Developing Applications with Python

The main goal of the course is to guide participants to design, write, debug, and run programs encoded in the Python language, and to understand the basic concepts of software development technology. Its main goal is to teach participants the skills related to the more advanced aspects of Python programming, including modules, packages, exceptions, file processing, as well as with general coding techniques and object-oriented programming (OOP).
The course is recommended for aspiring developers who are interested in pursuing careers connected with Software Development, and Security, Networking, and the Internet of Things (IoT).

CODE: ED24A21

DURATION: 28 hours

START DATE: Wednesday, 05/06/2024

AUDIENCE PROFILE: The audience for this course is professionals who develop applications and wish to use Python as a programming language

PREREQUISITES FOR PARTICIPATION:
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TRAINING LANGUAGE:
Greek or English

TRAINING MATERIALS:
Step by Step training materials in the English Language

METHODOLOGY:
Lecture, discussion, demonstration and practice.

COURSE OBJECTIVES:

Upon completion of this course the participants will :
- Describe the universal concepts of computer programming
- Describe the syntax and semantics of the Python language
- Practice skills in resolving typical implementation challenges
- Use the most important elements of Python Standard Library
- Install runtime environment
- Write Python programs
- Use object-oriented programming in Python
- Import and use Python modules
- Handle exceptions
- Process files
- Adopt the coding techniques and best practices

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VENUE:
Webinar

DATES & TIMES:

Wednesday, 05/06/2024, 08:15 -16:00
Wednesday, 12/06/2024, 08:15 -16:00
Wednesday, 19/06/2024, 08:15 -16:00
Wednesday, 26/06/2024, 08:15 -16:00

PARICIPATION COST:
The cost incudes the course notes and certificate.
In the event of classroom led training, coffee, snacks and lunch (only for full day courses) are offered complimentary.

Participation Cost
- Total Cost: €840
- HRDA Subsidy: €560
- Net Cost: €280

For Unemployed
- Please contact us

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COURSE TOPICS

Unit 1: Introduction: PR
The fundamentals of computer programming, i.e. how the computer works, how the program is executed, how the programming language is defined and constructed, what the difference is between compilation and interpretation, what Python is, how it is positioned among other programming languages, and what distinguishes the different versions of Python;

Unit 2: Data types, variables, basic input-output operations, basic operators PR

The basic methods of formatting and outputting data offered by Python, together with the primary kinds of data and numerical operators, their mutual relations and bindings; the concept of variables and variable naming conventions; the assignment operator, the rules governing the building of expressions; the inputting and converting of data;

Unit 3: Boolean values, conditional execution, loops, lists, logical and bitwise operations PR

Boolean values to compare difference values and control the execution paths using the if and if-else instructions; the utilization of loops (while and for) and how to control their behavior using the break and continue instructions; the difference between logical and bitwise operations; the concept of lists and list processing, including the iteration provided by the for loop, and slicing; the idea of multi-dimensional arrays;

Unit 4: Functions, tuples, dictionaries, and data processing PR

The defining and using of functions – their rationale, purpose, conventions, and traps; the concept of passing arguments in different ways and setting their default values, along with the mechanisms of returning the function's results; name scope issues; new data aggregates: tuples and dictionaries, and their role in data processing.

Unit 5: Modules, Packages and PIP PR
Importing and using Python modules; using some of the most useful Python standard library modules; con-structing and using Python packages; PIP (Python Installation Package) and how to use it to install and uninstall ready-to-use packages from PyPI.

Unit 6: Strings, String and List Methods, Exceptions PR

Characters, strings and coding standards; Strings vs. lists – similarities and differences; Lists methods; String methods; Python's way of handling runtime errors; Controlling the flow of errors using try and except; Hierarchy of exceptions.

Unit 7: Object-Oriented Programming PR

Basic concepts of object-oriented programming (OOP); The differences between the procedural and object approaches (motivations and profits); Classes, objects, properties, and methods; Designing reusable classes and creating objects; Inheritance and polymorphism; Exceptions as objects.

Unit 8: Miscellaneous PR

Generators, iterators and closures; Working with filesystem, directory tree and files; Selected Python Standard Library modules (os, datetime, time, and calendar.)