

Jupyter Notebook & Spyder Setup

General Information

For any computer programming language, we need a tool that allows us to write, test and debug our code. We can code-in almost any software in windows in-built notepad, but it lacks practicality i.e, when the code is ready to execute, we need to use another prompt command to execute it. So, it is better to have everything (meaning write, test, debug our code) in tool. There comes IDE. IDE stands for Integrated Development Environment. There are number of IDE's available in the market for different programming languages. We are interested in Python IDE's. If you are interested in finding about different IDE's, here is the [link](#) for all python IDE's

Here are the two best Python IDE's for Data Science in my opinion -

1. **Spyder** is an open source IDE, was specifically built for data science. It integrates the essential libraries for data science such as Numpy, Pandas, Scipy, Matplotlib etc and it can be extended with plugins. Also, it is pretty similar to RStudio, Matlab. So, switching between Matlab or R to Python will be very easy
2. **Jupyter Notebook** is an interactive data science environment that supports multiple programming languages (like Python, R, Ruby, Scala (Spark), Bash, Haskell, Julia). Also, it is not only IDE but also a notebook. It supports markdowns (allows to add HTML components from images to videos), Write/edit code, Visualize and Present. Finally, we can export the detailed file into PDF or HTML or .py file. One caveat is ... While Jupyter runs code in many programming languages, Python is a requirement (Python 3.3 or greater, or Python 2.7) for installing the Jupyter Notebook itself

One more thing to know:

While we can download traditional Python software to use above two IDE's, it is preferred to download Anaconda distribution instead. Reason is traditional Python gives you just a basic platform where you have to install your desired packages manually (this even does not have NumPy and Pandas installed), Anaconda gives you just everything. I mean it has the most useful packages for Mathematics, Science and Engineering already installed for you

What is Anaconda?

Anaconda is a free and open source distribution of the Python and R programming languages for data science and machine learning related applications (large-scale data processing, predictive analytics, scientific computing), that aims to simplify package management and deployment

IDE's Installation Steps

1. Go to the [Jupyter Website](http://jupyter.org) (jupyter.org)
2. Scroll down and click the *Install the Notebook* button
3. The button will take you to the [installation documentation](#).
4. This in turn should take you to the Anaconda Installation page, go to the [Anaconda Installation](#) page and click on the Graphical Installer for your system to download the installer.
5. Follow the directions for the graphical installer you chose, it should be straight-forward, just like installing any other software, keep any default options.

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6. Once you've successfully downloaded Anaconda you can begin with the installation commands for Jupyter. All installation commands should be run in the Terminal (for Mac and Linux) or the Command Prompt/Powershell (Windows). (Mac users should just search for **terminal** in Spotlight search, Windows Users just search for either **powershell** or **cmd** in your windows search tool to find your appropriate installation tool). You also have the option of using the **Anaconda Command Prompt** as shown in the videos.
7. Once the installation is done, in your terminal/command prompt type: **jupyter notebook** and for Spyder, search Spyder
8. You should eventually see a new tab open up in your browser for you to begin using Jupyter Notebooks. Don't worry if your tab says something like "Conda [Root]" or "Python Default", either of these options will work fine. You can click on these to start a new
9. For more information on how to use the Jupyter Notebooks, refer to the other lectures in this section.
10. For more information on the Jupyter Notebook system in general, check out the [official documentation](#).
11. Once

You're all set!