

PYTHON

Core & Advanced Python

Python overview

- What is python?
- The Birth of Python
- History
- Features
- Versions
- Applications of Python

The Python Environment

- Installation of Python
- Python Documentation
- Getting Help
- How to develop Python application
- Python editions and IDE's
- Basic Syntax
- Running a Python Script
- Python Script on Unix/Windows

Getting started

- Keywords, Data Types
- Variables, assign values to variables
- Multiple assignments
- Space Indentation
- Quotes, Comments
- Print (), Type (), Id ()
- Functions Input
- Raw input () functions
- How to read the data from keyboard
- Type conversions
- Number system
- Mutable and immutable objects

- Pre- defined exceptions
- Except, Try, Finally clause
- Handling multiple exceptions
- Used defined exceptions
- Raise
- Assert statement

File handling

- Opening a file
- Closing a file
- Writing data to a file
- Reading a data from file
- Tell() • Seek()

Advanced Python

Oops concepts

- About OO programing
- Defining classes
- Creating objects
- Class methods and data
- Static methods
- Private methods
- Constructors
- Destructors
- Inheritance
- Types of Inheritances
- Polymorphism
- Overload & over riding
- Data hiding

Regular expressions

- What are regular expressions?
- Wild card characters
- Forming regular expressions
- Character class
- Quantifiers
- Greedy matches
- Grouping, matches, search functions
- Matching v/s searching

String handling

- What is String?
- Single-quoted String literals
- Triple- quoted string literals
- String indexing , string slicing
- String functions
- String methods

Operators

- Arithmetic operators
- Relational operators
- Logical operators
- Assignment operators
- Short hand assignment operators
- Bitwise operators
- Membership operators
- Identity operators

Flow control

- Conditional statement
-Simple if, if...eles, if...elif...
- Looping statements
-while,for,infinite,nested
- Break
- Continue
- Pass

Sequences

- Creating list
- Accessing/deleting/updating list elements
- Indexing
- Slicing matrix
- Built-in list functions and mthods
- List comprehension
- Tuples: what is tuple, creating tuple
- Axising/deliting/updating tuple elements
- Indexing, slicing and matrix
- Built-in methods

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Dictionary

- What is dictionary
- Creative dictionary
- Accessing/ deleting/ updating dictionary elements
- Working with built-in dictionary
- Functions and methods
- Dictionary comprehension

Functions

- Defining a function
- Calling a function
- Function parameters
- Returning values
- Variables scope
- Call by value
- Call by reference
- Passing collections to a function
- Passing function to functions
- Lambda functions

Modules

- What is module?
- Creating user define module
- Setting path
- The import statement
- Modules search path
- From... import
- Module Aliases
- Dir function
- Working with standard module
 - Math, Random
 - Date and time
 - Os and sys, String ...

Errors & exception handling

- Syntax errors
- What is exception
- Need of exception handling

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- Sub functions splitting a string
- Replacing text
- Flags

Multi-threading

- Defining a thread
- Starting a thread
- Threading module
- Threads synchronization
- Multithreaded priority queue

Database access

- Basics of database
- Connections
- Executing queries
- Transaction management

Advanced concepts

- Iterators
- Generators
- Closure
- Decorator

Advanced modules

- Math's and science
- Numpy
- Scipy
- Matplotlib
- Data analysis (pandas)
- Network programming
 - Socket module
 - Twisted module
 - Client and server
- Testing (selenium)
- Web scraping
 - Web scraping
 - Python web
 - Mechanize
- GUI programming
 - Tkinter programming
 - pyGtk
 - PyQt

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