

Core Python

Objective: To write the console and windows based application using Core Python.

Pre-requisites: To know the basic fundamentals of programming language

Session 1 (Beginning with Python)

- Installing Python, Introduction to Python
- Data Types, Variables, Operators
- Variable Naming Rules, Basic Syntax of Python Programming
- Input/Output, Your First Python Program

Session 2 (Control Statements and Looping)

- Flow Controls (Modules, Branching)
- If, If-Else, Nested of If-else Statement
- Introduction to Looping, For and While Loop
- Nested Loops in Python, Uses of Break and Continue, exit and pass statements

Session 3 (Working with Strings)

- Pass, String and Tuples, Accessing Strings
- Basic Operations, Formatting Strings
- Accessing Multiple Values at Once, String Slicing and Other Operations with Strings

Session 4 (Working with Dictionaries)

- Introduction to Dictionaries
- Defining and Modifying Dictionaries
- Deleting Items from Dictionaries
- Functions with Dictionaries and Iteration with Dictionary using Keys and Values Pairs and Other Examples of Dictionary

Session 5 (Working with Lists)

- Working with Lists, Introducing Lists
- Adding Elements to Lists, Searching Lists
- Defining Lists, Declare, Assign and Retrieve Values From the Lists
- Deleting List Elements, Using List Operators
- Accessing Lists, Operation in Lists
- Mapping with List, Joining with List and Splitting and Slice Operation with Lists

Session 6 (Working with Function)

- Function and Methods
- Anonymous Function, Global and Local Variables
- Defining a Function, Calling a Function
- Using Optional and Named Arguments
- Types of Function, Function Arguments
- Using type, str, dir and Other Built-In Functions

Session 7 (Working with Tuples)

- Introduction to Tuples, Accessing Tuples
- Operations with Tuples
- Slicing Operation with Tuples
- Different Ways to write the tuples
- Tuples Iteration using while and for loop
- Tuple Iteration with Negative Indexing
- Example of Tuples

Session 8 and 9 (Python with OOPS)

- Object Oriented Python, OOPS Concepts
- Object, Indenting Code, Native Data Types, Declaring Variables
- Referencing Variables, Object References, Class and Object
- Attributes, Inheritance, Overloading, Overriding
- Data Hiding, Regular Expression
- Inheritances and Types of Inheritances with Examples
- Constructors and Destructors and Member Functions
- Class Variables or Shared Variables

Session 10 (Exception Handling)

- Introduction to Exception Handling, Try, Except and Finally Clause
- Raising Exception, Different Types of Exception, Nested Exception
- Nested Try Block
- User Defined Exceptions: Writing Your Own Class for Handling Exceptions

Session 11 (Working with GUI - Tkinter)

- Introduction to Python GUI using Tkinter
- Working with Tkinter Widgets, Working with Tkinter Events
- Designing Tkinter Forms, Tkinter Widgets Attributes

- Tkinter Menu, Combobox, TreeView, Table Widgets etc.
- Project with Tkinter Layout Designing

Session 12 and 13 (Working with Databases)

- Introduction to MySQL, SQL Introduction, Working with PyMySQL
- Working with CRUD Operation in Python
- SQL DML, DDL and DCL
- Working with SQL In-Built Functions
- Joining Concepts in SQL using Python Code
- Stored Procedure and Calling Stored Procedures using Python Code

Session 14 and 15 (Project Development using Tkinter and MySQL)