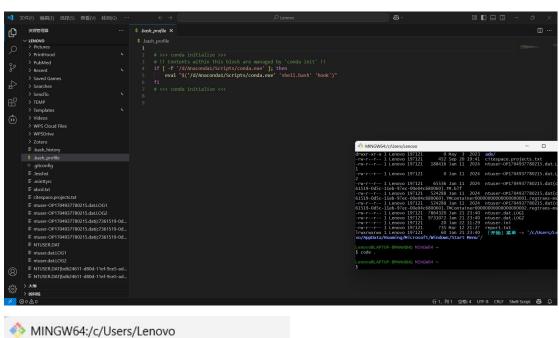
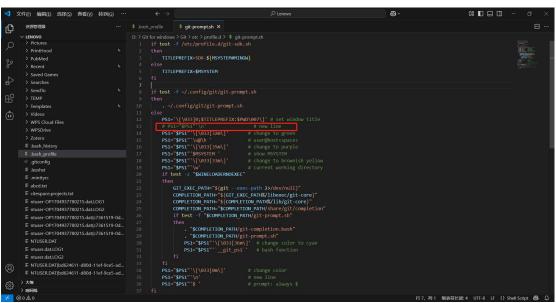
# 第三周 学习笔记——Python 项目 (初级)

# 一、在终端配置 Conda 初始化

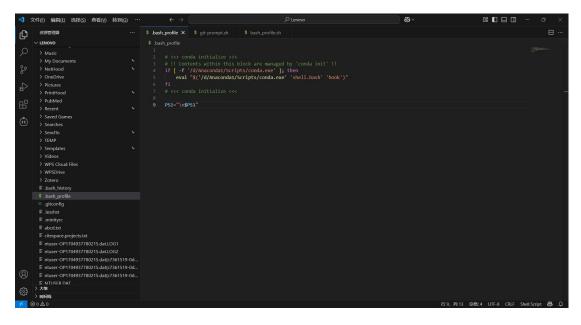
在自己的终端 Git Bash 中配置好 Conda Init, 使得启动终端后, 在提示符 \$前能够看到 (base)。











```
MINGW64:/c/Users/Lenovo
drwxr-xr-x 1 Lenovo 197121
                                       0 Jun 5
735 Mar 12
0 May 3
drwxr-xr-x 1 Lenovo 197121
                                                    2024
                                                            Zotero/
                                                    21:27
 rw-r--r-- 1 Lenovo 197121
                                                            abcd.txt
drwxr-xr-x 1 Lenovo 197121
                                                    2023
                                                            ado/
                                       452 Sep 20 19:41
                                                            citespace.projects.txt
ntuser-OP1704937780215.dat.LOG
-rw-r--r-- 1 Lenovo 197121
-rw-r--r-- 1 Lenovo 197121
                                   188416 Jan 11
                                                     2024
-rw-r--r-- 1 Lenovo 197121
                                         0 Jan 11
                                                     2024
                                                            ntuser-OP1704937780215.dat.LOG
-rw-r--r-- 1 Lenovo 197121
                                    65536 Jan 11
                                                     2024
                                                            ntuser-0P1704937780215.dat{c73
61519-0d5c-11eb-97ec-00e04c680060}.TM.blf
-rw-r--r- 1 Lenovo 197121 524288 Jan 11
                                                     2024 ntuser-0P1704937780215.dat{c73
61519-0d5c-11eb-97ec-00e04c680060}.TMContainer0000000000000000001.regtrans-ms
-rw-r--r-- 1 Lenovo 197121 524288 Jan 11 2024 ntuser-OP1704937780215.dat{c73
61519-0d5c-11eb-97ec-00e04c680060}.TMContainer00000000000000000002.regtrans-ms
                                 9748480 Jan 21 23:40
9731072 Jan 21 23:40
20 Jan 22 11:29
-rw-r--r-- 1 Lenovo 197121
                                                            ntuser.dat.LOG1
-rw-r--r-- 1 Lenovo 197121
                                                            ntuser.dat.LOG2
-rw-r--r-- 1 Lenovo 197121
                                                            ntuser.ini
                                       735 Mar 12 21:27
60 Jan 21 23:40
-rw-r--r-- 1 Lenovo 197121
                                                             report.txt
lrwxrwxrwx 1 Lenovo 197121
                                                              「开始」菜单 -> '/c/Users/Leno
vo/AppData/Roaming/Microsoft/Windows/Start Menu'/
(base) Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~
```

## 二、创建 Conda 环境

2.1 使用 conda info 命令查看本机 Conda 的配置信息

```
(base) Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~
$ conda info

active environment: base
conda version: 24.9.2
conda-build version: 24.9.2
python version: 3.12.7.final.0
solver: libmamba (default)
virtual packages: _archspec=l=icelake
_conda=24.9.2=0
_cuda=11.7=0
_win=0=0
base environment: D:\Anacondal(read only)
conda av data dir: D:\Anacondal(read only)
conda av metadata url: None
channel URLs: https://repo.anaconda.com/pkgs/main/win-64
https://repo.anaconda.com/pkgs/r/win-64
https://repo.anaconda.com/pkgs/r/win-64
https://repo.anaconda.com/pkgs/r/win-64
https://repo.anaconda.com/pkgs/msys2/win-64
https://repo.anaconda.com/pkgs/msys2/vin-64
https://repo.anaconda.com/pkgs/msys2/vin-64
https://repo.anaconda.com/pkgs/msys2/vin-64
https://repo.anaconda.com/pkgs/msys2/noarch
package cache: D:\Anacondal\pkgs
c:\Users\Lenovo\.conda\pkgs
c:\Users\Lenovo\.conda\pkgs
envs directories: C:\Users\Lenovo\.conda\pkgs
envs directories: C:\Users\Lenovo\.conda\pkgs
platform: win-64
user-agent: conda/24.9.2 requests/2.32.3 CPython/3.12.7 Windows/11 Windows/10.0.26100 sol
ver/libmamba conda-libmamba-solver/24.9.0 libmambapy/1.5.8 aau/0.4.4 c/. s/.
administrator: False
offline mode: False
```

2.2 使用 conda env list 命令查看已有的 Conda 环境的名称和路径,理解 Conda 环境的概念

```
(base) Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~ $ conda env list # conda environments:

# base D:\Anaconda1

(base) Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~ $ |
```

Conda 环境是一个由 Conda 创建和管理的独立的软件环境,它允许用户在同一台计算机上创建多个相互隔离的环境,每个环境可以有不同的 Python 版本、软件包及其依赖项,从而避免不同项目之间的依赖冲突。

- 2.3 使用 conda create 命令创建两个 Conda 环境,一个里面安装 Python 3.12 和 requests 软件包,另一个里面安装 Python 3.9、pandas 和 statsmodels 软件包,能够在终端里切换 Conda 环境,验证 Python 和软件包的版本
  - 2.3.1 安装 Python 3.12 和 requests 软件包

```
The following NEW packages will be INSTALLED:
  brotli-python
                        pkgs/main/win-64::brotli-python-1.0.9-py312h5da7b33_9
 bzip2
                        pkgs/main/win-64::bzip2-1.0.8-h2bbff1b_6
  ca-certificates
                        pkgs/main/win-64::ca-certificates-2025.2.25-haa95532_0
                        pkgs/main/win-64::certifi-2025.1.31-py312haa95532_0
  certifi
  charset-normalizer pkgs/main/noarch::charset-normalizer-3.3.2-pyhd3eb1b0_0 expat pkgs/main/win-64::expat-2.6.4-h8ddb27b_0
                       pkgs/main/win-64::idna-3.7-py312haa95532_0
pkgs/main/win-64::libffi-3.4.4-hd77b12b_1
  idna
  libffi
  openss1
                        pkgs/main/win-64::openssl-3.0.16-h3f729d1_0
                        pkgs/main/win-64::pip-25.0-py312haa95532_0
 pip
done
 To activate this environment, use
       $ conda activate pril
  To deactivate an active environment, use
      $ conda deactivate
```

2.3.2 安装 Python 3.9、pandas 和 statsmodels 软件包

在 安 装 python3.9 时 ,程 序 报 错 CondaError: Failed to write to C:\Users\Lenovo\.conda\pkgs\mkl-2023.1.0-h6b88edl errno: 28,可能是因为 C 盘内存不够,在清理一些内存之后,再尝试就成功了!

2.3.2 切换 Conda 环境,验证 Python 和软件包的版本

```
(base) Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~
$ conda activate prj1
(prj1)
Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~
$ which python
/c/Users/Lenovo/.conda/envs/prj1/python
(prj1)
Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~
$ python --version
Python 3.12.9
(prj1)
Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~
$ python
Python 3.12.9 | packaged by Anaconda, Inc. | (main, Feb 6 2025, 18:49:16) [MSC v.1929 64 bit (AMD64)]
on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> ls -l
Traceback (most recent call last):
File "<stdin>", line 1, in <module>
NameError: name 'ls' is not defined
>>> quit()
(prj1)
```

```
$ conda activate prj2
(prj2)
 enovo@LAPTOP-8MNNHDHQ MINGW64 ~
$ which python
/c/Users/Lenovo/.conda/envs/prj2/python
(prj2)
 enovo@LAPTOP-8MNNHDHQ MINGW64 ~
$ python --version
Python 3.9.21
(prj2)
 enovo@LAPTOP-8MNNHDHQ 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.
Traceback (most recent call last):
File "<stdin>", line 1, in <module>
ModuleNotFoundError: No module named 'requests'
>>> import pandas
>>> pandas.__file__
'C:\\Users\\Lenovo\\.conda\\envs\\prj2\\lib\\site-packages\\pandas\\__init__.py'
>>> pandas.__version__
'2.2.3'
>>> import statsmodels
>>> statsmodels.__version__
0.14.4
```

```
conda list
  packages in environment at C:\Users\Lenovo\.conda\envs\prj2:
# Name
                                                               Channel
                            Version
                                                        Build
blas
                                                          mk1
                            1.0
                            1.4.2
2025.2.25
                                              py39hc99e966_0
bottleneck
                                                  haa95532_0
ca-certificates
icc_rt
                            2022.1.0
                                                  h6049295_2
intel-openmp
                            2023.1.0
                                              h59b6b97_46320
                            2023.1.0
mk1
                                              h6b88ed4_46358
                                              py39h827c3e9_2
py39h827c3e9_0
mkl-service
                            2.4.0
mk1_fft
                            1.3.11
                                              py39hc64d2fc_0
mk1_random
                            1.2.8
numexpr
                            2.10.1
                                              py39h4cd664f_0
                                              py39h055cbcc_0
                            2.0.2
numpy
numpy-base
                            2.0.2
                                              py39h65a83cf_0
                            3.0.16
                                              h3f729d1_0
py39haa95532_0
openss1
                            24.2
packaging
                                              py39h5da7b33_0
pandas
                            2.2.3
                                              py39haa95532_0
patsy
                            1.0.1
                                              py39haa95532_0
pip
                            25.0
pybind11-abi
                                                  hd3eb1b0_0
                            3.9.21
                                                  h8205438_1
python
python-dateutil
                                              py39haa95532_2
                            2.9.0post0
python-tzdata
                            2023.3
                                                pyhd3eb1b0_0
                                              py39haa95532_0
                            2024.1
pytz
scipy
                            1.13.1
                                              py39h8640f81_1
                            72.1.0
                                              py39haa95532_0
setuptools
                            1.16.0
                                                pyhd3eb1b0_1
six
sqlite
                            3.45.3
                                                  h2bbff1b 0
                            0.14.4
statsmodels
                                              py39h827c3e9_0
                            2021.8.0
tbb
                                                  h59b6b97_0
tzdata
                            2025a
                                                  h04d1e81_0
                            14.42
                                                  haa95532_4
VC
                                                  he0abc0d_4
vs2015_runtime
                            14.42.34433
wheel
                            0.45.1
                                              py39haa95532_0
(prj2)
 enovo@LAPTOP-8MNNHDHQ MINGW64 ~
```

#### 2.4 使用 conda list 命令显示 Conda 环境里的软件包列表及其版本信息

```
conda activate prj1
  enovo@LAPTOP-8MNNHDHQ MINGW64 ~
  packages in environment at C:\Users\Lenovo\.conda\envs\prj1:
                                                                   Build Channel
py312h5da7b33_9
h2bbff1b_6
haa95532_0
py312haa95532_0
brotli-python
                                         1.0.9
1.0.8
bzip2
                                         1.0.8
2025.2.25
2025.1.31
3.3.2
2.6.4
3.7
3.4.4
3.0.16
ca-certificates
certifi
charset-normalizer
                                                                        pyhd3eb1b0_0
                                                                   h8ddb27b_0
py312haa95532_0
expat
idna
                                                                           hd77b12b_1
h3f729d1_0
libffi
openss1
                                                                   py312haa95532_0
py312haa95532_0
h14ffc60_0
pip
pıp
pysocks
python
                                                                   py312haa95532_1
py312haa95532_0
h2bbff1b_0
h0416ee5_0
h04d1e81_0
                                          2.32.3 75.8.0
 equests
setuptools
sqlite
                                          8.6.14
2025a
2.3.0
tzdata
                                                                   py312haa95532_0
haa95532_4
he0abc0d_4
py312haa95532_0
py312haa95532_0
urllib3
vc
vs2015_runtime
                                         14.42.34433
0.45.1
1.1.0
win_inet_pton
                                                                            h4754444_1
xz
zlib
                                                                            h8cc25b3_1
                                          1.2.13
(prj1)
Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~
(prj1)
          @LAPTOP-8MNNHDHQ MINGW64
```

```
conda list
  packages in environment at C:\Users\Lenovo\.conda\envs\prj2:
# Name
                                                                   Channe1
                             Version
                                                           Build
blas
                                                             mk1
                              1.0
                             1.4.2
2025.2.25
                                                 py39hc99e966_0
bottleneck
ca-certificates
                                                     haa95532_0
                                                     h6049295_2
                              2022.1.0
icc_rt
                                                 h59b6b97_46320
h6b88ed4_46358
                              2023.1.0
intel-openmp
mk1
                              2023.1.0
mkl-service
                              2.4.0
                                                 py39h827c3e9_2
mk1_fft
                              1.3.11
                                                 py39h827c3e9_0
mk1_random
                             1.2.8
                                                 py39hc64d2fc_0
                              2.10.1
                                                 py39h4cd664f_0
numexpr
                              2.0.2
                                                 py39h055cbcc_0
numpy
numpy-base
                              2.0.2
                                                 py39h65a83cf_0
                              3.0.16
24.2
                                                 h3f729d1_0
py39haa95532_0
openssl
packaging
pandas
                                                 py39h5da7b33_0
                              2.2.3
                                                 py39haa95532_0
py39haa95532_0
                              1.0.1
patsy
                              25.0
pip
pybind11-abi
                                                     hd3eb1b0_0
python
                              3.9.21
                                                     h8205438_1
                                                 py39haa95532_2
                              2.9.0post0
python-dateutil
python-tzdata
                                                   pyhd3eb1b0_0
                              2023.3
                                                 py39haa95532_0
                              2024.1
pytz
                             1.13.1
                                                 py39h8640f81_1
scipy
setuptools
                              72.1.0
                                                 py39haa95532_0
six
                              1.16.0
                                                   pyhd3eb1b0_1
sqlite
                             3.45.3
0.14.4
                                                     h2bbff1b_0
                                                 py39h827c3e9_0
h59b6b97_0
statsmodels
tbb
                              2021.8.0
                              2025a
                                                     h04d1e81_0
tzdata
                                                     haa95532_4
                              14.42
VC
                             14.42.34433
vs2015_runtime
                                                     he0abc0d_4
wheel
                             0.45.1
                                                 py39haa95532_0
(prj2)
```

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

```
(prj1)
_enovo@LAPTOP-8MNNHDHQ MINGW64 ~
$ conda list
  packages in environment at C:\Users\Lenovo\.conda\envs\prj1:
                             Version
# Name
                                                           Build
                                                                  Channel
asttokens
                             2.0.5
                                                   pyhd3eb1b0_0
brotli-python
                             1.0.9
                                                py312h5da7b33_9
                             1.0.8
                                                     h2bbff1b_6
bzip2
                             2025.2.25
2025.1.31
3.3.2
ca-certificates
                                                haa95532_0
py312haa95532_0
certifi
                                                   pyhd3eb1b0_0
charset-normalizer
                                                py312haa95532_0
                             0.4.6
colorama
                             5.1.1
decorator
                                                   pyhd3eb1b0_0
                                                   pyhd3eb1b0_0
executing
                             0.8.3
                                                     h8ddb27b_0
expat
                             2.6.4
idna
                              3.7
                                                py312haa95532_0
                                                py312haa95532_0
python
                             8.30.0
                             0.19.2
                                                py312haa95532_0
libffi
                             3.4.4
                                                     hd77b12b_1
                                               py312haa95532_0
h3f729d1_0
py312haa95532_0
matplotlib-inline
                             0.1.6
openss1
                              3.0.16
                             0.8.4
parso
                             25.0
                                                py312haa95532_0
pip
prompt-toolkit
                             3.0.43
                                                py312haa95532_0
prompt_toolkit
                             3.0.43
                                                     hd3eb1b0_0
                                                pyhd3eb1b0_0
py312haa95532_1
                             0.2.2
pure_eval
                             2.15.1
pygments
                                                py312haa95532_0
pysocks
                             1.7.1
                                                     h14ffc60_0
python
                              3.12.9
                                                py312haa95532_1
                             2.32.3
requests
                                                py312haa95532_0
setuptools
                             75.8.0
six
                             1.16.0
                                                   pyhd3eb1b0_1
sqlite
                                                     h2bbff1b_0
                              3.45.3
                                                   pyhd3eb1b0_0
stack_data
                             0.2.0
tk
                             8.6.14
                                                     h0416ee5_0
                                                py312haa95532_0
traitlets
                             5.14.3
                             2025a
                                                     h04d1e81_0
tzdata
urllib3
                             2.3.0
                                                py312haa95532_0
                             14.42
                                                     haa95532_4
vs2015_runtime
                             14.42.34433
                                                     he0abc0d_4
                             0.2.5
                                                   pyhd3eb1b0_0
wcwidth
                                               py312haa95532_0
py312haa95532_0
h4754444_1
whee1
                             0.45.1
win_inet_pton
                              1.1.0
                              5.6.4
zlib
                             1.2.13
                                                     h8cc25b3_1
(prj1)
 enovo@LAPTOP-8MNNHDHQ MINGW64 ~
```

# 三、Conda-Forge 清华镜像

根据文档,配置 Anaconda 清华镜像,加快 conda install 安装软件包的速度,将 conda-forge 设置为默认 Channel,让 conda install 能够安装更多的软件包。

```
MINGW64:/c/Users/Lenovo
                         LAPTOP-8MNNHDHQ MINGW64 ~
         conda list
         packages in environment at C:\Users\Lenovo\.conda\envs\prj1:
         Name
                                                                                                                                                Build
pyhd3eb1b0_0
                                                                                     Version
                                                                                                                                                                                            Channe 1
                                                                                   Version
2.0.5
1.0.9
1.0.8
2025.2.25
2025.1.31
3.3.2
0.4.6
5.1.1
0.8.3
2.6.4
                                                                                                                                                                                                  https://repo.anaconda.com/pkgs/main
https://repo.anaconda.com/pkgs/main
https://repo.anaconda.com/pkgs/main
https://repo.anaconda.com/pkgs/main
conda-forge
     asttokens
                                                                                                                                      pynd3eb1b0_0
py312h5da7b33_9
h2bbff1b_6
haa95532_0
pyhd8ed1ab_0
      protli-python
      bzip2
    ca-certificates
certifi
                                                                                                                                                                                                 conda-forge
https://repo.anaconda.com/pkgs/main
https://repo.anaconda.com/pkgs/main
https://repo.anaconda.com/pkgs/main
https://repo.anaconda.com/pkgs/main
https://repo.anaconda.com/pkgs/main
https://repo.anaconda.com/pkgs/main
conda-forge
https://repo.anaconda.com/pkgs/main
https://repo.anaconda.com/pkgs/main
conda-forge
                                                                                                                                       pyhd3eb1b0_0
py312haa95532_0
pyhd3eb1b0_0
      charset-normalizer
      colorama
      decorator
                                                                                                                                     pyhd3eb1b0_0
pyhd3eb1b0_0
h8ddb27b_0
py312haa95532_0
h57928b3_1083
py312haa95532_0
y312haa95532_0
31_h641d27c_mk1
31_h5e41251_mk1
he0c23c2_0
hd77b12b_1
    executing
     expat
                                                                                     3.7
2024.2.1
     intel-openmo
                                                                                    2024.2
8.30.0
0.19.2
3.9.0
3.9.0
2.6.4
3.4.4
2.11.2
1.18
3.9.0
5.6.4
      ipython
       edi
ibblas
        ibcblas
    libexpat
                                                                                                                                      he0c23c2_0 con-
hd77b12b_1 http
default_ha69328c_1001
h135ad9c_1 con-
31_h1aa476e_mk1 con-
h2466b09_0 con-
                                                                                                                                                                                                 001 conda-forge
conda-forge
conda-forge
conda-forge
conda-forge
 libhwloc
libiconv
iliblapack
iliblapack
                                                                                      3.49.1 h67fdade_2 con
12.0.0.r4.gg4f2fc60ca h57928b3_9
2.13.6 he286e8c_0 con
     libsqlite
                                                                                                                                                                                                 conda-forge
3_9 conda-forge
conda-forge
conda-forge
https://repo.anaconda.com/pkgs/main
conda-forge
conda-forge
conda-forge
conda-forge
conda-forge
https://repo.anaconda.com/pkgs/main
https://repo.anaconda.com/pkgs/main
pypi
    libwinpthread
libxml2
                                                                                                                                      h2466b09_2
py312haa95532_0
                                                                                     1.3.1 0.1.6
   matplotlib-inline
mkl
    libzlib
                                                                                      2024.2.2
2.2.4
3.4.1
                                                                                                                                       h66d3029_15
py312h3150e54_0
ha4e3fda_0
     numpy
                                                                                                                                       pyhd8ed1ab_2
py312haa95532_0
ny312haa95532_0
      ackaging
                                                                                     0.8.4
    parso
                                                                                                                                     py312haa95532.0 https://repo.anaconda.com/pkgs/main
pypi_0 pypi
py312naa95532_0 nttps://repo.anaconda.com/pkgs/main
hd3eb1b0_0 https://repo.anaconda.com/pkgs/main
py312haa95532_1 https://repo.anaconda.com/pkgs/main
py312haa95532_0 https://repo.anaconda.com/pkgs/main
h3f84c4b_1_cpython conda-torge
                                                                                     1.24.0
    polars
    prompt-tooikit
prompt_toolkit
                                                                                    3.0.43
3.0.43
0.2.2
2.15.1
1.7.1
     pure_eval
     pysocks
                                                                                    3.12.9
     python
                                                                                                                                                                                                 conda-torge
Conga-torge
https://repo.anaconda.com/pkgs/main
https://repo.anaconda.com/pkgs/main
https://repo.anaconda.com/pkgs/main
https://repo.anaconda.com/pkgs/main
https://repo.anaconda.com/pkgs/main
conda-forge
conda-forge
https://repo.anaconda.com/pkgs/main
https://repo.anaconda.com/pkgs/main
conda-forge
                                                                                                                                      py312haa95532_1
py312haa95532_1
py312haa95532_0
pyhd3eb1b0_1
      oytnon_ab1
requests
                                                                                     3.12
2.32.3
                                                                                     75.8.0
1.16.0
3.45.3
    setuptools
   six
sqlite
                                                                                                                                      pynd3eb1b0_1
h2bbff1b_0
pyhd3eb1b0_0
h62715c5_1
h5226925_1
py312haa95532_0
                                                                                     0.2.0
2021.13.0
       tack_data
      tbb
                                                                                     8.6.13
5.14.3
    traitlets
                                                                                                                                                      h04d1e81_0
h57928b3_1
      tzdata
                                                                                     10.0.22621.0
```

### 四、环境配置的导出与重建

4.1 使用 pip install 命令往 Conda 环境里安装 Python 软件包,并验证版本

```
MINGW64:/c/Users/Lenovo
                                             0.1.6
2024.2.2
2.2.4
3.4.1
                                                                         py312haa95532_0
h66d3029_15
 matplotlib-inline
                                                                                                          https://repo.anaconda.com/pkgs/m
conda-forge
conda-forge
 mk1
                                                                         py312h3150e54_0
numpy
                                                                                                          conda-forge
openss1
                                                                                  ha4e3fda_0
                                             24.2
                                                                                                          conda-forge
packaging
                                                                              pyhd8ed1ab_2
                                                                         pypi_0
py312haa95532_0
pandas
                                                                                                          pypi
                                                                                                           https://repo.anaconda.com/pkgs/m
 parso
                                                                         py312haa95532_0
                                                                                                          https://repo.anaconda.com/pkgs/m
pip
                                                                         pypi_0
py312haa95532_0
 polars
                                                                                                         https://repo.anaconda.com/pkgs/m
https://repo.anaconda.com/pkgs/m
https://repo.anaconda.com/pkgs/m
https://repo.anaconda.com/pkgs/m
https://repo.anaconda.com/pkgs/m
conda-forge
prompt-toolkit
                                              3.0.43
                                                                              hd3eb1b0_0
pyhd3eb1b0_0
 prompt_toolkit
                                              3.0.43
                                             0.2.2
2.15.1
1.7.1
3.12.9
pure eval
                                                                         py312haa95532_1
py312haa95532_0
pygments
pysocks
                                                                         h3f84c4b_1_cpython
python
python-dateutil
                                              2.9.0.post0
                                                                                        pypi_0
                                                                                                          pypi
                                             3.12
2025.1
                                                                                        5_cp312
                                                                                                          conda-forge
python_abi
                                                                         pypi_0
py312haa95532_1
py312haa95532_0
 pytz
                                             2.32.3
75.8.0
 requests
                                                                                                          https://repo.anaconda.com/pkgs/m
 setuptools
                                                                                                          https://repo.anaconda.com/pkgs/m
 simplejson
six
                                             3.20.1
1.16.0
2.6
                                                                              pypi_0
pyhd3eb1b0_1
                                                                                                          https://repo.anaconda.com/pkgs/m
                                                                              pypi_0
h2bbff1b_0
pyhd3eb1b0_0
                                                                                                         pypi
https://repo.anaconda.com/pkgs/m
https://repo.anaconda.com/pkgs/m
conda-forge
 soupsieve
 sqlite
                                              3.45.3
  tack_data
                                              0.2.0
 tbb
                                              2021.13.0
                                                                                  h62715c5_1
                                              8.6.13
                                                                                  h5226925_1
                                                                                                          conda-forge
                                             4.67.1
5.14.3
                                                                         pypi_0
py312haa95532_0
 traitlets
                                                                                                          https://repo.anaconda.com/pkgs/m
 tushare
cyping-excensions
                                             1.4.19
                                                                                        pypi_0
                                                                                                          рурі
                                             4.12.2
2025.1
                                                                                 pypi_0
pypi_0
h57928b3_1
                                                                                                          pypi
 tzdata
urlib3 2.3.0 py312haa95532_1 conda-forge
Python 3.12.9 | packaged by conda-forge | (main, Mar 4 2025, 22:37:18) [MSC v.1943 64 bit (A Type "help", "copyright", "credits" or "license" for more information.
>>> import tushare
Python 3.12.9 | packaged by conda-forge | (main, Mar 4 2025, 22:37:18) [MSC v.1943 64 bit (A MD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import tushare
>>> tushare. version
                                             10.0.22621.0
                                                                                                          conda-forge
 ucrt
urllib3
>>> Import Cushare
>>> tushare.__version
Traceback (most recent call last):
File "<stdin>", line 1, in <module>
AttributeError: module 'tushare' has no attribute '__version'. Did you mean: '__version__'?
   >> tushare.__version_
  ->>> tushare.__file__
'C:\\Users\\Lenovo\\.conda\\envs\\prj1\\Lib\\site-packages\\tushare\\__init__.py'
```

4.2 能够导出 environment.yml Conda 环境配置文件,能够删除 Conda 环境, 能够用 environment.yml 配置文件重建 Conda 环境

```
$ cd twinkledehaha
(base)
_enovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha (main)
$ 1s -1
total 25
-rw-r--r-- 1 Lenovo 197121
                              16 Mar 12 21:58 README.md
-rw-r--r-- 1 Lenovo 197121 22809 Mar 12 22:19 abcd.pdf
Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha (main)
$ nkdir prj1
bash: nkdir: command not found
(base)
Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha (main)
$ mkdir prj1
(base)
enovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha (main)
$ cd prj1
(base)
_enovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha/prj1 (main)
$ 1s -1
total 0
(base)
Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha/prj1 (main)
$ mv ~/environment.yml ./
(base)
Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha/prj1 (main)
$ conda env list
# conda environments:
                         C:\Users\Lenovo\.conda\envs\prj2
prj2
                      * D:\Anaconda1
base
(base)
Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha/prj1 (main)
/c/Users/Lenovo/Desktop/twinkledehaha/prj1
(base)
_enovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha/prj1 (main)
$ 1s -1
total 4
-rw-r--r-- 1 Lenovo 197121 2535 Mar 19 11:52 environment.yml
(base)
 To activate this environment, use
      $ conda activate prj1
 To deactivate an active environment, use
      $ conda deactivate
_enovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha/prj1 (main)
$ conda activate prj1
(prj1)
enovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha/prj1 (main)
$ conda list
 packages in environment at C:\Users\Lenovo\.conda\envs\prj1:
```

4.3 理解 Conda 与 Python 的关系, 理解 Conda-Forge 与 Conda 的关系, 理

解 Python 解释器、第三方软件包、PyPI 软件仓库、以及程序/软件包的路径问题

#### 4.3.1 conda 与 python 的关系

Conda 是一个开源的包管理系统和环境管理系统,主要用于帮助用户更方便 地管理 Python 项目中的依赖项和环境。

管理 Python 包: Conda 可以用于安装、更新和卸载 Python 包。

创建隔离的 Python 环境: Conda 允许用户创建多个相互隔离的 Python 环境。

跨平台兼容性: Conda 在不同操作系统(如 Windows、macOS 和 Linux)上都能很好地运行,并且能够处理不同平台上的包安装和环境配置问题。

#### 4.3.2 Conda-Forge 与 Conda 的关系

Conda-Forge 是一个社区驱动的开源项目。

提供额外的软件包渠道: Conda 本身是一个包管理系统和环境管理系统,而 Conda-Forge 为 Conda 提供了一个丰富的软件包渠道。

社区协作维护: Conda-Forge 是由社区成员共同维护和管理的。

补充和扩展 Conda 功能: Conda-Forge 不仅提供软件包,还通过一些特殊的功能和工具来扩展 Conda 的能力。

#### 4.3.3 Python 解释器

Python 解释器是 Python 语言的核心组件,其作用是将你编写的 Python 代码 转化为计算机能够理解和执行的机器语言指令。

当你编写好 Python 代码后,Python 解释器会逐行读取代码,对代码进行词法分析、语法分析等一系列处理,然后将其转换为机器能够执行的指令,最终完成代码的执行。这种逐行解释执行的方式,使得 Python 代码具有很好的动态性和交互性。Python 解释器有 CPython、IPython、JPython、IronPython,在选择 Python解释器时,需要根据具体的应用场景和需求来决定。

#### 4.3.4 第三方软件包

第三方软件包是指由 Python 官方标准库以外的其他开发者、组织或社区创建和维护的软件包。这些软件包旨在扩展 Python 的功能,帮助开发者更高效地完成特定任务。通常使用 pip(Python 包管理工具)或 conda(包和环境管理系统)来安装和管理第三方软件包。

#### 4.3.5 PyPI 软件仓库

PyPI 如同一个巨大的"软件宝库",存储着大量由 Python 开发者和组织贡献的第三方软件包。当你使用 pip 命令安装 Python 软件包时,pip 默认会连接到 PyPI,在其中搜索你指定的软件包。若找到匹配的软件包,pip 会下载该软件包及其依赖项,并将它们安装到你的 Python 环境中。例如,在命令行输入 pip install requests,pip 就会从 PyPI 找到 requests 库并进行安装。

#### 4.3.6 程序/软件包的路径问题

模块导入时的路径问题。当你使用 import 语句导入模块时,Python 会按照特定的路径顺序去查找该模块。如果模块不在 Python 解释器搜索的路径范围内,就会抛出 ModuleNotFoundError 异常。

文件读写时的路径问题。在进行文件读写操作时,如果指定的文件路径不正确,会导致 FileNotFoundError 异常。文件路径可以是相对路径或绝对路径,使用不当就会找不到文件。

#### 4.3.7 Conda-Forge 和 PyPI 如何选择

软件包管理。PyPI: 主要通过 pip 工具进行软件包的安装、升级和卸载。pip 专注于 Python 软件包的管理,对于纯 Python 的软件包,使用 pip 从 PyPI 安装是非常便捷的,且与 Python 的标准库集成紧密。Conda-Forge:使用 conda 命令进行软件包管理。conda 不仅能管理 Python 软件包,还能管理其他语言的软件包以及系统级的依赖,并且可以方便地创建和管理不同的虚拟环境,确保不同项目的依赖隔离。

软件包类型和兼容性。PyPI: 包含大量的纯 Python 软件包,涵盖了各种领域和功能。但对于一些依赖于特定系统库或需要复杂编译过程的软件包,在不同操作系统和平台上可能会遇到兼容性问题。Conda-Forge: 提供了丰富的软件包,包括 Python 软件包以及非 Python 的依赖项,如 C、C++ 等语言编写的库。Conda-Forge 注重跨平台兼容性,其软件包通常经过了预编译和优化,在不同操作系统(如 Windows、Linux、macOS)上更容易安装和运行,尤其适用于科学计算和数据科学领域中依赖多种底层库的软件包。

社区和生态系统。PyPI:作为 Python 官方的软件包索引,拥有庞大的社区和丰富的文档资源。Conda-Forge:是一个由社区驱动的开源项目,专注于为 conda

# 五、编写和运行 Python 程序

```
(base) Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha (main)

$ cd myproject/

(base) Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha/myproject (main)

$ ls -l

total 1

-rw-r--r-- 1 Lenovo 197121 75 Mar 19 12:47 environment.yml

(base) Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha/myproject (main)

$ cat environment.yml

name: myproject

channels:
   - conda-forge

dependencies:
   - conda-forge

dependencies:
   - python=3.12

(base) Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha/myproject (main)

$ curl -D https://edg.epa.gov/EPADataCommons/public/OA/EPA SmartLocationDatabase V3 lan 2021 Final csv
```

```
$ curl -0 https://edg.epa.gov/EPADataCommons/public/OA/EPA_SmartLocationDatabase_V3_Jan_2021_Final.csv % Total % Received % Xferd Average Speed Time Time Time Current Dload Upload Total Spent Left Speed
100 192M 100 192M 0 0 79574 0 0:42:13 0:42:13 --:--:- 1426k
(myproject)
Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha/myproject (main)
$ (myproject)
Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha/myproject (main)
$ python main.py
10.69% of U.S. residents live in highlywalkable neighborhoods.
(myproject)
Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha/myproject (main)
$ Lenovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha/myproject (main)
```

```
conda list
 packages in environment at C:\Users\Lenovo\.conda\envs\myproject:
                          Version
                                                      Build
                                                             Channel
 Name
zip2
                                                h2466b09_7
                          1.0.8
                                                               conda-forge
a-certificates
                          2025.1.31
                                                h56e8100_0
                                                               conda-forge
                          2024.2.1
ntel-openmp
                                             h57928b3_1083
                                                               conda-forge
ibblas
                          3.9.0
                                           31_h641d27c_mk1
                                                               conda-forge
                          3.9.0
                                           31_h5e41251_mk1
                                                               conda-forge
ibcblas
                                                               conda-forge
                          2.6.4
ibexpat
                                                he0c23c2_0
ibffi
                          3.4.6
                                                h537db12_0
                                                               conda-forge
ibhwloc
                          2.11.2
                                           default_ha69328c_1001
                                                                     conda-fo
                                                               conda-forge
ibiconv
                          1.18
                                                h135ad9c_1
iblapack
                          3.9.0
                                           31_h1aa476e_mk1
                                                               conda-forge
                          5.6.4
                                                h2466b09_0
ib1zma
                                                               conda-forge
                                                h67fdade_2
ibsglite
                          3.49.1
                                                               conda-forge
                          12.0.0.r4.gg4f2fc60ca
                                                       h57928b3_9
ibwinpthread
                                                                      conda-fo
ibxml2
                                                he286e8c_0
                                                               conda-forge
                          2.13.6
ibz1ib
                          1.3.1
                                                h2466b09_2
                                                               conda-forge
ık1
                          2024.2.2
                                               h66d3029_15
                                                               conda-forge
                          2.2.4
                                                               conda-forge
                                           py312h3150e54_0
umpy
penssl
                          3.4.1
                                                ha4e3fda_0
                                                               conda-forge
                                           py312h72972c8_1
                                                               conda-forge
andas
                          2.2.3
                          25.0.1
                                              pyh8b19718_0
                                                               conda-forge
ip
ython
                          3.12.9
                                           h3f84c4b_1_cpython
                                                                  conda-forge
ython-dateutil
                          2.9.0.post0
                                              pyhff2d567_1
                                                               conda-forge
ython-tzdata
                                              pyhd8ed1ab_0
                          2025.1
                                                               conda-forge
ython_abi
                           3.12
                                                    5_cp312
                                                               conda-forge
                          2024.1
                                              pyhd8ed1ab_0
                                                               conda-forge
ytz
etuptools
                          75.8.2
                                              pyhff2d567_0
                                                               conda-forge
ix
                          1.17.0
                                              pyhd8ed1ab_0
                                                               conda-forge
bb
                                                h62715c5_1
                                                               conda-forge
                          2021.13.0
                          8.6.13
                                                               conda-forge
                                                h5226925_1
                                                h78e105d_0
                          2025a
                                                               conda-forge
zdata
                          10.0.22621.0
                                                               conda-forge
crt
                                                h57928b3_1
                          14.3
                                               hbf610ac_24
                                                               conda-forge
                          14.42.34438
c14_runtime
                                               hfd919c2_24
                                                               conda-forge
heel
                          0.45.1
                                              pyhd8ed1ab_1
                                                               conda-forge
myproject)
enovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha/myproject (main)
 python main.py
ello, conda!
myproject)
enovo@LAPTOP-8MNNHDHQ MINGW64 ~/Desktop/twinkledehaha/myproject (main)
```

```
遇到的问题: AttributeError: module 'pandas' has no attribute '_version_'. Did you mean: '__version__'?

(myproject)
```

解决方法:将换成即可