

PY-DV



Data Visualization with Python

DURATION	LEVEL	TECHNOLOGY	DELIVERY METHOD	TRAINING CREDITS
3 Days	Intermediate	Python	Instructor Led	NA

INTRODUCTION

With so much data being continuously generated, developers with a knowledge of data analytics and data visualization are always in demand. With Data Visualization with Python, you'll learn how to use Python with NumPy, Pandas, Matplotlib, and Seaborn to create impactful data visualizations with real-world, public data.

Data Visualization with Python takes a hands-on approach to the practical aspects of using Python to create effective data visuals. It contains multiple activities that use real-life business scenarios for you to practice and apply your new skills in a highly relevant context.

AUDIENCE PROFILE

Developers and Scientists: This course is designed for professionals with a background in development or science who want to either:

- **Enter the field of data science:** The course offers a foundational understanding of data visualization libraries and their application in real-world scenarios.
- **Enrich their projects:** The course empowers these professionals to use data visualization to enhance their existing projects, both personal and professional.

Beginners with programming experience: While no prior experience in data analytics or visualization is required, the course does assume:

- **Basic knowledge of Python:** Familiarity with Python syntax and functionalities is helpful to grasp the code used in the course.
- **High school level mathematics:** Understanding of mathematical concepts will aid in comprehending the statistical aspects of data visualization.

PREREQUISITES

Before attending this course, delegates must have basic Python programming experience. Data Visualization with Python is designed for developers and scientists, who want to get into data science or want to use data visualizations to enrich their personal and professional projects. You do not need any prior experience in data analytics and visualization, however, it'll help you to have some knowledge of Python and familiarity with high-school-level mathematics.

COURSE OBJECTIVES

- **Understand and use various plot types with Python:** The course will equip you with the ability to choose and create appropriate visualizations for different data scenarios using Python libraries.
- **Work with industry-standard tools like Matplotlib, Seaborn, and Bokeh:** You'll gain hands-on experience with these popular data visualization libraries, expanding your toolkit for creating impactful visualizations.
- **Improve your Python data wrangling skills:** The course will enhance your ability to manipulate and prepare data for visualization using Python techniques.
- **Apply data visualization to real-world problems:** Through exercises that utilize real-world data, you'll gain practical experience in using data visualization for effective communication and analysis.

COURSE CONTENT

Lesson 1: Importance of data visualization and data exploration

- Introduction to data visualization and its importance
- Overview of statistics

- A quick way to get a good feeling for your data
- NumPy
- Pandas

Lesson 2: All you need to know about plots

- Choosing the best visualization
- Comparison plots
- Relation plots
- Composition plots
- Distribution plots
- Geo plots
- What makes a good plot?

Lesson 3: Introduction to NumPy, Pandas, and Matplotlib

- Overview and differences of libraries
- Matplotlib
- Seaborn
- Geo plots with geoplotlib
- Interactive plots with bokeh

Lesson 4: Deep Dive into Data Wrangling with Python

- Matplotlib
- Pyplot basics
- Basic plots
- Legends
- Layouts
- Images
- Writing mathematical expressions

Lesson 5: Simplification through Seaborn

- From Matplotlib to Seaborn
- Controlling figure aesthetics
- Color palettes
- Multi-plot grids

Lesson 6: Plotting geospatial data

- Geoplotlib basics
- Tiles providers
- Custom layers

Lesson 7: Making things interactive with Bokeh

- Bokeh basics
- Adding Widgets
- Animated Plots

ASSOCIATED CERTIFICATIONS & EXAM

None