Mastering Python for Analytics

Duration: 40 Hours (5 Days)

Overview

The Mastering Python for Analytics course is designed to equip learners with the essential Python programming skills needed to perform Data analysis. This comprehensive Python analytics course begins with the basics in Module 1, where students learn to execute Python code, understand the syntax, and write simple scripts. As they progress through subsequent modules, they delve into more complex topics such as Functions, Math operations, String manipulation, and data structures like dictionaries and sets.Emphasizing practical applications in analytics, the course covers Flow control for logical operations, Object-oriented programming to structure code effectively, and introduces essential libraries like NumPy, Pandas, Seaborn, and Matplotlib. These libraries are pivotal for Data analysis, allowing students to handle large datasets, perform statistical analyses, and create compelling visualizations. By the end of this Python for Analytics course, learners will have a solid foundation in Python programming and the skills to analyze and visualize data proficiently.

Audience Profile

Mastering Python for Analytics is designed for professionals seeking to enhance their data analysis skills using Python.

- Target Audience:
- Data Analysts
- Business Analysts
- Data Scientists
- Software Engineers interested in data science
- IT Professionals looking to transition into analytics roles
- Researchers requiring data analysis tools
- Marketing Analysts
- Financial Analysts
- Bioinformatics Professionals
- Academic Students and Professors in computer science or related fields
- Machine Learning Enthusiasts
- Quantitative Analysts

Course Syllabus

Module 1: Python Basics

- Running Python
- Hello, World!
- Literals
- Python Comments
- Variables
- Writing a Python Module
- print () Function
- Collecting User Input

- Getting Help

Module 2: Functions and Modules

- Defining Functions
- Variable Scope
- Global Variables
- Function Parameters
- Returning Values
- Importing Modules

Module 3: Math

- Arithmetic Operators
- Assignment Operators
- Built-in Math Functions
- The math Module
- The randon Module

Module 4: Python Strings

- Quotation Marks and Special Characters
- String Indexing
- Slicing Strings
- Concatenation and Repetition
- Common String Methods
- String Formatting
- Formatted String Literals (f-strings)
- Built-in String Functions

Module 5: Iterables: Sequences, Dictionaries, and Sets

- Definitions
- Sequences
- Unpacking Sequences
- Dictionaries
- The len() Function
- Sets
- *args and **kwargs

Module 6: Flow Control

- Conditional Statements
- Loops in Python
- break and continue
- The enumerate() Function
- Generators
- List Comprehensions

Module 7: Class and Objects

- Attributes

- Behaviors
- Classes vs. Objects
- Attributes and Methods
- Private Attributes
- Properties
- Documenting Classes
- Inheritance
- Static Methods
- Class Attributes and Methods
- Abstract Classes and Method

Module 8: NumPy – Python for Data Analysis

- Introduction
- ND array Object
- Data Types
- Array Attributes
- Array Creation Routines
- Array from existing data
- Numerical ranges
- Array Indexing and Slicing
- Advanced Indexing
- Iterating over Array
- Array Manipulation
- Arithmetic Operators
- Binary Operators
- String Functions
- Mathematical Functions
- Statistical Functions

Module 9: Pandas – Python for Data Analysis

- Introduction to Pandas
- Series
- DataFrames
- Missing Data
- Group by
- Merging Joining and Concatenating
- Operations
- Data Input and Output
- Pivot Table
- Pivot Table Filteringrse

Module 10: Seaborn

- Introduction to Seaborn
- Importing Dataset
- Seaborn Vs Matplotlib
- Using Seaborn with Matplotlib
- Loading a built-in Seaborn data

- Loading a Pandas Dataframe
- LinePlot
- Distplot
- BarGraph
- ScatterPlot
- JointPlot (KDE)
- StripPlot
- Box
- Point Plot
- FacetGrid
- Pair Grid
- CatPlot

Module 11: Matplotlib

- Introduction to Matplotlib
- Exploring Data using Python
- Matplotlib with Jupyter
- Load data
- How to pyplot Works
- Troubleshooting issues
- Line Chart
- Multi Line Plot
- Fill Plot
- Bar Chart
- Pie Chart
- Histogram
- Scatterplot
- Themes
- Scatter
- Subplot
- 3d plot
- Grid
- Save Image
- Legend