Python

what is python?

Python is a free, open-source programming language. Therefore, all you have to do is install Python once, and you can start working with it. Python is simple to use, but it is a real programming language, offering much more structure and support for large programs than shell scripts or batch files can offer.

Python is an interpreted, interactive, object oriented programming language. It incorporates modules, exceptions, dynamic typing, very high level dynamic data types, and classes. Python combines remarkable power with very clear syntax. It has interfaces to many system calls and libraries, as well as to various window systems, and is extensible in C or C++. It is also usable as an extension language for applications that need a programmable interface. Finally, Python is portable

History—

The programming language Python was conceived in the late 1980s, and its implementation was started in December 1989 by Guido van Rossum at CWI in the Netherlands as a successor to ABC capable of exception handling and interfacing with the Amoeba operating system. Van Rossum is Python's principal author, and his continuing central role in deciding the direction of Python is reflected in the title given to him by the Python community

Python 2.0 was released on October 16, 2000, with many major new features, including a cycle-detecting garbage collector (in addition to reference counting) for memory management and support for Unicode. However, the most important change was to the development process itself, with a shift to a more transparent and community-backed process.

Python 3.0, a major, backwards-incompatible release, was released on December 3, 2008 after a long period of testing. Many of its major features have also been backported to the backwards-compatible, while by now unsupported, Python 2.6 and 2.7.

Why it is so called??

When he began implementing Python, Guido van Rossum was also reading the published scripts from “Monty Python’s Flying Circus”, a BBC comedy series from the 1970s. Van Rossum thought he needed a name that was short, unique, and slightly mysterious, so he decided to call the language Python.

Why Python?

Python is a cross-platform compatible language. It means you have a Windows, Mac or Linux, you can rest assure that Python will work on all these operating systems.!!

Python is also a great visualization tool. It provides libraries such as Matplotlib, seaborn and bokeh to create stunning visualizations.! So you can create some great apps.!!!

Python is the most popular language for machine learning and deep learning. As a matter of fact, today, all top organizations are investing in Python to implement ML in the back-end..!!

Advantages…

1.Simple and easy to learn:

Learning python programming language is fun. If you compare Python with any other language, for example, Java or C++, then you will find that its syntax is a way lot easier. You also don't have to worry about the missing semicolons (;) in the end!

Suppose we want to print "Hello..!!" on our screen. Let's compare the syntax for Python and Java:

Java:

```
class Test {
        public static void main(String args[])
{
      System.out.println("Hello..!!");
    }
}
```

Python:

```
print("Hello..!!")
```

2. Career Opportunities:

Python has huge career opportunities in the IT industry. Almost every IT company, be it a startup or a MNC uses python for varied applications. So, if you are good in python, you will be in demand for a wide range of jobs in different domains such as machine learning, cloud infrastructure, web-site designing, testing and many more.

3.Large Open Source Community:

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Variables in Python-

You can consider a variable to be a temporary storage space where you can keep changing values. 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. Every value in Python has a datatype.

Assigning values to a variable..

To assign values to a variable in Python, we will use the assignment (=) operator.

Assigning a value 5 to x:

```
X=5

Print(x)
```

Output:

5

Allocating "Hello" to x:

```
Y="Hello"

Print(Y)
```

Output:

Hello

Data Types in Python..

Datatype

a.Immutable	b. Mutable
1.strings	1.Dictionaries
2.Tuples	2.Lists
3.Numbers	3. Sets