Python Training: Finance and Time Series

Introduction to Python Training: Finance and Time Series

Module 1: Introduction to Python for Finance

- Overview of Python as a programming tool for finance.
- Install and configure the Python environment with financial libraries.
- Manipulate financial data, data types, and basic operations.

Module 2: Financial Data Analysis with Pandas

- Introduction to the Pandas library for data analysis.
- Load financial data from various sources (CSV files, databases, etc.).
- Clean and preprocess data for in-depth analysis.
- Perform grouping, filtering, and statistical calculations on time series.

Module 3: Financial Data Visualization with Matplotlib and Seaborn

- Introduction to Matplotlib and Seaborn for data visualization.
- Create charts such as price curves, return histograms, and candlestick plots.
- Customize visualizations for effective presentation of financial data.

Module 4: Financial Time Series Analysis

- Understand key concepts in financial time series (volatility, trends, seasonality, etc.).
- Apply time series models such as Moving Average, Autoregression (AR), ARMA, and ARIMA.
- Evaluate and interpret model performance.

Module 5: Predicting Financial Prices with Machine Learning

- Introduction to basic machine learning and regression concepts.
- Use Machine Learning libraries such as Scikit-Learn to predict financial prices.
- Compare regression model performance to achieve accurate predictions.

Module 6: Practical Finance Applications with Python

- Apply acquired skills to solve real-world financial problems.
- Create investment strategies using financial time series analysis.
- Implement risk and portfolio analysis to support informed decision-

making.