

Introduction to PYTHON

- It is a high-level programming language.
- It is a scripting language.
- It was created by Guido van Rossum and released in 1991 at the National Research Institute for Mathematics and Computer Science in the Netherlands.
- It is a system-independent language.
- Python's name came from an old BBC television comedy sketch series called 'Monty Python's Flying Circus'.
- It is an open-source software.
- Source code can be compiled or just-in-time.
- It is an interpreted language.
- Interpreter: it converts high-level language code to machine language line by line.

What is a programming language?

→ It is somewhat like a natural language, but with a very limited set of statements and strict syntax rules.

→ It has statements to implement sequential, conditional, and iterative statements.

Examples:

FORTRAN, COBOL, LISP, BASIC, PASCAL, C, C++, JAVA.....

FEATURES OF THE PYTHON:

- Easy to write code
- Open source
- Supports GUI
- Supports object-oriented programming
- Cross-platform language
- Large standard library

Python applications:

- Web applications
- Desktop applications

- Console-based applications
- Scientific and numeric applications
- Business applications
- Audio or video based applications
- 3D CAD applications
- Enterprise applications
- Image processing applications

Advantages of python:

1.interpreted language

2.dynamically type

3.free and open source

4.vast libraries support

Dis-Advantages:

→slow speed

→not memory efficient

→database access

→runtime errors

→weak in mobile computing.

What is the difference between java and python?

JAVA	PYTHON
1.it is statically typed.	1.dynamically typed.
2.compiled language	2.interpreted language
3.more-libraries and documentation	3.less libraries and documentation
4.large legacy problems	4.fewer legacy problems

5.mainly used in web, mobile and enterprise applications	5.mainly used for datascience, AI and machine learning.
6.faster than python	6.fast but usually slower than java

Python tokens:

1.keywords:

True, False, None, and, as, assert, def, class, continue, break, else, finally, elif, del, except, global, for, if, from, import, raise, try, or, return, pass, nonlocal, in, not, is, lambda.

2.identifiers or variables:

Identifiers are the names given to the fundamental building blocks in a program.

These can be variables, class, objects, functions, lists,dictionaries....etc

Rules:

1.An identifier is a long sequence of characters and numbers.

2.no special character except underscore(_) can be used as an identifier.

3.keyword should not be used as an identifier name.

4.python is case sensitive.

5.first character of an identifier can be character, underscore but not digit.

Examples:

NAME(valid)

Name(valid)

name(valid)

NaMe(valid)

Stu name(invalid)

Stu_name(valid)

_name(valid)

1name(invalid)

Name_1(valid)

Variable is a name of the memory location where data is stored.

1. Assigning values to the variables:

Example:

```
>>> a=10
```

```
>>> name="sushma"
```

```
>>> sal=45000
```

```
>>> print(a)
```

10

```
>>> print(name)
```

sushma

```
>>> print(sal)
```

45000