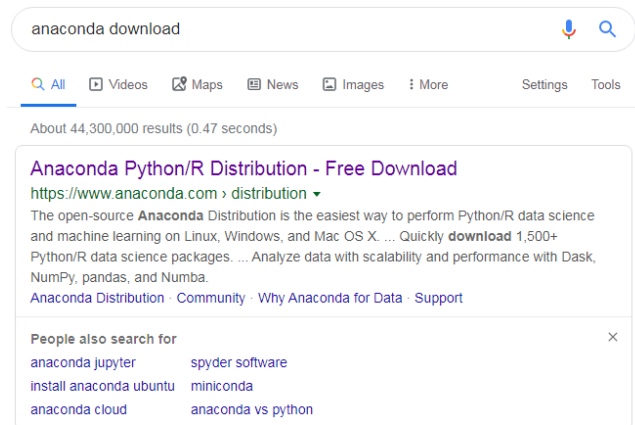


Python Programming

Instructions for getting started with Python

This is a detailed introduction to getting set-up and started with Python programming using the wonderful world of Jupyter notebooks. Further praise can be found in the notes that follow!

- Students should start by downloading Anaconda to their laptops.
- Start by googling 'Python Anaconda'. In the screenshot below it's the first choice



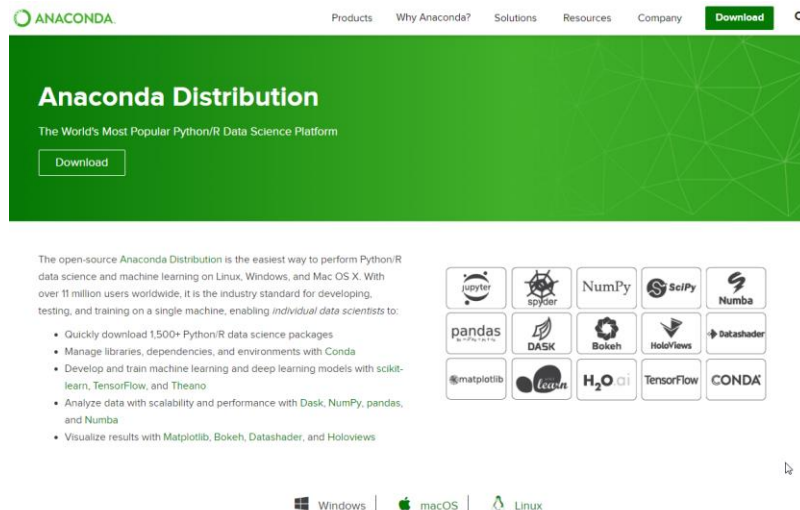
Anaconda | The World's Most Popular Data Science Platform

<https://www.anaconda.com>

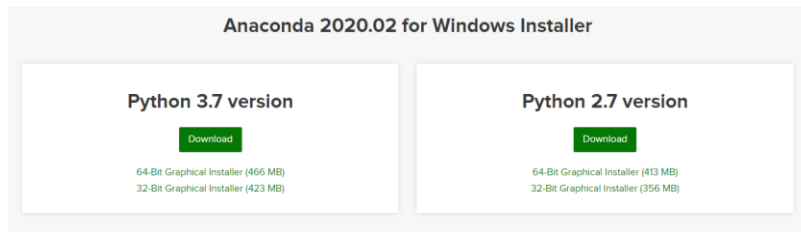
Anaconda is the standard platform for Python data science, leading in open source innovation for machine learning. Develop, manage ... [Download Now](#) ...

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Or typing <https://www.anaconda.com/download/> which takes you directly to the download page, below:



Choose from Windows, Mac or linux and you will be taken further down the page to. In my example, I've chosen the Windows Installer.



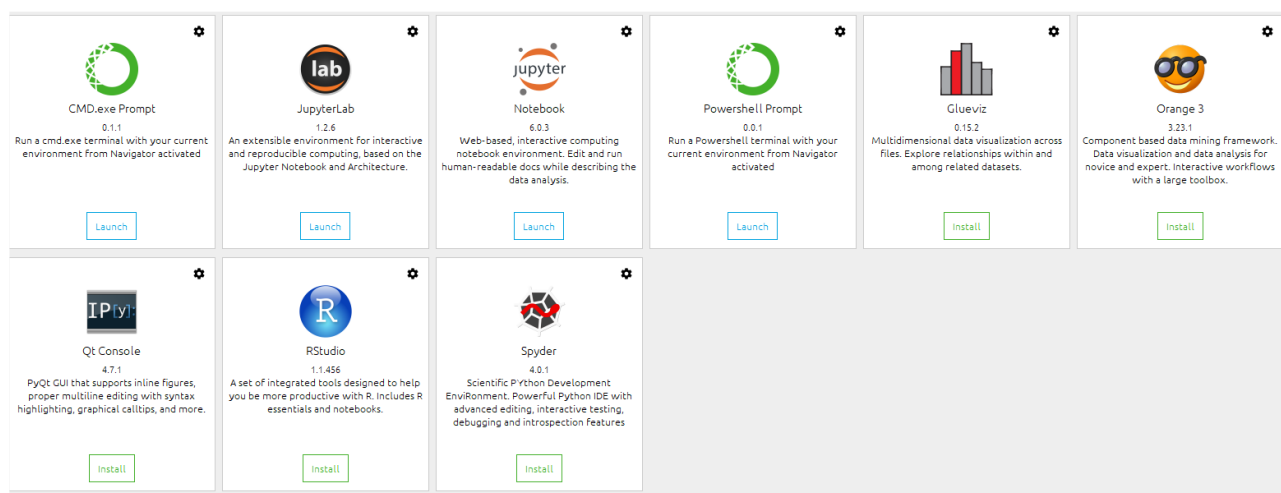
Now click on Python 3.7 version.

We will be using version 3.

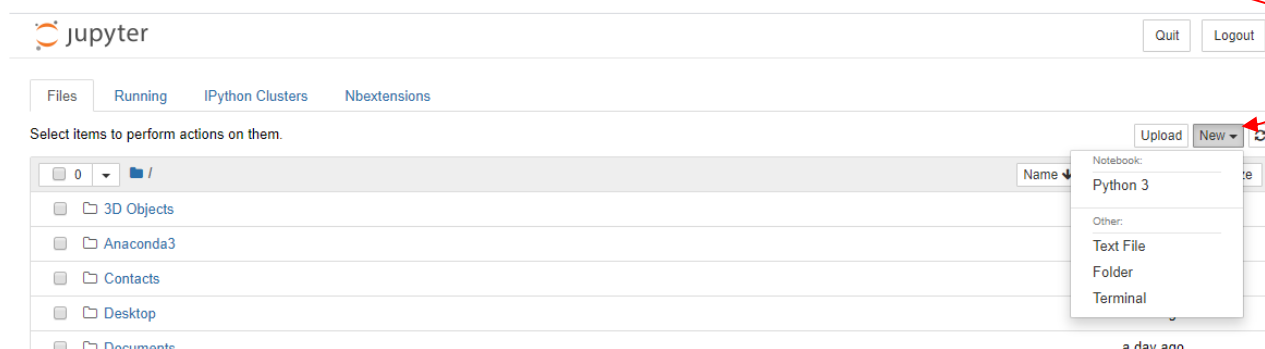
How to know if your PC/laptop is a 32 or 64-bit system?

- **Windows (old)** Click Start, right-click My Computer, and then click Properties if you see 64-bit it's a 64-bit system
- **Windows 10** In the search bar enter 'device specifications', then look next to System type.
- **Mac** uname -a also
- **linux** uname -a and if you see x64 then 64-bit else 32-bit

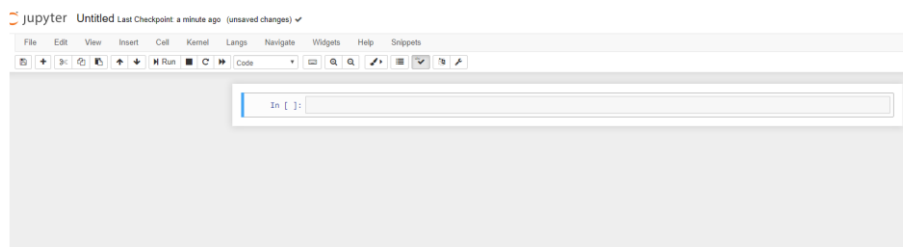
The first time you run Anaconda Navigator, from the list of (many) options presented, launch Jupyter Notebook.



The latest version is very exciting as it contains both CMD and Powershell Prompy options – so very exciting! You view which opens in your web browser should look something like



Click on New for the drop-down menu; select **Python 3** which will create a new Jupyter notebook, in a new window,



and you are ready to go. If this is the first time you are doing this, your view will be different, as I have nbextensions installed, which are discussed next.

These are add-ons that extend your functionality – in the process they take your experience to a new level giving MS Office style environment. In addition, they make life considerably simple with a lot of assistance. You will find you only need a few from the fairly long list of extensions. To install, launch your CMD.exe prompt and type the following (or copy/paste) **conda install -c conda-forge jupyter_contrib_nbextensions**

Exit the CMD prompt after the installation is complete and relaunch Jupyter Notebook. Return to nbextensions to see the following

Configurable nbextensions

☐ disable configuration for nbextensions without explicit compatibility (they may break your notebook environment, but can be useful to show for nbextension development)

filter: by description, section, or tags

<input checked="" type="checkbox"/> (some) LaTeX environments for Jupyter	<input type="checkbox"/> 2to3 Converter	<input type="checkbox"/> AddBefore	<input type="checkbox"/> Autopep8
<input type="checkbox"/> AutoSaveTime	<input type="checkbox"/> Autoscroll	<input type="checkbox"/> Cell Filter	<input checked="" type="checkbox"/> Code Font Size
<input type="checkbox"/> Code prettify	<input type="checkbox"/> Codefolding	<input type="checkbox"/> Codefolding in Editor	<input type="checkbox"/> CodeMirror mode extensions
<input checked="" type="checkbox"/> Collapsible Headings	<input type="checkbox"/> Comment/Uncomment Hotkey	<input checked="" type="checkbox"/> contrib_nbextensions_help_item	<input type="checkbox"/> datestamper
<input type="checkbox"/> Equation Auto Numbering	<input type="checkbox"/> ExecuteTime	<input type="checkbox"/> Execution Dependencies	<input type="checkbox"/> Exercise
<input type="checkbox"/> Exercise2	<input type="checkbox"/> Export Embedded HTML	<input type="checkbox"/> Freeze	<input type="checkbox"/> Gist-it
<input type="checkbox"/> Help panel	<input type="checkbox"/> Hide Header	<input type="checkbox"/> Hide input	<input type="checkbox"/> Hide input all
<input type="checkbox"/> Highlight selected word	<input checked="" type="checkbox"/> highlighter	<input checked="" type="checkbox"/> Hinterland	<input type="checkbox"/> Initialization cells
<input checked="" type="checkbox"/> ipyparallel/main	<input type="checkbox"/> Isort formatter	<input checked="" type="checkbox"/> jupyter-js-widgets/extension	<input checked="" type="checkbox"/> Keyboard shortcut editor
<input type="checkbox"/> Launch QTConsole	<input type="checkbox"/> Limit Output	<input type="checkbox"/> Live Markdown Preview	<input checked="" type="checkbox"/> Load TeX macros
<input type="checkbox"/> Move selected cells	<input type="checkbox"/> Navigation-Hotkeys	<input checked="" type="checkbox"/> Nbextensions dashboard tab	<input checked="" type="checkbox"/> Nbextensions edit menu item
<input checked="" type="checkbox"/> nbTranslate	<input type="checkbox"/> Notify	<input type="checkbox"/> Printview	<input checked="" type="checkbox"/> Python Markdown
<input checked="" type="checkbox"/> Rubberband	<input type="checkbox"/> Ruler	<input type="checkbox"/> Ruler in Editor	<input type="checkbox"/> Runtools
<input type="checkbox"/> Scratchpad	<input type="checkbox"/> ScrollDown	<input type="checkbox"/> Select CodeMirror Keymap	<input type="checkbox"/> SKILL Syntax
<input type="checkbox"/> Skip-Traceback	<input type="checkbox"/> Snippets	<input checked="" type="checkbox"/> Snippets Menu	<input checked="" type="checkbox"/> spellchecker
<input type="checkbox"/> Split Cells Notebook	<input checked="" type="checkbox"/> Table of Contents (2)	<input checked="" type="checkbox"/> table_beautifier	<input type="checkbox"/> Toggle all line numbers
<input type="checkbox"/> Tree Filter	<input type="checkbox"/> Variable Inspector	<input type="checkbox"/> zenmode	

The extensions I have enabled can be seen in the screenshot above. Spend a little time learning about each one – when you click each box, information on the use of each is given if you scroll down the page.

conda commands can also be entered in cells in Jupyter Notebook (hit the Run key), the following would be the same as the steps followed above

```
In [1]: conda install -c conda-forge jupyter_contrib_nbextensions

Collecting package metadata (current_repodata.json): ...working... done
Solving environment: ...working... done

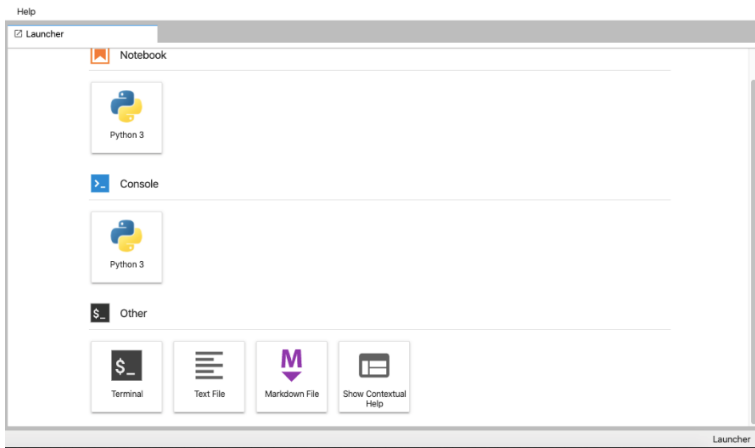
# All requested packages already installed.

Note: you may need to restart the kernel to use updated packages.
```

Note the message that Nbextensions are already installed! A comprehensive list of conda commands is at

https://docs.conda.io/projects/conda/en/4.6.0/_downloads/52a95608c49671267e40c689e0bc00ca/conda-cheatsheet.pdf

For mac users click on Jupyter Lab which shows



and choose Terminal. You can type conda commands here.

- Uploading files and folders to Jupyter Notebook

When you receive the Jupyter notebook, save it to any convenient folder, or one of the ones listed in your home page on the notebook (as shown on page 3 of this document). For windows the default directory is Users.

