PY 001: PYTHON ESSENTIALS
2023

Instructor Information

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Course Repository: https://github.com/Potter-Gryffindor/Python-Course

Course Description

This introductory course gives you an opportunity to dive into Python and computer programming with no specific prerequisites or prior knowledge required. It will guide you from a state of complete programming illiteracy to a level of programming knowledge which will allow you to design, write, debug, and run Python scripts, and to understand the basic concepts of software development technology.

Course Objectives

After this course, you should be able to...

- Learn basic fundamentals of Algorithm and Programming.
- Configure work environment (Programming environments).
- To know the generalities, data types and operators of the Python language.
- Use functions, modules and loops in the Python language syntax.
- Develop algorithms under the structure of object-oriented programming in Python language.

Documentation & Software

Documentation:

- *PYTHON IN A NUTSHELL, 3rd Edition*, by Alex Martelli, Anna Ravenscro, and Steve Holden.
- https://www.w3schools.com/python/
- https://peps.python.org/pep-0008/

Software:

- https://www.python.org/
- https://www.anaconda.com/
- https://code.visualstudio.com/

Workplan

The following is a *tentative* workplan for the course.

- **Chapter 1.** Algorithm and Programming.
  - **Section 1.** Data types, Operators and Expressions.
  - **Section 2.** Statements.
  - **Section 3.** Functions.
  - **Section 4.** Object Oriented Programming.
- **Chapter 2.** Work environment.
  - **Section 1.** Installing Python.
  - **Section 2.** Installing a text editor (Virtual Studio Code).
  - **Section 2.** Configuration of venv environment.
  - **Section 3.** Configuration of conda environment.
- **Chapter 3.** The Python Language.
  - **Section 1.** Lexical Structure.
  - **Section 2.** Data Types.
  - **Section 2.** Expressions and Operators.
  - **Section 3.** Statements.
  - **Section 4.** Functions.
- **Chapter 4.** Object-Oriented Python.
  - **Section 1.** Classes and Instances.
  - **Section 2.** Inheritance.

Tentative Schedule

The following is a *tentative* schedule for the course.

Class	Chapter	Section
1	1	1-4
2	2	1-3
3	3	1-4
4	4	1-2