Program : A program is a set of instructions that can be executed by the computer to perform a specific task.

Purpose of using programs :

1. To get accurate results.
2. To get output very fast.

We can write the programs using both the programming language and scripting language.

**Difference between programming language and scripting language**

1. Most of the programming languages are statistically typed but scripting languages are dynamically typed.
2. Programs written in programming language are compiled using a compiler which will convert it to intermediate code before the execution whereas scripting languages are interpreted using an interpreter.
3. Programming languages are used to develop standalone applications whereas scripting languages ase used to perform automation.
4. Programming languages execute the programs at higher speed as compared with the scripting language.
5. Programming languages may generate the platform specific binaries whereas the interpreted languages are portable.
6. Programming language is a heavy weight language but scripting language is lightweight language.
7. Examples :

Programming languages : Java, C, CPP,

Scripting languages : python, Javascript,perl.

**Python**

Python is a high-level, interpreted, and general-purpose programming language. It was created by Guido van Rossum and first released in 1991.

It is the fastest scripting language.

It is an accessible language for beginners while maintaining powerful features for professional developers.

**Why python got its name**

When Guido van Rossum began implementing Python,he used to read the published scripts from Monty Python's Flying Circus , a BBC comedy series from the 1970s. Van Rossum thought he needed a name that had to be short, unique, and slightly mysterious, so he decided to put the name of the language Python.

**Execution of Python Code**

1)**Compilation:Compiler**

Converts the high level code to low level code/machine understandable code/binary code.

2)**Execution:**

Resolving the binary code step by step is called execution.

 c+e

hello.c ------------>hello.exe

 compiler PVM(interpreter)

hello.py------------------->hello.pyc--------------------->hello.exe

python class file

.pyc ====>Python class file

PVM =====>Python Virtual Machine(Interpreter)

So, python is both compiler based and interpreter based language.

**Features of python**

1. It is free and open source you can download it from

www.python.org/downloads

1. Large standard library
2. Simple and easy to learn
3. Platform independent
4. It is a scripting language
5. Object oriented language
6. Dynamically typed language

**Applications of Python**

1. Web development
2. Automation and testing
3. Networking
4. Game development
5. Application development.
6. Desktop applications
7. Artificial intelligence
8. Web scraping
9. Data science

**Disadvantages of using python**

1. Slower execution speed,
2. Not suitable for developing mobile applications.
3. More memory consumption.
4. Python has a smaller pool of experienced developers compared to other languages like java.
5. It's near impossible to build a high-graphic 3D game using Python
6. Runtime errors: More errors(Exceptions) will be shown at Runtime.(At the time of execution)