CETPA INFOTECH PVT. LTD.
CURRICULUM OF PYTHON

GETTING STARTED

- History & need of Python
- Application of Python
- Advantages of Python
- Disadvantages of Python
- Installing Python

PYTHON FUNDAMENTALS

- Working With Interactive Mode
- Working With Script Mode
- Python Character Set
- Python Tokens- Keywords, Identifiers, Literals, Operators
- Variables and Assignments
- Input and Output Functions in Python

DATA HANDLING

- **Data Types**
  - ➢ Numbers
  - ➢ Strings
  - ➢ Lists
  - ➢ Tuples
  - ➢ Dictionary
  - ➢ Mutable and Immutable Data Types
- **Operators**
  - ➢ Arithmetic Operators
  - ➢ Relational Operators
  - ➢ Logical Operators
  - ➢ Operators Precedence
  - ➢ Evaluating Expression
  - ➢ Type Casting

CONDITIONAL AND LOOPING CONSTRUCTS

- **If Statements of Python**
  - ➢ The if Statement
  - ➢ The if-else Statement
  - ➢ The if-else-if Statement
  - ➢ Nested if Statements
- **Looping and Iteration**
  - ➢ The For Loop
  - ➢ The While Loop
  - ➢ Loop Else Statement
  - ➢ Nested Loops
  - ➢ Break and Continue
- **The Range Function**

INTRODUCTION TO FUNCTIONS AND MODULES

- Using a Functions
- Python Function Types
- Structure of Python Modules
- Importing Modules in Python Programs
- Invoking Python's Built In Functions
- Working With Random Modules

USER DEFINED FUNCTIONS

- Structure of a Python Program w.r.t. UDF
- Invoking UDF
- Flow of Execution
- Arguments and Parameters
- Default Arguments, Named Arguments
- Scope of Variables

STRING MANIPULATION

- Introduction to Python String
- Accessing Individual Elements
- String Operators
- String Slices
- String Functions and Methods

LIST MANIPULATION

- Introduction to Python List
- Creating List
- Accessing List
- Joining List
- Replicating List
- List Slicing

TUPLES

- Introduction to Tuples
- Creating Tuples
- Accessing Tuples
- Joining Tuples
- Replicating Tuples
- Tuple Slicing

DICTIONARIES

- Introduction
- Accessing values in dictionaries
- Working with dictionaries
- Properties

OOP CONCETPS

- Procedural Vs Modular Programming
- The Object Oriented Programming
- Data Abstraction
- Data Hiding
- Encapsulation
- Modularity
- Inheritance
- Polymorphism

CLASSES AND OBJECTS

- Classes As User Defined Data Type
- Objects as Instances of Classes
- Defining Class
- Creating Objects
- Creating Objects By Passing Values
- Variables & Methods in a Class

DATABASE	EXCEPTION HANDLING	FILE OPERATIONS
Introduction Connections Executing queries Transactions Handling error **MULTITHREADING** Thread Starting a thread Threading module Synchronizing threads Multithreaded Priority Queue	• Default Exception Handler • Catching Exceptions • Raise an exception • User defined exception **GUI PROGRAMMING** • Introduction to Tkinter programming • Tkinter widgets	• Opening a file • Using Files • Other File tools