What is Python?

Python is a general purpose, dynamic, high level, and interpreted programming language. It supports Object Oriented programming approach to develop applications. It is simple and easy to learn and provides lots of high-level data structures.

Python is *easy to learn* yet powerful and versatile scripting language which makes it attractive for Application Development.

Python's syntax and *dynamic typing* with its interpreted nature make it an ideal language for scripting and rapid application development

Python supports multiple programming pattern, including objectoriented, imperative, and functional or procedural programming

styles. We don't need to use data types to declare variable because it is dynamically typed so we can write a=10 to assign an integer value in an integer variable.

Python makes the development and debugging *fast* because there is no compilation step included in Python development, and edit-testdebug cycle is very fast.

The implementation of Python was started in December 1989 by Guido Van

Rossum at CWI in Netherland.

In February 1991, Guido Van Rossum published the code (labeled version 0.9.0) to alt.sources.

Centrum Wiskunde & Informatics


CWI
Centrum Wiskunde & Informatica
CWI

Guido Van Rossum

Python History

- Python was invented by **Guido van Rossum** in 1991 at CWI in Netherland. The idea of Python programming language has taken from the ABC programming language or we can say that ABC is a predecessor of Python language.
- There is also a fact behind the choosing name Python. Guido van Rossum was a fan of the popular BBC comedy show of that time, **"Monty Python's Flying Circus"**. So he decided to pick the name **Python** for his newly created programming language.

  Python has the vast community across the world and releases its version within the short period.

Why Python?

- Python works on different platforms (Windows, Mac, Linux, etc).
- Python has a simple syntax similar to the English language.
- Python has syntax that allows developers to write programs with fewer lines than some other programming languages.
- Python runs on an interpreter system, meaning that code can be executed as soon as it is written. This means that prototyping can be very quick.
- Python can be treated in a procedural way, an object-oriented way or a functional way.

Python Features

- Easy to Learn and Use
- Expressive Language
- Interpreted Language
- Cross-platform Language
- Free and Open Source
- Object-Oriented Language
- Extensible
- Large Standard Library
- GUI Programming Support
- Integrated
- Embeddable
- Dynamic Memory Allocation

Where is Python used?

- Data Science
- Data Mining
- Desktop Applications
- Console-based Applications
- Mobile Applications
- Software Development
- Artificial Intelligence
- Web Applications
- Enterprise Applications
- 3D CAD Applications
- Machine Learning
- Computer Vision or Image Processing Applications.
  - Speech Recognitions

Python Applications


Python Applications
Web applications
Destop GUI Applications
Console-Based Applications
Software Development
scientific & numeric
Busines Applications
Audio or Video-Based Applicatons
3D CAD Applications
Enterprise Applications
Image Processing Applications

Companies Using Python

Google – Searching Data

Netflix – Video Suffering

Facebook – Handle Large Amount of Data

YouTube – Recommend System

NASA – Scientific Calculation

Drop Box – Server side program

Quora – Reading or writing

Instagram – Image or video processing

NSA(National Security Agency) – Scientific Calculation

Torrent – Peer to Peer Connection

In which branch you want to go?

- Data Analytics (Numpy , Pandas etc)
- Automation Testing (Selenium software)
- Web Development (Django)
- Data Visualization (Matplotlib , Seaborn etc)
- Machine Learning (Numpy , Scipy)
- IOT(Internet Of Things) (Mraa , Sockets, MySqldb , Tkinter etc)
- Big Data Hadoop (Dask)

Python IDE(Integrated Development Environment)

All the tools required for application development is integrated in a single s/w and that software is called IDE.

1) Python IDLE (Official)
2) Pycharm
3) Spyder
4) PyDev
5) Wing

6) Jupyter NoteBook

7) Anaconda