Certified Professional Training

Data Analysis & Visualization (Python)

Practical Training on Real World Industrial Projects

Target Learners: Undergraduates and Job Professionals

Pre-requisite: Basic computer technological skills

Duration: 2 Months (2 sessions each week = Total 16 sessions)

Credit Hours: 32 (4 Hours each week)

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Enrollment Form: https://forms.gle/wHUTGTGtAAba5AjN6

Key Takeaways

After completing this course, participants will be able to:

- Understand the complete data analysis workflow from raw data to insights.
- Create and manipulate NumPy arrays, including data types and reshaping operations.
- Apply NumPy mathematical and statistical functions for numerical analysis.
- Work with Pandas Series and DataFrames for structured data handling.
- Read from and write to CSV and Excel files using Pandas.
- Select, filter, and index data efficiently for analysis tasks.
- Identify and handle missing values using appropriate techniques.
- Clean, transform, and prepare datasets for analysis.
- Calculate and interpret descriptive statistics such as mean, median, and standard deviation.
- Perform group-based analysis using GroupBy and aggregation functions.
- Understand the role of data visualization in data analysis and storytelling.
- Create basic visualizations using Matplotlib (line, bar, scatter, histograms).
- Generate statistical plots using Seaborn for deeper insights.
- Conduct Exploratory Data Analysis (EDA) to identify trends, patterns, and anomalies.
- Apply data analysis and visualization skills to complete a mini project independently.

Approved by

ViLabs Academy, Advisory Board Members (ABM) comprises senior educators, industry leaders, and global technology experts who provide strategic guidance across training design and curriculum development. The Board actively reviews course content, ensures alignment with current industry demands, and validates learning outcomes against global skill standards. Their involvement guarantees that all ViLabs Academy programs remain credible, practical, and workforce-ready, giving learners and partners confidence in the quality and relevance of our education.

Software/Tools to be learn

- Anaconda
- Jupyter Notebook

Course Outline

- Introduction to Data Analysis Workflow
- NumPy Basics (arrays, dtype, reshaping)
- NumPy Mathematical & Statistical Functions
- Pandas Introduction (Series & DataFrame)
- Reading & Writing CSV/Excel Files
- Data Selection, Filtering & Indexing
- Handling Missing Values
- Data Cleaning & Transformation
- Descriptive Statistics (mean, median, std, etc.)
- GroupBy & Aggregations
- Introduction to Data Visualization
- Matplotlib (line, bar, scatter, histogram)
- Seaborn (basic plots)
- Exploratory Data Analysis (EDA)
- Mini Project