Mastering Python Programming Boot Camp - TTPS4820

Hands-on, Complete Python: Core Python Skills, Regular Expressions, Classes, OO, Binary Data, Network Services & More

Duration: 5 Days
Skill Level: Introductory
Available Format: Instructor-Led Online; Instructor-Led, Onsite In Person ; Blended; On Public Schedule

As a cornerstone of our **Python SkillJourney** series, our **Mastering Python Programming Boot Camp** stands as a top-tier training experience, acclaimed for transforming Python novices into capable developers.

What You'll Learn

Overview

As a cornerstone of our **Python SkillJourney** series, our **Mastering Python Programming Boot Camp** stands as a top-tier training experience, acclaimed for transforming Python novices into capable developers. Whether you aim to streamline routine tasks through automated Python scripts or venture into the world of web development, this course serves as both a launchpad and a compass, guiding you toward exciting horizons in analytics, data science, machine learning, and beyond.

Working in a hands-on learning environment, you'll be guided through an immersive journey from Python's foundational elements, like script writing and running, all the way to its more sophisticated capabilities - think file operations, regular expressions, and binary data manipulation. We place particular emphasis on Python-exclusive features, such as tuples, array slices, and nuanced output formatting, ensuring that you not only know Python but know it well. The curriculum is designed for practicality, immersing you

into Python's extensive module functionality and ensuring that your learning translates directly into real-world task execution.

The course is rich with hands-on activities, challenge labs, knowledge checks, valuable discussions and focused projects that can be done individually or in groups. You'll exit this program equipped with the knowledge, skills and confidence needed to put your new Python skills right to work.

Objectives

This course combines engaging instructor-led presentations and useful demonstrations with valuable hands-on labs and engaging group activities. Throughout the course you'll learn how to:

- Create working Python scripts following best practices
- Use python data types appropriately
- Read and write files with both text and binary data
- Search and replace text with regular expressions
- Get familiar with the standard library and its work-saving modules
- Use lesser known but powerful Python data types
- Create real-world, professional Python applications
- Work with dates, times, and calendars
- Know when to use collections such as lists, tuples, dictionaries, and sets
- Understand Pythonic features such as list comprehensions and generators
- Write robust code using exception handling
- Create and use virtual environments

If your team requires different topics, additional skills or a custom approach, our team will collaborate with you to adjust the course to focus on your specific learning objectives and goals.

Audience

This course is geared for technical users who are new to Python. Roles might include developers, software engineers, data analysts who want to enhance data processing,

system administrators and web site administrators who want to use Python to support their server installations, developers who want more efficient web solutions, as well as anyone else who wants to automate or simplify common tasks with the use of Python scripts.

If you are coming from a non-technical background, you might consider the **TTPS4803: Python for Everyone: Getting Started with Python Basics for Non-Developers (4 days)** as an alternative to this course.

Pre-Requisites

To ensure a smooth learning experience and maximize the benefits of attending this course, you should have the following prerequisite skills:

- At least some prior hands-on experience with scripting or programming. You don't need to be an expert in either, but you should have had some exposure and should be coming from a technical background.
- Working with Unix or Linux, and familiarity with using the command line interface for simple tasks, such as file navigation and executing commands.
- Basic familiarity working with text editors like Notepad, or IDEs, would be helpful as the course includes hands-on lab sessions requiring code editing.

Agenda

The Python Environment

- Starting Python
- Using the interpreter
- Running a Python script
- Editors and IDEs

Variables and Values

- Using variables

- Builtin functions
- String data
- Numeric data
- Converting types

Basic input and output

- Writing to the screen
- String formatting
- Command line arguments
- Reading the keyboard

Flow Control

- About flow control
- The **if** statement
- Relational and Boolean values
- **while** loops
- Exiting from loops

Array types

- Sequence types in general
- Lists and list methods
- Tuples
- Indexing and slicing
- Iterating through a sequence
- Sequence functions, keywords, and operators
- List comprehensions and generators

Working with files

- File I/O overview
- Opening a text file
- Reading a text file

- Writing to a text file

Dictionaries and Sets

- About dictionaries
- Creating dictionaries
- Getting values
- Iterating through a dictionary
- About sets
- Creating sets
- Working with sets

Functions

- Defining functions
- Returning values
- Parameters and arguments
- Variable scope

Sorting

- The sorted() function
- Custom sort keys
- Lambda functions
- Sorting in reverse
- Using min() and max()

Exception handling and logging

- Exceptions
- Using try/catch/else/finally
- Handling multiple exceptions
- Logging setup
- Basic logging

Modules and Packages

- Creating Modules
- The import statement
- Module search path
- Using packages
- Function and Module aliases

Introduction to Classes

- About object-oriented programming
- Defining classes
- Constructors
- Understanding self
- Properties
- Instance Methods and data
- Class methods and data
- Inheritance

Regular Expressions

- RE syntax overview
- RE objects
- Searching and matching
- Compilation flags
- Groups and special groups
- Search-and-replace
- Splitting strings

Dates and times

- Date and time representations
- Parsing dates from text
- Formatting as text
- Converting representations

- Calendar data
- Time zones

Working with the file system
- Paths, directories, and filenames
- Checking for existence
- Permissions and other file attributes
- Walking directory trees
- Using shutil for file operations

Advanced data handling
- Defaultdict and Counter
- Pretty-printing data structures
- Compressed archives (zip, gzip, tar, etc.)
- Persistent data

Network programming
- Using requests
- Grabbing web content
- Sending email
- Using SSH for remote access
- Using FTP

Effective Scripts
- Reading input files a la Unix
- Parsing command-line options
- Detecting the current platform
- Implementing logging

Virtual Environments
- Why are virtual environments needed

- Creating a virtual env
- Replicating an environment
- Virtual environment issues

Addendum & Resources

Follow On Courses

TTPS4876	Next-Level (Intermediate) Python for Data Science and /or Machine Learning
TTPS4878	Hands-On Data Analysis with Panda
TTPS4879	Hands-On Predictive Analytics with Python

Related Courses

TTPS4824	Python Essentials for Networking & Systems Administration
TTPS4872	Quick Start to Python for Data Science Primer: A Hands-on Technical Overview
TTPS4874	Applied Python for Data Science and Engineering
TTPS4894	Python Security | Introduction to Python Programming for Security Analysts & Professionals
TTPS4820	Mastering Python Programming Boot Camp
TTPS4800	Introduction to Python Programming Basics
TTPS4873	Fast Track to Python for Data Science and/or Machine Learning

For More Information

Please contact us or call 844-475-4559 toll free for more information about our training services (instructor-led, self-paced or blended), coaching and mentoring services, public course enrollment or questions, partner programs, courseware licensing options and more.