NETWORKZ SYSTEMS

AN ISO 9001:2015 CERTIFIED COMPANY

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INTRODUCTION TO PYTHON

Python is a widely used general-purpose, high-level programming language as well as scripting language.

It was initially designed by Guido van Rossum in 1991

It was mainly developed for emphasis on code readability, and its syntax allows programmers to express concepts in fewer lines of code

creator

HISTORY

Python laid its foundation in the late 1980s

ABC programming language is said to be the predecessor of Python language which was capable of Exception Handling and interfacing with Amoeba Operating System.

Python is influenced by following programming languages:
ABC language.
Modula-3

Named after “Monty Python’s Flying Circus”

The implementation of Python was started in the December 1989 by Guido Van Rossum at CWI(Centrum Wiskunde & Informatica) in Netherland.

VERSIONS

Python version	Maintenance status	First released	End of support	Release schedule
3.13	prerelease	2024-10-01 (planned)	2029-10	PEP 719
3.12	bugfix	2023-10-02	2028-10	PEP 693
3.11	bugfix	2022-10-24	2027-10	PEP 664
3.10	security	2021-10-04	2026-10	PEP 619
3.9	security	2020-10-05	2025-10	PEP 596
3.8	security	2019-10-14	2024-10	PEP 569

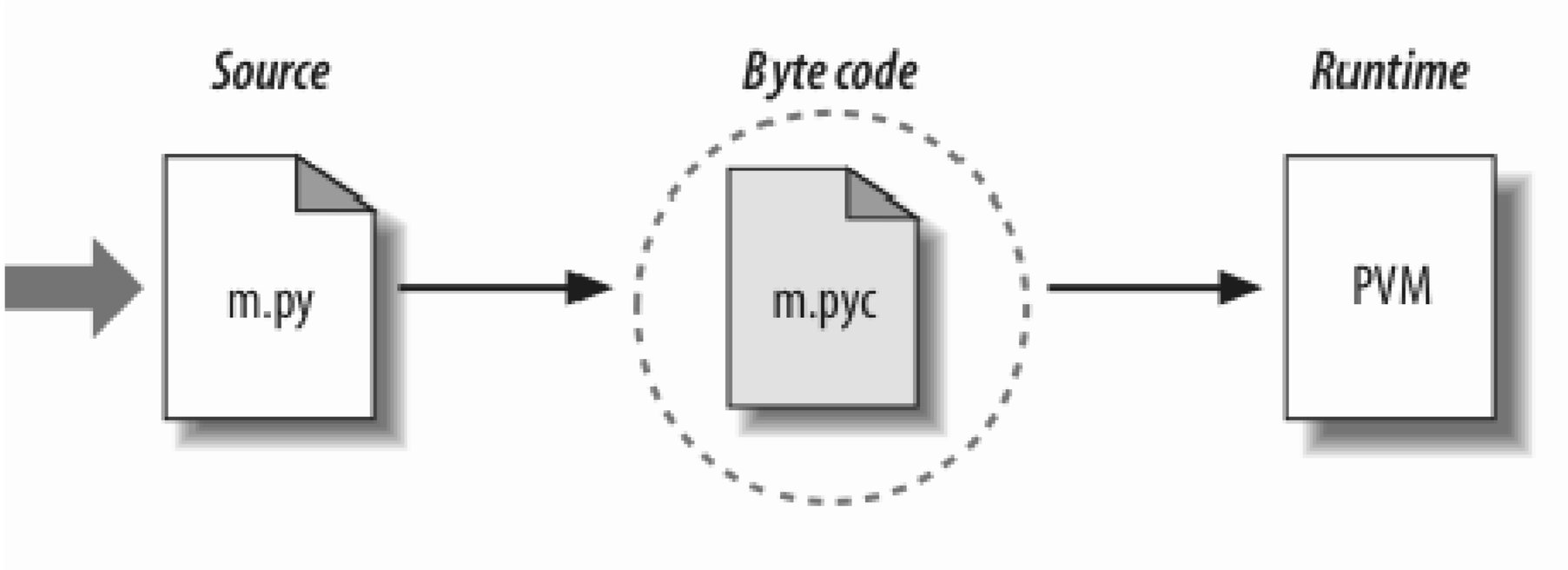
FEATURES

1)Easy to Learn and Use
2) Expressive Language
3) Interpreted Language
4) Cross-platform Language
5) Free and Open Source
6) Object-Oriented Language
7) Dynamic typing
8) Automatic memory management
9) Extensible
10) Large Standard Library
11) GUI Programming Support

APPLICATIONS

1) Web Applications
   provides Frameworks such as Django, Pyramid, Flask,Falcon
2) Desktop GUI Applications
   Tkinter GUI library
3) Software Development
4) Scientific and Numeric
5) Business Applications
6) Audio or Video based Applications
7) 3D CAD Applications
8)Applications for Images

Python Code Execution



Python Syntax compared to other programming languages.

Python was designed for readability, and has some similarities to the English language with influence from mathematics.

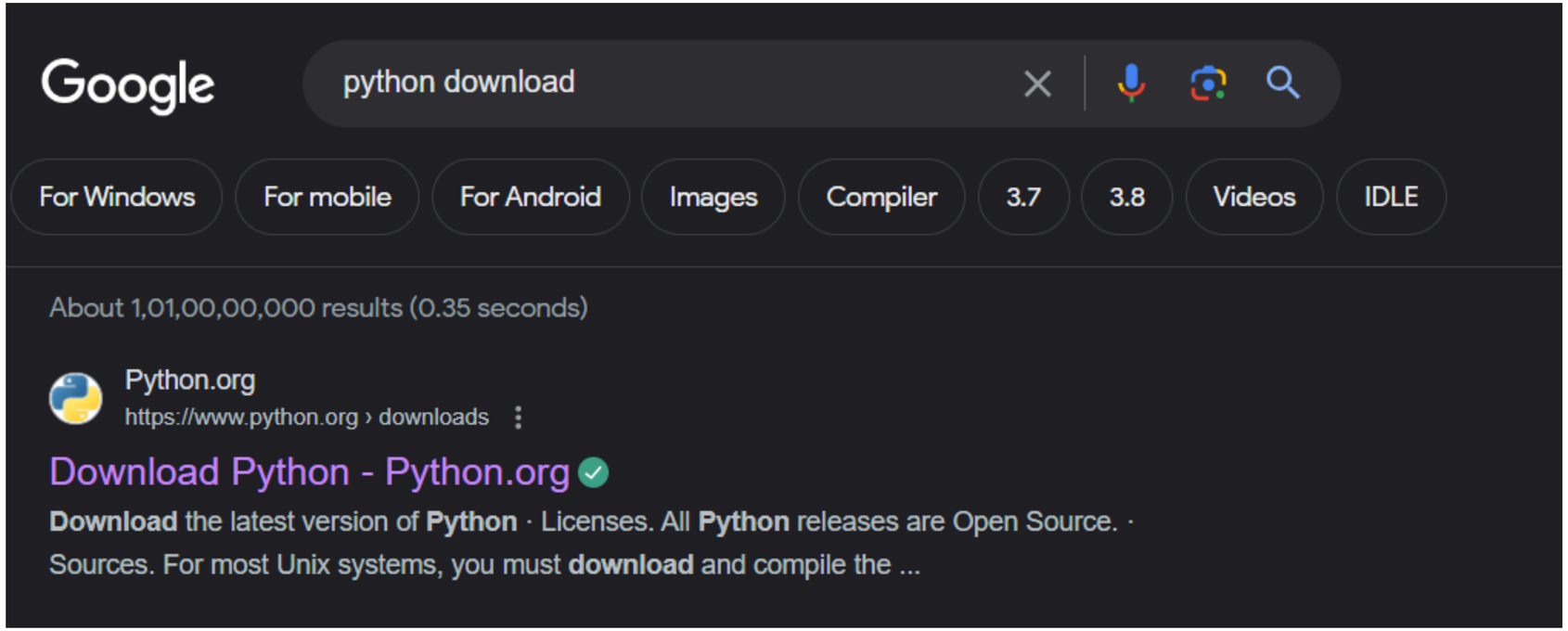
Python uses new lines to complete a command, as opposed to other programming languages which often use semicolons or parentheses.

Python relies on indentation, using whitespace, to define scope; such as the scope of loops, functions and classes. Other programming languages often use curly-brackets for this purpose

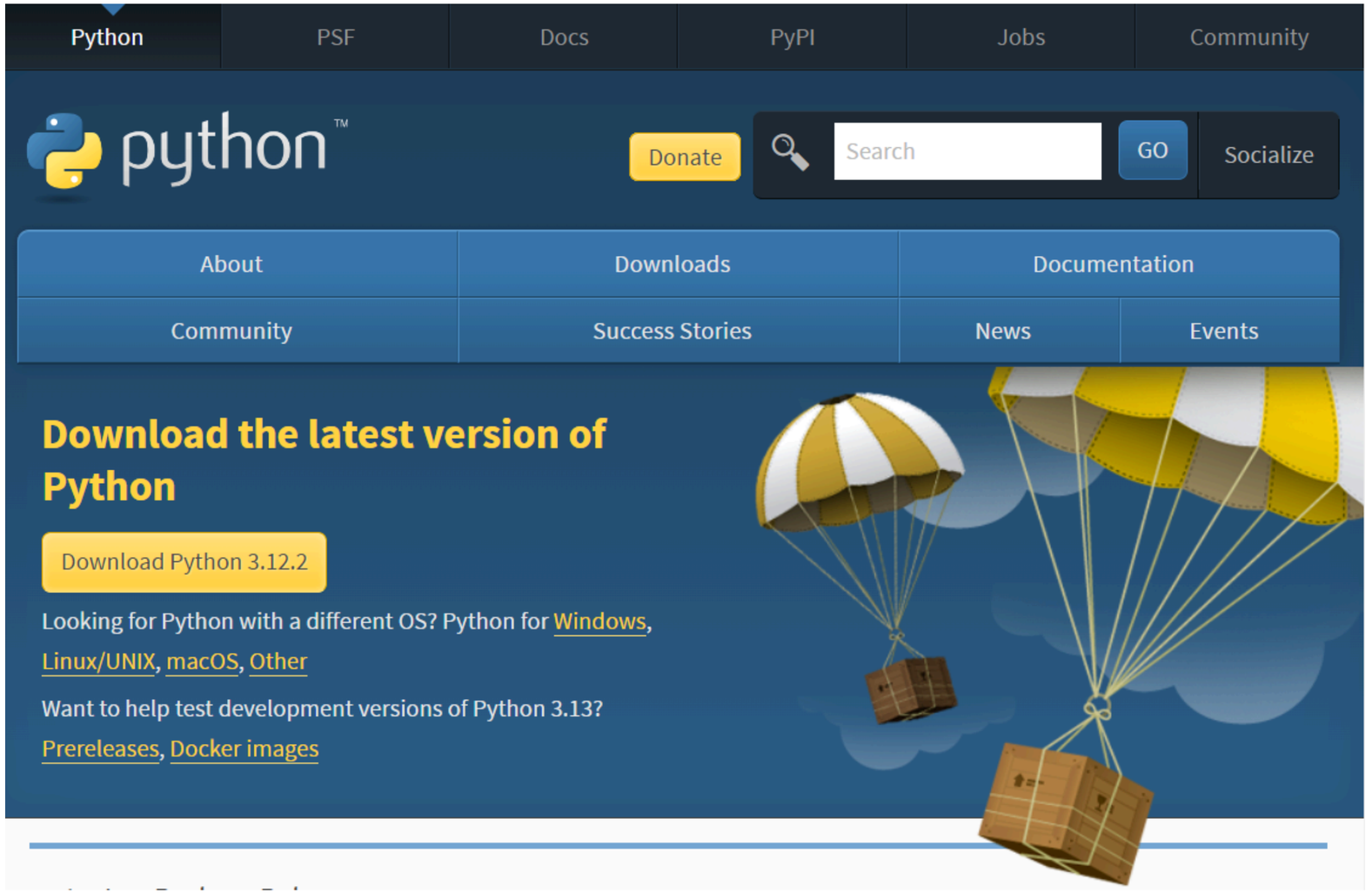
TOP BIG COMPANIES

- ❑ Google.
- ❑ Facebook.
- ❑ Instagram.
- ❑ Dropbox.

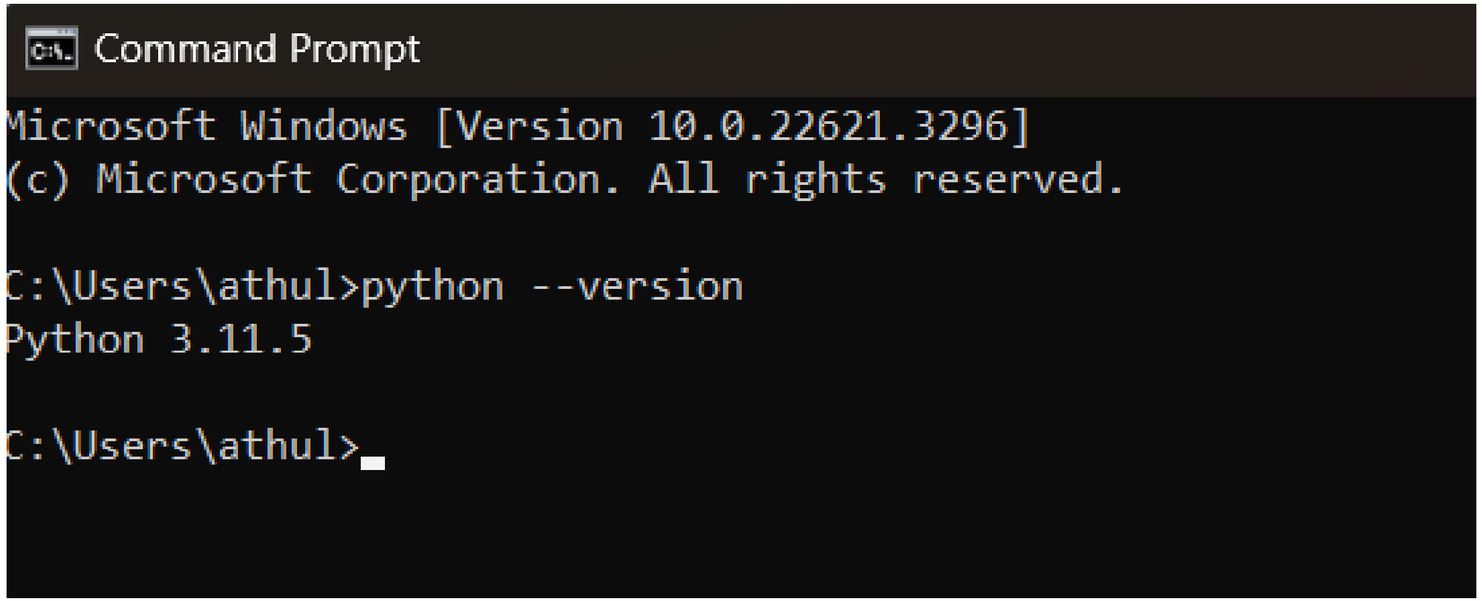
Python Install



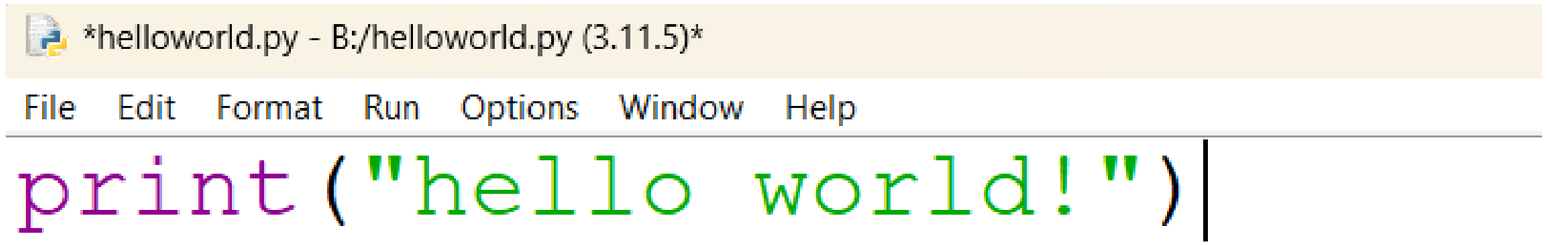
Python Install



Python Install



Let's write our first Python file, called helloworld.py, which can be done in any text editor




```
========== RESTART: B:\helloworld.py ==========
hello world!
```

Python is an interpreted programming language, this means that as a developer you write Python (.py) files in a text editor and then put those files into the python interpreter to be executed. The way to run a python file is like this on the command line

```
C:\Users\Your Name>python helloworld.py
```

```
PS B:\> python helloworld.py
hello world!
PS B:\>
```

Python Indentations

Where in other programming languages the indentation in code is for readability only, in Python the indentation is very important. Python uses indentation to indicate a block of code

You cannot indent randomly like this:

```
name = "Flavio"
    print(name)
```

Variables

We can create a new Python variable by assigning a value to a label, using the = assignment operator

Variables are containers for storing data values

Unlike other programming languages, Python has no command for declaring a variable

```
name = "Roger"
```

```
age = 8
```

```
name = "Roger"
print(name)
```

Variable Names

A variable can have a short name (like x and y) or a more descriptive name (age, carname, total_volume). Rules for Python variables:

A variable name must start with a letter or the underscore character

A variable name cannot start with a number

A variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and _)

Variable names are case-sensitive (age, Age and AGE are three different variables)

Variable Names

These are all valid variable names:

```
name1
AGE
aGE
a11111
my_name
_name
```

These are invalid variable names:

```
123
test!
name%
```

Assign Value to Multiple Variables

Python allows you to assign values to multiple variables in one line:

```
x, y, z = "Orange", "Banana", "Cherry"
print(x)
print(y)
print(z)
```

And you can assign the same value to multiple variables in one line:

```
x = y = z = "Orange"
print(x)
print(y)
print(z)
```

Output Variables

The Python print statement is often used to output variables

```
a=5
print(a)
```

To combine both text and a variable, Python uses the + character

```
x = "awesome"
print("Python is " + x)
```

Example

```
x = "Python is "
y = "awesome"
z = x + y
print(z)
```

Output Variables

For numbers, the + character works as a mathematical operator

Example

```
x = 5
y = 10
print(x + y)
```

If you try to combine a string and a number, Python will give you an error

Example

```
x = 5
y = "John"
print(x + y)
```

Comments

Comments can be used to explain Python code.
Comments can be used to make the code more readable.
Comments can be used to prevent execution when testing code.
Comments start with a #, and Python will render the rest of the line as a comment

```
#This is a comment.
print("Hello, World!")
```

Multiline Comments

Example

```
""" This is a comment
written in more than
just one line """
print("Hello, World!")
```

THANK YOU

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