READ ME

Erich Ratzat - eratzat@hotmail.com

Nikolas Lippmann Pareschi – nikolaslippmann@gmail.com

Version of Python: 2.7.13   Version of Spyder: 3.23

Description: In the final project we use intermarket analysis and 2 machine learning algorithms to predict the future returns of the SP500, the future returns of treasuries bunds. We combine the trading systems to make a portfolio that uses TLT to hedge SPY. In part 2 we use regression to make a return to the mean algorithm in gold.

Installation: Please install on your pc the latest version of Anaconda with Python 2.7 and the lates version of Spyder. The program was run in Windows 10 but it should work also if you use a Mac PC or a Linux distribution.

One can download the Anaconda / Python 2.7 / Spyder here:

https://www.anaconda.com/download/

Packages Used:

The following packages should be installed by the anaconda environment or via through pip install package in anaconda prompt: Pandas, Numpy , MatPlotlib, Sklearn, Matplotlib, Talib and GraphViz. The Talib library sometimes does not install easily through pip install. If that is your case, if you are running python on a windows 64 bit like me you will face some problems. You will need to follow these steps:

The solution was to get a wheel from https://www.lfd.uci.edu/~gohlke/pythonlibs, then install it via pip. You need to make sure the wheel matches your python version (in my case, 2.7).

```
(base) C:\Users\nikol>pip install TA_Lib-0.4.17-cp27-cp27m-win_amd64.whl
Processing c:\users\nikol\ta_lib-0.4.17-cp27-cp27m-win_amd64.whl
Installing collected packages: TA-Lib
Successfully installed TA-Lib-0.4.17
```

Maybe you will not have the wheel installed n your pc, to do so please:

```
(base) C:\Users\nikol>pip install wheel
Requirement already satisfied: wheel in c:\users\nikol\anaconda2\lib\site-packages (0.29.0)
```

The Graphviz library it not standard to install also. We need to run the following executable file (windows case):

https://graphviz.gitlab.io/_pages/Download/Download_windows.html

Windows Packages

Note: These Visual Studio packages do not alter the PATH variable or access the registry at all. If you wish to use the command-line interface to Graphviz or are using some other program that calls a Graphviz program, you will need to set the PATH variable yourself.

2.38 Stable Release

- **graphviz-2.38.msi**

We then need to copy all the bin files to the working directory. Next we proceed in installing grapgviz with the pip install command. If you are facing difficulties or if you are using a Mac or a Lynux computer please follow this link:

https://stackoverflow.com/questions/35064304/runtimeerror-make-sure-the-graphviz-executables-are-on-your-systems-path-aft/46258791