Financial Analysis with Python

Duration-45Hrs

Course Fees-@500/Hrs OR 18000

Certification Availability-Yes

Course Content

Python Fundamentals	Installation of Python
	Python data type, numbers, string, variable
	List, Tuples, Ranges, Dictionary, Sets
	Operator and Precedence
	Functions, Packages and Modules
	RW operation on file, Class and Objects
	Python Exceptions, Regular Expressions
Pandas	Creating Pandas DataFrame
	dealing with Rows & Columns in Pandas DataFrame
	Indexing & Selecting Data in DataFrame
	Boolean Indexing
	Working with Missing Data, Text Data
	Merging, Joining, Concatenating
Data Analysis	Reshaping, Reorganizing and Aggregating
	Loading historical Stock data
	Reorganizing the data-concatenation of DF, Merging, Pivoting
	Grouping & Aggregating-Splitting
Time Series	Time series data and Datetime Index
	Creating Time Series with specific frequencies
	Representing intervals of time using periods
	Shifting and lagging Time series data
	Frequencies Conversion of Time series data
	Re-sampling of Time Series
Time Series Stock Data	Obtaining Historical Stock and Index data-from Yahoo
	Visualizing financial time-series data-Plotting closing price, ploting volume-series data, combined price and volume
	Fundamental Financial Calculation-calculating daily simply percentage change, calculating daily cumulative return Analyzing distribution of return
	Moving windows
	Volatility calculation
Trading using Google Trends	A brief on Quantifying Trading behavior in Financial Market using Google Trends

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	Data Collection from Quandl
	Generating Order Signals
	Computing Returns
	Cumulative returns and result of the strategy
Algorithmic Trading	Process of Algorithm Trading-Momentum Strategies, Mean-reversion Strategies
	Moving Averages-Simple and Exponential weighted moving average
	Technical Analysis-Crossovers and Pair Trading
Working with Options	Introducing options
	Options data from Yahoo Finance
	Implied Volatility
	Calculating Payoff on Options-the call option pay off calculation, the put option pay off calculation
	Profit & Loss Calculation- the call option profit and loss of buyer, the call option profit and loss of seller,
	combined payoff charts
	The put option profit and loss of buyer, The put option profit and loss of seller,
Portfolios & Risks	Modern portfolio theory concepts
	Mathematical modeling of portfolio-risk and return, diversification, the efficient frontier
	Modeling a portfolio with pandas
	Constructing an efficient portfolio-gathering historical return for portfolio, formulation of portfolio risks, the Sharpe ratio
	Constructing an optimum portfolio

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