# Downloading Eclipse

*Parts of this handout were written by Justin Manus and Brandon Burr and then wantonly updated by your loving CS106A staff.*

In CS106A, we'll be using Stanford's customized version of Eclipse to build our programs. Eclipse is an enormously popular industrial strength Java environment with many features. Fortunately, Eclipse is also open source—anyone is free to change Eclipse to work the way they want. We have taken advantage of that freedom to install special Stanford features into Eclipse, tailoring it specifically for CS106A. This document gives instructions on how to get starting using Stanford Eclipse. **Please pay close attention to these instructions and do not skip steps!** If you run into any trouble installing Eclipse, email the head TA, Nick Troccoli (`troccoli@stanford.edu`), stop by his Office Hours, or stop by the LaIR, or stop by our Eclipse Troubleshooting Session **Thursday (9/28) from 8-10PM in the LaIR**.

## Installing Eclipse

Before you begin to write programs for Karel or Java, you will need to obtain a copy of Eclipse from the CS106A course website. The process for downloading Eclipse depends on what operating system you are using. The instructions for installing Eclipse on both Macintosh and Windows machines are given in this handout. On either platform, the process may take a while, so be patient!

## Installing Eclipse on a Mac

Stanford Eclipse will only work on macOS version 10.6 or higher. If you have an older version, you'll need to either upgrade or do your class work in a public computer cluster (which should already have Eclipse installed). To check which version of macOS you have, click the "Apple" menu in the upper left-hand corner of the screen and select **About This Mac**.

1. **Get Java SDK from the CS 106A website.** You must first obtain a copy of the Java SDK version 1.8. Go to the CS106A website: `http://cs106a.stanford.edu`. Then, click on the **Software** link (on the left-hand side of the page) and then click on the link **Download and install the Java SDK for Mac** under **Installing Eclipse on a Mac**. Double-click the downloaded file to install.

2. **Download Eclipse from the CS 106A website.** If you've followed step 1, you should be on the **Software** page of the CS106A website. You should then click on the link **Download Eclipse for Mac,** which saves the file to your Downloads folder. This may take a while as the file being downloaded is rather large. **Important note**: make sure to get the version of Eclipse from CS106A website. If you have an existing version of Eclipse installed on your machine (even an older version of Eclipse from CS106A), it will **not** function properly, and you should download the current CS106A version.

3. **Install Eclipse.**
   a. After Step 2, you should now have a file saved on your computer in your Downloads folder that is named `eclipse-mac.tar`.

b. Double click on `eclipse-mac.tar` to unarchive the **Eclipse** application (You can delete `eclipse-mac.tar` afterwards).

c. Drag the **Eclipse** application into the **Applications** folder on your Mac.

4. **Create a shortcut.** Find the **Eclipse** icon (the one you just dragged into the **Applications** folder), and drag it to your Dock to create a shortcut.

5. **Open Eclipse.** Click on the Eclipse icon in the Dock to open Eclipse. If you see an error that says Eclipse "can't be opened because it is from an unidentified developer," right-click on the Eclipse icon and select **Open** instead. You will be able to open Eclipse without right-clicking from now on.

6. **Set up Eclipse**. Now you'll need to install the 106A-specific customizations. Skip to the section "Installing the CS106A Plugin" later on this handout for more information.


## Installing Eclipse on Windows

Our version of Eclipse will run on Windows 7, 8, and 10. If you have an older version of Windows, you'll need to either upgrade or do your class work in a public computer cluster (which should already have Eclipse installed). Before installing Eclipse, you will first need to have a copy of the latest version of the Java JRE (Java Runtime Environment) installed on your computer. Note that Java version 1.8 is the latest version of Java. If you don't know which version, if any, of the JRE you have just start at Step 1. In fact, we recommend that all students start at Step 1.

1. **Uninstall previous versions of the JRE.** Before installing a new version of the JRE, we recommend that you remove any existing copies that may be installed on your system.

a. If you have <u>Windows 7 or 8</u>, do the following: Click on **Start**, then click on **Control Panel**, then select **Programs and Features**.

If you have <u>Windows 10</u>, do the following: Click on **Start** (the Windows icon in the lower left-hand corner), then click **Settings** (the gear-shaped icon), then select **System**, and finally select **Apps & features**.

b. From the list of programs you see, uninstall any occurrences of **Java/ J2SE Runtime Environment**, **Java SDK**, **Java SE Development Kit** or **Java Update**. Note that the exact program name may be slightly different or include a version number, but you generally want to remove anything that includes the text: **Java/J2SE Runtime Environment**, **Java SDK**, **Java SE Development Kit** or **Java Update**. To remove a program, click on the program name to highlight it and click the **Uninstall** button, or right-click on the program name and pick the **Uninstall** option.

2. **Download and install the JRE from the CS106A website.**

a. You can obtain a copy of the Java JRE from the CS106A website: `http://cs106a.stanford.edu`. Click on the **Software** link (on the left-hand side of the page). Go to the section entitled "Installing Eclipse in Windows", and go down to Step 2 to download the file. Click the link **Download and install the Java SDK for Windows** to start the download. This may take a little while as the file being downloaded is rather large.

b. After clicking this link a prompt will likely appear to ask you whether you want to **Run** or **Save** the file. Click **Run** to begin the download and installation process. If you did not get a prompt to run the file after the download completed, you should double-click the file you downloaded to run it manually. If a subsequent security warning dialog box appears, click **Run** (or **Yes**) to continue with the installation. <u>**Note**</u>: if you received a warning saying that this application cannot be installed on your PC, you may need to download the 32-bit version of the Java JRE (see Step 6 in the "Installing Eclipse in Windows" section of the **Software** page on the CS106A website to download 32-bit versions of the Java SDK and Eclipse).

c. The Java JRE installation program should begin. Do a **Typical** installation (just use the default settings in the installation process), and follow the rest of the instructions given in order to complete your installation.

3. **Download Eclipse from the CS 106A website.** If you've followed step 2, you should be on the **Software** page of the CS106A website. In the section entitled "Installing Eclipse in Windows", go to Step 3 to download the Eclipse file. Save the downloaded file to somewhere on your hard drive. This may take a little while as the file being downloaded is rather large. **Important note**: <u>make sure to get the version of Eclipse from CS106A website</u>. If you have an existing version of Eclipse installed on your machine (even an older version of Eclipse from CS106A), it will **not** function properly, and you should download the current CS106A version.

4. **Install Eclipse.** Unzip/extract the contents of the file by right-clicking on the folder you just downloaded (which is named **eclipse-windows.zip** or **eclipse-windows64.zip)**, selecting the **Extract All…** option and typing **C:\Program Files** as the location to extract the files to. Then continue following the steps in the extraction process.

5. **Create a shortcut.** After extracting Eclipse, you can then create a shortcut for easy access to the program.

   a. Open the **C:\Program Files\eclipse** directory

   b. Right-click and drag the **eclipse.exe** file (i.e., the **eclipse** application) to your desktop and then select the option **Create shortcut here**

6. **A Note about 32-bit.** If you installed the 64 bit versions of the software, and find that you have issues running Eclipse, we recommend that you uninstall the 64 bit versions of both the JDK and Eclipse and install the 32 bit versions of both. You can do this via Step 6 of the online Eclipse instructions. Then repeat the above steps.

7. **Set up Eclipse**. Now you'll need to install the 106A-specific customizations. Skip to the section "Installing the CS106A Plugin" below for more information.

## (Mac and Windows) Installing the CS106A Plugin

Now that you have installed Eclipse, we need to add the *CS106A Plugin*, which adds additional 106A-specific features to Eclipse. You can do this by doing the following (note that all screenshots below are taken on a Mac, even though these instructions apply to both Mac and PC):

1. **Setting up a workspace.** When you run Eclipse for the first time, it will prompt you to set up your *workspace* folder. This is just the place where Eclipse will place new

projects. In 106A you won't have to make any new projects from scratch. We will always give you skeleton projects for your assignments, so you don't need to worry about where the workspace is. The suggested location is fine. Check **Use this as the default and do not ask again** and then click **OK**.
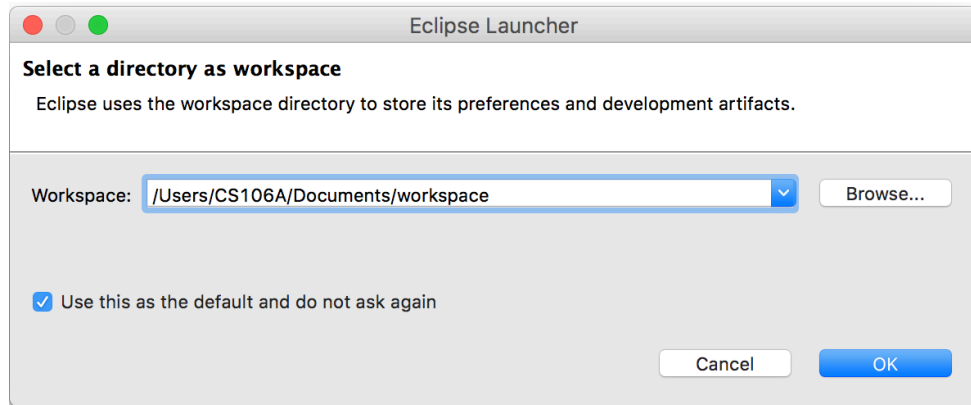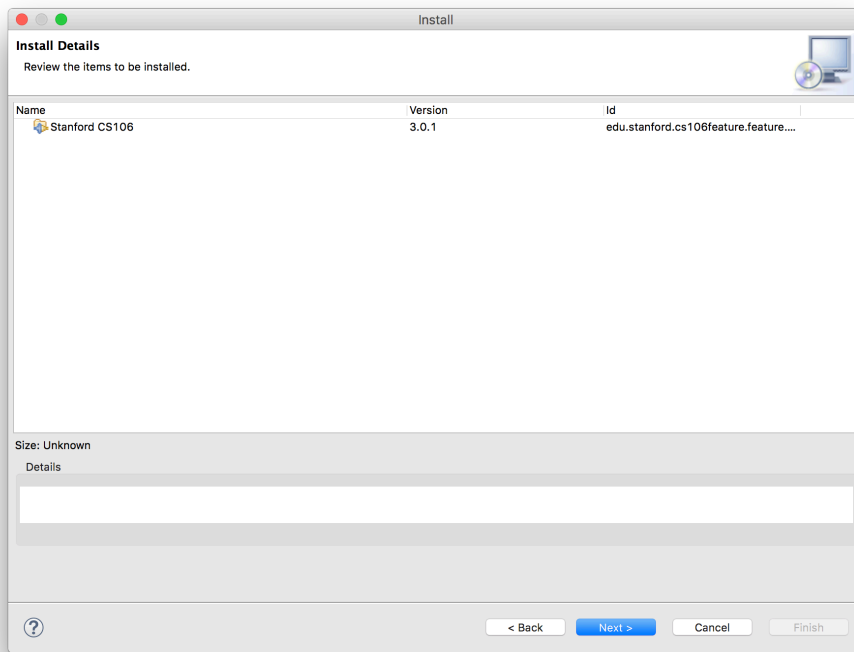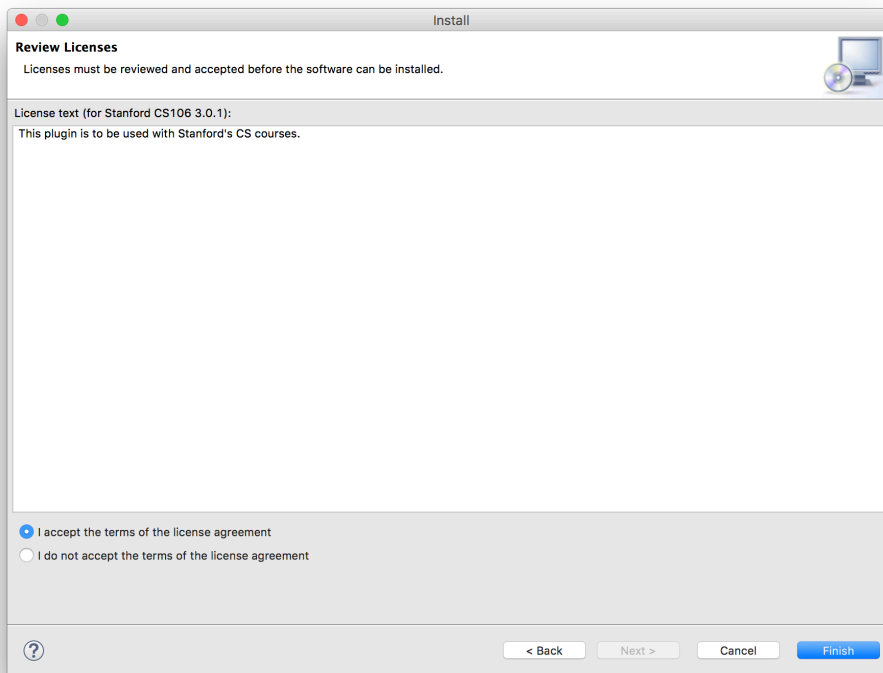
## 2. Install the CS106 Plugin.

    a. With Eclipse open, close the "Welcome" tab using the "X" in the top left. Click Click **Help -> Install New Software**.

    b. In the "Work with" text box, type

        **https://web.stanford.edu/dept/cs_edu/eclipse/plugin** and press **Enter**.

    c. Click **Select All**, and then click **Next**.
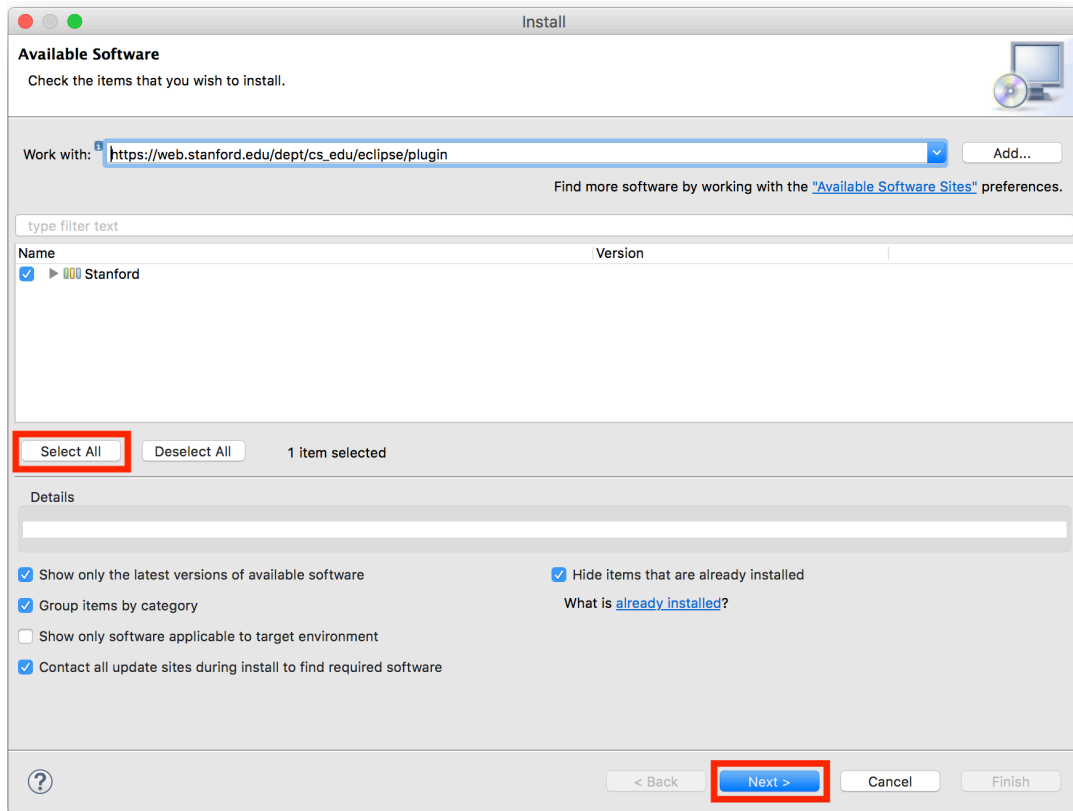
d. Click **next** again.



e. Click **I accept the terms of the license agreement**, and then click **Finish**.

f. Click **OK** when you see the warning about installing unsigned content.



g. Click **Yes** when asked to restart Eclipse.

**3. Go forth and program!** Now that you have Eclipse loaded, your next step is to create a new project in your workspace by importing a skeletal framework that we provide called a *starter project*. Using starter projects makes your life much easier by allowing you to ignore the many details involved in creating a project from scratch. Every assignment will include a starter project for each problem, and your first task will be to download the starter project from the class website and then import it into your workspace. The details for doing so are described in the handout *Using Karel with Eclipse*.

## Using Eclipse on Mac and Windows

Once you've finished installing Eclipse and have it running—after what may seem like a relatively long time—you will have a screen that looks like this (the Windows version is shown below, it may look slightly different on the Mac):
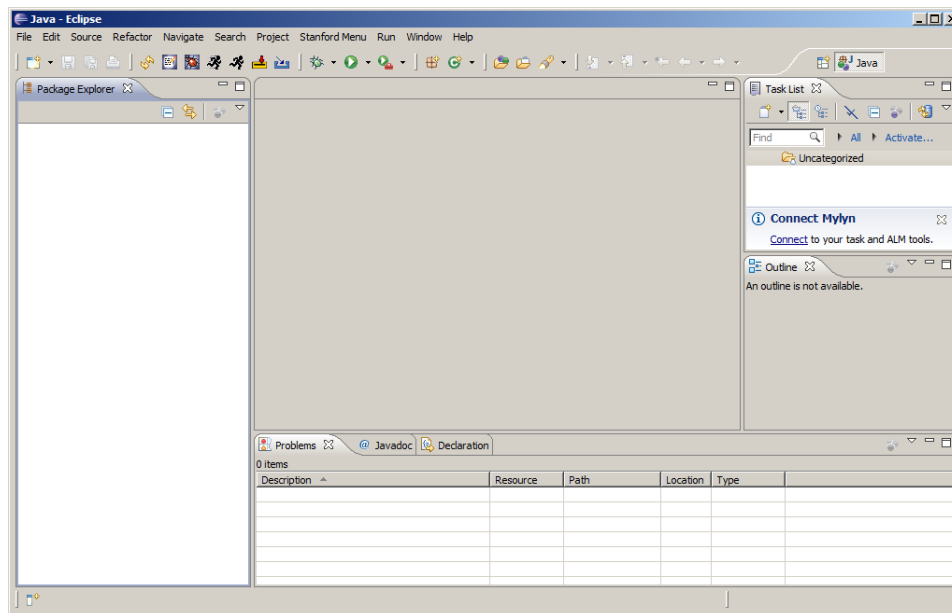
The layout of the screen—which the Eclipse designers decided to call a **perspective**—corresponds to the Stanford Editor perspective, which is where you will want to start editing your programs. Because Eclipse is a professional tool, it contains many advanced features that only get in the way in an introductory course. The purpose of the Stanford Editor perspective is to hide all the scary-looking features that you don't need. If you ever find yourself in a perspective that seems confusing, click on **Stanford Menu** in the menu bar and then select **Editor**. You can also click on the **Editor** button from the main toolbar, which looks like this:

As mentioned previously, once you have Eclipse loaded, your next step will usually be to create a new project in your workspace by importing a skeletal framework that we provide called a **starter project.** Using starter projects make your life much easier by allowing you to ignore the many details involved in creating a project from scratch. Every assignment will include a starter project for each problem, and your first task will be to download the starter project from the class website and then importing it into your workspace. The details for doing so are described in the handout "Using Karel with Eclipse".