

## **Python Summer Training Syllabus**

### **1. Introduction to Python**

Python Introduction, History of Python, Introduction to Python Interpreter and program execution, Python Installation Process in Windows and Linux, Python IDE, Introduction to anaconda, python variable declaration, Keywords, Indents in Python, Python input/output operations

### **2. Python's Operators**

Arithmetic Operators, Comparison Operators, Assignment Operators, Logical Operators, Bitwise Operators, Membership Operators, Identity Operators, Ternary Operator, Operator precedence.

### **3. Python's Built-in Data types**

String, List, Tuple, Set, Dictionary (characteristics and methods)

### **4. Conditional Statements & Loop**

Conditional Statements (If, If-else, If-elif-else, Nested-if etc.) and loop control statements (for, while, Nested loops, Break, Continue, Pass statements)

### **5. Function in python.**

Introduction to functions, Function definition and calling, Function parameters, Default argument function, Variable argument function, in built functions in python, Scope of variable in python

### **6. File Processing**

Concept of Files, File opening in various modes and closing of a file, Reading from a file, Writing onto a file, some important File handling functions e.g open(), close(), read(), readline() etc.

### **7. Modules**

Concept of modularization, Importance of modules in python, Importing modules, Built in modules ( ex: Numpy)

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**Learnomate Technologies** is the Information technology company which provide training on different IT Technologies.

Out of that **Python** is the one of the technology.

Course structure design in such a way that student will learn from Basic concepts to advance.

**Python** is an interpreted, object-oriented programming language. Python is a high-level programming language. It is a dynamically typed language. It's high-level built-in data structures, combined with dynamic typing and dynamic binding. It is very useful for Rapid Application Development.

### Features of Python Language

Python is beginner-friendly

Python is Easy to Learn



Python is super flexible

Python is highly versatile

Free and Open-Source



## COURSE OVERVIEW

### Module 1: 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

### Module 2: Control Statements

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



### **Module 3: 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

### **Module 4: Python Dictionaries and Sets**

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

### **Module 5 : Input and Output in Python**

- Reading and writing text files
- writing Text Files
- Appending to Files and Challenge
- Writing Binary Files Manually
- Using Pickle to Write Binary Files

### **Module 6 : Python built in function**

- Python user defined functions
- Python packages functions
- Defining and calling Function
- The anonymous Functions
- Loops and statement in Python
- Python Modules & Packages



## **Module 7 : Python Object Oriented**

- Overview of OOP
- The self variable
- Constructor
- Types Of Variables
- Namespaces
- Creating Classes and Objects
- Inheritance
- Types of Methods
  - Instance Methods
  - Static Methods
  - Class Methods
- Accessing attributes
- Built-In Class Attributes
- Destroying Objects
- Abstract classes and Interfaces
- Abstract Methods and Abstract class
- Interface in Python
- Abstract classes and Interfaces

## **Module 8: 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



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- Python Standard Exceptions
- Raising an exceptions
- User-Defined Exceptions

### **Module 9: Python Regular Expressions**

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

### **Module 10: Python Multithreaded Programming**

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



### **Module 11: Using Databases in Python**

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

### **Module 12: Data Science Using Python**

- **Numpy:**
  - Introduction to numpy
  - Creating arrays
  - Indexing Arrays
  - Array Transposition
  - Universal Array Function
  - Array Processing
  - Array Input and Output
- **Pandas:**
  - What are pandas?
  - Where it is used?
  - Series in pandas
  - Index objects
  - Reindex
  - Drop Entry
  - Selecting Entries
  - Data Alignment
  - Rank and Sort
  - Summary Statics
  - Index Hierarchy
  - Matplotlib: Data Visualization
  - Python for Data Visualization
  - Welcome to the Data Visualization Section
  - Introduction to Matplotlib



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## TRAINING HIGHLIGHTS

- **Recording Access** shared to students on Learnomate App
- **Professional Resume building** by Industrial working mentors
- **Placement assistance/Job requirement notification support/HR contacts**
- **Training Certificate:** Receive a recognized certificate upon course completion
- **LinkedIn, Naukri.com Profile:** Enhance your online presence with professionally curated profiles.
- **Flexible Learning Options:** Choose between offline and online training to suit your schedule.
- **Interview Preparation, Mock Interviews:** Nail your interviews with our tailored preparation and mock interview sessions
- **Real-time Scenarios Explained:** Learn through practical examples to master real-world applications.
- **? Doubt Sessions:** Clarify your doubts through dedicated doubt-clearing sessions.





## CONTACT DETAILS

If you required any further information, please fill free to contact us.

### Learnomate Technologies Pvt. Ltd

- Main Branch:

(Sai Luxuria, Office No 15, 3rd Floor, Bhumkar Chowk,  
Wakad, Pune, Maharashtra, 411057 India)

**Call/WhatsApp:** +91 +91 9325408926, +91 9225093995

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- Kalewadi Branch.

Office no.216, Solitaire business hub, 2nd floor, Kaspate Wasti, Wakad,  
Pune, Maharashtra 411057

**Call/WhatsApp:** +91 8983069523

---

- Kharadi Branch

City Vista Buisness park. A Wing, 3rd floor, Office No. 12A. Fountain  
Road, Ashoka Nagar, Kharadi, Pune, Maharashtra 411014

**Call/WhatsApp:** +91+91 9325408926, +91 9225093995



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