

CORE PYTHON COURSE CONTENT :

Introduction:

- General Introduction to Python
- What is Python?
- Why Python?
- Installation of Python
- Strings
- Boolean Values
- For Loop,Range() function-Break,Continue,Exit
- Flow Controls: Simple- If,If-else,If-else-if,Nested-If
- Infinite Loops

Basic Python Syntax:

- Data Types
- Variables
- Keywords
- Operators
- Comments
- Type Conversions Functions

Conditional Statements:

- Simple-if
- If-else
- If-else-if
- Nested if else

Looping Statements:

- While Loop

- For Loop
- Infinite Loop
- Nested Loops

Control Statements:

- Break Statements
- Continue Statements
- Exit

Collections Data Types:

- Lists
 - Dictionary
 - Tuples
 - Sets
 - Slicing of a List
 - Adding or Removing Elements
- Methods used in are explained with sample programs

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|-----------|--------------|----------|----------|
| 1. Keys | 2.Extend | 3.Values | 4.Items |
| 2. Get | 6.Setdefault | 7.Append | 8.Insert |
| 3. Remove | 10.Clear | 11.Index | 12.Count |
| 4. Sort | 14.Copy | | |

Strings

Strings are amongst the most popular types in Python. We can create them simply by enclosing characters in quotes. Python treats single quotes the same as double quotes.

We cover Methods:

Lower () join () startswith () min () zfill () upper ()
 Split() endswith() replace() rindex () title() rjust()
 Isdigit() index() isalpha() ljust() maketrans() find()
 Isdecimal() strip() replace() rfind() isspace() lstrip()
 Max() swapcase() Modules:re,re.compile(),re.search(),format()

Regular Expressions:

- Regular expressions syntax
- Pattern matching using group
- Pattern matching using PIPE
- Greedy values
- Shorthand characters
- Pattern matching using digits,spaces and word
- Regular expressions Methods
- Escape sequences and Modifiers with example programs

File Handling:

- What is file?
- Opening file
- Various file modes
- Reading data from file
- Writing data to a file
- Closing a file
- Replacing the contents of file
- Working with Directories
- Handling I/O functions
- Open(),read(),write(),close(),readLine()
- seek(),tell(),makedirs(),getcwd() with example programs

Functions:

- defining a functions
- calling a function
- function parameters
- types of parameters

- default parameters
- user defined functions
- recursive functions
- inner functions
- inner functions using debugger
- nested functions
- multiple return of values

Debugging:

- Syntax errors
- Runtime errors
- Types of errors
- What is exception?
- Predefined exceptions
- Exception handling
- Try,except and finally clauses
- Handling multiple exceptions
- Nested try,except and finally blocks
- Raising exceptions

ADVANCED PYTHON

Object Oriented Programming:

- Object Oriented Concepts
- Code Reusability
- What is Class and Object
- OOPS Features
- Encapsulation
- Polymorphism

- Abstraction
- Inheritance
- Types of Inheritance
- What is Constructor
- Passing parameters to Constructors
- Initializing Objects, class method, static variable and methods

Lambda Functions/Anonymous Functions:

- Filter()
- Map()
- Reduce()

Generators and Decorators:

- Purpose of generator
- Creation of generator
- Creation of decorators
- How they are different from normal functions

Database:

- Importing the API module
- Acquiring a connection with the database
- Issuing SQL
- Statements and stored procedures
- Closing the connection using MySQLdb.

Web Scrapping:

- Web browser Module
- Downloading from the web with the Requests Modules
- Parsing HTML with the BeautifulSoup Module
- Controlling with the browser

- Real Webpage Extraction
- Walking the tree
- HTML Parsing
- **Graphical User Interface (GUI) Automation:**
- Controlling the Keyboard from Python
- Screenshots and Image Recognition
- Checkbox
- Multi section
- Dialogue box
- Controlling the Mouse from Python
- **Networking and Email:**
- Creating SMTP objects for creating and sending emails
- Parsing Extensible Markup Language(XML)
- SAX API
- Working with HTML
- Web Page Structure
- Navbar
- Comments
- Footers and divs
- Parsing paragraph data