

CHAPTER-1

INTRODUCTION TO PYTHON

1.1 Introduction:

- General-purpose Object Oriented Programming language.
- High-level language
- Developed in late 1980 by **Guido van Rossum** at National Research Institute for Mathematics and Computer Science in the Netherlands.
- It is derived from programming languages such as ABC, Modula 3, small talk, Algol-68.
- It is Open Source Scripting language.
- It is **Case-sensitive language** (Difference between uppercase and lowercase letters).
- One of the official languages at Google.

1.2 Characteristics of Python:

- ✓ Interpreted: Python source code is compiled to byte code as a **.pyc** file, and this byte code can be interpreted by the interpreter.
- ✓ Interactive
- ✓ Object Oriented Programming Language
- ✓ Easy & Simple
- ✓ Portable
- ✓ Scalable: Provides improved structure for supporting large programs.
- ✓ Integrated
- ✓ Expressive Language

1.3 Python Interpreter:

Names of some Python interpreters are:

- PyCharm
- Python IDLE
- The Python Bundle
- pyGUI
- Sublime Text etc.

There are **two modes** to use the python interpreter:

- i. Interactive Mode
- ii. Script Mode

- i. **Interactive Mode:** Without passing python script file to the interpreter, directly execute code to Python (Command line).

Example:

```
>>>6+3
```

Output: 9

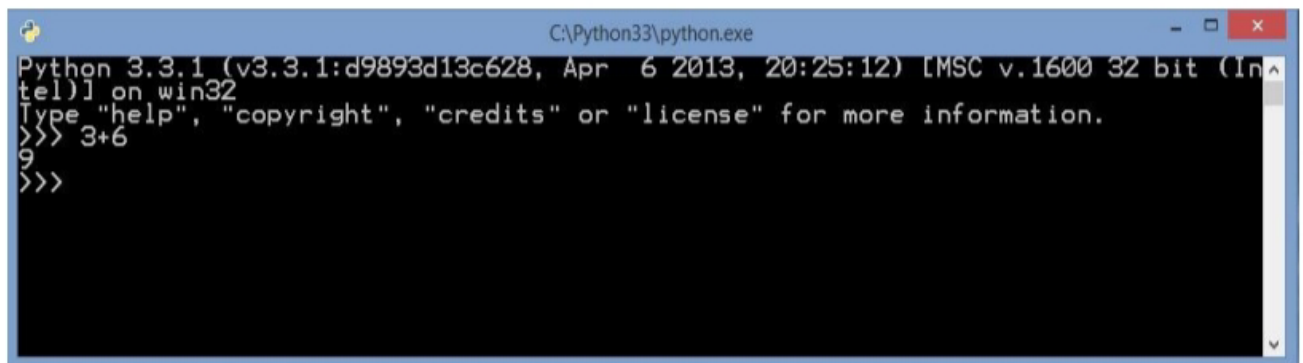
A screenshot of a Windows command prompt window titled "C:\Python33\python.exe". The window shows the Python 3.3.1 (v3.3.1:d9893d13c628, Apr 6 2013, 20:25:12) [MSC v.1600 32 bit (Intel)] on win32. It displays the prompt ">>>" followed by the input "3+6" and the output "9". The prompt ">>>" is shown again on the next line. The window has a standard Windows title bar with minimize, maximize, and close buttons.

Fig: Interactive Mode

Note: >>> is a command the python interpreter uses to indicate that it is ready. The interactive mode is better when a programmer deals with small pieces of code.

To run a python file on command line:

```
exec(open("C:\Python33\python programs\program1.py").read( ))
```

- ii. **Script Mode:** In this mode source code is stored in a file with the **.py** extension and use the interpreter to execute the contents of the file. To execute the script by the interpreter, you have to tell the interpreter the name of the file.

Example:

if you have a file name **Demo.py** , to run the script you have to follow the following steps:

Step-1: Open the text editor i.e. Notepad

Step-2: Write the python code and save the file with .py file extension. (Default directory is *C:\Python33/Demo.py*)

Step-3: Open IDLE (Python GUI) python shell

Step-4: Click on file menu and select the open option

Step-5: Select the existing python file

Step-6: Now a window of python file will be opened

Step-7: Click on Run menu and the option Run Module.

Step-8: Output will be displayed on python shell window.

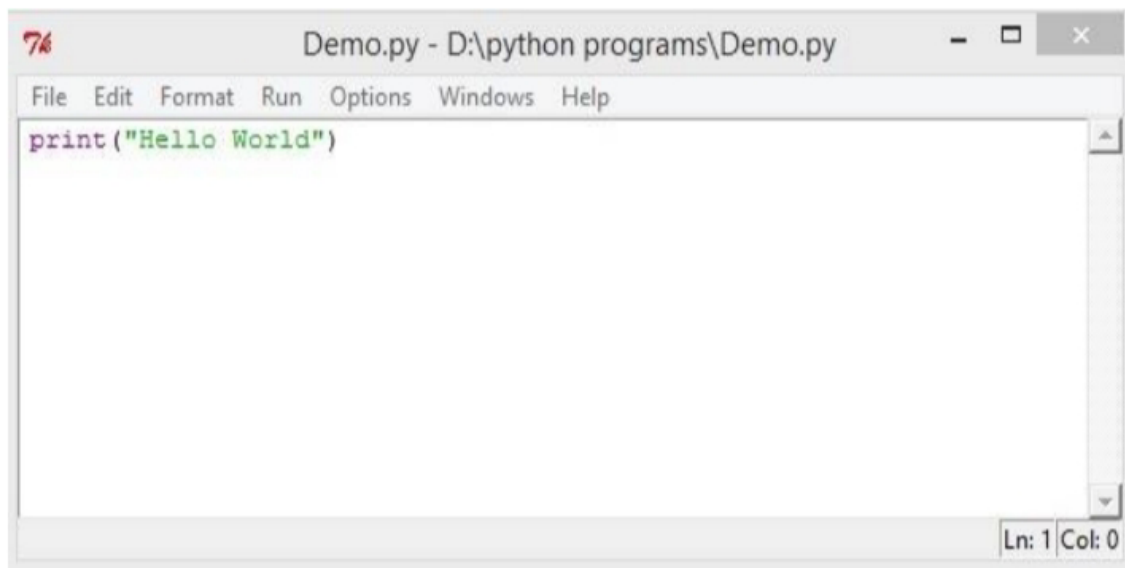


Fig. : IDLE (Python GUI)

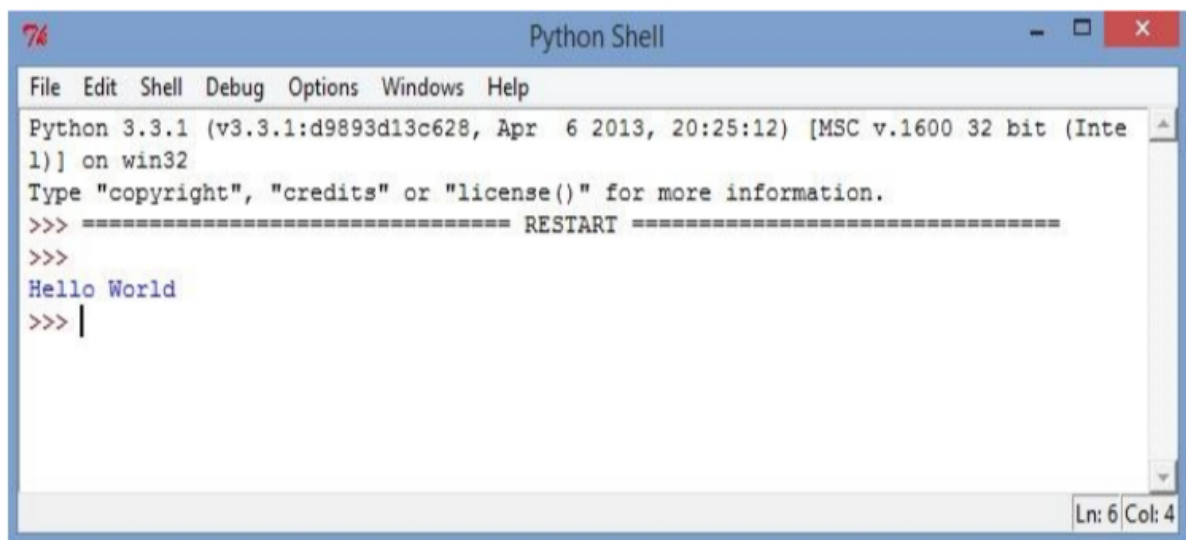


Fig: Python Shell