

Welcome to Python!



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What Is Python?

- **Python** is a general purpose, high-level, interpreted programming language.
- Developed by **Guido van Rossum** in the late 1980s at the National Research Institute for Mathematics and Computer Science in the Netherlands.
- **Python** is one of the most popular and widely used programming language used for set of tasks including console based, GUI based, web programming and data analysis.



Fact: **Python** is named based on the comedy television show *Monty Python's Flying Circus*.

Python Features

- **Easy to Learn and Use**

Python is easy to learn and use compared with other programming languages. It is developer-friendly and high level programming language.

- **Interpreted Language**

Python is an interpreted language because no need of compilation. This makes debugging easy and thus suitable for beginners.

- **Cross-platform Language**

Python can run equally on different platforms such as Windows, Linux, Unix and Macintosh etc. So, we can say that Python is a portable language.

- **Free and Open Source**

The Python interpreter is developed under an open-source license, making it free to install, use, and distribute.

- **Object-Oriented Language**

Python supports object oriented language and concepts of classes and objects come into existence.

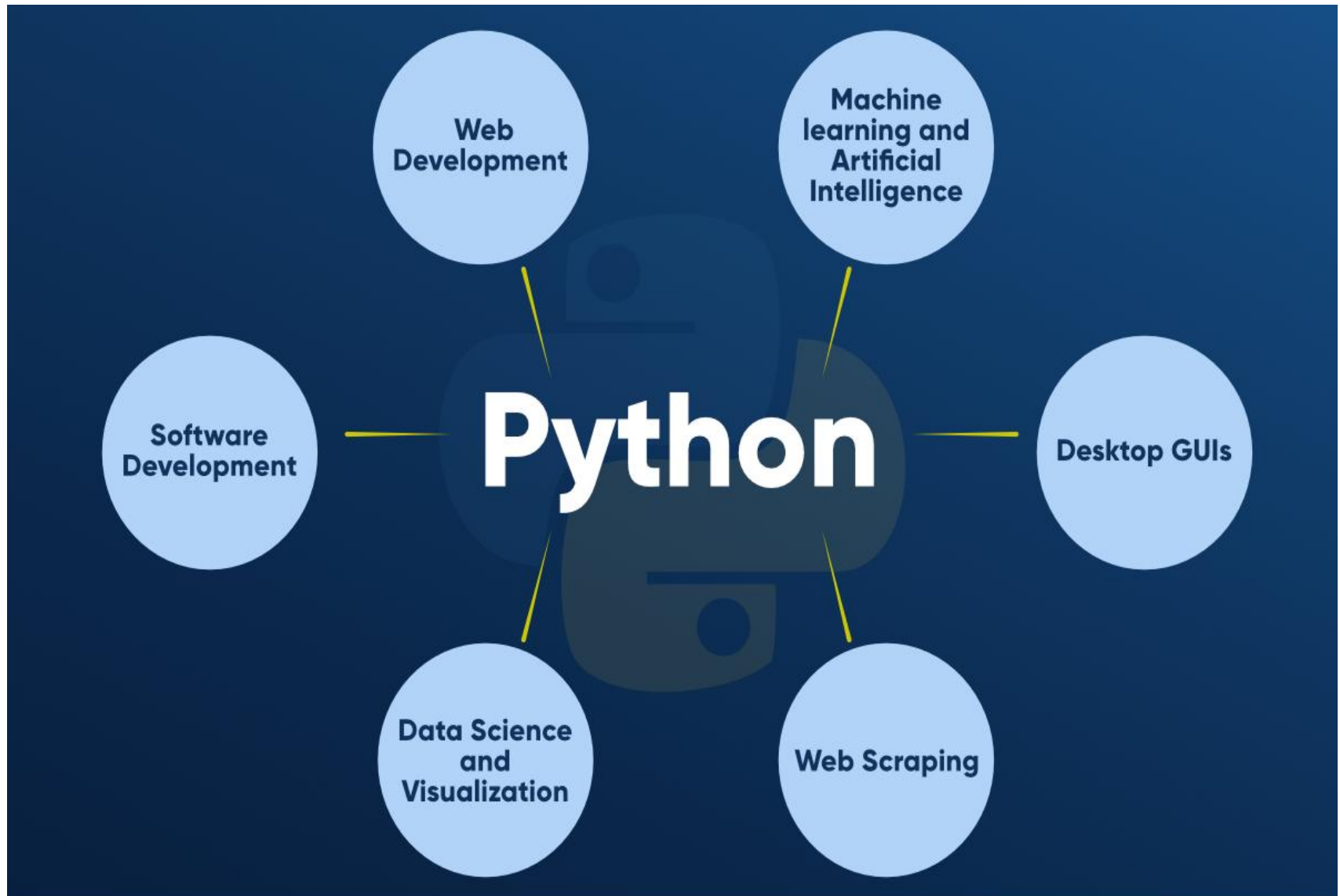
- **GUI Programming Support**

Graphical user interfaces can be developed using Python.

- **Integrated**

It can be easily integrated with languages like C, C++, and JAVA etc.

Python Applications



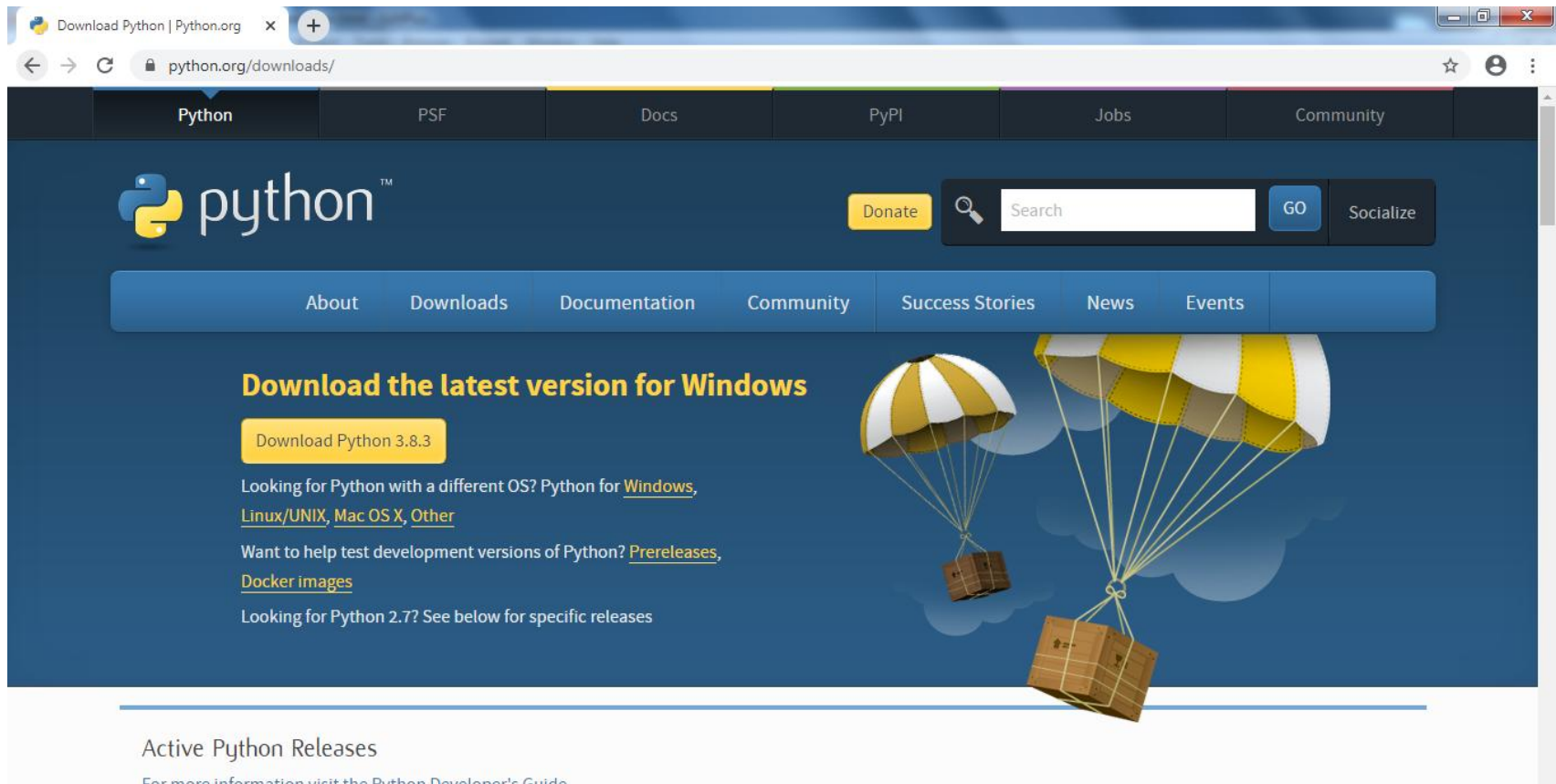
Downloading & Installing Python

- To start programming with **python**, we have to install python software. There are two major Python versions, those are **Python 2** and **Python 3**. Python 2 and 3 are quite different.
- In this tutorial we are going to use **Python 3**, because it more semantically correct and supports newer features.
- In this tutorial we are going to learn about installation of **Python3** on **Windows** and **Linux (Ubuntu)**.

Downloading & Installing Python Cont...

Python3 installation procedure in Windows :

1. To install Python3 in windows, we have to download Python3 software pack from official website of Python Software Foundation. Go to <https://www.python.org/>



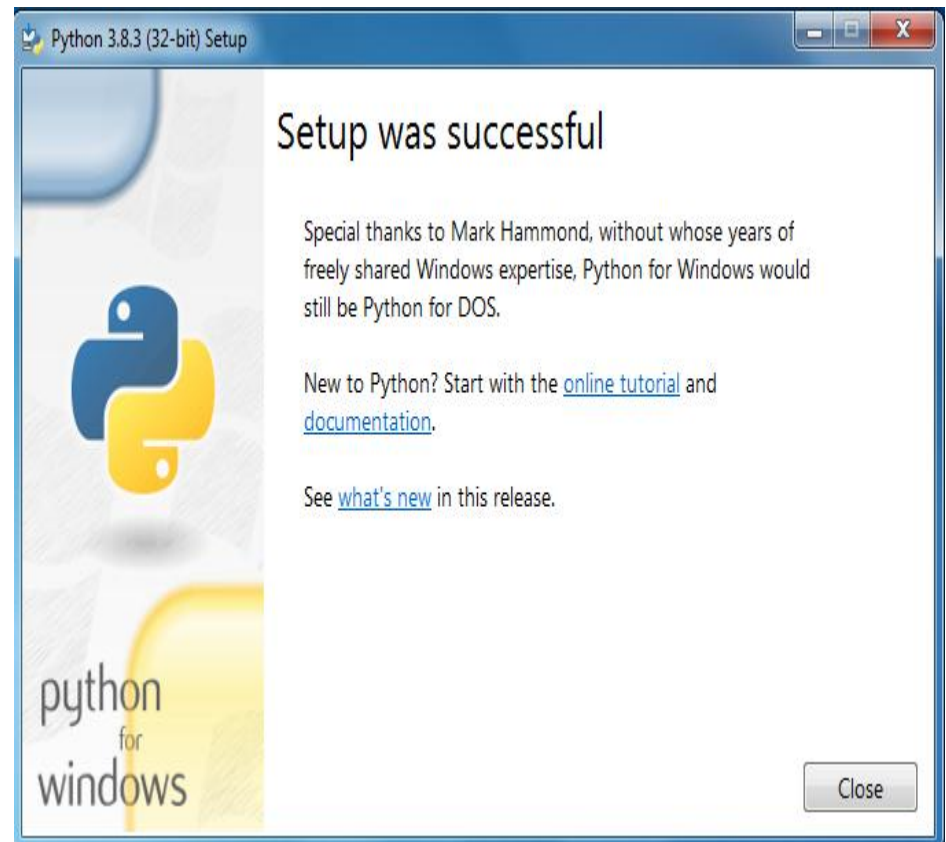
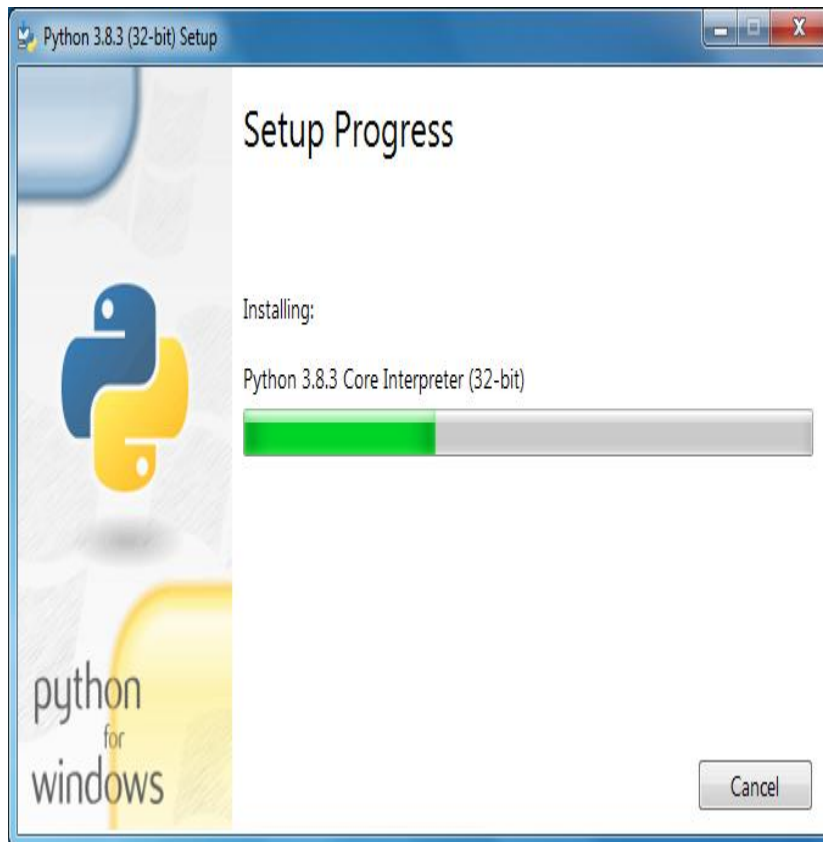
Downloading & Installing Python Cont...

2. Download the latest version of python(now latest version: **python 3.8.3**) for windows.
3. After the successful completion of download, we need to run **python3.8.3.exe** file.



Downloading & Installing Python Cont...

4. First we need to check **Add Python 3.8 to PATH**, And then click on **Install Now**.
5. The Python setup will take 2 to 3 minutes of time, After successful installation the following window will be displayed



Running Python

- After successful installation of python software we can able interpret or execute python script / program.

Python provides us the two ways to run a python script:

1. Using **Interactive interpreter prompt**
2. Using a **script file**

1. Using Interactive interpreter prompt:

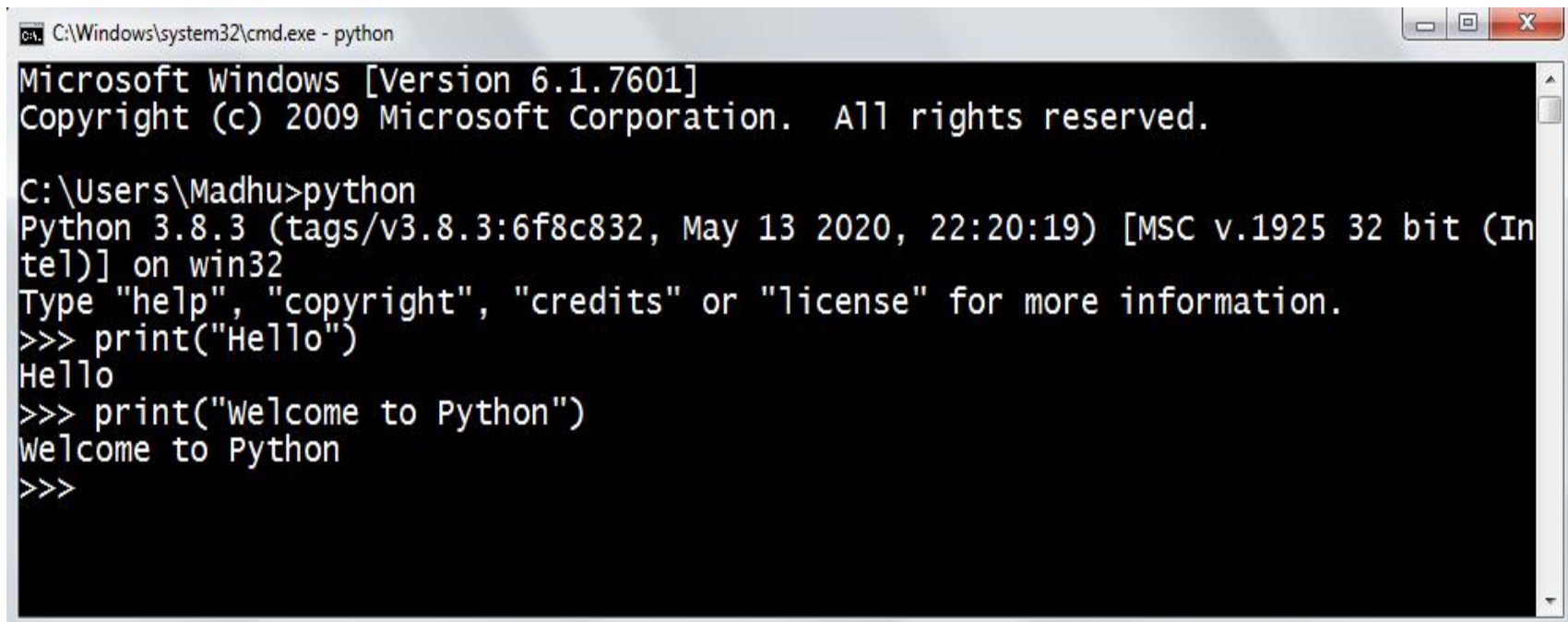
- Python provides us the feature to execute the python statement one by one at the interactive prompt.
- It is preferable in the case where we are concerned about the output of each line of our python program.

Running Python

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- To open the interactive mode, open the terminal (or command prompt) and type python (python3 in case if you have python2 and python3 both installed on your system).

Through Command Prompt :



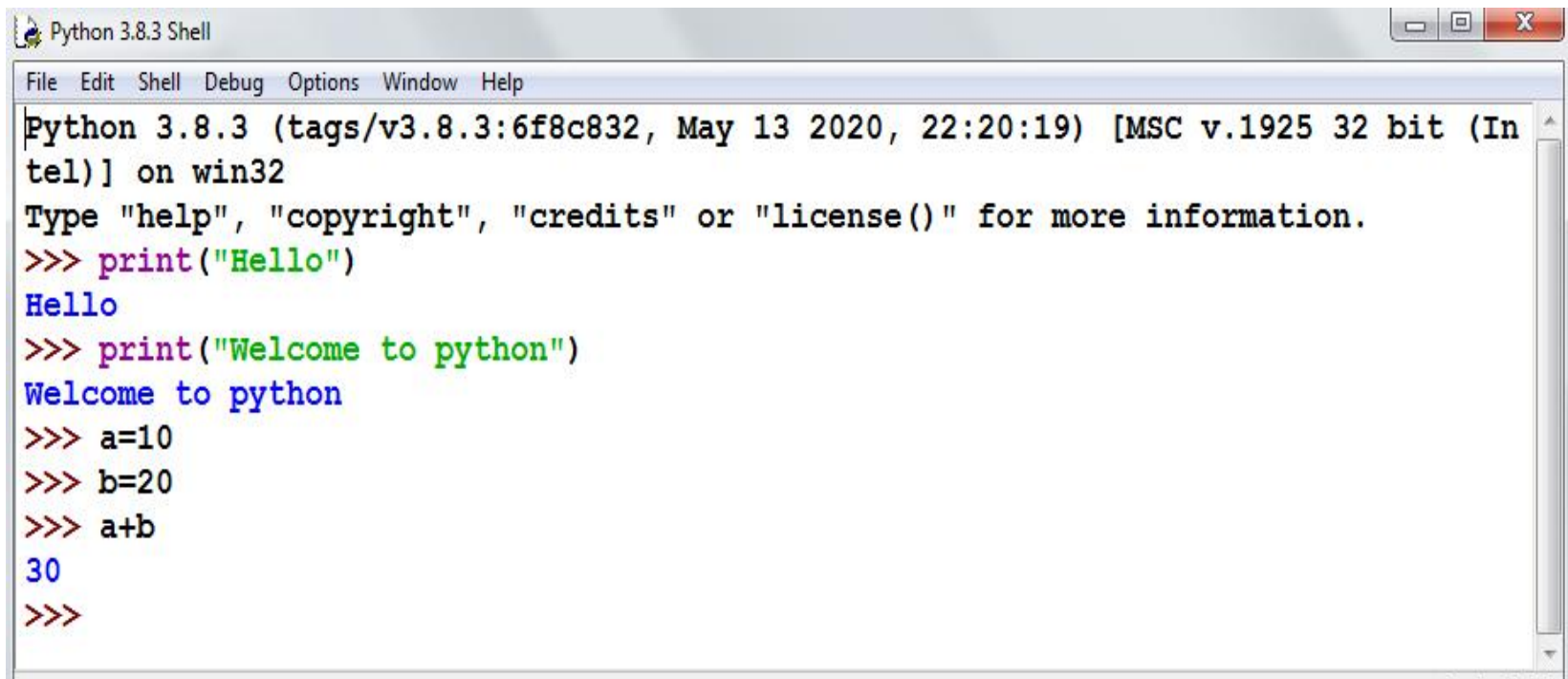
```
C:\Windows\system32\cmd.exe - python
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Madhu>python
Python 3.8.3 (tags/v3.8.3:6f8c832, May 13 2020, 22:20:19) [MSC v.1925 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> print("Hello")
Hello
>>> print("Welcome to Python")
Welcome to Python
>>>
```

Running Python

cont...

- In windows, search for python IDLE in all programs and then click on python IDLE, then the python interpreter prompt will open.
- Through python IDLE:



```
Python 3.8.3 Shell
File Edit Shell Debug Options Window Help
Python 3.8.3 (tags/v3.8.3:6f8c832, May 13 2020, 22:20:19) [MSC v.1925 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> print("Hello")
Hello
>>> print("Welcome to python")
Welcome to python
>>> a=10
>>> b=20
>>> a+b
30
>>>
```

2. Using **Script File** :

- Interpreter prompt is good to run the individual statements of the code. However if we want to execute multiple python statements at a time instead of executing one by one, then we can use *script file*.
- We need to write our script into a file which can be executed later. For this purpose, open an editor like notepad, create a file named **filename.py** (python used .py extension) and write the python script in it.

Output:

- **Example: "First.py"**

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

```
print("Welcome to Python Programming")
```

```
E:\pythonprgms>python First.py  
Hello !  
Welcome to Python Programming
```