Data Science with Python

3 days

The world of **Data Science** is rapidly establishing itself as an increasingly relevant skill in the job market. Python, known for its versatility, is one of the leading tools for analysing and manipulating data. This course focuses on the use of essential libraries in data science, such as **NumPy**, **Pandas**, **Matplotlib**, and **Seaborn**, providing a solid foundation for tackling data analysis and management projects.

Course Objectives

At the end of the course, the participant will be able to:

- Create and manipulate arrays using **NumPy**.
- Use **Pandas** tools for managing and cleaning large datasets.
- Apply effective graphical visualizations with **Matplotlib** and **Seaborn**.
- Perform advanced mathematical calculations and handle complex data efficiently.

Target Audience

This course is aimed at:

- IT professionals who want to expand their Data Science skills.
- Students and graduates in STEM disciplines interested in acquiring data analysis skills.
- Anyone looking to approach the world of Data Science with a basic knowledge of Python.

Course Duration

3 days

Course Program

Day 1 - Introduction to NumPy and Pandas

- **NumPy**: Introduction to the fundamental library for numerical computing.
- **Creating and Accessing a NumPy Array**: Building and manipulating multidimensional arrays.
- **Shaping a NumPy array**: Modifying and restructuring arrays.
- **Mathematical formulas and vectorization**: Optimizing calculations with NumPy.
- **NumPy Random**: Generating random numbers and simulations.
- **Series and Data Frames in Pandas**: Introduction to Pandas' main objects.
- **Creating and Loading a Data Frame**: Importing and Managing Datasets.

Day 2 - Data Manipulation with Pandas and Data Visualization with Matplotlib

- **Row and Column Selection (loc and iloc):** Extract data using labels or indexes.
- **Data Cleansing with Pandas**: Preprocessing Techniques for incomplete or dirty Datasets.
- **Matplotlib**: Introduction to the most widely used data visualization library.
- Creation of basic **charts**: lines, bars, scatter plots.
- Customize charts: **colors**, **labels,** and **titles**.

Day 3 – Advanced Visualization with Seaborn

- **Seaborn**: In-depth exploration of the statistical data visualization library.
- Creation of **heatmaps**, **pairplots** and violin charts.
- **Integration** between **Matplotlib** and **Seaborn** for advanced visualizations.
- **Final Project:** Complete analysis of a dataset, from cleaning to visualization.

The Teacher

With years of experience in corporate training, I am well-versed in teaching advanced tools such as Power BI, Python and Tableau. Thanks to the practical and straightforward approach, course participants implement effective solutions right from the start.

Contact me for more information

Would you like to train yourself or your team in Power BI, Python, Tableau, or ChatGPT? Write to me for a free consultation or to receive more details about personalized courses.

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