Environment Setup

This document goes through the necessary steps to set up Anaconda, Jupyter Notebooks, and install Python Modules.

Step One – Anaconda & Jupyter Notebooks

There are several ways to download and use Anaconda & Jupyter Notebooks. In this guide, we will be stepping through the standalone Anaconda application. To start, download Anaconda here. Make sure the correct Operating System and version of Python are chosen. Follow the steps of the installation. When the installation has finished, test to see if it worked by opening up Jupyter Notebooks with your Windows Start Menu. It will open a browser window that will act as your integrated development environment (IDE). This is the interface where you'll be able to create, write, and organize all of your Jupyter Notebooks. Even though it's in your browser, everything is run and stored locally. At this point, you will be able to create an empty Python Notebook. To do so, click **New** and click on **Python 3.** (See Figure 1) Feel free to write some Python code to see if everything works as expected.

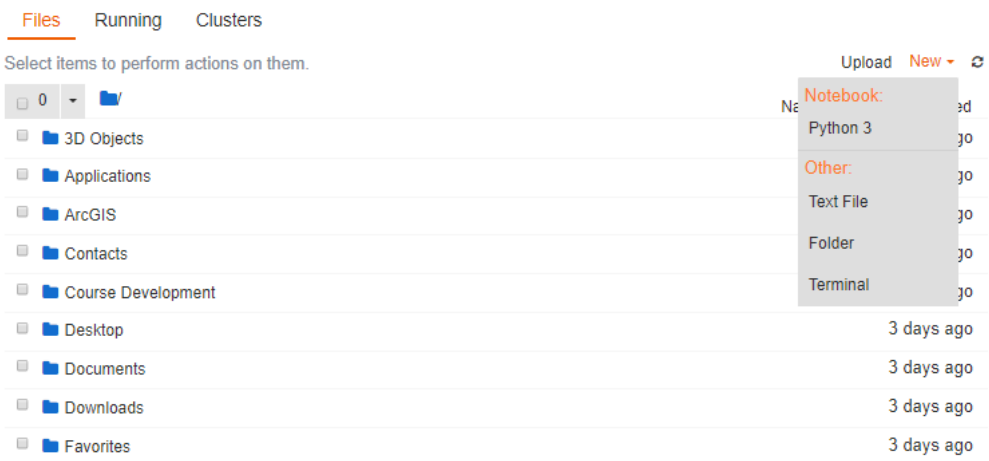


Figure 1. Jupyter Notebook Interface (Colors adjusted)

If you are experiencing difficulties setting up or getting started with Jupyter Notebooks, there is plenty of documentation available online. Below are some resources for installation guides for each operating system.

Installation Instructions

Windows Installation Instructions

MacOS Installation Instructions

Linux Installation Instructions

** If you would rather use Anaconda in combination with ArcGIS Pro, see instructions here. Follow the instructions to download the ArcGIS API for Python there.*

Step Two – ArcGIS API for Python

The ArcGIS API Python is an intuitive way to use a Python library to perform essential GIS and administration tasks. For an extensive overview of the library, refer to the documentation here.

To download and install **ArcGIS API for Python**, see the instructions here. It is easiest to install the API through the Command Line or the Anaconda Prompt.

Test this in a Jupyter Notebooks to see if the installation worked, and it can be accessed. If it worked, you shouldn't see errors.

```
In [1]: import arcgis
```

If you encounter a **ModuleNotFoundError** when importing **arcgis,** something may have gone wrong in the installation. Try the installation again, and try both Command Prompt and Anaconda Prompt if there are problems.

Step Three – Pandas, SciPy, Numpy, Scikit-learn and other packages

To install the Python Modules**,** use the Command Prompt (Windows) or Anaconda Prompt.

Command Prompt

Use the commands below. **pip install** can be used to install packages such as SciPy, Numpy, Scikit-learn or others. * *Run each one of these on their own line.*

> pip install pandas

> pip install numpy

> pip install scipy

> pip install -U scikit-learn

Anaconda Prompt

Use the commands below.

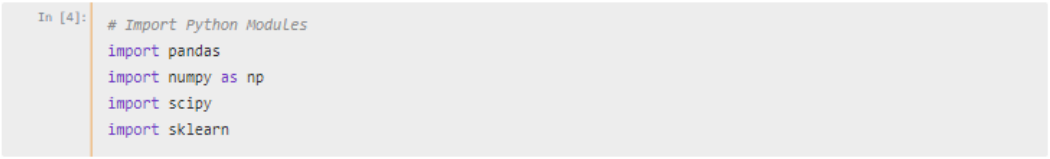
> conda install pandas

> conda install numpy

> conda install scipy

> conda install scikit-learn

Test this in a new Jupyter Notebook to see if the installation worked, and it can be accessed. If the cell is run and there are no errors, then the module was successfully imported. It is quite likely a module wasn't installed correctly if you are receiving an error. Track down what module is causing the problem by looking at the ModuleNotFoundError. (Python will point out which line the error is on.)



Step Four – Walk Through the Jupyter Notebook

Walk through the Jupyter Notebook to see if everything is functional. If things are not importing correctly, see what import is going wrong and traceback to fix that issue.