2016 Python Boot Camp

Goddard Python User's Group

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Goddard Space Flight Center

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Who we are?

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

Boot Camp Objectives

We want to:

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

- People with little or no knowlege of Python: Day 1, Day 2 and Day 3
- Intermediate Python users: Day 2 and Day 3
- Advanced Python users: Day 3

Obtaining the Material

To have the necessary information on this Boot Camp, please check the link:
All the presentations are available from:

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

All the presentations are available from:

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

What We Expect from You

- Pay the $3.0 registration fee (just for refreshment)
- Have your own laptop.
- Install on your system a Python distrubution (such Anaconda) that should at least have iPython, Numpy, Matplotlib.
- Be able to edit files on your platform.

What is Python?

Python is an elegant and robust programming language that combines the power and flexibility of traditional compiled languages with the ease-of-use of simpler scripting and interpreted languages.

What is Python?

- High level
- Interpreted
- Scalable
- Extensible
- Portable
- Easy to learn, read and maintain
- Robust
- Object oriented
- Versatile

Why Python?

- Free and Open source
- Built-in run-time checks
- Nested, heterogeneous data structures
- OO programming
- Support for efficient numerical computing
- Good memory management
- Can be integrated with C, C++, Fortran and Java
- Easier to create stand-alone applications on any platform

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.