

## Experiment 1.1

**Aim:** a) How to download and install Python.

b) Elaborate features of Python.

a) How to download and install Python

Python is a widely used high-level programming language. To write and execute code in python, we first need to install Python on our system.

Installing Python on Windows takes a series of few easy steps.

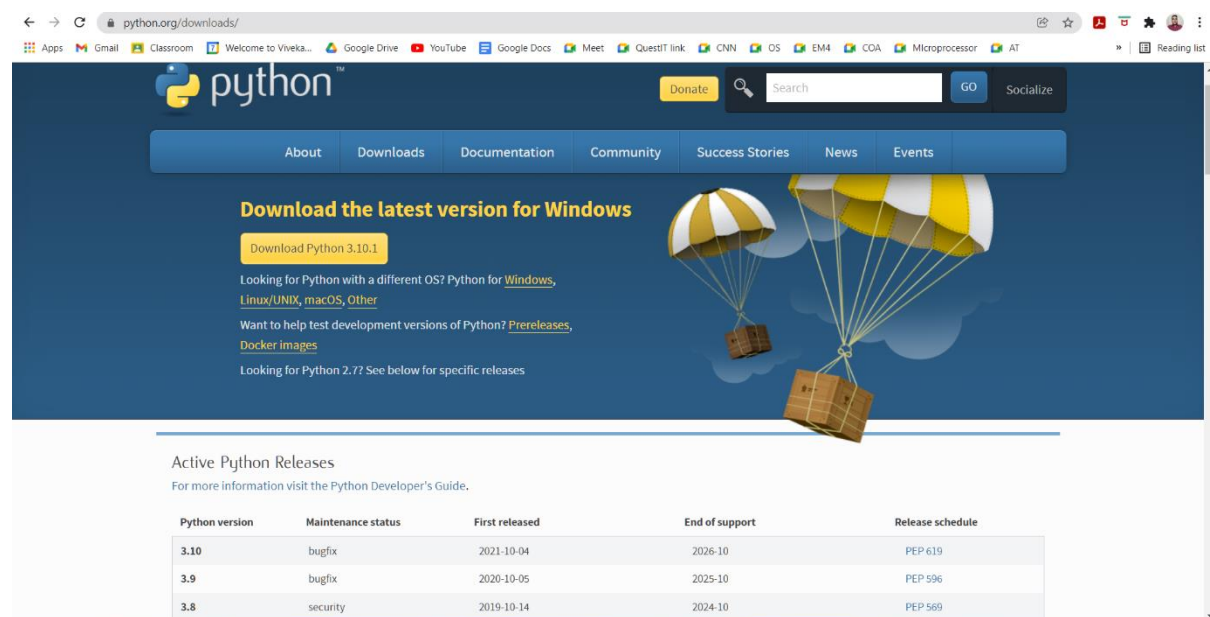
### **Step 1 – Select Version of Python to Install**

Python has various versions available with differences between the syntax and working of different versions of the language. We need to choose the version which we want to use or need. There are different versions of Python 2 and Python 3 available.

### **Step 2 – Download Python Executable Installer**

On the web browser, in the official site of python (www.python.org), move to the Download for Windows section.

Let suppose, we chose the Python 3.10.1 version.



The screenshot shows the Python.org website with the following content:

- Header: python logo, Donate button, Search bar, Socialize button.
- Navigation menu: About, Downloads, Documentation, Community, Success Stories, News, Events.
- Main content area:
  - Section: **Download the latest version for Windows**
  - Button: [Download Python 3.10.1](#)
  - Text: Looking for Python with a different OS? Python for [Windows](#), [Linux/UNIX](#), [macOS](#), [Other](#)
  - Text: Want to help test development versions of Python? [Prereleases](#), [Docker Images](#)
  - Text: Looking for Python 2.7? See below for specific releases
- Section: **Active Python Releases**  
For more information visit the [Python Developer's Guide](#).
- Table:

Python version	Maintenance status	First released	End of support	Release schedule
3.10	bugfix	2021-10-04	2026-10	PEP 619
3.9	bugfix	2020-10-05	2025-10	PEP 596
3.8	security	2019-10-14	2024-10	PEP 569

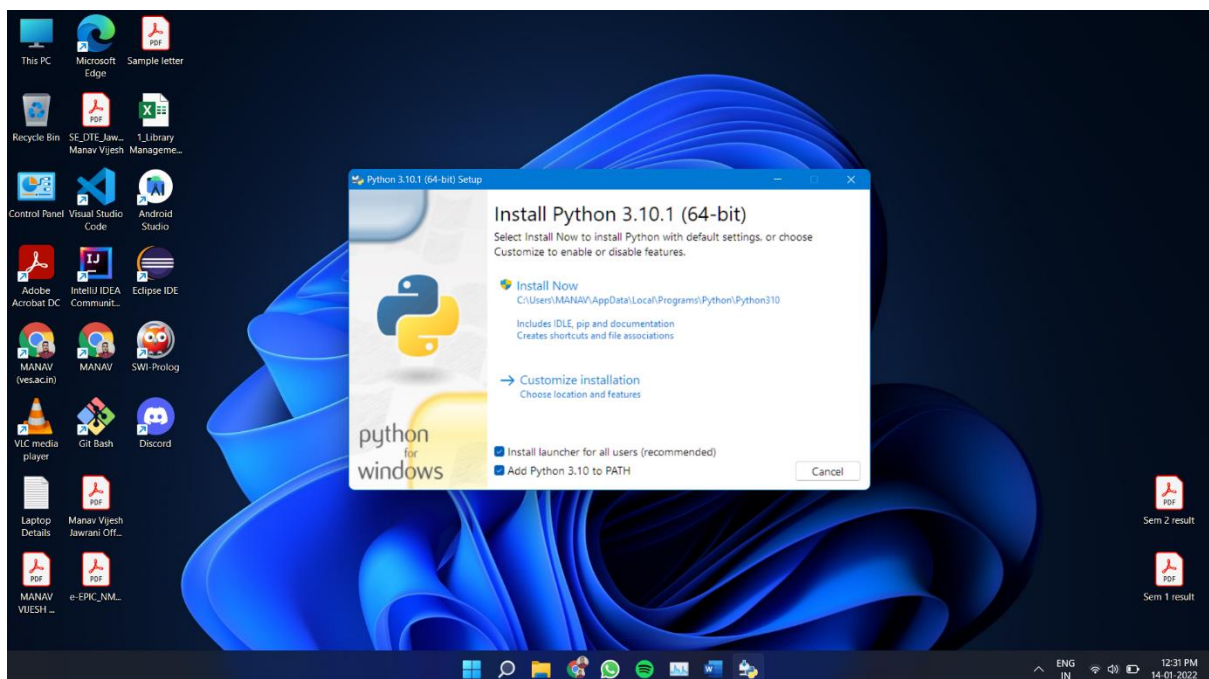
On clicking download, various available executable installers shall be visible with different operating system specifications. Choose the installer which suits your system operating system and download the installer. Let suppose, we select the Windows installer (64 bits).

The download size is less than 30MB.

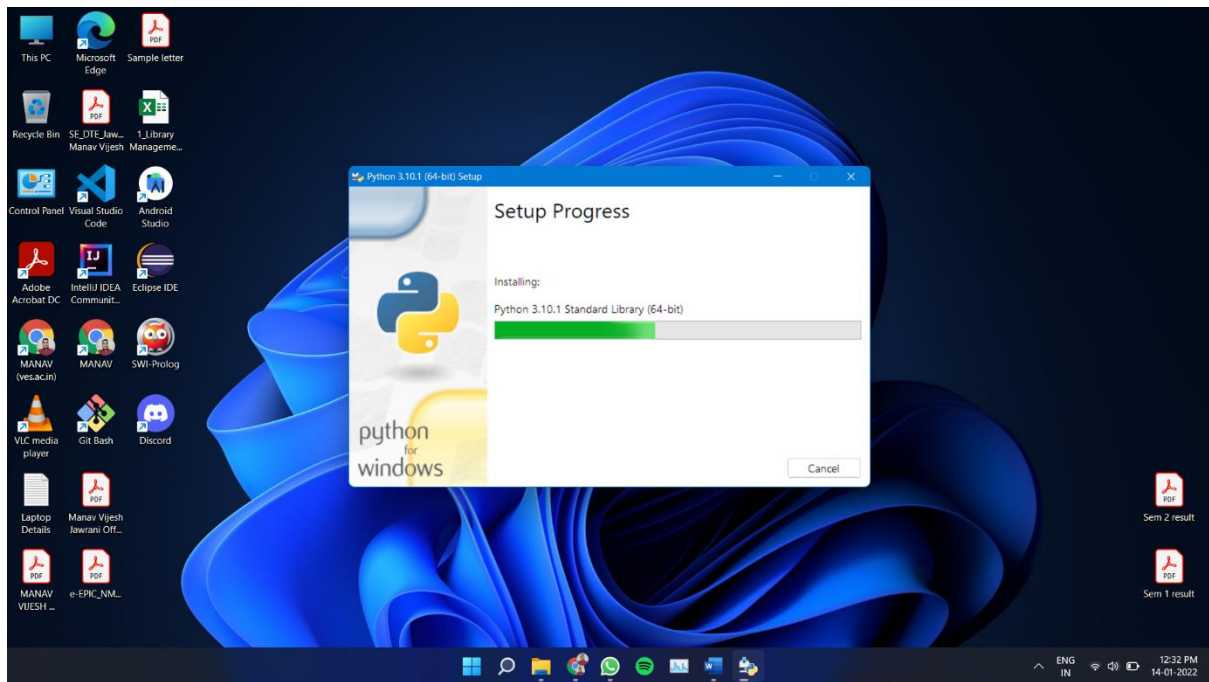
### Step 3 – Run Executable Installer

We downloaded the Python 3.9.1 Windows 64-bit installer.

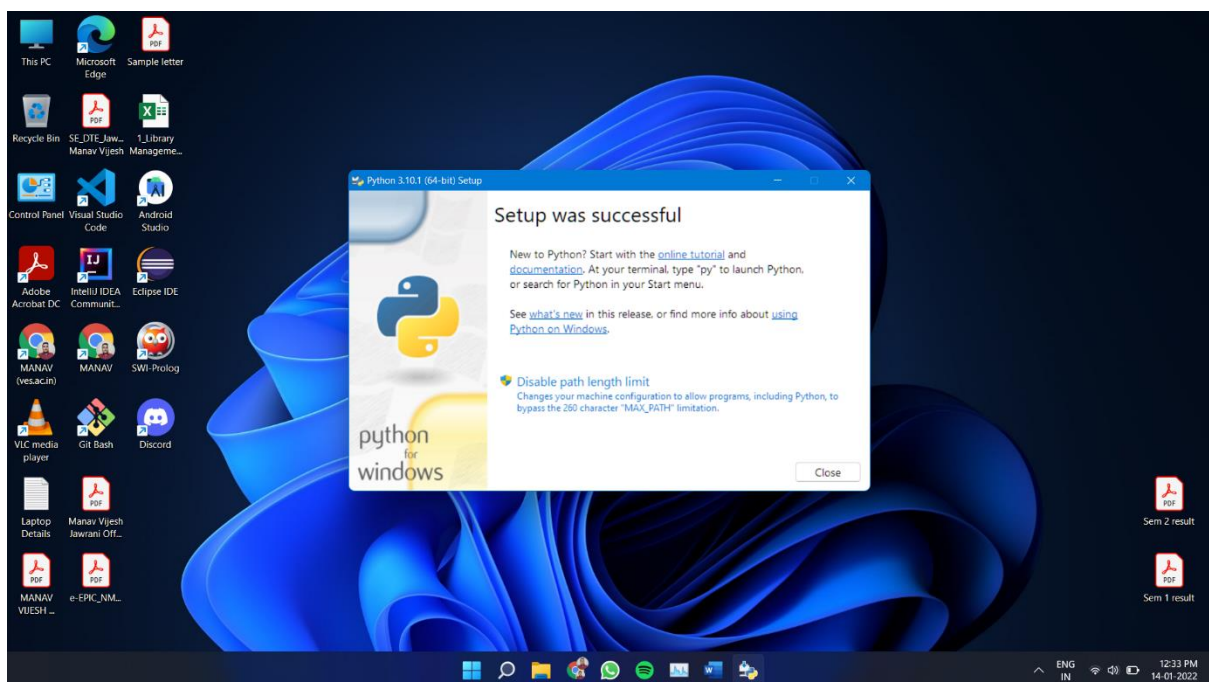
Run the installer. Make sure to select both the checkboxes at the bottom and then click Install New.



On clicking the Install Now, the installation process starts.



The installation process will take few minutes to complete and once the installation is successful, the following screen is displayed.

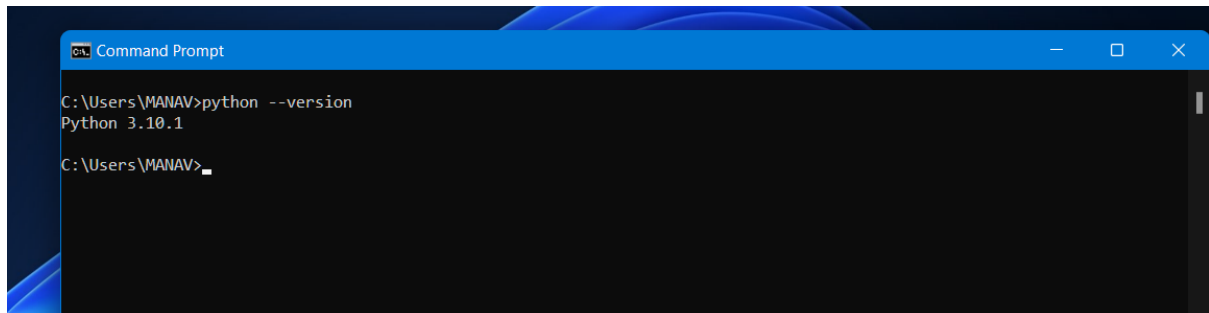


#### Step 4 – Verify Python is installed on Windows

To ensure if Python is successfully installed on your system. Follow the given steps –

- Open the command prompt.

- Type 'python' and press enter.
- The version of the python which you have installed will be displayed if the python is successfully installed on your windows.



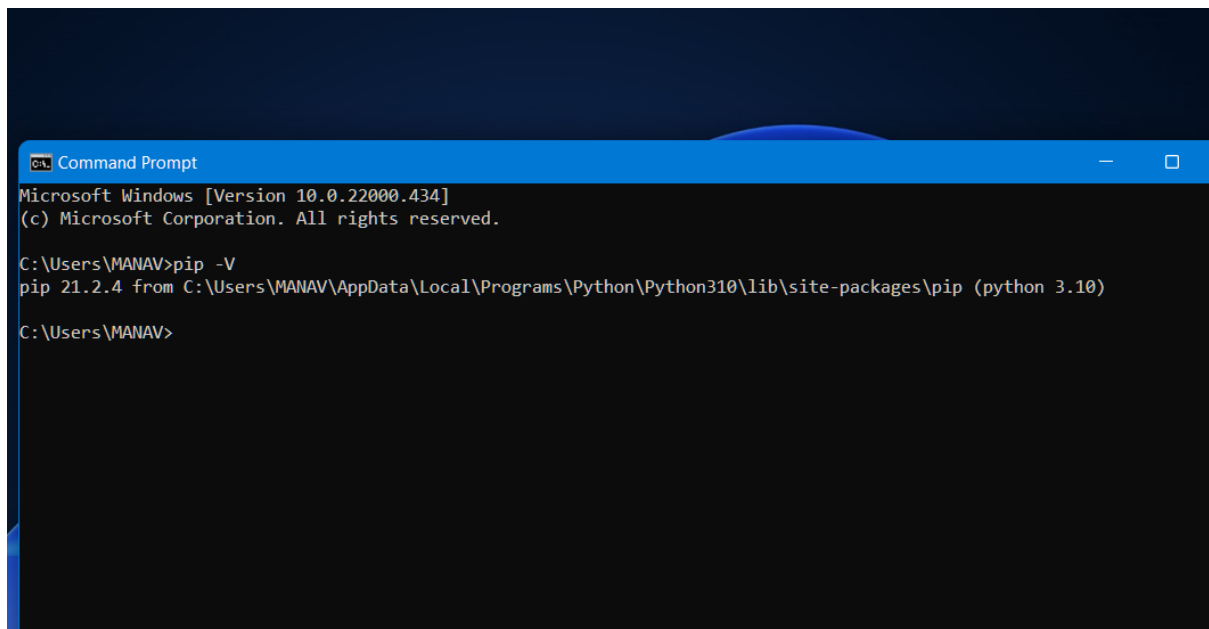
```
Command Prompt
C:\Users\MANAV>python --version
Python 3.10.1
C:\Users\MANAV>
```

### Step 5 – Verify Pip was installed

Pip is a powerful package management system for Python software packages. Thus, make sure that you have it installed.

To verify if pip was installed, follow the given steps –

- Open the command prompt.
- Enter pip -V to check if pip was installed.
- The following output appears if pip is installed successfully.



```
Command Prompt
Microsoft Windows [Version 10.0.22000.434]
(c) Microsoft Corporation. All rights reserved.
C:\Users\MANAV>pip -V
pip 21.2.4 from C:\Users\MANAV\AppData\Local\Programs\Python\Python310\lib\site-packages\pip (python 3.10)
C:\Users\MANAV>
```

We have successfully installed python and pip on our Windows system



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### b. Elaborate features of Python

#### 1. Easy to learn and use

Python is easy to learn as compared to other programming languages. Its syntax is straightforward and much the same as the English language. There is no use of the semicolon or curly-bracket, ~~there~~ indentation defines the code block. It is recommended programming language for beginners.

#### 2. Expressive language.

Python can perform complex tasks using a few lines of code. A simple example, the hello world program you simply type `print("Hello world")`. It will take only one line to execute, while Java or C takes multiple lines.

#### 3. Interpreted language

Python is an interpreted language; it means the Python program is executed one line at a time. The advantage of being interpreted language, it makes debugging easy and portable.

#### 4. Cross-platform language

Python can run equally on different platforms such as windows, Linux, Unix etc. So we can say that python is portable language. It enables programmers to develop the software for several competing platforms by writing a program only once.



### 5. Extensible

It implies that other languages such as C/C++ can be used to compile the code and thus it can be used further in our Python code. It converts the program into byte code and any platform can use that byte code.

### 6. GUI programming Support

Graphical user Interface is used for the developing desktop application. PyQT5, Tkinter, Kivy are the libraries which are used for developing web application.

### 7. Dynamically Typed language

Python is dynamically typed language. That means the type for a variable is decided at run time not in advance because of this feature we don't need to specify the type of variable.

### Conclusion:

We have understood how to install python and also elaborated the features of python.