

Advanced Python Programming

Level: intermediate / advanced

Length: 35 - 40 hours

Course Objective: approach more advanced issues regarding the language and use of it in several context

What You Will Learn

- Language related issues: Python' support for object oriented programming like metaclasses & abstract base classes, generator functions expressions, decorators, context managers
- Implementation of several design patterns in Python
- Use of Python in concurrent programming, XML processing, work with databases

Who Can Attend: Python programmers who want to study interesting aspects of the language, how it is used for solving some common problems

Prerequisites

- Knowledge of Python at least at medium level
- Comfortable with XML, how it is used
- Basics of working with databases, familiar with a particular product (Oracle, MS SQL Server, etc.), familiar with SQL language
- Familiar with sockets

Required facilities: VGA projector, white board, computers with Python installed and an IDE (PyCharm)

Related courses: Fundamentals of Python

Description

This course is a continuation of “Fundamentals of Python”, the attendees will enhance their skills regarding Python by studying more advanced language constructs and by applying Python to solve problems in several common contexts.

The course is highly interactive, the accent is on practice.



Contents

1. Introduction, outline the main language elements.
2. Functions
 - 2.1 Decorators
 - 2.2 Context managers
 - 2.3 Functions & expressions generator
- 3 Classes
 - 3.1 Special functions – dunder
 - 3.2 Metaclasses
 - 3.3 Class factories
 - 3.4 Abstract Base Classes - ABC
- 4 Using Python (subjects at user's choice)
 - 4.1 Regular expressions
 - 4.2 XML processing
 - 4.3 Working with relational databases
 - 4.4 Processes and threads
 - 4.5 Inter-process communication by using sockets
 - 4.6 Graphical User Interfaces