

Python 3 Essentials

Overview

An introductory and beyond-level practical, hands-on Python training course that leads the student from the basics of writing and running Python scripts to more advanced features.

Target Audience

Experienced Programmers and Systems Administrators.

Course Objectives

Throughout the course students will be led through a series of progressively advanced topics, where each topic consists of lecture, group discussion, comprehensive hands-on lab exercises, and lab review. This course is “skills-centric”, designed to train attendees in core Python and web development skills beyond an intermediate level, coupling the most current, effective techniques with best practices. Working within in an engaging, hands-on learning environment, guided by our expert Python practitioner, students will learn to:

- Create working Python scripts following best practices
- Use python data types appropriately
- Read and write files with both text and binary data
- Search and replace text with regular expressions
- Get familiar with the standard library and its work-saving modules
- Use lesser-known but powerful Python data types
- Create "real-world", professional Python applications
- Work with dates, times, and calendars
- Know when to use collections such as lists, dictionaries, and sets
- Understand Pythonic features such as comprehensions and iterators
- Write robust code using exception handling

Course Outline

[Register Online](#)

Schedule

Class Length: 5 Days

G2R = “Guaranteed to Run” | OLL = “Online LIVE”
ILT = “Instructor-Led-Training”

07/06/21	G2R	4:00PM - 12:00AM	Dublin, Ireland	OLL	EUR 1985
16/08/21	G2R	2:00PM - 10:00PM	Dublin, Ireland	OLL	EUR 1985
15/11/21	G2R	4:00PM - 12:00AM	Dublin, Ireland	OLL	EUR 1985

1 - An Overview of Python

What is python?

1 -- An overview of Python

What is python?

Python Timeline

Advantages/Disadvantages of Python

Getting help with pydoc

2 - The Python Environment

Starting Python

Using the interpreter

Running a Python script

Python scripts on Unix/Windows

Editors and IDEs

3 - Getting Started

Using variables

Built-in functions

Strings

Numbers

Converting among types

Writing to the screen

Command line parameters

4 - Flow Control

About flow control

White space

Conditional expressions

Relational and Boolean operators

While loops

Alternate loop exits

5 - Sequences

About sequences

Lists and list methods

Tuples

Indexing and slicing

Iterating through a sequence

Sequence functions, keywords, and operators

List comprehensions

Generator Expressions

Nested sequences

6 - Working with files

- File overview
- Opening a text file
- Reading a text file
- Writing to a text file
- Reading and writing raw (binary) data
- Converting binary data with struct

7 - Dictionaries and Sets

- About dictionaries
- Creating dictionaries
- Iterating through a dictionary
- About sets
- Creating sets
- Working with sets

8 - Functions

- Defining functions
- Parameters
- Global and local scope
- Nested functions
- Returning values

9 - Sorting

- The sorted() function
- Alternate keys
- Lambda functions
- Sorting collections
- Using operator.itemgetter()
- Reverse sorting

10 - Errors and Exception Handling

- Syntax errors
- Exceptions
- Using try/catch/else/finally
- Handling multiple exceptions
- Ignoring exceptions

11 - Modules and Packages

- The import statement
- Module search path
- Creating Modules
- Using packages
- Function and Module aliases

12 - Classes

- About o-o programming
- Defining classes
- Constructors
- Methods
- Instance data
- Properties
- Class methods and data

13 - Regular Expressions

- RE syntax overview
- RE Objects
- Searching and matching
- Compilation flags
- Groups and special groups
- Replacing text
- Splitting strings

14 - The standard library

- The sys module
- Launching external programs
- Math functions
- Random numbers
- The string module
- Reading CSV data

15 - Dates and times

- Working with dates and times
- Translating timestamps
- Parsing dates from text
- Formatting dates
- Calendar data

16 - Working with the file system

- Paths, directories, and filenames
- Checking for existence
- Permissions and other file attributes
- Walking directory trees
- Creating filters with fileinput
- Using shutil for file operations
- 17 – Advanced data handling
- Defaultdict and Counter
- Prettyprinting data structures
- Compressed archives (zip, gzip, tar, etc.)
- Persistent data

17 - Advanced data handling

- Defaultdict and Counter
- Prettyprinting data structures
- Compressed archives (zip, gzip, tar, etc.)
- Persistent data

18 - Network services

- Grabbing web content
- Sending email
- Using SSH for remote access
- Using FTP

19 - Writing real-life applications

- Parsing command-line options
- Detecting the current platform
- Trapping signals
- Implementing logging
- Python Timeline
- Advantages/Disadvantages of Python
- Getting help with pydoc
