

NRSC7610 Introduction to Systems Neuroscience

Introduction to python analysis setup instructions

Daniel Denman

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1 Use Google colab

This is the easiest method. It does not run locally, but instead runs an ipython notebook in the cloud. You will have to sign in to a Google account to run cells in the notebook. It is possible to use your CU Anschutz email for this if desired.

1. Go to <https://colab.research.google.com>
2. If the *Open* does not automatically open, go to it, select Github, and past the url https://github.com/danieljdenman/nrsc7610/blob/master/NRSC7610_Intro.ipynb

If you think that quantitative analyses of any kind will be a part of your PhD, and you don't already have Anaconda and VS code, I recommend following **2** below.

If you started by using Google Colab, but now want to keep growing your use of python, I recommend following **2** below.

2 Use VS Code

This is the slightly more involved method, which involved setting up your computer to run python and ipython notebooks along with a python environment manager.

1. Install Anaconda for package and environment management. This is not strictly necessary, but package environment management is good practice, and pretty critical for scientific coding.
 - Download the Anaconda installer [https://www.anaconda.com/products/individual\)and\[install\]\(https://docs.conda.io/projects/conda/en/latest/user-guide/install/index.html](https://www.anaconda.com/products/individual)and[install](https://docs.conda.io/projects/conda/en/latest/user-guide/install/index.html)
 - Install using the downloaded executable
 - Create a new environment. Open a Terminal (Mac OS X) or the newly installed Anaconda command prompt (Windows). you should see (base) before some other text on the first line. name your environment something short and informative about what it will be used for, e.g.: “conda create -n NRSC7610“
2. Install VS code. Choosing an editor or development environment is a personal choice that can generate strong opinions. There are many options. If you don't already have a strong preference, we'll use a fully featured and very popular one, VS Code. If you do already have a strong preference, you should know what to do use it for the course.
 - Download the VS code installer (<https://code.visualstudio.com/>)
 - Install using the downloaded executable
 - Open VS Code and make sure you can see your new environment when selecting a python interpreter. for more, see <https://code.visualstudio.com/docs/python/environments>
3. Get the course repository from GitHub: <https://github.com/danieljdenman/nrsc7610>
 - You can clone a repository using VS Code. see: https://code.visualstudio.com/docs/sourcecontrol/overview#_cloning-a-repository
 - In short, click the Explorer panel on the left of VS Code, choose clone repository, and enter the the URL: <https://github.com/danieljdenman/nrsc7610.git>

Remind yourself how to use a python notebook

Before we return to coding as a group and doing systems neuroscience related activities, take these few minutes after install to remind yourself how python notebooks work. Whether you are using Google Colab or VS Code, complete the following:

1. create a new, blank notebook
2. insert a new code cell
3. insert a new Markdown cell, and note in your new Markdown cell that the cell below will import required packages
4. import the packages *numpy* and *matplotlib* (if this throws an error, determine if you have *numpy* installed. if not, install it! if you don't know how to install a package...use your resources.)
5. go back and see that you've imported *numpy* as *np* and only the *pyplot* section of *matplotlib* as *plt*.
6. move this cell up and delete your old import cell.
7. add code to a cell that will print the *string* "Hello world."
8. create a variable called *four* and assign the value three to this variable
9. check what datatype - *floating point* or *integer* - your variable *four* is
10. swap the type of you *four* to the opposite type

If any of this is a challenge, no problem! ask for assistance, or go back to your NSP bootcamp materials (if you are an NSP student).