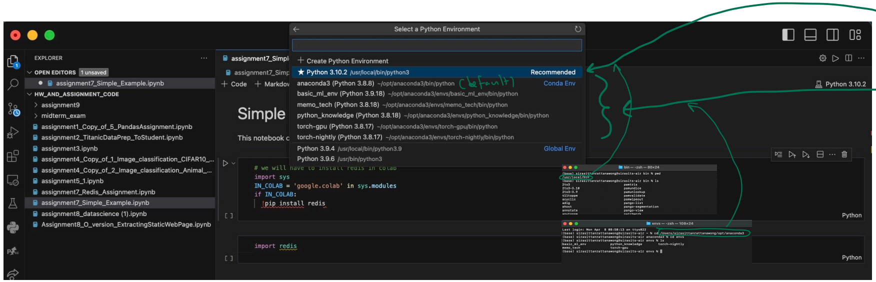
still waiting for update Now at programming | ENV And Path

There are 2 main types of using python


EXPLORER
OPEN EDITORS 1 unsaved
assignment7_Simple_Example.ipynb
HW_AND_ASSIGNMENT_CODE
assignment9
midterm_exam
assignment1_Copy_of_5_PandasAssignment.ipynb
assignment2_TitanicDataPrep_ToStudent.ipynb
assignment3.ipynb
assignment4_Copy_of_1_Image_classification_CIFAR10_...
assignment4_Copy_of_2_Image_classification_Animal_...
assignment5_1.ipynb
assignment7_Redis_Assignment.ipynb
assignment7_Simple_Example.ipynb
assignment8_datascience (1).ipynb
Assignment8_O_version_ExtractingStaticWebPage.ipynb
+ Code + Markdown
Simple
This notebook c
Python 3.10.2
Python

Select a Python Environment

+ Create Python Environment
★ Python 3.10.2 /usr/local/bin/python3 Recommended
anaconda3 (Python 3.8.8) ~/opt/anaconda3/bin/python (default) Conda Env
basic_ml_env (Python 3.9.18) ~/opt/anaconda3/envs/basic_ml_env/bin/python
memo_tech (Python 3.8.18) ~/opt/anaconda3/envs/memo_tech/bin/python
python_knowledge (Python 3.8.18) ~/opt/anaconda3/envs/python_knowledge/bin/python
torch-gpu (Python 3.8.17) ~/opt/anaconda3/envs/torch-gpu/bin/python
torch-nightly (Python 3.8.17) ~/opt/anaconda3/envs/torch-nightly/bin/python
Python 3.9.4 /usr/local/bin/python3.9 Global Env
Python 3.9.6 /usr/bin/python3

```
# we will have to install redis in colab
import sys
IN_COLAB = 'google.colab' in sys.modules
if IN_COLAB:
    !pip install redis
```

```
import redis
```

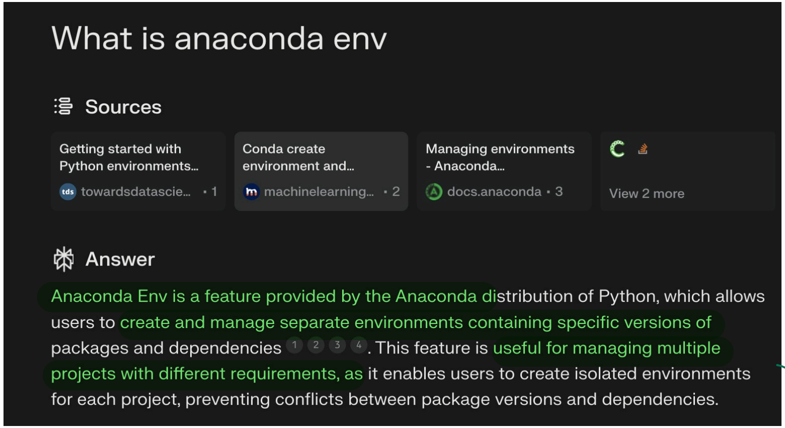
1. python env. /usr/local/bin (แบบปกติ default)

2. anaconda env (used in data science project)

/Users/sirasittanrattanawong/opt/anaconda3/bin

(you need to install anaconda first)

งานเรามักใช้แบบนี้!!



What is anaconda env

Sources

Getting started with Python environments... towardsdatascie... · 1

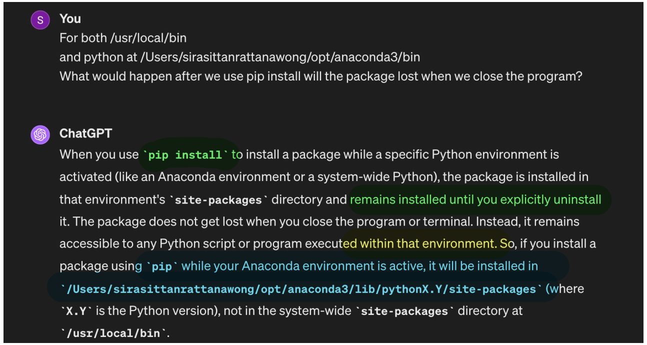
Conda create environment and... machinelearning... · 2

Managing environments - Anaconda... docs.anaconda · 3

View 2 more

Answer

Anaconda Env is a feature provided by the Anaconda distribution of Python, which allows users to create and manage separate environments containing specific versions of packages and dependencies 1 2 3 4. This feature is useful for managing multiple projects with different requirements, as it enables users to create isolated environments for each project, preventing conflicts between package versions and dependencies.



You

For both /usr/local/bin
and python at /Users/sirasittanrattanawong/opt/anaconda3/bin
What would happen after we use pip install will the package lost when we close the program?

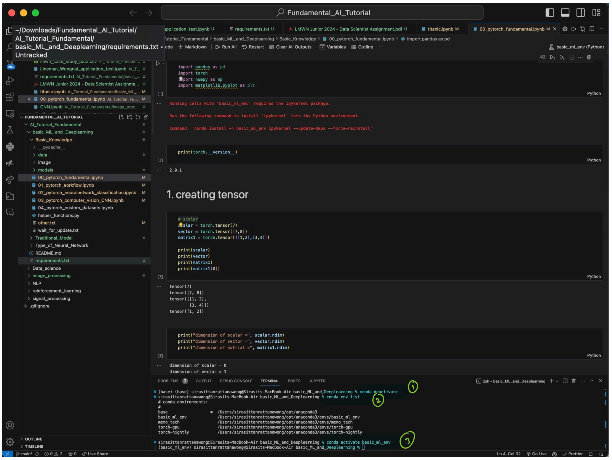
ChatGPT

When you use `pip install` to install a package while a specific Python environment is activated (like an Anaconda environment or a system-wide Python), the package is installed in that environment's `site-packages` directory and remains installed until you explicitly uninstall it. The package does not get lost when you close the program or terminal. Instead, it remains accessible to any Python script or program executed within that environment. So, if you install a package using `pip` while your Anaconda environment is active, it will be installed in `/Users/sirasittanrattanawong/opt/anaconda3/lib/pythonX.Y/site-packages` (where `X.Y` is the Python version), not in the system-wide `site-packages` directory at `/usr/local/bin`.

you can create env for each project

Conda environemnt command

1. Create `conda create --name myenv python=3.9`
2. Activate You can activate your env by using conda activate <env name >
3. Show all env `conda env list`
4. Deactivate `conda deactivate`



```
import pandas as pd
import torch
import numpy as np
import matplotlib.pyplot as plt
```

```
Running cells with 'basic_ml_env' requires the ipykernel package.

Run the following command to install 'ipykernel' into the Python environment.

Command: 'conda install -n basic_ml_env ipykernel --update-deps --force-reinstall'
```

```
print(torch.__version__)
```

```
2.0.1
```

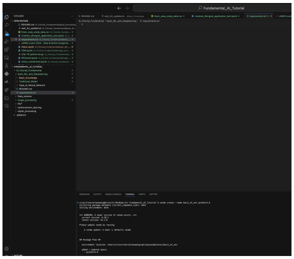
```
# scalar
scalar = torch.tensor(7)
vector = torch.tensor([7,8])
matrix1 = torch.tensor([[1,2],[3,4]])

print(scalar)
print(vector)
print(matrix1)
print(matrix1[0])
```

```
tensor(7)
tensor([7, 8])
tensor([[1, 2],
        [3, 4]])
tensor([1, 2])
```

```
print("dimension of scalar =", scalar.ndim)
print("dimension of vector =", vector.ndim)
print("dimension of matrix1 =", matrix1.ndim)
```

```
dimension of scalar = 0
dimension of vector = 1
```

```
(base) (base) sirasittanrattanawong@Sirasits-MacBook-Air basic_ML_and_Deeplearning % conda deactivate
sirasittanrattanawong@Sirasits-MacBook-Air basic_ML_and_Deeplearning % conda env list
# conda environments:
#
base                  *  /Users/sirasittanrattanawong/opt/anaconda3
basic_ml_env             /Users/sirasittanrattanawong/opt/anaconda3/envs/basic_ml_env
memo_tech                /Users/sirasittanrattanawong/opt/anaconda3/envs/memo_tech
torch-gpu                /Users/sirasittanrattanawong/opt/anaconda3/envs/torch-gpu
torch-nightly            /Users/sirasittanrattanawong/opt/anaconda3/envs/torch-nightly

sirasittanrattanawong@Sirasits-MacBook-Air basic_ML_and_Deeplearning % conda activate basic_ml_env
(basic_ml_env) sirasittanrattanawong@Sirasits-MacBook-Air basic_ML_and_Deeplearning %
```

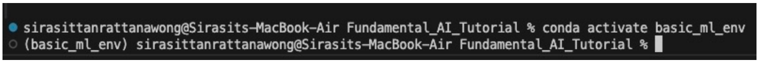


```
sirasittanrattanawong@Sirasits-MacBook-Air Fundamental_AI_Tutorial % conda create --name basic_ml_env python=3.9
Collecting package metadata (current_repodata.json): done
Solving environment: done


==> WARNING: A newer version of conda exists. <==
  current version: 4.10.1
  latest version: 24.1.0

Please update conda by running

    $ conda update -n base -c defaults conda



## Package Plan ##

  environment location: /Users/sirasittanrattanawong/opt/anaconda3/envs/basic_ml_env

  added / updated specs:
    - python=3.9
```

(skip this part if you have env)

1. When you create a new project that need to be deployed you need to create a new environment

```
conda create --name myenv python=3.9
```

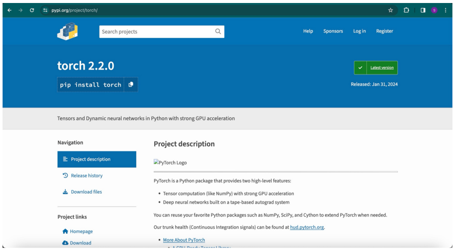


```
sirasittanrattanawong@Sirasits-MacBook-Air Fundamental_AI_Tutorial % conda activate basic_ml_env
(basic_ml_env) sirasittanrattanawong@Sirasits-MacBook-Air Fundamental_AI_Tutorial %
```

2. You can activate your env by using conda activate <env name >

3. For best practice, you should create requirements.txt file to install necessary libary to the environment you created using conda

You can use this website to select the suggetsed version



torch 2.2.0

`pip install torch`

Released: Jan 31, 2024

Tensors and Dynamic neural networks in Python with strong GPU acceleration

Navigation
- Project description
- Release history
- Download files

Project links
- Homepage
- Download

Project description

PyTorch is a Python package that provides two high-level features:

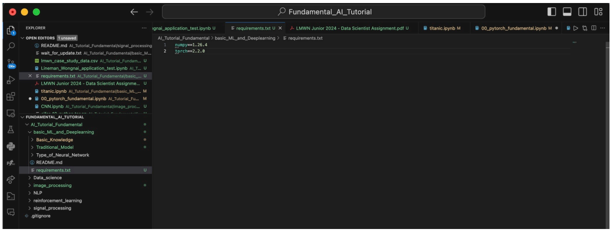
- Tensor computation (like NumPy) with strong GPU acceleration
- Deep neural networks built on a tape-based autograd system

You can reuse your favorite Python packages such as NumPy, SciPy, and Cython to extend PyTorch when needed.

Our trunk health (Continuous Integration signals) can be found at hud.pytorch.org.

- More About PyTorch

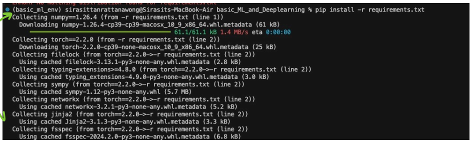
In requirements.txt, it should be something like this



AI_Tutorial_Fundamental > basic_ML_and_Deeplearning > requirements.txt

```
numpy==1.26.4
torch==2.2.0
```

Then you can navigate to the folder of requirements.txt and use command pip install -r requirements.txt



```
(basic_ml_env) sirasittanrattanawong@Sirasits-MacBook-Air basic_ML_and_Deeplearning % pip install -r requirements.txt
Collecting numpy==1.26.4 (from -r requirements.txt (line 1))
  Downloading numpy-1.26.4-cp39-cp39-macosx_10_9_x86_64.whl.metadata (61 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 61.1/61.1 kB 1.4 MB/s eta 0:00:00
Collecting torch==2.2.0 (from -r requirements.txt (line 2))
  Downloading torch-2.2.0-cp39-none-macosx_10_9_x86_64.whl.metadata (25 kB)
Collecting filelock (from torch==2.2.0->-r requirements.txt (line 2))
  Using cached filelock-3.13.1-py3-none-any.whl.metadata (2.8 kB)
Collecting typing-extensions>=4.8.0 (from torch==2.2.0->-r requirements.txt (line 2))
  Using cached typing_extensions-4.9.0-py3-none-any.whl.metadata (3.0 kB)
Collecting sympy (from torch==2.2.0->-r requirements.txt (line 2))
  Using cached sympy-1.12-py3-none-any.whl (5.7 MB)
Collecting networkx (from torch==2.2.0->-r requirements.txt (line 2))
  Using cached networkx-3.2.1-py3-none-any.whl.metadata (5.2 kB)
Collecting jinja2 (from torch==2.2.0->-r requirements.txt (line 2))
  Using cached Jinja2-3.1.3-py3-none-any.whl.metadata (3.3 kB)
Collecting fsspec (from torch==2.2.0->-r requirements.txt (line 2))
  Using cached fsspec-2024.2.0-py3-none-any.whl.metadata (6.8 kB)
```

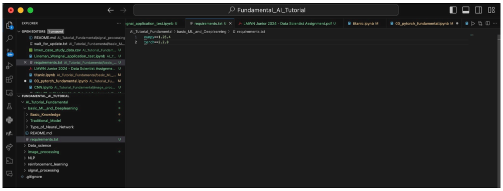
your current env

Next when you want to install more libaries you could add them to the requirements.txt file then use

pip install -r requirements.txt

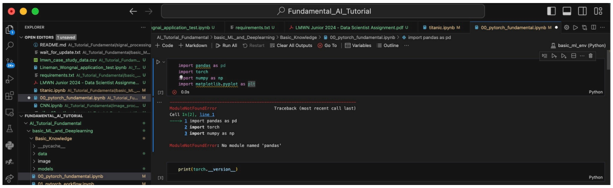
all of your libary will be in your env

ex. current requirements.txt



```
numpy==1.26.4
torch==2.2.0
```

you don't have pandas libary



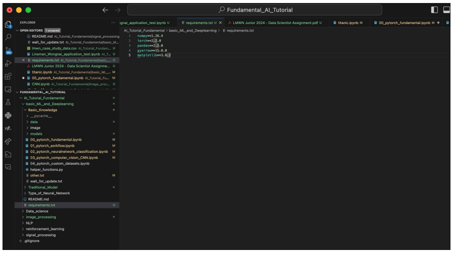
```
import pandas as pd
import torch
import numpy as np
import matplotlib.pyplot as plt
```

```
ModuleNotFoundError                       Traceback (most recent call last)
Cell In[2], line 1
----> 1 import pandas as pd
      2 import torch
      3 import numpy as np

ModuleNotFoundError: No module named 'pandas'
```

```
print(torch.__version__)
```

update requirements.txt and

pip install -r requirements.txt

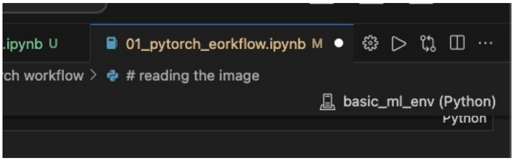


```
numpy==1.26.4
torch==2.2.0
pandas==2.2.0
pyarrow==15.0.0
matplotlib==3.8.2
```

for running with symbol not python command

you need to change env

for every notebook you run


.ipynb U
01_pytorch_eorkflow.ipynb M
ch workflow > # reading the image
basic_ml_env (Python)
Python

ลำดับการทำงานของ memo_tech

1. conda create env สำหรับ project นี้

2. สร้าง file requirements.txt

3. เวลาต้อง install อะไรก็ใส่ลงไปใน requirements.txt

   แล้ว pip install -r requirments.txt

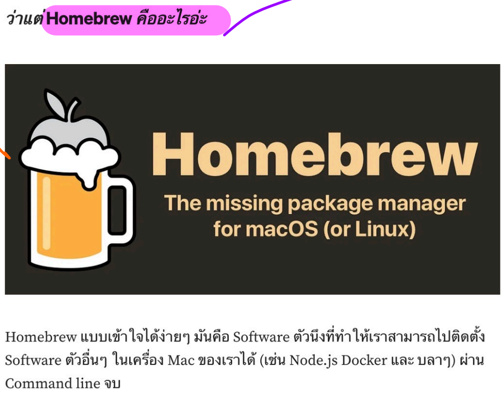
ข้างบนคือเวลาเราจะทำอะไรสำหรับแต่ละ project / env

แต่ถ้าเป็นไม่ว่าเรา ต้องการลงบางอย่างในเครื่อง globally โดยใช้ brew

ต้องติดตั้งลงเครื่องก่อน

(แค่ครั้งเดียว

ตลอดการใช้เครื่อง)



ว่าแต่ ***Homebrew*** ***คืออะไรอ่ะ***

Homebrew แบบเข้าใจได้ง่ายๆ มันคือ Software ตัวนึงที่ทำให้เราสามารถไปติดตั้ง Software ตัวอื่นๆ ในเครื่อง Mac ของเราได้ (เช่น Node.js Docker และ บลาๆ) ผ่าน Command line จบ

ไม่ต้องห่วงว่าเราจะลง package อะไรต่าง ๆ เช่น github-classroom

(อันนี้ต้องลงบนเครื่องเลย ไม่ใช่ของ project ใด ๆ) **

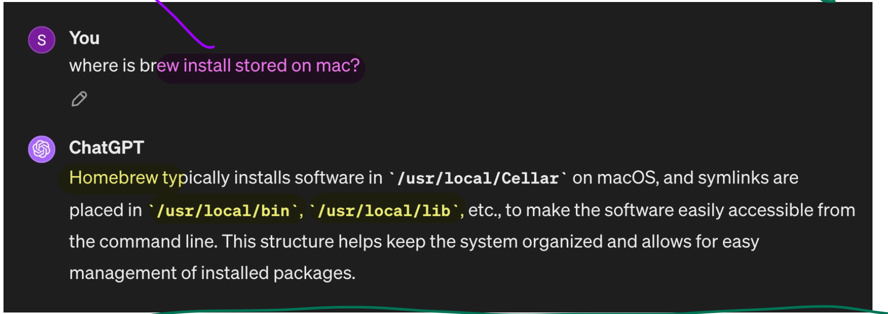
Slide 6 back-end

software prac

แล้วก็ไปสั่ง brew install

path doesn't matter

เพราะมันจะถูก store ไปที่ที่มันต้องอยู่ เช่น

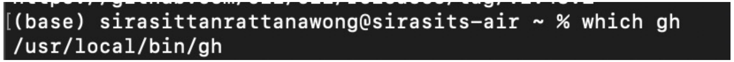


You

where is brew install stored on mac?

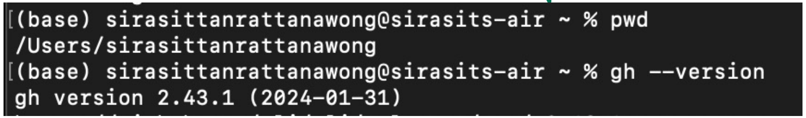
ChatGPT

Homebrew typically installs software in `/usr/local/Cellar` on macOS, and symlinks are placed in `/usr/local/bin`, `/usr/local/lib`, etc., to make the software easily accessible from the command line. This structure helps keep the system organized and allows for easy management of installed packages.



```
(base) sirasittanrattanawong@sirasits-air ~ % which gh
/usr/local/bin/gh
```

เวลาจะ check version ก็เหมือนกัน path doesn't matter



```
(base) sirasittanrattanawong@sirasits-air ~ % pwd
/Users/sirasittanrattanawong
(base) sirasittanrattanawong@sirasits-air ~ % gh --version
gh version 2.43.1 (2024-01-31)
```

แล้วของที่เรา install newman

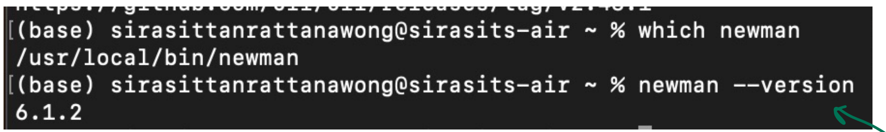
brew install newman

Slides back-end

Soft dev prac

path doesn't matter

จะไปอยู่ที่ไหนก็ได้



```
(base) sirasittanrattanawong@sirasits-air ~ % which newman
/usr/local/bin/newman
(base) sirasittanrattanawong@sirasits-air ~ % newman --version
6.1.2
```

เวลา check พวก ver ที่ทำก่อน

path doesn't matter

แล้ว npm ล่ะ??

Web programming env

↓