Python® Programming: Introduction

Course Specifications

Course Number:

094010

Course Length:

1 day

Course Description

Overview:

Python® has been around for decades, but it's still one of the most versatile and popular programming languages out there. Whether you're relatively new to programming or have been developing software for years, Python is an excellent language to add to your skill set. In this course, you'll learn the fundamentals of programming in Python, and you'll develop applications to demonstrate your grasp of the language.

Course Objectives:

In this course, you will develop simple command-line programs in Python.

You will:

- Set up Python and develop a simple application.
- Declare and perform operations on simple data types, including strings, numbers, and dates.
- Declare and perform operations on data structures, including lists, ranges, tuples, dictionaries, and sets.
- Write conditional statements and loops.
- Define and use functions, classes, and modules.
- Manage files and directories through code.
- Deal with exceptions.

Target Student:

This course is designed for people who want to learn the Python programming language in preparation for using Python to develop web and desktop applications.

Prerequisites:

It is recommended, but not required, that you have at least six months experience programming in an object-oriented language. Even if you don't, this course can be useful to those that are new to programming.

To ensure your success in the course, you should have at least a foundational knowledge of personal computer use. You can obtain this level of skills and knowledge by taking either of the following Logical Operations courses, or have equivalent experience:

- *Using Microsoft® Windows® 8.1*
- *Microsoft® Windows® 8.1: Transition from Windows® 7*

Course-specific Technical Requirements

Hardware

For this course, you will need one computer for each student and one for the instructor. Each computer will need the following minimum hardware configurations:

- 1 GHz or faster 64-bit (x64) processor
- 2 gigabyte (GB) RAM
- 30 GB available hard disk space
- Keyboard and mouse (or other pointing device)
- 1,024 x 768 resolution monitor recommended
- Projection system to display the instructor's computer screen

Software

- Windows 10/8.1/8/7/Vista (64-bit).

  This course was successfully keyed on Windows 10. Some activity steps may not key exactly as written if students key on a different version of Windows.

- Python version 3.4.2 (**python-3.4.2.amd64.msi**).
- PyCharm Community Edition version 3.4.1 (**pycharm-community-3.4.1.exe**).

  Both Python and PyCharm are distributed with the course data files. Python is distributed under the Python Software Foundation License (PSFL). PyCharm Community Edition is distributed under the Apache License 2.0.

- If necessary, software for viewing the course slides. (Instructor machine only.)

Course Content

Lesson 1: Setting Up Python and Developing a Simple Application

Topic A: Set Up the Development Environment

Topic B: Write Python Statements

Topic C: Create a Python Application

Topic D: Prevent Errors

Lesson 2: Processing Simple Data Types

Topic A: Process Strings and Integers

Topic B: Process Decimals, Floats, and Mixed Number Types

Lesson 3: Processing Data Structures

Topic A: Process Ordered Data Structures

Topic B: Process Unordered Data Structures

Lesson 4: Writing Conditional Statements and Loops in Python

Topic A: Write a Conditional Statement

Topic B: Write a Loop

Lesson 5: Structuring Code for Reuse

Topic A: Define and Call a Function

Topic B: Define and Instantiate a Class

Topic C: Import and Use a Module

Lesson 6: Writing Code to Process Files and Directories

Topic A: Write to a Text File

Topic B: Read from a Text File

Topic C: Get the Contents of a Directory

Topic D: Manage Files and Directories