55284: Introduction to Python

Duration: 4 Days

Method: Instructor-Led Training (ILT) | Live Online Training

Course Description

In this course, participants will learn to program in Python. The course is aimed at participants new to the language who may or may not have experience with other programming languages. This course is taught using the latest version of Python; however, differences between the latest version of Python and older versions are noted.

Target Audience

This course is intended for:

- Persons who want to learn Python.

Prerequisites

To attend this course, it will be helpful if candidates have, though it is not a requirement:

- Some programming experience.

Course Objectives

Upon successful completion of this course, attendees will be able to:

- Understand how Python works and what it is good for.
- Understand Python's place in the world of programming languages.
- Work with and manipulate strings in Python.
- Perform math operations with Python.
- Work with Python sequences: lists, arrays, dictionaries, and sets.
- Collect user input and output results.
- Perform flow control processing in Python.
- Write to and read from files using Python.
- Write functions in Python.
- Handle exceptions in Python.
- Work with dates and times in Python.

Course Topics

Module 1: Python Basics

- Running Python
- Hello, World!
- Literals
- Python Comments
- Variables
- Writing a Python Module
- print() Function
- Collecting User Input
- Getting Help

Module 2: Functions and Modules

- Defining Functions
- Variable Scope
- Global Variables
- Function Parameters
- Returning Values
- Importing Modules

Module 3: Math

- Arithmetic Operators
- Assignment Operators
- Built-in Math Functions
- The math Module
- The randon Module

Module 4: Python Strings

- Quotation Marks and Special Characters
- String Indexing
- Slicing Strings
- Concatenation and Repetition
- Common String Methods
- String Formatting
- Formatted String Literals (f-strings)
- Built-in String Functions

Module 5: Iterables: Sequences, Dictionaries, and Sets

- Definitions
- Sequences
- Unpacking Sequences
- Dictionaries
- The len() Function
- Sets
- *args and **kwargs

Module 6: Flow Control

- Conditional Statements
- Loops in Python
- break and continue
- The enumerate() Function
- Generators
- List Comprehensions

Module 7: Virtual Environments

- Create a Virtual Environment
- Activate and Deactivate a Virtual Environment
- Delete a Virtual Environment

Module 8: Regular Expressions

- Regular Expression Syntax
- Python's Handling of Regular Expressions

Module 9: Unicode and Encoding

- Bits and Bytes
- Hexadecimal Numbers
- Encoding

Module 10: File Processing

- Opening Files
- The os and os.path Modules

Course Topics *Continued*

Module 11: Exception Handling

- Wildcard Except Clauses
- Getting Information on Exceptions
- The else Clause
- The finally Clause
- Using Exceptions for Flow Control
- Raising Your Own Exceptions
- Exception Hierarchy

Module 12: Python Dates and Times

- Understanding Time
- The time Module
- The DateTime Module

Module 13: Running Python Scripts from the Command Line

- sys.arg
- sys.path

LABS INCLUDED