

# Python and Data Structures using Python

## Description

Our Python Training Course will give you all the knowledge needed to work on the Python platform. This python course will enable you to develop website and register on web server to show the world your creativity. Some important topics covered in this training are Python introduction, its components and the various resources, the process of creating Modules, the method of using class, and the different predefined Modules, Lists, Dictionary, Inbuilt functions, and complete data structure.

## Expectations and Goals

- Getting a clear view on Python Programming
- Working with Functions, Module, Packages
- Writing Algorithms using Python
- Getting a knowledge of Data structure using python

## Prerequisites

No prerequisite required.

## Course Schedule

Module	Topic
Module 1	Introduction to Python <ul style="list-style-type: none"><li>• History of Python</li><li>• Using Python Interpreter</li><li>• The Interpreter and its Environment</li><li>• Using Python as Calculator</li><li>• First Step towards Programming</li></ul>
Module 2	String Handling <ul style="list-style-type: none"><li>• Assigning Values to Variables</li><li>• Multiple Assignment</li><li>• Standard Data Types</li><li>• Python Strings</li><li>• Data Type Conversion</li></ul>
Module 3	Control Flow Tools <ul style="list-style-type: none"><li>• If/else</li><li>• Elif</li><li>• Iterative statement</li></ul>
Module 4	Function <ul style="list-style-type: none"><li>• Defining a Function</li><li>• Calling a Function</li><li>• Default Attribute Function</li></ul>
Module 5	Python Data Structures <ul style="list-style-type: none"><li>• Introduction to List</li><li>• Work on Tuples</li><li>• Sets</li><li>• Dictionary</li></ul>
Module 6	Module and Packages <ul style="list-style-type: none"><li>• Locating Modules</li><li>• Creating Modules</li><li>• Creating Packages</li><li>• Using Packages</li></ul>

<b>Module 7</b>	List , Set, Dictionary Comprehension <ul style="list-style-type: none"> <li>• List Comprehension</li> <li>• Set Comprehension</li> <li>• Dictionary Comprehension</li> </ul>
<b>Module 8</b>	Files I/O <ul style="list-style-type: none"> <li>• Printing to the Screen</li> <li>• Reading Keyboard Input</li> <li>• The input Function</li> <li>• Opening and Closing Files</li> <li>• The open Function</li> <li>• The file Object Attributes</li> <li>• The close() Method</li> <li>• Reading and Writing Files</li> <li>• The write() Method</li> <li>• The read() Method</li> </ul>
<b>Module 9</b>	Introduction to OOP <ul style="list-style-type: none"> <li>• Introduction to OOP</li> <li>• Class and Objects</li> <li>• Class Diagram</li> <li>• Constructor</li> </ul>
<b>Module 10</b>	Encapsulation <ul style="list-style-type: none"> <li>• Need for Encapsulation</li> <li>• Private Attributes</li> <li>• Getting Setter Methods</li> </ul>
<b>Module 11</b>	CGI with HTML Pages <ul style="list-style-type: none"> <li>• Using CGI Module</li> <li>• CGI Environment Variables</li> <li>• GET and POST Methods</li> <li>• Passing Information using GET method</li> <li>• Simple URL Example : Get Method</li> <li>• Simple FORM Example: GET Method</li> <li>• Python Passing Information Using POST Method</li> </ul>
<b>Module 12</b>	Using Objects <ul style="list-style-type: none"> <li>• Reference Variable</li> <li>• Pass by Reference</li> <li>• Self</li> <li>• Need for Static</li> <li>• Static Attributes</li> <li>• Static Methods</li> </ul>
<b>Module 13</b>	Inheritance <ul style="list-style-type: none"> <li>• Need for Inheritance</li> <li>• Overriding</li> <li>• Super ant Types</li> </ul>
<b>Module 14</b>	Abstract Class <ul style="list-style-type: none"> <li>• Need for Abstract</li> <li>• Abstract Methods</li> </ul>
<b>Module 15</b>	Exception Handling <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Raise</li> <li>• Custom Exception</li> </ul>

<b>Module 16</b>	List Data Structure <ul style="list-style-type: none"><li>• List using Array</li><li>• List using Linked list</li></ul>
<b>Module 17</b>	Using of Stack & Queue <ul style="list-style-type: none"><li>• Introduction</li><li>• Stack – Operations</li><li>• Stack – Applications</li><li>• Queue – Operations</li></ul>
<b>Module 18</b>	Non- Linear Data Structure <ul style="list-style-type: none"><li>• Graphs</li><li>• Trees</li></ul>
<b>Module 19</b>	Search Algorithms <ul style="list-style-type: none"><li>• Linear Search Algorithm</li><li>• Binary Search Algorithm</li></ul>
<b>Module 20</b>	Sort Algorithms <ul style="list-style-type: none"><li>• Selection Sort Algorithm</li><li>• Bubble Sort Algorithm</li><li>• Merge Sort Algorithm</li></ul>
<b>Module 21</b>	Project work and documentation