Quick Start to Python Primer for Data Science Training

Duration: **2 Day**

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Overview

New - Explore basic Python skills to kickstart your data analysis journey—perfect for business users stepping into data-driven roles.

Dive into the dynamic world of Python with our Quick Start to Python for Data Science Primer, tailored specifically for data analysts, business analysts, and technical managers keen on grasping the essentials of Python. This introductory course offers a friendly first step into the programming language that's become a staple in data science. Through engaging instructor-led presentations and light hands-on activities, you'll explore Python in various environments, including traditional scripts and interactive web notebooks like Jupyter. Discover how to execute simple scripts, manage data with fundamental Python structures, and apply basic programming concepts to real-world data scenarios.

By the end of this course, you'll not only understand the core functionalities of Python but also appreciate how it can be leveraged in data science applications. You'll be equipped to read and write basic files—a crucial skill for data management—and get introduced to powerful data science tools such as NumPy and Pandas for preliminary data analysis. Whether you're preparing for more advanced training or looking to gain a quick, practical understanding of Python for your professional needs, this course promises a clear and concise introduction to the skills necessary to kickstart your journey in data science.

Who Should Attend?

This introductory-level technical course is geared for data analysts, developers, engineers or anyone new to Python, who are tasked with utilizing Python for data analytics tasks.

Prerequisites

This course is geared for technical users, so some familiarity with basic scripting skills is recommended. Students should be comfortable working with files and folders as well as command line scripting.

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What You Will Learn

This hands-on course provides a solid starting point for business analysts, technical managers, or anyone interested in understanding the basics of Python in the context of data science. Attendees will be able to:

- **Run Python Scripts**: You will be able to execute basic Python scripts using both traditional script-based environments and interactive web notebooks like Jupyter, which is fundamental for beginning any data science project.
- **Manipulate Simple Data Structures**: Gain the ability to handle simple operations with Python's standard data structures (such as lists and dictionaries), enabling you to organize and manage data efficiently.
- **Apply Basic Python Commands for Data Analysis**: Learn to use essential Python commands and functions for basic data analysis tasks, giving you a taste of what Python can offer in processing and analyzing data.
- **Read and Write Basic Files**: Develop the skills to open, read, write, and close text files with Python, which is crucial for importing data for analysis and exporting results.

Get **Acquainted with Python's Data Science Libraries**: Acquire a foundational awareness of how libraries like NumPy and Pandas are used in Python for tasks like statistical analysis and data manipulation, preparing you for further exploration in the field of data science.

Outline

1. **Getting Started: Explore the Python Environment**
   - Python in the Shell
   - The python interpreter
   - Getting started with Jupyter notebook)
   - Python in Web Notebooks (iPython, Jupyter, Zeppelin)
   - Exploring Python, Notebooks, and Data Science
2. **Variables and Values**
   - Using variables
   - Builtin functions
   - Strings
   - Numbers
   - Converting among types
3. **Basic Input and output**
   - Writing to the screen
   - Command line parameters
4. **Flow Control**
   - About flow control
   - White space
   - Conditional expressions
   - Relational and Boolean operators
   - While loops
   - Alternate loop exits
5. **Sequences, Arrays, Dictionaries and Sets**
   - About sequences
   - Lists and list methods
   - Tuples

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- Indexing and slicing
- Iterating through a sequence
- Sequence functions, keywords, and operators
- List comprehensions
- Generator Expressions
- Nested sequences
- Working with Dictionaries
- Working with Sets

6. **Working with files**
   - File overview
   - Opening a text file
   - Reading a text file
   - Writing to a text file
   - Reading and writing raw (binary) data
7. **Functions, modules, & packages**
   - Defining functions
   - Parameters
   - Variable Scope
   - Creating modules
   - Using import
   - Creating packages
8. **Python and Data Science**
   - Python data science overview
   - NumPy Overview (with SciPy)
   - Pandas Overview
   - MatPlotLib Overview