# **Eclipse Installation Guide**

Version 2



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# Introduction

These Eclipse installation instructions are used by students enrolled in the Master of Science in Software Development and other Computer Science Department programs in both on-campus and online programs. The document begins with a discussion of Eclipse, downloading and installing Eclipse, creating a Hello World project, and exporting that project for submission. Note that as new versions of Eclipse are released, some of the screens may look different than the screenshots in this document. Nevertheless, this guide will help get you started quickly on most any version of Eclipse.

Although the examples in the main document are for the Microsoft Windows family, including Windows 8 and Windows 10, you may use Eclipse on Linux, a Mac, and many other platforms. You will need to follow a separate guide for downloading and installing Eclipse on those platforms, and you can skip down to the Creating a Hello World Project section after Eclipse is installed on your platform.

If you can't determine how to proceed or something goes wrong, and web searches don't help, ask your facilitator or instructor for help. Good luck, and have fun!

### **Eclipse Overview**

Eclipse is one of the most popular Java application development environments for desktop and Android applications. Eclipse is cross-platform and runs under Windows, Linux, Mac OS, and other platforms. It supports advanced Java development from a default install, and can be further extended with a variety of plugins to suit particular environments. Eclipse supports basic and advanced debugging, as well as a host of application creation tools. By learning to use Eclipse, you'll have experience with an industry standard Java development environment.

Eclipse is entirely open source with many contributors to both its base code and to plugins. This feature makes it popular and extensible.

# **Downloading and Installing Eclipse**

### Step 1: Downloading Eclipse

Visit Website Go to https://www.eclipse.org/downloads/packages/installer to get started downloading Eclipse. The Eclipse Foundation regularly updates their website, so what you see may be different than the following.

ECLIPSE	Members	Working Groups	Project
Home / Downloads / Packages / Eclipse Installer 2019-12 R			
Eclipse Installer Eclipse Packages			
Eclipse Installer 2019-12 R			
Try the Eclipse <b>Installer</b> 2019-12 R The easiest way to install and update your Eclipse		Download Mac OS X 64 bit Windows 64 bit	
Development Environment. <b>± 486,644 Downloads</b>		Linux 64 bit	
		Linux 64 bit	

# Click PlatformClick the "Windows 64 bit" link to get started. After doing so, you will see aLinkscreen similar to the following.



Click Click the "Download" button to continue. You will then see a screen like Download the following: Link



Your browser will save the executable, possibly asking you where you'd like to save it depending upon your browser settings.

Browse and<br/>ExecuteNext, browse to where you downloaded your executable in Windows<br/>Explore. Alternatively, your browser may give you an option to run it<br/>directly, without the needed to navigate in Windows Explorer.



Execute the installer.

## Step 2: Installing Eclipse

### **Select Flavor** After executing the installer, you will see a screen like this.



Unless you have a good reason, select the "Eclipse IDE for Java Developers" flavor. It has everything you need to get started, and you can add additional plugins later, should you need. After doing so, you will see a screen similar to the following.

Choose	The next screen lets you choose a couple of options, which Java version to use, and what
Options	directory to install into.

The essen	<b>DE for Java Developers</b> tial tools for any Java developer, including a Java IDE, a C lyn, Maven and Gradle integration.	äit client, XML			
ava 1.8+ VM	C:\Program Files\Java\jre1.8.0_171 (Current)	× 🖨			
Installation Folder	C:\Users\warre_000\eclipse\java-2019-12				
	✓ create start menu entry				
	✓ create desktop shortcut				
	🛓 INSTALL				

Unless you have a good reason not too, accept the defaults and click the "Install" button.

Accept theBefore installation begins, you'll be asked to accept the license for Eclipse like theLicensefollowing screen shown below.

Eclipse Installer

#### **Eclipse Foundation Software User Agreement**

Applicable licenses will be discovered and prompted later in the installation process. Avoid such interruptions by accepting the most common license now.

### **Eclipse Foundation Software User Agreement**

April 9, 2014

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Content includes, but is not limited to, source code, object code, documentation and other files maintained in the Eclipse Foundation source code repository ("Repository") in software modules

Accept Now Decide Later

×

StartAfter accepting the license, Eclipse will begin installing and you will see a<br/>progress bar.

eclipseins	taller by Oomph	Ξ
The essent	<b>DE for Java Developers</b> ial tools for any Java developer, including a Java IDE, a Git client, yn, Maven and Gradle integration.	XML
Java 1.8+ VM	C:\Program Files\Java\jre1.8.0_171 (Current)	
Installation Folder	C:\Users\warre_000\eclipse\java-2019-12	
	<ul> <li>create start menu entry</li> <li>create desktop shortcut</li> </ul>	
	IN STALLING	
	Cancel Installation	
васк		

# Additional<br/>AcceptanceNote that a license agreement and certificate agreement will come up<br/>partway through the install, so if your install does not appear to be<br/>progressing, double check whether a second window has appeared asking<br/>for acceptance. The two screens look like the following.

😰 Oomph License Confirmation	- D >
licenses	
Review and accept licenses before the software can be installed.	Oompl
Eclipse Foundation Software User Agreement	Eclipse Foundation Software User Agreement November 22, 2017
	Usage Of Content THE ECLIPSE FOUNDATION MAKES AVAILABLE SOFTWARE, DOCUMENTATION, INFORMATION
	AND/OR OTHER MATERIALS FOR OPEN SOURCE PROJECTS (COLLECTIVELY "CONTENT"). USE OF THE CONTENT IS GOVERNED BY THE TERMS AND CONDITIONS OF THIS AGREEMENT AND/OR THE
	TERMS AND CONDITIONS OF LICENSE AGREEMENTS OR NOTICES INDICATED OR REFERENCED BELOW. BY USING THE CONTENT, YOU AGREE THAT YOUR USE OF THE CONTENT IS GOVERNED
	BY THIS AGREEMENT AND/OR THE TERMS AND CONDITIONS OF ANY APPLICABLE LICENSE AGREEMENTS OR NOTICES INDICATED OR REFERENCED BELOW. IF YOU DO NOT AGREE TO THE
	TERMS AND CONDITIONS OF THIS AGREEMENT AND THE TERMS AND CONDITIONS OF ANY APPLICABLE LICENSE AGREEMENTS OR NOTICES INDICATED OR REFERENCED BELOW, THEN YOU MAY NOT USE THE CONTENT.
	Applicable Licenses Unless otherwise indicated, all Content made available by the Eclipse Foundation
	Remember accepted licenses     Accept     Decline

🚯 Certificates		×
Do you trust these certificates?		
Eclipse Foundation Inc.; Java Software Code Sign	ning; Sun Microsy	tems Inc
Remember accepted certificates	Select All	Deselect All
<ul> <li>Eclipse Foundation Inc.; Java Software Code Signi</li> <li>Eclipse Foundation Inc.; Java Software Code Si</li> <li>JCE Code Signing CA; Java Software Code Signing</li> </ul>	gning; Sun Micros	ystems Inc
Always accept certificates Accept selected		Cancel

Install Completed After the install has finished, you will see a screen similar to the following.



Congratulations! Eclipse is now installed on your machine and is ready to use.

# **Creating a Hello World Project**

To get you started, we'll walk you through creating your very first project. It will simply print "Hello World" to the screen.

### Step 1: Launching Eclipse

LaunchingAfter the installation is completed, you can launch Eclipse for the first time by clickingfrom Installerthe "Launch" button.



Launch fromGoing forward, you can launch Eclipse from Windows, either from the Start Menu, orWindowsfrom the shortcut on the desktop.

### Start Menu



### Desktop



### Step 2: Choosing a Workspace

Workspace<br/>SelectionThe first time Eclipse launches, you are asked you to decide on a base directory in which<br/>it will create the files it needs, including project files, classpath files, JARs, and many<br/>other types of files. You do not typically need to work with this directory directly, so it is<br/>fine to accept the default choice.

🖨 Eclipse IDE	E Launcher	×				
Select a directory as workspace Eclipse IDE uses the workspace directory to store its preferences and development artifacts.						
Eclipse IDE u	uses the workspace directory to store its preferences and development artifacts.					
Workspace:	C:\Users\warre_000\eclipse-workspace					
🔽 l leo this a	s the default and do not ask again					
	-					
	Launch Cancel					

By default, Eclipse is configured your user's "User" directory, which is the preferred location on Windows for application files. Check the "Use this as the default and do not ask again" checkbox so that you don't need to reconfirm this every time you start Eclipse.

### Step 3: Creating the Project

InitialAfter clicking the "Launch" button, you'll first see a splash screen with a progress bar,Appearancefollowed by the initial screen in Eclipse. The two screens are shown below.



Create aOn the initial screen, you see a lot of menu options and links to click. Don't worry about<br/>the plethora of options now; you can learn those over time as you become more familiar<br/>with Eclipse. You only need one option to create a Java Project. Click the File/New/Java<br/>Project menu option to get started.

۲	eclipse	-workspace	- Eclipse	IDE					
File	Edit	Navigate	Search	Project	Run	Window	Help		
	New				Alt	t+Shift+N>	12	Java Project	
	Open	File					<b>P</b>	Project	
	Open	Projects fro	m File Sy	stem			±	Package	Create a Java pr
	Recent	t Files				>		Class	
	Close					Ctrl+W	œ	Interface	
	Close	All			Ctrl	+Shift+W	C	Enum	
	Save					Ctrl+S	@	Annotation	
	Save A	le.					÷	Source Folder	

Name the<br/>ProjectNext, you want to create a name for your project. Following Java convention, you should<br/>use camel case for the name. With camel case, spaces are not included in the name, and<br/>each word is capitalized. So, "Hello World" is "HelloWorld" in camel case. Type the name<br/>in the "Project Name" field.

🖨 New Java Project			_		×
Create a Java Project Create a Java project in the workspace or in an external location.					-
Project name: HelloWorld					
Use default location					
Location: C:\Users\warre_000\eclipse-workspace\HelloWorld			В	rowse	
JRE					
Use an execution environment JRE:	JavaSE-1.8				~
○ Use a project specific JRE:	jre1.8.0_171				~
O Use default JRE 'jre1.8.0_171' and workspace compiler preferences			<u>Config</u>	jure JRE:	<u></u>
Project layout					
O Use project folder as root for sources and class files					
$\textcircled{\ensuremath{\bullet}}$ Create separate folders for sources and class files			Configur	e defaul	<u>t</u>
Working sets					
Add project to working sets			N	ew	
Working sets:			Se	lect	
(?) < Ba	ck Next >	Finish		Cance	

Leave everything else with their default options, and click the "Finish" button.

Expand theWhen the project is first opened, it almost looks like nothing has changed as you still seePanesthe welcome screen. In the upper left, however, there are panes that have been<br/>minimized by default.



Click the "Restore" option (which looks like two windows stacked on each other) to expand the panes.

RemoveOnce the panes have been restored, you will see the very useful "Package Explorer" onUnneededthe left, the coding buffer in the middle, and a "Task List" and "Welcome" on the right,Panesas follows.

🖨 eclipse-workspace - Eclip	ose IDE												
File Edit Source Refacto													
📬 🗕 🔚 💼 🛊 🔹 🚺	- 💁 - 💁	• • • •	🎯 🕶 🍅 🔑	🔗 🔹 🔌	) • 🖗 • 🏷 🔶	• ⇒ •   🖻							
😫 Package Explorer 🔀									🗐 Task List 🐹			🚳 Welcome 🖇	23
	cspace 😜	8							💣 🕶 📴 😵	<b>6</b> 9			
> 🛃 HelloWorld									🗙 👫 🖻 🕯	5		m	Ove
									8				Gel
									Find	All 🕨 A	Activ		-
												1	Tut Go
													l I
												**2	Sar Try
									0				Try
									(i) Connect M		nd ALM		
									or <u>create</u> a lo	ocal task.	ALM ALM		Wh Fine
									E Outline 🛙	<b>a</b> 8			
									There is no activ	e editor th	at		
									provides an outl	ine.			
													ľ
													l I
		7	🛐 Problems 🔀						8	50 S			ľ
			items	@ Javadoc []	Declaration				U				
			Description	^		Resource	Path	Location	Туре				
		- 11											

Go ahead and click the "X" on the "Task List" and "Welcome" panes to close them because you don't need them and they clutter up the space.



The "Package Explorer" pane gives you a high-level view of the libraries and source files you have in your project. Since you have not yet created any source files, you won't see much here at the moment. Use the package explorer to navigate between source files as needed.

The middle pane is the buffer where you edit the code of the currently selected source file. Since you are not currently editing anything, it is blank.

The "Outline" pane will show you a class outline of the current class you are editing.

**Create a File** The next step is to create your main Java class which will print out the "Hello World!" text. Right click on the "src" folder in the package explorer, and then click New/Class.



Choose ClassThe next screen will ask you to name your class and select other options about your<br/>class. For your name, you will want to follow the Java convention of using camel case,<br/>and name your class "HelloWorld" in the "Name" field.

🖨 New Java Class	_		×
Java Class		6	
Create a new Java o	class.	C	)
Source folder:	HelloWorld/src	Browse	·
Package:	main	Browse	<b></b>
Enclosing type:		Browse	
Name:	HelloWorld		
Modifiers:	public Opackage Oprivate Oprotected		
	abstract final static		
Superclass:	java.lang.Object	Browse	·
Interfaces:		Add	
		Remov	/e
Which method stub	os 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 <u>here</u> )		
	Generate comments		
?	Finish	Cance	<u>:</u>

Since this will be our main class that should execute, select the "public static void main(String[] args)" checkbox to have it generate that method. The last option you need to change is the package. Using the default Java package is discouraged, so type a package name in the "Package" field. In this case, we used the name "main". When creating larger projects, you may want to use a different package name as needed by your project.

Understand<br/>the CodeAfter clicking the "Finish" button on the class creation screen, the buffer pane shows the<br/>new HelloWorld class you created.



Notice that its in the "main" package, its name is "HelloWorld", and it has a default main method.

**Edit the Code** Now, you need to add a System.out.println() method call to print out "Hello World!" when the class is executed. To do so, type in the following line in the code.



Click the save icon, or Control-S, to save your file. Congratulations! You have created a HelloWorld project.

### Step 4: Running the Project

Debug the<br/>ProjectOnce you have your class created, you can choose to "Run" it or "Debug" it. While<br/>developing a class, it is recommended to debug it, because you can use breakpoints and<br/>other debugging features, and Eclipse will help you figure out where exceptions are<br/>occurring rather than just printing them in the output window. Click Run/Debug in the<br/>menu to start.



**View Output** Your HelloWorld class will execute, and you see this in the output.



Congratulations! You have executed your first class and have seen its output.

# **Exporting a Project for Submission**

### Step 1: Exporting the Project

Understand Exporting In order to submit your project to your facilitator, you will need to export it, which means you gather its contents into a single location, useful for giving it to others. While there are many formats you can use for export, for classes at BU, you should export into a zip file, because it is a universal file format that virtually anyone can use. Exporting is a better option than manually navigating to your workspace and zipping it manually, because Eclipse performs additional steps to ensure that your export is universally readable by anyone with a similar Eclipse version.

To start the export, click the File/Export... option. Start the Export eclipse-workspace - HelloWorld/src/main/HelloWorld.jav File Edit Source Refactor Navigate Search Project New Alt+Shift+N > Open File... Open Projects from File System... Recent Files > Close Ctrl+W Ctrl+Shift+W Close All Save Ctrl+S

٩	Save As	
r	Save All	Ctrl+Shift+S
	Revert	
	Move	
P	Rename	F2
8	Refresh	F5
	Convert Line Delimiters To	>
۵	Print	Ctrl+P
è	Import Export	
4	Export	

 **Choose Zip** To ensure the export is a zip file, choose General/Archive File in the list of options that appears on the next screen.

➡ Export		×
elect Export resources to an archive file on the local file system.	2	5
Select an export wizard:		
type filter text		
<ul> <li>✓ ➢ General</li> <li>♣ Ant Buildfiles</li> <li>♣ Archive File</li> <li>♣ File System</li> <li>♣ Preferences</li> <li>&gt; ➢ Install</li> <li>&gt; ➢ Java</li> <li>&gt; ➢ Run/Debug</li> <li>&gt; ➢ Team</li> <li>&gt; ➢ XML</li> </ul>		
(?) < Back Next > Finish	Cance	l

ChooseAfter clicking the "Next" button, a screen appears where you set the options for yourExportexport.Options

🖨 Export	– 🗆 X						
Archive file Export resources to an archive file on the local file system.							
> 🗹 🔁 HelloWorld	<ul> <li>✓ X .classpath</li> <li>✓ X .project</li> </ul>						
Filter Types     Select All       To archive file:     C:\Export\ChloeMitchellAssignment1.zip							
Options ● Save in zip format ○ Save in tar format ☑ Compress the contents of the file ☐ Resolve and export linked resources	<ul> <li>Create directory structure for files</li> <li>Create only selected directories</li> </ul>						
?	Next > Finish Cancel						

Check the "HelloWorld" checkbox in the first pane, to select all contents in the project. You can export only sub-portions of a project, but that is not recommended. Just export everything in your project every time so everything is included.

You will also be asked to choose the file location in the "To archive file" option. Browse to a directory you can remember, and enter a good filename. A good filename includes your first and last name and the name of the assignment. In this example, we used "ChloeMitchellAssignment1.zip" as the filename, as a submission from Chloe Mitchell for Assignment 1.

# **Optional Step 2: Viewing the File**

**View the File** After clicking the "Finish" button to create your export archive, you can optionally view the contents of your zip file. Once you are comfortable with this process, you can skip this step. In our example, the contents of the HelloWorld export look like this.

Z C:\Export\ChloeMitchellAssignment1.zip\HelloWorld\

File Edit View Favorites Tools Help							
🕂 🗕 🛷 📫 🗰 🗶 i							
Add Extract Test Copy Move Delete Info							
C:\Export\ChloeMitchellAssignment1.zip\HelloWorld\							
Name	Size						
settings	598						
bin	544						
src	137						
classpath	301						
project	386						

The .classpath and .project files are needed by Eclipse to understand the contents of the project and what classpath settings to use. The .settings directory contains additional settings for Eclipse. The bin folder contains any class and jar files created in the project. The src folder contains the source files needed by the project.

As you become more advanced with Eclipse, you may rename these directories and add additional directories. For a simple application such as HelloWorld, the above is what you will see.

Congratulations! You can now submit your export as part of your assignment in your class.

## **Next Steps**

You have now downloaded and installed Eclipse, created and executed a simple HelloWorld project, and exported it for submission. This is a great first step! As you start your class, your instructor will ask you to create additional projects. Don't worry. If you can create one project, you can create many.

In the HelloWorld example shown in previous sections, we intentionally kept things very simple. As you work on larger projects, you may need to use other features of Eclipse. You may also need to add additional libraries. Because Eclipse is so popular, there is a plethora of help documentation, and even step-by-step tutorials, on the web for almost anything you want to accomplish. There are also good books on the subject if you want to dive deep. And of course, your facilitator and instructor are available to help you should you get stuck. Take advantage of all of this help to succeed!