

Preparation for the Python MiniCourse

In this class, we will be using the Python programming language. The code in the lecture will be written in Python 2.7, and I will be using the Jupyter Notebook for most of the lectures/exercises. I will also be using Unix to navigate through my computer and execute commands. In Python, we will be using several modules, and numpy and scipy are two major modules that will also be needed.

If you already have a preferred method of writing and executing python scripts, and you can install all necessary modules, then you are in a good position to begin the class. However, if you would like to do the same thing as me, I encourage installing the Anaconda platform for Python 2.7. This will include the Jupyter notebook as well as most of the necessary modules.

If any of the following instructions do not work, come half an hour early to the start of the first day of class, so we can try to solve the issue before class begins! If you have any concerns before then, feel free to email me (Mel) at melyang@ivpp.ac.cn.

Unix

1. If you are a Mac or Linux user, you are set. Search for “Terminal” to open it.
2. If you are a windows user, you will need to download cygwin at <https://cygwin.com/install.html> (probably the 64 bit).
 - a. Start installing, and at a certain point, it will ask you to install extra packages (basically unix commands to recognize in the Cygwin environment).
 - b. Search for and include **wget, tar, bzip2, subversion and vim** to install. (Use the ‘+’ sign to look through the directories and find the right programs to include.)
 - c. This link (<https://www.maketecheasier.com/install-configure-cygwin-windows/>) might be helpful for the above steps.
 - d. Once installed, open the Cygwin terminal and copy/paste each of these lines.
 - i. `wget rawgit.com/transcode-open/apt-cyg/master/apt-cyg`
 - ii. `install apt-cyg /bin`
 - e. Then, put in each of these commands:
 - i. `apt-cyg install bash-completion`
 - ii. `apt-cyg install ca-certificates`
 - iii. `apt-cyg install curl`
 - iv. `apt-cyg install git`
 - v. `apt-cyg install git-svn`
 - vi. `apt-cyg install python`
 - vii. `apt-cyg install python-setuptools`
 - viii. `apt-cyg install rsync`

Anaconda

1. Go to <https://www.continuum.io/downloads> and download/install Anaconda.

- a. For Macs, I used the Graphical Installer for Python 2.7.
 - b. For Windows, I used the 64-bit installer for Python 2.7 (check what your computer runs best with, 32-bit or 64-bit, if you're not sure).
2. Testing if everything works:
- a. On a Mac (or Linux), open the Terminal.
 - i. Try typing "jupyter notebook". If a new webpage opens, it works! Return to the Terminal and press Ctrl+C to exit. If you get an error, take a screen shot, and ask for help prior to the start of class.
 - ii. Then, type "ipython". After it loads in your Terminal or Cygwin screen, try typing "import numpy". If it does so with no error (essentially it does nothing but start a new line), it works! If you get an error, take a screen shot, and ask for help prior to the start of class.
 - b. On Windows, open Cygwin.
 - i. Try typing "which python". If the output does not have a file path containing "Anaconda" somewhere in there, then copy the following command:

```
1. echo export  
   PATH=/cygdrive/c/Users/melan/Anaconda2:$PATH >>  
   ~/.bashrc  
2. source ~/.bashrc
```

 - 3. You will have to edit your path to the path leading to your Anaconda2 folder.
 - 4. Then recheck "which python" to see if the path has changed.
 - ii. After fixing the python path (step i above), type "python -i", and then in the python interpreter, type "import numpy". If it does so with no error (does nothing but start a new line), it works!. If you get an error, take a screen shot, and ask for help prior to the start of class.
 - iii. I have been having problems with this step. Try typing "jupyter notebook". If it doesn't work, then go to Anaconda2 in your Start menu and look for and click "jupyter notebook". If that opens a new window in your internet browser, then that is good enough for now! You will use this method of opening your jupyter notebook. I'll update you in class if I find out why you cannot open it from the Cygwin terminal.