Python 项目

配置 conda init

查看 conda 配置信息

命令查看已有的 Conda 环境的名称和路径

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

名称	修改日期
📁 prj1	2025/3/19 12:13
📄 .conda_envs_dir_test	2025/3/19 12:11

```
Administrator@DESKTOP-75CI4VE 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: D:\1\envs\prj2

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

```
(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ conda env list
# conda environments:
#
base                  *  D:\1
prj1                     D:\1\envs\prj1
prj2                     D:\1\envs\prj2
```


激活 prj1 环境

```
(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ conda activate prj1
(prj1)
```

```
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ which python
/d/1/envs/prj1/python
(prj1)
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ python --version
Python 3.12.9
(prj1)
```

```
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ conda activate prj2
(prj2)
Administrator@DESKTOP-75CI4VE 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 pandas
>>> pandas.--file--
  File "<stdin>", line 1
    pandas.--file--
             ^
SyntaxError: invalid syntax
>>> pandas.__file__
'D:\\1\\envs\\prj2\\lib\\site-packages\\pandas\\__init__.py'
>>>
```

查看版本信息

```
AttributeError: module 'pandas'
>>> pandas. __version__
'2.2.3'
>>> import statsmodels
>>> statsmodels. __version__
'0.14.4'
```

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

```
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ conda list
# packages in environment at D:\1\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
statsmodels               0.14.4         py39h827c3e9_0
tbb                       2021.8.0           h59b6b97_0
tzdata                    2025a              h04d1e81_0
vc                        14.42              haa95532_4
vs2015_runtime            14.42.34433        he0abc0d_4
wheel                     0.45.1         py39haa95532_0
(prj2)
```

```
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ conda activate prj1
(prj1)
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ conda list
# packages in environment at D:\1\envs\prj1:
#
# Name                    Version                   Build  Channel
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
expat                     2.6.4                 h8ddb27b_0
idna                      3.7             py312haa95532_0
libffi                    3.4.4                 hd77b12b_1
openssl                   3.0.16                h3f729d1_0
pip                       25.0            py312haa95532_0
pysocks                   1.7.1           py312haa95532_0
python                    3.12.9                h14ffc60_0
requests                  2.32.3          py312haa95532_1
setuptools                75.8.0          py312haa95532_0
sqlite                    3.45.3                h2bbff1b_0
tk                        8.6.14                h0416ee5_0
tzdata                    2025a                 h04d1e81_0
urllib3                   2.3.0           py312haa95532_0
vc                        14.42                 haa95532_4
vs2015_runtime            14.42.34433           he0abc0d_4
wheel                     0.45.1          py312haa95532_0
win_inet_pton             1.1.0           py312haa95532_0
xz                        5.6.4                 h4754444_1
zlib                      1.2.13                h8cc25b3_1
(prj1)
```

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

```
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ conda install ipython
Channels:
 - defaults
Platform: win-64
Collecting package metadata (repodata.json): done
Solving environment: done

## Package Plan ##

  environment location: D:\1\envs\prj1

  added / updated specs:
    - ipython


The following packages will be downloaded:

    package                    |            build
    ---------------------------|-----------------
    asttokens-2.0.5            |     pyhd3eb1b0_0          20 KB
    colorama-0.4.6             |   py312haa95532_0          53 KB
    decorator-5.1.1            |     pyhd3eb1b0_0          12 KB
    executing-0.8.3            |     pyhd3eb1b0_0          18 KB
    ipython-8.30.0            |   py312haa95532_0         1.5 MB
    jedi-0.19.2               |   py312haa95532_0         1.2 MB
    matplotlib-inline-0.1.6   |   py312haa95532_0          19 KB
    parso-0.8.4               |   py312haa95532_0         239 KB
    prompt-toolkit-3.0.43     |   py312haa95532_0         733 KB
done
```
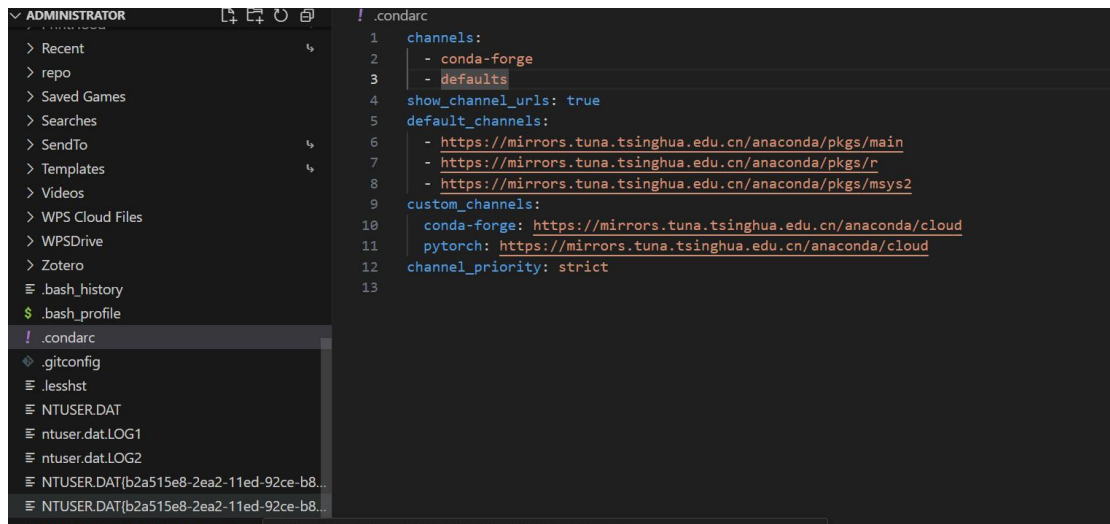
```
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ conda list
# packages in environment at D:\1\envs\prj1:
#
# Name                    Version                   Build  Channel
asttokens                 2.0.5                   pyhd3eb1b0_0
brotli-python             1.0.9                  py312h5da7b33_9
bzip2                     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
pure_eval                 0.2.2                   pyhd3eb1b0_0
pygments                  2.15.1                py312haa95532_1
pysocks                   1.7.1                 py312haa95532_0
python                    3.12.9                      h14ffc60_0
requests                  2.32.3                py312haa95532_1
setuptools                75.8.0                py312haa95532_0
six                       1.16.0                  pyhd3eb1b0_1
sqlite                    3.45.3                      h2bbff1b_0
stack_data                0.2.0                   pyhd3eb1b0_0
tk                        8.6.14                      h0416ee5_0
traitlets                 5.14.3                py312haa95532_0
tzdata                    2025a                       h04d1e81_0
urllib3                   2.3.0                 py312haa95532_0
vc                        14.42                       haa95532_4
vs2015_runtime            14.42.34433                 he0abc0d_4
wcwidth                   0.2.5                   pyhd3eb1b0_0
wheel                     0.45.1                py312haa95532_0
win_inet_pton             1.1.0                 py312haa95532_0
xz                        5.6.4                       h4754444_1
zlib                      1.2.13                      h8cc25b3_1
(prj1)
```
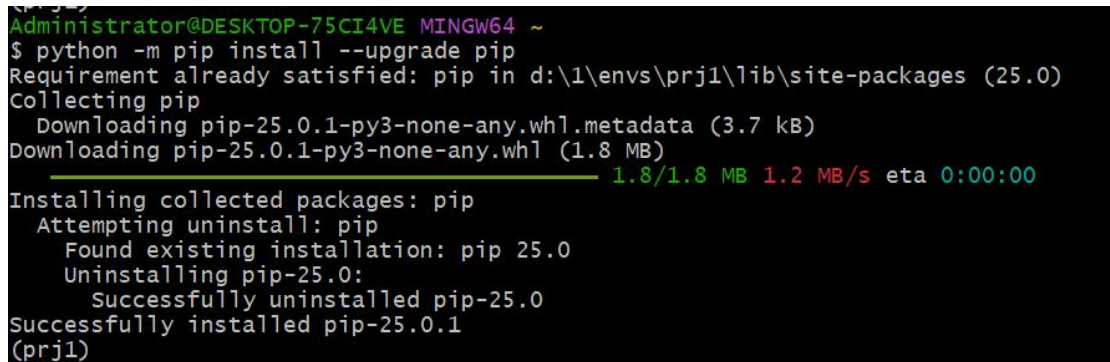
根据 文档，配置 Anaconda 清华镜像，加快 conda install 安装软件包的速度，将 conda-forge 设置为默认 Channel，让 conda install 能够安装更多的软件包
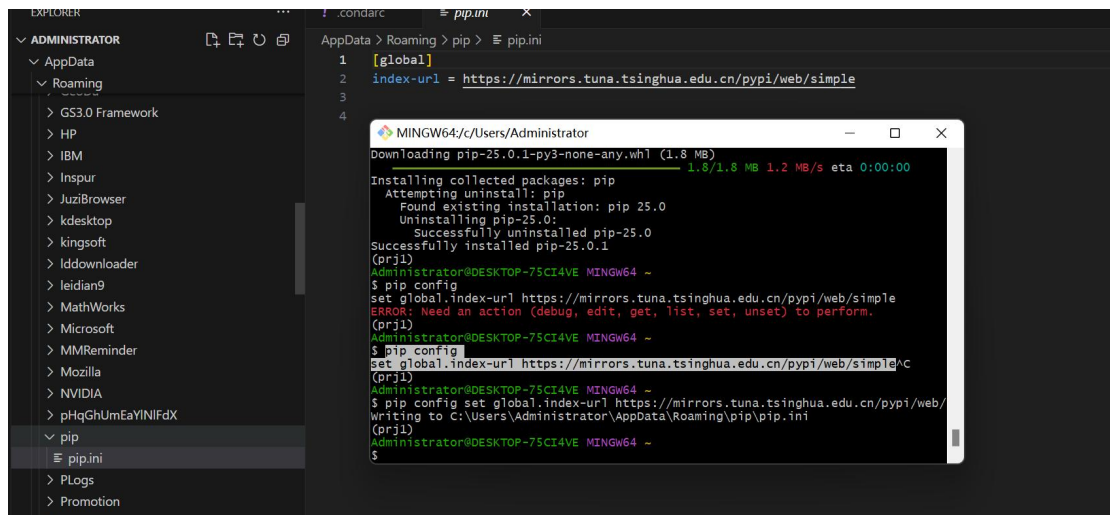
根据 文档 配置 PyPI 清华镜像，加快 pip install 安装软件包的速度

```
(prj1)
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ pip install tushare
Looking in indexes: https://mirrors.tuna.tsinghua.edu.cn/pypi/web/simple
Collecting tushare
  Downloading https://mirrors.tuna.tsinghua.edu.cn/pypi/web/packages/2b/b1/8aa06
e934b778920624047770cc8fd5518a1e9d3066043150a691f71edc1/tushare-1.4.19-py3-none-
any.whl (142 kB)
Collecting pandas (from tushare)
  Downloading https://mirrors.tuna.tsinghua.edu.cn/pypi/web/packages/29/d4/1244a
b8edf173a10fd601f7e13b9566c1b525c4f365d6bee918e68381889/pandas-2.2.3-cp312-cp312
-win_amd64.whl (11.5 MB)
                                        ━━━━━━━ 11.5/11.5 MB 2.3 MB/s eta 0:00:00
Requirement already satisfied: requests in d:\1\envs\prj1\lib\site-packages (fro
m tushare) (2.32.3)
Collecting lxml (from tushare)
  Downloading https://mirrors.tuna.tsinghua.edu.cn/pypi/web/packages/2b/9c/8abe2
1585d20ef70ad9cec7562da4332b764ed69ec29b7389d23dfabcea0/lxml-5.3.1-cp312-cp312-w
in_amd64.whl (3.8 MB)
                                        ━━━━━━━ 3.8/3.8 MB 2.3 MB/s eta 0:00:00
Collecting simplejson (from tushare)
  Downloading https://mirrors.tuna.tsinghua.edu.cn/pypi/web/packages/bc/5d/4e243
e937fa3560107c69f6f7c2eed8589163f5ed14324e864871daa2dd9/simplejson-3.20.1-cp312-
cp312-win_amd64.whl (75 kB)
```

```
traitlets                5.14.3               py312haa95532_0       https:
tushare                  1.4.19                        pypi_0       pypi
typing-extensions        4.12.2                        pypi_0       pypi
tzdata                   2025.1                        pypi_0       pypi
ucrt                     10.0.22621.0             h57928b3_1       conda-
urllib3                  2.3.0                py312haa95532_0       https:
vc                       14.42                     haa95532_4       https:
vc14_runtime             14.42.34438              hfd919c2_24      conda-
vs2015_runtime           14.42.34438              h7142326_24      conda-
wcwidth                  0.2.5                 pyhd3eb1b0_0        https:
websocket-client         1.8.0                         pypi_0       pypi
wheel                    0.45.1               py312haa95532_0       https:
win_inet_pton            1.1.0                py312haa95532_0       https:
xz                       5.6.4                     h4754444_1       https:
zlib                     1.3.1                     h2466b09_2       conda-
(prj1)
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ python
Python 3.12.9 | packaged by conda-forge | (main, Mar  4 2025, 22:37
Type "help", "copyright", "credits" or "license" for more informati
>>> import tushare
>>> tushare. __version__
'1.4.19'
```

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

```
(prj1)
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ conda env export
name: prj1
channels:
  - conda-forge
  - defaults
  - https://repo.anaconda.com/pkgs/main
  - https://repo.anaconda.com/pkgs/r
  - https://repo.anaconda.com/pkgs/msys2
dependencies:
  - 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=pyhd8ed1ab_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
  - intel-openmp=2024.2.1=h57928b3_1083
  - ipython=8.30.0=py312haa95532_0
```

```
            websocket-client=1.8.0
prefix: D:\1\envs\prj1
(prj1)
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ conda env export -f environment.yml
(prj1)
```

```
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ conda deactivate
(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ conda env list
# conda environments:
#
base                  *  D:\1
prj1                     D:\1\envs\prj1
prj2                     D:\1\envs\prj2

(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ conda env remove -n prj1

Remove all packages in environment D:\1\envs\prj1:
```

```
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ conda env list
# conda environments:
#
base                  *  D:\1
prj2                     D:\1\envs\prj2

(base)
```
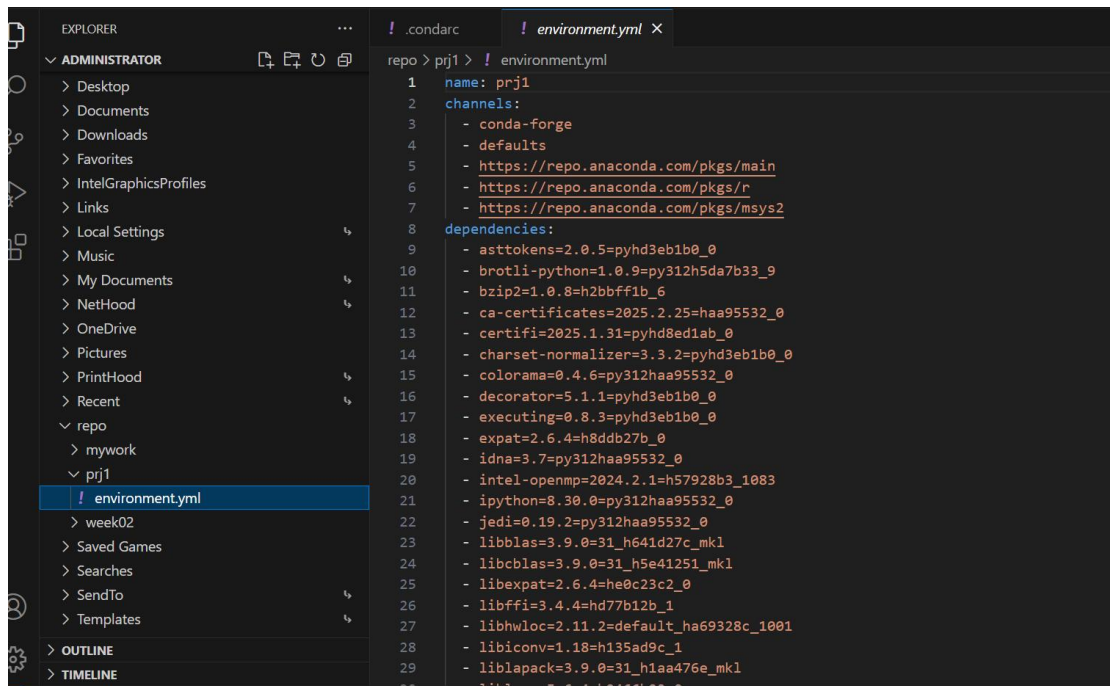
```
(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ conda env list
# conda environments:
#
base                 *  D:\1
prj2                    D:\1\envs\prj2

(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ cd repo
(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~/repo
$ ls -l
total 4
drwxr-xr-x 1 Administrator 197121 0 Mar 13 16:45 mywork/
drwxr-xr-x 1 Administrator 197121 0 Mar 13 17:18 week02/
(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~/repo
$ mkdir prj1
(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~/repo
$ cd prj1
(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~/repo/prj1
$ mv ~/environment.yml ./
```



```
name: prj1
channels:
  - conda-forge
  - defaults
  - https://repo.anaconda.com/pkgs/main
  - https://repo.anaconda.com/pkgs/r
  - https://repo.anaconda.com/pkgs/msys2
dependencies:
  - 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=pyhd8ed1ab_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
  - intel-openmp=2024.2.1=h57928b3_1083
  - ipython=8.30.0=py312haa95532_0
  - jedi=0.19.2=py312haa95532_0
  - libblas=3.9.0=31_h641d27c_mkl
  - libcblas=3.9.0=31_h5e41251_mkl
  - libexpat=2.6.4=he0c23c2_0
  - libffi=3.4.4=hd77b12b_1
  - libhwloc=2.11.2=default_ha69328c_1001
  - libiconv=1.18=h135ad9c_1
  - liblapack=3.9.0=31_h1aa476e_mkl
```
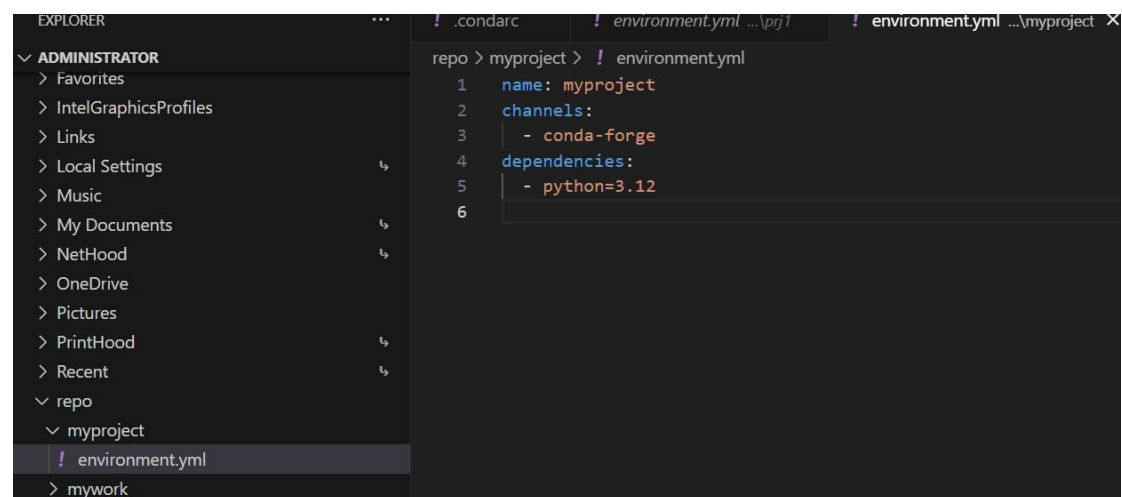


```
Administrator@DESKTOP-75CI4VE MINGW64 ~/repo/prj1
$ pwd
/c/Users/Administrator/repo/prj1
(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~/repo/prj1
$ conda env create
```

按照 教程 创建项目目录，在 VS Code 文本编辑器里安装一些支持 Python 开
发的常用扩展，编写 main.py 脚本，创建该项目专用的 Conda 环境，在终端里
激活该环境并成功运行该脚本

```
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ pwd
/c/Users/Administrator
(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ mkdir myproject
(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~
$ cd repo
(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~/repo
$ mkdir myproject
(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~/repo
$ cd myproject
(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~/repo/myproject
$ cat environment.yml
name: myproject
channels:
  - conda-forge
dependencies:
  - python=3.12
  (base)
Administrator@DESKTOP-75CI4VE MINGW64 ~/repo/myproject
$ ls -l
total 1
```

EXPLORER   ! .condarc   ! environment.yml ...\prj1   ! environment.yml ...\myproject ✕

∨ ADMINISTRATOR   repo > myproject > ! environment.yml
  > Favorites   1   name: myproject
  > IntelGraphicsProfiles   2   channels:
  > Links   3   - conda-forge
  > Local Settings   ↵   4   dependencies:
  > Music   5   - python=3.12
  > My Documents   ↵   6
  > NetHood   ↵
  > OneDrive
  > Pictures
  > PrintHood   ↵
  > Recent   ↵
  ∨ repo
    ∨ myproject
      ! environment.yml
    > mywork

```
(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~/repo/myproject
$ conda env list
# conda environments:
#
base                   *  D:\1
myproject                 D:\1\envs\myproject
prj1                      D:\1\envs\prj1
prj2                      D:\1\envs\prj2

(base)
Administrator@DESKTOP-75CI4VE MINGW64 ~/repo/myproject
$ conda activate myproject
(myproject)
Administrator@DESKTOP-75CI4VE MINGW64 ~/repo/myproject
$ conda list
# packages in environment at D:\1\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
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
```

```
.condarc          environment.yml          main.py  X      Extensio

repo > myproject > 🐍 main.py
1    def main():
2        print("Hello, conda!")
3
4
5    if __name__ == "__main__":
6        main()
```

```
Administrator@DESKTOP-75CI4VE MINGW64 ~/repo/myproject
$ python main.py
Hello, conda!
(myproject)
```

```
1     import pandas as pd
2
3
4     def main():
5         print("Hello, conda!")
6         print (pd.__version__)
7         print (pd.__file__)
8
9     if __name__ == "__main__":
10        main()
```

```
$ python main.py
Hello, conda!
(myproject)
Administrator@DESKTOP-75CI4VE MINGW64 ~/repo/myproject
$ python main.py
Hello, conda!
2.2.3
D:\1\envs\myproject\Lib\site-packages\pandas\__init__.py
(myproject)
```