

Data Analysis with Python

Course 3590– 32 Hours

Overview

Python is considered to be one of the most efficient programming languages for data analysis. Using the Pandas library, Python provides fast, flexible, and expressive data structures designed to make working with data both easy and intuitive.

This course will introduce the basics of the Python environment, including fundamental programming concepts such as control structures, functions, and data structures. At its core, this training will provide you a comprehensive toolset for working with data, including techniques for reading and writing diverse files, data cleaning and wrangling, analysis and visualization.

Who Should Attend

This course is mainly intended for Data Analysts, Developers, Business Intelligence professionals, Data Engineers, and other roles responsible for analyzing the organization's data.

Prerequisites

- Previous experience with data analysis
- Basic understanding of SQL
- Basic understanding of Programming concepts

Course Contents

- Python Crash Course
 - o Working with data types
 - o Slicers
 - o Control structures
 - o Understanding Python's Data Structures
 - o Implementing Functions
- Pandas - Series
 - o Understanding one-dimensional labeled arrays
 - o Create a Series from Python objects
 - o Using the read_csv() method
 - o Attributes
 - o Methods
 - o Arguments and Parameters
 - o Extracting Series values

- Pandas – DataFrames
 - Understanding two-dimensional data structures
 - Selecting columns from a DataFrame
 - Adding new columns to a DataFrame
 - Working with Nulls
 - Sorting a DataFrame
 - Filter a DataFrame - conditions and methods
 - Retrieving rows by Index position
 - Delete rows or columns from a DataFrame
 - Rename Index labels or Columns in a DataFrame
 - Common String methods
- Using MultiIndex
 - Understanding multiIndexes in Pandas
 - Creating a multiIndex
 - Extracting rows from a multiIndex
 - Common methods
- Group By
 - Basic operations
 - Retrieving groups
 - Common methods
 - Group by multiple columns
 - Iterating through groups
- Joining and Concatenating Data
 - Join operations between DataFrame objects
 - combining together Pandas objects
- Working with Dates
 - Understanding Python's datetime module
 - Pandas Timestamp and DateTimeIndex objects
 - Pandas DateOffset and TimeDelta objects
 - Common methods
- Python Pandas – Panels
 - Understanding the axis of a Panel Object
 - Common methods and attributes
 - Extracting data
- Pandas I/O API
 - Object conversions
 - Export DataFrame to csv
 - Importing and exporting Excel files
- Visualization
 - Using the .plot() method
 - Bar Graphs
 - Pie Charts
 - Histograms