

Python II - advanced techniques

Course code: PYTHON_ADV

The course is designed for all programmers who have programming experience in Python at the PYTHON_INTRO course level. In the course, you will learn more advanced elements of the language such as OOP, using generators and iterators, Lambda expressions, anonymous functions, decorators, JSON and many other practical and necessary topics for Python developers.

Affiliate	Duration	Course price	ITB
Praha	5	23 000 Kč	50
Brno	5	23 000 Kč	50
Bratislava	5	1 000 €	50

The prices are without VAT.

Course terms

Date	Duration	Course price	Type	Course language	Location
G 17.02.2025	5	23 000 Kč	Presence	CZ/SK	Gopas Praha Prezenční
17.03.2025	5	23 000 Kč	Presence	CZ/SK	Gopas Brno Prezenční
07.04.2025	5	1 000 €	Presence	CZ/SK	Gopas Bratislava Prezenční
19.05.2025	5	23 000 Kč	Presence	CZ/SK	Gopas Praha Prezenční
02.06.2025	5	23 000 Kč	Presence	CZ/SK	Gopas Brno Prezenční
09.06.2025	5	1 000 €	Online	CZ/SK	Gopas Bratislava Online
09.06.2025	5	23 000 Kč	Online	CZ/SK	Gopas Praha Online

The prices are without VAT.

For whom the course is intended:

- Programmers who have programming experience in Python at the PYTHON_INTRO course level
- Experienced developers who have experience with other programming languages and want to switch to Python. In this case, it is advisable to familiarize yourself with at least the complete basics of the language in advance.

Required entry skills

- Basic knowledge of Python at the level of the PYTHON_INTRO course

Teaching methods

- Expert interpretation with practical examples, exercises on computers.

Studying materials

- Presentation of the material discussed in printed or online form.

Syllabus

A quick recap of Python basics

- History and basic features of Python
- Installation and development environment
- Using multiple versions of CPython
- Pure function and variable scope
- Mutability and immutability of objects
- Using collections
- Use of *args and **kwargs

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Collection Comprehensions

- Sheet Comprehensions
- Set Comprehensions
- Dictionary Comprehensions

Modules, packages and distribution of applications (modules and packages)

- Objects, Namespaces and Scope
- Modules
- Packages
- Virtual Environment (external)
- Using Pip
- Freezing
- Using PyPi
- Packaging and Distribution

PPE techniques

- Class o object
- Using self
- Instance methods
- Class methods
- Static methods
- Inheritance, polymorphism
- Properties
- An object like a dictionary

Error Handling

- Exception handling
- Raising Custom Exception

Generators and Iterators

- Iterators, iterables and sequences
- Magic function
- **iter**
- {}
- Magic function
- **next**
- {}
- Custom iterable class
- Generator function
- yield return

Fundamentals of functional programming in Python

- Nested functions
- Functions as an object
- Keyword non-local
- Closures
- Anonymous / Lambda functions

Magic methods

- String Conversion
- Arithmetic Operations
- Comparison Operations
- Conversion

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Decorators

- Built-in Decorators
- Standard library Decorators
- Custom Decorators

Resources and Persistent Storage

- Work with resources (try / finally)
- Context manager and magic methods
- **enter**
- **and**
- **exit**
- Working with files (read, write)
- Working with Python pickle formats,
- Key-value database shelf
- JSON, CSV, XLSX

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