# TECHGENX

## Python course

**Please Note: All below course content will be covered in practical scenarios and regular assignments will be shared. All sessions will be recorded and shared with student for future reference (free of cost). Along with below course, around 100+ programs will be shared for self-practice**

**IDE: IDLE, Pycharm and Anaconda**

**Core Python:**
- **Python Introduction**
- **Python history**
- **Functions declaration and function calling**
- **Compiler VS Interpreter**
- **Operators (arithmetic, Membership, identity, logical, Augmented Assignment, Comparison)**
- **Expression vs Statements**
- **Conditional statement (if-elif-else)**
- **Loop structure (for and While)**
- **mini-programs in python**
- **How to import library/Module in python**
- **Usage of pip command**
- **some generic libraries like random, os, sys, etc.**
- **Practical programs on Fibonacci series, Prime Num, Even/Odd**
- **Develop a "guess a number" game using python**
- **Truthy vs Falsey values**
- **List functions:**
    - **List declaration**
    - **Fetching value from List**
    - **append()**
    - **insert()**
    - **remove()**
    - **extend()**
    - **Slicing of List**
    - **Sort()**
    - **list()**
    - **Iterating list using For Loop**
    - **pop()**
    - **count ()**
    - **Clear()**
    - **Reverse()**

- **Tuples functions:**
    - **Creating tuples**

- **Slicing of Tuple**
- **Mutable vs immutable**
- **Len() , max() , Count(), Min()**
- **Index()**
- **Dictionary Functions:**
    - **Declaring a Dictionary**
    - **Assignment in Dictionary**
    - **Extracting values from Dictionary**
    - **Inserting list in Dictionary**
    - **get()**
    - **copy()**
    - **setdefault()**
    - **fromkeys()**
    - **pop()**
    - **keys()**
    - **values()**
    - **items()**
    - **Iterating dictionary using for loop**
    - **dict()**
    - **clear()**
- **Any()**
- **All()**
- **Exception Handling**
- **File Handling**
    - **Os Module**
    - **get current working directory**
    - **change dir**
    - **make dir**
    - **statistics of file**
    - **get Size of file in Bytes**
    - **Absolute vs relative path**
    - **Remove dir**
    - **Create a dynamic file path**
    - **Open A file**
    - **Write a File**
    - **Read A File**
    - **Append A File**
- **Libraries (numpy/pandas)**

**Advance Python:**
- **OOPS:**
    - **Polymorphism**
        - **Overriding**
        - **Overloading**
    - **Inheritance**

- - Simple
  - Multiple
  - Multilevel
  - Hybrid
  - **Abstraction**
  - **Encapsulation**
  - **Class structure**
  - **Constructor**
- **Multi-Threading**
  - **Creating a Single thread**
  - **Creating multiple threads**
  - **Lock**
  - **Daemon**
  - **Overriding and Overloading Thread class**
  - **Queues:**
    - **LIFO**
    - **FIFO**
    - **Priority**
- **API Development:**
  - **Get**
  - **POST**
  - **Put**
  - **delete**
  - **Client/Server Model**
  - **Webservices vs API**
  - **Rest vs Soap**
  - **Creating API using Flask**
  - **Usage of Advance Rest and Postman**
- **MYSQL Integration:**
  - **What is Mysql**
  - **How to install Mysql**
  - **DDL VS DML**
  - **Create a database and create a table**
  - **insert values in tables**
  - **Joins**
  - **Order by Vs Group By**
  - **Subquery**
  - **Integrating MYSQL with python**
  - **Solving real-time errors**
- **Networking**
- **Tkinter**
  - **Launch first desktop application page**
  - **Labels**
  - **Buttons**
  - **Frames**
  - **Inserting Images**

- **Creation of Interactive GUI**
- **Canvas draw**
- **Login page using Tkinter**