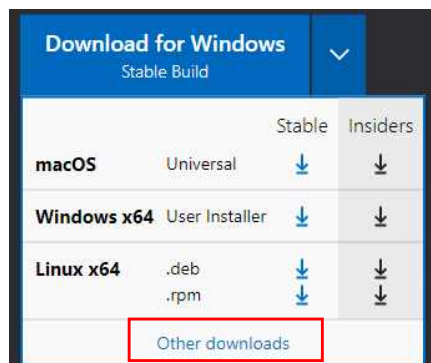


구글링 : PyQt5 Tutorial

버전업

SodaIDE 안에있는 VSCode 내용을 새로운걸로 넣음
data와 ext 는 그대로 놔두고 새로운 것으로 바꿈

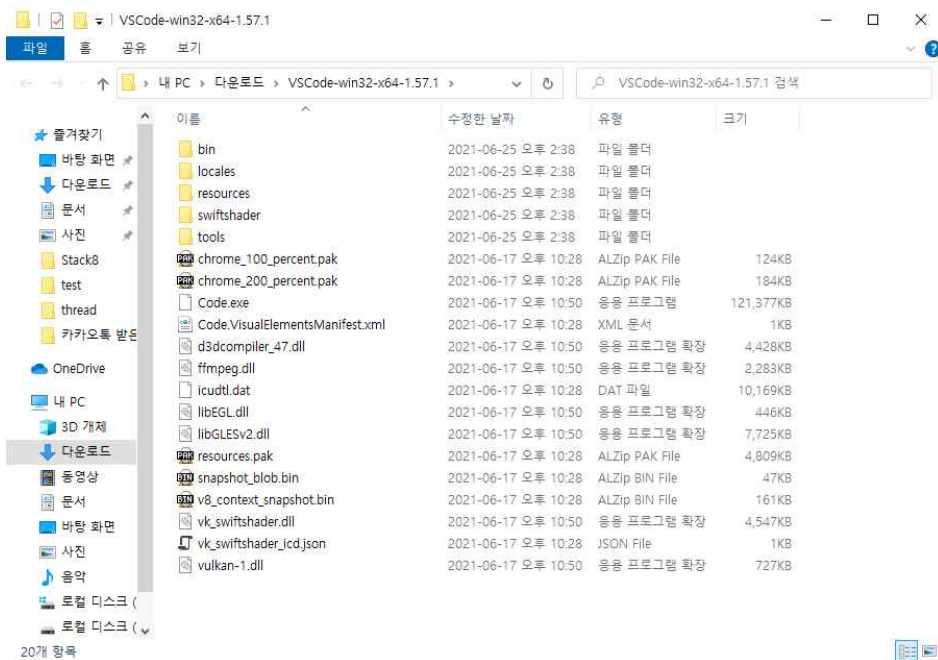
구글 - visual studio code



other download

.zip파일 - 64bit





C:\SodaIDE에서 data와 ext폴더만 남기고 다른건 다 지움

압축 푼 파일에서

bin -> 배치파일 - 옮길 필요 없음

나머진 모두 복사해서

SodaIDE에 옮겨줌

ext - 한백용 툴들

C:\SodaIDE\ext\utils

C:\SodaIDE\ext\python\Lib\site-packages

: pip 설치한 패키지들이 여기 들어있음..

여기있는거 쓰려면 SodaIDE에 있는 VSCode를 실행시켜야함

여기서 터미널 열어서 pip를 써야함

pip list

python -m pip install -U pip // pip를 -U (Upgrade) 시킴



인공지능을 공부해라..

엔비디아(GPU) 자체를 인공지능(딥러닝)에 쓰일 수 있도록 바꿔줘야함..

1. CUDA 라이브러리 설치
 2. cuDNN 설치
- ← 확장

CUDA - 병렬 연산을 위한 라이브러리
이걸 안쓰면 CPU를 사용하게 됨..
병렬 대수학 라이브러리 (벡터연산)
엔비디아만 가능. AMD은 안됨

cuDNN 딥러닝 가속메모리..?
CUDA를 설치한곳에 설치..?

텐서플로우, 파이토치 설치
기본으론 cpu만 사용하는걸로 설치됨
cuda를 먼저 설치되어있는지 확인하고 설치함..

파이토치 - CUDA용으로 설치한다고 옵션에 해줘야 함

[CUDA 설치]

<https://developer.nvidia.com/cuda-downloads>

Windows - x86_64 - 10 - exe(local)

The screenshot shows the NVIDIA Developer website's download page. The top navigation bar includes links for HOME, BLOG, FORUMS, DOCS, DOWNLOADS, and TRAINING. The main content area is titled "Select Target Platform" and contains a grid of buttons for selecting the operating system, architecture, version, and installer type. The selected options are Windows, x86_64, 10, and exe (local). Below this, a green banner indicates the download of the "Base Installer for Windows 10 x86_64". A "Download (2.7 GB)" button is visible next to the "Base Installer" link.

NVIDIA DEVELOPER HOME BLOG FORUMS DOCS DOWNLOADS TRAINING

Home

Select Target Platform

Click on the green buttons that describe your target platform. Only supported platforms will be shown. By downloading and using the software, you agree to fully comply with the terms and conditions of the [CUDA EULA](#).

Operating System	Linux	Windows
Architecture	x86_64	
Version	10	Server 2016 Server 2019
Installer Type	exe (local)	exe (network)

Download Installer for Windows 10 x86_64

The base installer is available for download below.

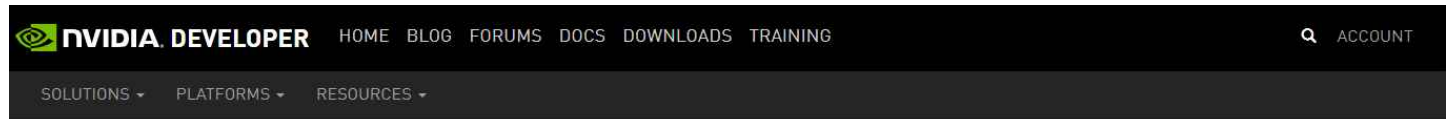
> Base Installer	Download (2.7 GB)
------------------	-------------------

Installation Instructions:

[cuDNN 설치]

<https://developer.nvidia.com/rdp/cudnn-archive>

CUDA버전에 맞는걸로 받아야 함 (안정화 때문에 낮은버전 쓸 수도 있음..)



Home

cuDNN Archive

NVIDIA cuDNN is a GPU-accelerated library of primitives for deep neural networks.

[Download cuDNN v8.2.0 \(April 23rd, 2021\), for CUDA 11.x](#)

[Download cuDNN v8.2.0 \(April 23rd, 2021\), for CUDA 10.2](#)

[Download cuDNN v8.1.1 \(February 26th, 2021\), for CUDA 11.0, 11.1 and 11.2](#)

[Download cuDNN v8.1.1 \(February 26th, 2021\), for CUDA 10.2](#)

[Download cuDNN v8.1.0 \(January 26th, 2021\), for CUDA 11.0, 11.1 and 11.2](#)

Windows용으로 다운로드

cuDNN Archive

NVIDIA cuDNN is a GPU-accelerated library of primitives for deep neural networks.

[Download cuDNN v8.2.0 \(April 23rd, 2021\), for CUDA 11.x](#)

Library for Windows and Linux, Ubuntu(x86_64, armsbsa, PPC architecture)

[cuDNN Library for Linux \(aarch64sbsa\)](#)

[cuDNN Library for Linux \(x86_64\)](#)

[cuDNN Library for Linux \(PPC\)](#)

[cuDNN Library for Windows \(x86\)](#)

[cuDNN Runtime Library for Ubuntu20.04 x86_64 \(Deb\)](#)

회원가입 해야함.....

Zip파일 다운로드

=> 압축파일 푸는 장소

C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v11.3

test

터미널에서

```
>> nvcc --version
```

```
>> nvidia-smi
```

입력

[파이토치 설치]

```
pip3 install torch==1.8.1+cu111 torchvision==0.9.1+cu111 torchaudio===0.8.1 -f
```

// 11.3설치하면 안됨.. 11.1은 가능? ???

```
> python3
```

```
import torch
```

[텐서플로우 설치]

```
pip install tensorflow
```

```
> python3
```

```
import tensorflow as tf
```

<https://tutorials.pytorch.kr>

1. CUDA Toolkit 11.3 Update 1
<https://developer.nvidia.com/cuda-downloads>
 > Select Target Platform >
 - Operating System: Windows
 - Architecture: x86_64
 - Version: 10
 - Installer Type: exe (local)
 ex)
https://developer.nvidia.com/cuda-downloads?target_os=Windows&target_arch=x86_64&target_version=10&target_type=exe_local
 : cuda_11.3.1_465.89_win10.exe

2. cuDNN v8.1.1
<https://developer.nvidia.com/rdp/cudnn-archive>
 > Download cuDNN 8.1.1 (February 26th, 2021), for CUDA 11.0, 11.1 and 11.2
 > cuDNN Library for Windows (x86)
 : cudnn-11.2-windows-x64-v8.1.1.33.zip

3. run cuda_11.3.1_465.89_win10.exe
 CUDA:
 - Visual Studio Integration (unchecked)
 - Samples (unchecked)
 - Documentation (unchecked)
 Driver components
 - Display Driver (unchecked) < old version
 - HD Audio (unchecked) < old version
 ex PATH) C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v11.3 (default)

4. unzip cudnn-11.2-windows-x64-v8.1.1.33.zip
 : copy cuda --> C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v11.3

5. test
 > nvcc --version
 nvcc: NVIDIA (R) Cuda compiler driver
 Copyright (c) 2005-2021 NVIDIA Corporation
 Built on Mon_May__3_19:41:42_Pacific_Daylight_Time_2021
 Cuda compilation tools, release 11.3, V11.3.109
 Build cuda_11.3.r11.3/compiler.29920130_0

 > nvidia-smi
 ...

6. PyTorch v1.8.1
 > pip3 install torch==1.8.1+cu111 torchvision==0.9.1+cu111 torchaudio==0.8.1 -f
https://download.pytorch.org/whl/torch_stable.html

 > python3
 import torch

 # setting device on GPU if available, else CPU
 device = torch.device('cuda' if torch.cuda.is_available() else 'cpu')
 print('Using device:', device)

 #Additional Info when using cuda
 if device.type == 'cuda':
 print(torch.cuda.get_device_name(0))
 print('Memory Usage:')
 print('Allocated:', round(torch.cuda.memory_allocated(0)/1024**3,1), 'GB')
 print('Cached: ', round(torch.cuda.memory_reserved(0)/1024**3,1), 'GB')

7. Tensorflow v2.5.0
 > pip install tensorflow

 > python3
 import tensorflow as tf