

Complete Guide to set up Python Machine Learning Environment

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Introduction

We will learn how to set up a Python environment for Machine Learning step by step. First, we will learn how to install Python for Windows and mac followed by installing the Jupyter Notebook and then the Python libraries required for Machine Learning. Let us start with an interesting fact about Python.

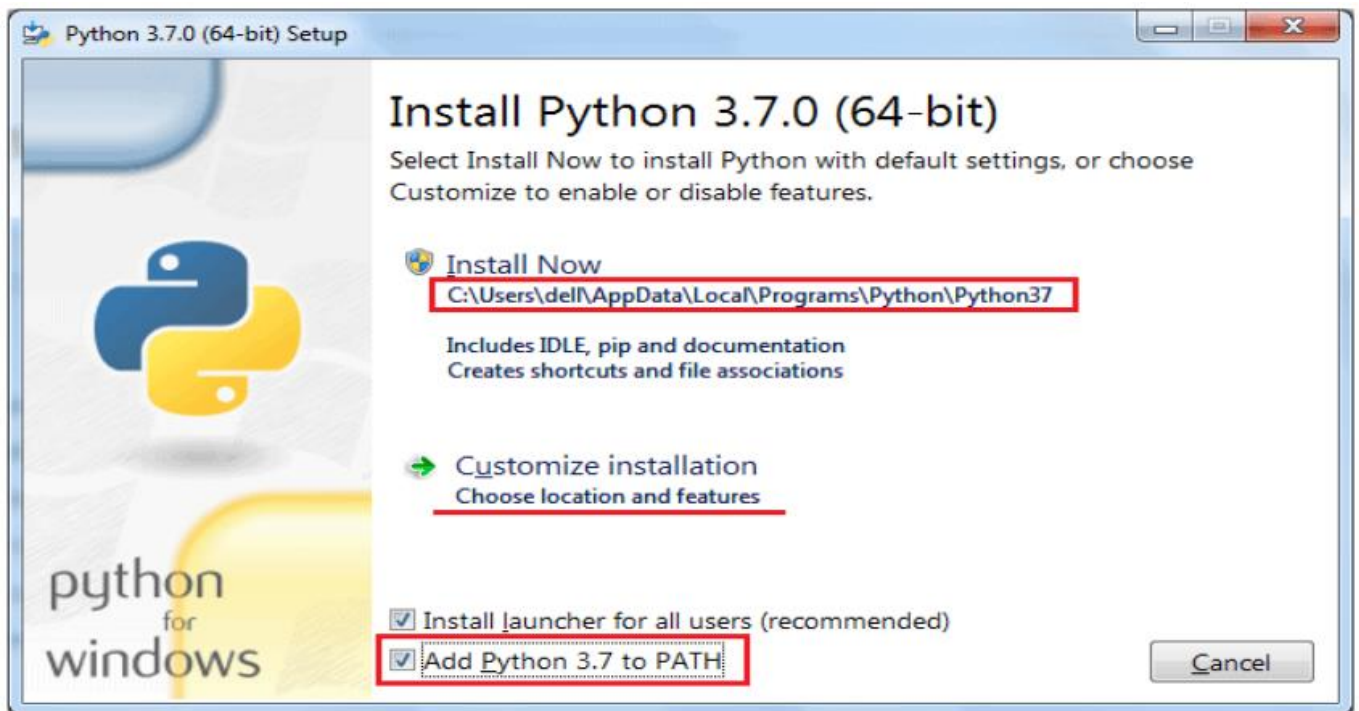
Python was named after a famous TV show - '*Monty Python's Flying Circus*' as the founder of Python - *Guido van Rossum* was a big fan of the TV show

How to Install Python for Windows

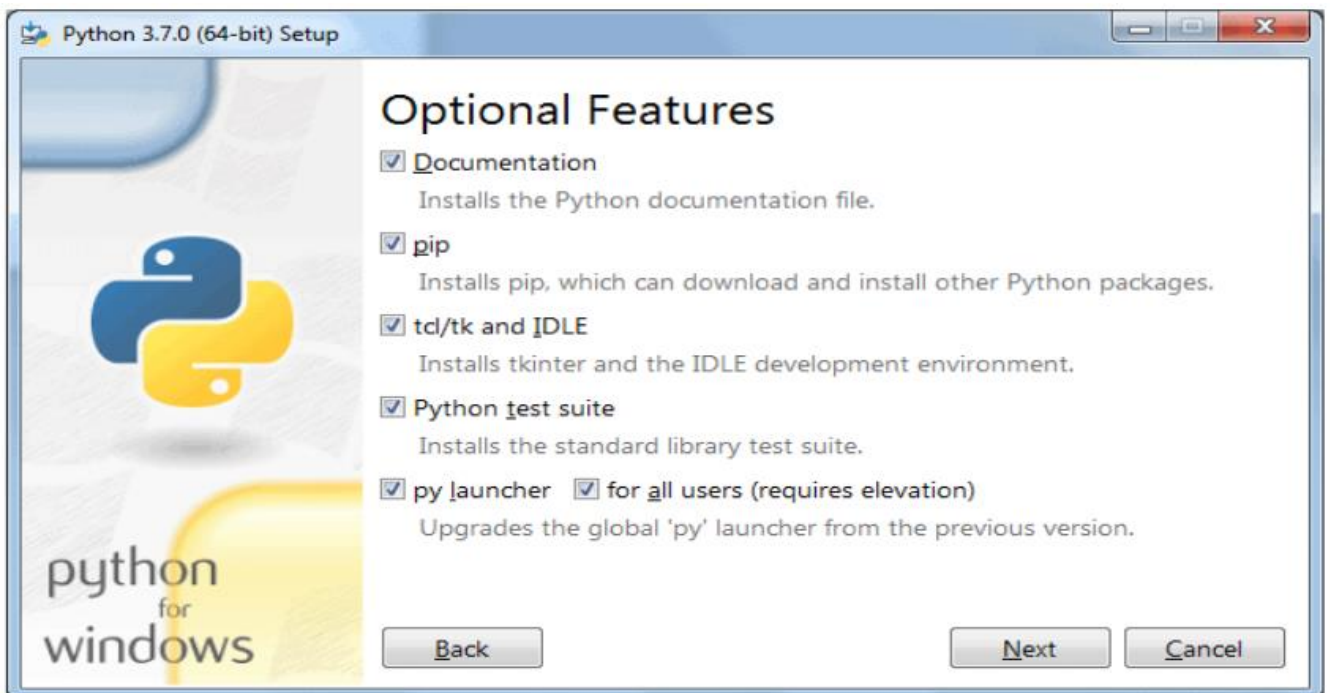
Below is the step-wise guide on how to install Python for Windows.

Step1: Go to [this](#) link and download the suitable Python set up on your machine.

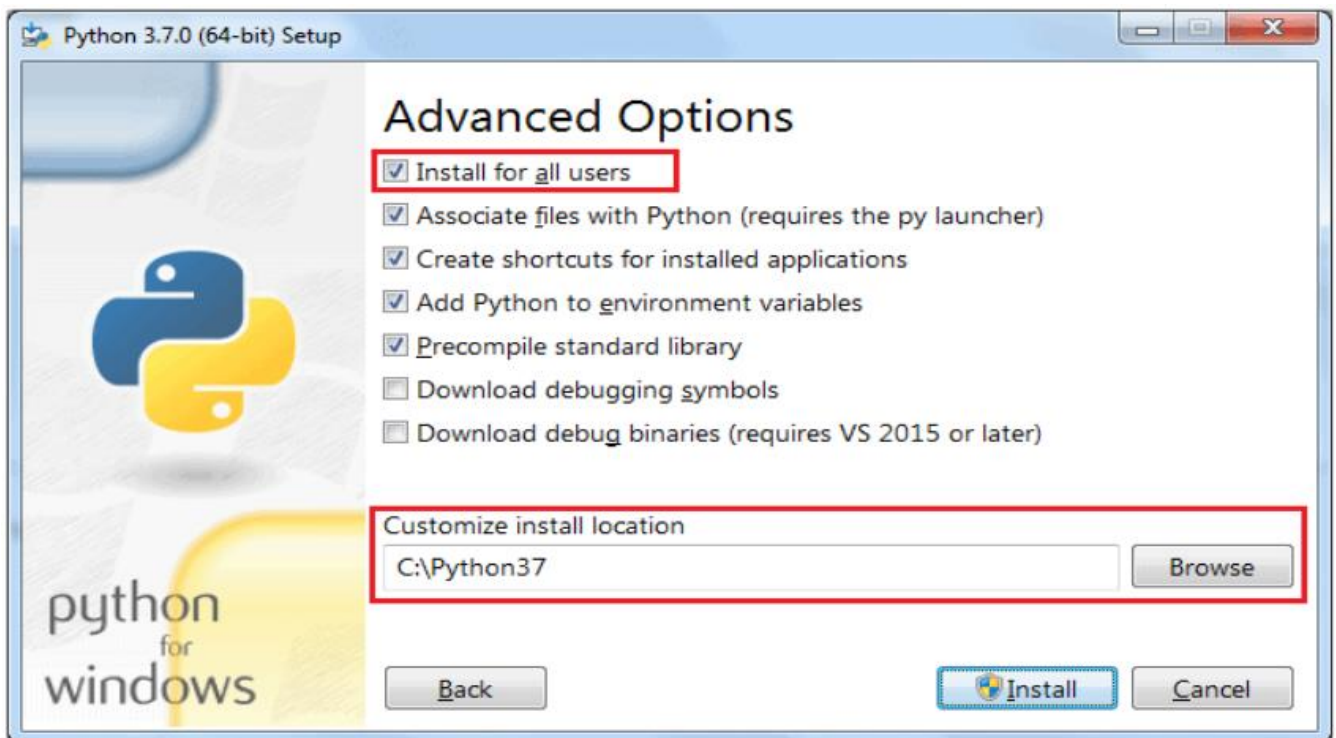
Step2: Once downloaded, click on the downloaded setup. The following window will open.



Check the Add Python 3.7 to PATH. You can also customize the installation by clicking on Customised installation. The following window will pop up if you click Customise installation.

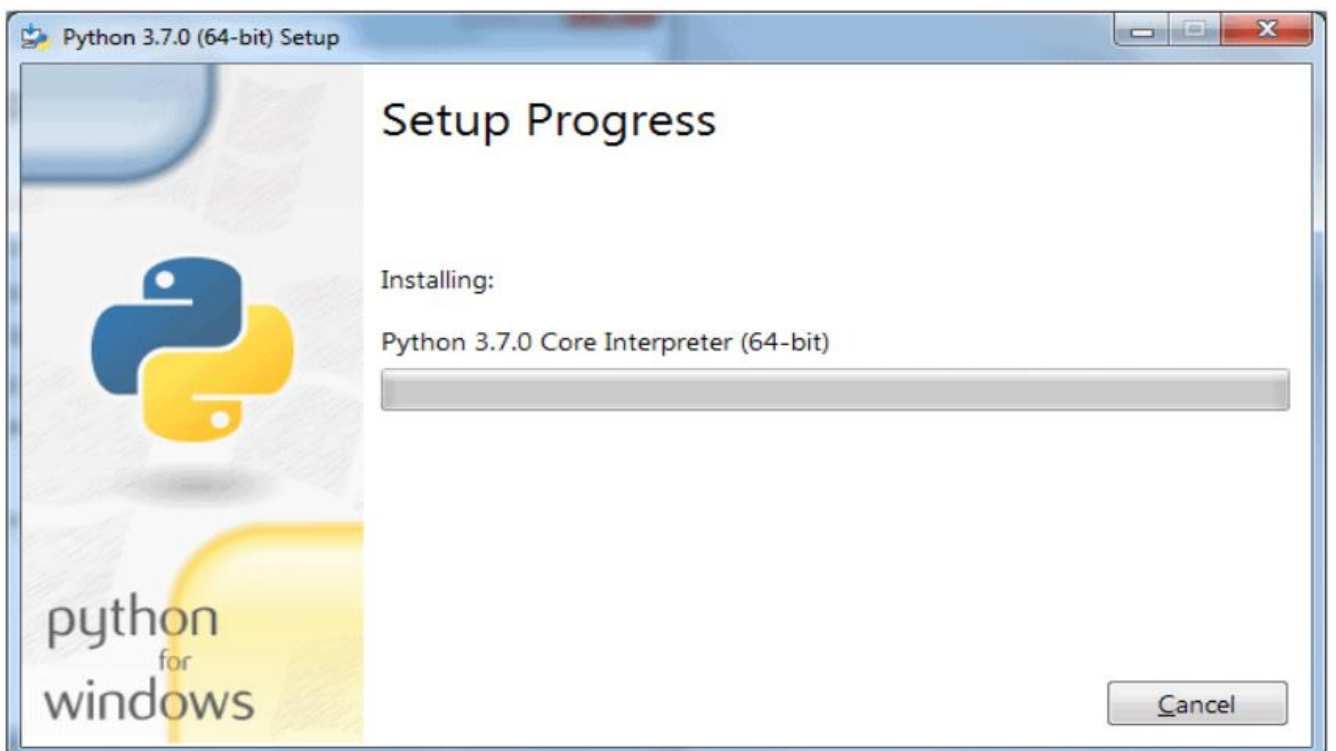


Step3: Click Next to continue. After that, the following window will pop up.



Mark all the boxes as shown in the above image.

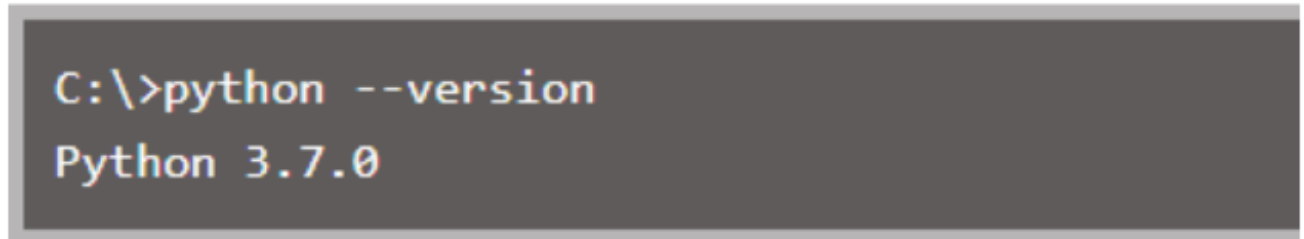
Step 4: Click Install. The installation will take a few minutes.



Once the installation is done, go to the command prompt and type the following command to check the Python installation.

Command: `python --version`

Take a look at the picture below. Python 3.7 is successfully installed on your machine.

A screenshot of a Windows command prompt window. The background is dark gray. The text is white. The first line shows the command 'C:\>python --version' and the second line shows the output 'Python 3.7.0'.

Now you have learned how to install Python on Windows, you can skip the next section if you are a Windows user.

How to Install Python for Mac

You have to follow three simple steps to install Python for mac.

Step1: Install Homebrew

Step2: Run the following command in the terminal.

`brew install python3`

Step3: It will take a few minutes to install Python3. Once done run the following command to check the installation.

`python --version`

Now, you are ready to move to the next stage.

How to Install Jupyter Notebook

Jupyter Notebook can be installed using pip, conda, mamba, pipenv, or docker.

We are going to use pip for installing the Jupyter Notebook.

The simple command to install Jupyter Notebook using pip is mentioned below.

`pip install jupyterlab`

Run this command to install Jupyter Notebook on your machine.

To run Jupyter Notebook on your machine use the following command.

`jupyter notebook`

```

C:\Users\<redacted>>jupyter notebook
[W 14:37:45.970 NotebookApp] Terminals not available (error was No module named 'winpty.cywinty')
[I 14:37:46.183 NotebookApp] Serving notebooks from local directory: C:\Users\91700
[I 14:37:46.183 NotebookApp] Jupyter Notebook 6.2.0 is running at:
[I 14:37:46.184 NotebookApp] http://localhost:8888/?token=eb12c507be9bce731c42b61fdd22b47530f657f6ea9bdc51
[I 14:37:46.184 NotebookApp] or http://127.0.0.1:8888/?token=eb12c507be9bce731c42b61fdd22b47530f657f6ea9bdc51
[I 14:37:46.184 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 14:37:46.280 NotebookApp]

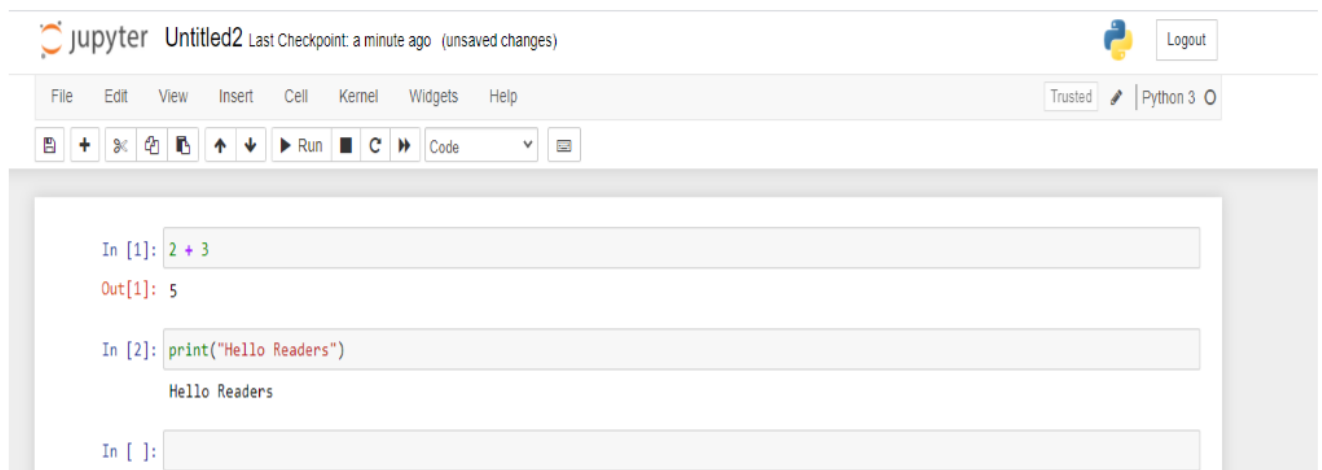
To access the notebook, open this file in a browser:
file:///C:/Users/91700/AppData/Roaming/jupyter/runtime/nbserver-10304-open.html
Or copy and paste one of these URLs:
http://localhost:8888/?token=eb12c507be9bce731c42b61fdd22b47530f657f6ea9bdc51
or http://127.0.0.1:8888/?token=eb12c507be9bce731c42b61fdd22b47530f657f6ea9bdc51

```

This will redirect you to your web browser.



Click on New to make a new Python3 file that looks like this.



Now, we have installed Python and Jupyter Notebook. Let's see how to install Python libraries for Machine Learning.

How to Install Python libraries for Machine Learning

We are going to learn how to install Python libraries. All the libraries are installed in the same way using pip.

- NumPy Library -> pip install numpy
- Pandas Library -> pip install pandas
- Matplotlib Library -> pip install matplotlib
- Scikit-learn Library -> pip install scikit-learn
- TensorFlow Library -> pip install tensorflow
- NLTK Library -> pip install nltk

Similarly, you can install any Python library you need to build your machine learning project. These were the common ones that we covered in this article.