PYTHON ESSENTIALS 1 Course

This introductory course gives you an opportunity to dive into Python and computer programming with no specific prerequisites or prior knowledge required. It will guide you from a state of complete programming illiteracy to a level of programming knowledge which will allow you to design, write, debug, and run Python scripts, and to understand the basic concepts of software development technology.

This intermediate–level course gives you an opportunity to dive deeper into Python programming, and learn how to analyze and model real–life problems in Object–Oriented Programming categories.

مروری بر دوره

We will cover expressions, variables, functions, logic, and conditionals, which are foundational concepts in computer programming. We will also teach you how to use Python modules, which enable you to benefit from the vast array of functionality that is already a part of the Python language. These concepts and skills will help you to begin to think like a computer programmer and to understand how to go about writing Python programs.

The Python Essentials 2 course offered by the Python Institute is an advanced course that builds on the concepts covered in the Python Essentials 1 course. It is designed to help programmers deepen their understanding of Python and become proficient in using Python for a variety of applications, including web programming, database programming, and GUI programming.

آنچه خواهید آموخت

- Python
- Computer Programming
- Algorithmic Thinking
- Analytical Thinking
- Design, Develop, and Debug Multi–Module applications
- Best Practices in Programming
- Solutions Architecture
- Object–Oriented Programming

سرفصل ها

- Python
- Computer Programming

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- Algorithmic Thinking
- Analytical Thinking
- Design, Develop, and Debug Scripts
- Best Practices in Programming
- Procedural Programming

I. Advanced programming concepts

- Recursion
- Sorting and searching algorithms
- Exception handling
- File input/output
- Object-oriented programming concepts

II. Modules and packages

- Understanding Python modules
- Creating and using Python packages
- Importing modules and packages

III. Graphical User Interfaces

- GUI programming concepts
- Introduction to Tkinter
- Creating GUI applications using Tkinter

IV. Regular expressions

- Introduction to regular expressions
- Using the 're' module to perform regular expression operations

V. Debugging and testing

- Debugging techniques
- Testing concepts and frameworks (e.g., unittest)

VI. Advanced data structures

- Nested data structures (e.g., lists of dictionaries)

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- Choosing the right data structure for the job
- Best practices for working with data structures in Python

VII. Web programming

- Introduction to web programming
- Using Python for web programming (e.g., Flask, Django)
- Working with APIs

VIII. Database programming

- Introduction to databases
- Using Python for database programming (e.g., SQLite, MySQL)
- Working with database APIs

IX. Best practices

- Writing maintainable and readable code
- Code documentation
- Collaborative programming (e.g., version control with Git)

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