Python Advanced

Python

About The Course

This 2-day advanced Python course will provide the students with skills and techniques for flow control, including emulating the switch statement. You will also learn the methods of working with bytes and the internals of objects. In addition, this course covers more advanced topics about using descriptors, metaclasses, class decorators, and abstract base classes, among others.

Duration: 2 days

Class size: 10 students max

Times: 9:00am - 5:00pm

Price: *Refer to our website for current course and package pricing*

After the course?

Each student will receive:

- Certificate of completion
- Training manual
- 12 months FREE email support
- FREE class re-sit (if necessary)

Who Should Do This Course?

This course is ideal for those who would like to learn more advanced skills on various techniques, shortcuts, and tips for writing more professional python code. It will lead you on from being a competent programmer to becoming a master.

Prerequisites

This course assumes you have done the beginner and intermediate courses or have experience and a solid understanding of the following Python concepts: packages; lambda expressions; decorators and closures; properties, static and class methods; formatting and managing strings and representations; Using floats, real and complex numbers; detailed understanding of iterations, mapping, filtering and the reduce function; comprehensive understanding collections and protocols; handling exceptions and assertions; using context managers and introspection.

Content

Unit 1: Advanced Flow Control

- Using Else Clauses on Loops
- Investigating an Alternative to Loop Else Clauses
- Using the Try..Except..Else Construct
- Emulating Switch
- Dispatching on Type

Unit 2: Byte Oriented Programming

- Understanding Bitwise Operators
- Investigating the Bytes Type in Depth
- Using the Mutable Bytearray Sequence
- Interpreting Byte Streams with the Struct Module
- Using Memory Views
- Using Memory-Mapped Files

Unit 3: Object Internals and Custom Attributes

- Understanding How Python Objects are Stored?
- Using Vars() to Access Dict
- Overriding Getattribute()
- Using Special Methods which Bypass Getattribute ()
- Locating the Methods
- Reducing Memory Usage Using Slots

Unit 4: Descriptors

- Reviewing Properties
- Unravelling the Property Function
- Implementing a Descriptor
- Retrieving Descriptors on Classes
- Understanding Data versus Non-Data Descriptors

Unit 5: Instance Creation

- Understanding Instance Creation
- Customising Allocation

Unit 6: Metaclasses

- Understanding the Object Class
- Understanding How a Class Is Allocated and Initialised
- Passing Additional Arguments to the Metaclass
- Investigating Metaclass Methods and Visibility
- Utilising Fine-Grained Instantiation Control with Metaclass Call()
- Examining Practical Metaclass Examples
- Understanding Inheritance in Metaclasses

Unit 7: Class Decorators

- Introducing Class Decorators
- Enforcing Constraints with a Class Decorator
- Enforcing Constraints for Properties
- Chaining Class Decorators

Unit 8: Abstract Base Classes

- Understanding Abstract Base-Classes
- Discussing Why Abstract Base-Classes Are Useful?
- Understanding Duck Typing
- Understanding Abstract Base-Classes in Python
- Defining Subclasses with Subclasscheck()
- Understanding Non-Transitivity of Subclass Relationships
- Resolving Method Calls in Virtual Base-Classes
- Investigating Library Support for Abstract Base-Classes
- Combining Abstractmethod with Other Decorators
- Propagating Abstractness through Descriptors
- Fixing Our @Invariant Class Decorator with Abcs

Looking for course dates?

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Alternatively please contact our office on 1300 888 724**