

INSTALLATION PROCESS OF ANACONDA 3

The time has come to install Python on Windows using an IDE. In fact, we will use Anaconda throughout this book right from installing Python to writing multi-threaded codes in the coming lectures. Now, let us get going with the installation.

This section explains how you can download and install Anaconda on Windows.

Download and install Anaconda by following these steps.

1. Open the following URL in your browser.

<https://www.anaconda.com/distribution/>

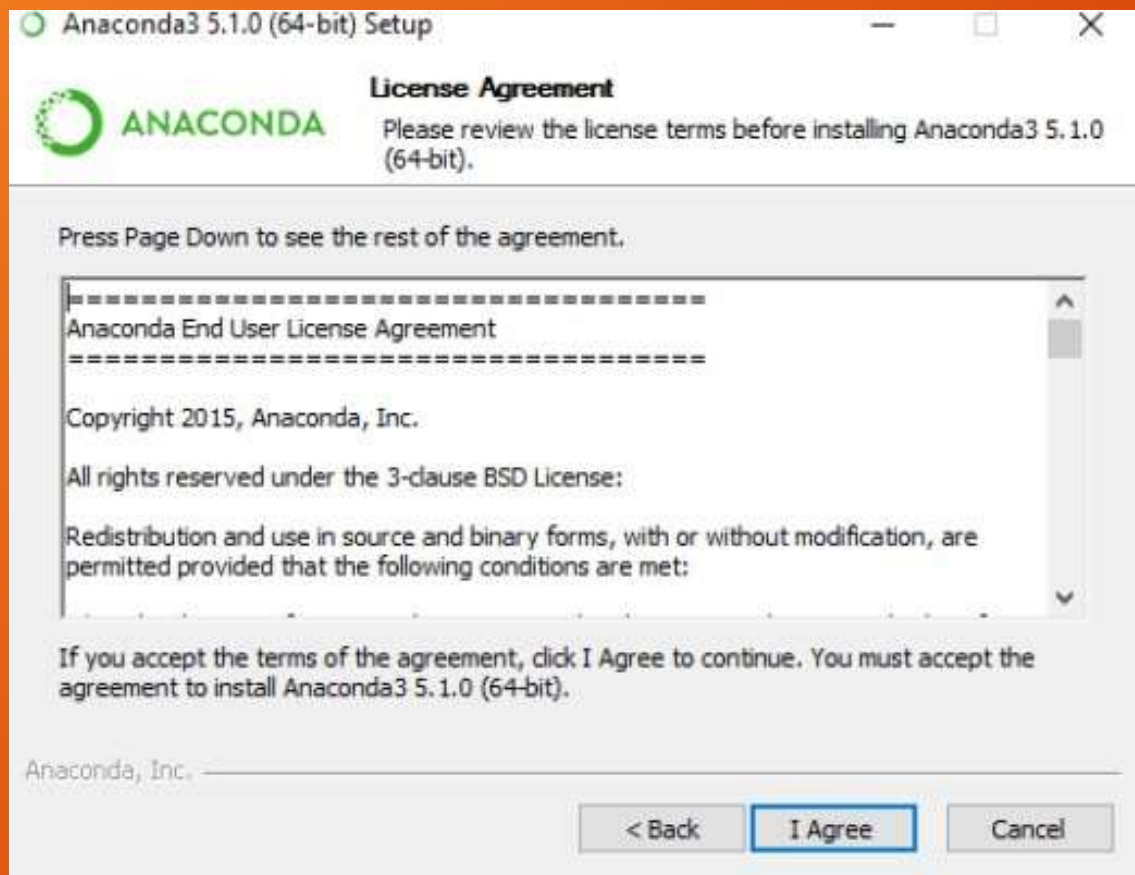
2. The browser will take you to the following webpage. Select the latest version Python (3.7 at the time of writing this book). Now, click the *Download* button to download the executable file. Depending upon the internet speed, the file will download within 2–3 minutes.



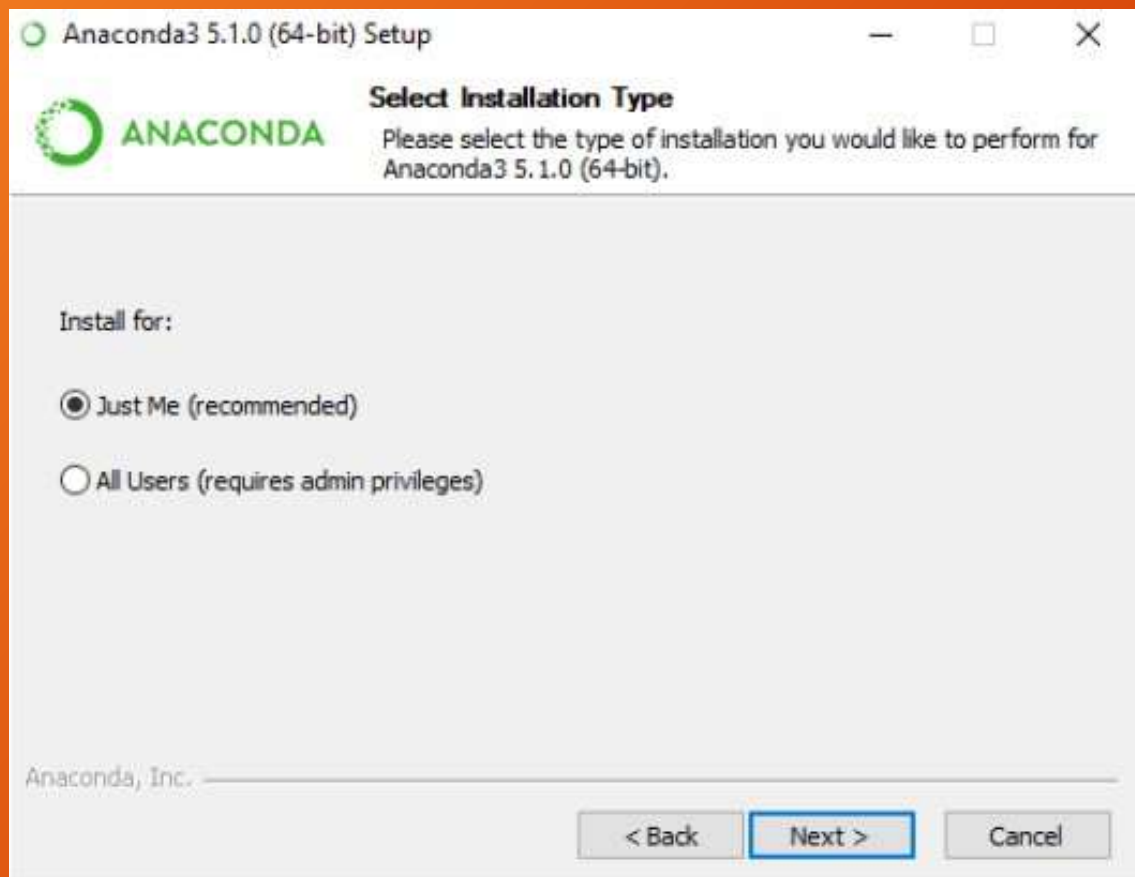
3. Run the executable file after the download is complete. You will most likely find the download file in your download folder. The file name should be along the lines: "Anaconda3-5.1.0-Windows-x86_64." The installation wizard will open when you run the file, as shown in the following figure. Click the *Next* button



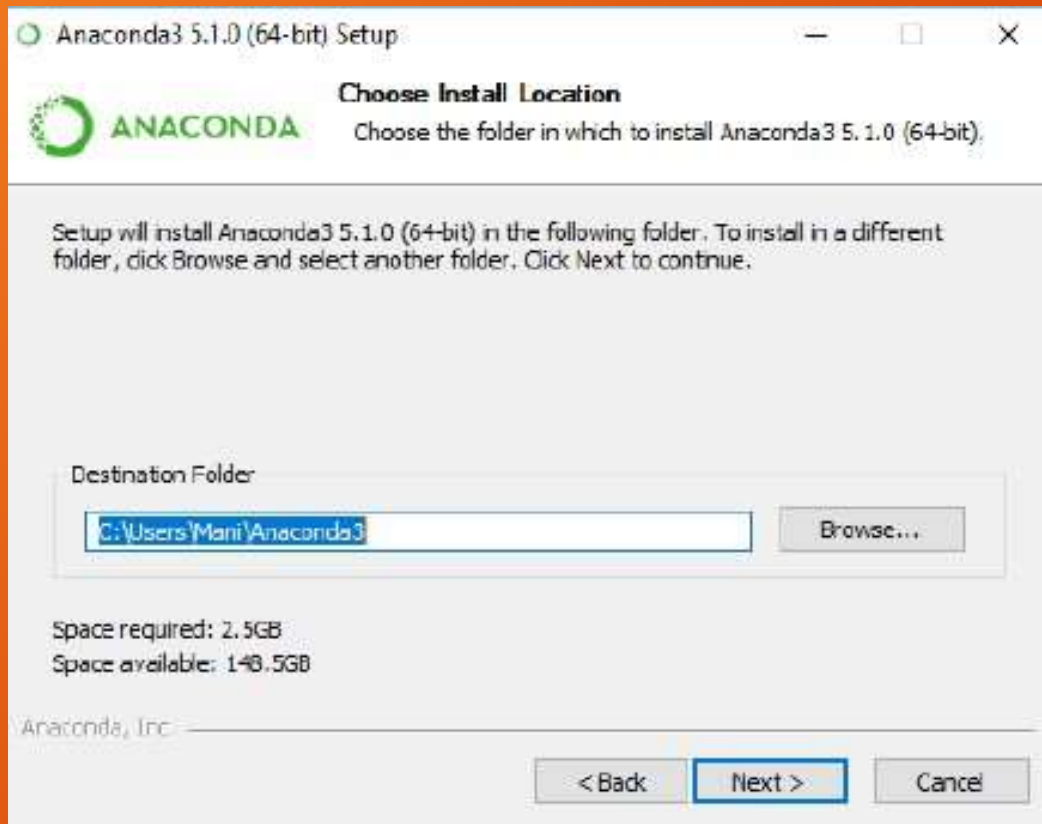
4. Now click *I Agree* on the *License Agreement* dialog, as shown in the following screenshot.



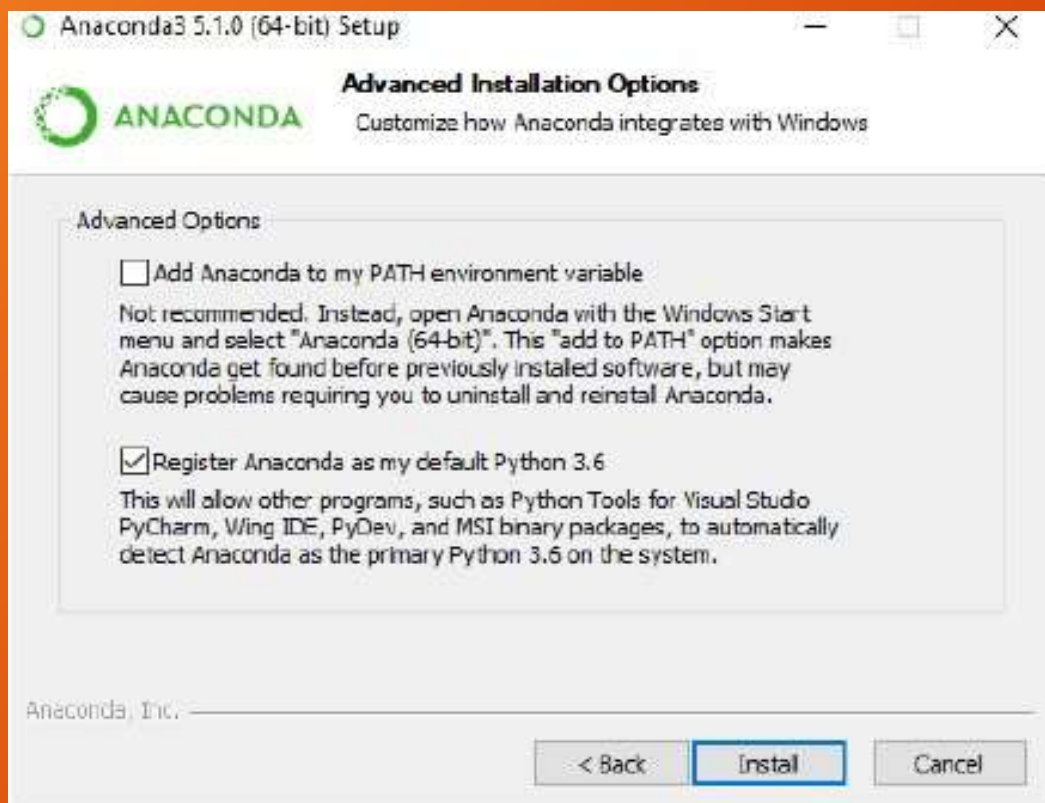
5. Check the *Just Me* radio button from the *Select Installation Type* dialogue box. Click the *Next* button to continue.



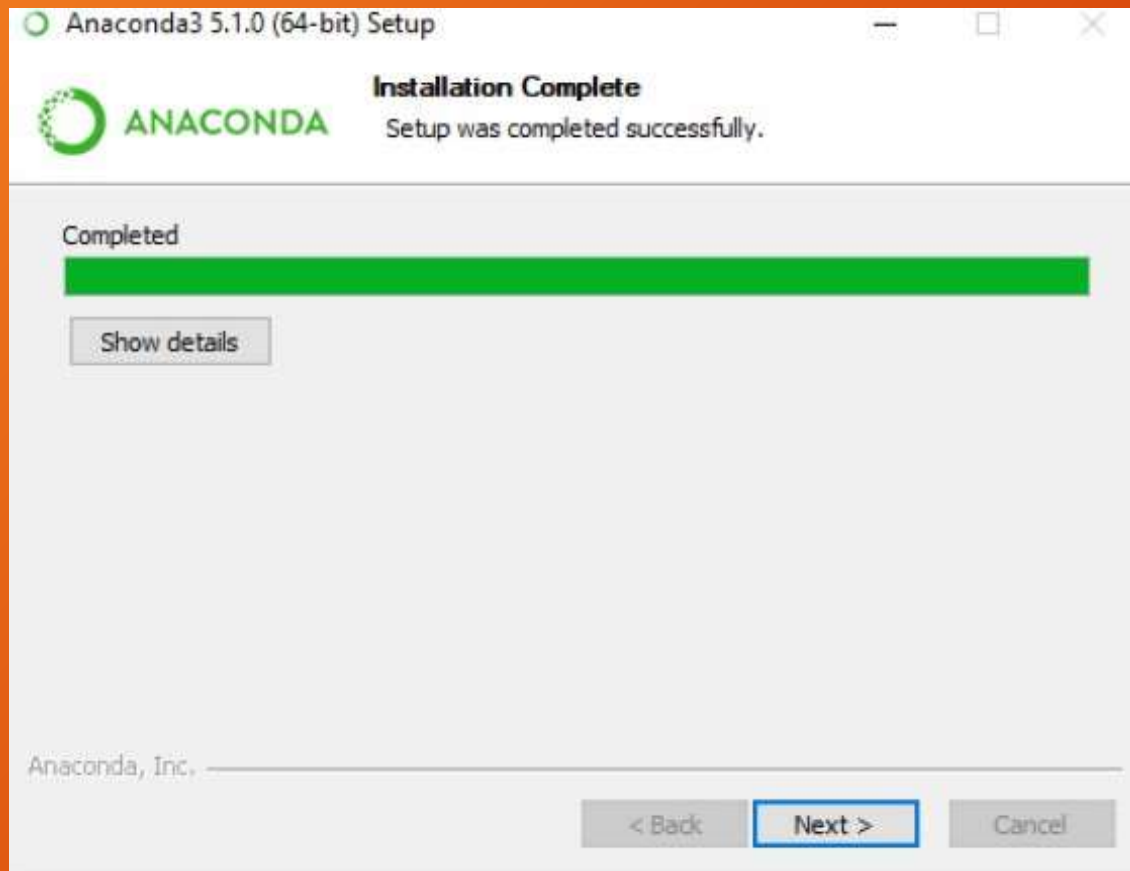
6. Now, the *Choose Install Location* dialog will be displayed. Change the directory you want, but the default is preferred. The installation folder should have at least 10 GB of free space for Anaconda. Click the *Next* button.



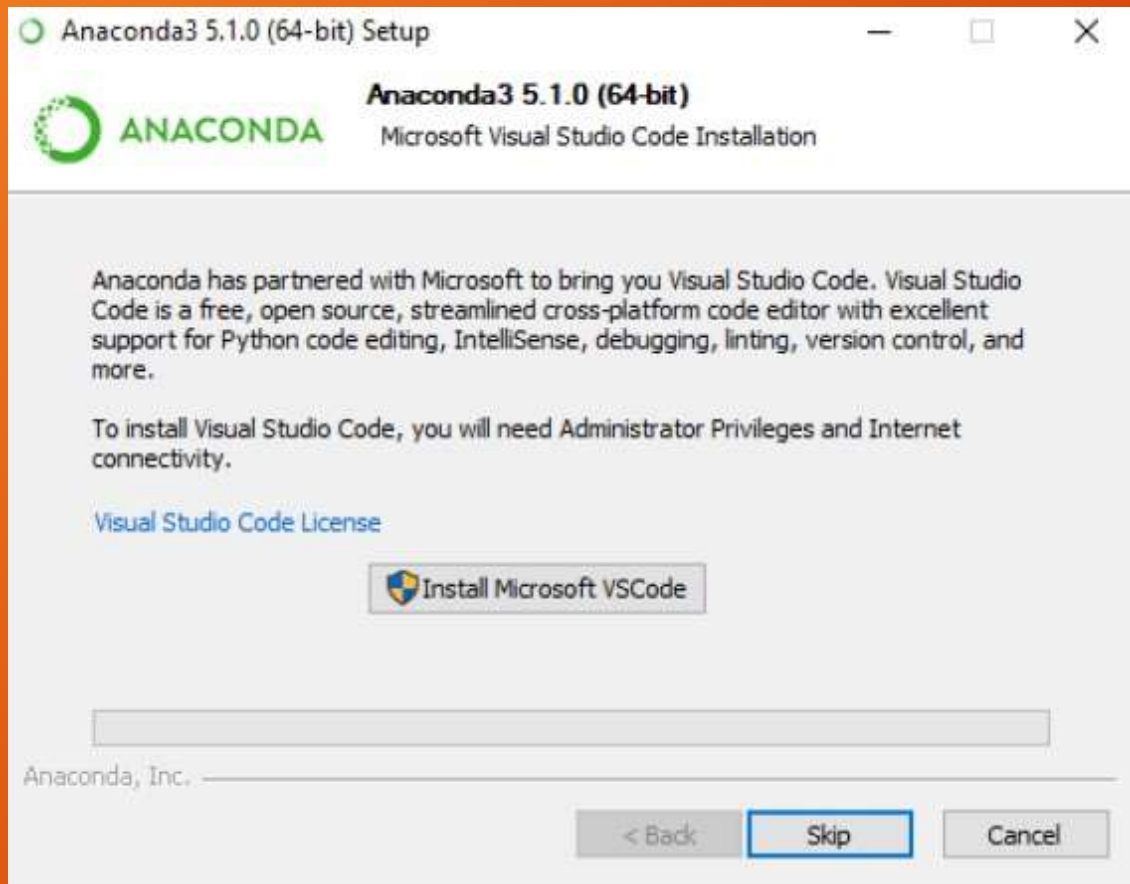
7. Go for the second option, *Register Anaconda as my default Python 3.7* in the *Advanced Installation Options* dialogue box. Click the *Install* button. The installation starts. However, this can take some time to complete.



8. Click *Next* once the installation is complete.



9. Click Skip on the *Microsoft Visual Studio Code Installation* dialog box.



10. You have successfully installed Anaconda on your Windows. Excellent job. next step is to uncheck both checkboxes on the dialog box. Now, click on th button.



1.2.2. Mac Setup

Anaconda's installation process is almost the same for Mac. It may differ graphically, but you will follow the same steps you followed for Windows. The only difference is that you have to download the executable file, which is compatible with the Mac operating system.

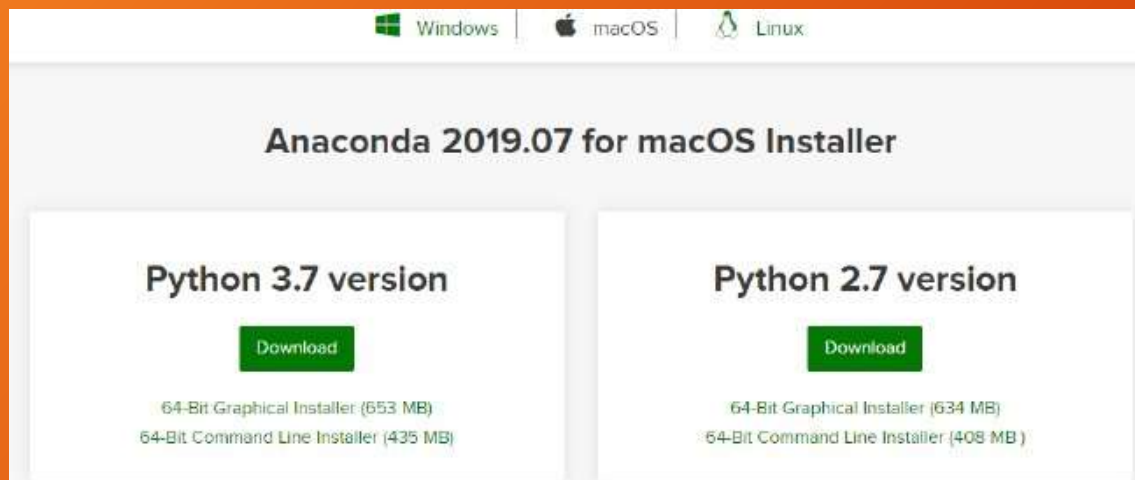
This section explains how you can download and install Anaconda on Mac.

Download and install Anaconda by following these steps.

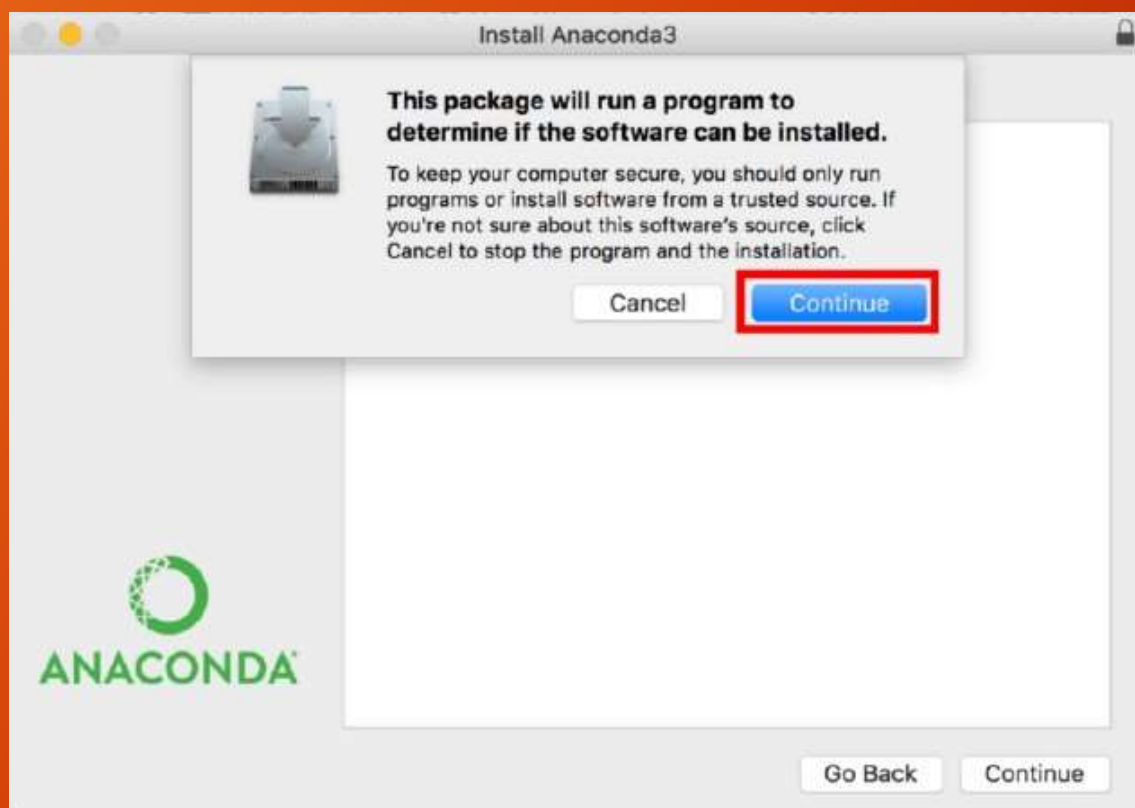
1. Open the following URL in your browser.

<http://www.anaconda.com/distribution/>

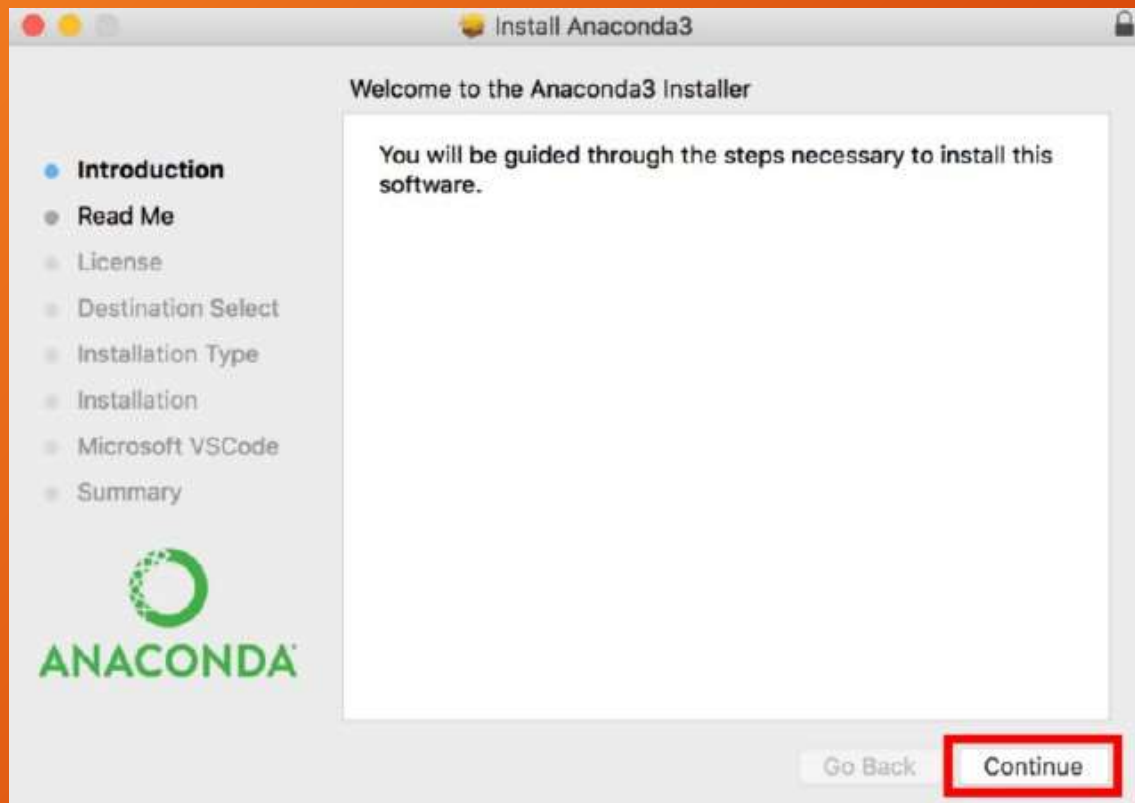
2. The browser will take you to the following webpage. Select the latest version of Python for Mac. (3.7 at the time of writing this book). Now, click the *Download* button to download the executable file. Depending on the internet speed, it will download within 2–3 minutes.



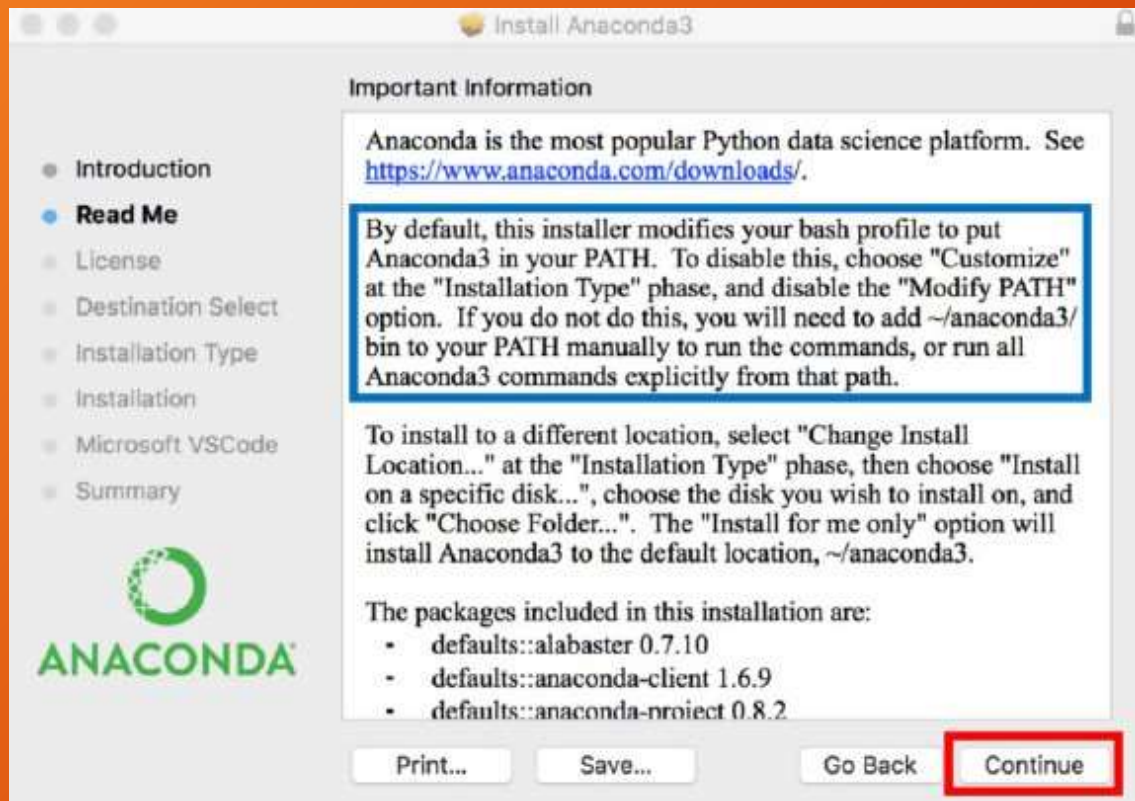
3. Run the executable file after the download is complete. You will most likely find the download file in your download folder. The name of the file should be similar to "Anaconda3-5.1.0-Windows-x86_64." The installation wizard will open when you run the file, as shown in the following figure. Click the *Continue* button



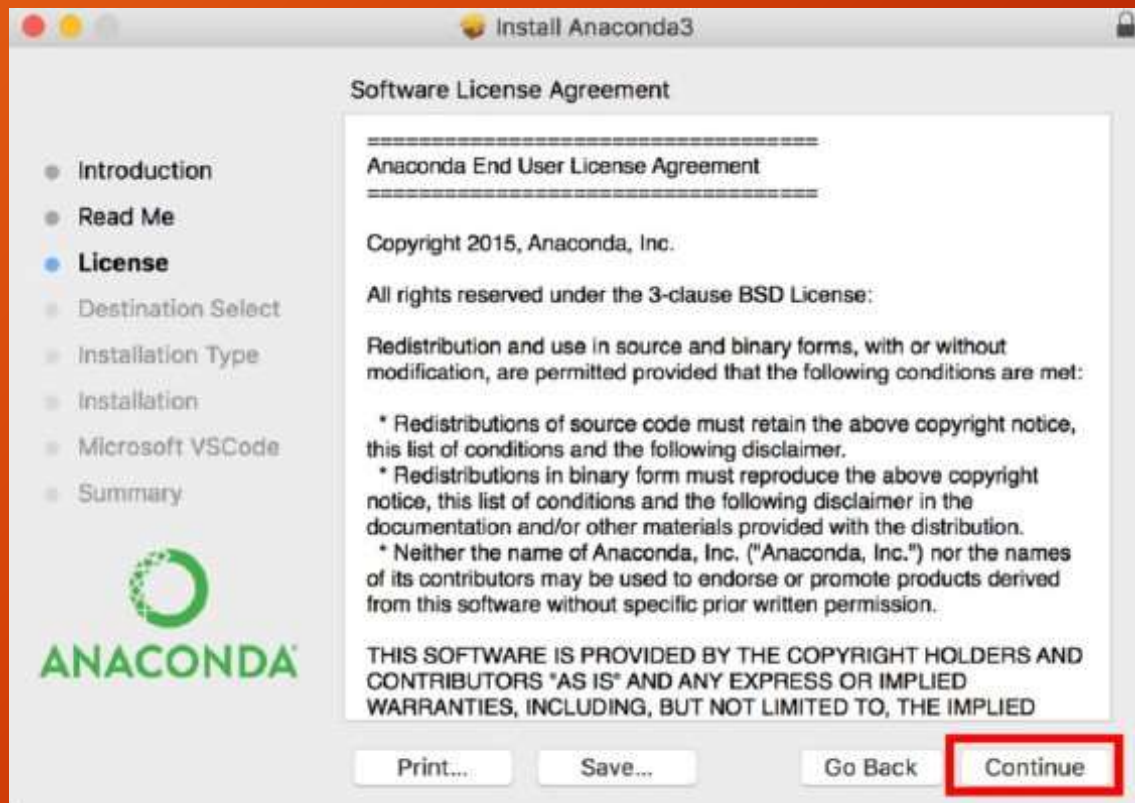
4. Now click *Continue* on the *Welcome to Anaconda 3 Installer* window, as shown in the following screenshot.



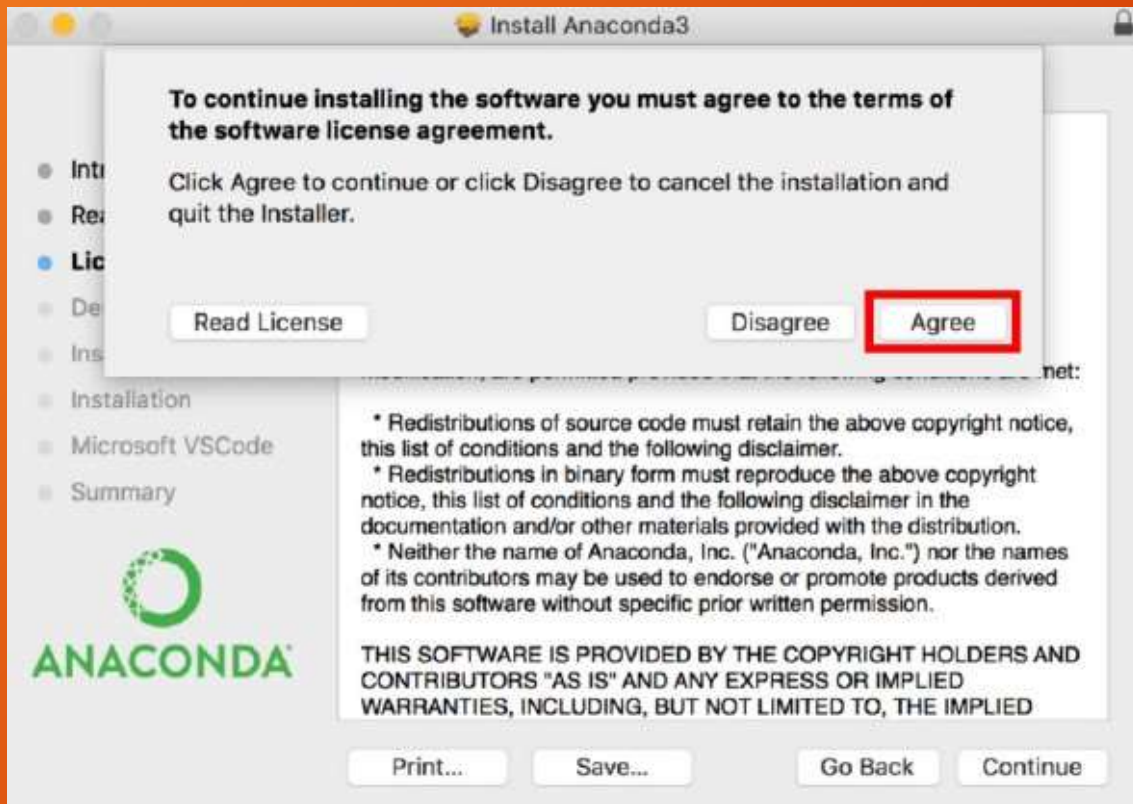
5. The *Important Information* dialog will pop up. Simply, click *Continue* to go the default version that is Anaconda 3.



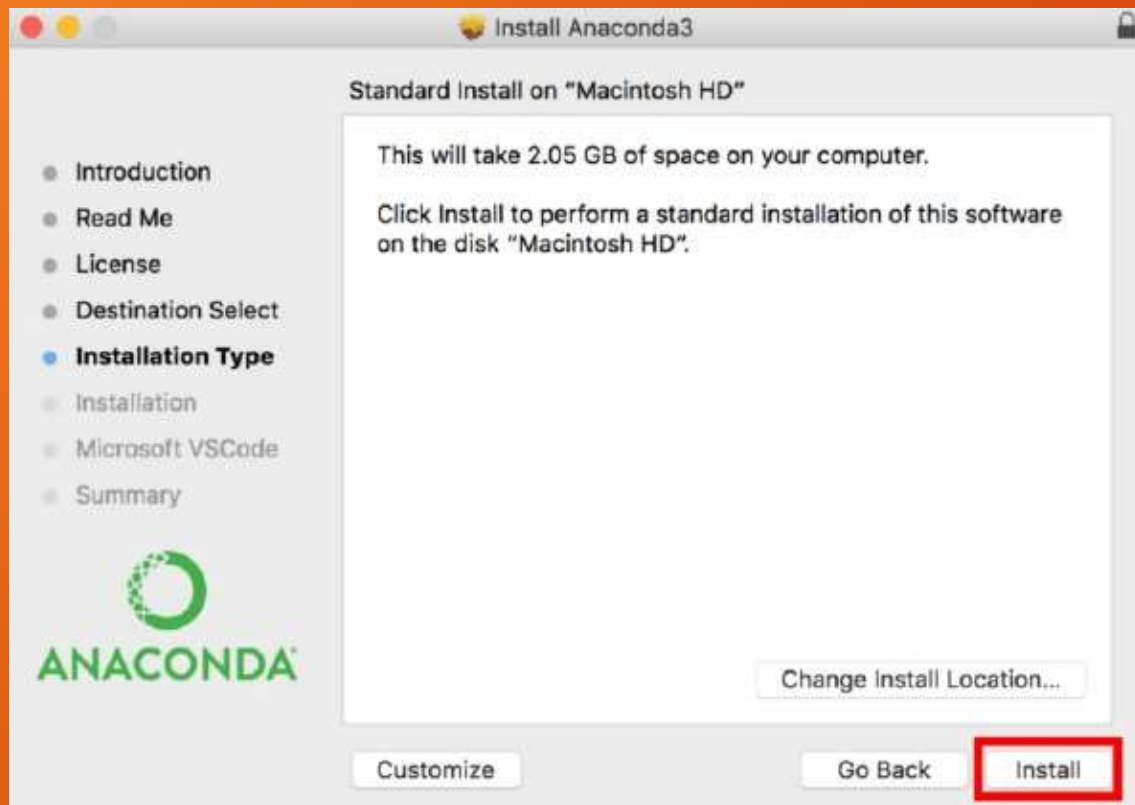
6. Click *Continue* on the *Software License Agreement* Dialog.



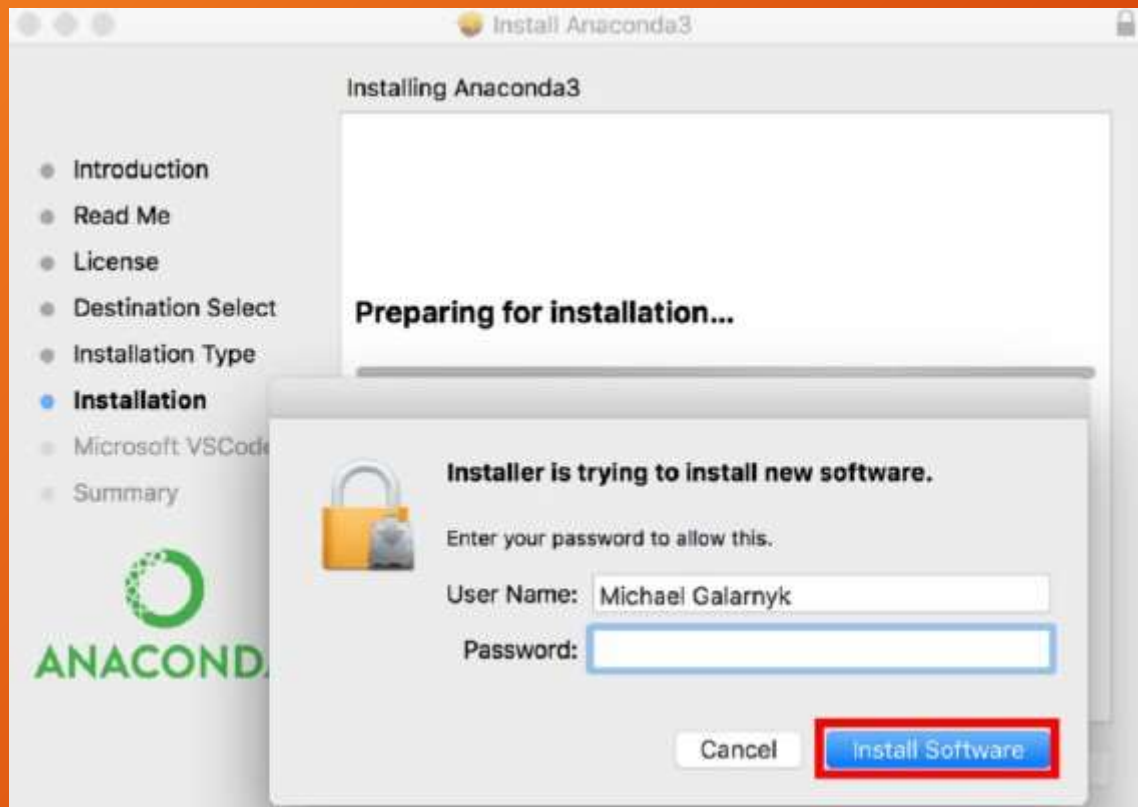
7. It is mandatory to read the license agreement and click the *Agree* button before clicking the *Continue* button again.



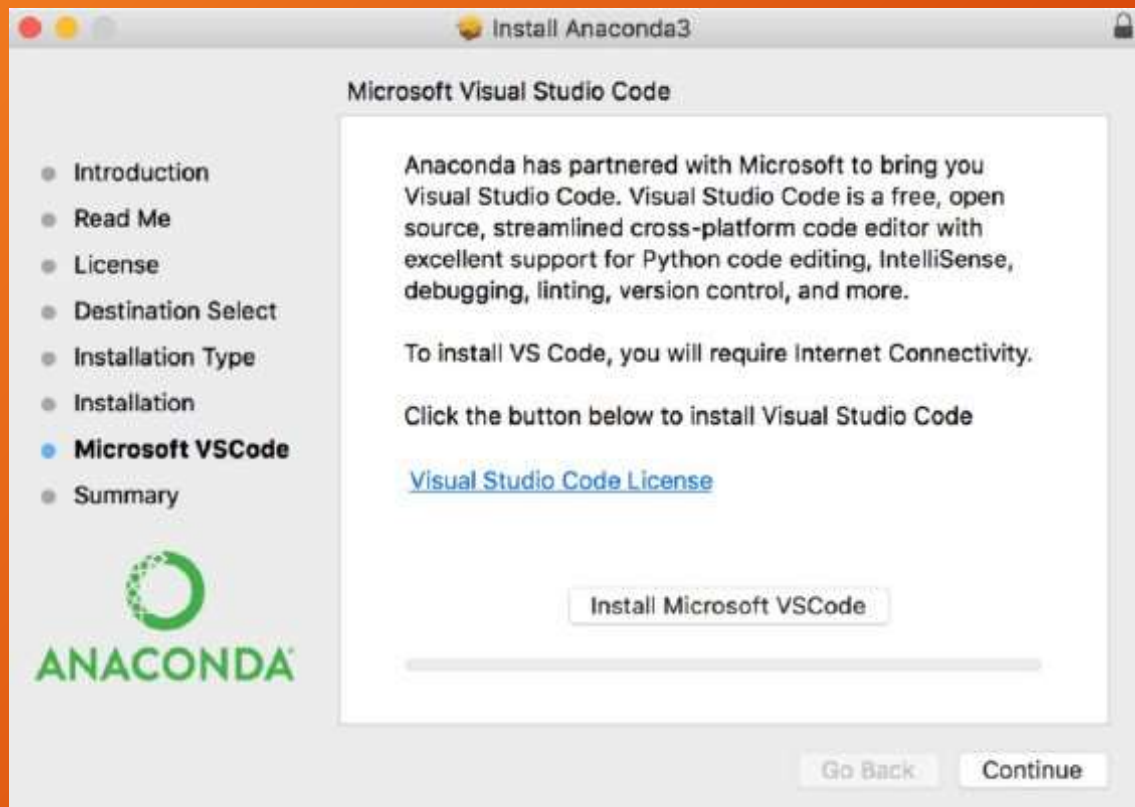
8. On the next window, simply click *Install*.



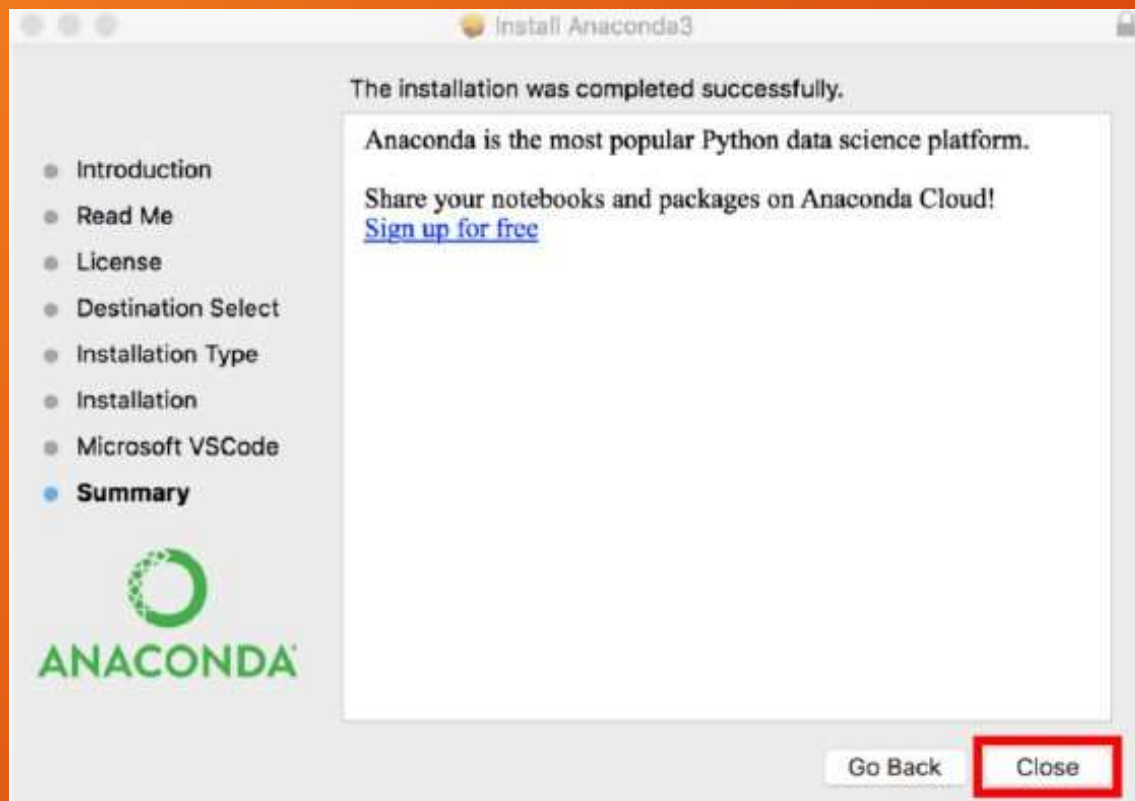
The system alerts you to give your password. Use the same password you use to login to your Mac computer. Now, click on *Install Software* .



9. Click *Continue* on the next window. You also have the option to install Micr
VSCode at this point.



The next screen will display the message that the installation has completed successfully. Click *Close* to close the installer.



There you have it. You have successfully installed Anaconda on your Mac computer. Now, you can write Python code in Jupyter and Spyder the same way you wrote it in Windows.

1.2.3. Linux Setup

We have used Python's graphical installers for installation on Windows and Mac. However, we will use the command line to install Python on Ubuntu or Linux. Linux is also more resource-friendly, and the installation of software is particularly easy, as well.

Follow these steps to install Anaconda on Linux (Ubuntu distribution).

1. Go to the following link to copy the installer bash script from the latest available version.

<https://www.anaconda.com/distribution/>



2. The second step is to download the installer bash script. Log into your Linux computer and open your terminal. Now, go to /tmp directory and download bash you downloaded from Anaconda's home page using curl.

```
$ cd /tmp  
$ curl -o https://repo.anaconda.com/archive/Anaconda3-5.2.0-Linux-x86\_64.sh
```

3. You should also use the cryptographic hash verification through SHA-256 checksum to verify the integrity of the installer.

```
$ sha256sum Anaconda3-5.2.0-Linux-x86_64.sh
```

You will get the following output.

```
09f53738b0cd3bb96f5b1bac488e5528df9906be2480fe61df40e0e0d19e3d48 Anaconda3-5.2.0-Linux-x86_64.sh
```

4. The fourth step is to run the Anaconda Script, as shown in the following fig

```
$ bash Anaconda3-5.2.0-Linux-x86_64.sh
```

The command line will produce the following output. You will be asked to review the license agreement. Keep on pressing *Enter* until you reach the end.

```
Output  
  
Welcome to Anaconda3 5.2.0  
  
In order to continue the installation process, please review the license agreement.
```

```
Please, press Enter to continue
>>>
...
Do you approve the license terms? [yes|No]
```

Type *Yes* when you get to the bottom of the License Agreement.

5. The installer will alert you to choose the installation location after you agree license agreement. Simply press *Enter* to choose the default location. You can specify a different location if you want.

```
Output
Anaconda3 will now be installed on this location:
/home/tola/anaconda3

- Press ENTER to confirm the location
- Press CTRL-C to abort the installation
- Or specify a different location below

[/home/tola/anaconda3] >>>
```

The installation will proceed once you press *Enter* . Once again, you have to be patient as the installation process takes some time to complete.

6. You will receive the following result when the installation is complete. If you want to use conda command, type *Yes* .

```
Output
...
Installation finished.
Do you wish the installer to prepend Anaconda3 install location to path in your /home/tola/.bashrc?
[yes|no] [no]>>>
```

At this point, you will also have the option to download the Visual Studio Code. Type *yes* or *no* to install or decline, respectively.

7. Use the following command to activate your brand-new installation of Anaconda

```
$ source ~/.bashrc
```

8. You can also test the installation using the conda command.

```
$ conda list
```

Congratulations. You have successfully installed Anaconda on your Linux system.

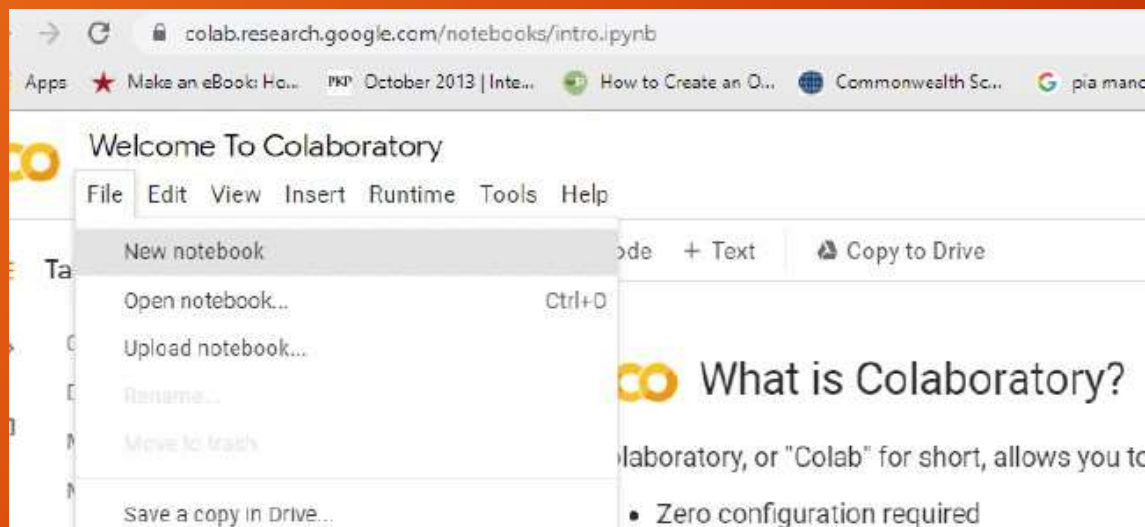
1.2.4. Using Google Colab Cloud Environment

In addition to local Python environments such as Anaconda, you can run deep learning applications on Google Colab as well, which is Google's platform for deep learning with GPU support. All the codes in this book have been run using Google Colab. Therefore, I would suggest that you use Google Colab too.

To run deep learning applications via Google Colab, all you need is a Google/Gmail account. Once you have a Google/ Gmail account, you can simply go to:

<https://colab.research.google.com/>

Next, click on File -> New notebook, as shown in the following screenshot.



Next, to run your code using GPU, from the top menu, select Runtime -> Change runtime type as shown in the following screenshot:



You should see the following window. Here from the dropdown list, select GPU, and click the *Save* button.

Notebook settings

Runtime type

Python 3 ▼

Hardware accelerator

GPU ▼ ⓘ

To get the most out of Colab, avoid using a GPU unless you need one. [Learn more](#)

☐ Omit code cell output when saving this notebook

CANCEL SAVE

To make sure you are running the latest version of TensorFlow, execute the following script in the Google Colab notebook cell. The following script will update your TensorFlow version.

```
pip install --upgrade tensorflow
```

To check if you are really running TensorFlow version > 2.0, execute the following script.

```
import tensorflow as tf
print(tf.__version__)
```

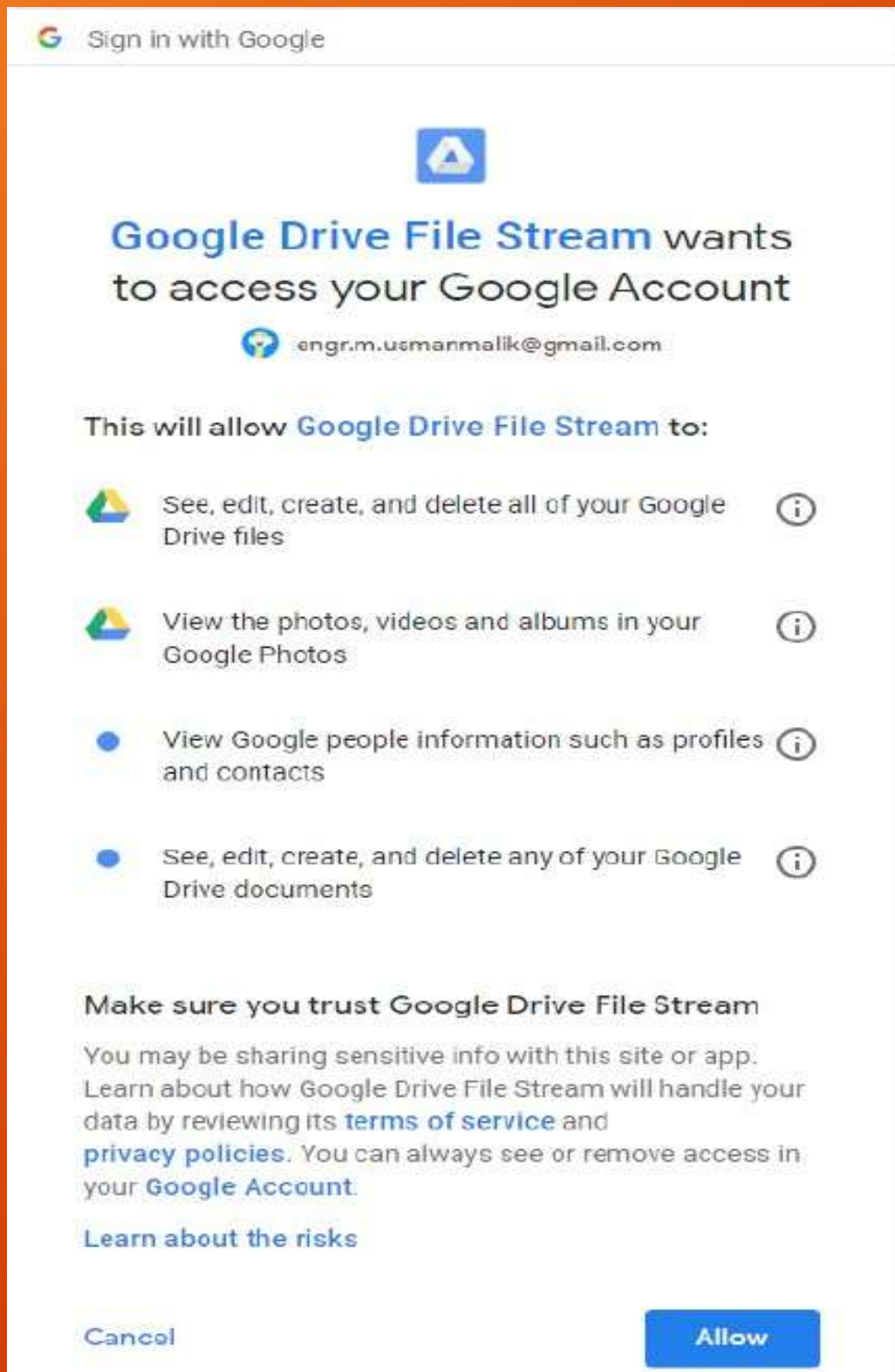
With Google Cloud, you can import the datasets from your Google drive. Execute the following script, and click on the link that appears as shown below:

```
from google.colab import drive  
drive.mount('/gdrive')
```

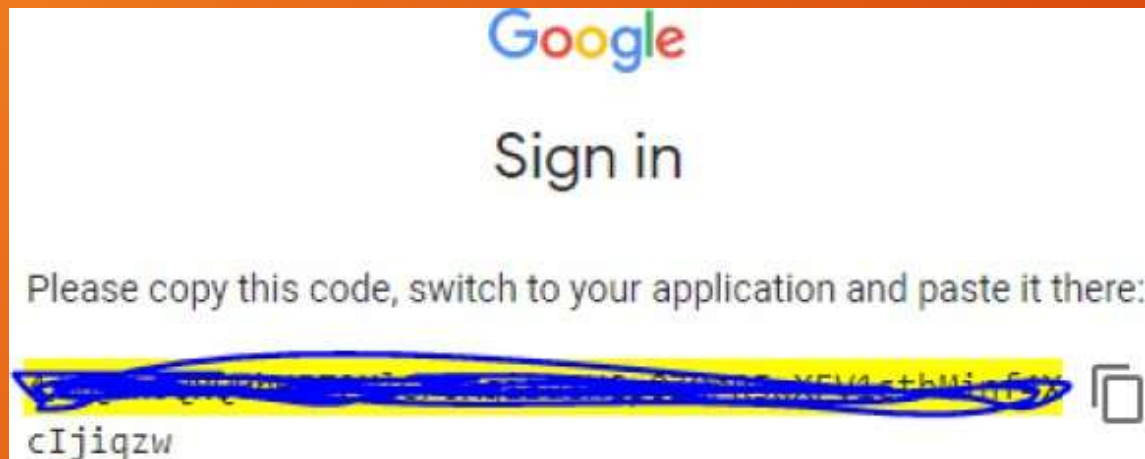
Go to this URL in a browser: <https://accounts.google.com/o/oauth2/auth>

Enter your authorization code:

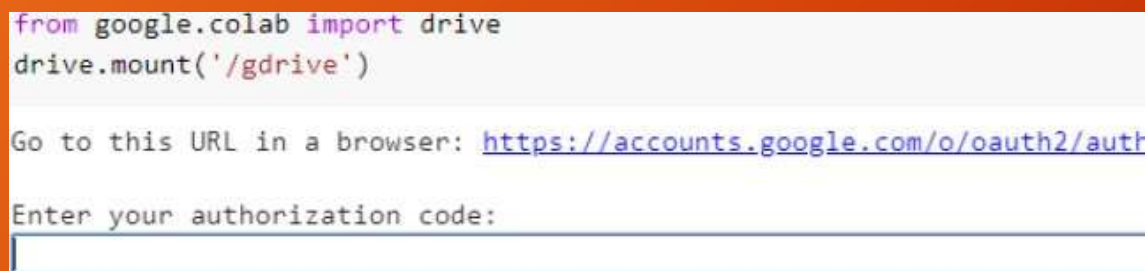
You will be prompted to allow Google Colab to access your Google drive. Click *Allow* button as shown below:



You will see a link appear, as shown in the following image (the link has been blinded here).



Copy this link. Paste it in the field in the Google Colab cell, as shown below:



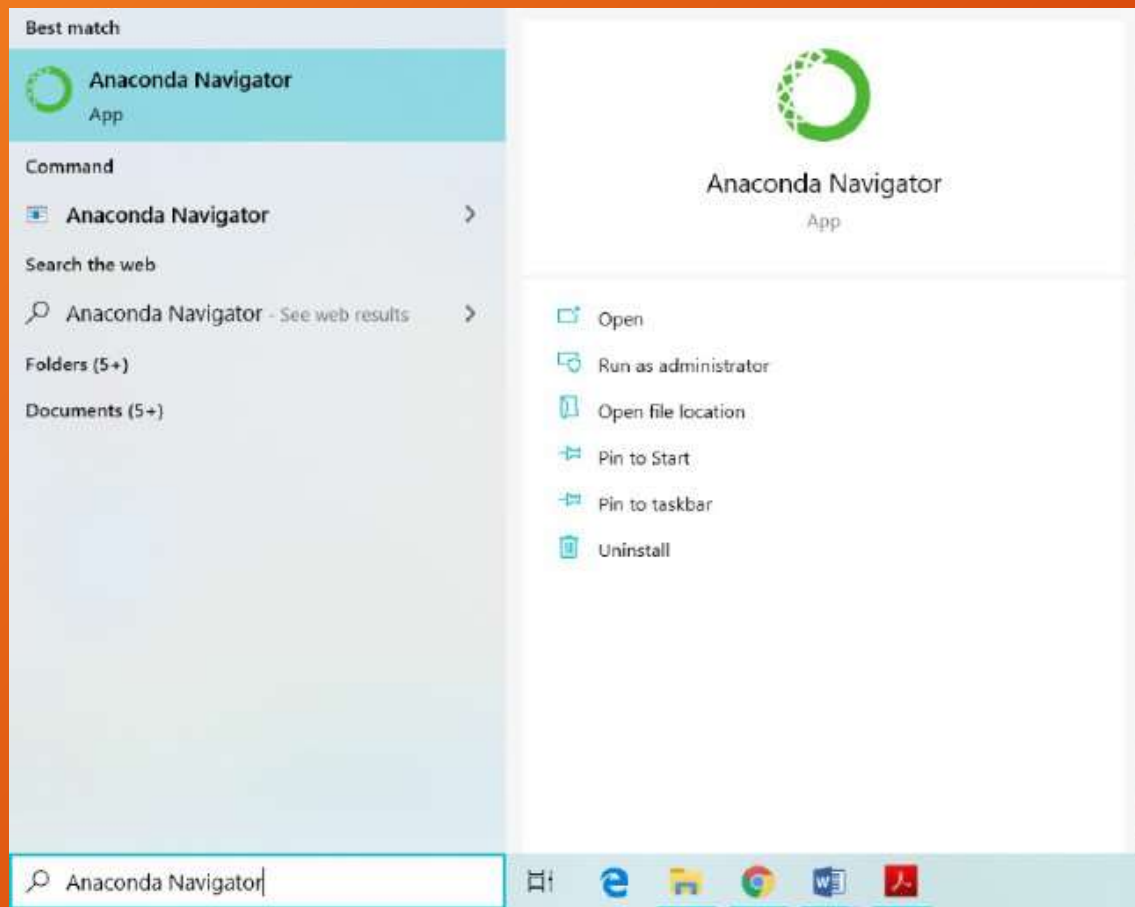
1.3. Python Crash Course

If you are familiar with the foundational concepts of the Python programming language, you can skip this section. For those who are absolute beginners to Python, this section provides a very brief overview of some of the most basic concepts of Python. Python is a very vast programming language, and this section is by no means a substitute for a complete Python Book. However, if you want to see how various operations and commands are executed in Python, you are welcome to follow along the rest of this section.

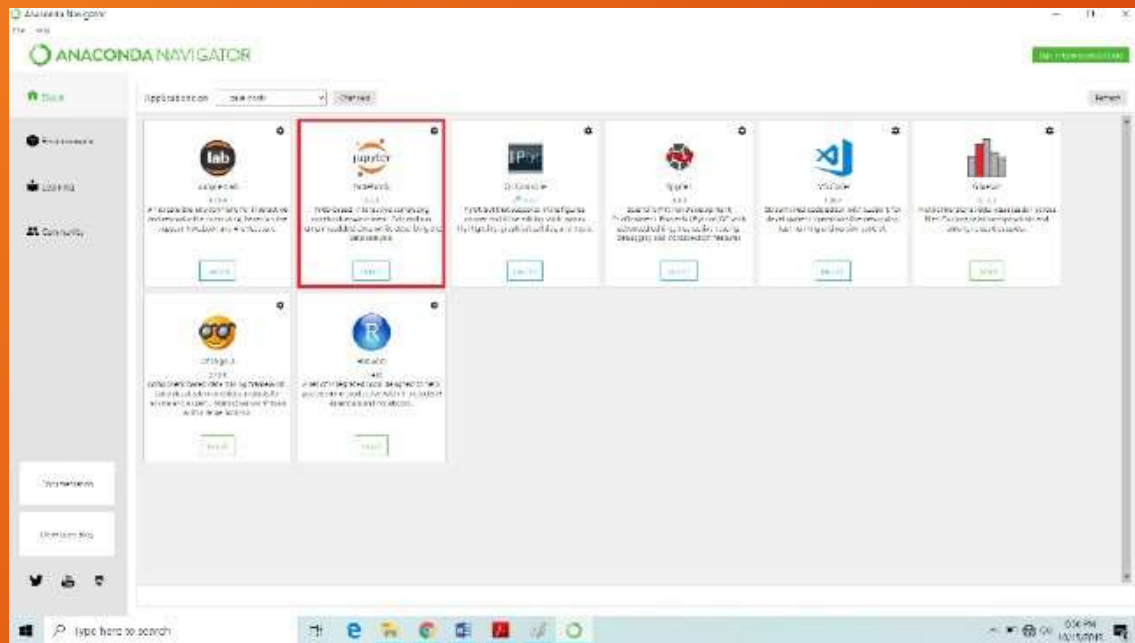
1.3.1. Writing Your First Program

The installation of Python on your computer is complete. You have established a unique environment in the form of Anaconda. Now, it is time to write your first program, that is the Hello World!

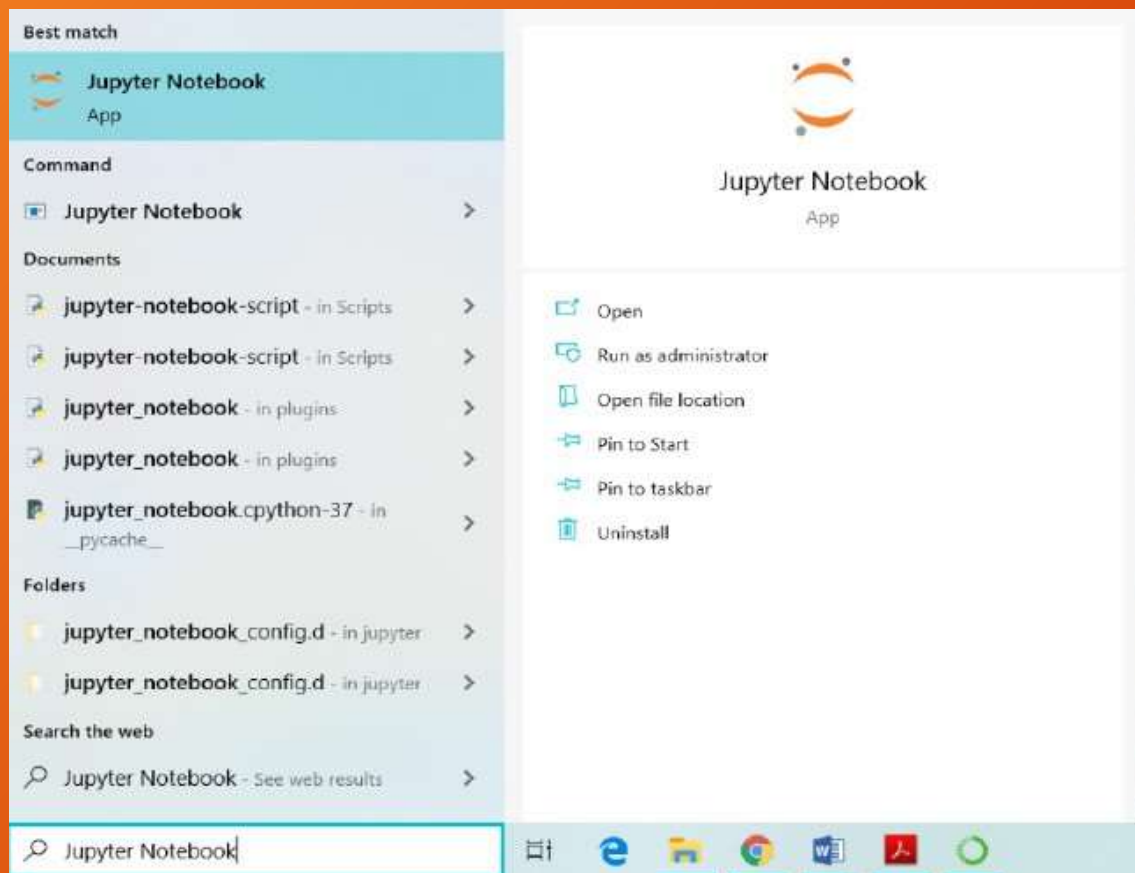
In order to write a program in Anaconda, you have to launch Anaconda Navigator. Search *Anaconda Navigator* in your Windows Search Box. Now, click on the Anaconda Navigator application icon, as shown in the following figure.



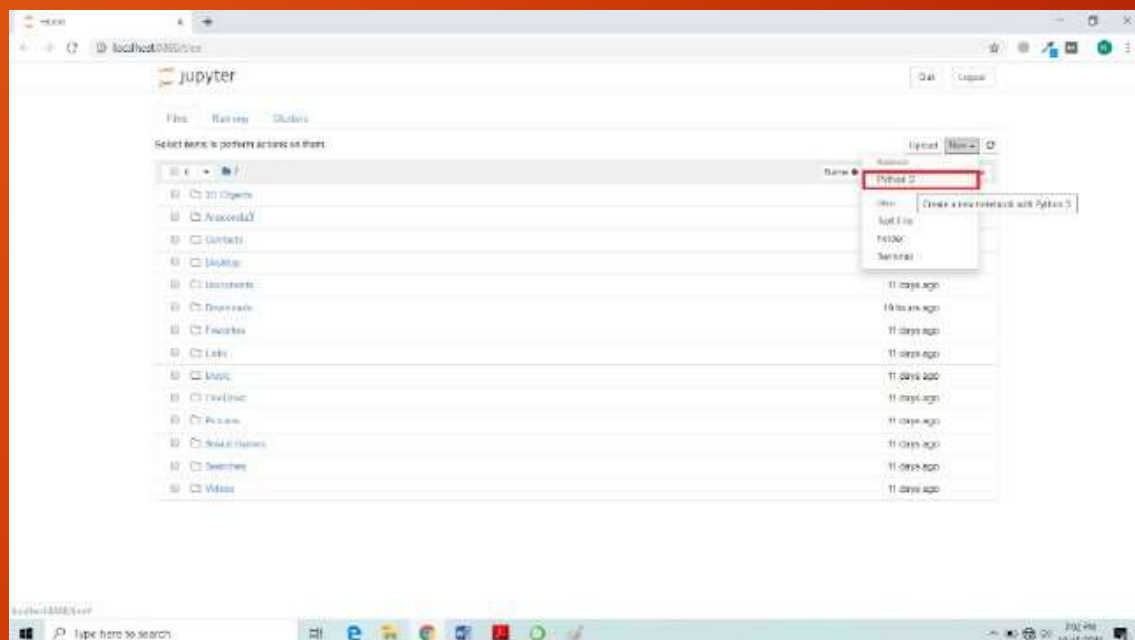
Once you click on the application, the Anaconda's Dashboard will open. The Dashboard offers you a myriad of tools to write your code. We will use the *Jupyter Notebook* , the most popular of these tools, to write and explain the code throughout this book.



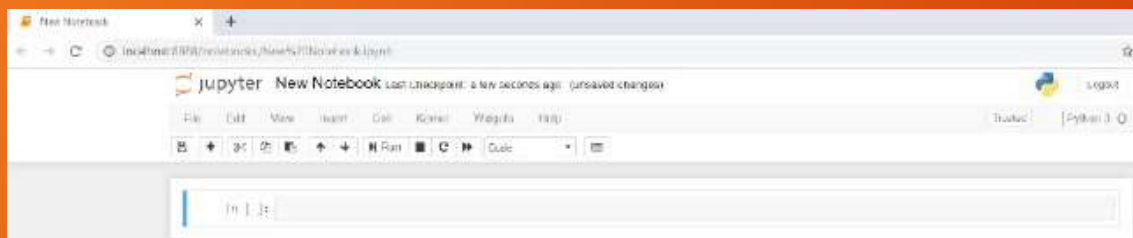
The Jupyter Notebook is available at second from the top of the Dashboard. You can use Jupyter Notebook even if you don't have access to the internet as it runs right in your default browser. Another method to open Jupyter Notebook is to type *Jupyter Notebook* in the Windows search bar. Subsequently, click on the Jupyter Notebook application. The application will open in the new tab of your browser.



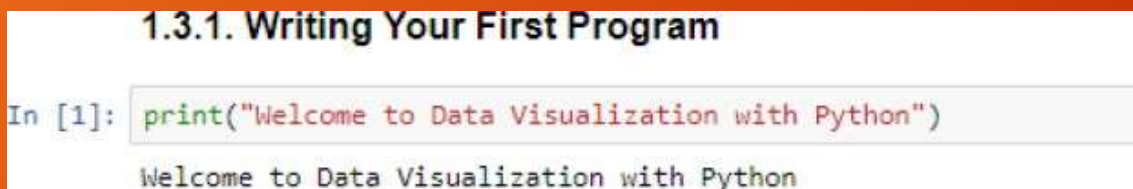
The top right corner of Jupyter Notebook's own Dashboard houses a *New* button, which you have to click to open a new document. A dropdown containing several options will appear. Click on *Python 3*.



A new Python notebook will appear for you to write your programs. It looks as follows.



Jupyter Notebook consists of cells, as evident from the above image, making its layout very simple and straightforward. You will write your code inside these cells. Let us write our first ever Python program in Jupyter Notebook.



The above script basically prints a string value in the output using the **print()** method. The **print()** method is used to print on the console, any string passed to it. If you see the following output, you have successfully run your first Python program.

Output:

Welcome to Data Visualization with Python

Let's now explore some of the other important Python concepts starting with Variables and Data Types.

Requirements – Anaconda, Jupyter, and Matplotlib

- ♦ All the scripts in this book have been executed via Jupyter notebook. Therefore, you should have Jupyter notebook installed.
- ♦ It goes without saying that we will be using the Matplotlib library.

- ♦ The Numpy and Pandas libraries should also be installed before this chapter.

Hands-on Time – Source Codes

All IPython notebook for the source code of all the scripts in this chapter can be found in Resources/Chapter 1.ipynb. I would suggest that you write all the code in this chapter yourself and see if you can get the same output as mentioned in this chapter.