

Setting up your Python Environment for CompSci 101 Fall 2016

Windows Version

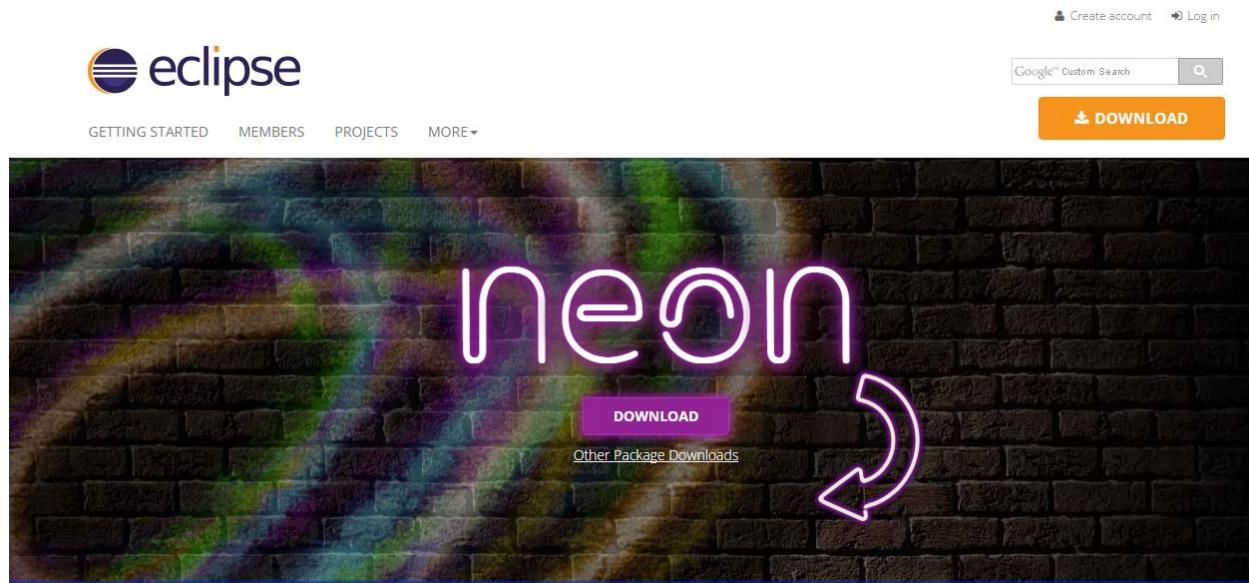
For developing programs in CompSci 101 at Duke you'll need:

- An Integrated Development Environment (IDE) called Eclipse
- Java, a programming language used to run Eclipse -- also used in CompSci 201
- Python, the programming language we use in CompSci 101
- Enthought Canopy, a set of Python libraries we'll use in CompSci 101
- PyDev, an Eclipse plugin for developing Python programs in Eclipse
- Ambient, a Duke plugin for Eclipse for downloading and uploading assignments

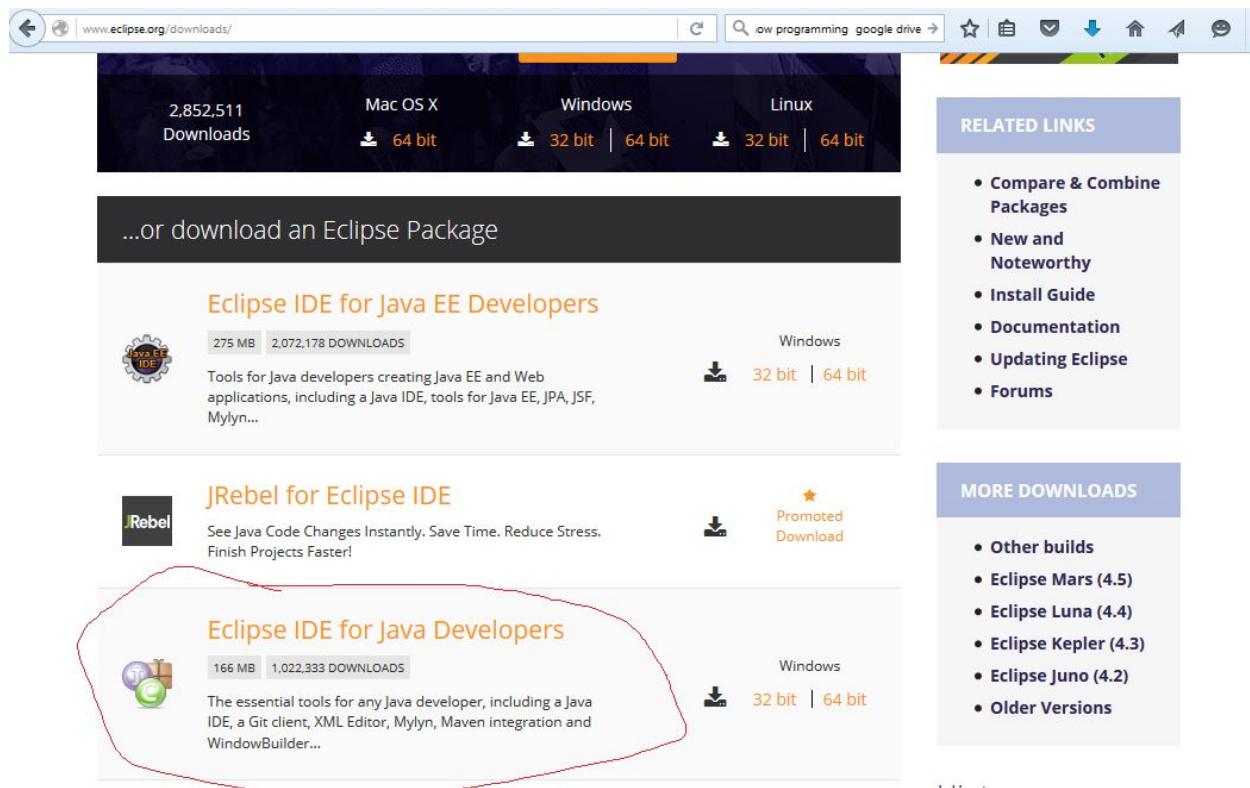
Detailed instructions with screenshots are shown below for each of these software artifacts.

Eclipse

Eclipse is the free IDE we use in CompSci 101 and 201. You should visit <http://eclipse.org> and use the Download link that appears at the top of the page, see the screen shot below.



It's likely that Windows will be automatically recognized by your browser. Under the purple download button is **Other Package Downloads**. Select **Eclipse IDE for Java Developers**. In the screenshot below I circled it in red.



Hint

After you've downloaded the software, you should unpackage it and install it as an application. To do this, you will need to go to your downloads folder, and select the Extract All option after right-clicking on the downloaded Eclipse file (this might take a minute to finish unzipping the file). You then need to drag the Eclipse folder that you downloaded to This PC > Local Disk (C:) > Program Files. Click on the Eclipse folder, then right click on the Eclipse application Icon and pin it to your start menu or taskbar, for easy access in the future. You should then launch Eclipse. If you don't have Java installed already launching Eclipse will cause a dialog to appear asking you to install Java.

Installing Java

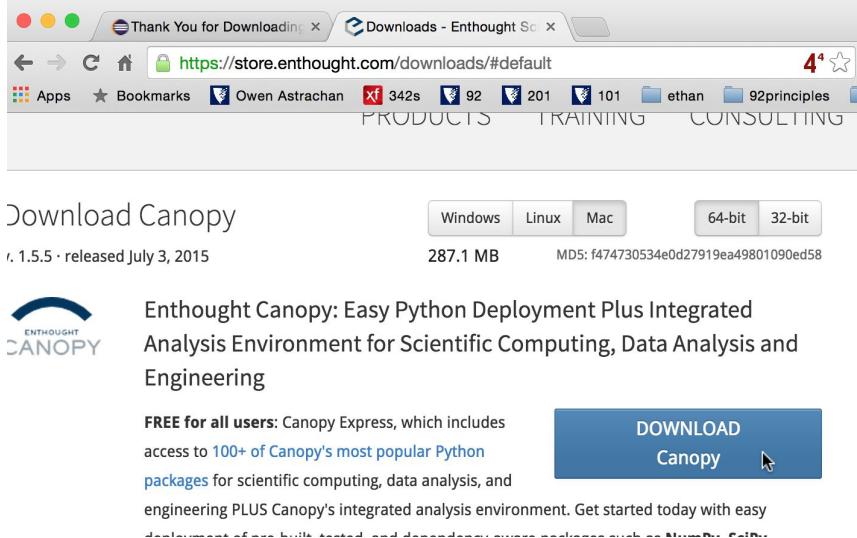
When you launch Eclipse your operating system may ask you to install Java if it hasn't already been installed on your computer. Follow the instructions to install Java so that you can run Eclipse. If you can launch Eclipse, you'll have Java and be ready to go.

In the fall of 2016 the current version of Java is Standard Edition (SE) 8u102. You should install the JDK (Java Development Kit) for your operating system from this site

<http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>

Enthought Canopy/Python

Enthought Canopy is a collection of Python code/libraries we'll use in Compci 101. The software is free, find it at <https://store.enthought.com/> and choose the free version (Canopy Express) for downloading—that should take you to a website that looks like the screenshot here. You should download Canopy Express and perhaps indicate that you're eligible for the Academic License by filling out the form and indicating that you're at an academic institution and eligible for an Academic License. You don't have to do this, but it's a good idea.

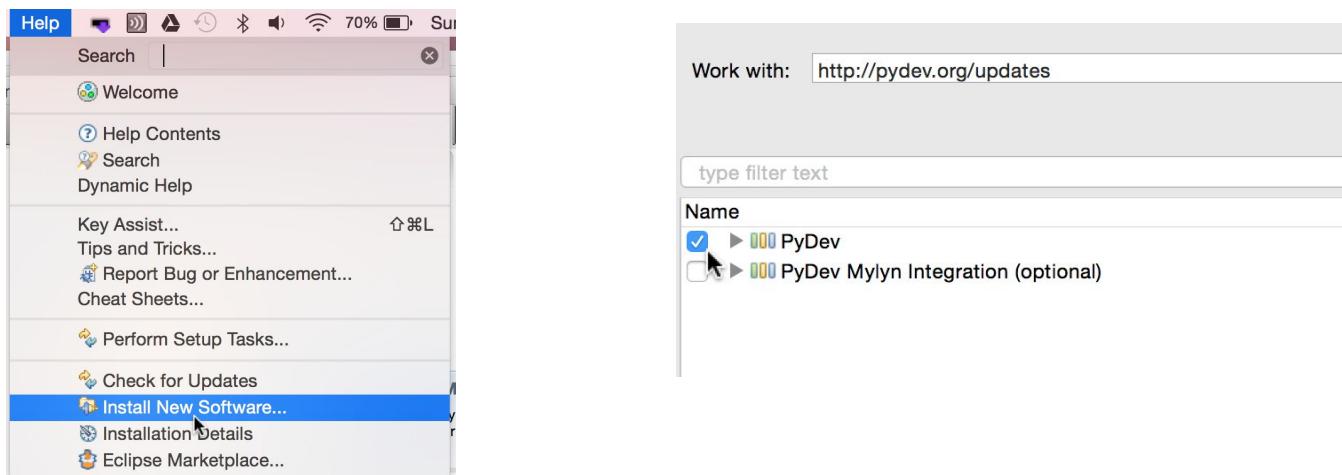


After downloading Canopy be sure to run it! Follow the Setup Wizard's instructions, and install Canopy. You'll likely only need to launch Canopy once, but **do not** make Canopy your default Python environment! You'll then need to follow the steps below to install Python and connect Eclipse to Python and the Canopy libraries.

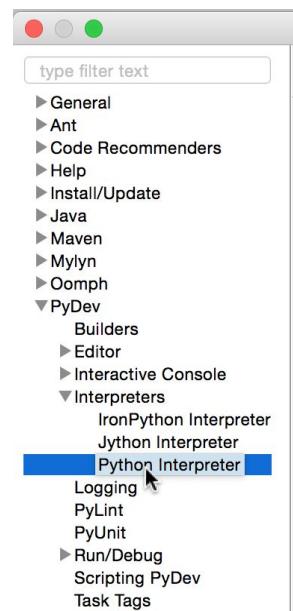
PyDev

To install the PyDev plugin for Eclipse you'll use the Help>Install New Software menu as shown below on the left. Then you'll enter <http://pydev.org/updates> into the 'work with' textbox, wait for the 'Pending' notice to be replaced by the view on the right below where you'll select just PyDev, **not** the PyDev Mylyn integration option and then go through the dialogs (next, next, finish, etc.).

You should agree to all the terms and conditions. If you get a warning about 'unsigned content', check the box next to the certificate and then click 'ok' and proceed. You'll need to restart Eclipse.

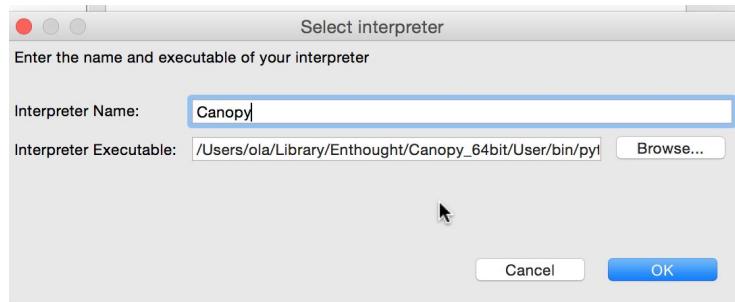


After you've installed PyDev, you'll need to configure Eclipse so that it associates PyDev with Canopy, which you downloaded earlier, to develop Python programs for CompSci 101. Choose Window>Preferences. Then choose PyDev>Interpreters>Python Interpreter to configure PyDev, as shown on the right.



The steps below will allow you to configure Python/PyDev/Canopy with Eclipse.

- press the "New ..." button to tell Eclipse about Python
- in the resulting dialog box, for the "Interpreter Name" type "Canopy" and for the "Interpreter Executable" you should use the Browse button to navigate to one of the following locations, **replace UUU with your user name on your machine**
- type:
"C:\Users\UUU\AppData\Local\Enthought\Canopy\User\appdata\canopy-1.7.4.3348.win-x86_64\python.exe" *Note: It may be easier to simply click the browse button, search for "Canopy" in "This PC," and go from there, as Canopy does not always install in the directory typed above. Note 2: In this version of Canopy there are multiple python.exe files, only the one under Canopy\User will work as expected. You'll know you have the wrong one if you can't import matplotlib for lab 1.*
- choose "Select All" and then click "OK" at the bottom of the resulting dialog box
- click "OK" at the bottom of the Preferences Box and wait for the changes to take effect when the dialog box to close (you do not need to restart Eclipse)
- **Last step:** change eclipse to python mode by selecting "Window" then "Open perspective" and then "other" and select PyDev.
- In the top right corner of eclipse you should see PyDev appear.
- You should now be ready to create a Python program



Ambient

You'll need to install Ambient, an Eclipse plugin (like PyDev) was, to be able to download labs and assignments and to submit them for CompSci 101 and other Duke classes. The first steps are similar to what you did in PyDev to install that plugin.

- open Eclipse and access the Help menu
- select "Install New Software..."
- in the "Work with:" text field, type "http://www.cs.duke.edu/csed/ambient/update" and press Enter
- you may need to wait a number of seconds until the "Pending..." is replaced by "Ambient" in the main selection area
- select "Ambient" and click "Next >" down at the bottom
- follow the next steps to finish the installation using the defaults and agreeing to the terms and conditions;
- if you receive a warning about unsigned content, proceed anyway
- at the end, agree to restart Eclipse for changes to take effect

In the first lab you'll use Ambient to download a program to see if the PyDev/Canopy libraries worked correctly.