Introduction to Python Chris Marciniak

June 25, 2015

**Installation instructions**

Go to <https://www.python.org/downloads/>

Note: Python 2.7.10 is still supported because much legacy software is built with it. Unless you are using software that requires it, it is recommended to download the latest version. <https://wiki.python.org/moin/Python2orPython3>

Download Python 3.4.3 and run the installer.

Select “Install for all users” and click next.

Click next to set the Python directory in the default location

On the “add Python.exe to path” icon. Select “Will be installed on local hard drive” and click Next.

**Setuptools and Pip**

Python comes with a package manager that allows you to easily install software libraries and add-ons.

To install a package simply type pip install “package name”.

e.g. pip install requests

**ArcGIS arcpy Installation Instructions**

ArcGIS comes with Python 2.7 installed. In order to write arcpy scripts you need to add the Python that comes with ArcGIS to your path.

If you want to use Python 3 and switch over to ArcGIS’s Python when you need it then you can download and execute the following batch file: <https://github.com/marcinic/arcgis-python>

**Setting up a Compiler on Windows**

Compiling is the process of going from code in a high-level language to the 0’s and 1’s that execute on the machine. Compiled code is fast. Python is an interpreted language that is wrapped around C. As a result, many packages will require a C compiler for installation.

1. Install Visual C++ 2010 Express

<http://download.microsoft.com/download/1/D/9/1D9A6C0E-FC89-43EE-9658-B9F0E3A76983/vc_web.exe>

1. Download and complete the installation for Microsoft Windows SDK for Windows 7 and .NET Framework 4. (Note: you do not need to install the .NET components)

<https://www.microsoft.com/en-us/download/details.aspx?id=8279>

**Alternative to installing a compiler on Windows**

There is an unofficial repository for Windows Python packages maintained by Christoph Gohlke at the University of California, Irvine. I would recommend downloading SciPy with this method.

<http://www.lfd.uci.edu/~gohlke/pythonlibs/>

**List of Potentially Useful Packages**

requests, beautifulsoup4, numpy, scipy, scikit-learn, statsmodels, PyMC3

**Resources for Self-Study**

Documentation

<https://docs.python.org/3/>

Python’s style guide

<https://www.python.org/dev/peps/pep-0008/>

Interactive tutorials to learn Python syntax

<http://www.codecademy.com/tracks/python>

<http://www.learnpython.org/>

Computational Statistics in Python

<http://people.duke.edu/~ccc14/sta-663/index.html>