



PYTHON FULL STACK

Introduction To Python

- Why Python
- Application areas of python
- Python implementations
- Python versions
- Installing pythonPython interpreter architecture
 - Python byte code compiler
 - Python virtual machine(pvm)

Writing and Executing First Python Program

- Using interactive mode
- Using script mode
 - General text editor and command window
 - Idle editor and idle shell
- Understanding print() function
- How to compile python program explicitly

Python Language Fundamentals

- Character set
- Keywords
- Comments
- Variables
- Literals
- Operators
- Reading input from console
- Parsing string to int, float

Python Conditional Statements

- If statement
- If else statement
- If elif statement
- If elif else statement
- Nested if statement

Looping Statements

- While loop
- For loop
- Nested loops

- Pass, break and continue keywords

Standard Data Types

- Int, float, complex, bool, nonetype
- Str, list, tuple, range
- Dict, set, frozenset

String Handling

- What is string
- String representations
- Unicode string
- String functions, methods
- String indexing and slicing
- String formatting

Python List

- Creating and accessing lists
- Indexing and slicing lists
- List methods
- Nested lists
- List comprehension

Python Tuple

- Creating tuple
- Accessing tuple
- Immutability of tuple

Python Set

- How to create a set
- Iteration over sets
- Python set methods
- Python frozenset

Python Dictionary

- Creating a dictionary Dictionary methods
- Accessing values from dictionary
- Updating dictionary
- Iterating dictionary
- Dictionary comprehension

Python Functions

- Defining a function
- Calling a function
- Types of functions
- Function arguments
 - Positional arguments, keyword arguments
 - Default arguments, non-default arguments
 - Arbitrary arguments, keyword arbitrary arguments
- Function return statement
- Nested function
- Function as argument
- Function as return statement
- Decorator function

- Closure
- Map(), filter(), reduce(), any() functions
- Anonymous or lambda function

Modules & Packages

- Why modules
- Script v/s module
- Importing module
- Standard v/s third party modules
- Why packages
- Understanding pip utility

File I/O

- Introduction to file handling
- File modes
- Functions and methods related to file handling
- Understanding with block

SQL using MY SQL

Regular Expressions(Regex)

- Need of regular expressions
- Re module
- Functions /methods related to regex
- Meta characters & special sequences

Object Oriented Programming

- Procedural v/s Object Oriented Programming
- OOP Principles
- Defining a Class & Object Creation
- Inheritance
- Encapsulation
- Polymorphism
- Abstraction
- Garbage Collection
- Iterator & Generator

Exception Handling

- Difference Between Syntax Errors and Exceptions
- Keywords used in Exception Handling
- try , except , finally , raise , assert
- Types of Except Blocks
- User-defined Exceptions

GUI Programming

- Introduction to Tkinter Programming
- Tkinter Widgets
- Layout Managers

SQL Using MySQL

- Event handling

- Displaying image

Multi-Threading Programming

- Multiprocessing v/s Multithreading
- Need of threads
- Creating child threads
- Functions /methods related to threads
- Thread synchronisation and locking

Introduction to RDBMS

- What is Relational Database Package
- Difference between SQL & Database
- Installing MySQL Server database

SQL Basic

- DDL: Create, Alter, Drop, etc.
- DML: Insert, Update, Delete ,etc.
- DQL : Select
- Auto Increment field
- SQL Comments
- SQL Aliases
- Savepoint & rollback