

PROGRAMMING WITH PYTHON

UNIT-1

PYTHON INTRODUCTION: ORIGIN AND FEATURES

ORIGIN:

Python is a widely used general-purpose, high-level programming language. It was initially designed by **Guido van Rossum** in **1991**. Work on Python began in late 1989 by Guido van Rossum, at CWI (Centrum Wiskunde Informatica) in the Netherlands. It was eventually released for public distribution in early 1991. At the time, van Rossum was a researcher with considerable language design experience with the interpreted language ABC, also developed at CWI, but he was unsatisfied with its ability to be developed into something more. Having used and partially developed a higher-level language like ABC, falling back to C was not an attractive possibility. Some of the tools he envisioned were for performing general system administration tasks, so he also wanted access to the power of system calls that were available through the Amoeba distributed operating system. Although van Rossum gave some thought to an Amoeba-specific language, a generalized language made more sense, and late in 1989, the seeds of Python were sown.

FEATURES:

➤ Easy to code

Python is a High-Level Programming Language. Python is very easy to learn the language as compared to other languages like C, C#, Java script, Java, etc. It is very easy to code in the Python language and anybody can learn Python basics in a few hours or days. It is also a developer-friendly language.

➤ **Easy to Read**

As you will see, learning Python is quite simple. As was already established, Python's syntax is really straightforward. The code block is defined by the indentations rather than by semicolons or brackets.

➤ **Object-Oriented Language**

One of the key features of python is Object Oriented Programming. Python supports object-oriented language and concepts of classes, object encapsulation, etc.

➤ **High-Level Language**

Python is a high-level language. When we write programs in Python, we do not need to remember the system architecture, nor do we need to manage the memory.

➤ **Easy to Debug**

Excellent information for mistake tracing. You will be able to quickly identify and correct the majority of your program's issues once you understand how to interpret Python's error traces. Simply by glancing at the code, you can determine what it is designed to perform.

➤ **Python is a Portable language**

Python language is also a portable language. For example, if we have Python code for Windows and if we want to run this code on other platforms such as Linux, Unix, and Mac then we do not need to change it, we can run this code on any platform.

➤ **Python is an Integrated language**

Python is also an Integrated language because we can easily integrate Python with other languages like C, C++, etc.

➤ **Interpreted Language:**

Python is an Interpreted Language because Python code is executed line by line at a time. like other languages C, C++, Java, etc. there is no need to compile Python code this makes it easier to debug our code. The source code of Python is converted into an immediate form called **bytecode**.

➤ **Large Standard Library**

Python has a large standard library that provides a rich set of modules and functions so you do not have to write your own code for every single thing. There are many libraries present in Python such as regular expressions, unit testing web browsers, etc.

➤ **Dynamically Typed Language**

Python is a dynamically-typed language. That means the type (for example- int, double, long, etc.) for a variable is decided at run time not in advance because of this feature we don't need to specify the type of variable.