Python® Programming: Advanced

Duration: 3 Days

Course Description:

Python® continues to be a popular programming language, perhaps owing to its ability to get a lot of work done in few lines of code, and its versatility. Python is useful for developing custom software tools, applications, web services, and cloud applications. In this course, you'll build upon your basic Python skills, learning more advanced topics such as object-oriented programming patterns, development of graphical user interfaces, data management, threading, unit testing, and creating and installing packages and executable applications.

Course Objectives:

In this course, you will expand your Python proficiencies. You will:

- Create object-oriented Python applications.
- Design and create a GUI.
- Store data in a database from Python applications.
- Communicate using client/server network protocols.
- Manage multiple processes with threading.
- Implement unit testing.
- Package an application for distribution.

Prerequisites:

To ensure your success in this course, you should have experience with object-oriented programming and Python 2.x or 3.x. You can obtain this level of skill and knowledge by taking the following Logical Operations course:

- Python® Programming: Introduction

Target Audience:

This course is designed for existing Python programmers who have at least one year of Python experience and who want to expand their Python proficiencies.

Course Outlines:

Lesson 1: Using Object-Oriented Python

- ➢ Topic A: Create and Use Classes in an Application
- ➢ Topic B: Use Magic Methods
- ➢ Topic C: Incorporate Class Factories

Lesson 2: Creating a GUI

- ➢ Topic A: Design a GUI
- ➢ Topic B: Create and Arrange a GUI Layout
- ➢ Topic C: Interact with User Events

Lesson 3: Using Databases

- ➢ Topic A: Basics of Data Management
- ➢ Topic B: Use SQLite Databases
- ➢ Topic C: Manipulate SQL Data

Lesson 4: Network Programming

- ➢ Topic A: Basics of Network Programming
- ➢ Topic B: Create a Client/Server Program

Lesson 5: Managing Multiple Processes with Threading

- ➢ Topic A: Create a Threaded Application
- ➢ Topic B: Manage Thread Resources

Lesson 6: Implementing Unit Testing

- ➢ Topic A: Test-Driven Development
- ➢ Topic B: Write and Run a Unit Test Case
- ➢ Topic C: Create a Test Suite

Lesson 7: Packaging an Application for Distribution

- ➢ Topic A: Create a Package Structure
- ➢ Topic B: Generate the Package Distribution Files
- ➢ Topic C: Generate a Windows Executable

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