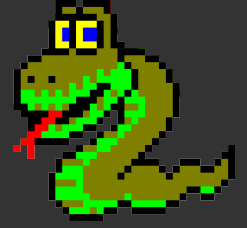


>>> Introduction to Data Science with Python
>>> DS101

Name: Celia Cintas[†] Nahuel Defosse [‡]

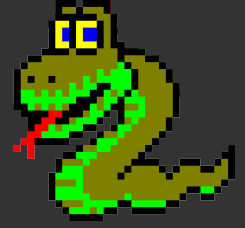
Date: January 25, 2019

[†]cintas.celia@gmail.com
[‡]nahuel.defosse@gmail.com

>>> Why learn Python?

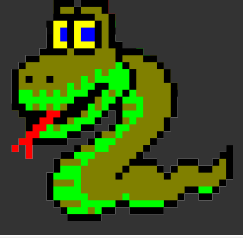
* Open.
* Easy to learn.
* Fast prototyping.
* Great Community.
* Used in different areas (Web, Games, Research, IOT, etc.).
* Can communicate easily with other Languages (C/C++, fortran, R, Java).

>>> How to install Python?

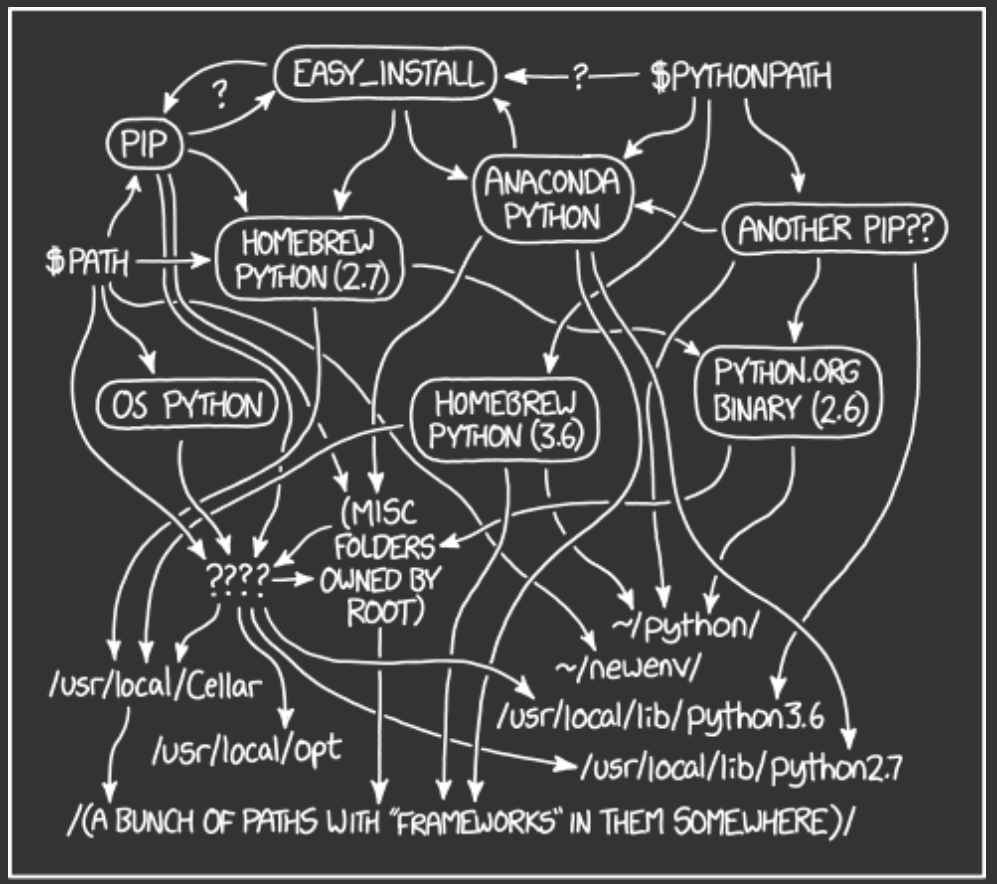


* There are two major versions of Python:
  * Legacy python (2.7)
  * Python 3.7
* Python can be downloaded from python.org for Windows, Linux and MacOS.
* Anaconda is the most popular Python distribution that requires the least effort to install software that depends on non python things (C/C++ compiles).

>>> How to install libraries?

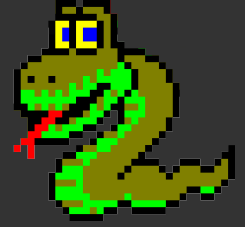


* Python comes with a tool called pip that lets you
  * search
  * install
  * uninstall
  * freeze
  * list
* We use pip to install third party software that is not available in Python built in standard library.



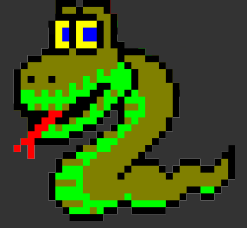
MY PYTHON ENVIRONMENT HAS BECOME SO DEGRADED THAT MY LAPTOP HAS BEEN DECLARED A SUPERFUND SITE.

>>> What is a virtualenv?



* Using pip is great, but you can easily run into problems:
    * In Linux you won't be able to install packages into the system
    * ...and if you do, you can break the system
    * You can easily loose track of what's really needed in your project
    * ...and your software only runs in your machine :(
* There are several tools to provide environments, we'll focus in the most simple one, a standard library module called venv.

>>> Using venv



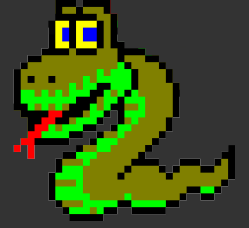
* Example of virtual environment

```
$ python -m venv cool_project
$ . cool_project/bin/activate
(cool_project) $ pip install tweepy
```

* Listing the contents of our environment?

```
$ pip freeze
certifi==2018.11.29
chardet==3.0.4
idna==2.8
oauthlib==3.0.0
requests==2.21.0
requests-oauthlib==1.2.0
tweetpy==0.1
urllib3==1.24.1
```

>>> Virtualenvs distribution



* How can we save this information to replicate our project dependencies?

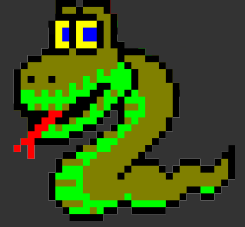
```
$ pip freeze > requirements.txt
```

...now all we care about is our python files and the requirements.txt

* We can search for libraries with pip too (although your search engine may be your best ally):

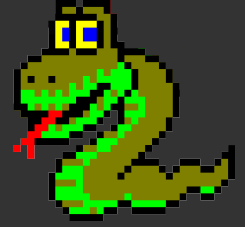
```
$ pip search mpesa
mpesa (0.0.1)       - a pip installable mpesa package
mpesa-api (0.1.8)   - Mpesa B2C, C2B, ....
python-mpesa (0.1.10) - M-Pesa API G2 Python adapter
mpesa-api-sdk (0.1)   - M-Pesa API SDK
```

>>> What is a jupyter notebook?

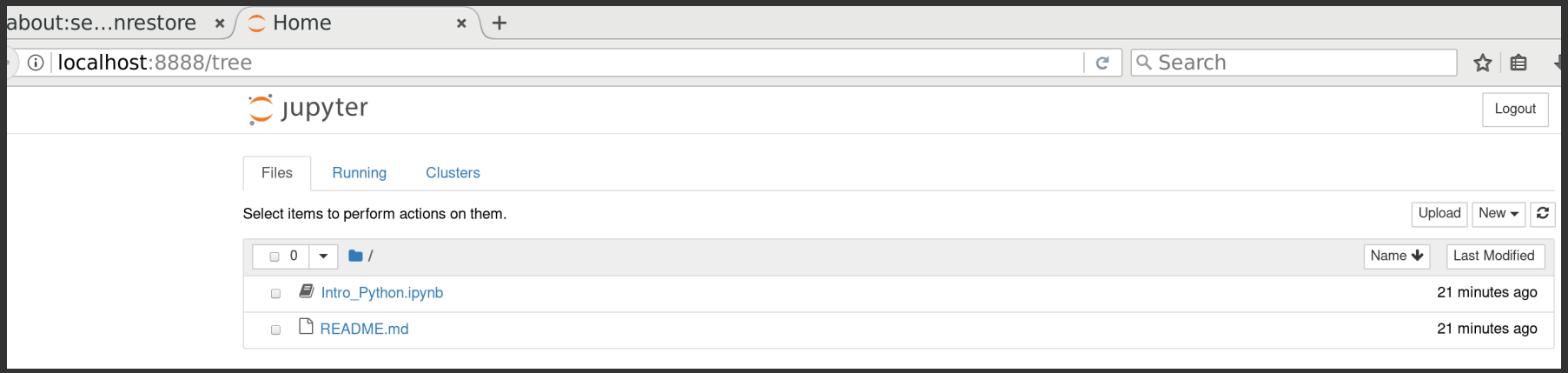


* Jupyter is a cell based Python web based execution environment.
* Jupyter can be installed with pip in a virtual environment ;).
* Jupyter will run by default in http://localhost:8888 and you will need a web browser to use it.
* Jupyter is widely used in the industry and can be executed in the cloud thanks to:
  * https://jupyter.org/try
  * Google Drive Colaboratory

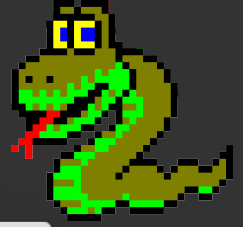
>>> Starting with Jupyter

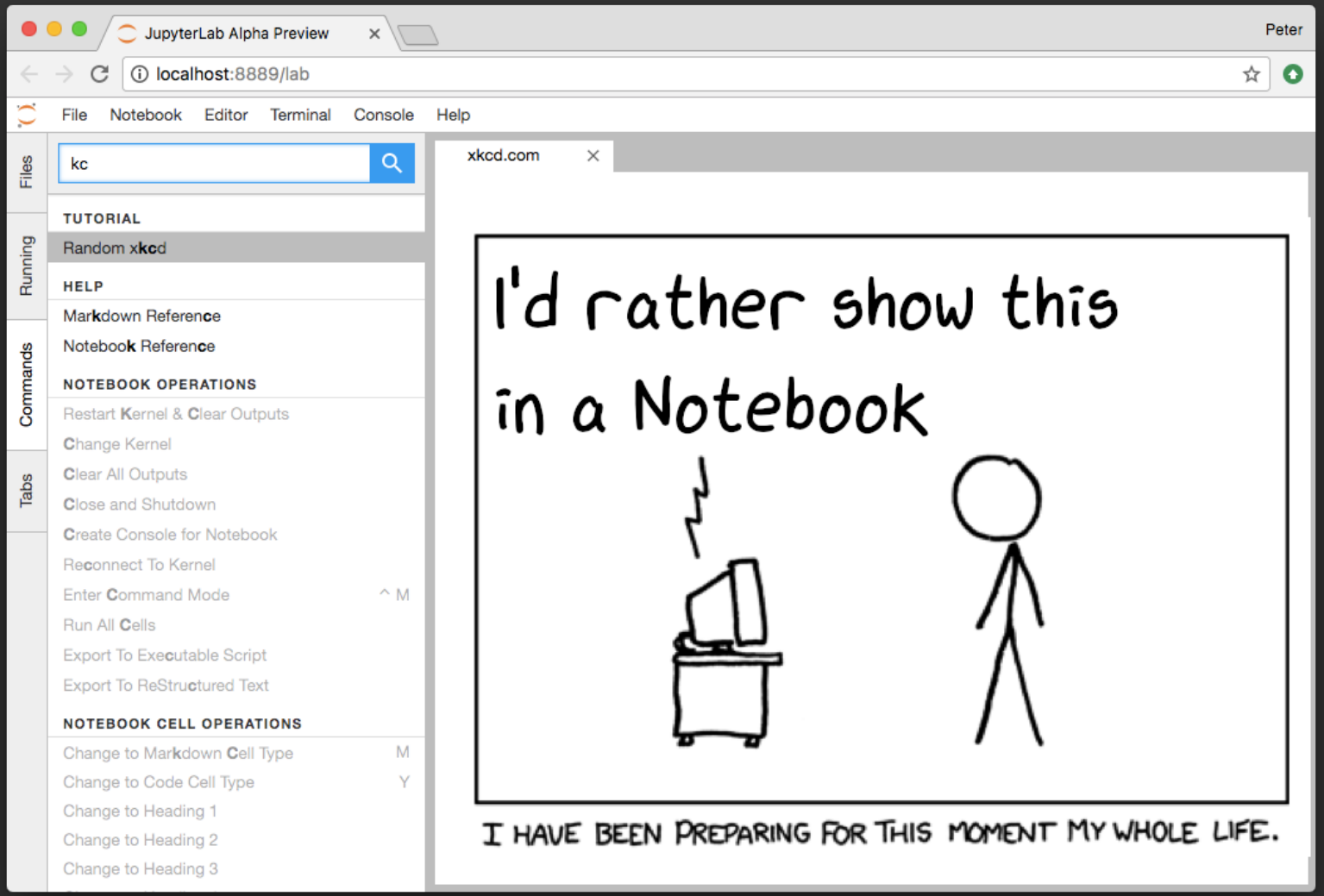


```
$ pip install jupyter
$ jupyter notebook
http://localhost:8888/?token=fd580144ed9c47
```

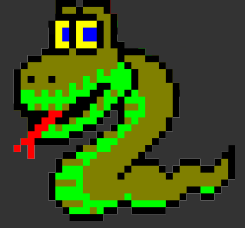


>>> Starting with Python





>>> Exercises

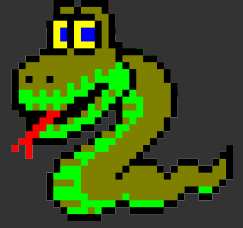


Enviroments Create a virtualenv in your machine.

Console Run python code in the console.

Jupyter Create first ipython notebook.

>>> Things to explore & Gracias!



* Code & slides https://kutt.it/OZf68d
* PEP-8 https://www.python.org/dev/peps/pep-0008/
* Nairobi Python Meetup
  https://www.meetup.com/Python-Nairobi/
* ♡GNU/Linux (guilty!) http://linuxchixar.org/
  https://www.linuxchix.org/