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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/