

# VEDITHTECH

## PYTHON PROGRAMING:

### Course Overview

Python is a programming language that helps you work more efficiently and quickly. it will also help you to integrate your systems faster. Python language is known for its high reliability and simple syntax. The course is completely designed and prepared in such a way that the candidate can utilise it in complete development of applications of website and GUI and web development.

The Learning of python course as a high-level programming language will shift your focus on core functionality of the applications by handling major programming tasks. Our simple way of training the course to candidates that makes it easier for them to keep the code readable and application maintainable.

On the successful completion of Python course candidates will able to have clear understanding of concepts like data structure, networked application program, database

### Course Prerequisite

Python Programming Language course is prepared with no technical prerequisite. Still having prior knowledge about mentioned will help candidates and professionals for better understanding of course.

- Well understanding of basic programming concepts.
- Basic understanding of programming script, regular expressions.
- Basic understanding of different functionalities to enhance the programming concepts.

### Course Content

#### History

The Python Programming language was found in 1980s by Guido van Rossum and started its use by the end of 1989. The Language is designed to be capable of exception handling and interfacing with operation systems

#### Introduction

Python is a widely used general – purpose and high – level programming language. The language is designed with greater value of code readability and it helps to python developers to make them express their concepts in very few lines.

## Why Python?

Python is designed in such a way that it can be used to build anything, which will be made easy with different tools. It is user – friendly and a great backend support for web development, data analysis, artificial intelligence and scientific computing.

## Setup and Installation

To start using the python programming language, we will help you with the complete process of setup and installation documentation and tools.

## Modes of Programming

This module explains you the basic modes of programming language like Normal mode and the interactive mode. Our trainers will take you through it to understand the concept in a smooth and better way.

## IDLE

IDLE is an Integrated DeveLopment Environment for python. It is been associated with the default implementation of the python language. It is a Multi – Window text editor for python.

## Basic Syntax

### Identifiers

Identifier is a name that is used to identify a variable, function, class, module or any other object in the python programming language.

### Reserved Words

Reserved words are also explained as the keywords in the python language. It holds defined and predefined meanings for the syntax used in the language.

### Comments

Python Programming Language has the commenting capability that is used for the purpose of in code documentation. It always starts with #.

### Quotations

Python programming Language uses a simple way to use quotation symbols in the strings. The single and double quotes are used as per the requirement in language.

### Lines and Indentations

In Python Programming Language, Indentation is used for the spaces at the beginning of the code line. Python language uses Indentation to indicate block of code.

### **Multi – Line Statements**

The Statements used in the python are the code instructions that re used and executed by the python interpreter. We can use the multi-line statements in python.

### **User Input**

User input is the function used in the python programming language. The function is mainly used to execute the flow of the program.

## **Operators in Python**

### **Arithmetic Operators**

Python Arithmetic Operators explains in detail about how to handle the arithmetic operations like Addition, Multiplication, Subtraction, Division, Modulus and exponents.

### **Assignments Operators**

Python Assignments Operator provides understanding about how to assign the operators to variables. The operators like =, +=add AND, Subtract AND, Multiply AND and many more with description and examples.

### **Comparison Operators**

Python Comparison Operators uses to compare the values on either side of them and decide the rotation among them. They are also called rational operators. The comparison operators are mainly used to compare value for stating the statements true or false.

### **Logical Operators**

Python Logical Operators like Logical AND, Logical OR, Logical NOT are used to prove the conditional statements true or false by applying them.

### **Bitwise Operator**

Bitwise Operator in Python works on bits and performs bit by bit operations. The values used in the binary operators are in the binary format that in 0s and 1s.

### **Membership Operator**

Python Membership Operator used to test the membership in sequence such as lists, string, tuples. It is used to evaluate the sequence true or false.

## **Datatypes in Python**

### **Numbers**

Numbers is one of the datatypes used in the python. There are three numeric datatypes that re int, float and complex. They are used in python to assign the numeric value to the variables used.

### **Strings**

Strings literals are the datatypes in python are surrounded by the single quotation marks as well as double quotation marks. Also, it explains the prints () function used for applying the datatypes.

### **Lists**

Lists are the collections datatypes in the python programming language. Lists are the collections that are ordered and changeable. It also allows duplicate members.

### **Set**

Set is the collection datatype that is unordered and unindexed. It also allows duplicate members.

### **Tuple**

Tuple is the collection datatype in python programming language. It is the collection which is ordered and unchangeable but allows duplicate members.

### **Dictionary**

Dictionary is the collection datatype in the python. It is a collection which is indexed, changeable but unordered and does not allow duplicate members.

## **Flow Control**

### **If-else Statement**

Python Programming Language supports the conditions and logical statements. If- else is the logical statement helps get the result.

### **While loops**

While loops can be used in the python language to execute certain set of statements as far as the condition is true.

## **For loops**

For is the keyword used in the python and for loops is used for iterating over a sequence that can be either list, tuple, string or set.

## **Control Statements**

Python language uses the loop control statements like break statement, continue statement, the range function to continue or stop the loop iteration.

## **Functions**

### **Function Definition**

Python Programming Language uses the functions that is called as the block of code and it is only runs when it is called. Parameters as a data can be passed in to functions

### **Function Arguments**

Functions in the python language uses arguments as an information that is passed to the functions. We can add as many by separating with comma.

### **The return Statement**

The return statement is used in the python language to make the function return value provided by the statement.

### **Scope of Variable**

In python Language, the scope of variable can be explained as when the variable is available from inside the region. There are different types of scope in python language.

### **The Global Statement**

The global statement is used in the python language when the variable is created in the main body of the python code.

## **Modules and Packages**

### **What is a module?**

In Python language, the module is considered as a file containing set of functions that we include in our application.

### **The Import Statement**

In python language, the import statement is used to import some parts from the module and it can be done by using from Keyword.

## **Namespaces and Scoping**

In Python Language course, the namespaces is defined as the mapping the names to the objects declared whereas scoping explains textual region where namespace is directly accessible.

### **The global () and Local () Functions**

In python Programming Language, local function can be used when the variable is declared inside the function as well as global function can be used for variable created in the main body of the python code.

### **The dir () function**

In the Python Programming Language, the dir() function is a built – in function is used to list down ll the functions or the variable names in the module.

### **Packages in Python**

Packages in python are considered as the namespaces which contain multiple packages and modules themselves. Each Package in python is considered as a directory.

### **Files and Directories in Python**

#### **File I/O Overview**

In python programming language, the course covers all I/O functions in python with required syntax needed for both input and output statements and functions.

#### **Opening and Closing File**

Python Language uses its own built in functions like open () and close () for the opening and closing of the file respectively.

#### **Python file methods**

Python languages uses various types of methods like open (), close (), write () and more methods and functions for the files in pythons

#### **Working with directories**

All files in the python language are contained within various directories. The module has several methods that help to create, remove or modify directories in python.

#### **The OS Module**

In Python, the OS module explains the way in which the operating system dependent functionality can be handled.

## **The Sys Module**

This module explains in detail information about the constants, functions and methods of the python interpreter.

## **Error and Exception Handling**

### **Error and Its Types**

In python language, it provides two important features to hand error that are exception handling and Assertions. The exception handling can be done with few different types.

### **Assertions in Python**

Assertions are used in the python for the testing of the program and it can be done by using method like assert statement.

### **Handling Exceptions**

In python programming language, there are more than 20 standard exceptions can be handled and it can explain with descriptions of them.

### **The try-finally clause**

In python language, the try – finally clause can e used to avoid exception from the suspicious code to defend the program. Finally block is needed where the code must be executed.

### **User defined Exception**

Python programming language allow user to create their own exceptions by deriving classes from the standard built – in exceptions.

## **Classes and Objects**

### **About Object Oriented Programming**

As the name Object Oriented Programming it uses objects in programming that aims to use the real – world entities like inheritance, hiding polymorphism and etc.

### **Defining Classes**

In the python language, the classes are defined as the instance for the object or a thing in object-oriented programming concepts.

## **Constructors**

A constructor is a special kind of method that used in python, when the object is initiated using the definition found in class.

## **Instance Methods**

The instance method is the first method that has been called by the class. This is a basic method and used most of the times in python.

## **Class Variables**

It is a method used in the python for pointing to the class parameter to class instead of object instance when method is called.

## **Automating Random Staff using Python**

### **Web Scraping**

Web Scraping in python helps you to pull large amount of data from different websites as quickly as possible.

### **Working with Spreadsheets**

This module will help you to learn how to work with excel spreadsheets for automating the work using python language.

### **GUI Automation**

GUI Automation in python can be used for controlling the keyboard and mouse as well as knowing various python module in this course.

### **Sending Email and Text Messages.**

Sending email and text messages is big time consuming and that can be managed by automating it with the help of python in this course.