

Python Language

Overview:

Python is an interpreted high-level programming language for general-purpose programming. Created by Guido van Rossum and first released in 1991, Python has a design philosophy that emphasizes code readability and a syntax that allows programmers to express concepts in fewer lines of code. It provides constructs that enable clear programming on both small and large scales.

Python features a dynamic type system and automatic memory management. It supports multiple programming paradigms, including object-oriented, functional and procedural and has a large and comprehensive standard library.

Python interpreters are available for many operating systems.

Audience & Pre-requisites

This course designed for those who want to learn Python programming language from basics.

Participants should be familiar with any programming language, preferably 'C' language.

Course Contents

Introduction to Python

- Python overview
- Python as an interpreted Language
- Python benefits
- Python from the command line
- Writing Python Scripts in the text editor
- Python Editors and IDE's
- Command line operations in the interpreter

Python Essentials

- Variables, identifiers and assignment in Python
- Data types - Numbers and String
- Printing in Python
- Expressions
- Flow Control and conditional execution: if else Statements, Loops and iterations
- User input

- String formatting
- Functions in Python
- Function parameters, global variables, variables scope.
- user defined functions
- Modules and Packages
- import and from statements in python

Deep Dive in python

- Lists
- Tuples, Dictionaries and Sets
- Working with List and Tuples
- range function
- Concatenating and repeating List and Tuples
- Comparing the lists and the in operators
- Sorting, Indexing, Slicing and Dicing
- List Comprehensions
- working with Dictionary
- Sorting Dictionaries
- Sets in python

OOPS in Python and Exception handling

- History, Unstructured Code, routines, procedures
- Introduction to Object Oriented Programming
- Classes, Methods, Static and Non-Static
- Constructors in Python
- Accessing members of a class
- Python Object direct access to variables
- Object and functions - Passing parameters in and out
- Creating user defined classes in python
- Method and variable naming standard in python
- What is Exception
- Using try and except
- Types of Exceptions

Files, IO and Regular Expressions

- Opening and Reading a file
- Writing to File
- File System checks

- Reading a web page
- Writing bytes to a file
- Manipulating path names
- Making temporary files and directories

- Serializing python objects
- Regular Expression in Python
- Pattern Matching with Regular Expressions

Accessing Data from Python

- Working with CSV files
- Working with Excel files
- Working with Relational Database
 - Setting up MySQL Database
 - Executing SQL Commands from Python