

PYTHON PROGRAMMING

Basic Python

1. Introduction to Python
 - Overview
 - Python Features
 - Python 2 Vs Python 3
 - Environment Setup
 - Basic Syntax
 - Interactive Mode Programming
 - Script Mode Programming
 - Identifiers
 - Reserved Words
 - Lines and Indentation
 - Multiline Statements
 - Quotation in Python
 - Comments in Python
 - Waiting for the Users
 - Multiple Statement Groups as Suites
 - Command Line Arguments
 - Online Help, help() And dir()
2. Variables and Data types
 - Variable Types
 - Assigning values to Variables
 - Multiple Assignment
 - Data types
 - Standard Data types
 - Numbers, Strings, Lists, Tuples, Dictionary
 - Data type conversion
3. Operators
 - Types of Operator
 - Arithmetic Operators
 - Comparison or Relational Operators
 - Assignment operators
 - Logical Operators
 - Bitwise Operators
 - Membership Operators
 - Identity Operators
 - Operator's Precedence
4. Branches
 - if...else if...else statements
 - Nested if statement
5. Looping
 - Loops
 - For Loops
 - While Loop
 - Else Clause of Loops
6. Control Statements
 - Breaking
 - Continuing
 - Pass
7. Numbers
 - Number System
 - Typecasting
 - Basic Operations
 - Number Methods
8. Strings
 - Accessing strings
 - Basic Operations
 - String Slices
 - String Methods
9. Lists
 - List Creation
 - List Attributes
 - Combining Lists
 - Getting pieces of Lists(Slices)
 - Comparing Lists
 - Sorting Lists
 - Iteration
 - Deleting
 - Aggregates
 - Copying
 - Clearing
 - List Methods
 - Operators
10. Tuples
 - Tuple Notations
 - Packaging and Un-packaging
 - Operations on Tuples
 - Tuple Attributes
 - Conversions
 - Uses of Tuples
 - Using List Comprehensions to Process Tuple Elements

11. Dictionaries

- Dictionary Notation
- Operation on Dictionaries
- Combining to Dictionaries
- Deleting from Dictionary

12. Sets

- Constructing Sets
- Membership Testing
- Removing Items
- Iteration over Sets
- Set Operations
- Multiple Sets
- Frozen set

13. Functions

- Defining a Function
- Calling a Function
- Pass by Reference Vs Value
- Function Arguments
- Required Arguments
- Keyword Arguments
- Default Arguments
- Variable-Length Arguments
- The Anonymous Functions
- The Return Statement
- Scope Of Variables
- Global Vs Local Variables

14. Modules

- Importing a Module
- The Import Statements
- Creating a Module from a File
- The from...import Statement
- The from...import * Statement
- Locating Modules
- Namespaces and Scoping
- The dir() Function

- The globals() and locals() Functions
- The reload() Function
- Creating a Module from a Directory
- Packages in Python

15. Input and Output

- Raw_input()
- Input()
- File input
- Print()
- File Output

16. Files

- File I/O
- Testing Files
- Common File Operations
- Finding Files
- Current Directory

17. Exception Handling

- Assertions in Python
- What is Exception ?
- Handling an Exception
- The except clause with no Exceptions
- The except clause with multiple exceptions
- The try-finally Clause
- Argument of an Exception
- Raising an Exception
- Exception Hierarchy

18. Command Line Arguments

- Parsing Command-Line Arguments
- getopt.getopt Method
- Exception getopt.GetoptError

Advance Python

19. Python Object Oriented

- Overview of OOP terminology
- Creating class
- Creating instance objects
- Accessing attributes
- Built-in class attributes
- Destroying objects
- Class inheritance
- Overriding methods
- Base overloading methods
- Overloading operators
- Data hiding

20. Argparse

- Introducing positional arguments
- Introducing optional arguments
- Short options
- Combining positional & optional arguments
- Getting a little more advanced
- Conflicting options

21. Date and Time

- What is tick?
- What is time tuple
- Getting current time
- Getting formatted time
- Getting calendar for a month
- The time module
- The calendar module

22. Process

- Parent Process
- Child Process
- Orphan Process
- Zombie Process
- Daemon Process
- Forking
- Exiting Child
- Waiting for the Child

23. Signals

- Some Common Signals
- Signal Handler
- signal.signal() method
- Handling signals
- Handling SIGCHLD signal

- Handling SIGINT signal

24. Multi Threading

- Starting a new thread
- The threading module
- Creating thread using threading module
- Synchronizing threads
- Multithreaded priority queue

25. Network Programming

- Sockets
- The socket module
- Server socket methods
- Client socket methods
- General socket methods
- Transmission control protocol
- User datagram protocol

26. Databases Programming

- What is MySQLdb?
- Install MySQLdb
- Database connection
- Creating database table
- Insert operation
- Read operation
- Update operation
- Delete operation
- Performing transactions
- Commit operation
- Rollback operation
- Disconnecting database
- Handling errors

27. Graphical User Interface

- Introduction
- What's Tkinter?
- Hello, Tkinter
- Layout management
- Widgets
- Menus & toolbars