Introduction to Python

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1. Presentation
   1. Brief background of Python, Python versions
   2. What can we do with Python? Why we want to use python?
   3. Python Environment Setup(Mac ,PC , Linux) & Command Line

2. Exercises
   1. Python Syntax, Built-in data types, Operators
   2. Basic Data Types, Loop, Function
   3. Data Import
   4. Basic Data Visualization (Histogram, Line chart, pie chart el.)
   5. Final Project

3. Q & A
Python is a popular language for scientific computing, and great for general-purpose programming as well.

Over six years ago, in December 1989, I was looking for a "hobby" programming project that would keep me occupied during the week around Christmas. My office ... would be closed, but I had a home computer, and not much else on my hands. I decided to write an interpreter for the new scripting language I had been thinking about lately: a descendant of ABC that would appeal to Unix/C hackers. I chose Python as a working title for the project, being in a slightly irreverent mood (and a big fan of Monty Python's Flying Circus).
Python 2.x vs 3.x

Python 2.0 was released on 16 October 2000 and had many major new features, including a cycle-detecting garbage collector and support for Unicode. With this release the development process was changed and became more transparent and community-backed.

Python 3.0 (which early in its development was commonly referred to as Python 3000 or py3k), a major, backwards-incompatible release, was released on 3 December 2008, after a long period of testing. Many of its major features have been backported to the backwards-compatible Python 2.6.x and 2.7.x version series.
What can we do with python?

Robotics
Web Scraping
Data Science
Web Test
Computer Vision
Web Development
OpenCV
Beautiful Soup
NumPy
SciPy
matplotlib
pandas
IPython
Scikit-learn
django
Flask
Pyramid
And More
Why we want to use Python?

Advantages:
• Open Source software, supported by Python Software Foundation
• Available on all platforms
• Syntax readable
• Supports multiple programming paradigms
• Large community

Disadvantages:
• Slow
• Python is not a good language for mobile development.
• Python is not a good choice for memory intensive tasks.
• It's near impossible to build a high-graphic 3D game using Python.
• Python is not good for multi-processor/multi-core work.
The **Jupyter Notebook** is an open-source web application that allows you to create and share documents that contain live code, equations, visualizations and explanatory text.
1. Go to ANACONDA website to download and install Anaconda (Python 3.6) that based on your OS.

**Python Environment Setup**

**Anaconda 4.3.1**

**For Windows**

Anaconda is BSD licensed which gives you permission to use Anaconda commercially and for redistribution.

**Changelog**

1. Download the installer
2. Optional: Verify data integrity with MD5 or SHA-256 More info
3. Double-click the .exe file to install Anaconda and follow the instructions on the screen

Behind a firewall? Use these zipped Windows installers

- Python 3.6 version
  - 64-BIT INSTALLER (422M)
  - 32-BIT INSTALLER (348M)

- Python 2.7 version
  - 64-BIT INSTALLER (414M)
  - 32-BIT INSTALLER (339M)
2. Open your Command Prompt and create a working directory in your Desktop/Laptop and move to the directory.

3. After installed Anaconda to launch the jupyter notebook you need to type this "ipython notebook" command in your Mac terminal/ Windows Power shell.

4. It will automatically popup from you default browser. If nothing show up, you can open this link in your browser: http://localhost:8888.

5. Please drag the “Python_Intro.ipynb” file to your working directory and refresh your ipython notebook and open it.
Features of Python

Python is a high-level, interpreted, interactive and object-oriented scripting language. Python is designed to be highly readable. It uses English keywords frequently where as other languages use punctuation, and it has fewer syntactical constructions than other languages.

Python is:

• Interpreted
• Interactive
• Object-Oriented
• A Beginner's Language
More Python Related Source

Books
Learning Python Mark Lutz
Fluent Python Luciano Ramalho

Websites
Codecademy: https://www.codecademy.com/

DataCamp: https://www.datacamp.com/

Video Tutorials
Sentdex Youtube Channel: https://www.youtube.com/user/sentdex

Corey Schafer Youtube Channel: https://www.youtube.com/user/schafer5

Tutorials point: https://www.tutorialspoint.com

Sentdex Youtube Channel: https://www.youtube.com/user/sentdex

Data Carpentry: http://www.datacarpentry.org
Continue Learning

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