```
=============================================================
                    Python Software
=============================================================
```
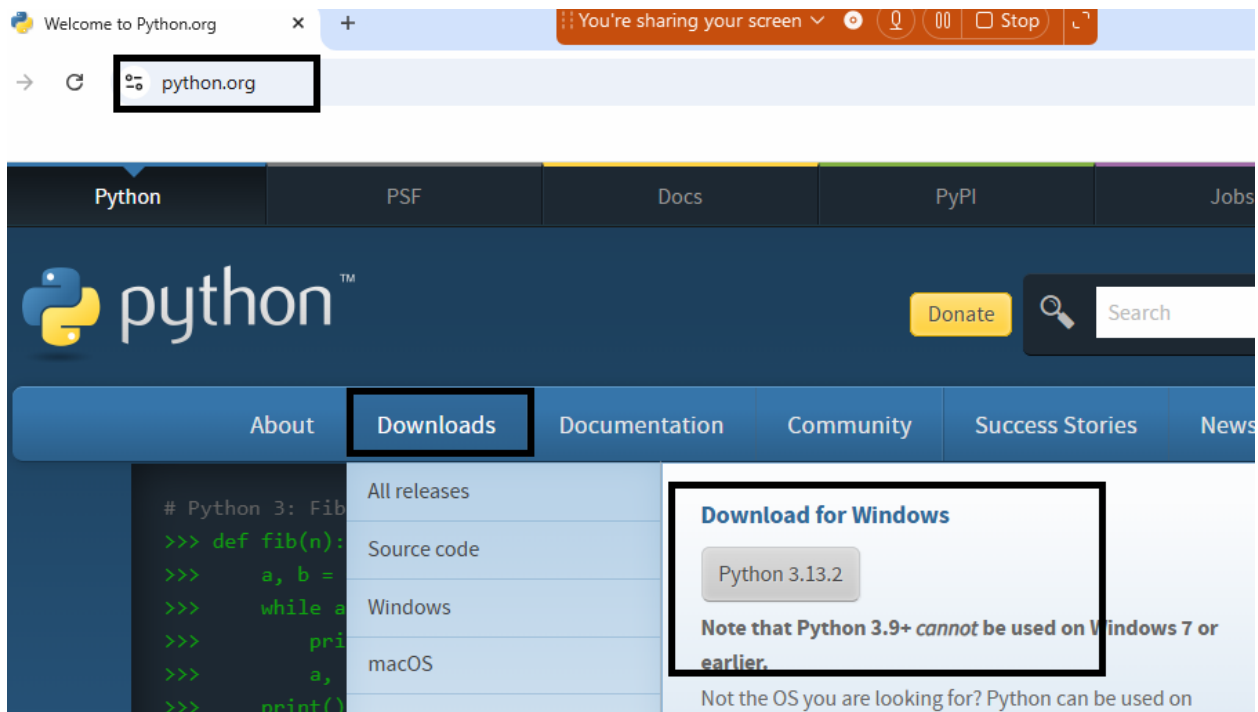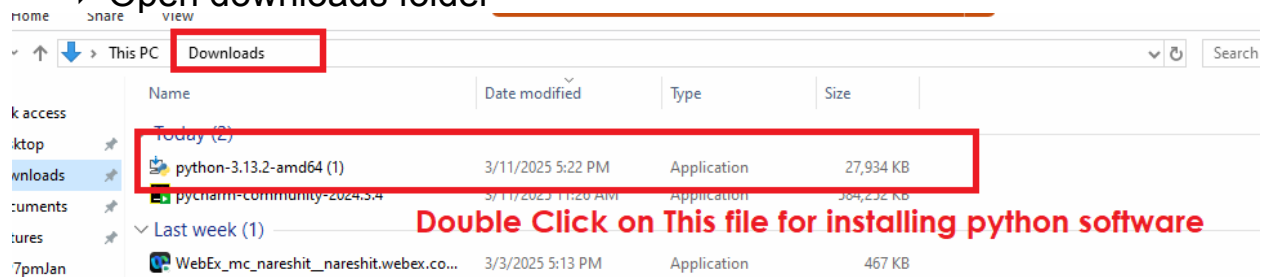
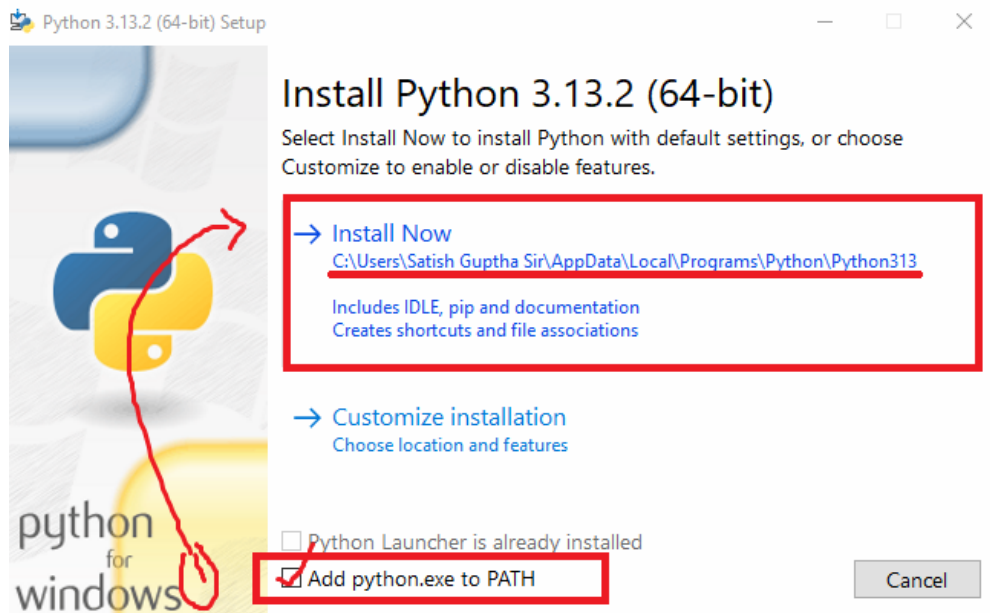Python software can be downloaded from,
www.python.org

==> Open website ==> www.python.org
==> Downloads ==> Download python 3.13.2

⇨ Python software is downloaded in downloads folder
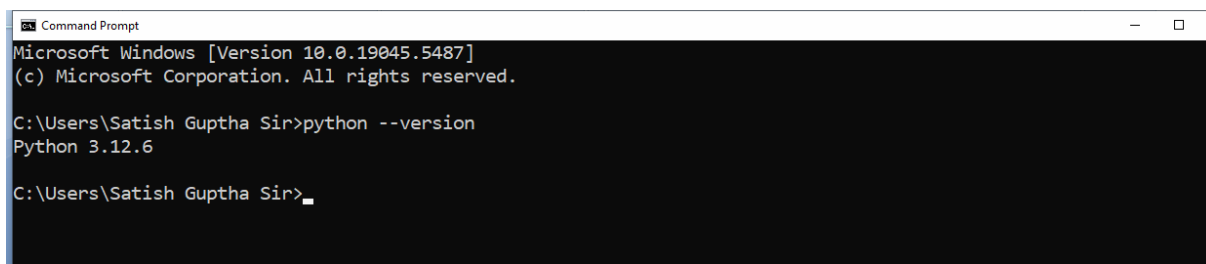⇨ Open downloads folder
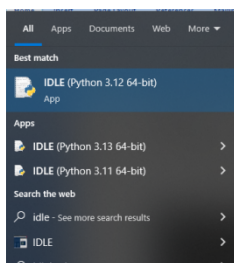
How to verify python software is installed or not?

Method-1
1. Open command prompt
   a. Search ➔ Cmd

Method-2

1. Search ➔ IDLE (Python Editor)

Python software provides the following components

1. IDLE (Integrated Development Learning Environment), it is code editor provided by python (IDE)
2. Standard Libraries (Predefined Programs with predefined functionality)
3. Python Shell (REPL Tool)
   R → Read
   E → Evaluate
   P → Print
   L → Loop
4. Python Compiler, PVM (Python Virtual Machine)
5. Tools
   a. Python Debugger
   b. Python library installer (PIP)

Other IDE's of Python
1. PyCharm (Python Editor)
2. Spyder (Python Editor)
3. VSCode (It is not pure python editor)
4. Google Colab (Python editor)
5. Jupiter Note Book (Python editor)

Python Distributions

Python distribution is a python software bundle which consist of
1. Python software
2. Application Specific Libraries
3. IDE's

Anaconda Python (a full Python distribution for data management, analysis and visualization of large data sets)
ActiveState ActivePython (commercial and community versions, including scientific computing modules)
Nuitka (a compiler that packages user code with CPython into a static binary for improved performance and IP protection)
pyodide (a Python distribution for the browser and Node.js based on WebAssembly)
winpython (WinPython is a portable scientific Python distribution for Windows)
pythonxy (Scientific-oriented Python Distribution based on Qt and Spyder)

Conceptive Python SDK (targets business, desktop and database applications)
PyIMSL Studio (a commercial distribution for numerical analysis – free for non-commercial use)
eGenix PyRun (a portable Python runtime, complete with stdlib, frozen into a single 3.5MB - 13MB executable file)

Python Implementations
Python software implemented in other languages
1. Jython (java+python)
2. Ironpython (.Net+python)
3. Rpython (R+Python)
4. MicroPython (C+PYTHON)
5. RubyPython (Ruby+Python)

Mobile Apps for practicing python
1. Pydroid
2. Pythonista

Python Working Modes

Python developer work with python in 2 modes
1. Interactive Mode
2. Programming Mode Or Scripting Mode

Interactive mode

In interactive mode python developer work with python shell

What is python shell?
Python shell is command line interface (CLI)
Python shell is a single line command line interface
In python shell python developer or programmer cannot write programs.
Python developer can execute single command or instructions

Python Shell is also called REPL tool
R➜ Read Command
E ➜ Evaluate
P ➜ Print Result of command
L ➜ Loop

```
Python 3.13.2 (tags/v3.13.2:4f8bb39, Feb  4 2025, 15:23:4
[MSC v.1942 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for mc
information.
>>> 10+20
30
>>> import math
>>> math.sqrt(9)
3.0
>>> math.sqrt(-9)
Traceback (most recent call last):
  File "<pyshell#3>", line 1, in <module>
    math.sqrt(-9)
ValueError: math domain error
>>>
```

```
Python 3.13.2 (tags/v3.13.2:4f8bb39, Feb  4 2025, 15:23
[MSC v.1942 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for
information.
>>>
```

Python Prompt
(Chevron Prompt)

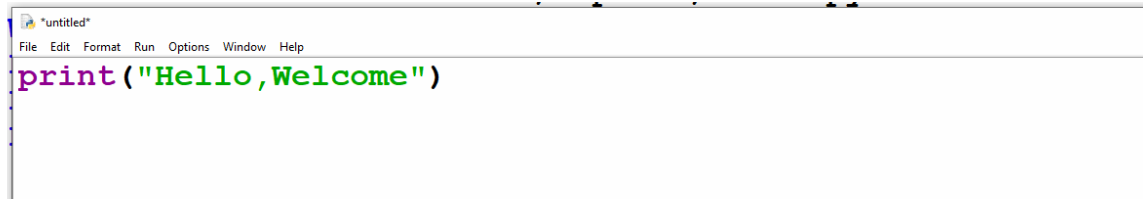**CLI (Command Line Interface)**

Programming Mode
A python program is file with extension .py
A program is set of instructions executed by computer to perform operations.

Basic steps for writing program
1. Click on File ➔ New File (Code Editor)
2. Write Code

```
print("Hello,Welcome")
```

3. Save the program
   a. File ➜ Save
4. Run the program
   a. Run ➜ Run Module

Every python editor allows working in two modes.

Telegram: codewithsatishgupta