Programming With Python

2nd part

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Why python:

Python is easy to use, powerful, and versatile, making it a great choice for beginners and experts alike. Python's readability makes it a great first programming language — it allows you to think like a programmer and not waste time with confusing syntax, it is a high-level, interpreted and general-purpose dynamic programming language that focuses on code readability. The syntax in Python helps the programmers to do coding in fewer steps as compared to Java or C++. ... The Python is widely used in bigger organizations because of its multiple programming paradigms.

why this book?

In this book, we tried to collect all the important titles in Python, and make it simpler, so after each part there is an exercise with the solution to explain that part more, and make it more comprehensible.(more 40 exercise and 5 activitys with solutions),and also it contains images from the executor(Jupyter), and illustrations for better understanding.

Welcome to the Python Workshop

Thank you for purchasing the book: **programming with python!** Before we get started we just need to explain some of the unique features of the course, and run through installation and setup for your local environment.

As you work through the material, you'll notice that all practical hands-on elements in the course (which we call **exercises** and **activities**) start by walking through a step-by-step reference implementation, followed by an instructor screencast. We recommend that you try to follow the step-by-step instructions for each practical task first, *before* walking through the guided example with an instructor.

Taking this approach helps hack your brain, building and reinforcing your learning. It helps with embedding core concepts so that they stick with you for the years ahead. This is also why you'll periodically come across knowledge-check events in the form of informal quizzes. They're not graded and there is zero pressure; they're just there to help you benchmark and lock-in what you've worked through over the duration of the course.

If you find yourself getting a lot of summary questions incorrect, it's worth stepping back, taking a break and revisiting a section another time. This fits in with a general rule; don't be too hard on yourself! Learning is not an instantaneous process, and is best conducted in chunks over a longer period of time. We've structured the course so that you can dip in and out to meet **your** needs, with quizzes and exercises acting as useful self-diagnostic tools.

Activities and Exercises

One last thing we should mention is the difference between exercises and activities. Exercises are completely end-to-end and step-by-step. Combined with instructor screencasts, you should never get stuck or be left wondering why something isn't working.

Activities start off the same as exercises, but leave you with open-ended expansion points for self-study and exploration. It's absolutely worth stepping back and spending some time on extending activities. The process helps to extend your frame of reference and apply your own creative input to what you've

just learned, further embedding your new skills. Just in case you run into some roadblocks, at the end of the course you'll still find reference solutions for all activities.

With the methodology of the course out of the way, let's move on to installation and setup!

Installation and Setup

Installing Jupyter on your System

We will be using Python 3.7:

To install Jupyter on Windows, MacOS and Linux follow these steps:

1. Head to Anaconda Distribution (https://www.anaconda.com/) to install the Anaconda Navigator, which is an interface through which you can access your local Jupyter notebook.
2. Now, based on your Operating system (Windows, macOS or Linux) you need to download the Anaconda Installer. Have a look at the following figure where we have downloaded the Anaconda files for Windows:

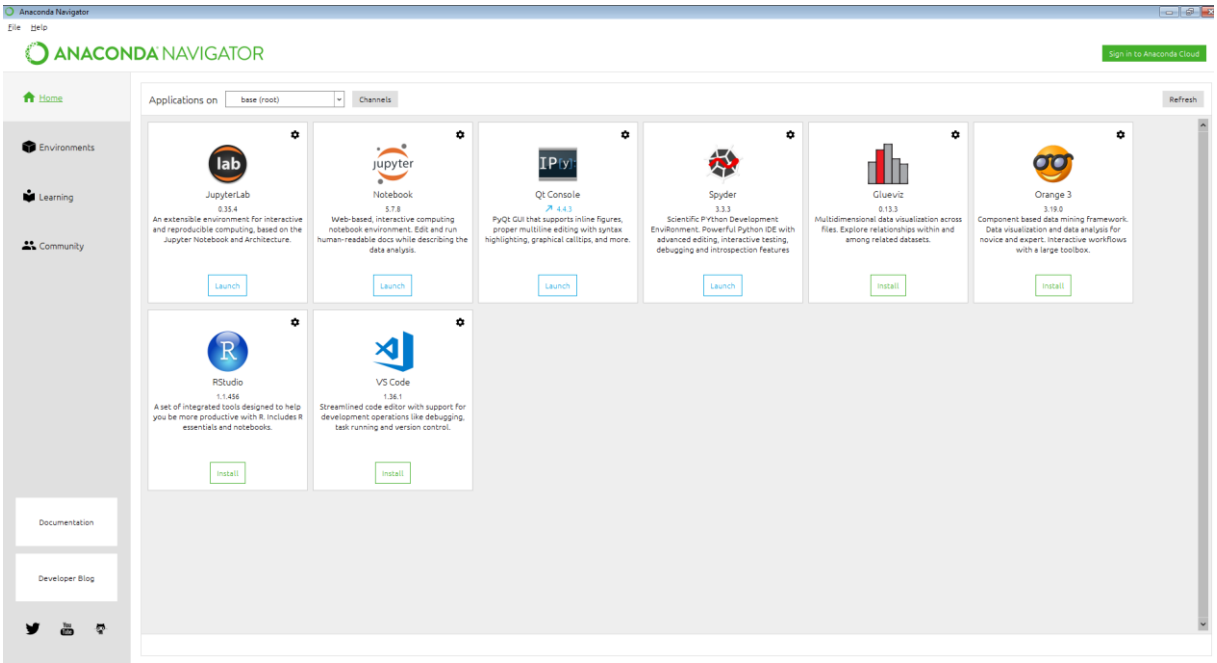

Figure 0.1: The Anaconda home screen

Launching the Jupyter Notebook

To Launch the Jupyter Notebook from the Anaconda Navigator you need to follow the mentioned steps below:

1. Once you install the Anaconda Navigator you will have the following screen at your end as shown in *Figure 0.2*.

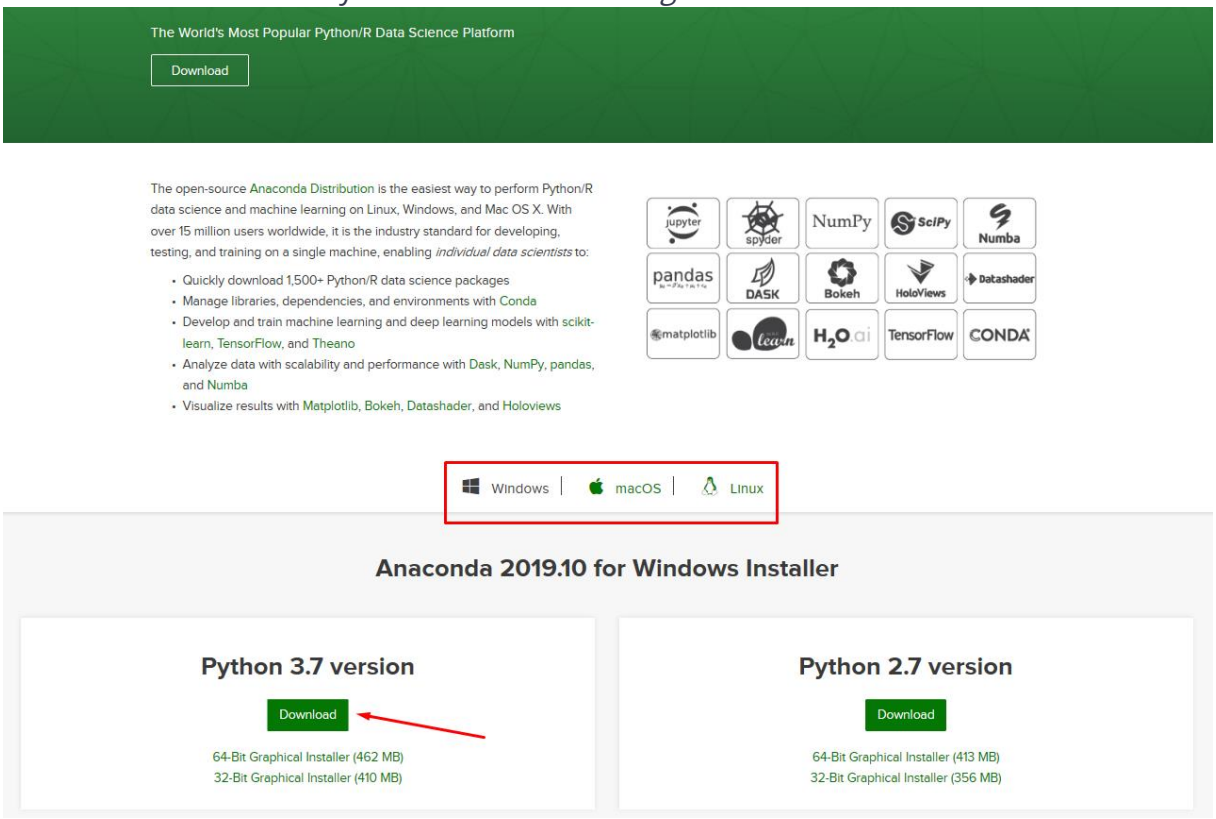

Figure 0.2: Anaconda installation screen

2. Now, click on `Launch` under the Jupyter Notebook option and launch the notebook on your local system:

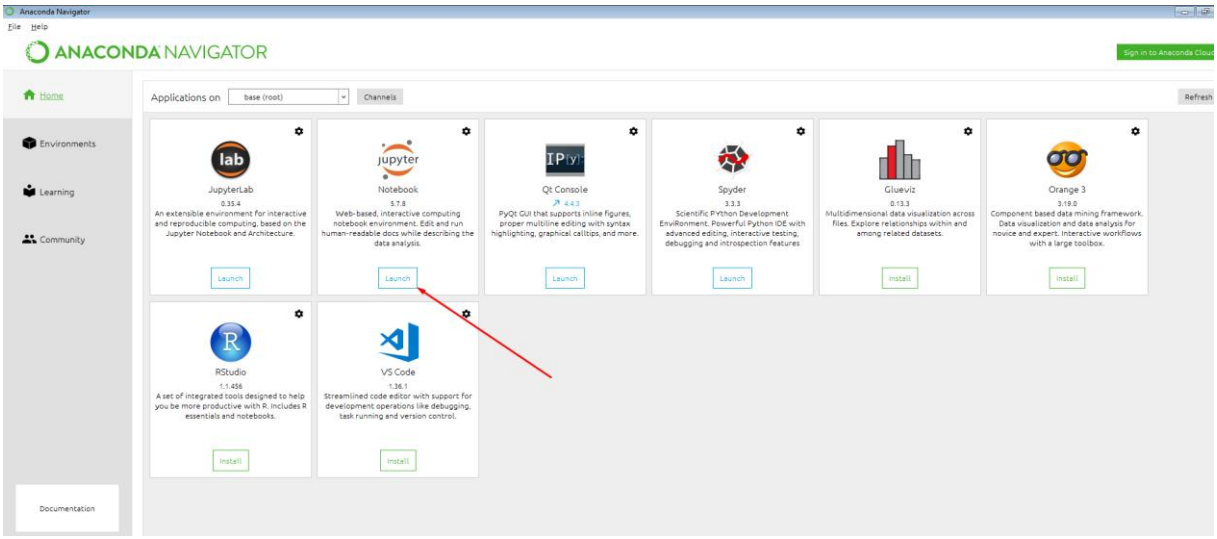

Figure 0.3: Jupyter notebook launch option

You have successfully installed Jupyter Notebook onto your system.

To Install the Python Terminal on your System

To install the Python terminal on your system, follow these steps:

1. Open the following link, which is the Python community : www.python.org/downloads/

2. Select the Operating System (Windows, macOS or Linux) you would be working on as highlighted in the following screenshot:

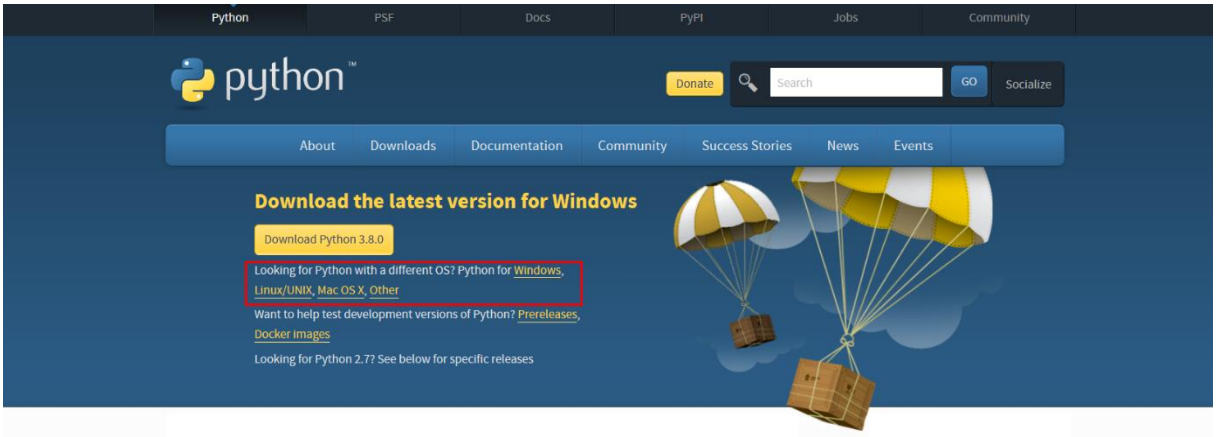

Figure 0.4: The Python home screen

3. Once you have downloaded the software, you need to install it.
4. Have a look at the following screenshot in which we have installed the Python terminal on a Windows system. We load it through the Start menu and search for Python and **click** on the software. The Python terminal will look like this:

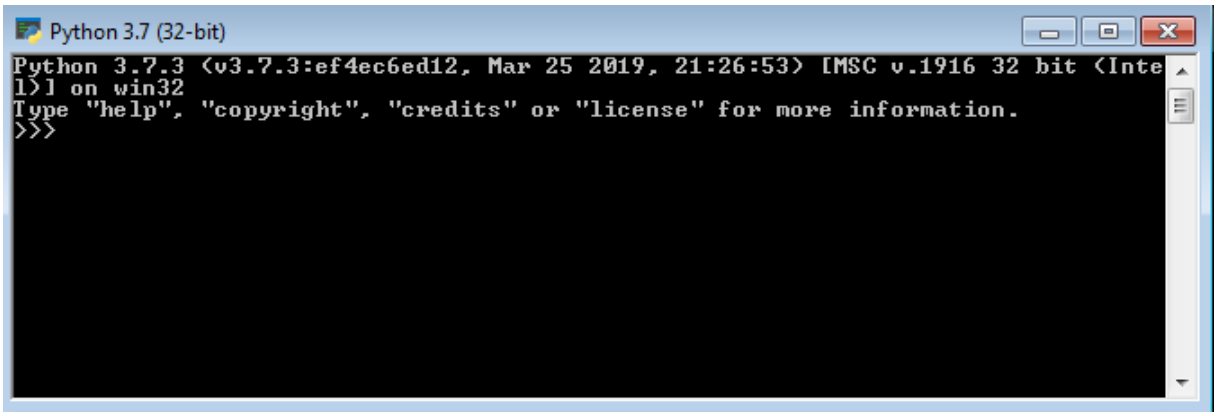

Figure 0.5: Python terminal interface

You have successfully installed the Python terminal onto your system.