GETTING STARTED WITH PYTHON

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INTRODUCTION

- Python is a computer programming language.
- Python Programming language was developed by **Guido Van Rossum** in **February 1991**.
- Python Programming language was named after famous BBC comedy show namely **Monty Python's Flying Circus**.
- Python Programming Language is based on or influenced by two programming language.
  - **ABC language**, a teaching language created as a replacement of BASIC
  - **Modula-3**
- Python is an easy to learn Object Oriented Programming Language.
- Python is a very high level programming language yet as powerful as many other middle-level language such as C, C++, JAVA etc.

PYTHON-PLUSES

- **EASY TO USE OBJECT ORIENTED LANGUAGE**
  - Python is a compact programming language.
  - It is an Object Oriented Programming Language
  - It has very simple syntax.
  - It is very high level language and hence very-very user friendly.

- **EXPRESSIVE LANGUAGE**
  - It is more capable of expressing the code's purposes than many other programming language.
  - Its reason is that it requires fewer lines of codes

Example

//In C++: Swap Values of two Variables   *#in Python Swap values of two variables*

   int a=2, b=3, temp;   *a, b=2, 3*

   temp=a;   *a, b=b, a*

   a = b

   b = temp;

PYTHON-PLUSES

- **INTERPRETED LANGUAGE**
  - Python is an Interpreted language not a compiled language.
  - It means python interprets and executes code line-by-line.
  - Hence, easy-to-debug language and thus suitable for beginners to advanced learners of computer programming language.
- **ITS COMPLETENESS**
  - On installation of python, we get everything we need to do real work.
  - We do not need to download and install additional libraries.
  - All types of functionality is available through various modules of Python Standard Library.
  - Example: Diverse functionality such as
    - e-mails
    - Web-Pages
    - Databases
    - GUI Development
    - Network Connections and many more

PYTHON-PLUSES

- ## CROSS-PLATFORM LANGUAGE
  - Python can run equally well on variety of Operating System Platforms – such as Windows, Linus/UNIX, Macintosh, Supercomputers and Smart Phones etc.
  - Python even has versions that run on different languages such as JAVA (Jython), .NET(IronPython) etc.
  - This feature makes Python a true Cross Platform Language or in other words Python is a Portable Language.
- ## FREE AND OPEN SOURCE LANGUAGE
  - Python Language is freely available and can be downloaded from www.python.org.
  - It is not only free rather its source code is also available (Open Source).
  - We can learn by simply reading it, modify, improve/extend an open source software/language.

PYTHON-PLUSES

- **VARIETY OF USAGE / APPLICATIONS**
  - Python is a very powerful, complete and useful programming language which is being used for variety of fields / applications such as
    - Scripting
    - Web Applications
    - Game Development
    - System Administrations
    - Rapid Prototyping
    - GUI Programs
    - Database Applications etc.

PYTHON-MINUSES

Although Python is very powerful language yet it is not the perfect programming language.

There are some areas where python does not offer much or is not that capable.

Following are the minuses of Python

- Not The Fastest Language
- Lesser Libraries than C, C++ and JAVA
- Not Strong on type-binding
- Not Easily Convertible

PYTHON-MINUSES

- **Not The Fastest Language**
  - Python is an interpreted language not fully compiled one.
  - Python is first semi-compiled into an internal byte-code, which is then interpreted by python interpreter.
  - Fully compiled languages are faster than that of the interpreter based language.
  - Though Python provides rapid development times but execution times are not so fast as fully compiler based languages.
- Lesser Libraries than C, C++ and JAVA
  - Python offers library support for almost all computing programs, but still not competent with languages like C, C++, JAVA, Perl etc. as they have larger collection of libraries.
  - C, C++, JAVA and Perl offers better and multiple solutions for some computing problems than python.

PYTHON-MINUSES

- Not Strong on type-binding
  - Python interpreter is not very strong on catching 'Type Mismatch'.
  - As for example, if we declare a variable as integer but later store a string value in it, Python won't complain or pin-point it.

- Not Easily Convertible
  - Due to lack of syntax, python is an easy language to program, but this advantages has flip side too.
  - Since other programing language have strong structured defined syntaxes the translation from python to another language would require the programmer to carefully examine the python code and its structure and then implement the same in another programming language.

Thanks for Watching This Presentation