PYTHON

1. **Python** is object-oriented, interpreted, dynamic & widely used high-level programming language for general-purpose programming.

2. **Python** created by **Guido van Rossum** and first released in 1991 from python software foundation.

3. **Python** is platform independent & open source language.
   File name extensions in python: .py
   Web site: www.python.org

4. Python is a clear and powerful object-oriented programming language, comparable to Perl, Ruby, Scheme, or Java.

5. Python is used to develop the different types of application such as web-apps, Standalone apps, enterprise apps, ERP and e-commerce application, Scientific & numeric computing etc.

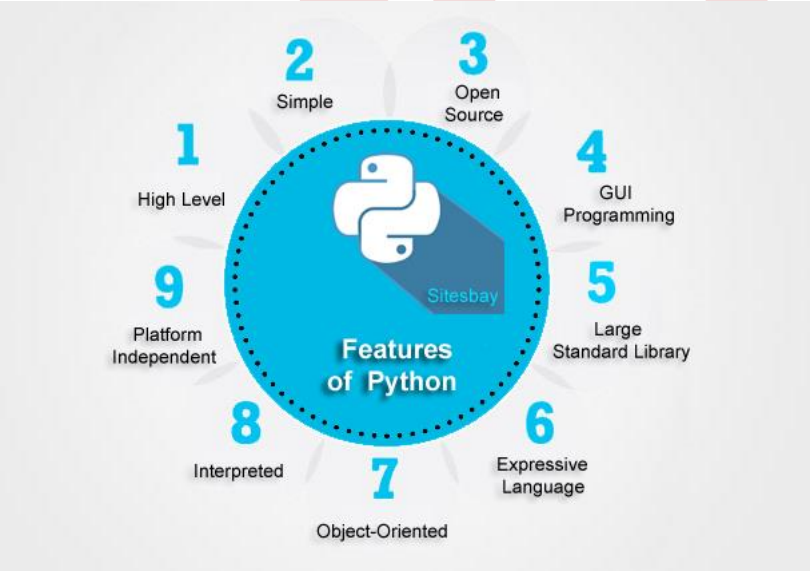
What is Python (Programming)?
Python is a general-purpose language. It has wide range of applications from Web development (like: Django and Bottle), scientific and mathematical computing (Orange, SymPy, NumPy) to desktop graphical user Interfaces (Pygame, Panda3D).

History of Python
Python is a fairly old language created by Guido Van Rossum. The design began in the late 1980s and was first released in February 1991.

Why Python was created?
In late 1980s, Guido Van Rossum was working on the Amoeba distributed operating system group. He wanted to use an interpreted language like ABC (ABC has simple easy-to-understand syntax) that could access the Amoeba system calls. So, he decided to create a language that was extensible. This led to design of a new language which was later named Python.

Why the name Python?
No. It wasn't named after a dangerous snake. Rossum was fan of a comedy series from late seventies. The name "Python" was adopted from the same series "Monty Python's Flying Circus". Python was named for the BBC TV show Monty Python's Flying Circus.

Features of Python



Features of python:
1. Easy to Use
   a. It is a programmer friendly; it contains syntaxes just like English commands.
   b. Uses an elegant syntax, making the programs you write easier to read.

2. High Level Language
   a. Python is a clear and powerful object-oriented programming language, comparable to Perl, Ruby, Scheme, or Java.

3. Expressive Language

a. The code is easily understandable.

4. Interpreted
   a. The execution done in line by line format.
5. Platform Independent
   a. We can run this python code in all operating systems.

6 Open Source
   a. Python is free of cost, source code also available.

7. Object-Oriented language
   a. Python supports object-oriented programming with classes and multiple Inheritance

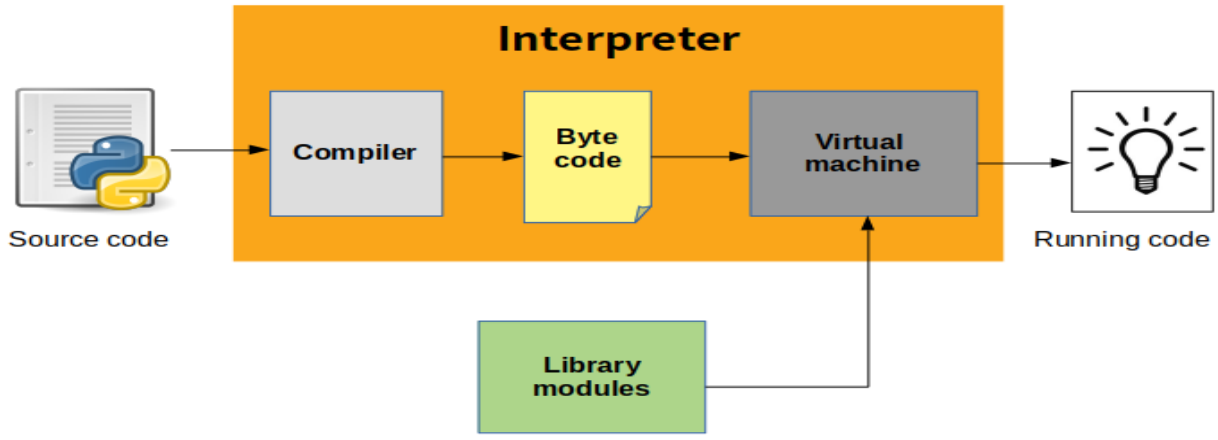
8. Huge Standard Library
   a. Code can be grouped into modules and packages.

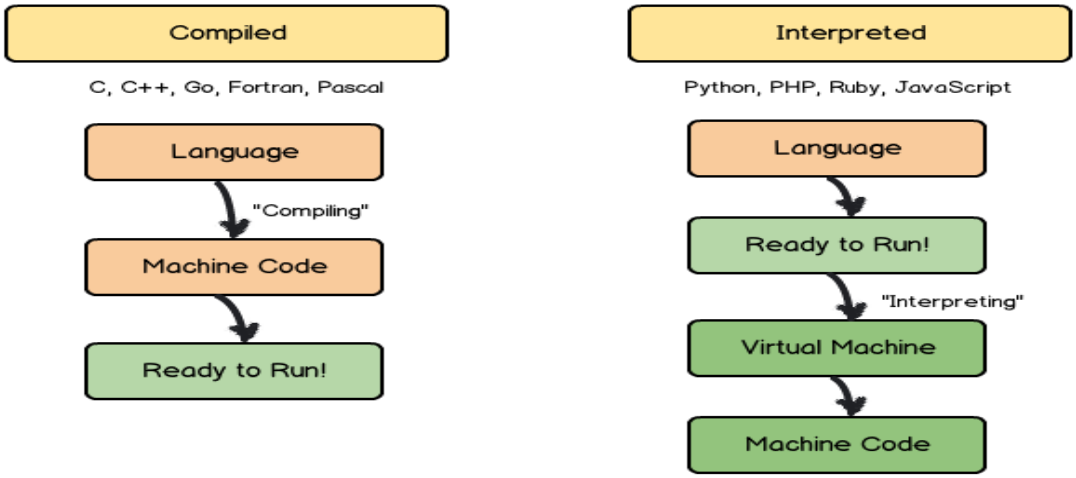
9. GUI Programming
   a. Graphical user interfaces can be developed using Python.

10. Integrated
   a. It can be easily integrated with languages like C, C++, and JAVA etc.

11. Extensible
   a. Is easily extended by adding new modules implemented in a compiled language such as C or C++.

PVM => Python Virtual Machine





Java vs. Python:

1. ***Python simple language:***
   Case 1: *printing sum of value….*

   Case 2: *Taking input from end-user….*

   Case 3: *swapping two numbers.*

2. Python is dynamically typed.
In java we must declare the type of the variables by using data type concept.
But python is dynamically typed no need to declare the data type.

3. Python Single line code
In other languages it will take more lines of code but in python we can write the code in a smaller number of lines.

Case 1: variable declaration single line of code in python.

In java:

```
int eid=101;
String ename="micky";
float esal=75000.00;
```

in python:

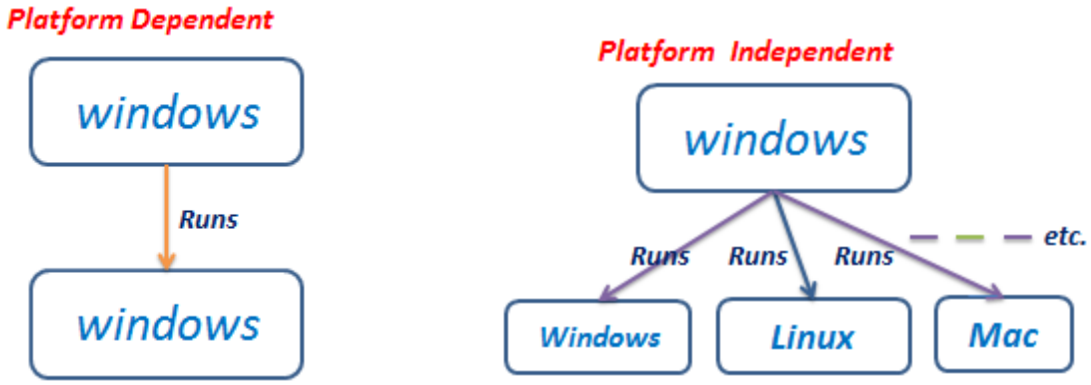
```
eid,ename,esal=101,"micky",9500000.00
```

5. Python platform independent & open source software

a. *Once we develop the application by using any one operating system(windows)* that application runs only on same operating system is called platform dependency.

b. Once *we develop the application by using any one operating system(windows)* that application runs on in all operating system is called platform independency.

c. *Free of cost & source code is open.*

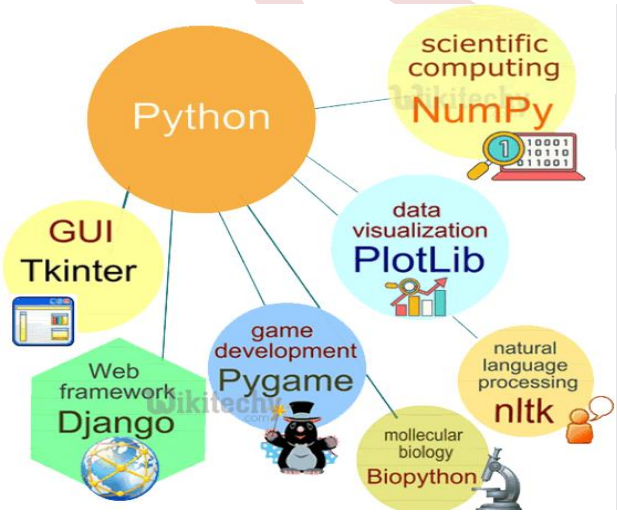


Python Version release dates:

Implementation started - December, 1989
Internal releases at Centrum Wiskunde & Informatica – 1990

Python 0.9.0 - February 20, 1991
Python 1.0 - January 1994
Python 2.0 - October 16, 2000
Python 3.0 - December 3, 2008

PYTHON USE



There is difference between Programming language and Scripting language.

Programming Language:

- A programming language is an artificial language designed to communicate instructions to a machine, particularly a computer
- Programming is making a full code of program
- Compiler-based language

Scripting Language:

- A scripting language is a programming language designed for integrating and communicating with other programming languages.
  - Programs written for a special run-time environment which automates the execution of tasks
  - Example: When the program starts to execute, line-by-line execution is done as per script (PHP, Python, Scala)
- Scripts are just a piece of code
- Interpreter based language

Many people only knows that Python is a programming language; but Python can also be used as scripting language

In Scripting:

- The code is written in the form of Scripts and get executed
- Machine reads and interprets the code
- Error checking is done at Runtime
- Once the code is checked it can be used several times