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Python for Novice

Introduction

Python is an easy to learn, powerful programming language. It has efficient high-level data structures and a simple but effective approach to object-oriented programming. Python's elegant syntax and dynamic typing, together with its interpreted nature, make it an ideal language for scripting and rapid application development in many areas on most platforms. A byte of Python

There are several Python tutorials available for beginners, therefore rather than creating a new tutorial we considered putting them together.

Useful resources

- Web links:
- Software Carpentry: Python lessons for novice
- Getting Started
- Python Beginners Guide
- Execute Python
- Use Python
- Code sample and snippets for Beginners
- Python programmers Guide
- MIT lecture notes
- MIT: Introduction computer Science
- · Basic snippets
- · Interactive learning:
- Codecademy
- After Hours Programming
- More suggestions on [Quora](https://www.quora.com)
- · Books:
- A byte of Python
- · Learn Python the hard way
- Dive into Python
- · Video tutorials:

- YouTube DRAPS TV
- · Learn Python in one video
- Many more... (literally millions of YouTube videos)

Topics to be discussed

- 1. How To 'Hello World'
- 2. Literal Constants: integers, floats and strings
- 3. Variables: use them in python commands (slicing, splicing, overwriting)
- 4. Operators and Expressions: plus, minus, multiply, power, divide, less/greater than, boolean and, or, not
- 5. Sets and Lists: define and access list (min, max, index, sort, unique, append, reverse, combine, sum, intersect, string to list etc.)
- 6. The if-statements: making choices and defining conditionals
- 7. For-loop: repeated tasks like reading multiple files for same action
- 8. Choosing editors to write Python programs
- 9. Basic rules: comments, quote, indentation, newline, tabs
- 10. File handling: create, read, write, open, close
- 11. Functions
- 12. Import packages and work with them: os, sys, numpy, matplotlib
- 13. Perform operations on arrays of data.
- 14. Display simple graphs
- 15. Basic error and exceptions: try and except

Text editors / IDEs (Integrated Development Environment)

- gedit (installed)
- PyCharm (Alternative, not installed)
- · GNU/Emacs with elpy

Debugging

• https://swcarpentry.github.io/python-novice-inflammation/09-debugging/