Project Verano Environment Setup

There are a few python packages that you’ll want to have installed for this project. Some of them will be used specifically to implement financial analysis algorithms, while others will be used for convenience in working with the data. This document will serve as a tutorial on setting up your python with all of the tools you will need.

I’ll explain what each of these does later, but here’s a list of all of the python packages we will be using:

1. Pandas
2. NumPy
3. yahoo-finance
4. TA-Lib
5. scikit-learn or PyBrain\*

\*I won’t have you install these yet, since they are purely for phase 3

Here’s a step-by-step tutorial on getting all of these packages installed. Some of them can be quickly installed via pip, while others require some work or have other dependencies. If you run into any error that aren’t covered in these steps, try googling them before asking me.

1. Make sure you have Python 2.7.11. You can check by running the interactive interpreter and typing the following:

“import sys”

“print sys.version”

1. Next, you want to have python and its packages accessible from the terminal so you can just type “python” instead of “C:\Python27\python.exe” every time you want to run something using python. To do this, we’ll add the directories containing python.exe and its packages to your system environment’s PATH variable. Follow these steps:
   1. Search for “environment” in Windows and click on the option that says something about “system environment variables”
   2. Click on the button at the bottom of the window that says “Environment Variables”
   3. Scroll down the “System variables” window until you see one called “Path” then select it and click “Edit”
   4. Go to the end and add (DON’T DELETE ANYTHING) the following:

“;C:\Python27;C:\Python27\Scripts”

And yes, include the semicolon (it acts as the delimiter between entries)

* 1. Click “OK” on both windows

We can now use pip to install packages. pip is a package manager for python, meaning that it consolidates official python packages and allows anything to be installed with a single command.

1. Run the following command in your terminal:

“pip install pandas”

This will tell pip to install pandas and all of its dependencies. Luckily for us, NumPy is one of those dependencies, so this installs two of our required packages.

NumPy is a widely-used package for data science. It includes a lot of functions for manipulating its most common data structure: the multidimensional array. The multidimensional array object is the industry standard for transferring data between scientific computing packages.

pandas is a more general-purpose scientific computing package aimed at allowing the user to manipulate, analyze, and model a wider variety of data. We will mostly be using it in conjunction with other packages like NumPy and TA-Lib, but it’s also very useful on its own.

1. Run the following command in your terminal:

“pip install yahoo-finance”

yahoo-finance is a single-purpose package designed to get data from the Yahoo! Finance API.

1. In this step we’ll install TA-Lib.
   1. Go to <http://www.lfd.uci.edu/~gohlke/pythonlibs/> and scroll down to the TA-Lib section.
   2. Download one of the first two files depending on your OS (the ones with “cp27” in their names) and try to run the following commands in your terminal:

“cd %HOMEPATH%\Downloads” (this should work)

“pip install [file name]”

If it says something along the lines of “this is not a supported wheel on this platform” then try downloading another version (different “cp##”) from the website and running the commands again (the first one just takes you to your download directory, so you probably don’t need to do that one again).

\*It might throw an error and tell you that it couldn’t find “vcvarsall.bat” in which case you should go to <http://aka.ms/vcpython27/> and download and install the compiler.

TA-Lib is one of the most widely-used technical analysis libraries in the programming world, so we’ll be using its python component. It includes technical indicators, chart patterns, and market trend analysis tools so that we can more easily develop the algorithms we want.