

Getting Started with Python

- What is Python?
- Downloading and installing
- Environment Setup and path settings
- Which version of Python
- Where to find documentation, online help and dir
- Python IDE's
- Running Python Scripts
 - Using the interpreter interactively
 - Running standalone scripts

Types, Variables and Input/output

- Data types and Variables
- Getting User Input with input()
- Writing to the screen
- Converting Values
- String operators and expressions
- Math operators and expressions
- Command line parameters
- Strings
 - Slicing
 - String operators
- Format method

Flow Control

- Indenting is significant
- The if, else and elif statements
- While loops
- Using the for statement
- The range() function
- Using Logical Operators
- Break and continue

Lists

- Creating and Using Lists
- len() with Lists
- in Operator with Lists
- Indexing, Slicing and Concatenating
- Deleting List Element with del
- Using Lists Methods such as append(), sort(), reverse(), count(), pop(), remove(), insert() and index()
- Using Nested Sequences

Python Sorting and Tuples

- Sorted() method
 - Custom Sorting with key=
- Sort method
- Tuples

Dictionaries

- Using Dictionaries
- Accessing Dictionary values
- Adding, Replacing and Deleting key-value pairs
- Functions: get(), keys(), values() and items()

Functions

- Defining functions
- Types of Functions
- Default arguments
- Keywords arguments
- Variable argument
- Scope of Variables
- Globals
- Locals

Modules and packages

- What is module, why is it?
- Importing module and Packages
- Using in Built-in Modules (OS, SYS)
- Creating modules

Utilities of Python

- Lambda
- Map
- Reduce
- Zip

File Handling and I/O

- Input and Output
- Opening and Closing Files
- Reading from files
- Writing to files
- Iterating over file contents
- File Buffering
- File Modes
- Attributes of File Object

Object Oriented Programming

- OOPs Terminology
- Initialization in Classes
- Doc String in Classes and Methods
- Using Built-in Attributes of Classes
- Encapsulation
- Inheritance
- Polymorphism
- Data Hiding
- Properties

Python Content

Exceptions

- Handling Exceptions
- Using try Statement with except
- Handling Multiple Exceptions
- Raising Exceptions
- Finally keyword
- User Defined Exceptions

Data Structures in Python

- Push, Pop, Delete operations
- Queue Operations
- Infix , PostFix and Prefix Operations
- Writing Unit Test for your Code

Advance Topic

1. Regular Expressions
2. Databases with Python
3. Advance Classes & Objects
(Static, Abstract and Mixed)
4. Iterators
5. Generators
6. Decorators
7. Multithreading
8. Code Optimisation using Profiler
9. Python Networking
10. XML Parsing

Scientific Module

1. Numpy
2. SciPy
3. Matplotlib
4. Pandas
5. Case Studies