Python Programming 2

Category: Software Development & Programming | **Vendor:** Various

Duration: 24.00 hours (3 days) **19.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

The Python Programming 2 course comprises sessions dealing with advanced object orientation, iterators and generators, comprehensions, decorators, multithreading, functional programming, web services, and unit testing.

The delegate will learn how to exploit advanced features of the Python language to build complex and efficient applications.

Exercises and examples are used throughout the course to give practical hands-on experience with the techniques covered.

About This Course

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Who Should Attend

The Python Programming 2 course is designed for existing Python developers who have a good grounding in the basics and want to exploit some of the advanced features of the language.

For the delegate for whom Python is their first programming language, we recommend taking the Python Programming 1 (PYP1) course first, then taking some time to practice the skills gained, before returning to take the Python Programming 2 course.

Prerequisites & Entry Requirements

General Prerequisites:

Delegates should be able to build Python applications that exploit all fundamental elements of the language including variables and expressions, conditions and loops, functions, objects, and lists.

This knowledge can be gained by attendance on the pre-requisite Python Programming 1 (PYP1) course.

Learning Outcomes

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

This course aims to provide the delegate with the knowledge to be able to interpret, write, and troubleshoot complex Python applications exploiting inheritance and polymorphism, mixins, composition and aggregation, iterators, generators, decorators, comprehension, concurrency, functional programming, and RESTful web services.

The delegate will learn and acquire skills as follows:

- Encapsulating classes
- Exploiting polymorphism using inheritance and mixins
- Associating objects via composition and aggregation
- Working with static members
- Using iterators as an alternative to for
- Constructing custom iterators
- Constructing functions that yield generators
- Manipulating lists, sets, and dictionaries using comprehension
- Exploiting aspect oriented programming using decorators
- Writing multithreaded code
- Sharing data between threads
- Processing collections using lambdas
- Building RESTful clients
- Building RESTful APIs
- Testing units of code

Detailed Course Outline

Day 1

Course Introduction

- Administration and Course Materials
- Course Structure and Agenda
- Delegate and Trainer Introductions

Session 1: ADVANCED OBJECT ORIENTATION

- The self Keyword
- Constructors and Destructors
- Encapsulation
- Inheritance
- Polymorphism
- Abstract Classes
- Multiple Inheritance and Mixins
- Composition and Aggregation
- Static Members

Session 2: ITERATORS & GENERATORS

- Iterables
- Iterators
- Custom Iterators
- Generators
- Yield vs. Return

Session 3: COMPREHENSIONS

- List Comprehension
- Set Comprehension
- The zip Function

- Dictionary Comprehension

Day 2

Session 4: FUNCTIONAL PROGRAMMING

- Functional Programming
- Lambdas
- Immutability
- Mapping
- Filtering
- Reducing

Session 5: DECORATORS

- Decorators
- Decorator Functions
- Decorator Annotations
- Decorator Use Cases
- Labs

Session 6: MULTITHREADING

- Threads
- Multithreading
- Thread Construction
- Thread Execution
- Thread Sleep

- Joins

- Data Sharing

- Synchronisation

- Multithreading vs. Multiprocessing

Day 3

Session 7: WEB SERVICES

- RESTful Web Services

- JSON Data

- CRUD and HTTP

- RESTful Clients

- RESTful APIs

Session 8: UNIT TESTING

- Unit Testing Terminology

- Test Classes

- Test Fixtures

- Test Cases

- Assertions

- Test Runners

Skills You Will Learn:

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Frequently Asked Questions

Q: What delivery options are available for Python Programming 2?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 3-day Python Programming 2 course provides up to 19.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Python Programming 2 training?

The training takes place over 3 day(s), with each day lasting approximately 24.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Python Programming 2?

Yes, we provide corporate training, dedicated training, and closed classes for Python Programming 2. Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: Python Programming 2, Programming, PYP2

Q: Why choose Nexus Human for Python Programming 2?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Python Programming 2 training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

Nexus Human

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