Today I'll Cover :

1. Introduction to PYTHON
2. Applications
3. Features
4. Limitations
5. Flavors
6. Versions

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In the name of ALLAH,
the Most Beneficent, the Most Merciful

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Introduction

1. General purpose High Level Language.

2. Developed by Guido van Rossum at National Institute in Netherland In 1989.

3. From 20th-Feb-1991 publicly available.

4. The word 'PYTHON' is taken from a very popular TV show of 1969-74 broadcast by BBC. Name of the show was "MONTY PYTHON'S FLYING CIRCUS".

Guido developed python by taking almost all programming features of that time.

- ✓ Procedural Programming – c
- ✓ Object Oriented – C++
- ✓ Scripting – Perl, Shell Scripting
- ✓ Modular Programming – Modula-3

Syntax of Python is Derived from *C* and *ABC* *language*.

Applications

- ✓ Desktop Application

- ✓ Web Application

- ✓ Network Programming

- ✓ Game Development

- ✓ Data Analysis

- ✓ Machine Learning

- ✓ Artificial Intelligence

- ✓ IOT Programming

Companies like Google, IBM, Microsoft, Yahoo, NASA internally use python.

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Features

❑ Easy to Learn

- When you read Python program you will feel that you are learning English.

- Only 32+ keywords are there.

- Very easy syntax.

- Less code to require to achieve the same task.

- More readability and more simplicity

- Less development time and cost as well.

❑ Freeware and Open Source

- We can use python without any license in free of cost.

- We can View its source Code.

- We can Customize it as per our need.

- Jython is a customized version of python, Developed to work with java Application.

❑ High Level Language

- It is programmer friendly.

- Being a Programmer we are not required to concentrate on low level activities like Memory Management, Security etc.

❑ Platform Independent

- Python follow WORA (Write Once Run Anywhere) concept.
- PVM (Python Virtual Machine) is responsible to convert the code into machine understandable format.

❑ Portable

- We can migrate from one platform to another platform very easily.
- Python program will generate same result on any platform.

❑ Dynamically Typed

- Not required to declare type of the variable.

- Whenever we assign the value, type will be allocated automatically.

C, Java are statically typed language. We have to declare the datatype in the beginning only.

❑ Interpreted

- Not required to compile the program explicitly, internally python's interpreter take care of the compilation.

- If compilation failed interpreter raise "*syntax error*". Once compilation successful PVM is responsible to execute.

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❑ Extensible

- We can use other language program in python.

1. Code reusability.

2. Can improve performance.

❑ Embedded

- We can use python program in any other language program.

❑ Rich Library

- Being a programmer we can use these library directly and
  we not responsible to write the same functionality again.

Limitations

- Performance is not up to the mark, because it is interpreted language.
- We can't develop Mobile Applications.

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Flavors

❑ **CPython**

It is standard flavour of python. It can be used to work with c language.

❑ **Jython**

It can be run on JVM.

❑ **Pypy**

Performance will be improved because of JIT compiler available inside PVM. It is not free.

❑ **Rubypython**

❑ **Anacondapython**

Versions

- Python 1.0 - January 1994.

- Python 2.0 - October 2000.

- Python 3.0 - December 2008.

There is no guarantee that python2 code will run on python3.

Latest version of python is 3.