Python Installation Instructions (Windows)

Predictive Analytics using Python

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Throughout the course we will use the Python programming language in conjunction with many open source libraries. While there are numerous Python distributions, we strongly recommend using Anaconda. Among many other features, Anaconda facilitates the usage of Python by providing a large number of frequently used packages and tools in its initial installation.

1. Please download and install anaconda: https://www.anaconda.com/distribution/#download-section
   - Please check the box "Add Anaconda3 to my PATH environment variable" (other options could be left unchanged)

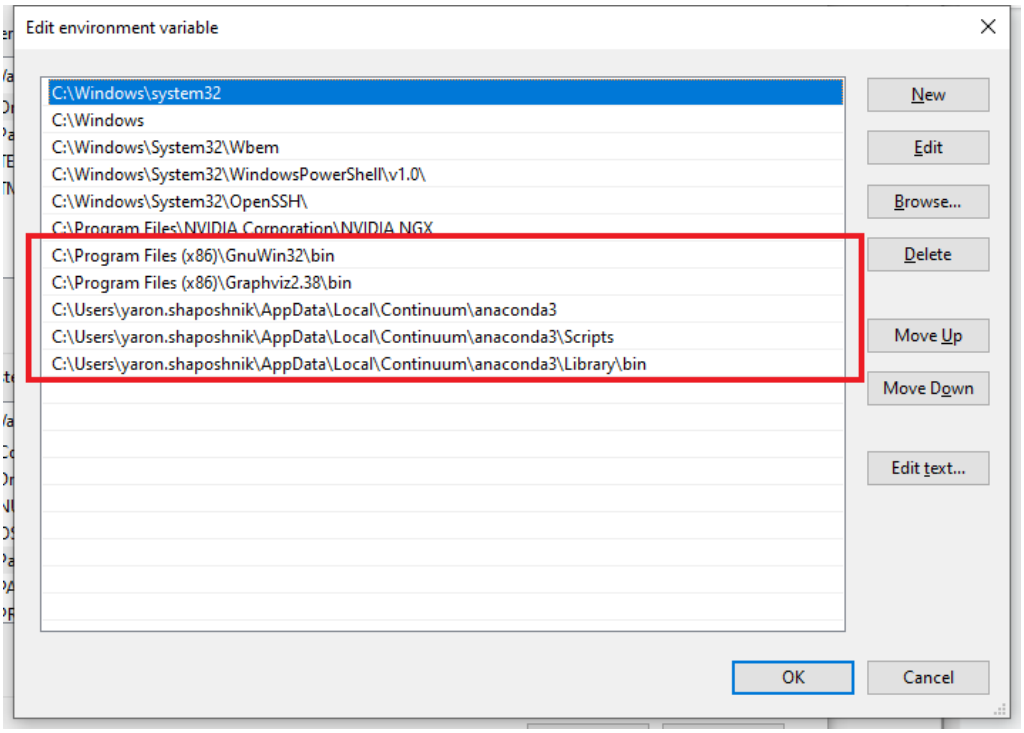
2. Install Graphviz by downloading and running the .exe file from the following website: https://www2.graphviz.org/Packages/stable/windows/10/cmake/Release/x64/
   - Please check the box "Add Graphviz to the system PATH for all users"

   Alternatively, you may download the file from the following website: https://graphviz.org/download/ (Scroll down to Windows, "Stable Windows install packages"->10->cmake->release->x64)

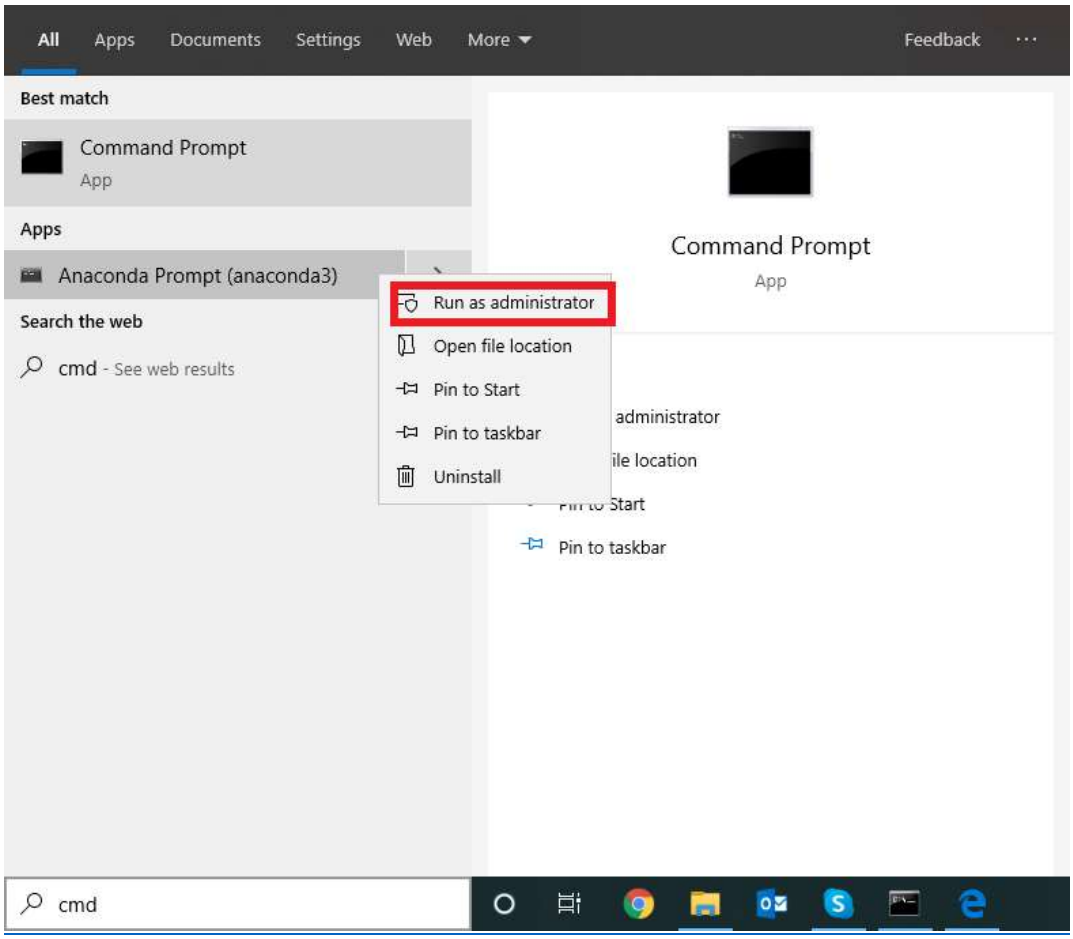
3. Install the following unix shell commands:
   - http://gnuwin32.sourceforge.net/packages/coreutils.htm (click on "complete package, except sources")
   - http://gnuwin32.sourceforge.net/packages/grep.htm (click on "complete package, except sources")
   - http://gnuwin32.sourceforge.net/packages/diffutils.htm (click on "complete package, except sources")

4. Add the location of the installed programs to the PATH variable:
   a. Type "env" in the search box at the bottom part of the screen where it says "Type here to search".

   b. Click on "Edit the system environment variables".
   c. Click on the button "Environment variables".
   d. In the bottom half of the screen (System Variables), select "Path" can click on "Edit" below.
   e. Click on "New" then "Browse" and add the directories for the programs installed in steps 2 and 3. The following screenshot illustrates how the Path variable should look like. Note that for on different machines other folder locations could be found, but the folders for Graphviz, the Unix commands (GnuWin), and Anaconda should appear in this list.



5. Type “cmd” in the search box to locate the command prompt icon. Right click on the icon “Anaconda Prompt” and choose “Run as administrator”



6. Type the following commands in the terminal (one at a time; you may be asked to type **y** to proceed):

```
conda create -n cis432 python=3.6 keras tensorflow matplotlib scikit-learn lxml networkx spyder pandas numpy
conda activate cis432
conda install -c conda-forge jupyter_contrib_nbextensions ipywidgets
jupyter nbextension enable collapsible_headings/main
jupyter nbextension enable toc2/main
jupyter nbextension enable spellchecker/main
pip install --upgrade pip pydot-ng
dot -c
```

Homework 1: Run the test files in homework 1 by copying the files **test.py** and **test.dot** into some folder on your computer. Then, open the command prompt ("Anaconda Prompt"), change the working directory to the folder containing the files and type: **python test.py**

The message "Passed installation tests!" would indicate that python is installed properly on your computer and that three files were created: **test.png**, **test.pdf**, and **test.txt**. Upload the files to Vocareum (homework 1) and click submit.

Summary: You have installed two versions of Python on your computer. While both versions could potentially work with the course material files, one is most likely to run smoothly. To launch python/ipython/spyder/jupyter:

a. Launch command prompt ("Anaconda Prompt")
b. Change directory to the folder containing the course material. For example

```
cd "C:\Users\Yaron\Dropbox\Projects\Teaching\2021"
```

c. Type: **conda activate cis432**
d. Launch jupyter (or python/ipython/spyder) by executing the command:

```
jupyter notebook
```

(or simply write python/ipython/spyder)