

# Chapter 1

## ECE 111 Python Installation

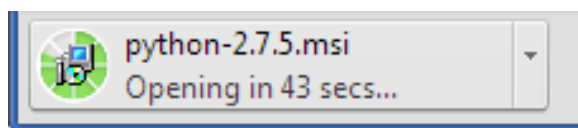
This document contains all of the instructions necessary to run the Python GUIs in ECE 111. The GUIs are coded in Python2.7 using the PyQt4 library for GUI widgets and Pyserial 2.6 for communication with the Teensy2.0.

### 1.1 Download and Install Python 2.7

The graphical user interfaces (GUIs) are built on Python 2.7 using several libraries which will be installed later. Python 2.7 can be found at <http://www.python.org/download/releases/2.7.5/>

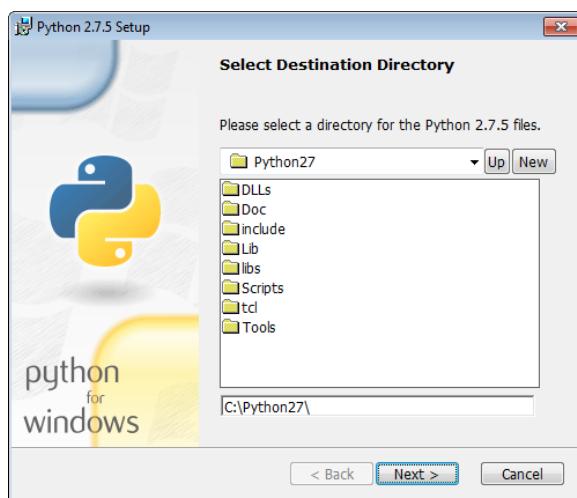
1. Download the appropriate version of Python 2.7.5 for your operating system.

For Windows users, download either the 32 bit x86 MSI Installer or the 64 bit X86-64 MSI Installer.



2. Install Python 2.7 by running the installer.

Install in the default directory to make later steps easier.

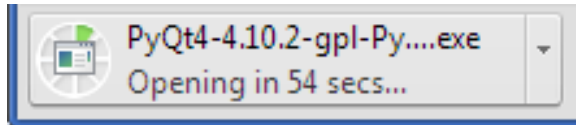


### 1.2 Download and Install PyQt4

The library containing the GUI widgets and layouts is PyQt4. PyQt4 is a Python implementation of the cross-platform toolkit Qt. PyQt4 can be found at <http://www.riverbankcomputing.com/software/pyqt/download>

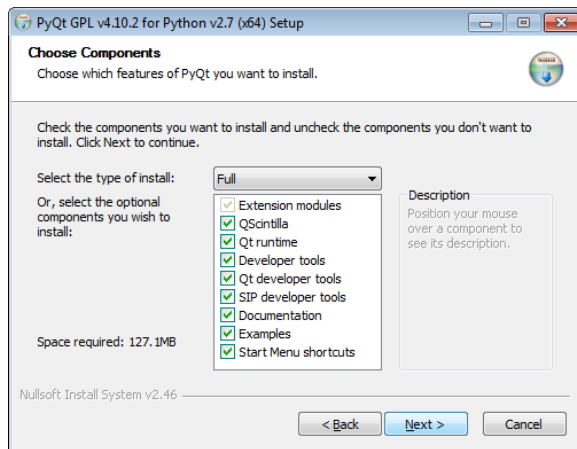
1. Download the appropriate version of PyQt4 for the operating system.

For Windows users, download the Binary Package (.exe) that correlates with the current Python2.7 installation. For example, download PyQt4-4.10.2-gpl-Py2.7-Qt4.8.4-x64.exe for 64 bit Python 2.7.



2. Install PyQt4 by running the installer.

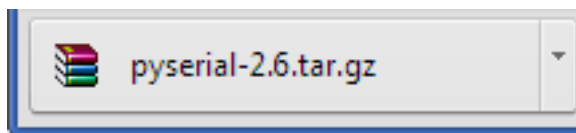
Select Full install to install all packages.



### 1.3 Download and Install Pyserial 2.6

Pyserial is a library that contains all of the serial functions required to communicate with the Teensy2.0. Pyserial 2.6 can be found at <https://pypi.python.org/pypi/pyserial>

1. Download Pyserial 2.6.



2. Unzip the .tar.gz using 7-zip, WinRAR, Winzip, or any other unzipping program.
3. Copy the extracted files to C:\Python27\Lib\site-packages
4. Open command prompt type `cd C:\Python27\Lib\site-packages\pyserial-2.6`

Command prompt can be opened by typing "cmd" into the Run command.

The Run command window can be opened by clicking "Run..." in the start menu or by pressing Windows+R on the keyboard.

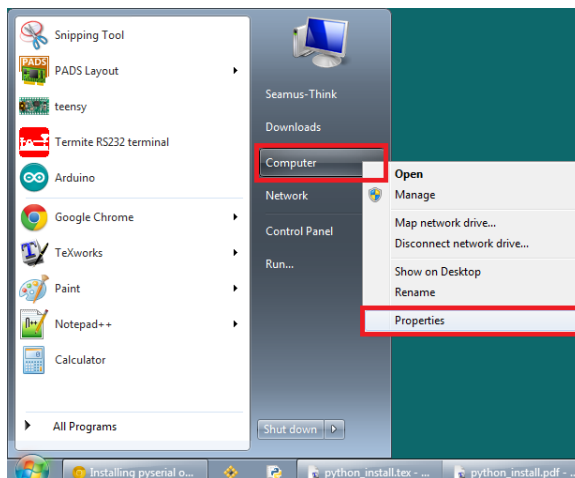
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5. Type `python setup.py install` into command prompt.

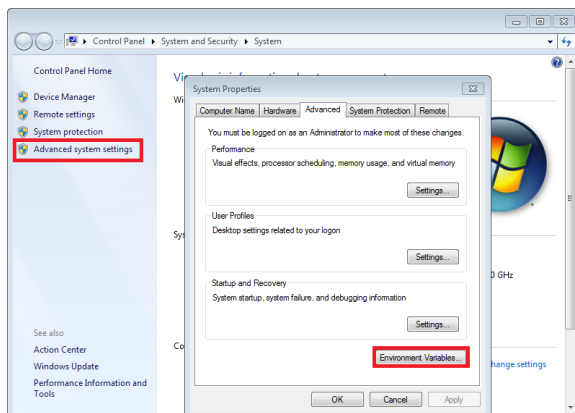
If you receive a "python is not recognized as an internal command" error, your system does not know where Python is installed.

Fix this error by adding Python's installation directory to the *PATH* variable in *Environment Variables*.

(a) Right click My Computer and select Properties.



(b) Open Environment Variables, which is under Advanced system settings.

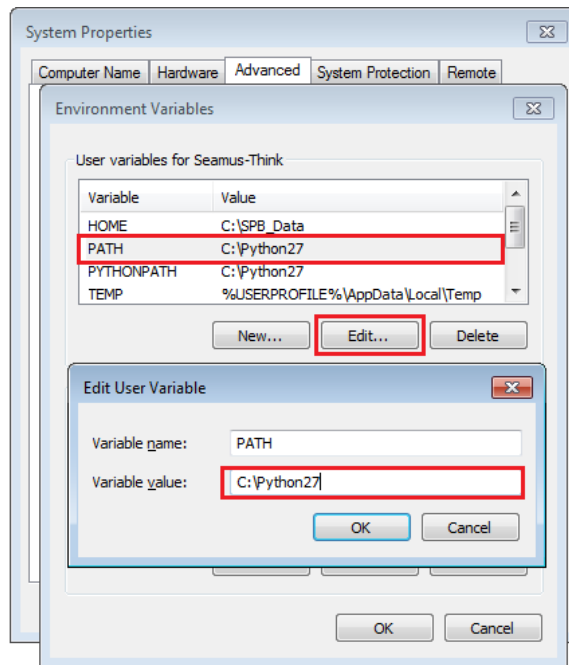


(c) Click Edit on the PATH user variable.

(d) Append `C:\Python27;` to the end of the list of values contained in this variable.

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(e) Restart the computer.

*All done!* Celebrate by downloading the Python source files from [TekBots.com](http://TekBots.com) and looking them over. Attempt to learn how a button is created and added to the GUI.