

CS501

Introductory Computation for Scientists



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Lesson 2.1: What is Python?



Outline

- What is Python?
- Python History
- Python Competitors
- Python Libraries
- Applications of Python
- Python2 and Python 3
- Advantages and Disadvantages of Python



What is Python?

- Python - History
- Open Source general purpose language created by Guido van Rossum in the late 1980s.

Guido van Rossum

- Guido van Rossum is a Dutch programmer who is best known as the author of the Python programming language.
- He was employed by Google from 2005 until 7 December 2012, where he spent half his time developing the Python language.
- In January 2013, Van Rossum started working for Dropbox.



Guido van Rossum

Programmer

Guido van Rossum is a Dutch programmer who is best known as the author of the Python programming language. [Wikipedia](#)

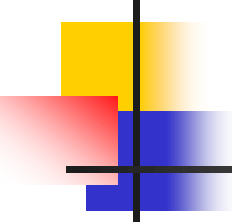
Born: January 31, 1956 (age 61), Haarlem, Netherlands

Education: University of Amsterdam (1982)

Spouse: Kim Knapp (m. 2000)

Awards: Award for Advancement of Free Software

Siblings: [Just van Rossum](#)



A Few Famous Software Programs Written In Python?

- YouTube
- Dropbox
- Google
- Instagram
- Spotify
- Reddit
- Yahoo Maps

Python Competitors





Python Libraries

- NumPy
 - Providing a practical array of data structures
- SciPy
 - Scientific Computing
- Matplotlib
 - Graphical plotting
- Pandas
 - Data analysis and statistics
- Scikit-learn
 - Machine Learning
- SymPy
 - Symbolic Computing
- Jupyter
 - Interactive Computing



Other Python Applications

- Web Development
 - Django, Pyramid, Flask
- Computer Vision
- Raspberry Pi
 - Robotics
- Game Development
 - Pygame
- Web Scraping
- Writing Scripts
- Browser Automation
- GUI Development



Python 2 or Python 3

- Python 2.0 was first released in 2000
 - Its latest version, 2.7, was released in 2010
- Python 3.0 was released in 2008
 - Its latest version is 3.7
- Python 2 code will not run on Python 3



Advantages of Python

- Simple syntax: Easy to learn
- It is free: Open Source
- Cross Platform support: Windows + Mac + Linux
- Rich set of libraries (modules): Numpy, Scipy, ... etc.
- Easy to learn
- Use heavily in
 - Data Science
 - Machine Learning
 - Scientific Computing
- Python: Contains features of
 - Procedural languages (General Purpose)
 - Object Oriented Languages
 - Functional Languages



Disadvantages of Python

- Interpreted Language: Not as fast as compiled language
- Python 2 and Python 3 problems



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