Python: An Appropriate Language For Real World Programming

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Abstract -- In this paper, we are describe an introduction to Python Programming Language and prove it as a suitable language for both learning and real world programming. Due to this, we will begin with the introduction of python, history and its features. This paper also discuss about the users of python, future scope of this technology and what can we do with python. The most important section of this paper it has the number of options to remove the python demerits through different techniques.

I. INTRODUCTION

Python is a widely used general purpose, high-level, dynamic, object-oriented programming language.

In this paper, we are describe the characteristics of Python Programming language. Its design emphasizes code readability. It provides intended to enable clear programs on all scales. Python supports multiple programming paradigms, including object oriented, functional programming and procedural style. It is perfect for machine learning, complex data analysis and visualization.

II. SOLUTIONS FOR REMOVE THE DEMERITS OF PYTHON

However, in this paper the number of options are described to remove the python demerits through different techniques.

- Get Slow in Speed:

Speed is a major issue. Python is an interpreted language. It can be slower than other compiled languages. The number of methods are used to make the application written in python makes run faster. We can create a custom runtime and use it instead of the default runtime of the programming language.

- Weak in Mobile Computing:

The presence of python programming language on many desktop and server platforms is good and have efficient working ability but it is seen as a weak language for mobile computing.

The major reason for this is that it difficult to secure. There is still a lack of a good secure sandbox for the language. So, use of good secure sandbox enhance their ability in mobile computing.

- Run-time Errors:

Python language is dynamically typed so it has many design restrictions in the system while processing. These restrictions are reported to the Python developers. It requires more testing time, and the errors show up when the applications are finally run.

- To reduce it we can less,
- Division by zero
- Performing an operation on incompatible types
- Using an identifier which has not been defined.

What Types Of Programs Can Be Written In Python?

• System programming in Python:

System programming with the Python is made a lot easy with the help of the operating system module, it serves as an abstract layer between the python program and the operating system. The main advantage of using python for system programming is that most commands are independent of the Operating system i.e, it is platform independent.

• Network programming in Python:

The number of modules are embedded in Python standard library that provides many tools for network programming, such as: client-server connection, socket programming, FTP, Telnet, email functions, RPC, SOAP, etc. Also, some third-party tools like mod-Python allow web servers like apache to run Python scripts.

• Components integrity:

An integrated connection is make by python in between its codes and other components. Tools like Swing and SIP are used to import the compiled codes of any other languages for using in the Python.

• Database programming in Python:

The Python programming language has many powerful features for database programming. Python supports various databases like MySQL, Oracle, Sybase, PostgreSQL, etc.

• Numerical programming:

NumPy module of python can be a powerful alternative for FORTRAN and C++, because it provides powerful tools for working with mathematical libraries, by using simple Python codes. There are many third-party tools on the internet for numerical programming by Python.

• Other programming applications:

Python is dominates in a wide extent of programming areas. For example, PyGame is a tool for game programming and PIL is used for image processing. PyRo is used for rotics programming. A vast complete package for artificial intelligence, network simulation, and shell programming was published under the title NLTK. In all area you can find sufficient modules that can help you to get to your goals.

ADVANTAGES OF PYTHON:

• Extensive Support Libraries

It provides large standard libraries that include the areas like string operations, Internet, web service tools, operating system interfaces and protocols. Most of the highly used programming tasks are already scripted into it that has limits the length of the codes to be written in Python.

• Integration Feature

Python integrates the Enterprise Application Integration that makes it easy to develop Web services or applications by invoking COM or COBRA components.

DISADVANTAGES OF PYTHON:

• Weak in Mobile Computing

The presence of Python programming language on many desktop and server platforms is good and have efficient working. It is weak language for mobile computing. This is the reason why very few mobile applications are built in it like Carbonnelle.

• Gets Slower in Speed

The programming language i.e Python is executes with the help of an interpreter instead of the compiler, which causes it to slow down because compilation and execution help it to work normally. Also, it can be seen that it is fast for many web applications too.

• Run-time Errors

Python language is dynamically typed so it has applied many design restrictions in the system while processing. These restrictions are reported by some Python Developers. It requires more testing time in the processing, and the errors show up when the applications are finally run.

• Under developed Database Access Layers

As compared to the other popular technologies like JDBC and ODBC, the Python's database access layer is found to be a bit under developed and primitive. So, it cannot be applied in the enterprises that need smooth interaction of complex legacy data.

III. WHY LEARN PYTHON?

Beginner Friendliness: Python is designed to be easy to understand and fun to use. Coding in Python is a satisfying experience. Thus, Python has gained popularity for being a beginner-friendly language.

- Easy to Understand: Python is a high level language, so it reads like English. It takes a lot of syntax-learning stress off coding beginners. Python handles a lot of complexity for us, so it is very beginner-friendly in that it allows beginners to focus on learning programming concepts and not have to worry about too much details.

- Very Flexible: As Python is a dynamically typed language, it's really flexible. This means there are no hard rules on how to build features, and we will have more flexibility solving the problems using different methods. Python is also more forgiving of errors, so we'll still be able to compile and run our program until we hit the problematic part.

- Why companies prefer python ?

Python has placed top in the chart over other programming languages like C, C++ & JAVA. Python is widely used with the programmers in different ranges. This language has undergone a drastic change since its release 25 years ago as many add-on features are introduced. The Python 1.0 had the module system of Modula-3 and interacted with Amoeba Operating System with varied functioning tools. Python 2.0 introduced in the year 2000 had features of garbage collector and Unicode Support. Python 3.0 introduced in the year 2008 had a constructive design that avoids duplicate modules and constructs. With the added features, now the companies are using Python 3.5.

IV. PRIMARY FACTORS OF PYTHON USERS

- Python is object oriented:

Its Structure supports such concepts as polymorphism, operation overloading and multiple inheritance.

- It's free:

The process of Downloading and installing python is free and easy source code is easily accessible.

- It's powerful:
  - Dynamic Typing
  - Built-in types and tools
  - Library Utilities
  - Third parties Utilities

- It's Portable:
  - Python runs virtually every major platform used today.
  - We have a compatible Python interpreter installed.

Who uses Python today?

- Python is being applied in real revenue generating products by real companies.
- Google makes extensive use of Python in its web search system and employs Python's creator.
- Intel, Cisco, IBM use Python for hardware testing.
- The youtube video sharing service is largely written in Python.

What can we do with Python?

- System Programming
- Graphical user Interfacing Programming
- Internet Scripting
- Component Integration
- Database Programming
- Gaming, Images, XML, Robot & more.

V. CONCLUSION

In this paper, we introduced the Python programming language as a suitable choice for learning and real world programming. Due to this, history, Advantages and Disadvantages was talked. Then we got to definition and distinguished features of it. According these features we found Python as a slow, powerful, portable, simple and open source language that supports other technologies. Then, different methods are discussed through which we can remove python demerits.

VI. FUTURE SCOPE

Python is the 4th most popular programming language out of 100 with the rise of Ruby on Rails and more recently Node.js, The usage of Python as the main prototyping language for backend web development has diminished somewhat, especially since it has a fragmented MVC ecosystem.

However, with the big data becoming more and more important, Python has become a skill that is more in demand than ever, especially it can be integrated into web applications. As an open source project, Python is actively worked on with a moderate update cycle, pushing out new versions every year or so to make sure it remains relevant. In terms of search volume for anyone interested in learning Python, it has skyrocketed to the 1st place when compared to other languages.

- Science
  - Bioinfomatics
- System Administration
  - Unix
  - Web logic
  - Web Sphere
- Web Application Development
  - CGI
- Testing Script

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