1. Why do we call python as a general purpose and high- level programming language?

* It is a powerful high level and popular language. Python is a object oriented high level language. And it is easy for humans to understand. It was first introduced in 1991 by Guido

Van Rossum,dutch computer programmer.

Uses – it is use foe web -development, mathematical application, extensively used in data science and seveloping machine learning projects building software testing .

1. Why is Python called a dynamically typed language?

-> In python, there is no need to define the types of variables. It allows to directly use the variables as its type-checking will be done during the execution of the program. The interpreter checks the program line-by-line and also examines the data type of the variable.

1. List some pros and cons of Python programming language?

* 1. Easy to read, learn and code

Python is a high-level language and its syntax is very simple. It does not need any semicolons or braces and looks like English. Thus, it is beginner-friendly. Due to its simplicity, its maintenance cost is less

#### 2.  Free, Open Source

It is free and also has an open-source licence. This means the source code is available to the public for free and one can do modifications to the original code. This modified code can be distributed with no restrictions.

This is a very useful feature that helps companies or people to modify according to their needs and use their version.

#### 3.  Portable

Python is also platform-independent. That is, if you write the code on one of the Windows, Mac, or Linux operating systems, then you can run the same code on the other OS with no need for any changes.

This is called Write Once Run Anywhere (WORA). However, you should be careful while you add system dependent features.

#### 4. Wide Range of Applications

Python has many applications like web development, making desktop GUIs, app development, artificial intelligence, data science, etc. It has become a preferred language by the professionals in many areas like engineering, mathematics and science.

#### 5.  Extensible and Integrable to Other Programming Languages

In addition to having libraries like CPython and Jython, it can extend to other languages like C, C++. This feature helps while building projects.

It can also integrate with C, C++, and Java, helping in cross-platform development and also in using the strong features of each language. This makes Python a powerful language.

Cons

## 1.  Python is Slow at Runtime

Python is measurably slower at runtime compared to other programming languages like Java, C++, PHP, Javascript, Swift, etc. This is a major concern for programmers when they are writing giant programs with lots of lines of code.

## 2.  Python is Not Great for Mobile Application Development

Even though Python is a server-side language, it is not the best one when it comes to mobile application development. Android and iOS application development were pretty much out of the question with Python.

## 3.  Python Programmers face Difficulty in Using Other Languages

Many Python programmers do not enjoy coding with other programming languages. This is because they feel that other languages are much more difficult to use. They might be used to code with Python, which is the easiest programming language in the world.

## 4. Python has High Memory Consumption

For memory-intensive tasks, Python is not always the best choice. The memory consumption of Python is high due to the flexibility of the data types.

Python has automatic garbage collection when objects go out of scope.  Due to this functionality, Python intends to remove a lot of the complexity of memory management that languages like C and C++ involve.

## 5. Python is not used commonly in the Enterprise Development Sector

Python is a powerful programming language with minimal worries for programmers and has built a considerable buzz in the large-scale web development space. But, despite its popularity, Python has failed to penetrate enterprise development.

1. In what all domains can we use Python?

* **It is a popular choice for building web apps, gaming applications, enterprise-grade apps, e-commerce applications, ML and AI applications, and much more.**

Unlike most programming languages, the practical uses for Python are not limited to just web or mobile development.

It is a popular choice for building web apps, gaming applications, enterprise-grade apps, e-commerce applications, ML and AI applications, and much more.

1. What are variable and how can we declare them?

->A Python variable is a reserved memory location to store values. In other words, a variable in a python program gives data to the computer for processing.

Types:

Every value in Python has a datatype. Different data types in Python are Numbers, List, Tuple, Strings, Dictionary, etc. Variables in Python can be declared by any name or even alphabets like a, aa, abc, etc.

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