2016 Python BootCamp

Goddard Python User's Group

pythonbootcamp@bigbang.gsfc.nasa.gov

Goddard Space Flight Center

June 13, 2016

Who Are We?

1. All volunteers
2. Scientists, Engineers, IT Professionals from Goddard
3. Post-Docs
4. University Professors

To contact us, please send an email to:

pythonbootcamp@bigbang.gsfc.nasa.gov

BootCamp Objectives

We want to:

1. Introduce the basic concepts of Python programming
2. Create functions and modules
3. Manipulate Python objects (list, tuple, arrays, etc.)
4. Handle files
5. Do plotting
6. Do OOP with Python
7. Create and share a Python package

What we will Cover

1. Core principles of Python: Day 1 and Day 2 (morning)
2. Object Oriented Programming with Python: Day 2 (afternoon)
3. Create your own Python package: Day 2 (afternoon)
4. Advanced topics: Day 3 (morning)
5. Real life applications using Python: Day 3 (afternoon)

Target Audience

Python User	Day 1	Day 2	Day 3
Beginner	X	X	X
Intermediate		X	X
Advanced			X

What We Expect from You

- Pay the $3 registration fee (to cover the refreshment)
- Have your own laptop.
- Install on your system a Python distrubution (such as Conda) that should at least have iPython, Numpy, Matplotlib.
- Install the package Git
- Be able to create/edit files on your platform
- Do the examples yourself as we move along
- Ask questions

Obtaining the Materials

To have the necessary information on this BootCamp, please check the link:

http://asd.gsfc.nasa.gov/conferences/pythonbootcamp/2016/

You can also obtain presentations by issue the command:

```
git clone https://github.com/JulesKouatchou/PBC2016
```

You will then get on your platform the directory PBC2016.

Beyond the Agenda

There are few topics that will not be covered but are worth looking at. Presentations were prepared on:

1. List Comprehension
2. Strings
3. Datetime Module
4. F2Py

Informal Self-Assessment

At the end of Day 1, you might consider taking a 25-question test at:

http://www.afterhoursprogramming.com/tests/practice/Python/

Useful Pointers I

- Python Programming - Introduction
  http://www.youtube.com/watch?v=72RKMMyLxS8
- A Hands-On Introduction to Python for Beginning Programmers
  https://www.youtube.com/watch?v=rkx5_MRAV3A
- A Beginner's Python Tutorial
  http://www.sthurlow.com/python/
- Invent with Python
  http://inventwithpython.com/chapters/
- Think Python: How to Think Like a Computer Scientist
  http://greenteapress.com/thinkpython/html/index.html

Useful Pointers II


Hans Petter Langtangen.
A Primer on Scientific Programming with Python.
Springer, 2009.


Johnny Wei-Bing Lin.
A Hands-On Introduction to Using Python in the Atmospheric and Oceanic Sciences.
http://www.johnny-lin.com/pyintro, 2012.


Drew McCormack.
Scientific Scripting with Python.
2009.