Program Instruction

Installation Before Using:

-Python 3.11++

-Geforce Experience (Driver Update)

-CUDA & cuDNN

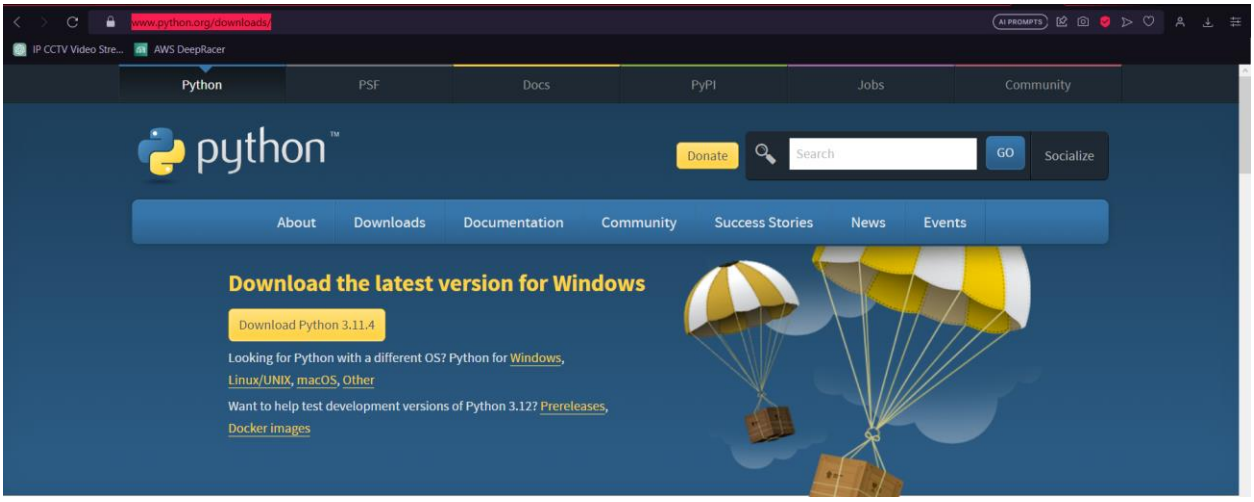
-Microsoft Visual C++

-InfluxDB 2.x & nssm

-Git

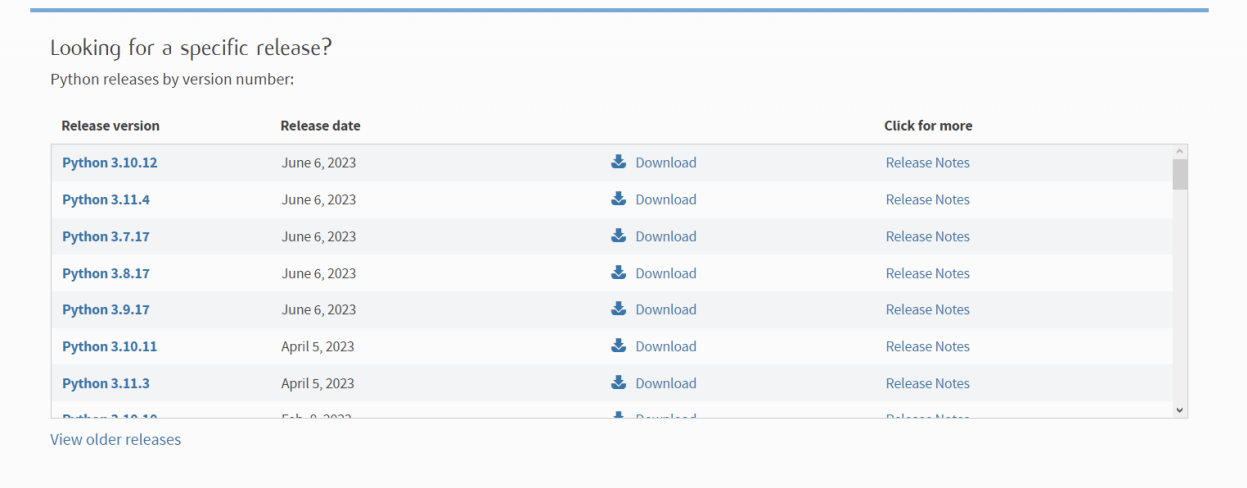
Download Python:

1.Go to https://www.python.org/downloads/

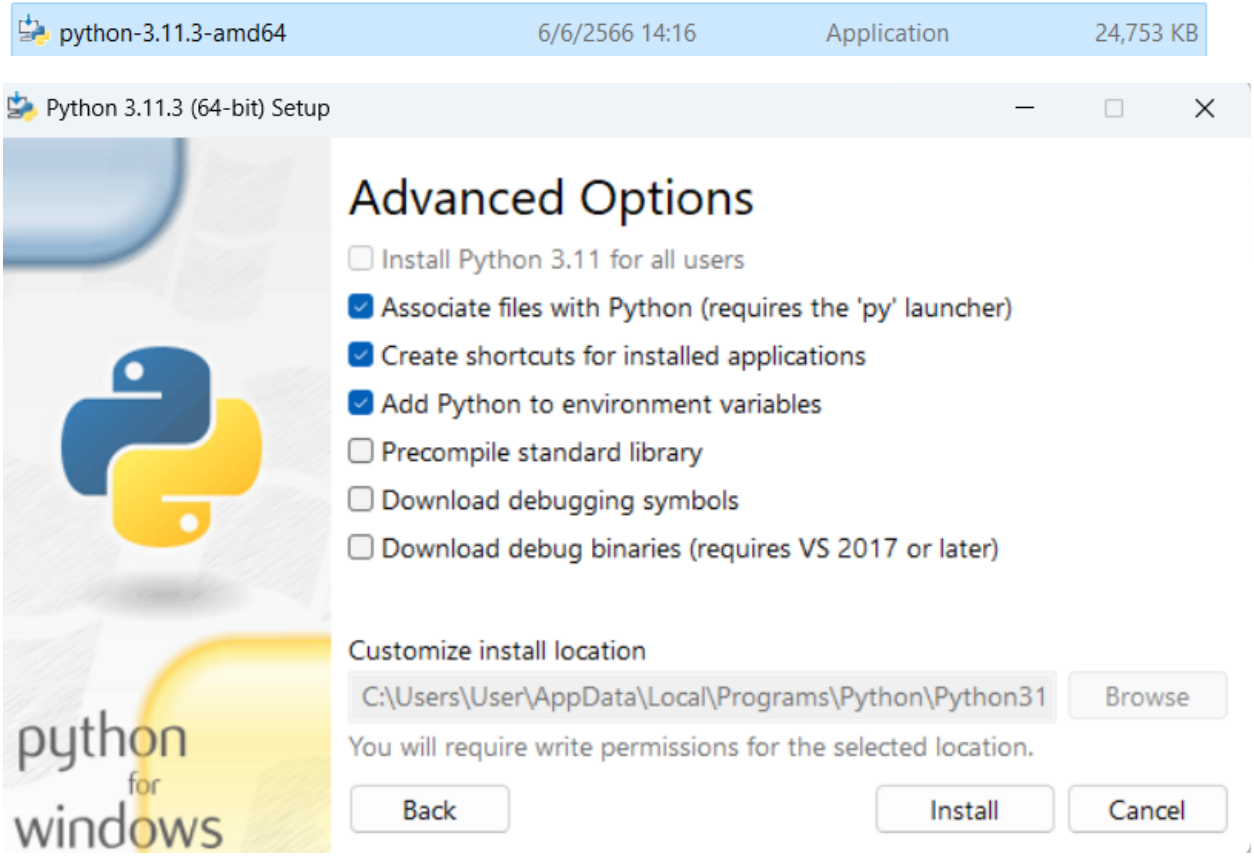


Click Download to start and wait for it to finish.

1.2 Recommend lower than the latest version for efficiency because latest version might have bug that not fixed. Scroll down to see the version list.



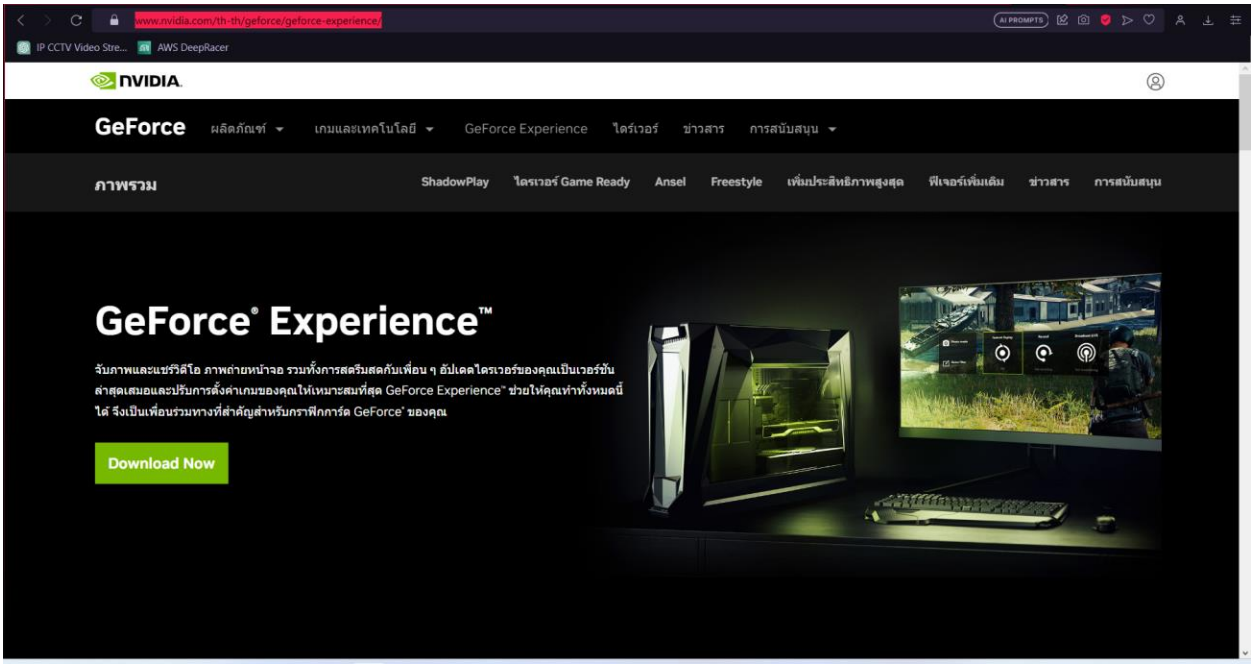
2 After finish download open it and install python.



Important! Must tick Add Python to environment variables box if you don't tick the python will not include the library and you need to go set path by yourself.

2.Download Geforce Experience:

1.Go to https://www.nvidia.com/th-th/geforce/geforce-experience/

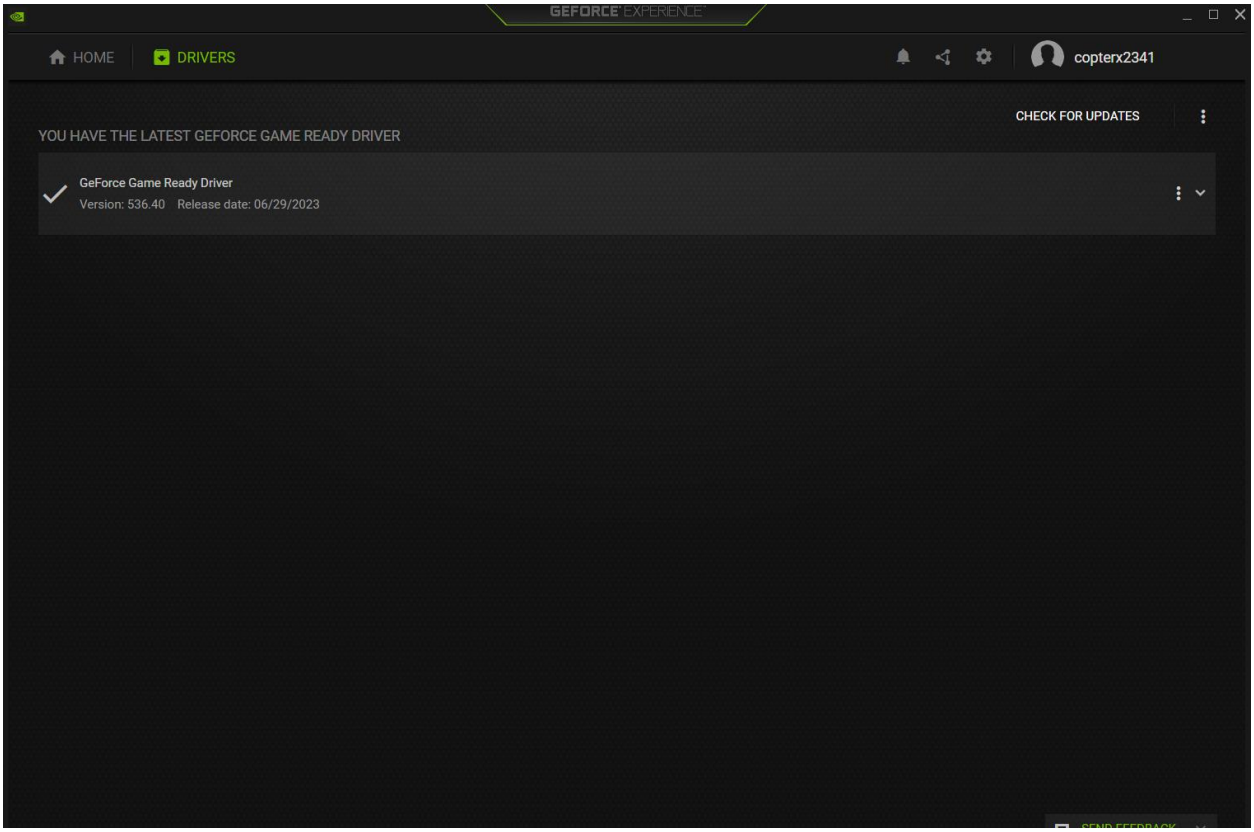


Click Download Now wait for it to download.

GeForce_Experience_v3.27.0.112	4/3/2566 22:10	Application	128,378 KB

After finish download install Geforce Experience and open it

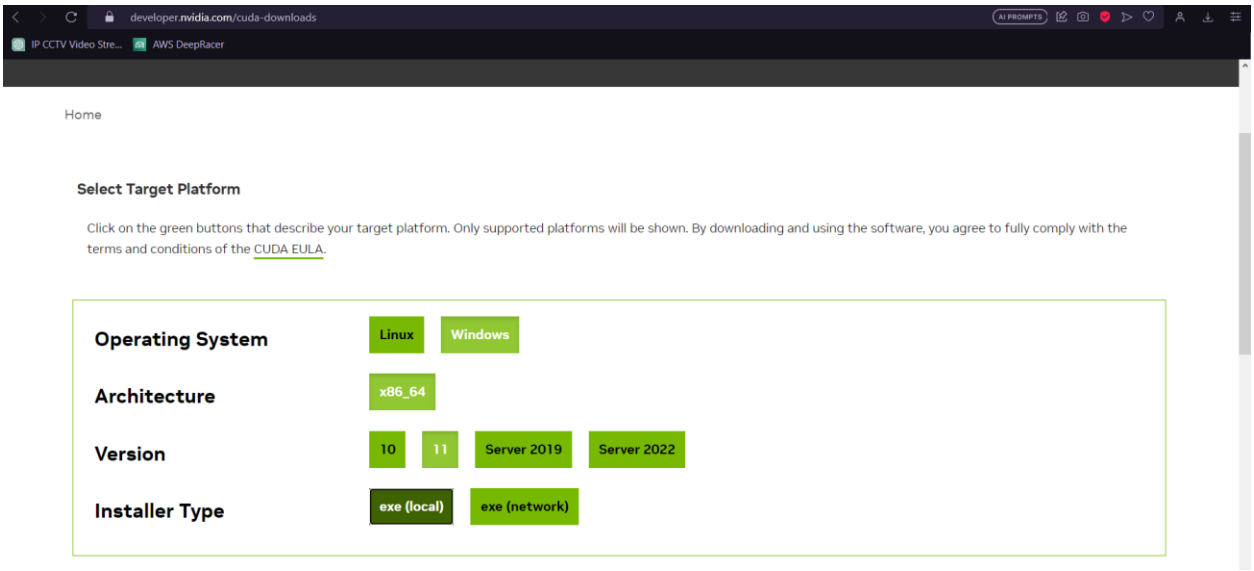
NOTE: This step you must have Account Geforce Experience first.



Check your driver version is your driver are latest version or not, if not install the latest version.

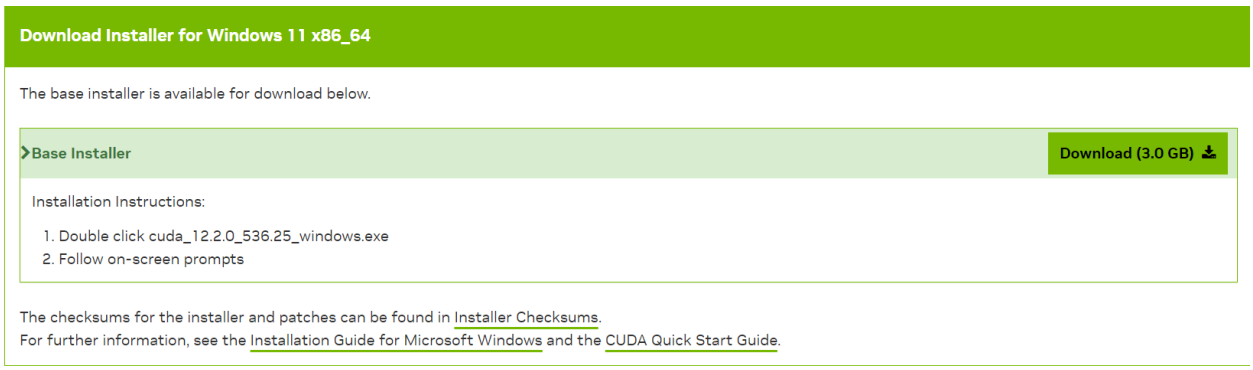
3.Download CUDA & cuDNN :

Go to https://developer.nvidia.com/cuda-downloads



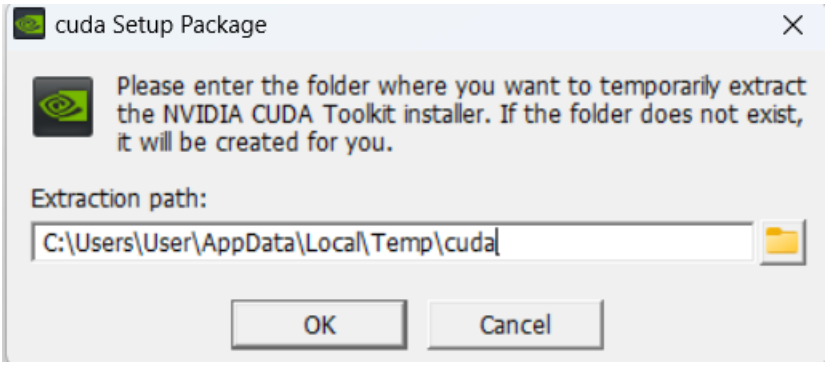
Choose according to the appropriate operating system

In Installer Type choice choose local



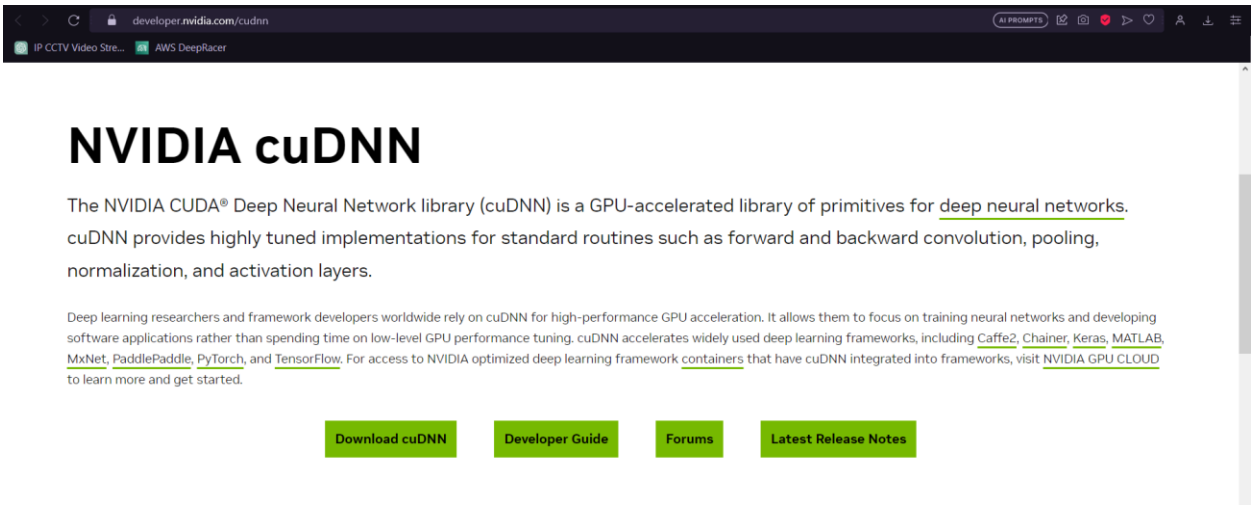
Click download

Wait for program downloaded. After finish open it.

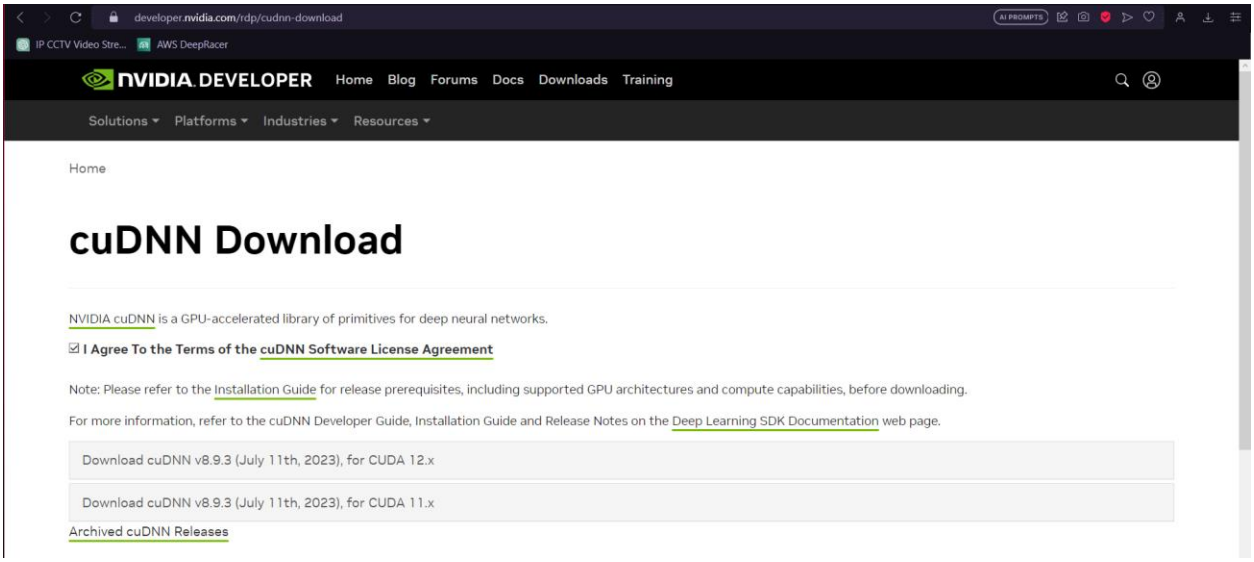


Choose file location I recommend to put it somewhere easy to find but I will leave it as Default

After finish Installation Download cuDNN by this link: https://developer.nvidia.com/cudnn

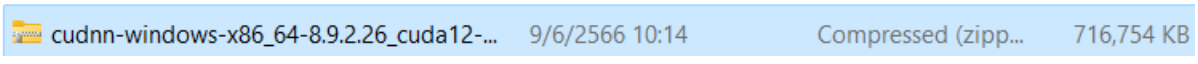


This step you must have Nvidia Account first to download cuDNN.

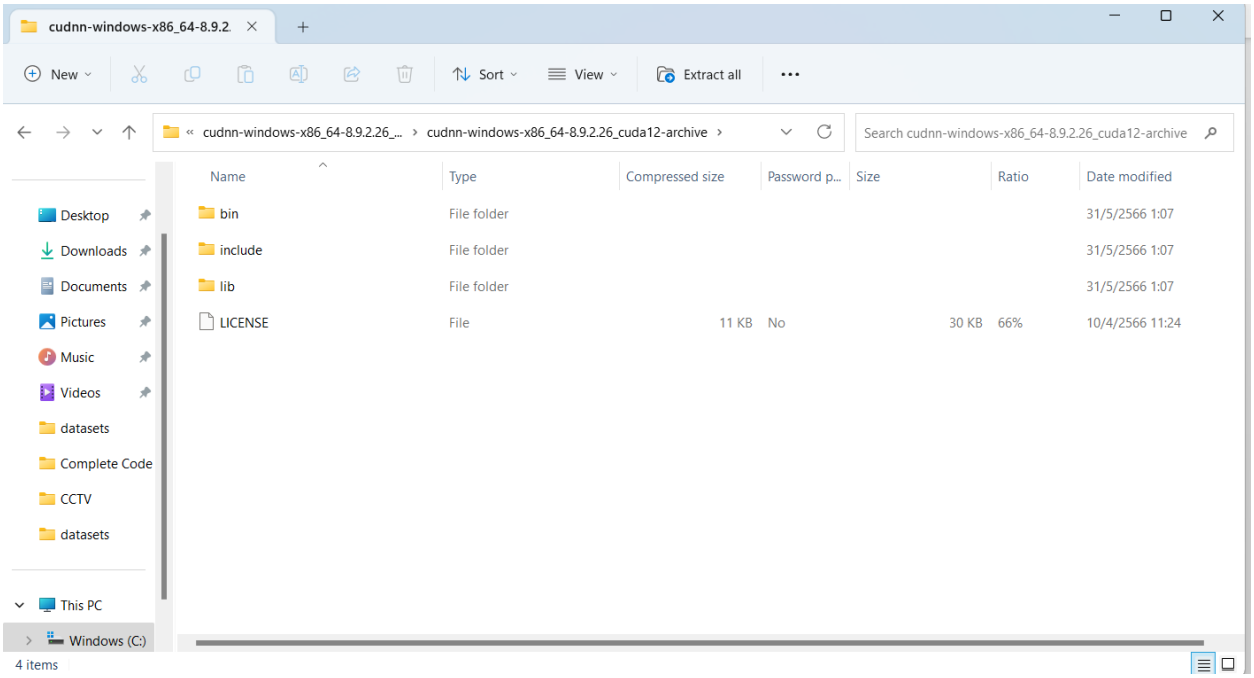


Download cuDNN that match your CUDA version

You will get this file after finish Installation

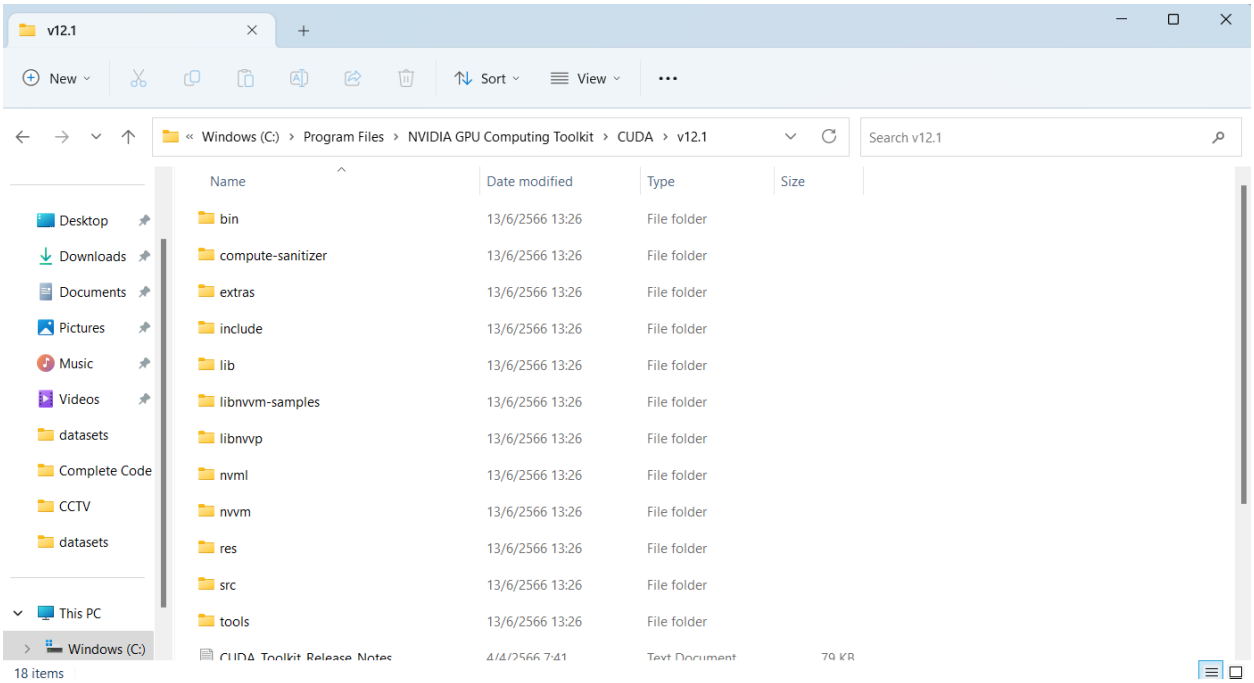


Extract file and open it



Next, open CUDA file location. My CUDA file is

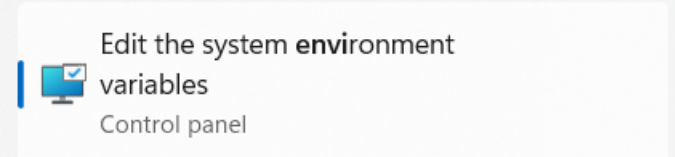
C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v12.1

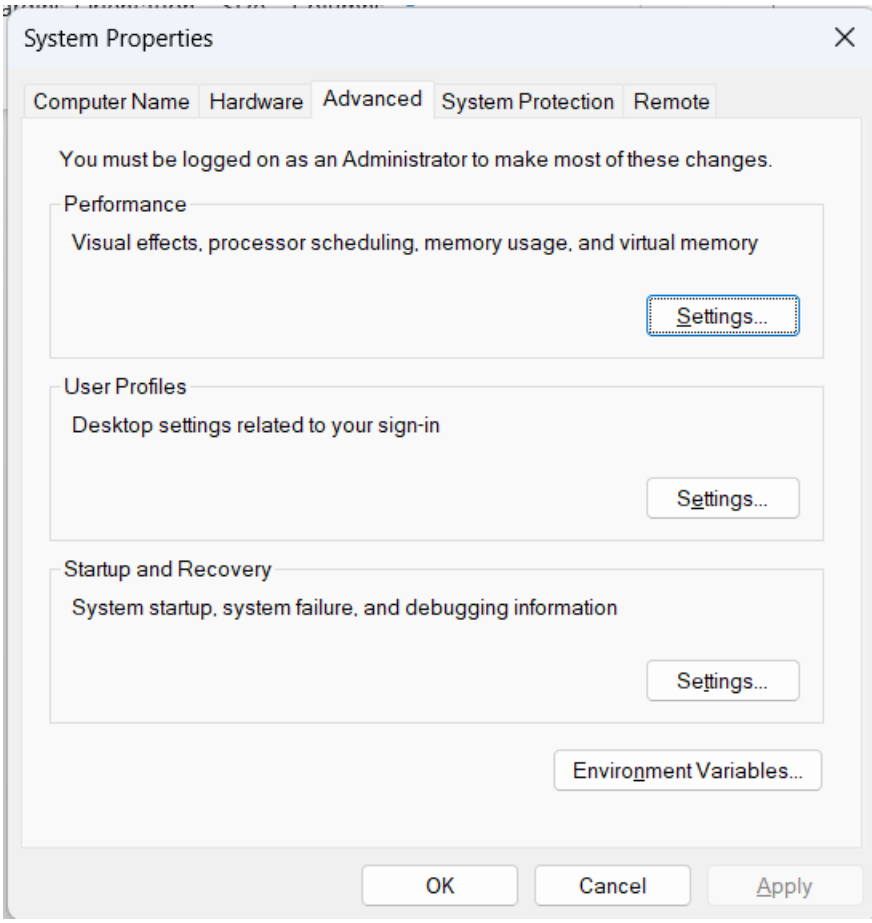


copy file in lib, bin and include from cuDNN Folder to folder lib, bin and include of CUDA folder

After do all step finish now, we will set path to CUDA for the system to know where CUDA is

Write in window search “environment variables”





Click Environment Variables

Check that CUDA path does it exist or not. It will be like this:

CUDA_PATH	C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v12.1
CUDA_PATH_V12_1	C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v12.1

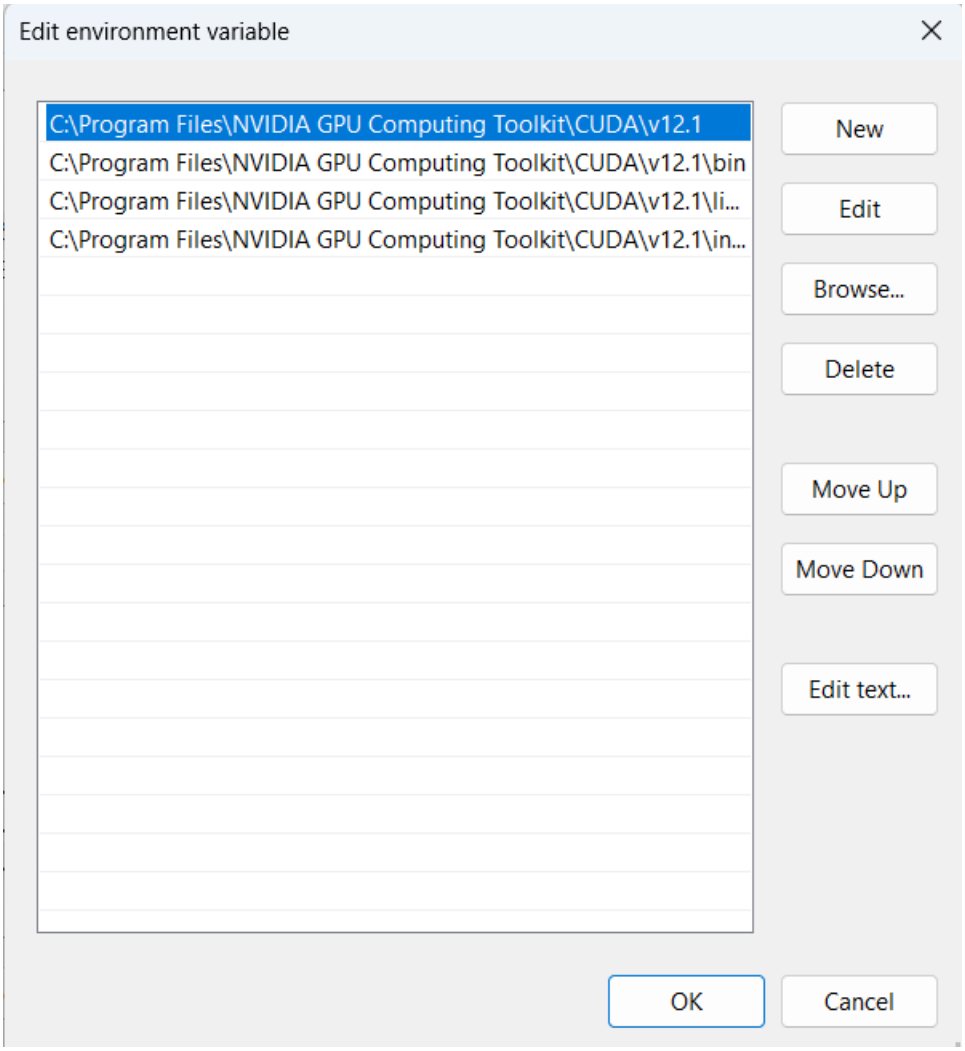
After that, create new system Variable name cuDNN and set path to point to CUDA folder:

C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v12.1

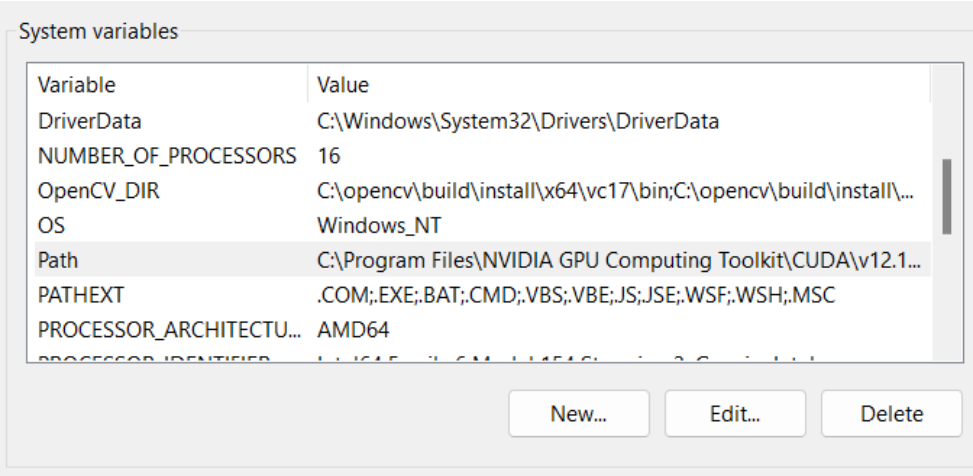
C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v12.1\bin

C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v12.1\lib\x64

C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v12.1\include



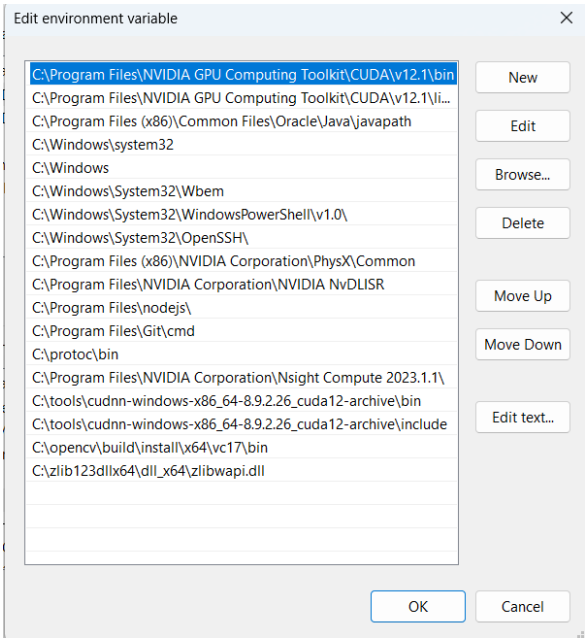
Next, go to Path of Sytstem Variable



Click edit and add 2 new locations in path

C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v12.1\libnvvp

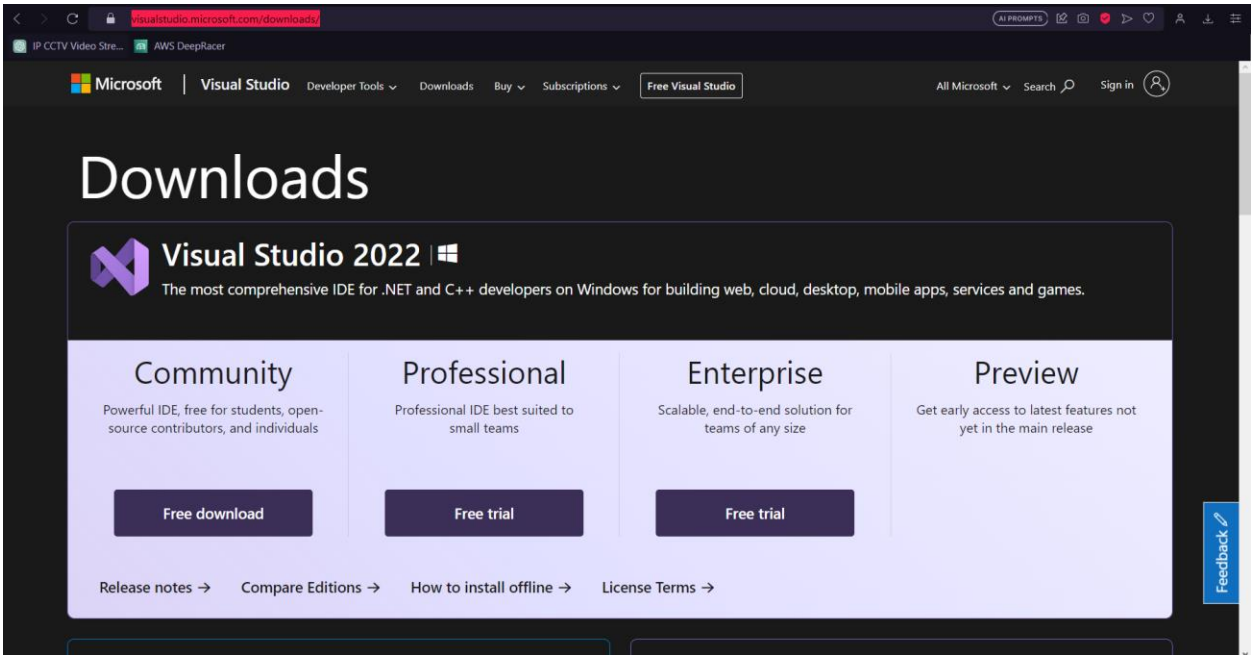
C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v12.1\bin



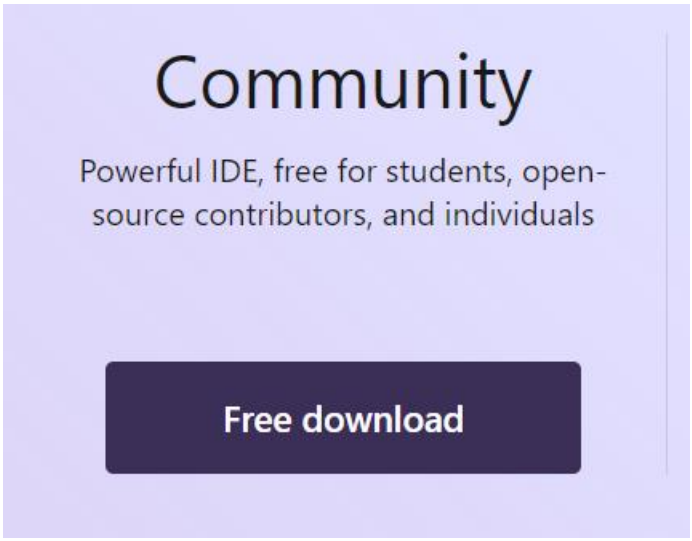
When you finish, you might have to restart computer to make system reboot setting but you can do it after finish all installation.

4. Download Microsoft Visual C++

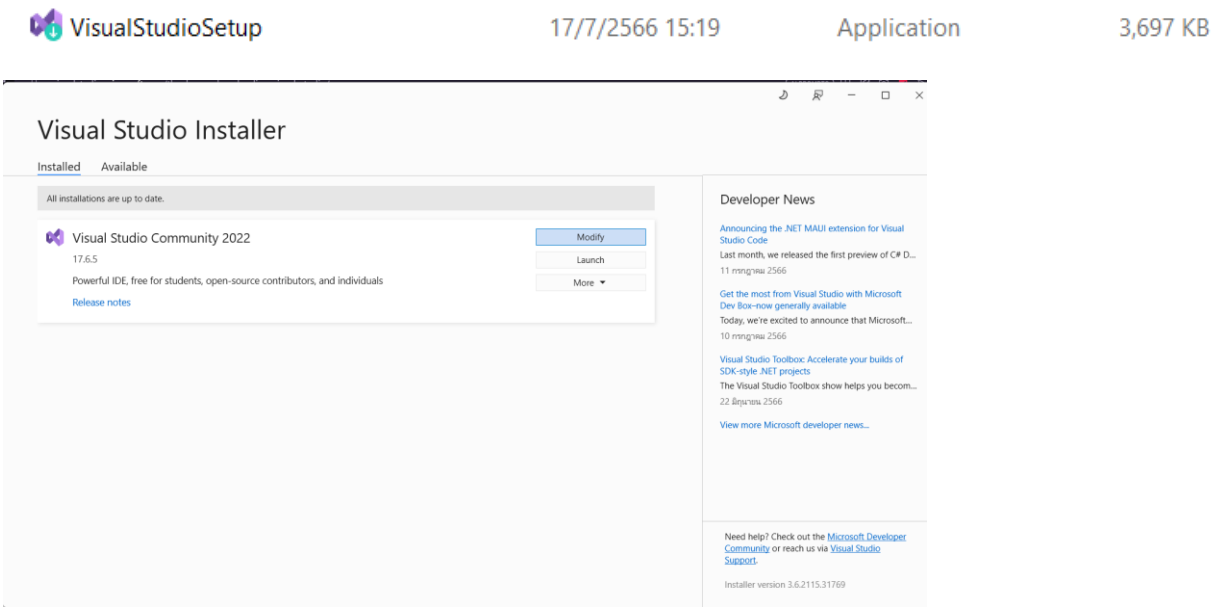
1. Go to https://visualstudio.microsoft.com/downloads/



Download the community version



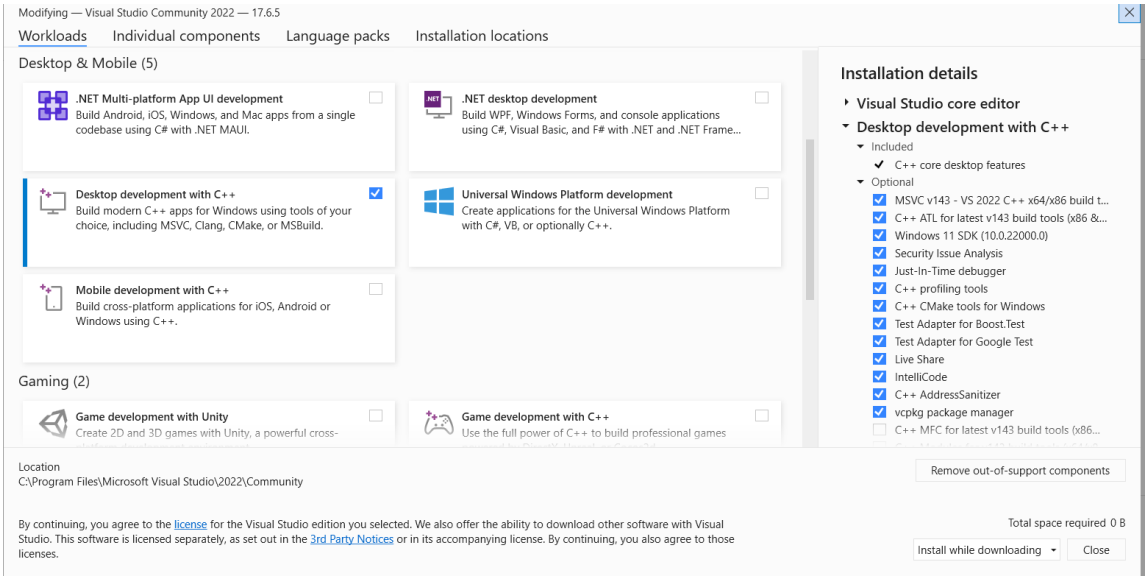
2. After download finish, open installer.



Beside that I have already downloaded so it will show Modify but for who doesn't downloaded it will show install click install.

Choose Desktop development with C++

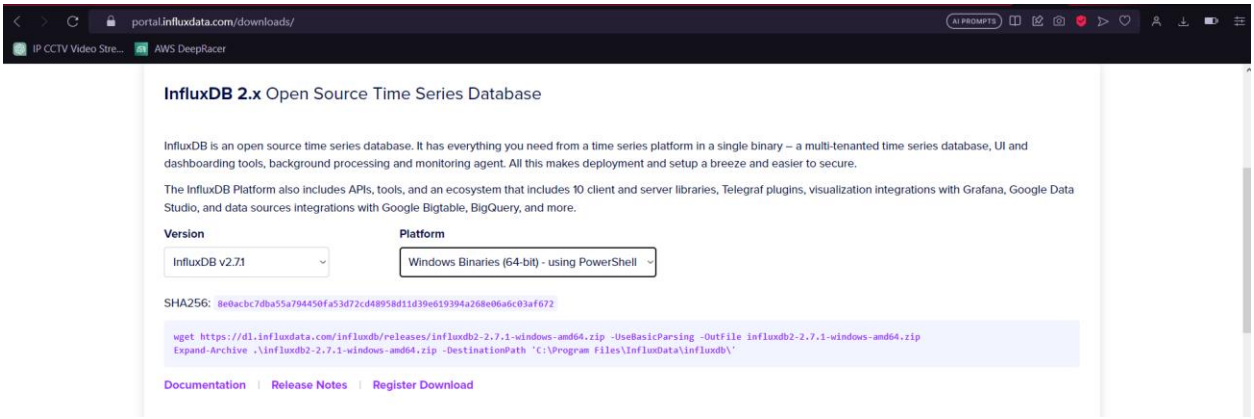
Tick it then untick other than Desktop development with C++ because we not using it



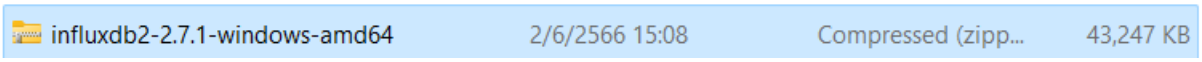
Click Install

5.Download InfluxDB 2.x

1.Go to https://portal.influxdata.com/downloads/

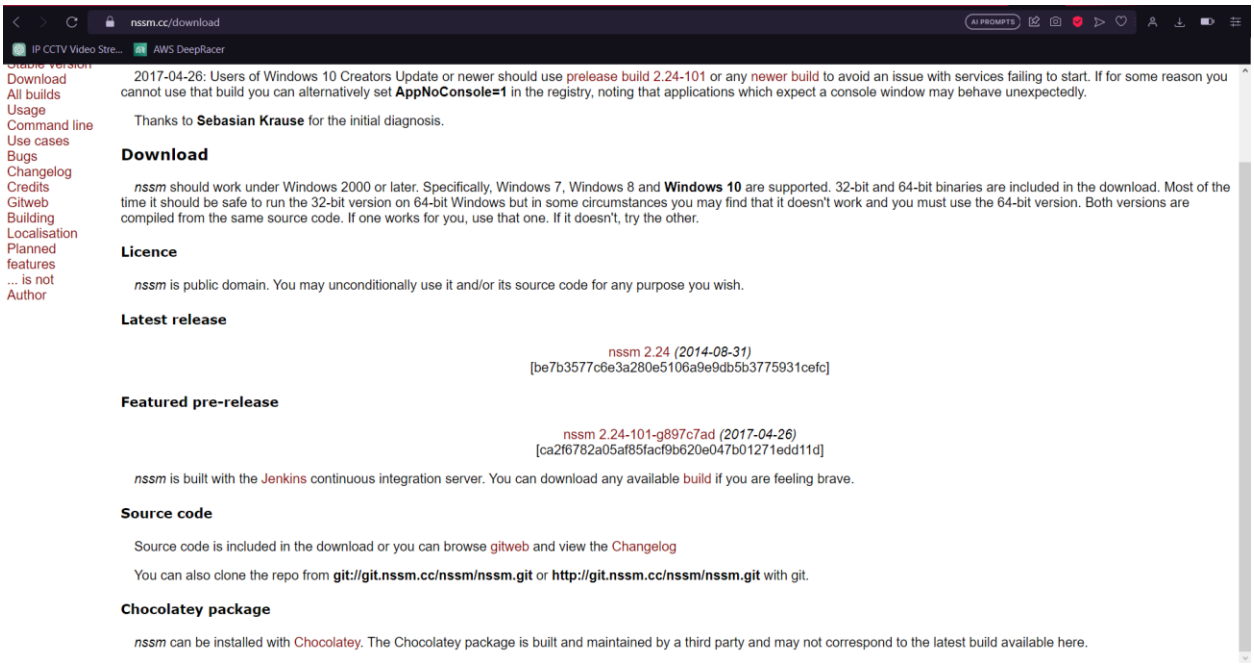


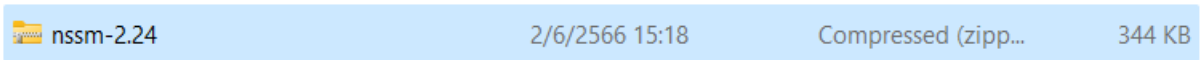
Choose Platform that match your system you must login first before download.



After finish extract file

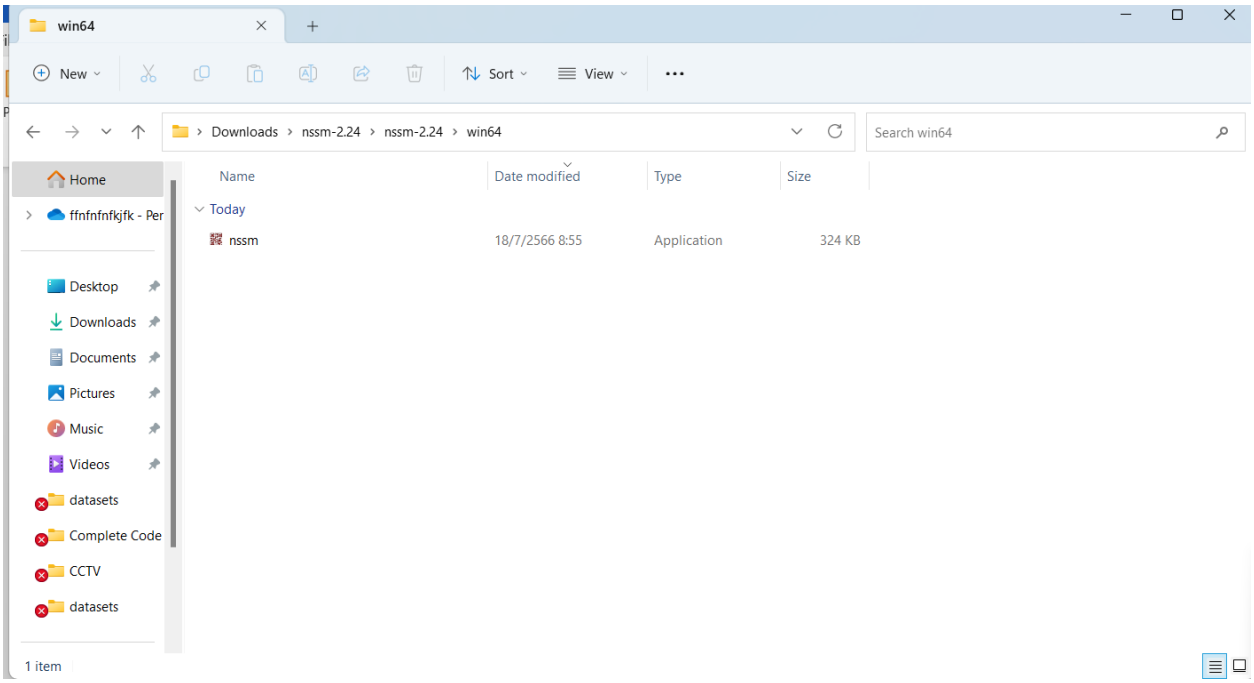
2.Download NSSM follow this link https://nssm.cc/download





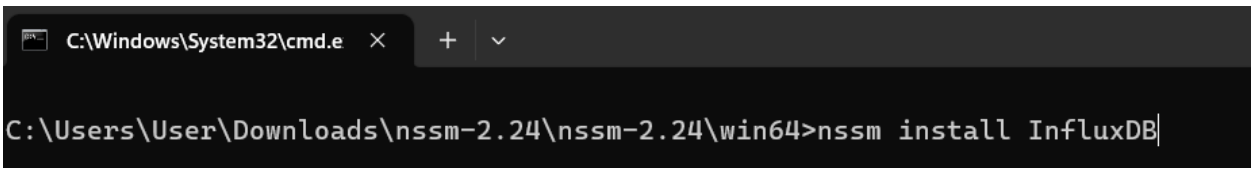
Extract file

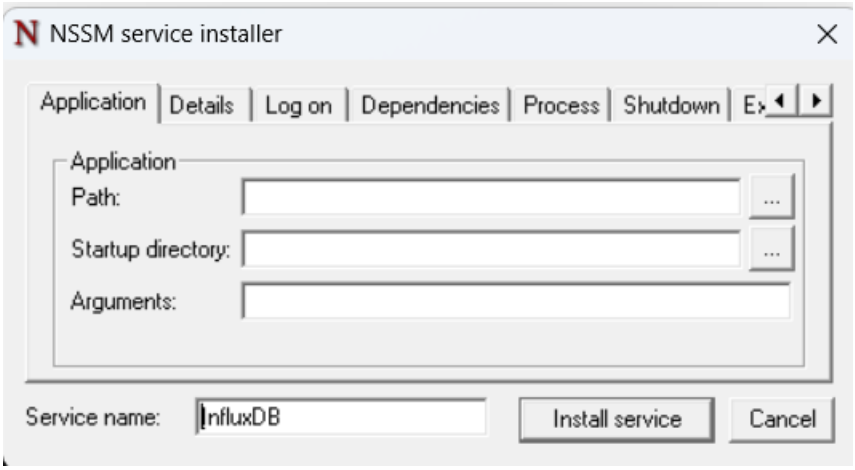
3. Open NSSM Folder



You will found nssm.exe open cmd that path point to this folder write command

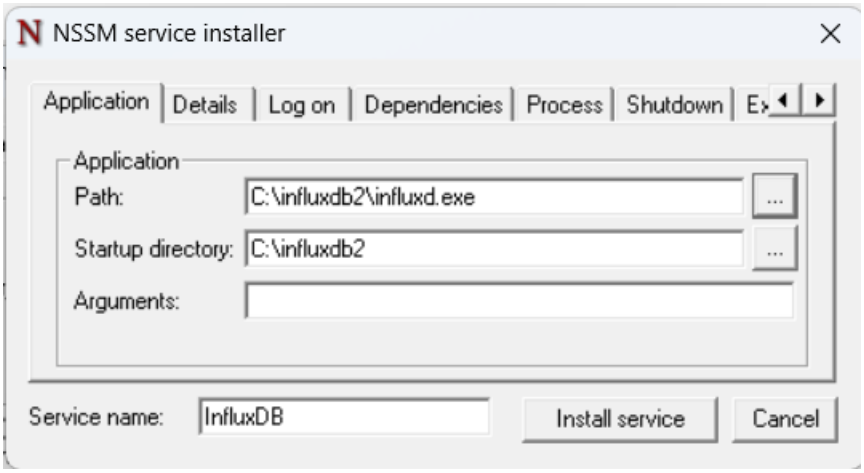
nssm install InfluxDB



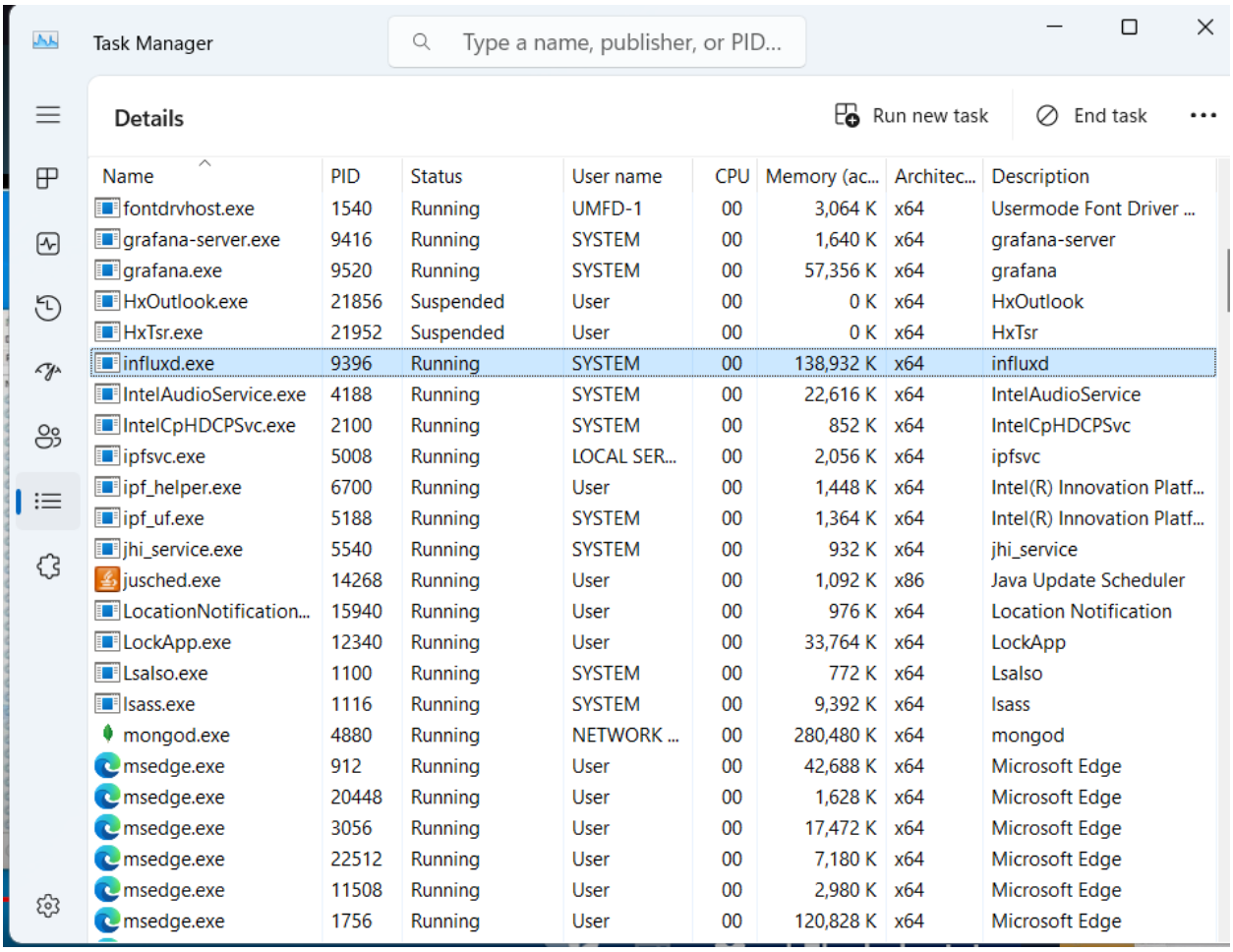


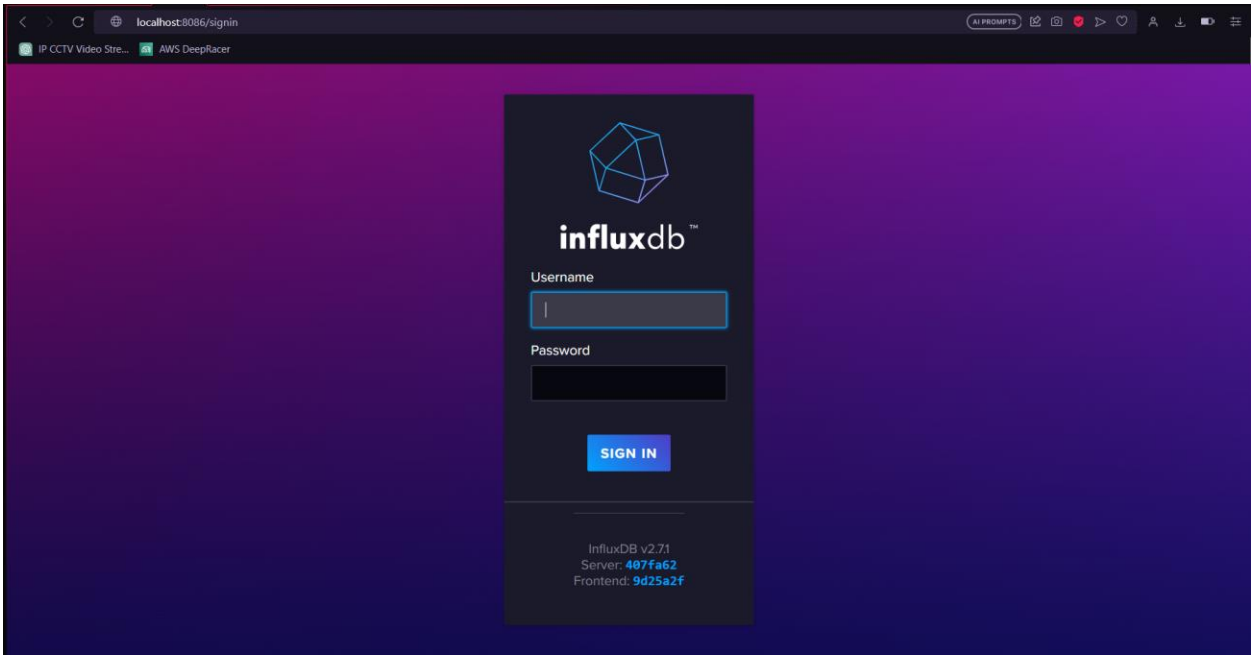
Then the program will appear

Choose the path to be the influx.exe in influxdb folder that we extracted



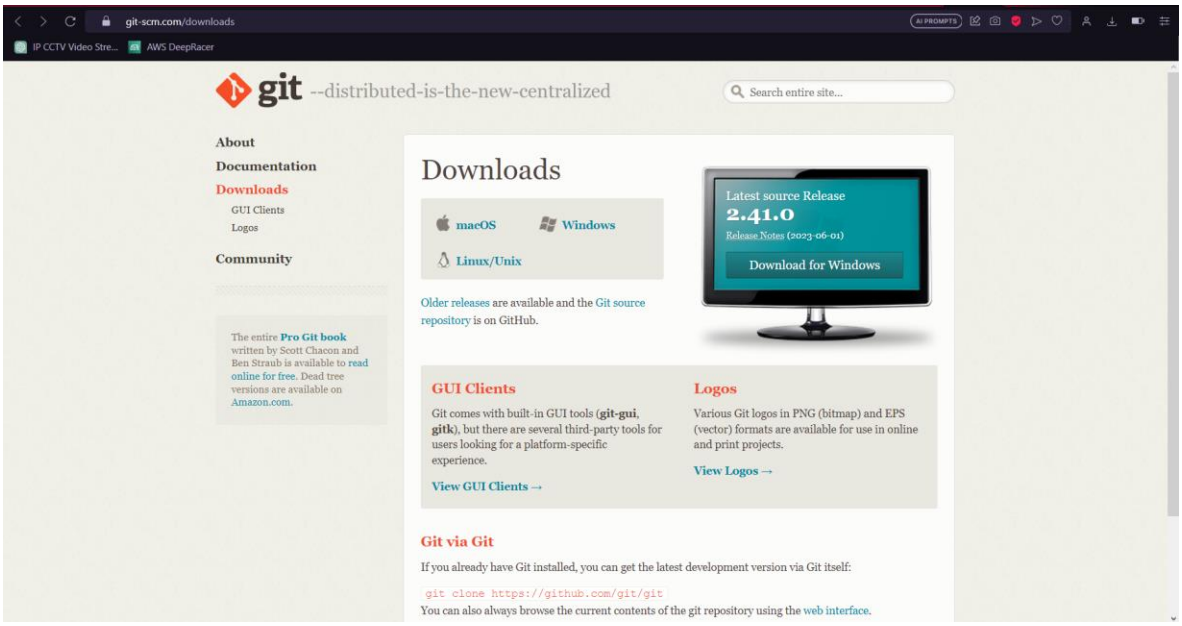
Click install then we will get influxdb server





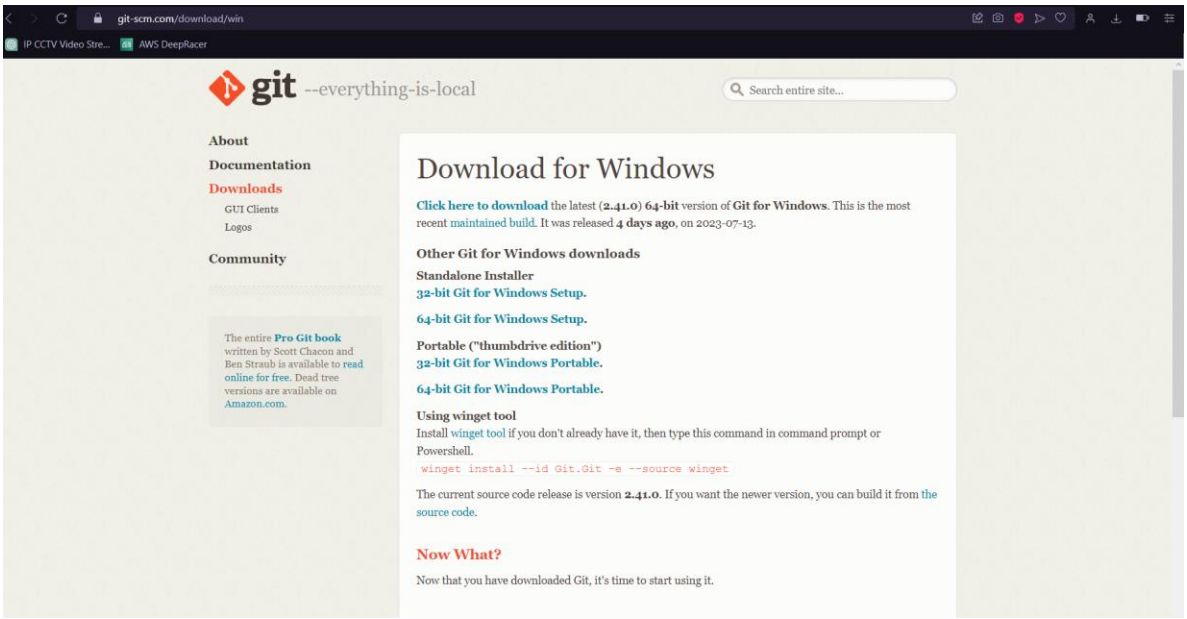
Register/login to use InfluxDB

6.Download git (Use to Clone Code from git hub) go to https://git-scm.com/downloads

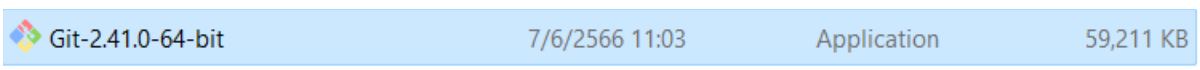


choose platform to download

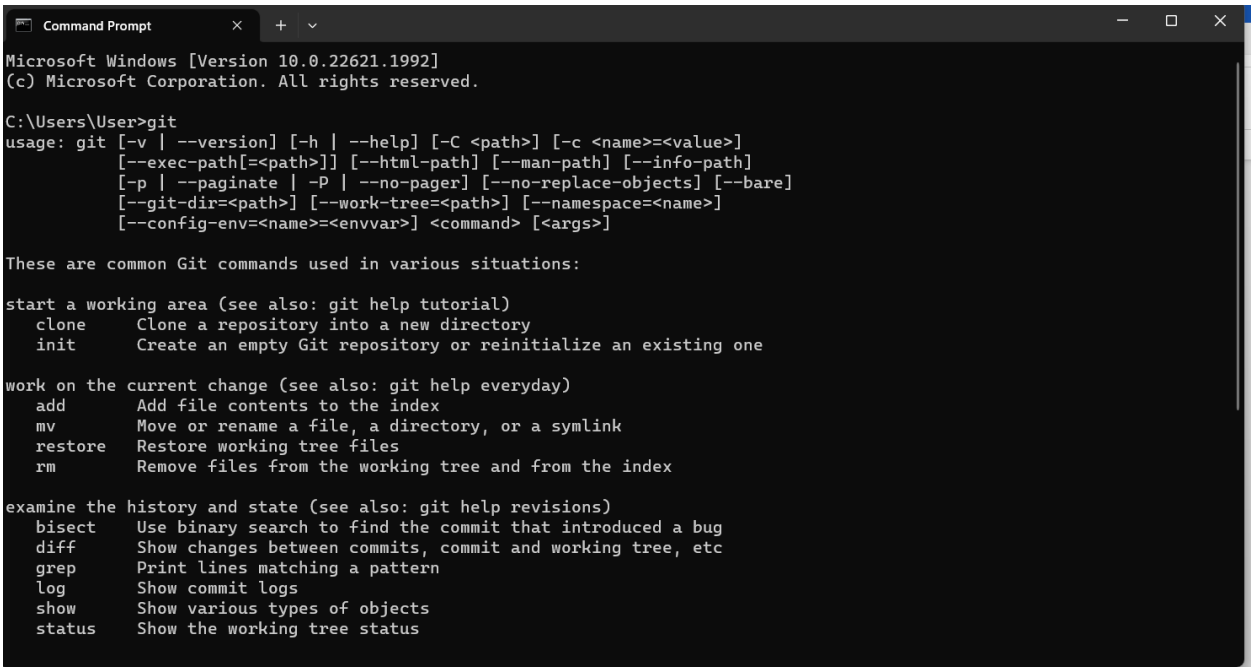
mine is window



choose Standalone choice



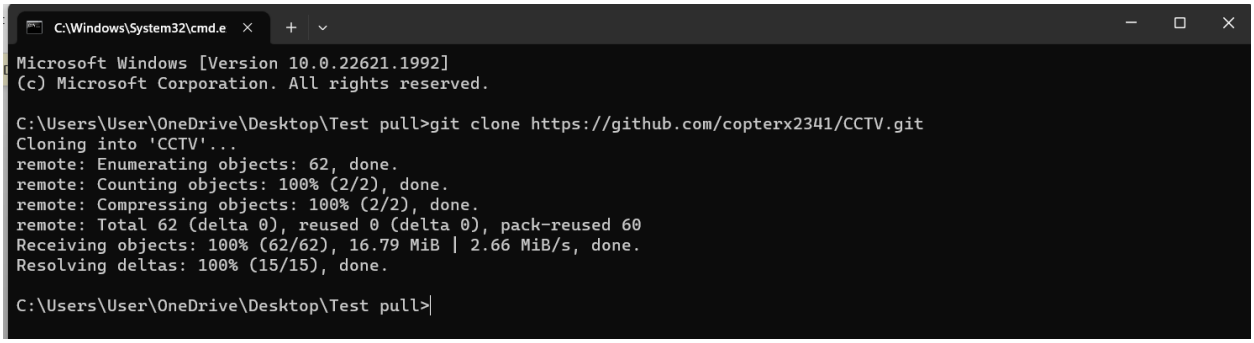
Follow the steps in installation After installation finish open cmd and write git to check that git installation was success.



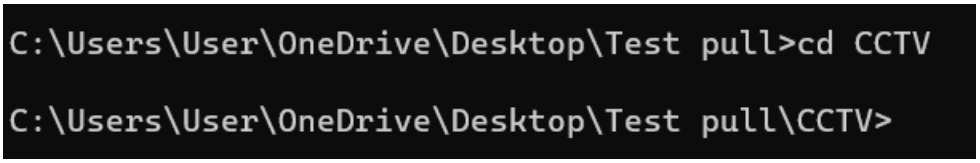
Create folder and open cmd that point to the created folder

And clone the repository by using command

git clone https://github.com/copterx2341/CCTV.git



Enter respository of Folder CCTV by using “cd CCTV”



write pip install -r requirements.txt to download all the library of python that will be use

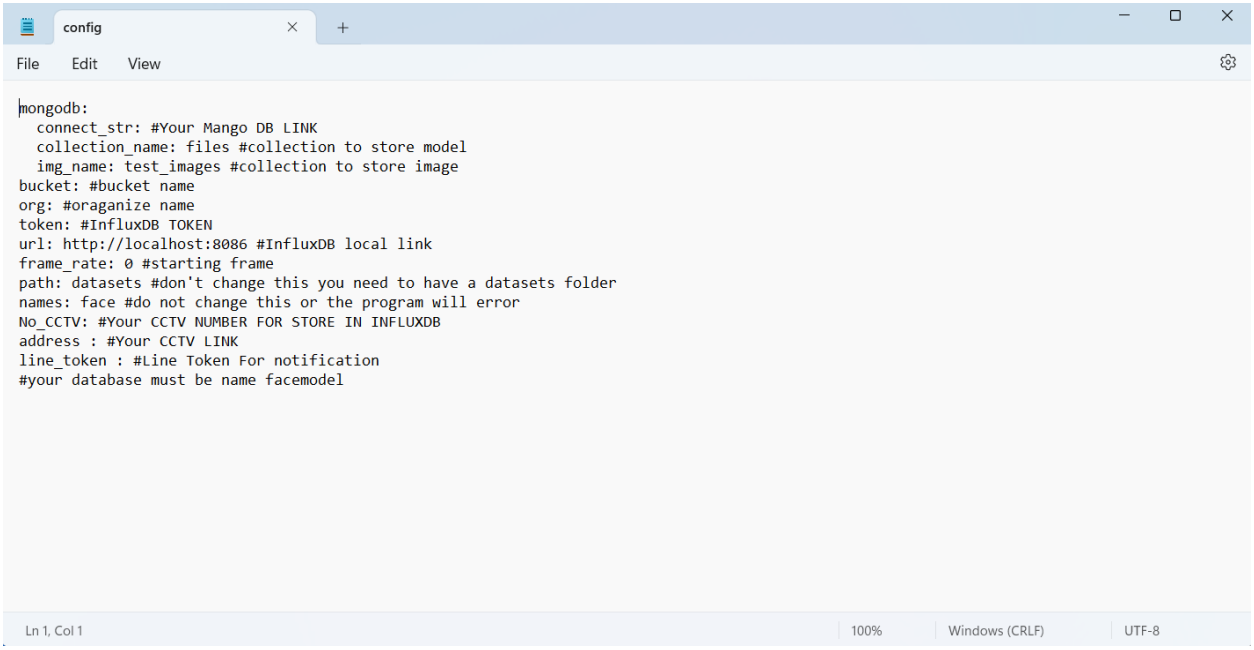
After that,

write pip3 install torch torchvision torchaudio --index-url https://download.pytorch.org/whl/cu117

to install TensorFlow wait for the installation finish

open folder CCTV APPLICATION or TRAINING APPLICATION

In the folder we will found config.yaml open it recommend to open with editable text file



Ok now I will describe each variable what is it do.

connect_str is the link that we will use to connect to mongoDB Atlas

collection-name is the name of collection that we will use to store face.yml (model) file

img_name is the name of collection that we will use to store image of Dataset

bucket is the name of the bucket of InfluxDB 2.x

org is the organization name of InfluxDB 2.x

token is Token key of InfluxDB 2.x

url: http://localhost:8086 #InfluxDB local link

frame_rate: 0 #starting frame (this is the starting frame count doesn't effect to a code but need to be int+ only)

path: datasets #don't change it this is the folder that we will collect dataset

names: face #don't change this is the model file name

No_CCTV is the name of CCTV that you want to name it

address is link that we will use to connect to camera or if you use webcam you can make it 0

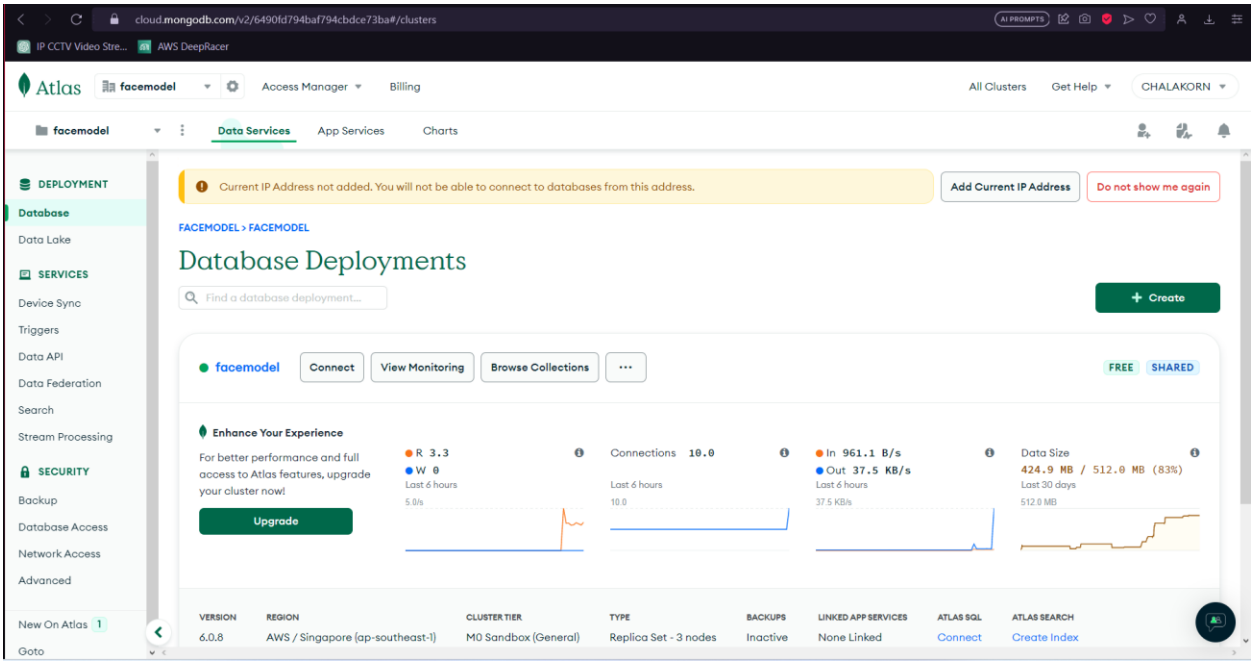
line_token is line notification Token

beside that, Database must be name facemodel

and in datasets must have at least 1 picture

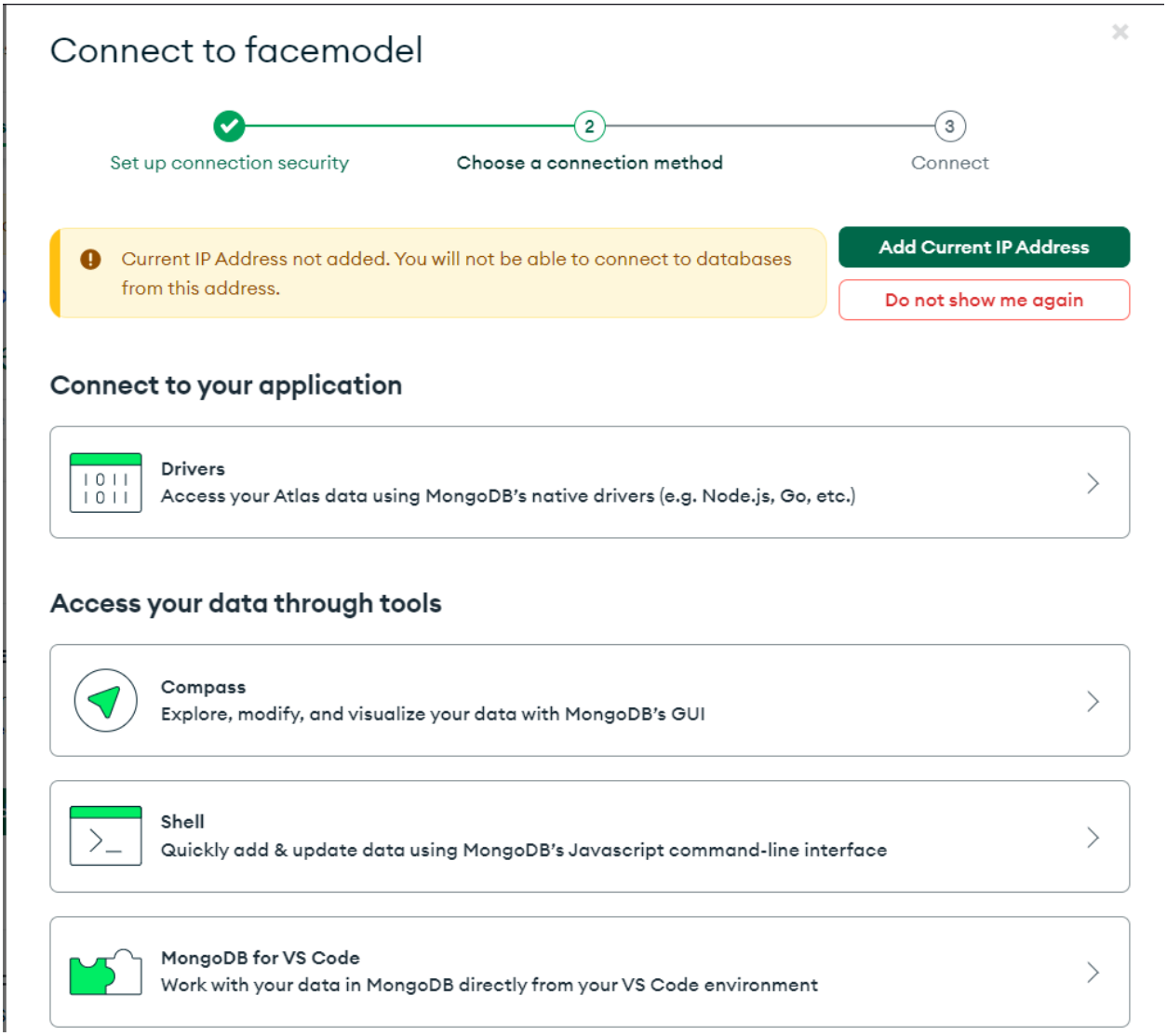
OK so we will Setup before we can use it.

1.go to https://www.mongodb.com/atlas/database Register/login and create Database name facemodel



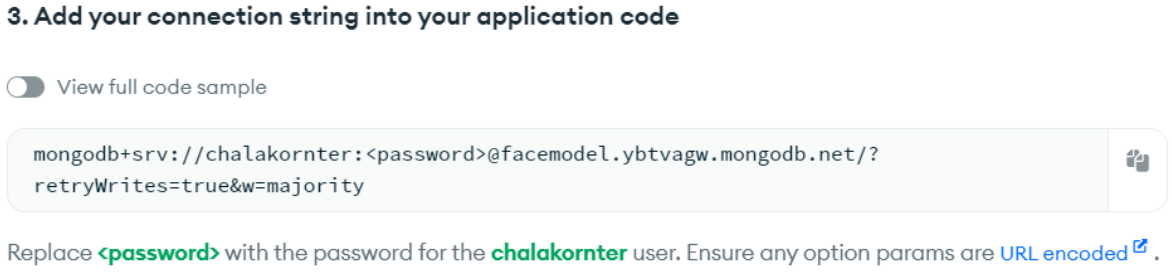
After you finish created database go into facemodel database

click connect



This will popout choose Driver option then copy link in step 3

this is your mongoDB link



password in link you need to change it to the password of the organiztion

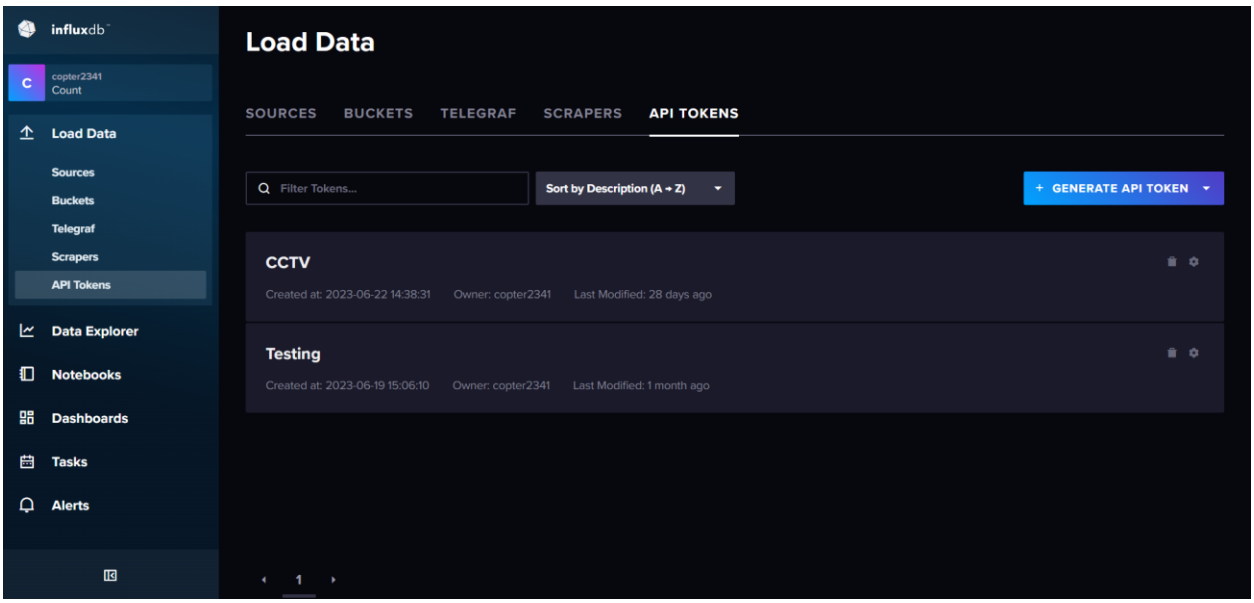
2.go to http://localhost:8086 and register/login to use influxDB

If you login first time the InfluxDB will request you to Create Organization กับ Bucket to store the data

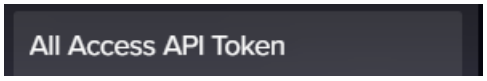
1 organization can have many bucket

After finish create go to API tokens to Generate token

As shown below:



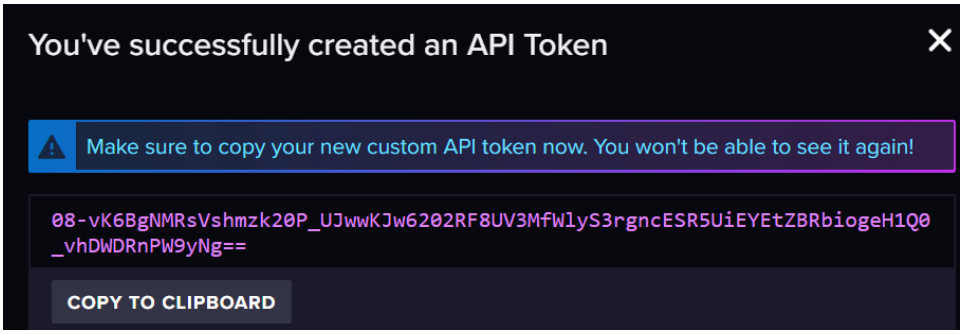
click GENERATE API TOKEN

choose 

option

the system will request the description of the token you can put any description as you like

then if click create you will get the Token



I recommend to save the token to your notepad or text file because your token can be only once time seen so if you close it you can't see it anymore. So be careful don't lose your token if you don't want to create new.

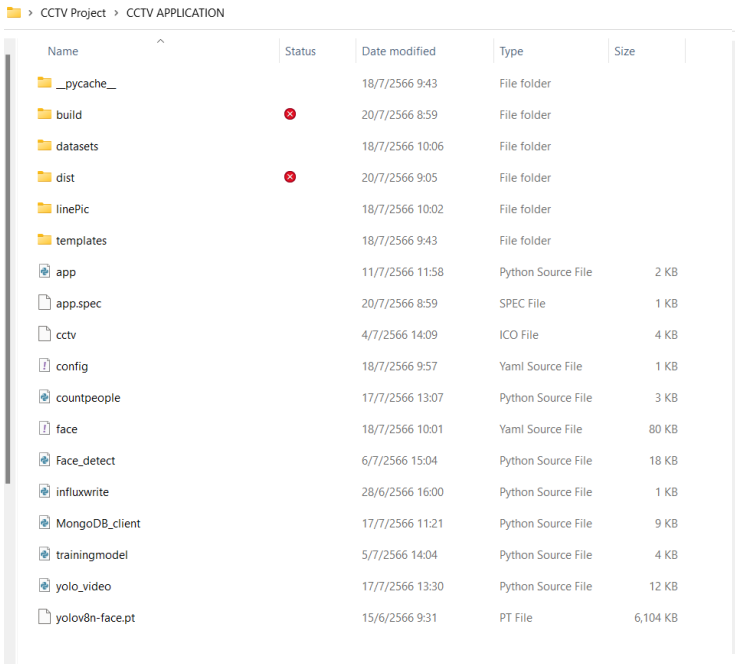
3.go to https://notify-bot.line.me/th/ to create Line Token

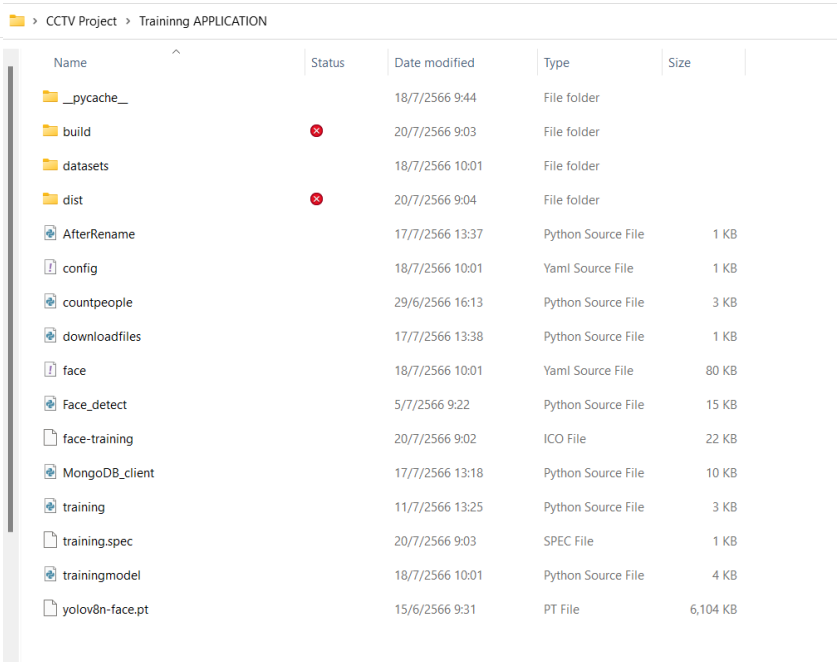
After enter website login to your account After that click My page on your profile

Click Generate Token choose the chat that you want to notify or choose group(I recommend you to create group because you can share with other people)

After we insert all data in config.yaml

open Folder CCTV APPLICATION and TRAINING APPLICATION





In CCTV APPLICATION we will use app.py to run the program – CCTV camera program detect people.

TRAINING APPLICATION use training.py to run program – Use to train face model.