Conda

1- A conda environment has already been created and in the above screenshot, we can see I have activated the environment called venv1 and installed Keras and PyTorch.

```
(venv1) C:\Users\S S>pip install tensorflow==1.14.0
Collecting tensorflow==1.14.0
  Downloading tensorflow-1.14.0-cp37-cp37m-win_amd64.whl (68.3 MB)
     ---------------------------------------- 68.3/68.3 MB 50.2 kB/s eta 0:00:00
WARNING: Retrying (Retry(total=4, connect=None, read=None, redirect=None, status=None)) after connection broken by '
TTPSConnectionPool(host='pypi.org', port=443): Read timed out. (read timeout=15)")': /simple/absl-py/
Collecting absl-py>=0.7.0
  Downloading absl_py-1.4.0-py3-none-any.whl (126 kB)
     ---------------------------------------- 126.5/126.5 kB 74.4 kB/s eta 0:00:00
Collecting tensorboard<1.15.0,>=1.14.0
  Downloading tensorboard-1.14.0-py3-none-any.whl (3.1 MB)
     ---------------------------------------- 3.1/3.1 MB 154.8 kB/s eta 0:00:00
Collecting keras-applications>=1.0.6
  Downloading Keras_Applications-1.0.8-py3-none-any.whl (50 kB)
     ---------------------------------------- 50.7/50.7 kB 54.0 kB/s eta 0:00:00
Collecting google-pasta>=0.1.6
  Downloading google_pasta-0.2.0-py3-none-any.whl (57 kB)
     ---------------------------------------- 57.5/57.5 kB 83.9 kB/s eta 0:00:00
Collecting six>=1.10.0
  Using cached six-1.16.0-py2.py3-none-any.whl (11 kB)
Collecting protobuf>=3.6.1
  Downloading protobuf-4.22.3-cp37-cp37m-win_amd64.whl (420 kB)
     ---------------------------------------- 420.4/420.4 kB 134.6 kB/s eta 0:00:00
Collecting astor>=0.6.0
  Downloading astor-0.8.1-py2.py3-none-any.whl (27 kB)
Collecting grpcio>=1.8.6
```

2- In the above screenshot TensorFlow is being installed.

```
(venv1) C:\Users\S S>conda list
# packages in environment at C:\Users\S S\anaconda3\envs\venv1:
#
# Name                    Version                   Build  Channel
absl-py                   1.4.0                     pypi_0    pypi
astor                     0.8.1                     pypi_0    pypi
ca-certificates           2023.01.10           haa95532_0
certifi                   2022.12.7         py37haa95532_0
gast                      0.5.3                     pypi_0    pypi
google-pasta              0.2.0                     pypi_0    pypi
grpcio                    1.54.0                    pypi_0    pypi
h5py                      3.8.0                     pypi_0    pypi
importlib-metadata        6.6.0                     pypi_0    pypi
keras-applications        1.0.8                     pypi_0    pypi
keras-preprocessing       1.1.2                     pypi_0    pypi
markdown                  3.4.3                     pypi_0    pypi
markupsafe                2.1.2                     pypi_0    pypi
numpy                     1.21.6                    pypi_0    pypi
openssl                   1.1.1t               h2bbff1b_0
pip                       22.3.1            py37haa95532_0
protobuf                  4.22.3                    pypi_0    pypi
python                    3.7.16               h6244533_0
setuptools                65.6.3            py37haa95532_0
six                       1.16.0                    pypi_0    pypi
sqlite                    3.41.2               h2bbff1b_0
tensorboard               1.14.0                    pypi_0    pypi
tensorflow                1.14.0                    pypi_0    pypi
tensorflow-estimator      1.14.0                    pypi_0    pypi
termcolor                 2.3.0                     pypi_0    pypi
torch                     1.10.2                    pypi_0    pypi
```

3- The above screenshot shows the newly installed packages inside the conda environment venv1, highlighted yellow.

```
(venv1) C:\Users\S S>conda env export > environment1.yml

(venv1) C:\Users\S S>conda env remove --name venv1

CondaEnvironmentError: cannot remove current environment. deactivate and run conda remove again


(venv1) C:\Users\S S>deactivate
DeprecationWarning: 'deactivate' is deprecated. Use 'conda deactivate'.

(venv1) C:\Users\S S>conda.bat deactivate

C:\Users\S S>
C:\Users\S S>conda deactivate

C:\Users\S S>conda env remove --name venv1

Remove all packages in environment C:\Users\S S\anaconda3\envs\venv1:


C:\Users\S S>conda env list
# conda environments:
#
base                  C:\Users\S S\anaconda3
myenv                 C:\Users\S S\anaconda3\envs\myenv
```

4- In the above screenshot, a different command is used to export venv1 to a yml file called environment1.yml, the venv1 has been deactivated and removed, and we can see in the env list the venv1 has been removed.

```
C:\Users\S S>conda env create -f environment1.yml
Collecting package metadata (repodata.json): done
Solving environment: done

Downloading and Extracting Packages

Preparing transaction: done
Verifying transaction: done
Executing transaction: done
Installing pip dependencies: / Ran pip subprocess with arguments:
['C:\\Users\\S S\\anaconda3\\envs\\venv1\\python.exe', '-m', 'pip', 'install', '-U', '-r', 'C:\\Users\\S S\\condaenv.kjdu65_l.requireme
nts.txt', '--exists-action=b']
Pip subprocess output:
Collecting absl-py==1.4.0
  Using cached absl_py-1.4.0-py3-none-any.whl (126 kB)
Collecting astor==0.8.1
  Using cached astor-0.8.1-py2.py3-none-any.whl (27 kB)
Collecting gast==0.5.3
  Using cached gast-0.5.3-py3-none-any.whl (19 kB)
Collecting google-pasta==0.2.0
  Using cached google_pasta-0.2.0-py3-none-any.whl (57 kB)
Collecting grpcio==1.54.0
  Using cached grpcio-1.54.0-cp37-cp37m-win_amd64.whl (4.1 MB)
Collecting h5py==3.8.0
  Using cached h5py-3.8.0-cp37-cp37m-win_amd64.whl (2.6 MB)
Collecting importlib-metadata==6.6.0
  Using cached importlib_metadata-6.6.0-py3-none-any.whl (22 kB)
Collecting keras==2.1.6
  Using cached Keras-2.1.6-py2.py3-none-any.whl (339 kB)
Collecting keras-applications==1.0.8
  Using cached Keras_Applications-1.0.8-py3-none-any.whl (50 kB)
```

5- The above screenshot shows the conda environment is again being created using that yml file called environment1.yml file

Git

6- A repository called Test-Repo has already been created and in the above screenshot, the Test-Repo is being cloned to my local machine.

7- Adding first code to Test-Repo, using commit and push commands.

```
C:\Users\S S\Desktop\Test-Repo>git push origin main
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 288 bytes | 288.00 KiB/s, done.
Total 3 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To https://github.com/ammadamir1122/Test-Repo.git
   1401e1e..eddd41f  main -> main
```

```
C:\Users\S S\Desktop\f2\Test-Repo>git pull origin main
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (1/1), done.
remote: Total 3 (delta 2), reused 3 (delta 2), pack-reused 0
Unpacking objects: 100% (3/3), 268 bytes | 6.00 KiB/s, done.
From https://github.com/ammadamir1122/Test-Repo
 * branch            main       -> FETCH_HEAD
   1401e1e..eddd41f  main       -> origin/main
Updating 1401e1e..eddd41f
Fast-forward
 sum.py | 3 ++-
 1 file changed, 2 insertions(+), 1 deletion(-)
```

8- The test repo has been cloned to two different directories and the above screenshot the changes are being pushed from one directory to a remote repository and in the other the changes are being pulled from a remote repository

Cloning other source code from their public Repos and running their code

```
C:\Users\S S\Desktop>git clone https://github.com/ultralytics/yolov5.git
Cloning into 'yolov5'...
remote: Enumerating objects: 15598, done.
remote: Counting objects: 100% (205/205), done.
remote: Compressing objects: 100% (151/151), done.
remote: Total 15598 (delta 98), reused 115 (delta 54), pack-reused 15393
Receiving objects: 100% (15598/15598), 14.64 MiB | 58.00 KiB/s, done.
Resolving deltas: 100% (10626/10626), done.

C:\Users\S S\Desktop>
```

9- The above screenshot shows the YOLO git repository is being cloned on my local machine.

```
C:\Users\S S\Desktop\yolov5>conda create --name yolov5 python=3.8
Retrieving notices: ...working... done
WARNING: A space was detected in your requested environment path:
'C:\Users\S S\anaconda3\envs\yolov5'
Spaces in paths can sometimes be problematic. To minimize issues,
make sure you activate your environment before running any executables!

Collecting package metadata (current_repodata.json): done
Solving environment: done

## Package Plan ##

  environment location: C:\Users\S S\anaconda3\envs\yolov5

  added / updated specs:
    - python=3.8


The following packages will be downloaded:

    package                    |            build
    ---------------------------|-----------------
    pip-23.0.1                 |   py38haa95532_0         2.7 MB
    python-3.8.16              |       h6244533_3        18.9 MB
    setuptools-66.0.0          |   py38haa95532_0         1.2 MB
    wheel-0.38.4               |   py38haa95532_0          83 KB
    ------------------------------------------------------------
                                           Total:        22.9 MB
```

10- The above screenshot shows that a new conda environment called yolov5 has been created.

```
(yolov5) C:\Users\S S\Desktop\yolov5>pip install -r requirements.txt
Collecting gitpython>=3.1.30
  Downloading GitPython-3.1.31-py3-none-any.whl (184 kB)
     ---------------------------------------- 184.3/184.3 kB 146.7 kB/s eta 0:00:00
Collecting matplotlib>=3.3
  Downloading matplotlib-3.7.1-cp38-cp38-win_amd64.whl (7.6 MB)
     ---------------------------------------- 7.6/7.6 MB 39.9 kB/s eta 0:00:00
Collecting numpy>=1.18.5
  Downloading numpy-1.24.3-cp38-cp38-win_amd64.whl (14.9 MB)
     ---------------------------------------- 14.9/14.9 MB 54.0 kB/s eta 0:00:00
WARNING: Retrying (Retry(total=4, connect=None, read=None, redirect=None, status=None)) after connection broken by 'ReadTimeoutError("H
TTPSConnectionPool(host='pypi.org', port=443): Read timed out. (read timeout=15)")': /simple/opencv-python/
Collecting opencv-python>=4.1.1
  Using cached opencv_python-4.7.0.72-cp37-abi3-win_amd64.whl (38.2 MB)
Collecting Pillow>=7.1.2
  Downloading Pillow-9.5.0-cp38-cp38-win_amd64.whl (2.5 MB)
     ---------------------------------------- 2.5/2.5 MB 214.3 kB/s eta 0:00:00
Collecting psutil
  Downloading psutil-5.9.5-cp36-abi3-win_amd64.whl (255 kB)
     ---------------------------------------- 255.1/255.1 kB 195.9 kB/s eta 0:00:00
Collecting PyYAML>=5.3.1
```

11- The yolov5 environment has been activated and now all the dependencies have been installed using the file requirements.txt.