

Data Analysis with Python – 1 Week

Module 1 - NumPy

- Installing Numpy | Introduction to Numpy Arrays
- Different operation and functions on Numpy Arrays
- Numpy operations and different functions
- Creating different arrays using Numpy
- Array Indexing and Slicing | Array Functions and Methods
- Different Mathematical Functions | Different Matrix Operations
- Random Numbers | Generate Numbers between a range.

Module 2 - Introduction to Pandas for Data Analysis

- Installing Pandas | Pandas Introduction
- Use of Pandas for Data Analysis
- Series vs DataFrames
- Reading data from CSV and TXT file and databases

Module 3 - Pandas (Series)

- Concept Of Series in Pandas | Creating Series using Pandas
- Series vs List, Series Operations
- Different Functions in Series | Sorting of Series
- Extracting Values from Series
- .value_counts() method, .apply() methods
- Data Cleaning - Dealing with Duplicates and Missing Values

Module 4 - Pandas (DataFrame)

- What is DataFrame and its use | Creating DataFrame
- DataFrame different functions
- Dropping columns/rows from DataFrame
- Display Particular Columns from DataFrame (Subset of DataFrame)
- Add New Column to DataFrame
- Broadcasting Operations in DataFrame | Dropping and Filling Null Values

Module 5 - DataFrame - Continued

- Different Sorting Algorithms in Dataframe
- Filtering Data in Dataframe
- Filtering Data based on Condition.
- Filter Data with AND & OR Operations
- .set_index() & .reset_index() in Pandas
- Retrieve Row Values Using loc and iloc in Pandas
- Set New/Multiple Values for a Specific Cell or Row
- Rename Index Labels or Columns in Pandas
- Delete Rows or Columns in Pandas
- The .nsmallest() and .nlargest(), .where(),.query(),.apply() methods in Pandas

Module 6 - Data Visualization

- Introduction to Data Visualization | Installing Matplotlib and Seaborn
- Line Plot, Scatter Plot, Bar Plot, Histogram, Pie Chart
- Box Plot
- Detecting Outliers
- Heatmap

Highlights & Projects

- Covid – 19 Data Analysis
- IPL Data Analysis
- Titanic Passenger Data Analysis
- Pandas & Numpy Concepts
- Data Visualization
- Daily Recordings will be provided.
- Completely Hands on Session