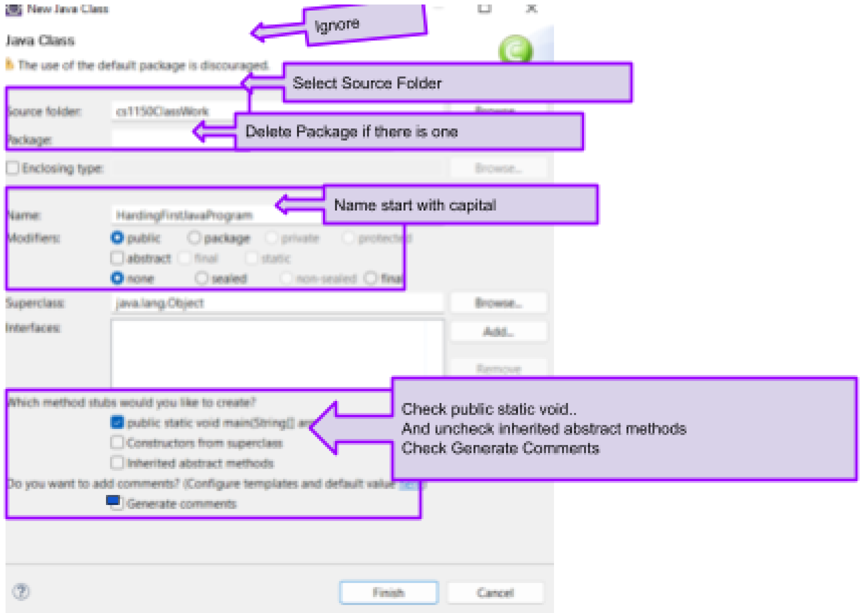
1. Make sure you have selected the project folder you want to create it in, selected.



2. Go to **File->New->Class** (or **File->New->Other** then pick **Class** in the dialog)


JavaDev - Eclipse IDE

3. Set the following (see screen below)
   - Source Folder – should be filled in with the name you gave your project
   - **Package should be empty**
   - Name - name for file starts with capital letter
   - Check: **public static void main(String[] args)**
   - Uncheck: Inherited abstract methods
   - Check Generate Comments
   - Click Finish


New Java Class

Java Class

The use of the default package is discouraged.

Source folder: cs1150ClassWork

Package:

□ Enclosing type:

Name: HardingFirstJavaProgram

Modifiers: ● public ○ package ○ private ○ protected
□ abstract □ final □ static
● none ○ sealed ○ non-sealed ○ final

Superclass: java.lang.Object

Interfaces:

Which method stubs would you like to create?
☑ public static void main(String[] args)
□ Constructors from superclass
□ Inherited abstract methods

Do you want to add comments? (Configure templates and default value here)
☑ Generate comments

Ignore

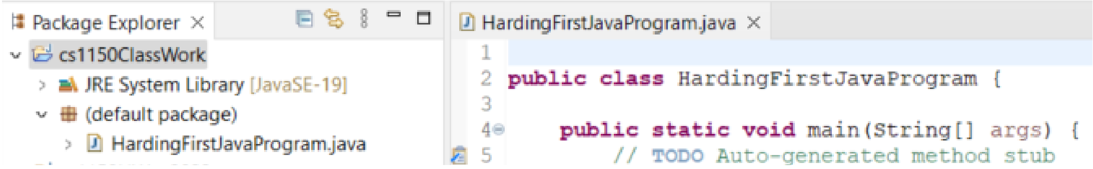
Select Source Folder

Delete Package if there is one

Name start with capital

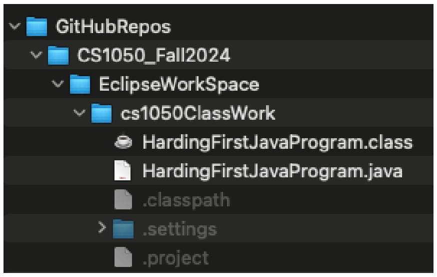
Check public static void..
And uncheck inherited abstract methods
Check Generate Comments

4. In Eclipse, on the left side you will see in the Package Explorer panel and your code in the middle.

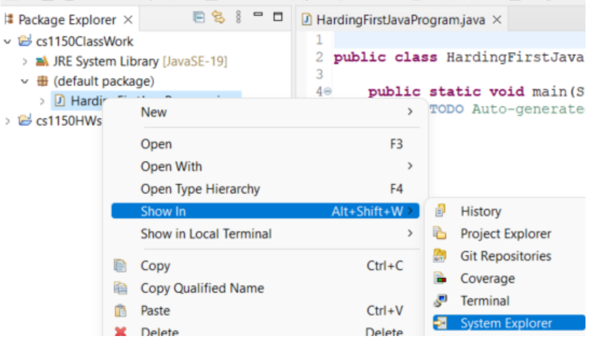

Package Explorer
cs1150ClassWork
JRE System Library [JavaSE-19]
(default package)
HardingFirstJavaProgram.java
HardingFirstJavaProgram.java

```

public class HardingFirstJavaProgram {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
```

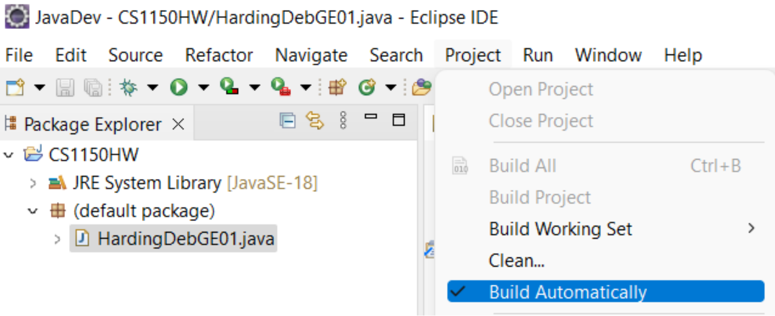
5. You will repeat this step #3 (creating a java class) each time you want to create a new file.
6. Go to your project located in you local repository



Another way to get to the directory is to right click the file then go to Show In -> System Explorer



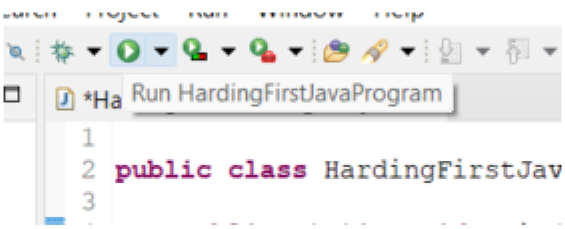
7. Eclipse automatically builds the .class file In Eclipse, if you go under Projects, you will see “**Build Automatically**” is selected. This is how the .class file was created automatically for you.



8. Add code to your first file. **System.out.print(”Hello Java”);**

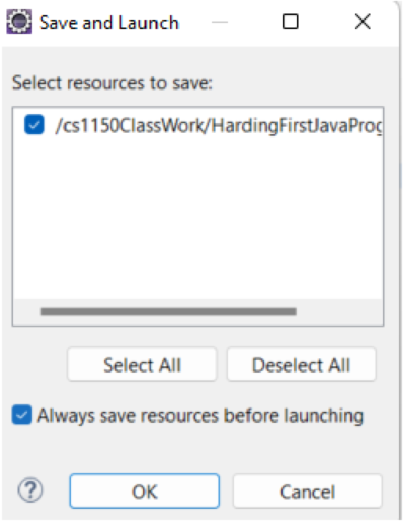
```
public class HardingHello {
        /**
        * @param args
         */
        public static void main(String[] args) {
                // Print hello
                System.out.print(”Hello”);

        }

}
```

9. To run your program Select ”Run” from the top menu



```
public class HardingFirstJav
```

10. If the **Save and Launch** dialog appears, select “Always save resources before launching” so you do not need to see this every time.

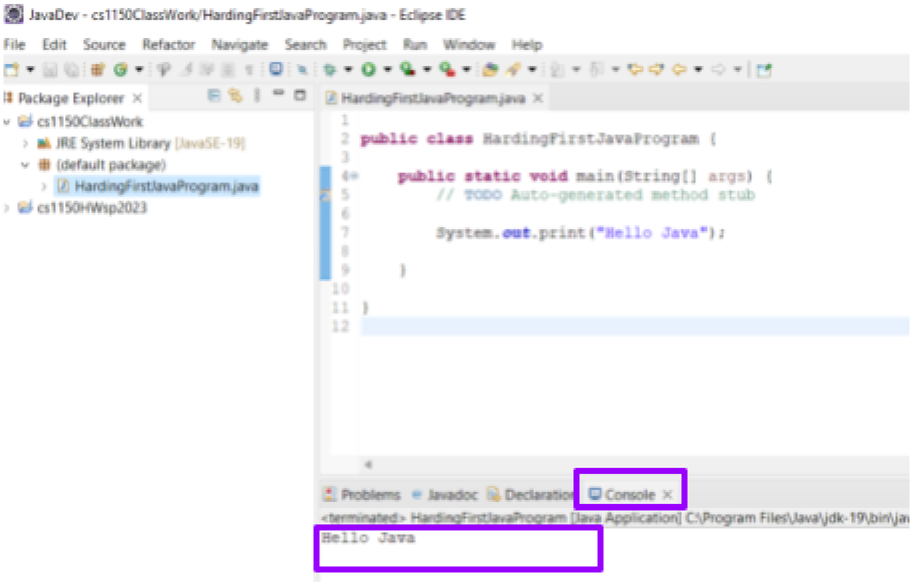


Select resources to save:

☑ /cs1150ClassWork/HardingFirstJavaProg

☑ Always save resources before launching

11. You should see the output in the **console window** on bottom of the screen


JavaDev - cs1150ClassWork/HardingFirstJavaProgram.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
cs1150ClassWork
JRE System Library [JavaSE-19]
(default package)
HardingFirstJavaProgram.java
cs1150HWsp2023
HardingFirstJavaProgram.java
Problems
Javadoc
Declaration
Console

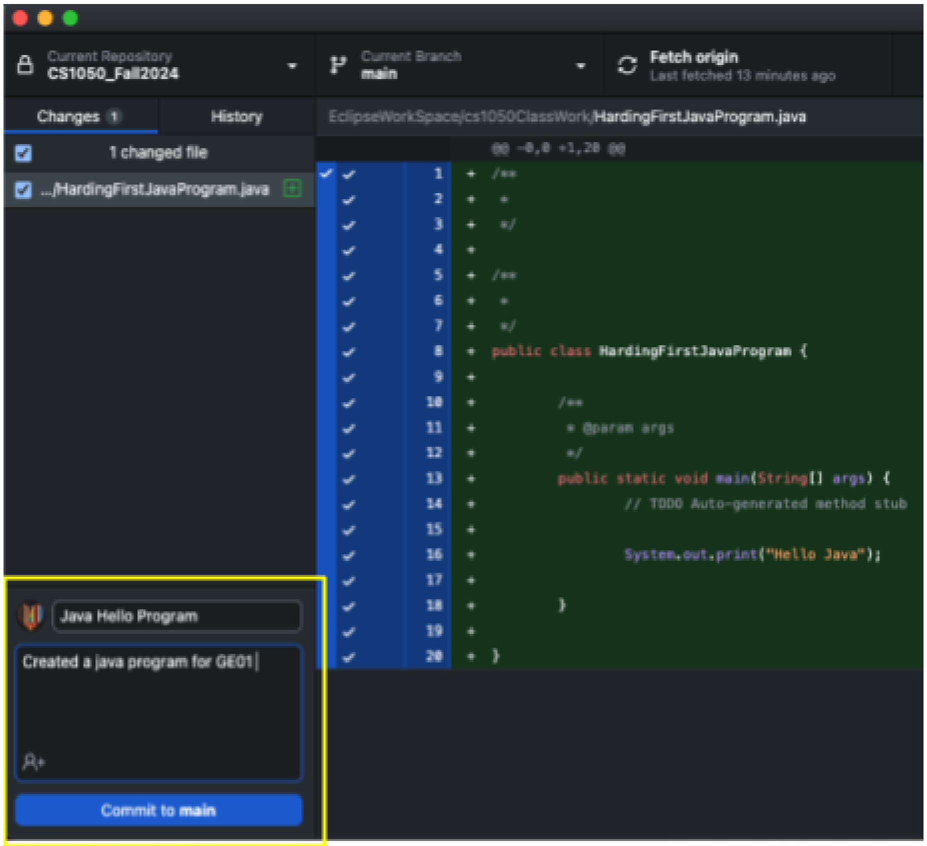
```
public class HardingFirstJavaProgram {

	public static void main(String[] args) {
		// TODO Auto-generated method stub

		System.out.print("Hello Java");

	}

}
```

```
<terminated> HardingFirstJavaProgram [Java Application] C:\Program Files\Java\jdk-19\bin\ja
Hello Java
```

12. Celebrate!

Step 3: Github Desktop: Version and Backup

1. Go to your github desktop and you should see the following. This is showing your new .java file. You need to version the file locally by committing. Put



Current Repository: CS1050_Fall2024

Current Branch: main

EclipseWorkSpace/cs1050ClassWork/HardingFirstJavaProgram.java

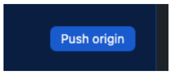
.../HardingFirstJavaProgram.java

```
@@ -0,0 +1,20 @@
+ /**
+  *
+  */
+
+ /**
+  *
+  */
+ public class HardingFirstJavaProgram {
+
+         /**
+          * @param args
+          */
+         public static void main(String[] args) {
+                 // TODO Auto-generated method stub
+
+                 System.out.print("Hello Java");
+
+         }
+
+ }
```

Java Hello Program

Created a java program for GE01

2. Next you will push the update to the github server.



Troubleshooting Eclipse

This section covers two possible issues that you might run into

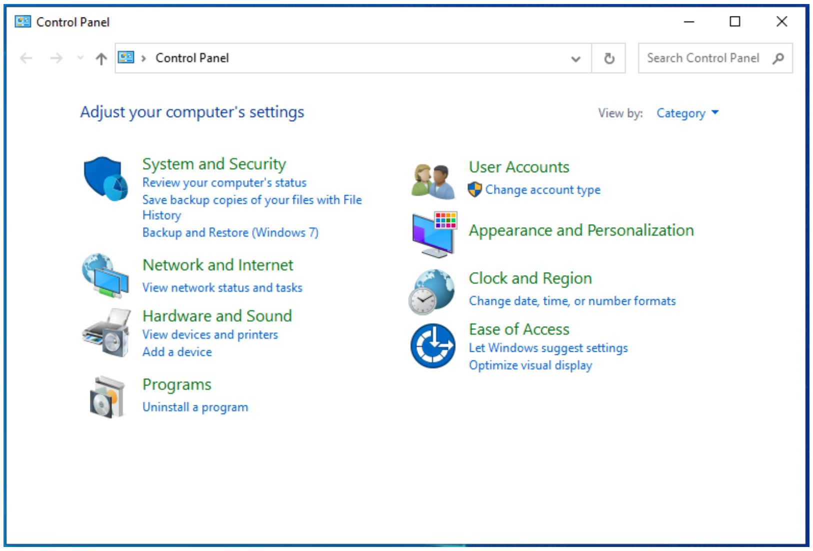
- **Exit code 13 error**
- **Project has a red !**

Issue #1: Exit code 13 error

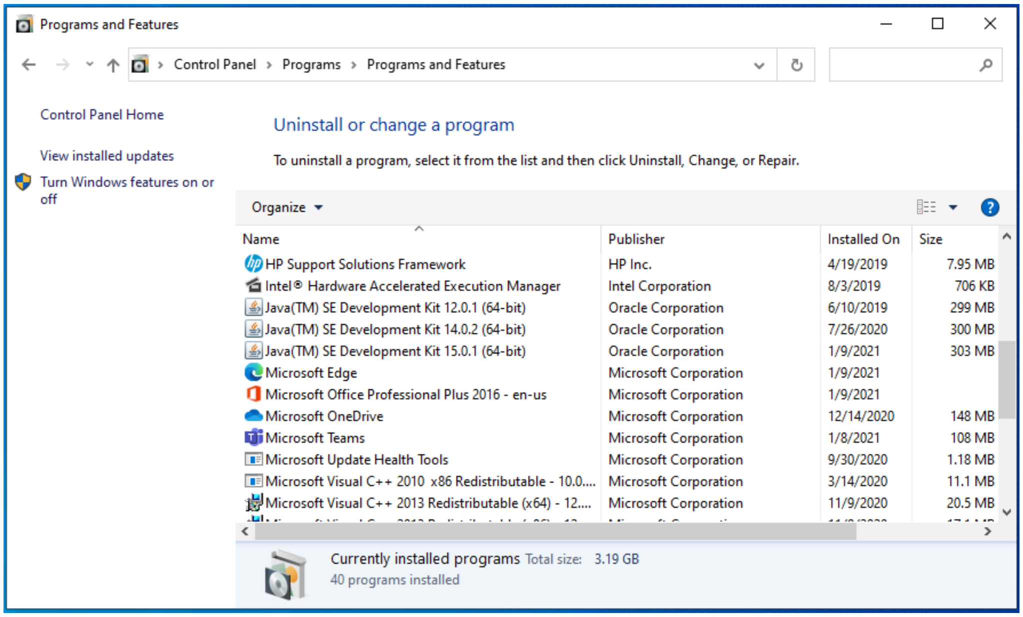
This error occurs when there is more than one version of the JRE on your system.

1. Note that you have 2 directories on your C drive:
   - Program Files
   - Program Files (x86)
2. You correctly installed the JDK into the Program Files
   - The Program Files directory is the correct location for the JDK so don’t mess with it.
3. Exit code 13 occurs when there is a java directory in Program Files (X86)
   - If you have a **Java** directory in Program Files (x86), Eclipse will use it instead of the one you just installed in Program Files.
   - You need to **UNINSTALL** the java directory in Program Files (X86)
   - Uninstall is different from deleting, so DO NOT delete the directory.
4. To fix this issue:

- **Uninstall** the JRE in the Program Files (X86) directory
- The new JDK that you just installed already contains the JRE.
- Open the Control Panel
- Select under Programs “Uninstall a program”


Control Panel
Control Panel
Search Control Panel
Adjust your computer's settings
View by: Category
System and Security
Review your computer's status
Save backup copies of your files with File History
Backup and Restore (Windows 7)
Network and Internet
View network status and tasks
Hardware and Sound
View devices and printers
Add a device
Programs
Uninstall a program
User Accounts
Change account type
Appearance and Personalization
Clock and Region
Change date, time, or number formats
Ease of Access
Let Windows suggest settings
Optimize visual display

5. You next screen will appear with a list of all the programs installed on your system
   - Locate the JRE
   - I don’t have the JRE on my system so the screen grab only shows the JDK’s so I can’t show what this looks like.
   - Once you locate the JRE, select it, then select uninstall


Programs and Features
Control Panel › Programs › Programs and Features
Control Panel Home
View installed updates
Turn Windows features on or off
Organize

Uninstall or change a program

To uninstall a program, select it from the list and then click Uninstall, Change, or Repair.

Name	Publisher	Installed On	Size
HP Support Solutions Framework	HP Inc.	4/19/2019	7.95 MB
Intel® Hardware Accelerated Execution Manager	Intel Corporation	8/3/2019	706 KB
Java(TM) SE Development Kit 12.0.1 (64-bit)	Oracle Corporation	6/10/2019	299 MB
Java(TM) SE Development Kit 14.0.2 (64-bit)	Oracle Corporation	7/26/2020	300 MB
Java(TM) SE Development Kit 15.0.1 (64-bit)	Oracle Corporation	1/9/2021	303 MB
Microsoft Edge	Microsoft Corporation	1/9/2021	
Microsoft Office Professional Plus 2016 - en-us	Microsoft Corporation	1/9/2021	
Microsoft OneDrive	Microsoft Corporation	12/14/2020	148 MB
Microsoft Teams	Microsoft Corporation	1/8/2021	108 MB
Microsoft Update Health Tools	Microsoft Corporation	9/30/2020	1.18 MB
Microsoft Visual C++ 2010 x86 Redistributable - 10.0....	Microsoft Corporation	3/14/2020	11.1 MB
Microsoft Visual C++ 2013 Redistributable (x64) - 12....	Microsoft Corporation	11/9/2020	20.5 MB

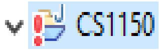
Currently installed programs Total size: 3.19 GB
40 programs installed

- You should now be able to start Eclipse.

Issue #2: Project has a red !

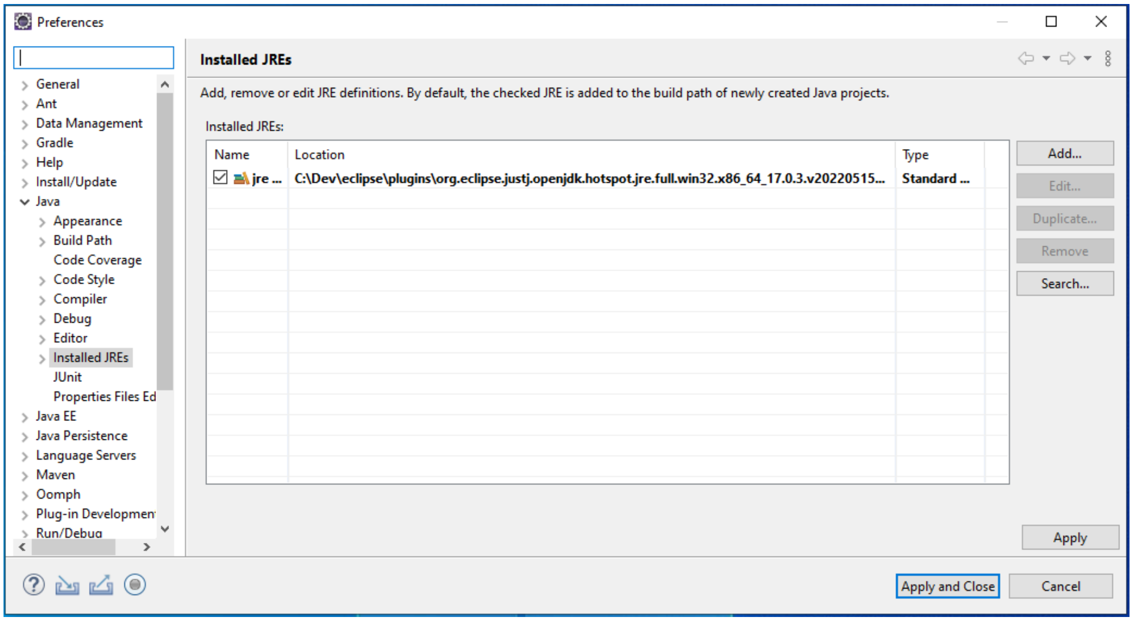
1. A project with a red **!** indicates that Eclipse needs the new JDK.

2. Eclipse will not work properly until you fix this issue!



3. In Eclipse, on the top menu, go to **Window -> Preferences**

4. In the preference dialog, click arrow **>** next to **Java** to open Java, then select **Installed JRE's**



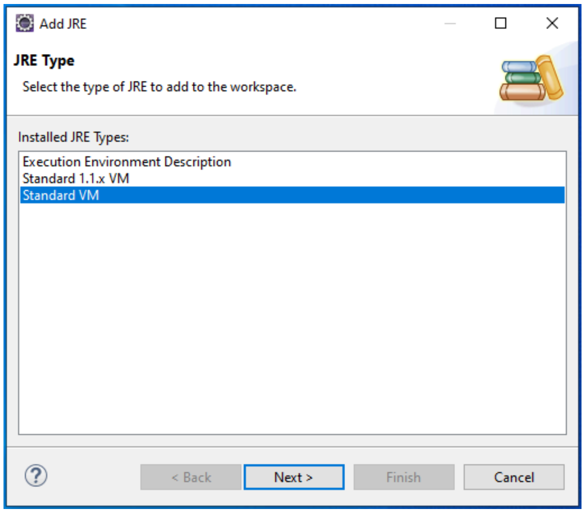
Installed JREs

Add, remove or edit JRE definitions. By default, the checked JRE is added to the build path of newly created Java projects.

Installed JREs:

Name	Location	Type
☑ jre ...	C:\Dev\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.3.v20220515...	Standard ...

5. Click **Add**. In Add JRE window, select **Standard VM** then next



JRE Type

Select the type of JRE to add to the workspace.

Installed JRE Types:

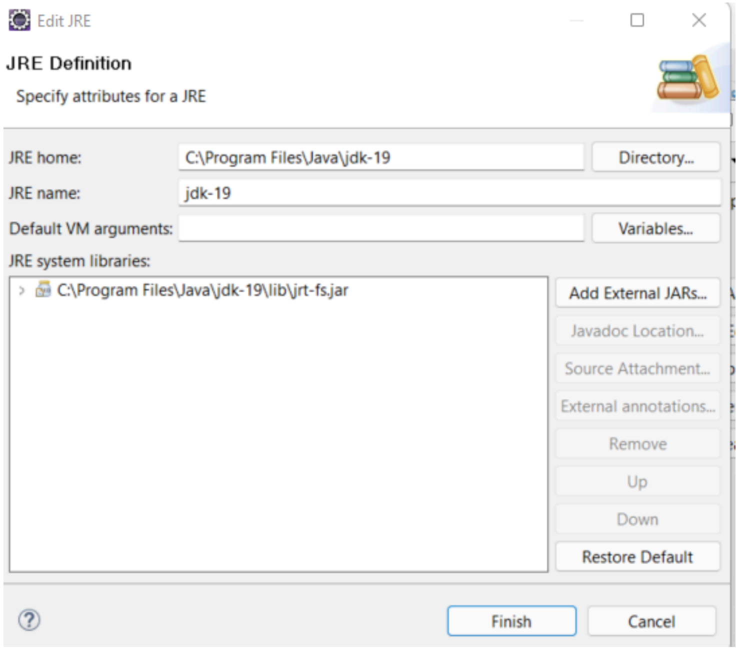
Execution Environment Description
Standard 1.1.x VM
Standard VM

6. In the updated **Add JRE** screen, to the right of JRE Home, click **Directory...**

7. Browse to C:\Program Files\Java\jdk-22

8. Highlight jdk-22 and click **Select Folder**

9. The Add JRE dialog will now be filled in, click **Finish. In image below it should be jdk-22 instead of 19.**



Edit JRE

JRE Definition

Specify attributes for a JRE

JRE home: C:\Program Files\Java\jdk-19

JRE name: jdk-19

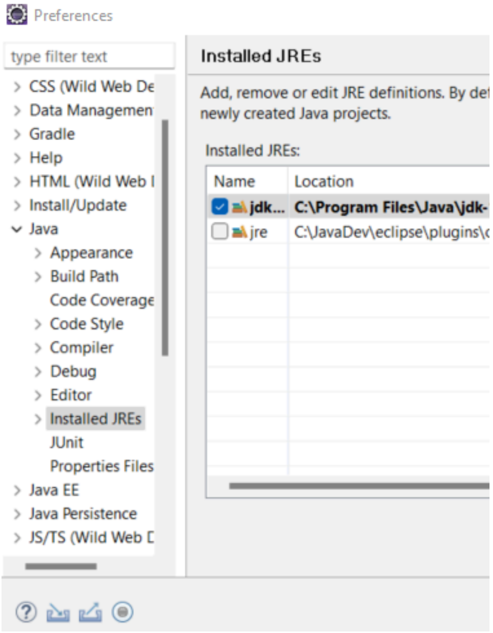
Default VM arguments:

JRE system libraries:

C:\Program Files\Java\jdk-19\lib\jrt-fs.jar

10. You will now see in Installed JREs dialog a new entry with **jdk-22**

11. Select the box to the **left** of the jdk-22



Preferences

Installed JREs

Add, remove or edit JRE definitions. By de
newly created Java projects.

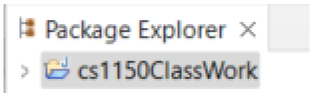
Installed JREs:

Name	Location
☑ **jdk...**	**C:\Program Files\Java\jdk-**
□ jre	C:\JavaDev\eclipse\plugins\c

12. Click **Apply and Close** button

13. The project should no longer have the red ! Return to Create a Java Class

If you still have an issue, send me an email to get help.



Package Explorer
cs1150ClassWork