Basic Python

Trainer: Dr. M. Müller, Python Academy, http://www.python-academy.de/

Course objectives

The objective of the course is to enable programmers who are proficient with at least one other programming language to work efficiently with Python. The course not only introduces all basic language constructs but also puts them in context to demonstrate how pythonic programs look like. The term pythonic is used for idiomatic Python that takes full advantage of language features often leading to significant increase in programmer productivity.

After the course, the participants will be able to write own, useful Python programs and to read complex programs written by others. Furthermore, they will be able to quickly find information about how to best solve a certain task with Python.

Course content

The first part of the course is a brief tutorial-style overview that introduces all concepts of the Python programming language. The second part is based on a complex example that contains all important components of a Python program. After the complex example is introduced as a whole, all components will be explained in detail. Exercises are included for each topic. In addition to writing code, reading code written by others (in this case by the trainer) will be practiced. This is particularly useful because foreign code reading is typically a major part of programming.

The main parts of the course are:

- Python in comparison with other languages
- Setup of a development environment
- Basic syntax
- Statements and expression
- Decisions
- Loops
- Data types overview
- Sequences
- Sets
- Dictionaries
- Functions
- Generators and iterators
- Classes
- Exception handling
- Input and output
- Complex Example – Introduction to principles and best practice
- Modules and Packages
- Objects
- Names
- Name spaces
- Text processing
- System functions
- Differences between Python 2 and 3

All topics are supported by extensive exercises and are applied to the complex example. Participants are welcome to bring examples from their daily work. If time allows, the trainer will incorporate them into the course. Providing the examples before the course is advantageous.

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