



IT EDUCATION
CENTRE

Python



Introduction to Python

- What is Python and history of Python?
- Unique features of Python
- Python-2 and Python-3 differences
- Install Python and Environment Setup
- First Python Program
- Python Identifiers, Keywords and Indentation
- Comments and document interlude in Python
- Command line arguments
- Getting User Input
- Python Data Types
- What are variables?
- Python Core objects and Functions
- Number and Maths
- Week 1 Assignments

Control Statements

- if-else
- if-elif-else
- while loop
- for loop
- break
- continue
- assert
- pass
- return

String

- Introduction
- string in Python
- Functions of string.
- Loops on String

List, Ranges & Tuples in Python

- List, Ranges & Tuples in Python
- Introduction
- Lists in Python
- More about Lists
- Understanding Iterators
- Generators, Comprehensions and Lambda Expressions
- Introduction
- Generators and Yield
- Next and Ranges
- Understanding and using Ranges
- More About Ranges
- Ordered Sets with tuples

Python Dictionaries, Sets, and Frozenset

- Introduction to the section
- Python Dictionaries
- Sets
- Python Sets Examples

Input and Output in Python

- Reading text files
- Writing text files
- Appending to files and challenge
- Writing Binary files manually
- Using pickle to write Binary files

Exceptions

- Errors in Python
- Compile-Time Errors
- Runtime Errors
- Logical Errors
- What is Exception?
- Handling an exception
- Try....except...else
- Try-finally clause
- Argument of an Exception
- Python Standard Exceptions
- Raising an Exception
- User-Defined Exceptions

Python Regular Expressions

- What are regular expressions?
- Match Function
- Search Function
- Matching vs searching
- Search and Replace
- Extended Regular Expressions
- Wildcard

Python Multithreaded Programming

- What is multithreading?
- Difference between a Process and Thread
- Concurrent Programming and GIL
- Uses of Thread
- Starting a New Thread
- Threading Module
- Thread Synchronization
- Locks
- Semaphore
- Deadlock in Threads
- Avoiding Deadlocks
- Daemon Threads

Using Databases in Python

- Python MySQL Database Access
- Install the MySQLdb and other packages
- Create Database Connection
- CREATE, INSERT, READ Operation
- DML and DDL Operation with Database

Graphical User Interface

- GUI in Python
- Button Widget
- Label Widget
- Text Widget

Django Web Framework in Python

- Introduction to MVC and MVT architecture on web development.
- Django folder structure flow of control.

Webscrapping in python

- Pandas
- Numpy
- Seaborn
- Matplotlib
- Python Project

GitHub

- **Creating a Git Account**
- **Cloning the repository**
- **Adding the file**
- **Committing the file**
- **Git push**
- **Removing the file**

