

KOENIG SOLUTIONS • COURSE OUTLINE

Mastering Python for Analytics (Data Visualization Focus)

Learn to write Python scripts and use NumPy, Pandas, Seaborn and Matplotlib to analyse and visualize data.

5 Days

40 HOURS

11

MODULES

115

TOPICS

COURSE 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.

WHO THIS COURSE IS FOR

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

What You Will Learn

- Write and run basic Python scripts and modules
- Define functions and manage variable scope
- Apply arithmetic, assignment and built-in math operations
- Manipulate strings using slicing, methods and f-strings
- Work with sequences, dictionaries, sets and comprehensions
- Implement classes, inheritance and object-oriented structures
- Analyse data arrays and datasets with NumPy and Pandas
- Create visualizations with Seaborn and Matplotlib

COURSE SYLLABUS

11 Modules, 115 Topics

01

Python Basics

TOPICS

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

02

Functions and Modules

TOPICS

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

03

Math

TOPICS

Arithmetic Operators · Assignment Operators · Built-in Math Functions · The math Module · The random Module

04

Python Strings

TOPICS

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

05

Iterables: Sequences, Dictionaries, and Sets

TOPICS

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

06

Flow Control

TOPICS

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

07

Class and Objects

TOPICS

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

08

NumPy - Python for Data Analysis

TOPICS

- 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

09

Pandas - Python for Data Analysis

TOPICS

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

10

Seaborn

TOPICS

- 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

11

Matplotlib

TOPICS

- 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

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training

Live Online Classes (ILO)

Fly-Me-A-Trainer (FMAT)

Flexi (Self-Paced)

1-on-1 Training

Ready to Get Started?

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