Python + Data Analytics Course |

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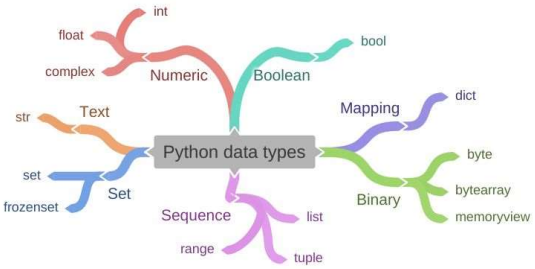
Duration : 2 Months

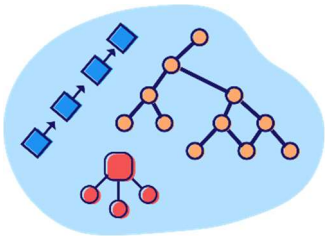
CONTENTS COVERAGE

- **Introduction**
  - Programming Overview
  - Python –Overview, History,
  - Features
  - Language-Future and current trendss
  - Job-role prospects
  - Industrial Applications of Python
- **Environment setup**
  - Local Environment Setup
  - Downloading Python
  - Installation
  - Setting-up system and Python environment
  - Environment-PATH
  - Launching Python and IDE
  - Introduction to Online platform
  - Jupyter Lab environment
- **Initial syntaxes**
  - Interactive coding
  - Script based coding
  - Identifiers
  - Reserved keywords
  - Lines and Indentation
  - Single line and multiple Comments
  - Reading inputs from user
  - Reading multiple values
  - Output Statements
  - Multiple Statement Groups as Suites
  - Command Line Arguments
- **Identifiers**
  - Definition
  - Assigning values
  - Standard data types
  - Derived data types
  - Data type conversion
- **Numbers data type**
  - Numerical data types
  - Type conversions
  - Mathematical Functions
  - Random Number Functions
  - Trigonometric Functions
  - Mathematical Constants
  - Math and random Library

- **Strings data type**
  - Accessing Values
  - Updating string
  - Escape Characters
  - String Special Operators
  - String Formatting Operator
  - Triple Quotes
  - Unicode String
  - Built-in String-Methods
  - F-strings



- **Operator Symbols**
  - Arithmetic operators
  - Comparison operators
  - Assignment operators
  - Bitwise operators
  - Logical operators
  - Membership operators
  - Identity operators
  - Operators Precedence



- **Lists & Tuples**
  - Accessing Values
  - Create/Update/Read data types
  - List/Tuple Operations
  - Indexing possibilities
  - Slicing and Matrixes
  - Built-in Functions & Methods
  - Enclosing Delimiters
- **Flow Control statements:**
  - **Decision-making**
    - Single/Multiple statements suits
    - Conditional statements
    - Transfer statements
    - Nested conditions
  - **Loops**
    - Types of Iterative statements
    - Nested Looping
    - Loop control keywords

- **Functions**
  - Types of Functions – In built and custom created
  - Parameters and function returns
  - Types of arguments
  - Variable Scopes
  - Recursive functions
  - Lambda functions

- **Exceptions and Error handling**
  - Try, except, finally, else keywords
  - Assertions
  - Errors raising and handling in python

- **Modules and Packages**
  - Introduction to need and applications of modules
  - Create and Read Module/Package
  - Importing and aliasing modules
  - Naming conflicts and special variables
  - Installation of Python packages

- **Classes and Objects**
  - Overview of Object oriented programming
  - Creation of Classes and objects
  - Accessing attributes
  - Built-in class attributes
  - Inheritances (of class)
  - Overriding and Overloading
  - Encapsulation of attributes and methods
  - Constructors
  - Generators
  - Destructors

- **Standard Libraries:**
  - Datetime
  - Os
  - Sys
  - Tkinter
  - Pickle
  - Json
  - Pandas
  - Numpy
  - MatplotLib
  - Plotly
  - Seaborn

- **Data Analytics Visualizations Standard Libraries:**

  - Read data (json, excel , databases etc)
  - Create data Types: Series , data frame , Panels
  - Analyzing data
  - filtering data
  - cleaning data
  - Correlations
  - Plotting data
  - Arrays
  - Array -indexing
  - Array slicing
  - Numpy datatypes
  - shape
  - iterate
  - join
  - split, search, sort
  - filter
  - Data Distribution