

第三周作业笔记

一、配置好 Conda Init, 使得启动终端后, 在提示符前能够看到 (base)

base 不单独占用一行

```
$ git-prompt.sh X
$ git-prompt.sh
1  if test -f /etc/profile.d/git-sdk.sh
2  then
3      TITLEPREFIX=SDK-${MSYSTEM#MINGW}
4  else
5      TITLEPREFIX=$MSYSTEM
6  fi
7
8  if test -f ~/.config/git/git-prompt.sh
9  then
10     . ~/.config/git/git-prompt.sh
11 else
12     PS1='\[\033]0;${TITLEPREFIX}${PWD}\007\]' # set window title
13     #PS1="$PS1'\n'          # new line
14     PS1="\${PS1}\[\033[32m\]" # change to green
15     PS1="$PS1"'\u@h '        # user@host<space>
16     PS1="$PS1"'\[\033[35m\]'  # change to purple
17     PS1="$PS1"'$MSYSTEM '     # show MSYSTEM
18     PS1="$PS1"'\[\033[33m\]'  # change to brownish yellow
19     PS1="$PS1"'\w'           # current working directory
20     if test -z "$WINELOADERNOEXEC"
21     then
22         GIT_EXEC_PATH="$(git --exec-path 2>/dev/null)"
23         COMPLETION_PATH="${GIT_EXEC_PATH%/libexec/git-core}"
24         COMPLETION_PATH="${COMPLETION_PATH%/lib/git-core}"
25         COMPLETION_PATH="${COMPLETION_PATH%/share/git/completion}"
```

```
(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$
```

前空一行

```
$ .bash_profile X
$ .bash_profile
1
2  # >>> conda initialize >>>
3  # !! Contents within this block are managed by 'conda init' !!
4  if [ -f '/d/GQ/anaconda3/Scripts/conda.exe' ]; then
5      eval "$( '/d/GQ/anaconda3/Scripts/conda.exe' 'shell.bash' 'hook' )"
6  fi
7  # <<< conda initialize <<<
8
9  PS1="\n$PS1"

drwxr-xr-x 1 FAN0917 197121 0 3月 18 20:18 MPS Cloud File
drwxr-xr-x 1 FAN0917 197121 0 12月 6 16:18 Zotero/
drwxr-xr-x 1 FAN0917 197121 0 5月 26 2022 华为云盘/

(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$
```

二、一些命令

conda info 命令查看本机 Conda 的配置信息

```
(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~  
$ conda info  
  
active environment : base  
active env location : D:\GQ\anaconda3  
shell level : 1  
user config file : C:\Users\FAN0917\.condarc  
populated config files : D:\GQ\anaconda3\.condarc  
conda version : 24.9.2  
conda-build version : 24.9.0  
python version : 3.12.7.final.0  
solver : libmamba (default)  
virtual packages : __archspec=1=skylake  
                   __conda=24.9.2=0  
                   __cuda=10.2=0  
                   __win=0=0  
  
base environment : D:\GQ\anaconda3 (read only)  
conda av data dir : D:\GQ\anaconda3\etc\conda  
conda av metadata url : None  
channel URLs : https://repo.anaconda.com/pkgs/main/win-64  
               https://repo.anaconda.com/pkgs/main/noarch  
               https://repo.anaconda.com/pkgs/r/win-64  
               https://repo.anaconda.com/pkgs/r/noarch  
               https://repo.anaconda.com/pkgs/msys2/win-64  
               https://repo.anaconda.com/pkgs/msys2/noarch  
package cache : D:\GQ\anaconda3\pkgs
```

conda env list 命令查看已有的 Conda 环境的名称和路径

```
(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~  
$ conda env list  
# conda environments:  
#  
base * D:\GQ\anaconda3
```

conda create 命令创建两个 Conda 环境
prj1 里面安装 Python 3.12 和 requests 软件包

```
(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~  
$ conda create -n prj1 python=3.12 requests  
Channels:  
- defaults  
Platform: win-64  
Collecting package metadata (repodata.json): done  
Solving environment: done  
  
## Package Plan ##  
  
environment location: C:\Users\FAN0917\.conda\envs\prj1  
  
added / updated specs:  
- python=3.12  
- requests
```

```
done  
#  
# To activate this environment, use  
#  
#     $ conda activate prj1  
#  
# To deactivate an active environment, use  
#  
#     $ conda deactivate  
  
(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~  
$
```

prj2 里面安装 Python 3.9、pandas 和 statsmodels 软件包

```
(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~  
$ conda create -n prj2 python=3.9 pandas statsmodels  
Channels:  
- defaults  
Platform: win-64  
Collecting package metadata (repodata.json): done  
Solving environment: done  
  
## Package Plan ##  
  
environment location: C:\Users\FAN0917\.conda\envs\prj2  
  
added / updated specs:  
- pandas  
- python=3.9  
- statsmodels
```

```
done
#
# To activate this environment, use
#
#     $ conda activate prj2
#
# To deactivate an active environment, use
#
#     $ conda deactivate

(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$
```

激活 prj1

```
(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ conda activate prj1
(prj1)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ which python
/c/Users/FAN0917/.conda/envs/prj1/python
(prj1)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ python --version
Python 3.12.9
(prj1)
```

激活 prj2

```
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ conda activate prj2
(prj2)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ which python
/c/Users/FAN0917/.conda/envs/prj2/python
(prj2)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ python --version
Python 3.9.21
(prj2)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$
```

验证 Python 和软件包的版本

```

FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ python
Python 3.9.21 (main, Dec 11 2024, 16:35:24) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import requests
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
ModuleNotFoundError: No module named 'requests'
>>> import pandas
>>> pandas.__file__
'C:\Users\FAN0917\.conda\envs\prj2\lib\site-packages\pandas\__init__.py'
>>> pandas.__version__
'2.2.3'
>>> import statsmodels
>>> statsmodels.__version__
'0.14.4'
>>>

```

conda list 命令显示 Conda 环境里的软件包列表及其版本信息

```

$ conda list
# packages in environment at C:\Users\FAN0917\.conda\envs\prj2:
#
# Name                                Version                                Build      Channel
blas                                  1.0                                    mkl
bottleneck                           1.4.2                                py39hc99e966_0
ca-certificates                      2025.2.25                            haa95532_0
icc_rt                               2022.1.0                             h6049295_2
intel-openmp                         2023.1.0                             h59b6b97_46320
mkl                                  2023.1.0                             h6b88ed4_46358
mkl-service                          2.4.0                                py39h827c3e9_2
mkl_fft                              1.3.11                               py39h827c3e9_0
mkl_random                           1.2.8                                py39hc64d2fc_0
numexpr                              2.10.1                               py39h4cd664f_0
numpy                                 2.0.2                                py39h055cbcc_0
numpy-base                           2.0.2                                py39h65a83cf_0
openssl                              3.0.16                               h3f729d1_0
packaging                             24.2                                py39haa95532_0
pandas                               2.2.3                                py39h5da7b33_0
patsy                                 1.0.1                                py39haa95532_0
pip                                  25.0                                py39haa95532_0
pybind11-abi                          5                                    hd3eb1b0_0
python                               3.9.21                               h8205438_1
python-dateutil                      2.9.0post0                           py39haa95532_2
python-tzdata                        2023.3                               pyhd3eb1b0_0
pytz                                 2024.1                               py39haa95532_0
scipy                                 1.13.1                               py39h8640f81_1
setuptools                           72.1.0                               py39haa95532_0
six                                  1.16.0                               pyhd3eb1b0_1
sqlite                                3.45.3                               h2bbff1b_0

```

conda install 命令往 Conda 环境里安装更多的软件包，并验证版本

```

FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ conda install ipython
Channels:
- defaults
Platform: win-64
Collecting package metadata (repodata.json): done
Solving environment: done

```



```

done
(prj1)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ conda list
# packages in environment at C:\Users\FAN0917\.conda\envs\prj1:
#
# Name                        Version                        Build      Channel
asttokens                    2.0.5                        pyhd3eb1b0_0
brotli-python                1.0.9                        py312h5da7b33_9
bzip2                        1.0.8                        h2bbff1b_6
ca-certificates              2025.2.25                    haa95532_0
certifi                      2025.1.31                    py312haa95532_0
charset-normalizer           3.3.2                        pyhd3eb1b0_0
colorama                     0.4.6                        py312haa95532_0
decorator                     5.1.1                        pyhd3eb1b0_0
executing                    0.8.3                        pyhd3eb1b0_0
expat                        2.6.4                        h8ddb27b_0
idna                         3.7                          py312haa95532_0
ipython                      8.30.0                       py312haa95532_0
jedi                         0.19.2                       py312haa95532_0
libffi                       3.4.4                        hd77b12b_1
matplotlib-inline            0.1.6                        py312haa95532_0
openssl                      3.0.16                       h3f729d1_0
parso                        0.8.4                        py312haa95532_0
pip                          25.0                         py312haa95532_0
prompt-toolkit               3.0.43                       py312haa95532_0
prompt_toolkit               3.0.43                       hd3eb1b0_0

```

三、配置 Anaconda 清华镜像

将 conda-forge 设置为默认 Channel

```

(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ conda activate prj1
(prj1)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ conda install polars
Channels:
- conda-forge
- https://repo.anaconda.com/pkgs/main
- https://repo.anaconda.com/pkgs/r
- https://repo.anaconda.com/pkgs/msys2
Platform: win-64
Collecting package metadata (repodata.json): done
Solving environment: done

```

```

FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ which python
/c/Users/FAN0917/.conda/envs/prj1/python
(prj1)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ python
Python 3.12.9 | packaged by conda-forge | (main, Mar 4 2025, 22:37:18) [MSC v.1943 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import polars
>>>

```

四、pip install

往 Conda 环境里安装 Python 软件包，并验证版本

```
>>> quit()
(prj1)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ pip install tushare
Collecting tushare
  Downloading tushare-1.4.19-py3-none-any.whl.metadata (3.1 kB)
Collecting pandas (from tushare)
  Downloading pandas-2.2.3-cp312-cp312-win_amd64.whl.metadata (19 kB)
Requirement already satisfied: requests in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from tushare) (2.32.3)
Collecting lxml (from tushare)
  Downloading lxml-5.3.1-cp312-cp312-win_amd64.whl.metadata (3.8 kB)
Collecting simplejson (from tushare)
  Downloading simplejson-3.20.1-cp312-cp312-win_amd64.whl.metadata (3.4 kB)
Collecting bs4 (from tushare)
  Downloading bs4-0.0.2-py2.py3-none-any.whl.metadata (411 bytes)
Collecting websocket-client>=0.57.0 (from tushare)
  Downloading websocket_client-1.8.0-py3-none-any.whl.metadata (8.0 kB)
Collecting tqdm (from tushare)
  Downloading tqdm-4.67.1-py3-none-any.whl.metadata (57 kB)
Collecting BeautifulSoup4 (from bs4->tushare)
  Downloading BeautifulSoup4-4.13.3-py3-none-any.whl.metadata (3.8 kB)
Requirement already satisfied: numpy>=1.26.0 in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from pandas->tushare) (2.2.4)
Collecting python-dateutil>=2.8.2 (from pandas->tushare)
  Downloading python_dateutil-2.9.0.post0-py2.py3-none-any.whl.metadata (8.4 kB)
Collecting pytz>=2020.1 (from pandas->tushare)
  Downloading pytz-2025.1-py2.py3-none-any.whl.metadata (22 kB)
Collecting tzdata>=2022.7 (from pandas->tushare)
  Downloading tzdata-2025.1-py2.py3-none-any.whl (1.2 kB)
  Downloading bs4-0.0.2-py2.py3-none-any.whl (1.2 kB)
  Downloading lxml-5.3.1-cp312-cp312-win_amd64.whl (3.8 MB)
    3.8/3.8 MB 8.4 MB/s eta 0:00:00
  Downloading pandas-2.2.3-cp312-cp312-win_amd64.whl (11.5 MB)
    11.5/11.5 MB 10.4 MB/s eta 0:00:00
  Downloading simplejson-3.20.1-cp312-cp312-win_amd64.whl (75 kB)
  Downloading tqdm-4.67.1-py3-none-any.whl (78 kB)
  Downloading python_dateutil-2.9.0.post0-py2.py3-none-any.whl (229 kB)
  Downloading pytz-2025.1-py2.py3-none-any.whl (507 kB)
  Downloading tzdata-2025.1-py2.py3-none-any.whl (346 kB)
  Downloading BeautifulSoup4-4.13.3-py3-none-any.whl (186 kB)
  Downloading soupsieve-2.6-py3-none-any.whl (36 kB)
  Downloading typing_extensions-4.12.2-py3-none-any.whl (37 kB)
Installing collected packages: pytz, websocket-client, tzdata, typing-extensions, tqdm, soupsieve, simplejson, python-dateutil, lxml, pandas, BeautifulSoup4, bs4, tushare
Successfully installed BeautifulSoup4-4.13.3 bs4-0.0.2 lxml-5.3.1 pandas-2.2.3 python-dateutil-2.9.0.post0 pytz-2025.1 simplejson-3.20.1 soupsieve-2.6
tqdm-4.67.1 tushare-1.4.19 typing-extensions-4.12.2 tzdata-2025.1 websocket-client-1.8.0
(prj1)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$
```

配置 PyPI 清华镜像

```
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ python -m pip install --upgrade pip
Requirement already satisfied: pip in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (25.0)
Collecting pip
  Downloading pip-25.0.1-py3-none-any.whl.metadata (3.7 kB)
  Downloading pip-25.0.1-py3-none-any.whl (1.8 MB)
    1.8/1.8 MB 1.4 MB/s eta 0:00:00
Installing collected packages: pip
  Attempting uninstall: pip
    Found existing installation: pip 25.0
    Uninstalling pip-25.0:
      Successfully uninstalled pip-25.0
  Successfully installed pip-25.0.1
(prj1)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ pip config set global.index-url https://mirrors.tuna.tsinghua.edu.cn/pypi/web/simple
Writing to C:\Users\FAN0917\AppData\Roaming\pip\pip.ini
(prj1)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$
```

```
(prj1)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ pip install tushare
Looking in indexes: https://mirrors.tuna.tsinghua.edu.cn/pypi/web/simple
Requirement already satisfied: tushare in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (1.4.19)
Requirement already satisfied: pandas in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from tushare) (2.2.3)
Requirement already satisfied: requests in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from tushare) (2.32.3)
Requirement already satisfied: lxml in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from tushare) (5.3.1)
Requirement already satisfied: simplejson in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from tushare) (3.20.1)
Requirement already satisfied: bs4 in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from tushare) (0.0.2)
Requirement already satisfied: websocket-client>=0.57.0 in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from tushare) (1.8.0)
Requirement already satisfied: tqdm in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from tushare) (4.67.1)
Requirement already satisfied: beautifulsoup4 in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from bs4->tushare) (4.13.3)
Requirement already satisfied: numpy>=1.26.0 in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from pandas->tushare) (2.2.4)
Requirement already satisfied: python-dateutil>=2.8.2 in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from pandas->tushare) (2.9.0.post0)
Requirement already satisfied: pytz>=2020.1 in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from pandas->tushare) (2025.1)
Requirement already satisfied: tzdata>=2022.7 in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from pandas->tushare) (2025.1)
Requirement already satisfied: charset-normalizer<4,>=2 in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from requests->tushare) (3.3.2)
Requirement already satisfied: idna<4,>=2.5 in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from requests->tushare) (3.7)
Requirement already satisfied: urllib3<3,>=1.21.1 in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from requests->tushare) (2.3.0)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from requests->tushare) (2025.1.31)
Requirement already satisfied: colorama in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from tqdm->tushare) (0.4.6)
Requirement already satisfied: six>=1.5 in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from python-dateutil>=2.8.2->pandas->tushare) (1.16.0)
Requirement already satisfied: soupsieve>1.2 in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from beautifulsoup4->bs4->tushare) (2.6)
Requirement already satisfied: typing-extensions>=4.0.0 in c:\users\fan0917\.conda\envs\prj1\lib\site-packages (from beautifulsoup4->bs4->tushare) (4.12.2)
(prj1)
```

```
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ python
Python 3.12.9 | packaged by conda-forge | (main, Mar 4 2025, 22:37:18) [MSC v.1943 64 bit
(AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import tushare
>>> tushare.__version__
'1.4.19'
>>>
```

五、environment.yml

```
(prj1)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ conda env export
name: prj1
channels:
  - conda-forge
  - https://repo.anaconda.com/pkgs/main
  - https://repo.anaconda.com/pkgs/r
  - https://repo.anaconda.com/pkgs/msys2
dependencies:
```

导出到文件中

```
prefix: C:\Users\FAN0917\.conda\envs\prj1
(prj1)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$ conda env export -f environment.yml
(prj1)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~
$
```



```
← → FAN0917
! environment.yml x
! environment.yml
1 name: prj1
2 channels:
3   - conda-forge
4   - https://repo.anaconda.com/pkgs/main
5   - https://repo.anaconda.com/pkgs/r
6   - https://repo.anaconda.com/pkgs/msys2
7 dependencies:
8   - asttokens=2.0.5=pyhd3eb1b0_0
9   - brotli-python=1.0.9=py312h5da7b33_9
10  - bzip2=1.0.8=h2bbff1b_6
11  - ca-certificates=2025.2.25=haa95532_0
12  - certifi=2025.1.31=pyhd8ed1ab_0
13  - charset-normalizer=3.3.2=pyhd3eb1b0_0
14  - colorama=0.4.6=py312haa95532_0
15  - decorator=5.1.1=pyhd3eb1b0_0
16  - executing=0.8.3=pyhd3eb1b0_0
17  - expat=2.6.4=h8ddb27b_0
18  - idna=3.7=py312haa95532_0
19  - intel-openmp=2024.2.1=h57928b3_1083
20  - ipython=8.30.0=py312haa95532_0
21  - jedi=0.19.2=py312haa95532_0
22  - libblas=3.9.0=31_h641d27c_mkl
23  - libcbblas=3.9.0=31_h5e41251_mkl
24  - libexpat=2.6.4=he0c23c2_0
25  - libffi=3.4.4=hd77b12b_1
26  - libhwloc=2.11.2=default_ha69328c_1001
27  - libiconv=1.18=h135ad9c_1
28  - liblapack=3.9.0=31_h1aa476e_mkl
29  - liblzma=5.6.4=h2466b09_0
30  - libsqlite=3.49.1=h67fdade_2
31  - libwinpthread=12.0.0.r4.gg4f2fc60ca=h57928b3_9
32  - libxml2=2.13.6=he286e8c_0
33  - libzlib=1.3.1=h2466b09_2
34  - matplotlib-inline=0.1.6=py312haa95532_0
35  - mkl=2024.2.2=h66d3029_15
36  - numpy=2.2.4=py312h3150e54_0
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```

重建

```
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo
$ mkdir prj1
(base)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo
$ cd prj1
(base)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/prj1
$ ls -l
total 0
(base)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/prj1
$ mv ~/environment.yml ./
(base)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/prj1
$ conda env list
# conda environments:
#
prj2                C:\Users\FAN0917\.conda\envs\prj2
base                * D:\GQ\anaconda3

(base)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/prj1
$
```

```
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/prj1
$ pwd
/c/Users/FAN0917/repo/prj1
(base)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/prj1
$ ls -l
total 4
-rw-r--r-- 1 FAN0917 197121 2514  3月 18 22:41 environment.yml
(base)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/prj1
$ conda env create
D:\GQ\anaconda3\Lib\argparse.py:2006: FutureWarning: `remote_definition` is deprecated and
```

六、关系理解

以下是对这些概念及关系的简述：

- **Conda 与 Python 的关系：**Conda 是一个跨平台的包管理系统和环境管理系统，它可以用于管理多种语言的软件包和环境，其中包括 Python。Conda 可以创建独立的 Python 环境，每个环境可以有不同的 Python 版本和软件包组合，这有助于解决不同项目对 Python 版本和依赖包的不同需求，避免版本冲突等问题。
- **Conda - Forge 与 Conda 的关系：**Conda - Forge 是一个社区驱动的开源项目，为 Conda 提供了大量的软件包。它是 Conda 的一个重要软件包渠道，补充了 Conda 官方渠道中可能缺失的一些软件包，并且通常能提供更及时的软件包更新和更广泛的软件包选择。
- **Python 解释器：**是用于执行 Python 代码的程序。它读取 Python 源代码，将其解释为计算机可以理解的机器码并执行相应操作。不同的 Python 版本可能在语法、性能和内置功能等方面有所不同。
- **第三方软件包：**是由 Python 社区或第三方开发者编写的代码库，用于扩展 Python 的功能。例如，NumPy 用于数值计算，Pandas 用于数据处理，Matplotlib 用于绘图等。这些软件包可以方便开发者快速实现各种复杂功能，而无需从头编写所有代码。
- **PyPI 软件仓库：**即 Python Package Index，是 Python 官方的软件包仓库，包含了大量的第三方 Python 软件包。开发者可以通过工具（如 pip）从 PyPI 上方便地下载和安装所需的软件包。
- **程序 / 软件包的路径问题：**在 Python 中，程序和软件包的路径对于正确运行和导入模块非常重要。当 Python 解释器查找模块时，会按照一定的路径顺序进行搜索。包括当前目录、Python 安装目录下的标准库路径以及通过环境变量等设置的额外路径。如果软件包不在这些路径中，可能需要通过修改环境变量或使用相对路径、绝对路径等方式来确保 Python 能够找到所需的模块和程序。

七、Creating projects

```
(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo
$ cd myproject

(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/myproject
$ cat environment.yml
name: myproject
channels:
  - conda-forge
dependencies:
  - python=3.12
(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/myproject
$ pwd
/c/Users/FAN0917/repo/myproject
done
#
# To activate this environment, use
#
#     $ conda activate myproject
#
# To deactivate an active environment, use
#
#     $ conda deactivate

(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/myproject
$
```

```
(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/myproject
$ conda env list
# conda environments:
#
myproject          C:\Users\FAN0917\.conda\envs\myproject
prj2               C:\Users\FAN0917\.conda\envs\prj2
base               * D:\GQ\anaconda3

(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/myproject
$
```

编写 main.py 脚本

```
$.bash_profile  ! .condarc  ! environment.yml  main.py X
repo > myproject > main.py > ...
1  def main():
2      print("Hello, conda!")
3
4
5  if __name__ == "__main__":
6      main()
7
```

```
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/myproject
$ python main.py
Hello, conda!
(myproject)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/myproject
$
```



```
(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/myproject
$ conda activate myproject
(myproject)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/myproject
$ conda list
# packages in environment at C:\Users\FAN0917\.conda\envs\myproject:
#
# Name                                Version                                Build                                Channel
bzip2                                1.0.8                                h2466b09_7                          conda-forge
ca-certificates                      2025.1.31                             h56e8100_0                          conda-forge
libexpat                             2.6.4                                he0c23c2_0                          conda-forge
libffi                               3.4.6                                h537db12_0                          conda-forge
liblzma                              5.6.4                                h2466b09_0                          conda-forge
libsqlite                             3.49.1                               h67fdade_2                          conda-forge
libzlib                              1.3.1                                h2466b09_2                          conda-forge
openssl                              3.4.1                                ha4e3fda_0                          conda-forge
pip                                  25.0.1                               pyh8b19718_0                        conda-forge
python                               3.12.9                               h3f84c4b_1_cpython                  conda-forge
setuptools                           75.8.2                               pyhff2d567_0                        conda-forge
tk                                    8.6.13                               h5226925_1                          conda-forge
tzdata                              2025a                                h78e105d_0                          conda-forge
done
#
# To activate this environment, use
#
#     $ conda activate myproject
#
# To deactivate an active environment, use
#
```

```
libwinpthread                        12.0.0.r4.gg4f2fc60ca                h57928b3_9                          conda-fo
rge
libxml2                              2.13.6                                he286e8c_0                          conda-forge
libzlib                              1.3.1                                h2466b09_2                          conda-forge
mkl                                  2024.2.2                              h66d3029_15                         conda-forge
numpy                                2.2.4                                py312h3150e54_0                     conda-forge
openssl                              3.4.1                                ha4e3fda_0                          conda-forge
pandas                               2.2.3                                py312h72972c8_1                     conda-forge
pip                                  25.0.1                               pyh8b19718_0                        conda-forge
python                               3.12.9                               h3f84c4b_1_cpython                  conda-forge
python-dateutil                      2.9.0.post0                           pyhff2d567_1                        conda-forge
python-tzdata                        2025.1                                pyhd8ed1ab_0                        conda-forge
python_abi                           3.12                                  5_cp312                             conda-forge
pytz                                 2024.1                                pyhd8ed1ab_0                        conda-forge
setuptools                           75.8.2                               pyhff2d567_0                        conda-forge
six                                  1.17.0                               pyhd8ed1ab_0                        conda-forge
tbb                                  2021.13.0                             h62715c5_1                          conda-forge
tk                                    8.6.13                               h5226925_1                          conda-forge
tzdata                              2025a                                h78e105d_0                          conda-forge
ucrt                                 10.0.22621.0                          h57928b3_1                          conda-forge
vc                                    14.3                                  hbf610ac_24                         conda-forge
vc14_runtime                         14.42.34438                           hfd919c2_24                         conda-forge
wheel                                0.45.1                               pyhd8ed1ab_1                        conda-forge
```

```
(myproject)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/myproject
$ python main.py
Hello, conda!
(myproject)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/myproject
$ █
```

```
$.bash_profile  ! .condarc  ! environment.yml  main.py 1 X
repo > myproject > main.py > main
1  import pandas as pd
2
3
4  def main():
5      print("Hello, conda!")
6      print(pd.__version__)
7      print(pd.__file__)
8
9
10 if __name__ == "__main__":
11     main()
12
```

```
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/myproject
$ python main.py
Hello, conda!
2.2.3
C:\Users\FAN0917\.conda\envs\myproject\Lib\site-packages\pandas\__init__.py
(myproject)
FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/myproject
$
```

```
(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/myproject
$ python main.py
Hello, conda!
2.2.2
D:\GQ\anaconda3\Lib\site-packages\pandas\__init__.py
7.02% of U.S. residents live in highlywalkable neighborhoods.

(base) FAN0917@LAPTOP-7PDVKG40 MINGW64 ~/repo/myproject
$
```