



Sachin Sir's

Bridging Gap Between Developed & Developing India !

Techno Comp Academy

An IT Training Institute

Branch : New Sangvi, Pune.

Contact : 9284293870

Course Content – Python Programming

Introduction

History of a Python
Why the Language is named as Python.
What is a Python
Features of a Python
Limitations of a Python
Flavours of Python
Python Version
Installation to Python IDLE
First Python Program
Every thing is an Object !!!

Basics of Python Language

Understanding Python Variables
Rules for defining Python Variables
Python Identifiers, keywords/Reserved words
Importance of indentation in Python
Number System – Decimal, Octal, Hexadecimal and Binary
Operators in Python
Fundamental data types Vs Immutability
Escape characters
Constants
del statement
Difference between del and None



Sachin Sir's

Bridging Gap Between Developed & Developing India !

Techno Comp Academy

An IT Training Institute

Branch : New Sangvi, Pune.

Contact : 9284293870

Data Types

int Data Type

- Decimal Form

- Binary Form

- Octal Form

- Hexadecimal Form

Float Data Type

Complex Data Type

bool Data Type

str Data Type

bytes Data Type

bytearray Data Type

List Data Type

Tuple Data Type

Range Data Type

Set Data Type

frozenset Data Type

dict Data Type

None Data Type

Typecasting in python

Operators in Python

Arithmetic Operators

Relational Operators or Comparison Operators

Equality Operators

Logical Operators

Bitwise Operators

Assignment operators

Ternary Operator OR Conditional Operator

Special operators

- Identity Operator
- Membership operator

Online + Offline Training

www.technocompacademy.com



Sachin Sir's

Bridging Gap Between Developed & Developing India !

Techno Comp Academy

An IT Training Institute

Branch : New Sangvi, Pune.

Contact : 9284293870

Operator Precedence
Mathematical Functions (math Module)
Command Line Arguments

Program Flow Control

Conditional Block

- if statement
- if-elif statement
- if-elif-else statement

Iterative/Loops statement

- for loop
- while loop

Transfer Statements

- break
- continue
- pass statement

Pattern Printing Programs

String Type / Text Sequence Type

What is String

multi-line String Literals

doc string

Access Characters of a String

- using Index
- using Slice Operator

What is Slice Operator

Mathematical Operators for String

len()

Checking Membership

Functions on String

Formatting the Strings

Online + Offline Training

www.technocompacademy.com



Sachin Sir's

Bridging Gap Between Developed & Developing India !

Techno Comp Academy

An IT Training Institute

Branch : New Sangvi, Pune.

Contact : 9284293870

List Type / Sequence Type

Creation of List

Accessing Elements of List

- Using Index
- Using Slice

List vs Mutability

Traversing the Elements of List

Functions of List

Mathematical Operators for List

- Concatenation Operator (+)
- Repetition Operator (*)

Membership Operators

Nested Lists (as a matrix)

List Comprehensions

Tuple Type / Sequence Type

Creation of Tuple

Accessing Elements of Tuple

- Using Index
- Using Slice

Tuple vs Immutability

Functions of Tuple

Mathematical Operators for Tuple

- Concatenation Operator (+)
- Repetition Operator (*)

Membership Operators

Tuple Comprehensions

Tuple Packing and Unpacking



Sachin Sir's

Bridging Gap Between Developed & Developing India !

Techno Comp Academy

An IT Training Institute

Branch : New Sangvi, Pune.

Contact : 9284293870

Set Type

Creation of Set Objects
Important Functions of Set
Mathematical Operations on the Set
Membership Operators (in, not in)
Set Comprehension
Set Packing and Unpacking

Dict Type / Mapping Type

Creation of dictionary
Accessing Elements of a dictionary
Important Functions of Dictionary
Dictionary Comprehension
Packing and Unpacking of Dictionary

Functions

What is mean by Procedure Oriented Programming.
What is a Function in python
Built in Functions
User Defined Functions
What is mean by Parameter
return statement
returning multiple values from a function
Types of Arguments

- Positional Arguments
- Keyword Arguments
- Default Arguments
- Variable Length Arguments

Types of Variables

- Global Variables

Online + Offline Training

www.technocompacademy.com



Sachin Sir's

Bridging Gap Between Developed & Developing India !

Techno Comp Academy

An IT Training Institute

Branch : New Sangvi, Pune.

Contact : 9284293870

- Local Variables

Recursive Functions

Anonymous Functions

Function Aliasing

Nested Functions

Functional Programming

- Lambda expression
- Map
- Filter
- Reduce
- functools

Decorator Functions

Generator Functions

Modules in Python

What is a Module

Need of a Module

Difference between function, module and Library

Different Ways to import module

Reloading Module

Importance of `__name__`, `__doc__`, `__file__`

Math module

Random module

Package in Python

Installation of Pycharm

Pycharm is an IDE

What is mean by IDE

What is package

Use of `__init__.py`

PIP tool

Installation and uninstallation user-defined package

How we can achieve modularity using Package

Online + Offline Training

www.technocompacademy.com



Sachin Sir's

Bridging Gap Between Developed & Developing India !

Techno Comp Academy

An IT Training Institute

Branch : New Sangvi, Pune.

Contact : 9284293870

Exception Handling

What is an Error
What is an Exception
Exception Hierarchy
Default Exception Handling in Python
Exception Handling by using try-except
finally Block
else Block
Various possible Combinations of try-except-else-finally
Write User Defined Exceptions
Assertions in Python

File Handling

What is mean by File Handling
Types of a File
Text Files
Binary Files
Operations on a file

- Open
- Close
- Read
- Write
- Append
- Seek
- Tell

with Statement
Handling Binary Data
Handling CSV Files
Object Serialization / Marshalling / Pickling
Object Deserialization / Un-Marshalling / Un-Pickling



Sachin Sir's

Bridging Gap Between Developed & Developing India !

Techno Comp Academy

An IT Training Institute

Branch : New Sangvi, Pune.

Contact : 9284293870

Multithreading in Python

Python follows multithreaded Model

What is mean by multitasking

What is mean by Multithreading

Ways of Creating Thread

Creating a Thread without using any class

Creating a Thread by extending Thread class

Creating a Thread without extending Thread class

Thread Properties

Functions of Thread

Synchronization in Thread

Join() method

Daemon Thread

Python Database Connectivity

Python-Database Applications Using MySQL

Python-Database Applications Using PostgreSQL

Python-Database Applications Using MongoDB

Object Oriented Programming in Python

What is mean by OOP

What is a class

What is Object

What is a Reference Variable

Self Variable

Constructor Concept

Differences between Methods and Constructors

Types of Variables

- Instance Variables



Sachin Sir's

Bridging Gap Between Developed & Developing India !

Techno Comp Academy

An IT Training Institute

Branch : New Sangvi, Pune.

Contact : 9284293870

- Static Variables
- Local variables

Types of Methods

- Instance Methods
- Class Methods
- Static Methods

Inner Classes

Garbage Collection in Python

Destructors

Inheritance

Types of Inheritance

Method Resolution Order (MRO)

Polymorphism

Overloading

Overriding

Duck Typing Philosophy of Python

Abstract class

Metaclasses

- To know more about 'type'
- ABCMeta class in abc package
- @abstractmethod
- @classmethod
- @staticmethod

Public, Private and Protected Members



Sachin Sir's

Bridging Gap Between Developed & Developing India !

Techno Comp Academy

An IT Training Institute

Branch : New Sangvi, Pune.

Contact : 9284293870

Database

MySQL, PostgreSQL, MongoDB

IDE

IDLE [Integrated Development and Learning Environment]

Sublime text

VS Code

Jupyter Notebook

PyCharm

Course Completion Certificate

At the end of course you will get Techno Comp Academy's Course Completion Certificate.

Duration

3-4 Months