실습 준비

❖**Vscode 설치** https://code.visualstudio.com
오른쪽 상단의 Download, Windows를 눌러 설치 파일 다운로드

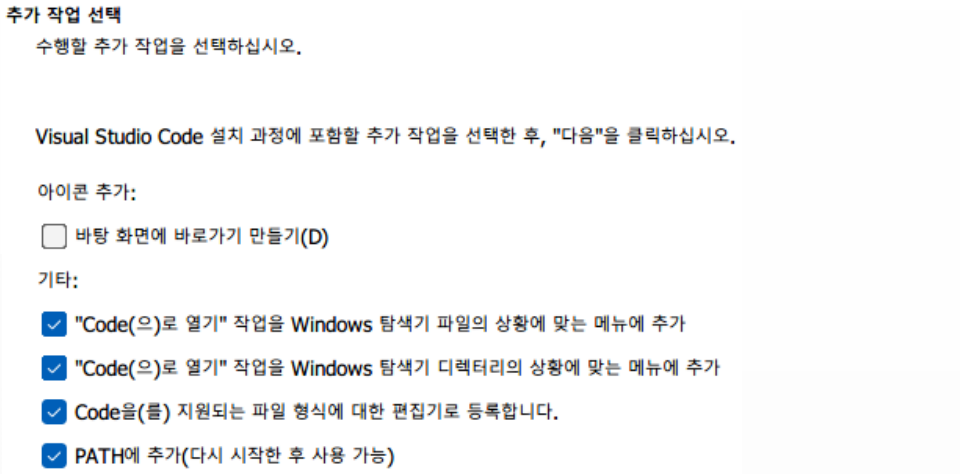
❖**Python 설치** https://www.python.org/downloads/
3.8.9 버전

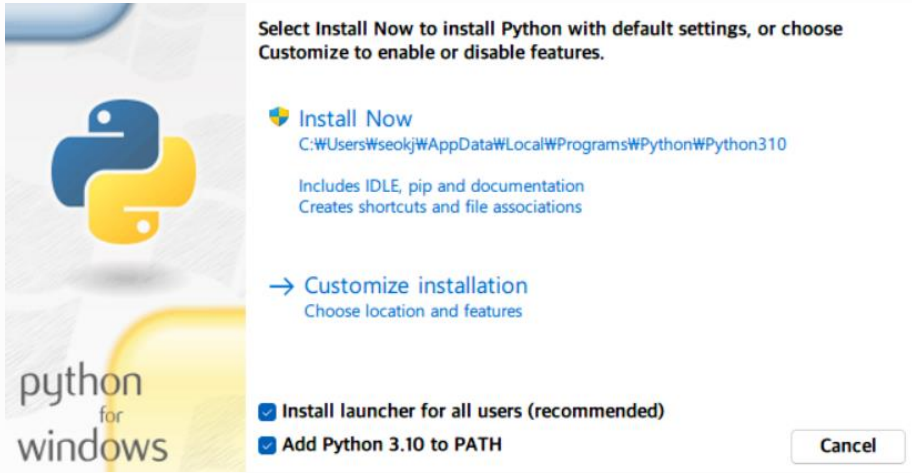
Release version	Release date		Click for more
Python 3.9.5	May 3, 2021	Download	Release Notes
Python 3.8.10	May 3, 2021	Download	Release Notes
Python 3.9.4	April 4, 2021	Download	Release Notes
Python 3.8.9	April 2, 2021	Download	Release Notes
Python 3.9.2	Feb. 19, 2021	Download	Release Notes
Python 3.8.8	Feb. 19, 2021	Download	Release Notes
Python 3.6.13	Feb. 15, 2021	Download	Release Notes

View older releases

Files

Version	Operating System	Description	MD5 Sum	File Size	GPG
Gzipped source tarball	Source release		41a5eaa15818cee7ea59e578564a2629	23.4 MB	SIG
XZ compressed source tarball	Source release		51b5bbf2ab447e66d15af4883db1c133	17.4 MB	SIG
macOS 64-bit Intel installer	macOS	for macOS 10.9 and later	2323c476134fafa8b462530019f34394	28.5 MB	SIG
Windows installer (64-bit)	Windows	Recommended	f69d9c918a8ad06c71d7f0f26ccfee12	26.9 MB	SIG
Windows installer (32-bit)	Windows		1b5456a52e2017eec31c320f0222d359	25.9 MB	SIG
Windows help file	Windows		678cdc8e46b0b569ab9284be689be807	8.2 MB	SIG
Windows embeddable package (64-bit)	Windows		cff9e470ee6b57c63c16b8a93c586b28	7.8 MB	SIG
Windows embeddable package (32-bit)	Windows		40830c33f775641ccfad5bf17ea3a893	7.0 MB	SIG





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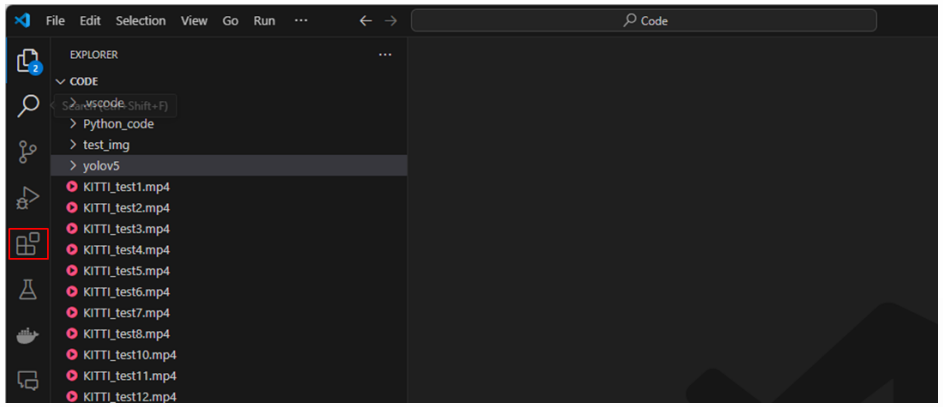
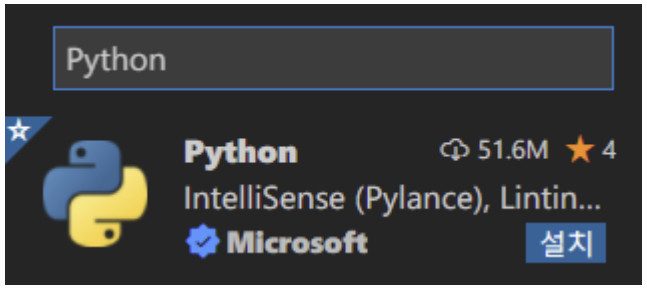
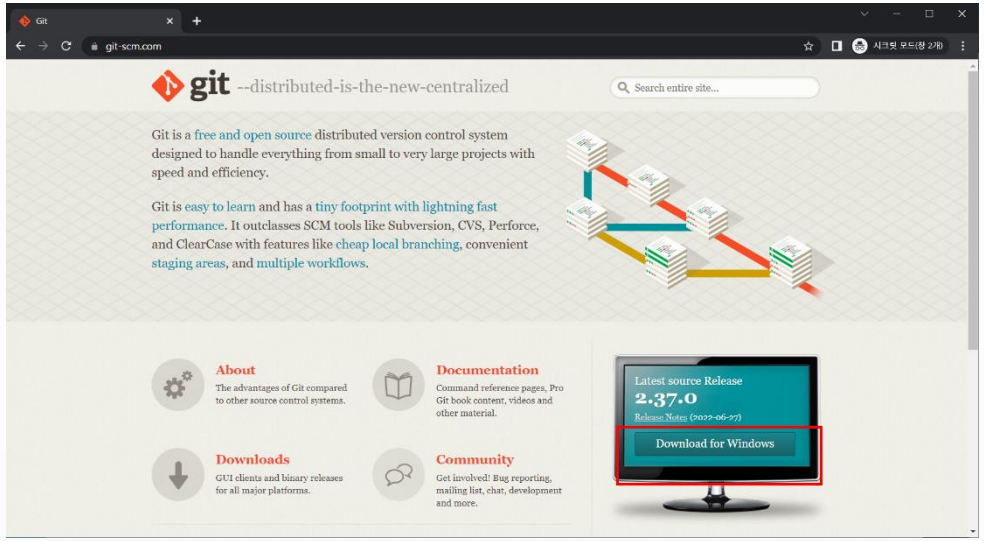
❖Vscode Python Extension 설치





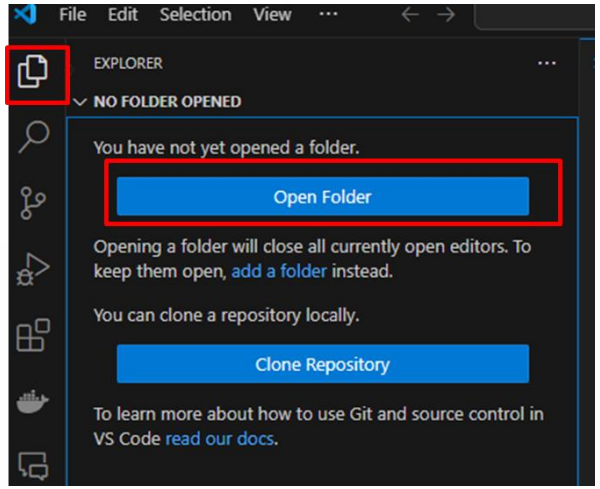
❖Git 설치 https://git-scm.com/

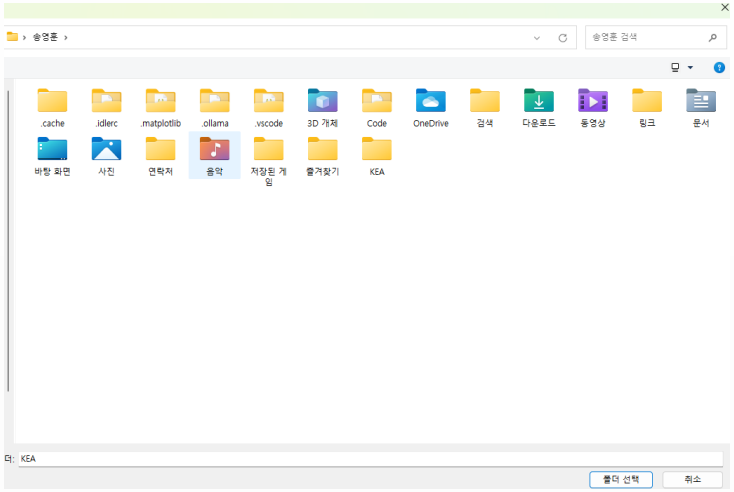


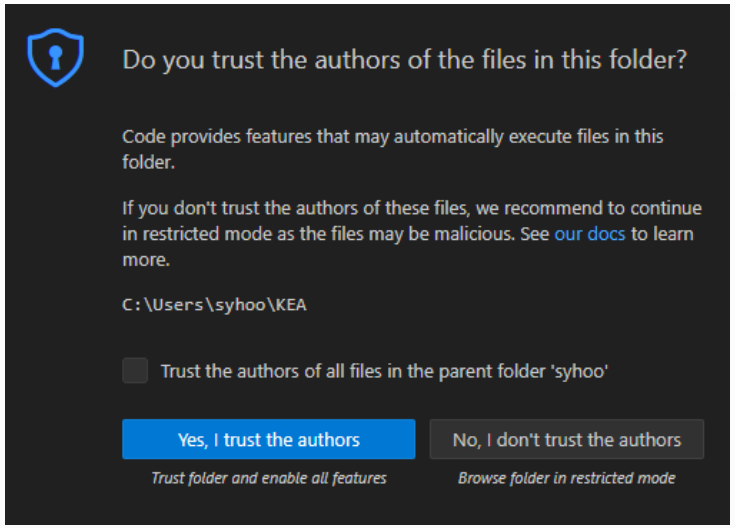
실습 준비

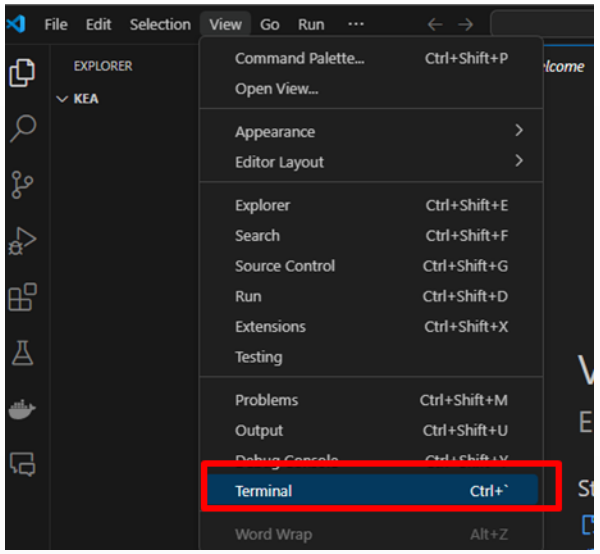
❖설치 확인

Vscode 실행 -> 탐색기창 왼쪽 최상단으로 이동 -> 폴더 열기 -> 실습 폴더 생성 및 선택 -> View 에 Terminal 실행



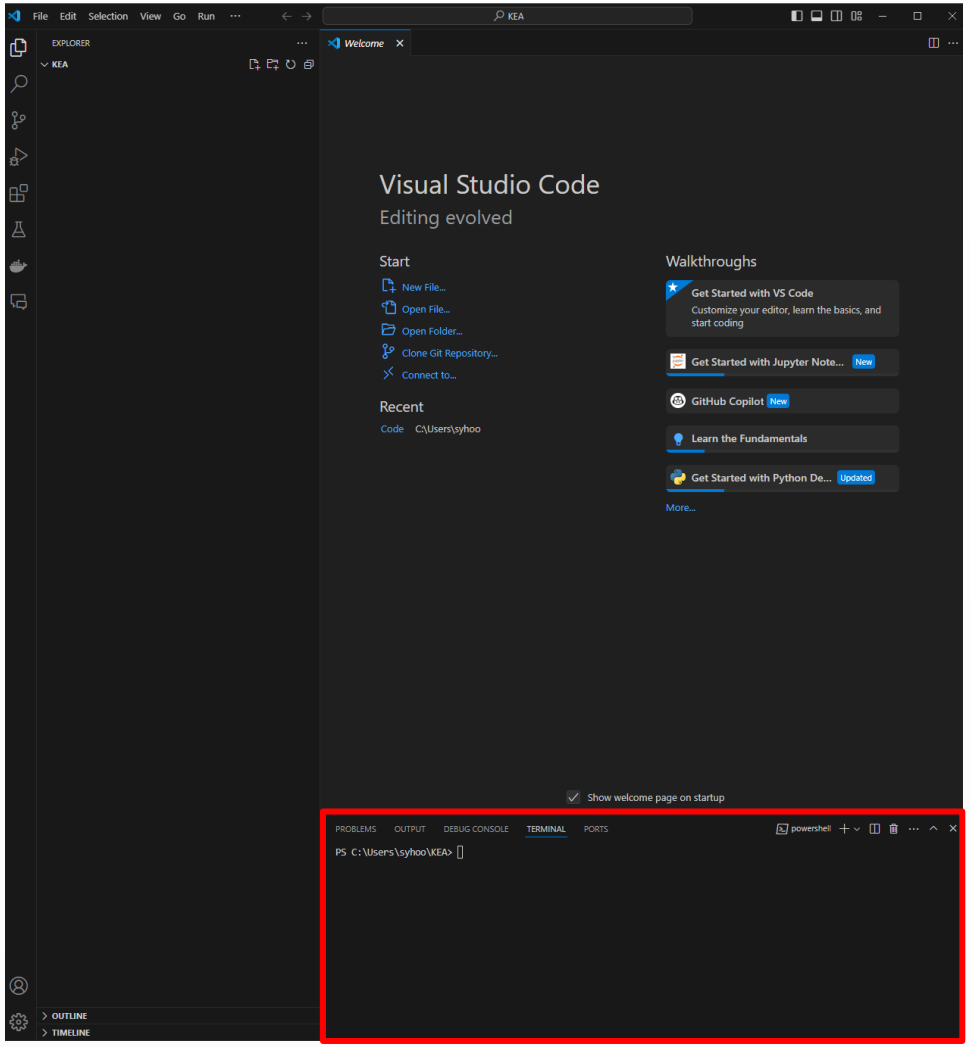


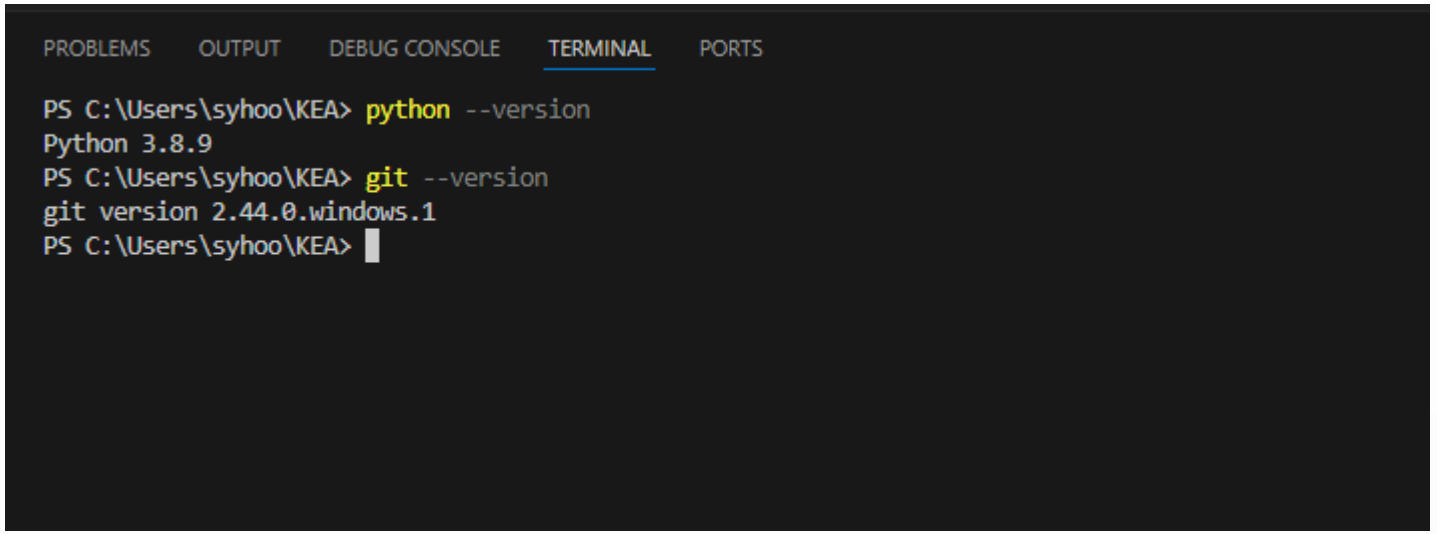




실습 준비

❖설치 확인
설정한 폴더 경로 및 터미널 실행 확인 -> 터미널에 python --version, git --version 입력 및 확인





실습 준비

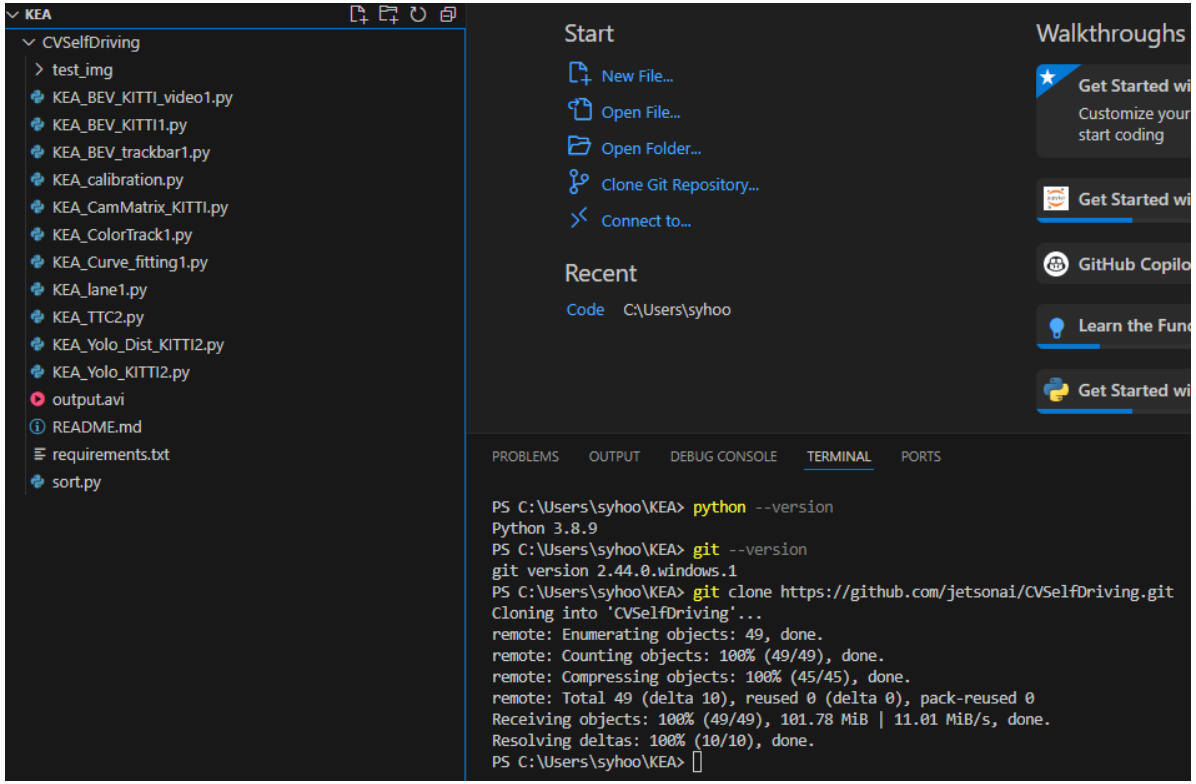
❖실습 코드 및 환경 다운로드

https://github.com/jetsonai/CVSelfDriving.git

터미널에 git clone https://github.com/jetsonai/CVSelfDriving.git 실행
CVSelfDriving 폴더 및 코드 파일 생성 확인

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\syhoo\KEA> python --version
Python 3.8.9
PS C:\Users\syhoo\KEA> git --version
git version 2.44.0.windows.1
PS C:\Users\syhoo\KEA> git clone https://github.com/jetsonai/CVSelfDriving.git
Cloning into 'CVSelfDriving'...
remote: Enumerating objects: 49, done.
remote: Counting objects: 100% (49/49), done.
remote: Compressing objects: 100% (45/45), done.
remote: Total 49 (delta 10), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (49/49), 101.78 MiB | 11.01 MiB/s, done.
Resolving deltas: 100% (10/10), done.
PS C:\Users\syhoo\KEA>
```


KEA
CVSelfDriving
test_img
KEA_BEV_KITTI_video1.py
KEA_BEV_KITTI1.py
KEA_BEV_trackbar1.py
KEA_calibration.py
KEA_CamMatrix_KITTI.py
KEA_ColorTrack1.py
KEA_Curve_fitting1.py
KEA_lane1.py
KEA_TTC2.py
KEA_Yolo_Dist_KITTI2.py
KEA_Yolo_KITTI2.py
output.avi
README.md
requirements.txt
sort.py
Start
New File...
Open File...
Open Folder...
Clone Git Repository...
Connect to...
Recent
Code C:\Users\syhoo
Walkthroughs
Get Started wi
Customize your start coding
Get Started wi
GitHub Copilo
Learn the Func
Get Started wi
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\syhoo\KEA> python --version
Python 3.8.9
PS C:\Users\syhoo\KEA> git --version
git version 2.44.0.windows.1
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remote: Total 49 (delta 10), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (49/49), 101.78 MiB | 11.01 MiB/s, done.
Resolving deltas: 100% (10/10), done.
PS C:\Users\syhoo\KEA>
```
```

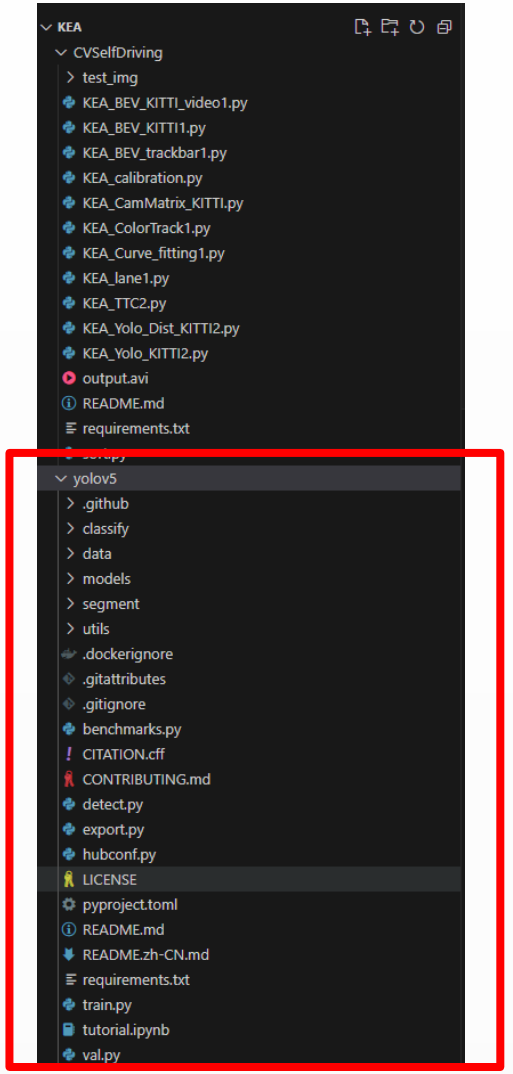
실습 준비

❖실습 코드 테스트

터미널에 git clone https://github.com/ultralytics/yolov5.git 실행

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\syhoo\KEA> python --version
Python 3.8.9
PS C:\Users\syhoo\KEA> git --version
git version 2.44.0.windows.1
PS C:\Users\syhoo\KEA> git clone https://github.com/jetsonai/CVSelfDriving.git
Cloning into 'CVSelfDriving'...
remote: Enumerating objects: 49, done.
remote: Counting objects: 100% (49/49), done.
remote: Compressing objects: 100% (45/45), done.
remote: Total 49 (delta 10), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (49/49), 101.78 MiB | 11.01 MiB/s, done.
Resolving deltas: 100% (10/10), done.
PS C:\Users\syhoo\KEA> git clone https://github.com/ultralytics/yolov5.git
Cloning into 'yolov5'...
remote: Enumerating objects: 16623, done.
remote: Counting objects: 100% (101/101), done.
remote: Compressing objects: 100% (72/72), done.
remote: Total 16623 (delta 56), reused 62 (delta 29), pack-reused 16522
Receiving objects: 100% (16623/16623), 15.10 MiB | 19.64 MiB/s, done.
Resolving deltas: 100% (11415/11415), done.
PS C:\Users\syhoo\KEA>
```



실습 준비

❖실습 코드 테스트

터미널에 cd yolov5 입력 ->pip install -r requirements.txt 입력 -> pip install scikit-image==0.17.2 filterpy 입력

```
PS C:\Users\syhoo\KEA> pip install scikit-image==0.17.2 filterpy
Resolving deltas: 100% (10/10), done.
PS C:\Users\syhoo\KEA> git clone https://github.com/ultralytics/yolov5.git
Cloning into 'yolov5'...
remote: Enumerating objects: 16623, done.
remote: Counting objects: 100% (101/101), done.
remote: Compressing objects: 100% (72/72), done.
remote: Total 16623 (delta 56), reused 62 (delta 29), pack-reused 16522
Receiving objects: 100% (16623/16623), 15.10 MiB | 19.64 MiB/s, done.
Resolving deltas: 100% (11415/11415), done.
PS C:\Users\syhoo\KEA> cd yolov5
PS C:\Users\syhoo\KEA\yolov5> pip install -r requirements.txt
Requirement already satisfied: gitpython>=3.1.30 in c:\users\syhoo\appdata\local\programs\python\p
thon38\lib\site-packages (from -r requirements.txt (line 5)) (3.1.43)
Requirement already satisfied: matplotlib>=3.3 in c:\users\syhoo\appdata\local\programs\python\pyt
on38\lib\site-packages (from -r requirements.txt (line 6)) (3.7.5)
Requirement already satisfied: numpy>=1.23.5 in c:\users\syhoo\appdata\local\programs\python\pytho
38\lib\site-packages (from -r requirements.txt (line 7)) (1.24.4)
Requirement already satisfied: opencv-python>=4.1.1 in c:\users\syhoo\appdata\local\programs\pytho
\python38\lib\site-packages (from -r requirements.txt (line 8)) (4.9.0.80)
Requirement already satisfied: pillow>=10.3.0 in c:\users\syhoo\appdata\local\programs\python\pyth
n38\lib\site-packages (from -r requirements.txt (line 9)) (10.3.0)
Requirement already satisfied: psutil in c:\users\syhoo\appdata\local\programs\python\python38\lib
site-packages (from -r requirements.txt (line 10)) (5.9.8)
Requirement already satisfied: PyYAML>=5.3.1 in c:\users\syhoo\appdata\local\programs\python\pytho
38\lib\site-packages (from -r requirements.txt (line 11)) (6.0.1)
Requirement already satisfied: requests>=2.23.0 in c:\users\syhoo\appdata\local\programs\python\py
hon38\lib\site-packages (from -r requirements.txt (line 12)) (2.31.0)
Requirement already satisfied: scipy>=1.4.1 in c:\users\syhoo\appdata\local\programs\python\python
8\lib\site-packages (from -r requirements.txt (line 13)) (1.10.1)
Requirement already satisfied: thop>=0.1.1 in c:\users\syhoo\appdata\local\programs\python\python3
\lib\site-packages (from -r requirements.txt (line 14)) (0.1.1.post2209072238)
Requirement already satisfied: torch>=1.8.0 in c:\users\syhoo\appdata\local\programs\python\python
8\lib\site-packages (from -r requirements.txt (line 15)) (1.9.0+cu111)
Requirement already satisfied: torchvision>=0.9.0 in c:\users\syhoo\appdata\local\programs\python\
ython38\lib\site-packages (from -r requirements.txt (line 16)) (0.10.0+cu111)
Requirement already satisfied: tqdm>=4.64.0 in c:\users\syhoo\appdata\local\programs\python\python
8\lib\site-packages (from -r requirements.txt (line 17)) (4.66.2)
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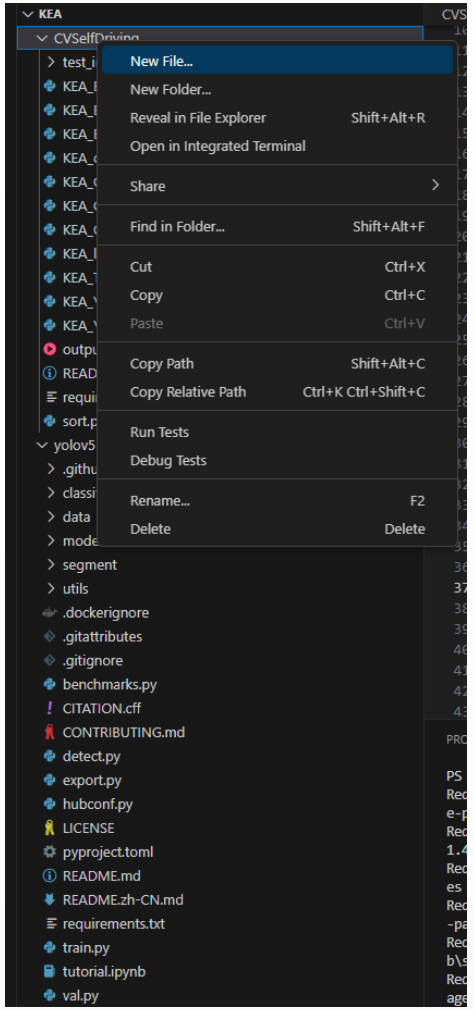

실습 준비

❖실습 코드 테스트

yolotest.py 생성