Python Programming - Advanced

Course Overview

Students will build upon 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.

Who Should Attend

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 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.

Course Outline

1 USING OBJECT-ORIENTED PYTHON
Create and Use Classes in an Application
Use Magic Methods
Incorporate Class Factories

2 CREATING A GUI
Design a GUI
Create and Arrange a GUI Layout
Interact with User Events

3 USING DATABASES
Basics of Data Management
Use SQLite Databases
Manipulate SQL Data

4 NETWORK PROGRAMMING
Basics of Network Programming
Create a Client/Server Program
5 MANAGING MULTIPLE PROCESSES WITH THREADING
Create a Threaded Application
Manage Thread Resources

6 IMPLEMENTING UNIT TESTING
Test-Driven Development
Write and Run a Unit Test Case
Create a Test Suite

7 PACKAGING AN APPLICATION FOR DISTRIBUTION
Create a Package Structure
Generate the Package Distribution Files
Generate a Windows Executable