

# PYTHON

Introduction: Python is a high-level, interpreted, interactive and object-oriented scripting language which has feature of highly readable. Python is created by Guido van Rossum in 1989 at National Research Institute for Mathematics and Computer Science in the Netherlands. Keywords used while writing the code in python are same as that of English words.

## Features of Python:

Easy to use: Python is very easy to use and high level language. It is also a programmer friendly language.

Interpreted : It is a interpreter language that execute the code line by line and makes debugging easy for beginners also.

Portable: It is portable which means code written in one system can be executed on the other.

Free and Open: It is free available at official site and source code is also provided which means it is open source.

Object Oriented: It supports oops concepts like classes and objects etc. and everything in python is converted to object.

Dynamic: It is a dynamic language where we need not to specify the data type of the value as it automatically takes it.

## Versions:

Python programming language is being updated regularly.

- Starting from python 1.0 version to python 3.3 it is updated continuously.
- The most recommended version of python is 2.7

## Applications:

Console based application: It is used to develop some console applications.

Ex: IPython

Web applications: It is used to develop web based applications. Ex: Pycocoo, PythonBlogSoftware.

3D CAD Applications: Fandango is a real application which provide feature of CAD.

Enterprise applications: Python can be used to create applications that are used within an organisation.

### Installation:

- Python is available on various operating systems, we can check whether python is installed by opening a terminal and type 'python' to check already installed and version.

### Windows:

- First need to download binary code applicable for the system by going to official <https://www.python.org/downloads/>.
- Download the .msi file for windows installer.
- Install python by double clicking on .msi file and follow the instructions provided.
- This will install python in windows.
- To check whether it is installed open **command prompt** and type **python** it will show the version otherwise and error.

### Setting up path:

- Python programs and executable code can be present in any directory of your system, therefore Operating System provides a specific search path where it should look for executable code. This is done only by setting the path.
- While installing python it will ask for setting the path with a checkbox .
- To add path copy python path where it is installed and paste it in this location My Computer ->Properties ->Advanced System setting ->Environment Variable ->Path->New of your system.
- This will add the python path to the system so that we execute the python program easily.

## Python IDLE:

- IDLE is a Integrated Development environment for Python.
- Python comes with an GUI toolkit.
- It has two modes:

Interactive shell

Development mode.

## Interactive Shell:

• It will provide a command line interpreter this can be opened by searching for python IDLE which will open a shell which is called as python interactive shell.

• This is called interactive shell because we can directly interact with the IDLE.

## Development Mode:

• By clicking on new file in the interactive shell we get a new shell called Development mode.

• Where we can write more lines of code and click on run module to run the code in the Interactive shell.

- The difference between these both is we can write more lines of code in development but not in interactive.

## First Program:

Writing a program in python is simple

- Open a editor(notepad) and write **print "This is Python Program"**.
- While using python 3.0 and above ( ) should be used to write string code.
- Save it at first.py file at some location.

## Executing Python Program:

- Now open command prompt and go to directory of file where it is saved.
- Type **python first.py** and hit Enter.

- It will display “This is Python Program” as output.

There are different ways how we can write and execute python programs by using some python editor like Pycharm where we add python interpreter to pycharm so that we can execute them easily.

Another method is by using the standard python shell where we can write the code and execute in the shell itself.