GKTCS INNOVATIONS

INTRODUCTION TO PYTHON

What is Python ?

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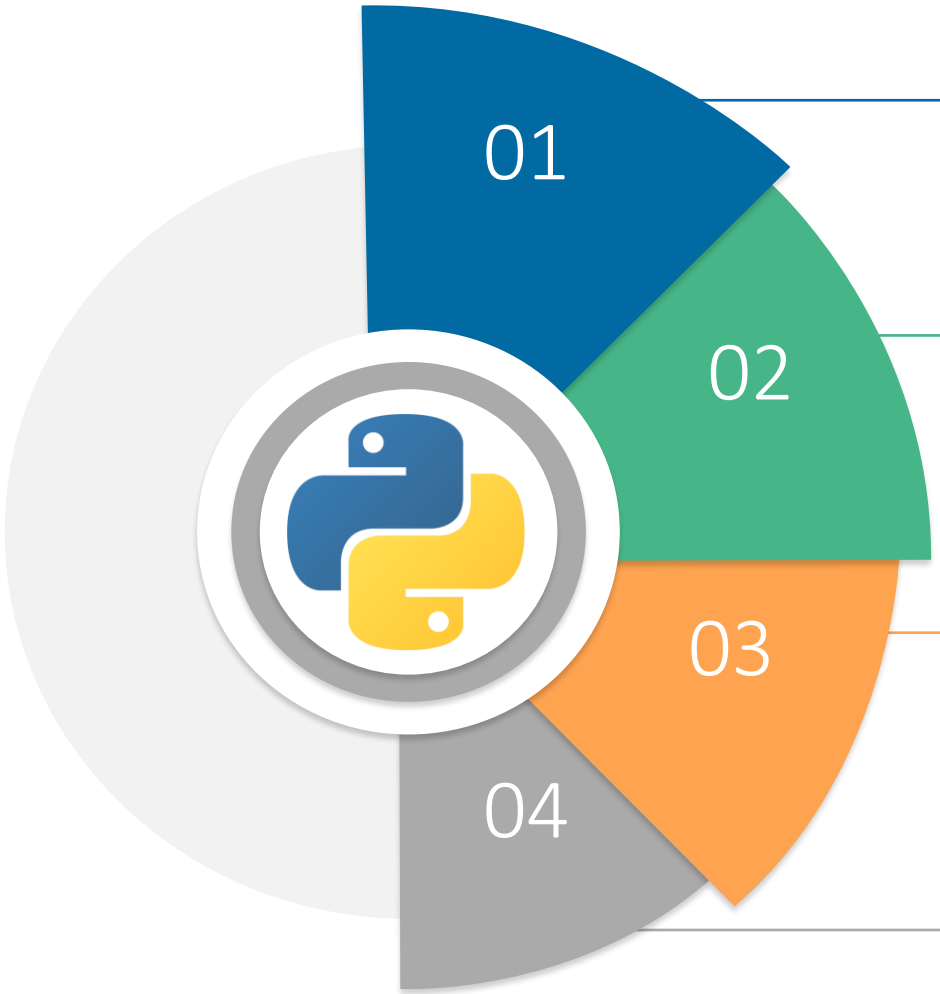

Interactive

Interpreted

Object Oriented Scripting Language

High Level Programming Language

Difference between Programing language & Scripting language

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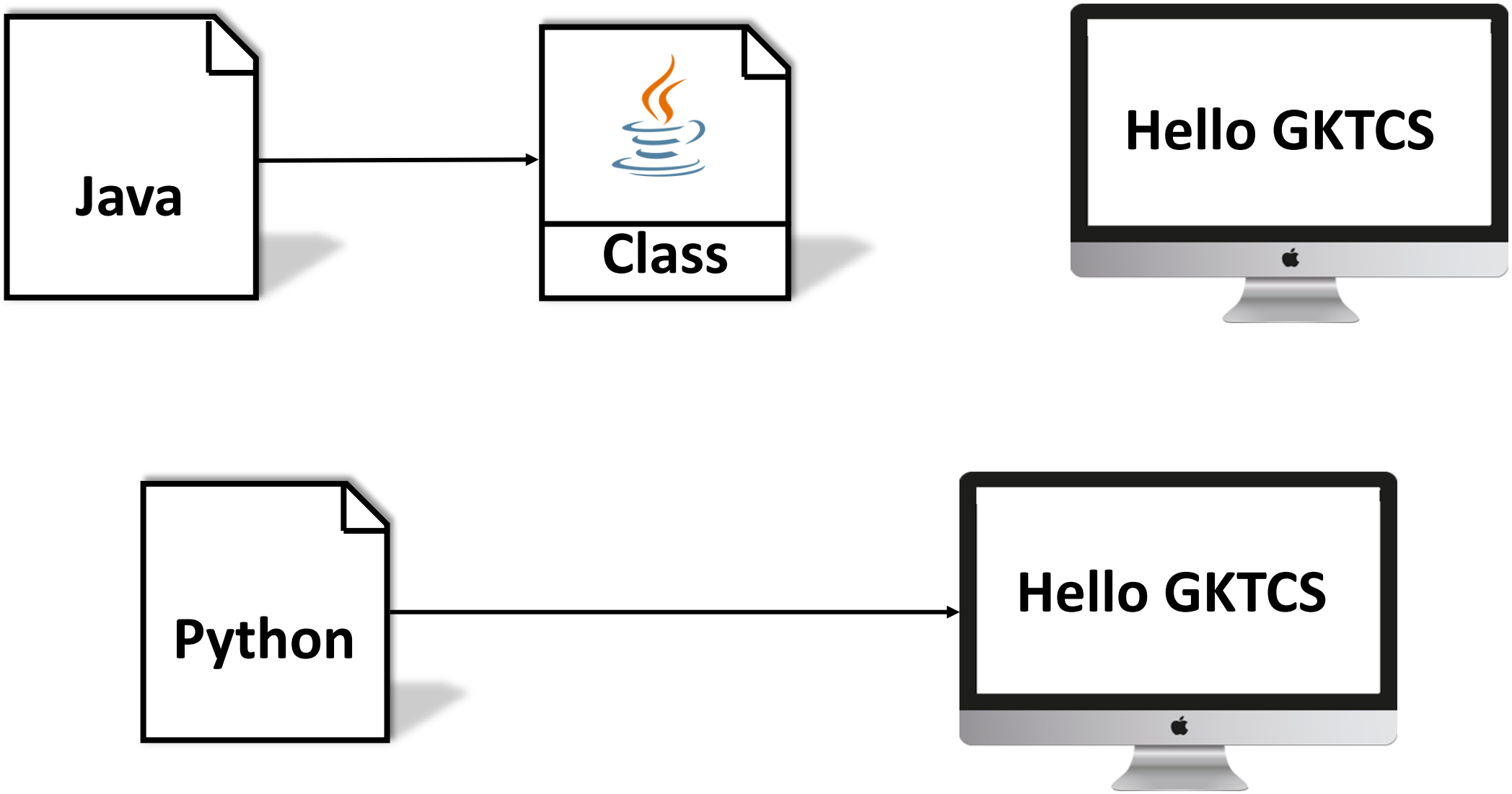
Java

```java
public class Main {
  public static void main(String[] args) {
      System.out.println("hello world");
  }
}
```

Python

```python
print("hello world");
```



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PYTHON 2

VS

PYTHON 3

Legacy

Future

Library

Library

0100
0001

ASCII

Unicode

0000
0000
0100
0001

7/2=3

7/2=3.5

print “GKTCS”

print (“GKTCS”)

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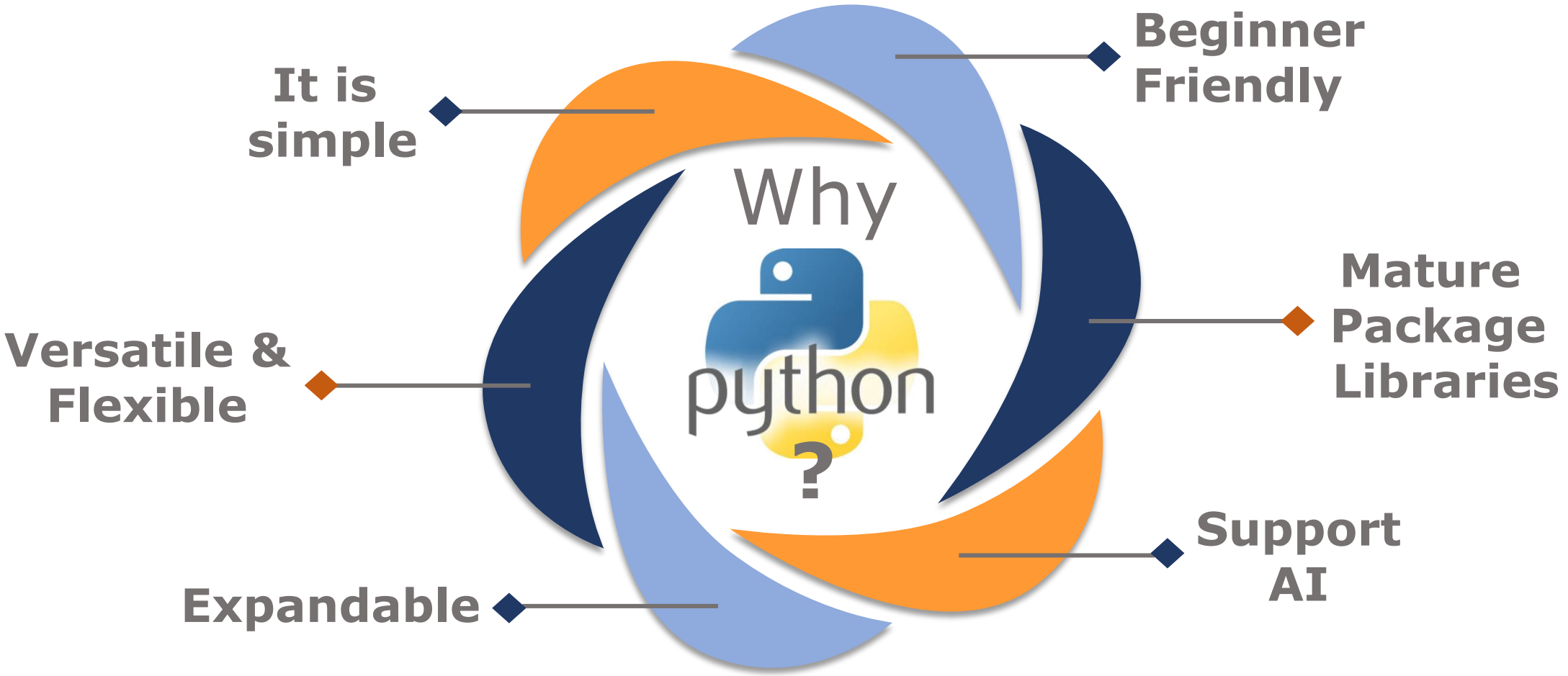

Advantages

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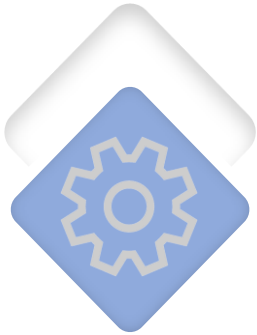
Free & Open Source

Improved Productivity



Interpreted Language

Dynamically Typed

Vast Libraries Support

Object Oriented

Disadvantages

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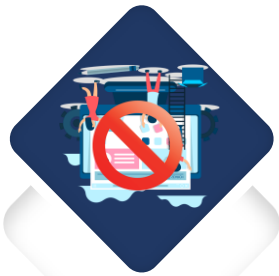
Speed Limitations

Weak in Mobile Computing

Design Restrictions



Underdeveloped DB layers

Web Frameworks

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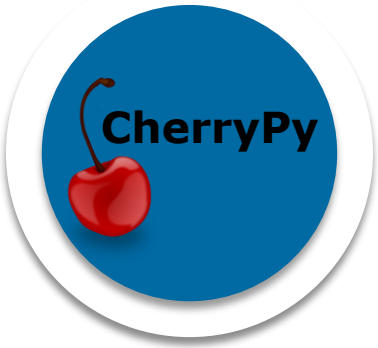
Flask

Web2Py

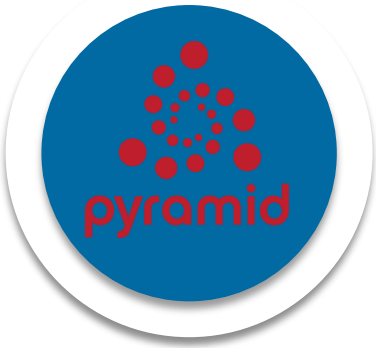
CherryPy



Django

Tornado

Pyramid



Bottle

Dash

CubicWeb

File Extensions in Python

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01

.py

The normal extension for a Python source file

02

.pyc

The compiled bytecode

03

.pyd

A Windows DLL file

04

.pyo

A file created with optimizations

05

.pyw

A Python script for Windows

06

.pyz

A Python script archive

Applications Of Python

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1. Web & Internet Development
2. Games and 3D Graphics
3. Software Development
4. Business Applications
5. Database Access
6. Network Programing

Popular website build with Python

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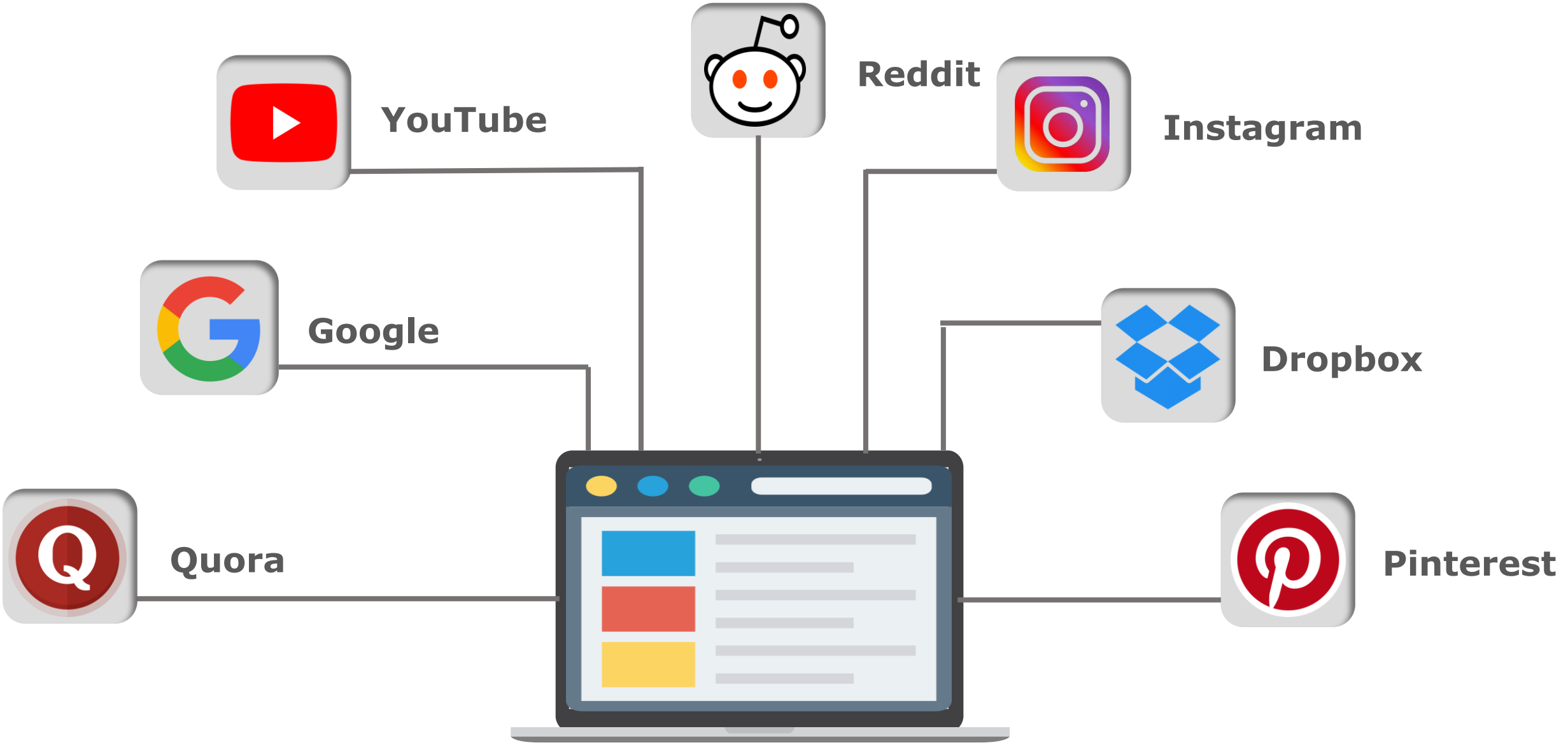

Installing Python on Windows

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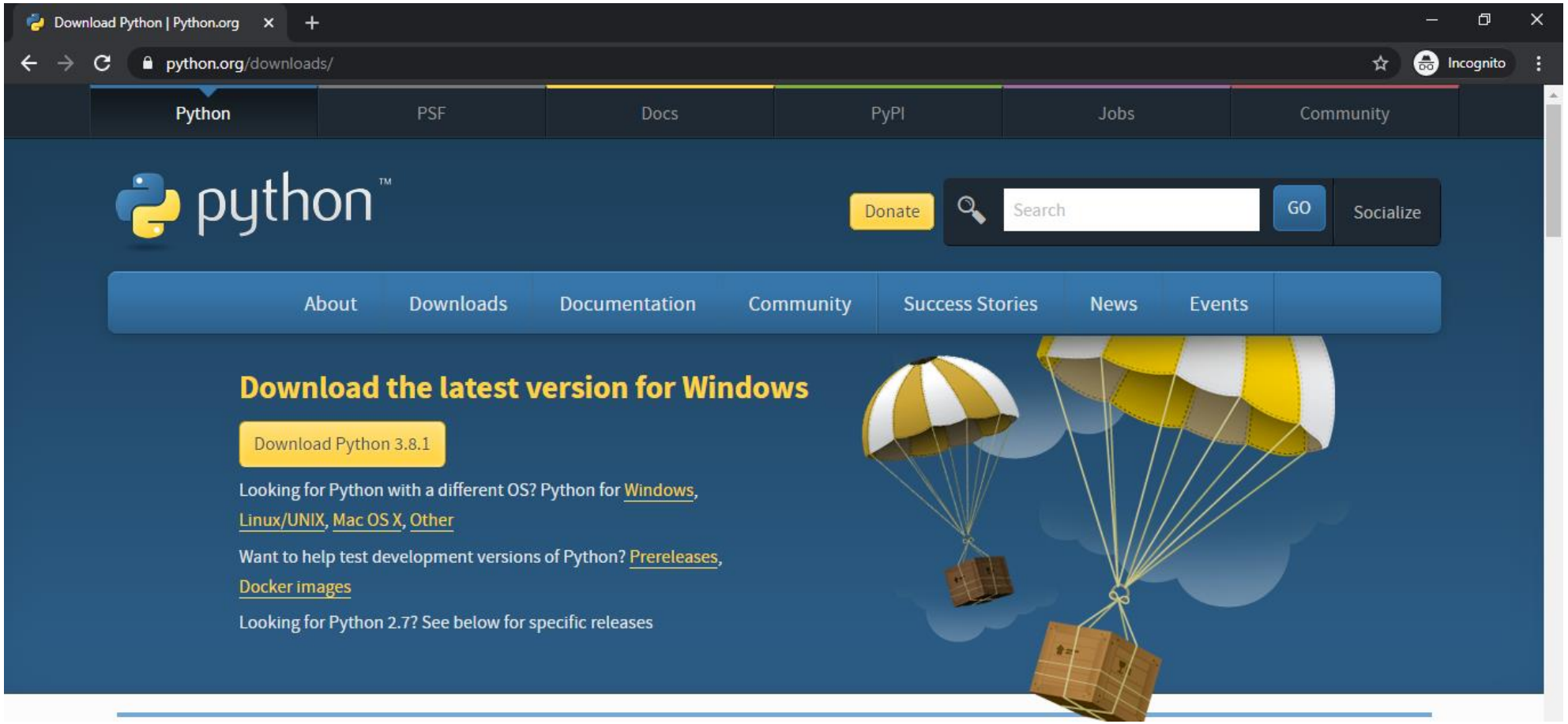
Step: 1

- To download and install Python, go to Python's official website http://www.python.org/downloads/



Step: 2

- When download is complete run .exe file to install Python.

Step: 3

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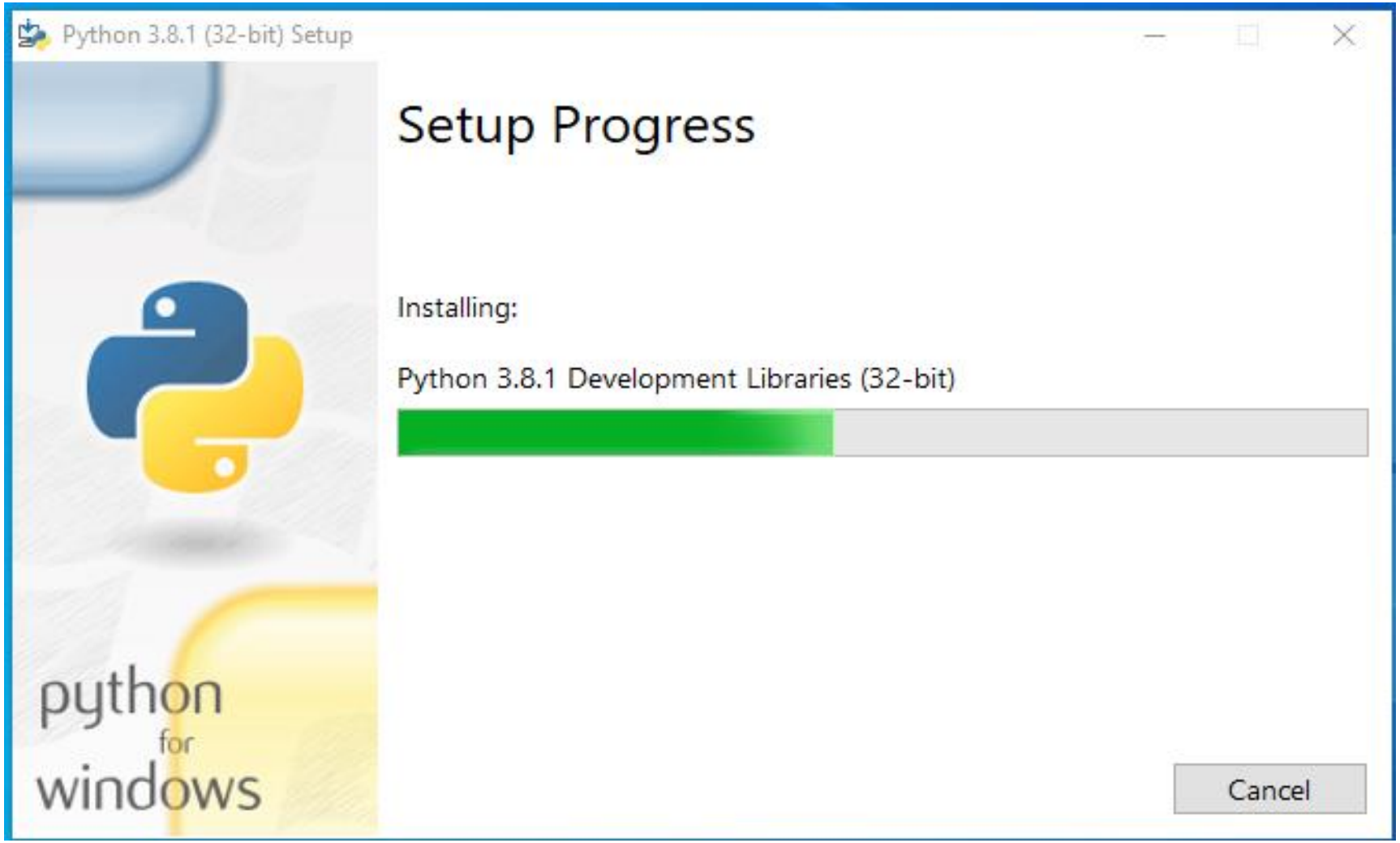
- You can see python installation.



Step: 4

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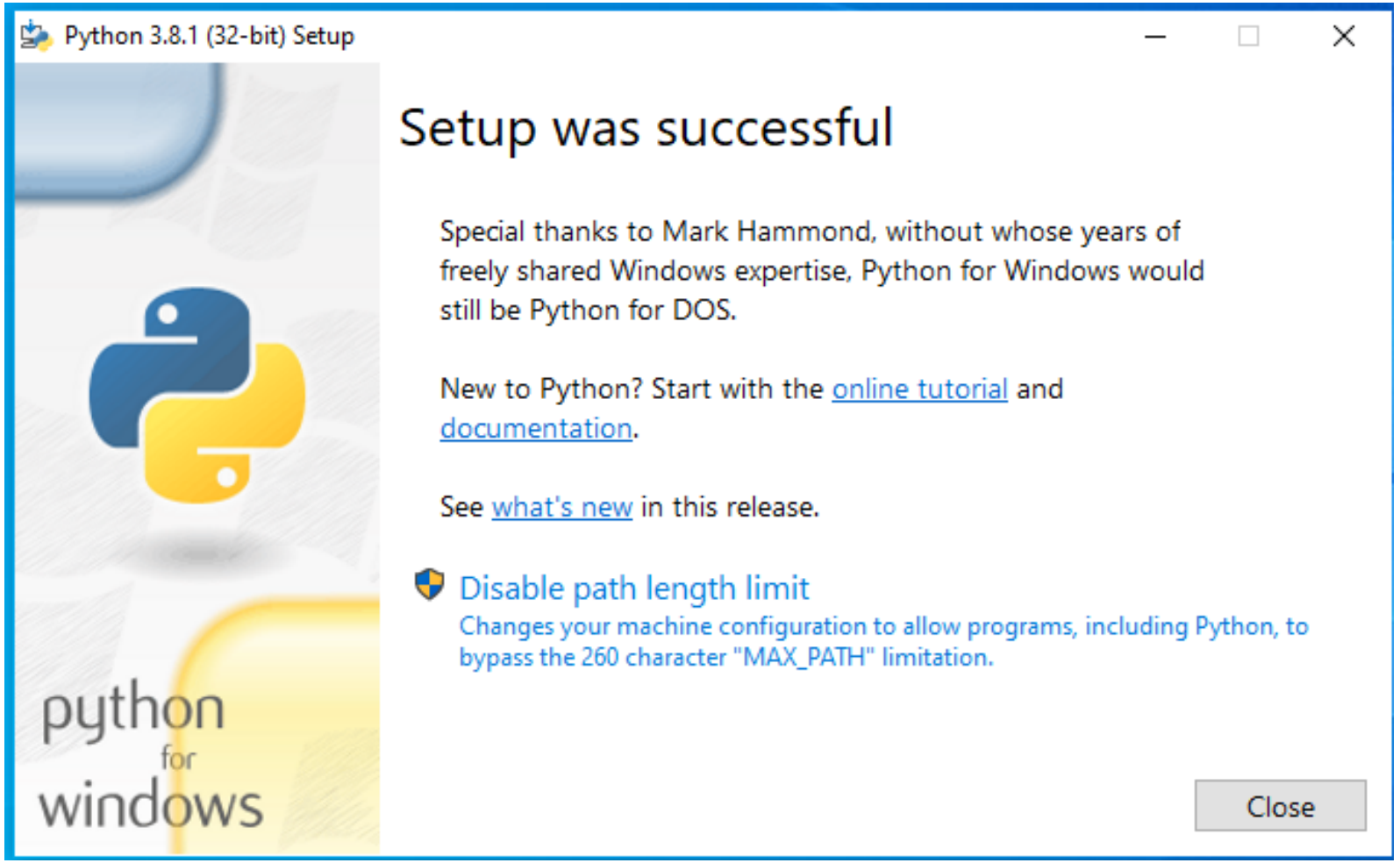
- when installation was complete you can see message "setup was successful" on screen.



IDLE Development Environment

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- **I**ntegrated **D**eve**L**opment **E**nvironment
- Text editor with smart indenting for creating python files.
- Menu commands for changing system settings and running files.

Python Interpreter

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- Interactive Interface to python

```
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019,
22:39:24) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license" for
more information.
>>>
```

How Python run's

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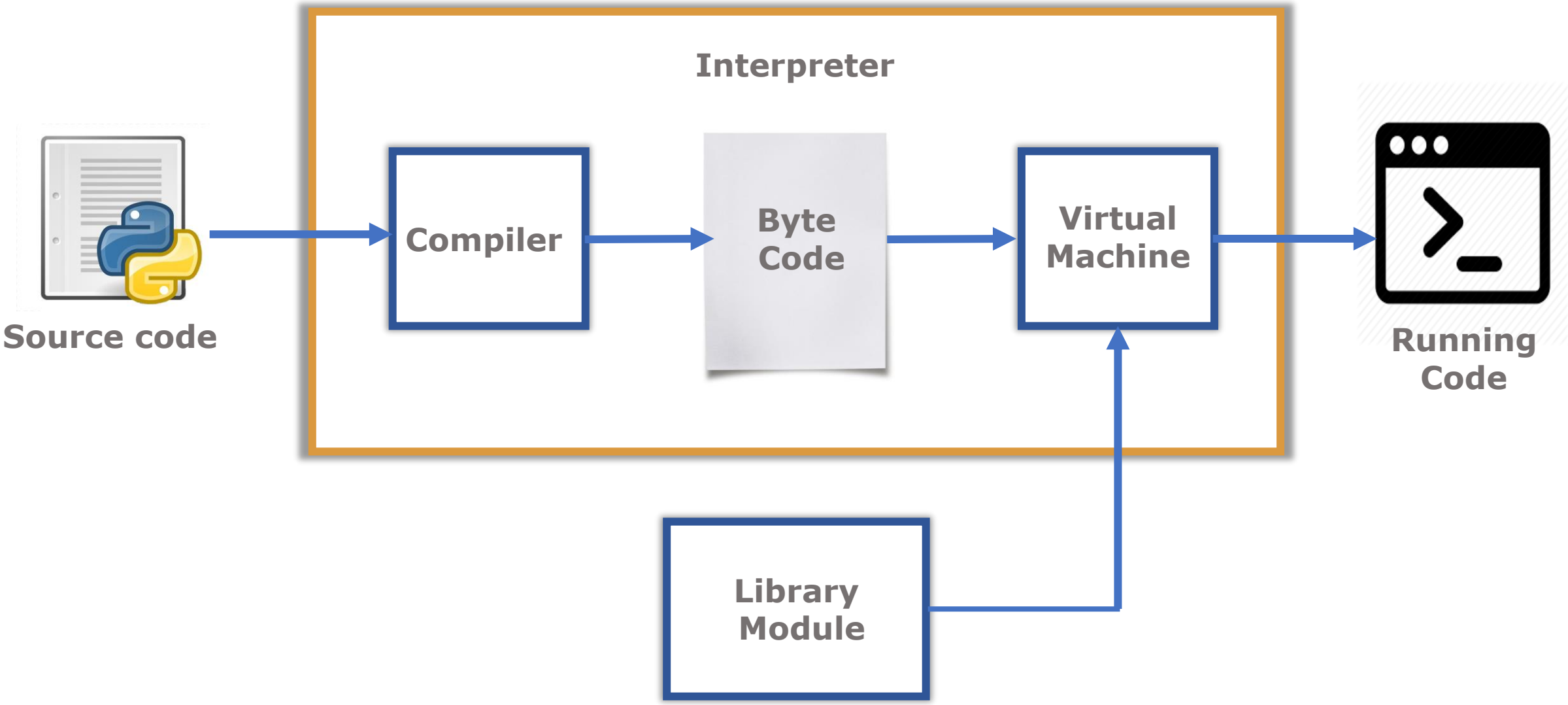

Running Python

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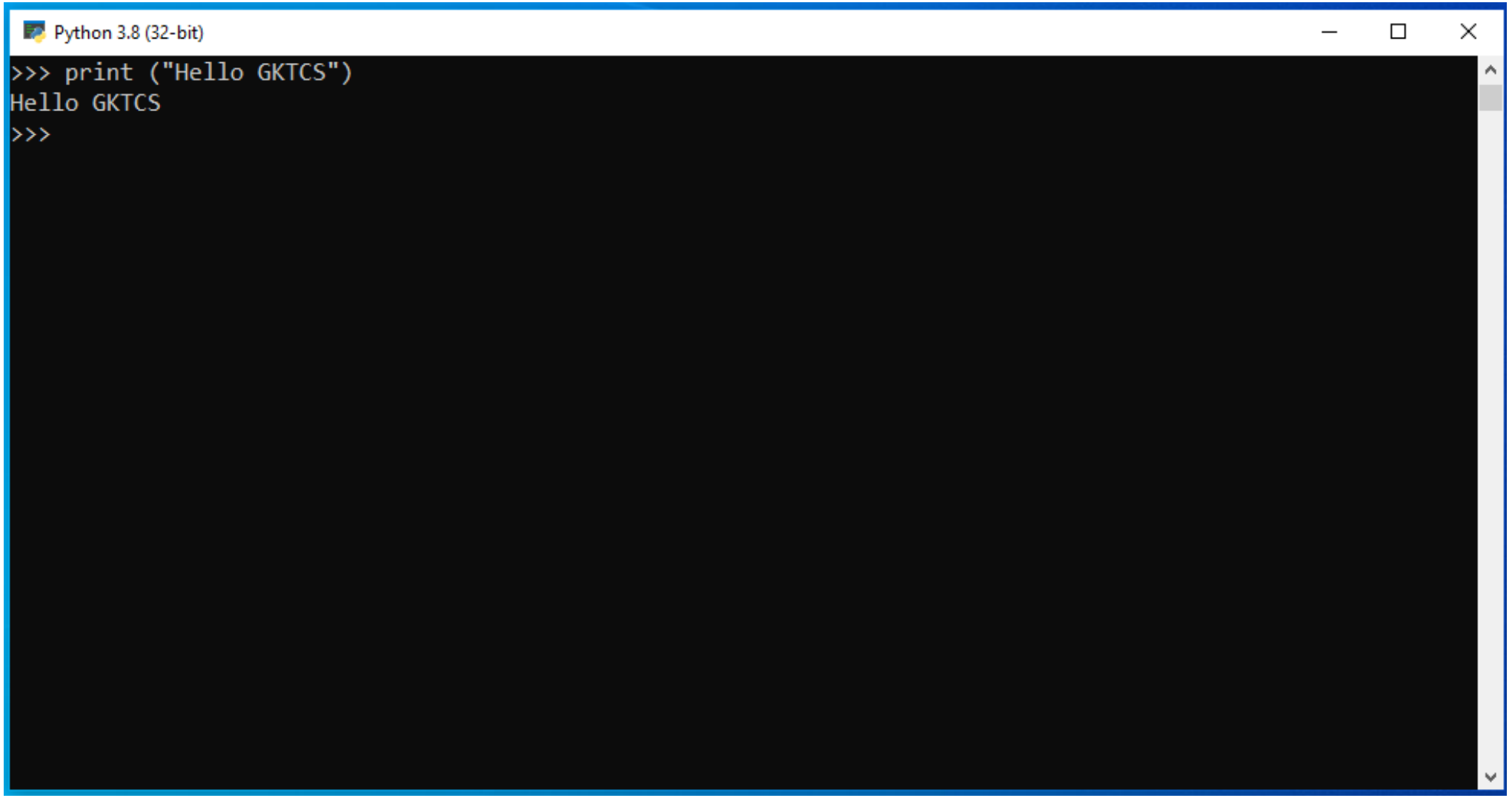
- When you open the interpreter and type command



Datatypes

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Text Type:	**str**
Numeric Types:	**int, float, complex**
Sequence Types:	**list, tuple, range**
Mapping Type:	**dict**
Set Types:	**set, frozenset**
Boolean Type:	**bool**
Binary Types:	**bytes, bytearray, memoryview**

Datatypes and Example

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- When you assign a value to a variable data type is set :

int	float	str
a=10	a=2.5	a="GKTCS"

complex	list	tuple
a=2x	a = ["python", "Java", "Html"]	a = ("python", "Java", "Html")

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dict

```
a = {
"name" : "Amit",
"age" : 25 }
```

set

```
a = { "python",
"Java", "Html" }
```

bool

```
a=True
```

complex

```
a=2x
```

bytes

```
a=b"GKTCS"
```

bytearray

```
a=bytearray(5)
```

Basic Datatypes

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- **Integers(for numbers)**

  ```
  a=4+3    #answer is 7, integer addition
  ```

- **Floats**

  ```
  a=5/2    #answer is 2.5
  ```

- **Strings**

  Can use " " or ' ' to specify.

  "GKTCS" or 'GKTCS' are same.

String Methods

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title()

Converts the first character of each word to upper case

upper()

Converts a string into upper case

lower()

Converts a string into lower case

isdigit()

Returns True if all characters in the string are digits

isupper()

Returns True if all characters in the string are in upper case.

swapcase()

Swaps cases, lower case becomes upper case and vice versa

Variables

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- Variables are use to store data values.
- A variable is created when you assign a value to it.

```
x = 2
y = "Amit"
print(x)
print(y)
```

Output

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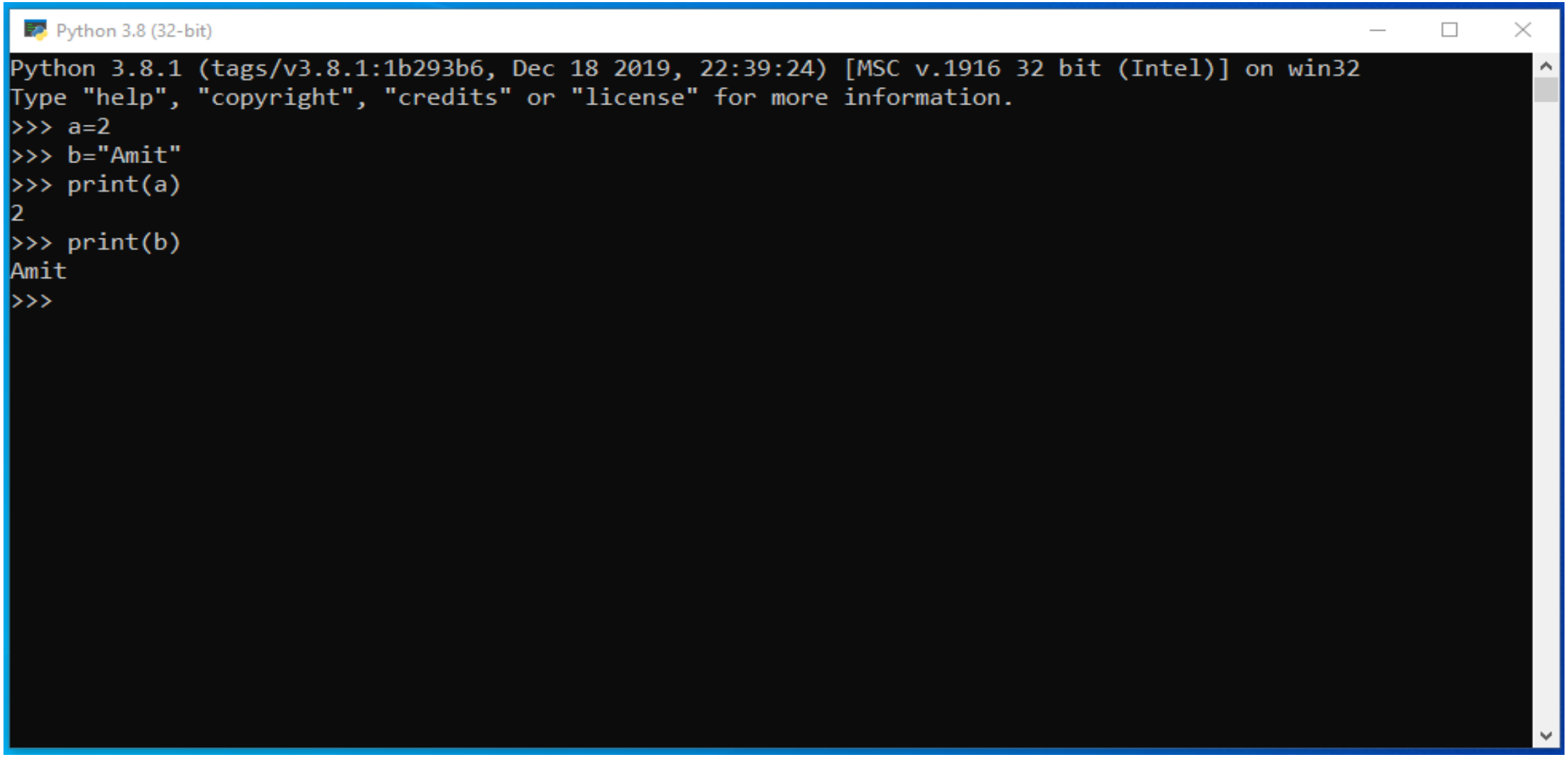

Rules for Python variables:

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- 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)

Comments

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Comments can be used to improve readability of the code.

1) Single-line comments

Simply create a line starting with the hash (#) character

```
#This would be a single line comment in Python
```

2) Multi-line comments

Created by adding a delimiter (""") on each end of the comment.

```
""" This would be a multiline comment in Python that
describes your code, your day, or anything you want it to """
```

Output

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