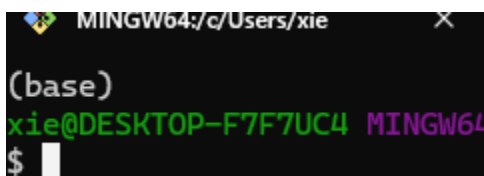


1. 在自己的终端 (比如 Git Bash、Zsh 等) 配置好 Conda Init, 使得启动终端后, 在提示符 (比如 \$、%) 前能够看到 (base)

```
xie@DESKTOP-F7F7UC4 MINGW64 ~  
$ which conda  
/c/Users/xie/anaconda3/Scripts/conda  
  
xie@DESKTOP-F7F7UC4 MINGW64 ~  
$ conda init  
no change C:\Users\xie\anaconda3\Scripts\conda.exe  
no change C:\Users\xie\anaconda3\Scripts\conda-env.exe  
no change C:\Users\xie\anaconda3\Scripts\conda-script.py  
no change C:\Users\xie\anaconda3\Scripts\conda-env-script.py  
no change C:\Users\xie\anaconda3\condabin\conda.bat  
no change C:\Users\xie\anaconda3\Library\bin\conda.bat  
no change C:\Users\xie\anaconda3\condabin\_conda_activate.bat  
no change C:\Users\xie\anaconda3\condabin\rename_tmp.bat  
no change C:\Users\xie\anaconda3\condabin\conda_auto_activate.bat  
no change C:\Users\xie\anaconda3\condabin\conda_hook.bat  
no change C:\Users\xie\anaconda3\Scripts\activate.bat  
no change C:\Users\xie\anaconda3\condabin\activate.bat  
no change C:\Users\xie\anaconda3\condabin\deactivate.bat  
modified C:\Users\xie\anaconda3\Scripts\activate  
modified C:\Users\xie\anaconda3\Scripts\deactivate  
modified C:\Users\xie\anaconda3\etc\profile.d\conda.sh  
modified C:\Users\xie\anaconda3\etc\fish\conf.d\conda.fish  
no change C:\Users\xie\anaconda3\shell\condabin\Conda.psm1  
modified C:\Users\xie\anaconda3\shell\condabin\conda-hook.ps1  
no change C:\Users\xie\anaconda3\Lib\site-packages\xontrib\conda.xsh  
modified C:\Users\xie\anaconda3\etc\profile.d\conda.csh  
modified C:\Users\xie\Documents\WindowsPowerShell\profile.ps1  
modified HKEY_CURRENT_USER\Software\Microsoft\Command Processor\AutoRun  
  
==> For changes to take effect, close and re-open your current shell. <==
```

```
xie@DESKTOP-F7F7UC4 MINGW64 ~  
$ which conda  
/c/Users/xie/anaconda3/Scripts/conda  
  
xie@DESKTOP-F7F7UC4 MINGW64 ~  
$ conda init  
no change C:\Users\xie\anaconda3\Scripts\conda.exe  
no change C:\Users\xie\anaconda3\Scripts\conda-env.exe  
no change C:\Users\xie\anaconda3\Scripts\conda-script.py  
no change C:\Users\xie\anaconda3\Scripts\conda-env-script.py  
no change C:\Users\xie\anaconda3\condabin\conda.bat  
no change C:\Users\xie\anaconda3\Library\bin\conda.bat  
no change C:\Users\xie\anaconda3\condabin\_conda_activate.bat  
no change C:\Users\xie\anaconda3\condabin\rename_tmp.bat  
no change C:\Users\xie\anaconda3\condabin\conda_auto_activate.bat  
no change C:\Users\xie\anaconda3\condabin\conda_hook.bat  
no change C:\Users\xie\anaconda3\Scripts\activate.bat  
no change C:\Users\xie\anaconda3\condabin\activate.bat  
no change C:\Users\xie\anaconda3\condabin\deactivate.bat  
modified C:\Users\xie\anaconda3\Scripts\activate  
modified C:\Users\xie\anaconda3\Scripts\deactivate  
modified C:\Users\xie\anaconda3\etc\profile.d\conda.sh  
modified C:\Users\xie\anaconda3\etc\fish\conf.d\conda.fish  
no change C:\Users\xie\anaconda3\shell\condabin\Conda.psm1  
modified C:\Users\xie\anaconda3\shell\condabin\conda-hook.ps1  
no change C:\Users\xie\anaconda3\Lib\site-packages\xontrib\conda.xsh  
modified C:\Users\xie\anaconda3\etc\profile.d\conda.csh  
modified C:\Users\xie\Documents\WindowsPowerShell\profile.ps1  
modified HKEY_CURRENT_USER\Software\Microsoft\Command Processor\AutoRun  
  
==> For changes to take effect, close and re-open your current shell. <==
```



- 2 使用 conda info 命令查看本机 Conda 的配置信息

```
(base)
xie@DESKTOP-F7F7UC4 MINGW64 ~
$ conda info

active environment : base
active env location : C:\Users\xie\anaconda3
  shell level      : 1
  user config file : C:\Users\xie\.condarc
populated config files : C:\Users\xie\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=broadwell
                  __conda=24.9.2=0
                  __win=0=0
base environment   : C:\Users\xie\anaconda3 (writable)
conda av data dir  : C:\Users\xie\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      : C:\Users\xie\anaconda3\pkgs
                  C:\Users\xie\.conda\pkgs
                  C:\Users\xie\AppData\Local\conda\conda\pkgs
envs directories   : C:\Users\xie\anaconda3\envs
                  C:\Users\xie\.conda\envs
                  C:\Users\xie\AppData\Local\conda\conda\envs
platform           : win-64
user-agent          : conda/24.9.2 requests/2.32.3 CPython/3.12.7 Windows/10 Windows/10.0.19045 solver
mambapy/1.5.8 aauf/0.4.4 c/ s/ e/
```

3 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)
xie@DESKTOP-F7F7UC4 MINGW64 ~
$ conda env list
# conda environments:
#
base * C:\Users\xie\anaconda3
```

环境名称：第一列展示的是各个 Conda 环境的名称。base 是安装 Anaconda 时自动创建的基础环境，xie\anaconda3 是用户自行创建的环境。

激活标识：带有 * 号的环境表示当前处于激活状态的环境。

环境路径：第二列显示的是每个环境在系统中的安装路径。通过路径可以了解到环

境的存储位置，方便进行管理和维护**环境的概念理解**

Conda 环境是一种相互隔离的软件环境，它允许用户在同一台计算机上同时管理多个不同的 Python 版本和软件包集合。不同的项目往往依赖于不同版本的 Python 或者特定的软件包，使用 Conda 环境能够避免这些依赖之间产生冲突。

例如，一个项目需要 Python 3.7 版本和特定版本的 NumPy 才能正常运行，而另一个项目则需要 Python 3.9 版本和不同版本的 NumPy。在这种情况下，

用户可以为每个项目分别创建独立的 Conda 环境，并在每个环境中安装所需的 Python 版本和软件包，从而确保每个项目都能在适合的环境中稳定运行。

通过 `conda env list` 命令，用户可以清晰地了解系统中存在哪些 Conda 环境以及它们的位置，便于对这些环境进行管理、切换和删除等操作。

4 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

```
(base)
xie@DESKTOP-F7F7UC4 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\xie\anaconda3\envs\prj1

added / updated specs:
- python=3.12
- requests

The following packages will be downloaded:
```

package	build	
brotli-python-1.0.9	py312h5da7b33_9	347 KB
bzip2-1.0.8	h2bbff1b_6	90 KB
ca-certificates-2025.2.25	haa95532_0	130 KB
certifi-2025.1.31	py312haa95532_0	164 KB
charset-normalizer-3.3.2	pyhd3eb1b0_0	44 KB
expat-2.6.4	h8ddb27b_0	257 KB
idna-3.7	py312haa95532_0	133 KB
libffi-3.4.4	hd77b12b_1	122 KB

```
tk-8.6.14 | h0416ee5_0 | 3.5 MB
tzdata-2025a | h04d1e81_0 | 117 KB
urllib3-2.3.0 | py312haa95532_0 | 238 KB
vc-14.42 | haa95532_4 | 11 KB
vs2015_runtime-14.42.34433 | he0abc0d_4 | 1.2 MB
wheel-0.45.1 | py312haa95532_0 | 177 KB
win_inet_pton-1.1.0 | py312haa95532_0 | 10 KB
xz-5.6.4 | h4754444_1 | 280 KB
zlib-1.2.13 | h8cc25b3_1 | 131 KB
-----
Total: 37.5 MB

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
certifi pkgs/main/win-64::certifi-2025.1.31-py312haa95532_0
charset-normalizer pkgs/main/noarch::charset-normalizer-3.3.2-pyhd3eb1b0_0
expat pkgs/main/win-64::expat-2.6.4-h8ddb27b_0
idna pkgs/main/win-64::idna-3.7-py312haa95532_0
libffi pkgs/main/win-64::libffi-3.4.4-hd77b12b_1
openssl pkgs/main/win-64::openssl-3.0.16-h3f729d1_0
pip pkgs/main/win-64::pip-25.0-py312haa95532_0
pysocks pkgs/main/win-64::pysocks-1.7.1-py312haa95532_0
python pkgs/main/win-64::python-3.12.9-h14ffc60_0
requests pkgs/main/win-64::requests-2.32.3-py312haa95532_1
setuptools pkgs/main/win-64::setuptools-75.8.0-py312haa95532_0
sqlite pkgs/main/win-64::sqlite-3.45.3-h2bbff1b_0
tk pkgs/main/win-64::tk-8.6.14-h0416ee5_0
tzdata pkgs/main/noarch::tzdata-2025a-h04d1e81_0
urllib3 pkgs/main/win-64::urllib3-2.3.0-py312haa95532_0
vc pkgs/main/win-64::vc-14.42-haa95532_4
wheel pkgs/main/win-64::wheel-0.45.1-py312haa95532_0

Proceed ([y]/n)? y

Downloading and Extracting Packages:
tk-8.6.14 155.9 MB ##### 66%
certifi-2025.1.31 22.9 MB ##### 100%
pip-25.0 19.6 MB ##### 100%
urllib3-2.3.0 11.9 MB ##### 100%
tzdata-2025a 10.4 MB ##### 100%
requests-2.32.3 9.2 MB ##### 100%
setuptools-75.8.0 6.5 MB ##### 100%
expat-2.6.4 2.7 MB ##### 100%
pysocks-1.7.1 2.5 MB ##### 100%
idna-3.7 2.4 MB ##### 100%
brotli-python-1.0.9 288 KB ##### 100%
python-dateutil-2.9.0 280 KB ##### 100%
zlib-1.2.13 257 KB ##### 100%
sqlite-3.45.3 215 KB ##### 100%
wheel-0.45.1 177 KB ##### 100%
packaging-24.2 168 KB ##### 100%
libffi-3.4.4 167 KB ##### 100%
bzip2-1.0.8 149 KB ##### 100%
wheel-0.45.1 145 KB ##### 100%
python-tzdata-2025.2 140 KB ##### 100%
bottleneck-1.4.2 129 KB ##### 100%
xl-service-2.4.0 66 KB ##### 100%
xl-1.16.0 18 KB ##### 100%
pybind11-absl-5 14 KB ##### 100%
numpy-2.0.2 12 KB ##### 100%
blas-1.0 6 KB ##### 100%
```

```
# $ conda deactivate

(base)
xie@DESKTOP-F7F7UC4 MINGW64 ~
$ conda env list
# conda environments:
#
base          * C:\Users\xie\anaconda3
prj1          C:\Users\xie\anaconda3\envs\prj1
prj2          C:\Users\xie\anaconda3\envs\prj2

(base)
xie@DESKTOP-F7F7UC4 MINGW64 ~
$ conda activate prj1
(prj1)
xie@DESKTOP-F7F7UC4 MINGW64 ~
$ which python
/c/Users/xie/anaconda3/envs/prj1/python
(prj1)
xie@DESKTOP-F7F7UC4 MINGW64 ~
$ python --version
Python 3.12.9
(prj1)
xie@DESKTOP-F7F7UC4 MINGW64 ~
```

```
$ python --version
Python 3.12.9
(prj1)
xie@DESKTOP-F7F7UC4 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.
>>> import requests
>>> requests
<module 'requests' from 'C:\Users\xie\anaconda3\envs\prj1\Lib\site-packages\requests\__init__.py'>
>>>
```

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

```
xie@DESKTOP-F7F7UC4 MINGW64 ~
$ conda list
# packages in environment at C:\Users\xie\anaconda3\envs\prj:
#
# Name                    Version                    Build
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
```

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

```
prompt_toolkit           pkgs/main/win-64::prompt-toolkit-3.0.43-py312haa95532_0
prompt_toolkit           pkgs/main/noarch::prompt_toolkit-3.0.43-hd3eb1b0_0
pure_eval                 pkgs/main/noarch::pure_eval-0.2.2-pyhd3eb1b0_0
pygments                 pkgs/main/win-64::pygments-2.15.1-py312haa95532_1
six                       pkgs/main/noarch::six-1.16.0-pyhd3eb1b0_1
stack_data               pkgs/main/noarch::stack_data-0.2.0-pyhd3eb1b0_0
traitlets                pkgs/main/win-64::traitlets-5.14.3-py312haa95532_0
wcwidth                  pkgs/main/noarch::wcwidth-0.2.5-pyhd3eb1b0_0

Proceed ([y]/n)? y

Downloading and Extracting Packages:
pygments-2.15.1           1.8 MB |#####7| 63%
ipython-8.30.0            1.5 MB |#####2| 97%
jedi-0.19.2              1.2 MB |#####5| 99%
prompt_toolkit-3.0.4      733 KB |#####100%
parso-0.8.4              239 KB |#####100%
traitlets-5.14.3         221 KB |#####100%
colorama-0.4.6           53 KB |#####100%
wcwidth-0.2.5            26 KB |#####100%
stack_data-0.2.0         22 KB |#####100%
asttokens-2.0.5          20 KB |#####100%
matplotlib-inline-0.      19 KB |#####100%
executing-0.8.3          18 KB |#####100%
pure_eval-0.2.2          14 KB |#####100%
decorator-5.1.1          12 KB |#####100%
prompt_toolkit-3.0.4      5 KB |#####100%
```

environment location: C:\Users\xie\anaconda3\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
prompt_toolkit-3.0.43	hd3eb1b0_0	5 KB
pure_eval-0.2.2	pyhd3eb1b0_0	14 KB
pygments-2.15.1	py312haa95532_1	1.8 MB
stack_data-0.2.0	pyhd3eb1b0_0	22 KB
traitlets-5.14.3	py312haa95532_0	221 KB
wcwidth-0.2.5	pyhd3eb1b0_0	26 KB
Total:		5.8 MB

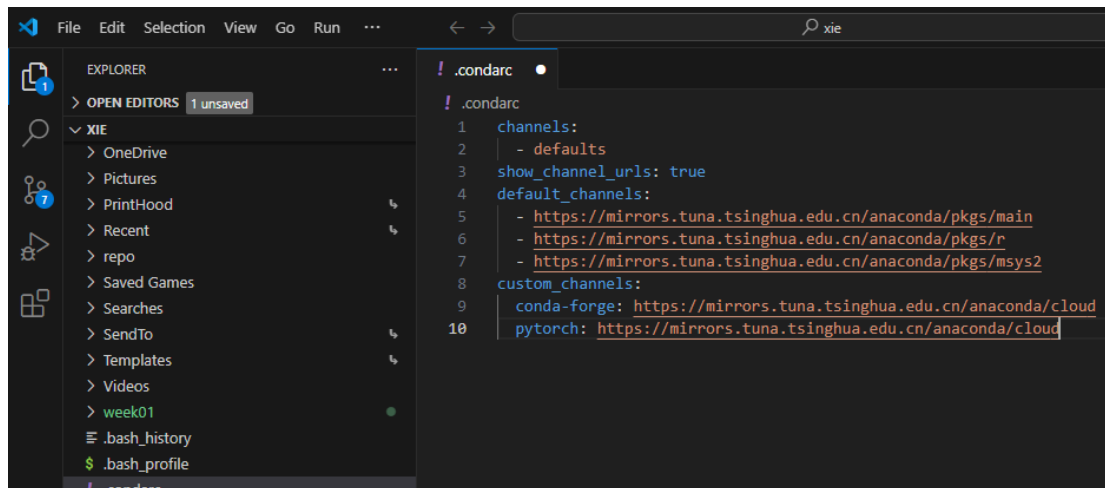
The following NEW packages will be INSTALLED:

asttokens	pkgs/main/noarch::asttokens-2.0.5-pyhd3eb1b0_0
colorama	pkgs/main/win-64::colorama-0.4.6-py312haa95532_0

done


```
xie@DESKTOP-F7F7UC4 MINGW64 ~
$ conda list
# packages in environment at C:\Users\xie\anaconda3\envs\prj1
#
# Name                                Version                                Build                                Ch
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
```

7 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



```
Remove unused packages and caches.

options:
  -h, --help                Show this help message and exit.

Removal Targets:
  -a, --all                 Remove index cache, lock files, unused cache packages, tarballs, and logfiles.
  -i, --index-cache        Remove index cache.
  -p, --packages            Remove unused packages from writable package caches. WARNING: This does not check for packages installed using symlinks back to the package cache.
  -t, --tarballs           Remove cached package tarballs.
  -f, --force-pkgs-dirs    Remove *all* writable package caches. This option is not included with the --all flag. WARNING: This will break environments with packages installed using symlinks back to the package cache.
  -c [TEMPFILES ...], --tempfiles [TEMPFILES ...] Remove temporary files that could not be deleted earlier due to being in-use. The argument for the --tempfiles flag is a path (or list of paths) to the environment(s) where the tempfiles should be found and removed.
  -l, --logfiles           Remove log files.

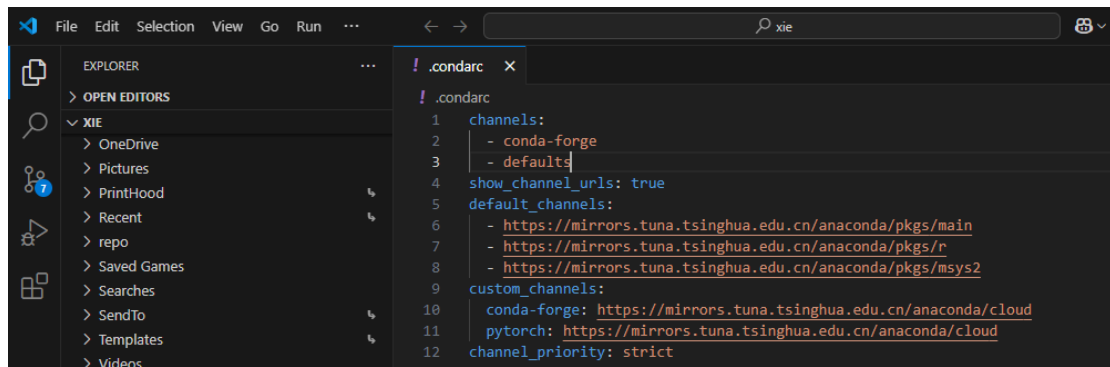
Output, Prompt, and Flow Control Options:
  --json                   Report all output as json. Suitable for using conda programmatically.
  -v, --verbose            Can be used multiple times. Once for detailed output, twice for INFO logging, thrice for DEBUG logging, four times for TRACE logging.
  -q, --quiet             Do not display progress bar.
  -d, --dry-run           Only display what would have been done.
  -y, --yes               Sets any confirmation values to 'yes' automatically. Users will not be asked to confirm any adding, deleting, or installing, etc.

Examples::

  conda clean --tarballs
(prj1)
xie@DESKTOP-F7F7UC4 MINGW64 ~
$ conda clean -i
```

```
xie@DESKTOP-F7F7UC4 MINGW64 ~
$ conda clean -i
Will remove 1 index cache(s).
Proceed ([y]/n)? y

(prj1)
xie@DESKTOP-F7F7UC4 MINGW64 ~
$ conda create -n myenv numpy
Channels:
  - defaults
  - https://repo.anaconda.com/pkg/main
  - https://repo.anaconda.com/pkg/r
  - https://repo.anaconda.com/pkg/msys2
Platform: win-64
Collecting package metadata (repodata.json): \
```



```
File Edit Selection View Go Run ... xie
EXPLORER
> OPEN EDITORS
XIE
  > OneDrive
  > Pictures
  > PrintHood
  > Recent
  > repo
  > Saved Games
  > Searches
  > SendTo
  > Templates
  > Videos
! .condarc x
! .condarc
1 channels:
2   - conda-forge
3   - default
4 show_channel_urls: true
5 default_channels:
6   - https://mirrors.tuna.tsinghua.edu.cn/anaconda/pkgs/main
7   - https://mirrors.tuna.tsinghua.edu.cn/anaconda/pkgs/r
8   - https://mirrors.tuna.tsinghua.edu.cn/anaconda/pkgs/msys2
9 custom_channels:
10  conda-forge: https://mirrors.tuna.tsinghua.edu.cn/anaconda/cloud
11  pytorch: https://mirrors.tuna.tsinghua.edu.cn/anaconda/cloud
12 channel_priority: strict
```

```
(prj1)
xie@DESKTOP-F7F7UC4 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): /
```

```
The following NEW packages will be INSTALLED:

intel-openmp      conda-forge/win-64::intel-openmp-2024.2.1-h57928b3_1083
libblas           conda-forge/win-64::libblas-3.9.0-31_h641d27c_mkl
libcblas         conda-forge/win-64::libcblas-3.9.0-31_h5e41251_mkl
libexpat          conda-forge/win-64::libexpat-2.6.4-he0c23c2_0
libhwloc          conda-forge/win-64::libhwloc-2.11.2-default_ha69328c_1001
libiconv          conda-forge/win-64::libiconv-1.18-h135ad9c_1
liblapack         conda-forge/win-64::liblapack-3.9.0-31_h1aa476e_mkl
liblzma           conda-forge/win-64::liblzma-5.6.4-h2466b09_0
libsqlite         conda-forge/win-64::libsqlite-3.49.1-h67fdade_2
libwinpthread     conda-forge/win-64::libwinpthread-12.0.0-r4.gg4f2fc60ca-h57928b3_9
libxml2           conda-forge/win-64::libxml2-2.13.6-he286e8c_0
libzlib           conda-forge/win-64::libzlib-1.3.1-h2466b09_2
mkl               conda-forge/win-64::mkl-2024.2.2-h66d3029_15
numpy             conda-forge/win-64::numpy-2.2.4-py312h3150e54_0
packaging         conda-forge/noarch::packaging-24.2-pyhd8ed1ab_2
polars            conda-forge/win-64::polars-1.24.0-py312h3fc9636_0
python_abi        conda-forge/win-64::python_abi-3.12-5_cp312
tbb               conda-forge/win-64::tbb-2021.13.0-h62715c5_1
ucrt              conda-forge/win-64::ucrt-10.0.22621.0-h57928b3_1
vc14_runtime      conda-forge/win-64::vc14_runtime-14.42.34438-hfd919c2_24

The following packages will be UPDATED:

openssl          pkgs/main::openssl-3.0.16-h3f729d1_0 --> conda-forge::openssl-3.4.1-ha4e3fda_0
python           pkgs/main::python-3.12.9-h14fffc60_0 --> conda-forge::python-3.12.9-h3f84c4b_1_cpython
vs2015_runtime   pkgs/main::vs2015_runtime-14.42.34433~ --> conda-forge::vs2015_runtime-14.42.34438-h7142326_24
zlib             pkgs/main::zlib-1.2.13-h8cc25b3_1 --> conda-forge::zlib-1.3.1-h2466b09_2

The following packages will be SUPERSEDED by a higher-priority channel:
done
```

```
$ which python
bash: which: command not found
(prj1)
xie@DESKTOP-F7F7UC4 MINGW64 ~
$ which python
/c/Users/xie/anaconda3/envs/prj1/python
(prj1)
xie@DESKTOP-F7F7UC4 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
```

- 8 使用 pip install 命令往 Conda 环境里安装 Python 软件包，并验证版本
- 9 根据 [文档](#) 配置 PyPI 清华镜像，加快 pip install 安装软件包的速度
- 8 9 合并

```

Collecting python-dateutil<=2.8.2 (from pandas->tushare)
  Using cached 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.metadata (1.4 kB)
Requirement already satisfied: charset-normalizer<4,>=2 in c:\users\xie\anaconda3\envs\prj1\lib\site-packages (from requests->tushare) (3.3.2)
Requirement already satisfied: idna<4,>=2.5 in c:\users\xie\anaconda3\envs\prj1\lib\site-packages (from requests->tushare) (3.7)
Requirement already satisfied: urllib3<3,>=1.21.1 in c:\users\xie\anaconda3\envs\prj1\lib\site-packages (from requests->tushare) (2.3.0)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\xie\anaconda3\envs\prj1\lib\site-packages (from requests->tushare) (2025.1.31)
Requirement already satisfied: colorama in c:\users\xie\anaconda3\envs\prj1\lib\site-packages (from tqdm->tushare) (0.4.6)
Requirement already satisfied: six>=1.5 in c:\users\xie\anaconda3\envs\prj1\lib\site-packages (from python-dateutil<=2.8.2->pandas->tushare) (1.16.0)
Collecting soupsieve>1.2 (from beautifulsoup4->bs4->tushare)
  Using cached soupsieve-2.6-py3-none-any.whl.metadata (4.6 kB)
Collecting typing-extensions>=4.0.0 (from beautifulsoup4->bs4->tushare)
  Using cached typing_extensions-4.12.2-py3-none-any.whl.metadata (3.0 kB)
Downloading tushare-1.4.19-py3-none-any.whl (142 kB)
Downloading websocket_client-1.8.0-py3-none-any.whl (58 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 187.7 kB/s eta 0:00:00
Downloading pandas-2.2.3-cp312-cp312-win_amd64.whl (11.5 MB)
   11.5/11.5 MB 274.0 kB/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

```

```

xie@DESKTOP-F7F7UC4 MINGW64 ~
$
(prj1)
xie@DESKTOP-F7F7UC4 MINGW64 ~
$ python -m pip install --upgrade pip
Requirement already satisfied: pip in c:\users\xie\anaconda3\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 1.0 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)
xie@DESKTOP-F7F7UC4 MINGW64 ~
$ pip config set global.index-url https://mirrors.tuna.tsinghua.edu.cn/pypi/web/simple
Writing to C:\Users\xie\AppData\Roaming\pip\pip.ini
(prj1)

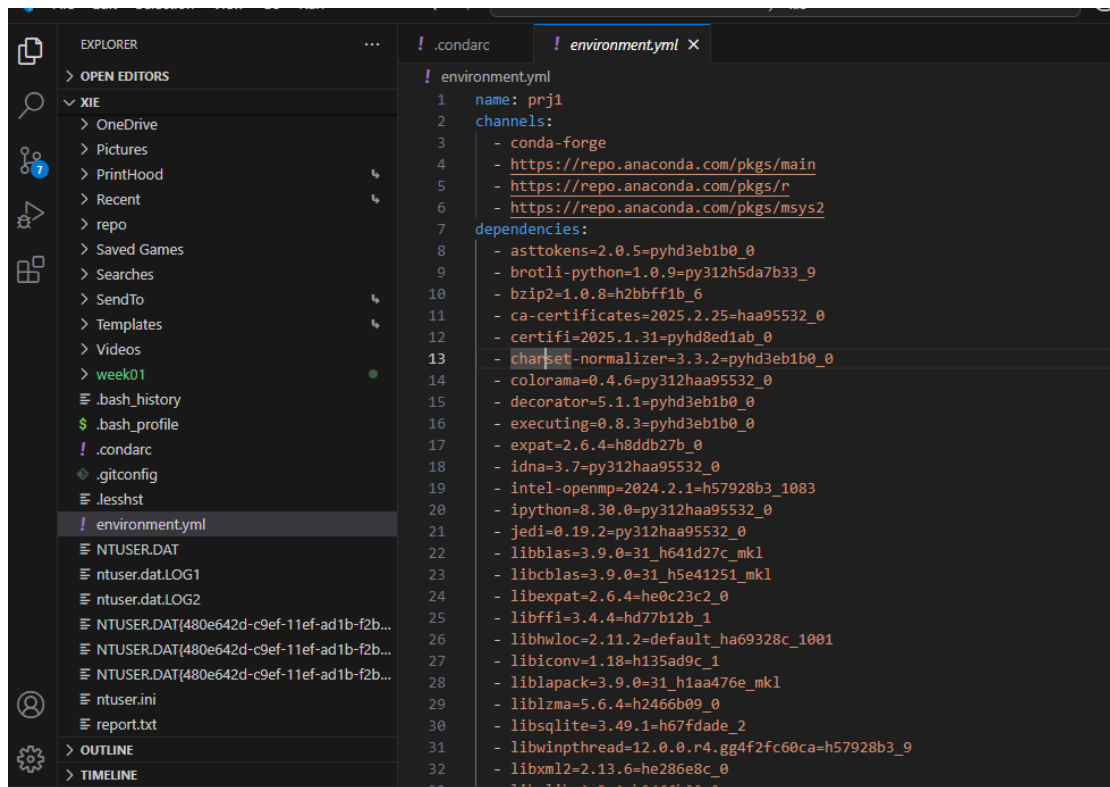
```

```

c
c14_runtime
s2015_runtime
cwidth
ebsocket-client
heel
in_inet_pton
z
lib
prj1)
ie@DESKTOP-F7F7UC4 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
>> tushare.__file__
C:\Users\xie\anaconda3\envs\prj1\Lib\site-packages\tushare\__init__.py

```

10 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



EnvironmentLocationNotFound: Not a conda environment: C:\Users\xie\anaconda3\envs\prj1

(base)

xie@DESKTOP-F7F7UC4 MINGW64 ~

\$ conda env list

conda environments:

#

base

* C:\Users\xie\anaconda3

prj1

C:\Users\xie\anaconda3\envs\prj1

prj2

C:\Users\xie\anaconda3\envs\prj2

(base)

xie@DESKTOP-F7F7UC4 MINGW64 ~

\$ conda env remove -n prj1

Remove all packages in environment C:\Users\xie\anaconda3\envs\prj1:

Package Plan

environment location: C:\Users\xie\anaconda3\envs\prj1

The following packages will be REMOVED:

```

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

```

```

Node.js v20.18.2
(base)
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/prj1
$ conda env list
# conda environments:
#
base                  * C:\Users\xie\anaconda3
prj2                  C:\Users\xie\anaconda3\envs\prj2

(base)
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/prj1
$ pwd
/c/Users/xie/repo/prj1
(base)
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/prj1
$ ls -l
total 4
-rw-r--r-- 1 xie 197121 2513  3月 21 15:41 environment.yml
(base)
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/prj1
$ conda env create
C:\Users\xie\anaconda3\Lib\argparse.py:2006: FutureWarning: 'remote_definition' is deprecated and will be removed in 2
ile=URL' instead.
  action(self, namespace, argument_values, option_string)
Warning: you have pip-installed dependencies in your environment file, but you do not list pip itself as one of your c
not use the correct pip to install your packages, and they may end up in the wrong place. Please add an explicit pip
r you, but still nagging you.
Channels:
- conda-forge
- https://repo.anaconda.com/pkgs/main
- https://repo.anaconda.com/pkgs/r
- https://repo.anaconda.com/pkgs/msys2
Platform: win-64

```

```

xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/prj1
$ conda env create
C:\Users\xie\anaconda3\Lib\argparse.py:2006: FutureWarning: 'remote_definition' is deprecated and will be removed in 25.9. Use 'conda env create --file=URL' instead.
  action(self, namespace, argument_values, option_string)
Warning: you have pip-installed dependencies in your environment file, but you do not list pip itself as one of your conda dependencies. Conda ma
not use the correct pip to install your packages, and they may end up in the wrong place. Please add an explicit pip dependency. I'm adding one
r you, but still nagging you.
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: failed
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: failed

LibMambaUnsatisfiableError: Encountered problems while solving:
- package brotli-python-1.0.9-py312h5da7b33_9 is excluded by strict repo priority
- package bzip2-1.0.8-h2bbff1b_6 is excluded by strict repo priority
- package ca-certificates-2025.2.25-haa95532_0 is excluded by strict repo priority
- package colorama-0.4.6-py312haa95532_0 is excluded by strict repo priority
- package decorator-5.1.1-pyhd3eb1b0_0 is excluded by strict repo priority
- package expat-2.6.4-h8ddb27b_0 is excluded by strict repo priority

```

Prj1 安装失败 提示 remote_definition 这个特性在 Conda 后续的 25.9 版本中会被移除。当前使用的 conda env create 命令里可能隐式地使用了这个即将被弃用的特性，建议使用 conda env create --file=URL 这种方式来创建环境，避免在未来版本中出现兼容性问题。视频课 part4 20 分钟

11 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
下面将详细解释 Conda 与 Python 的关系、Conda-Forge 与 Conda 的关系，以及 Python 解释器、第三方软件包、PyPI 软件仓库和程序/软件包的路径问题。

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，它可以跨语言使用，不过在 Python 生态中应用广泛。Conda 与 Python 的关系主要体现在以下方面：

- **环境隔离**：Conda 能创建独立的 Python 环境，每个环境可安装不同版本的 Python 以及特定版本的软件包。例如，一个项目需要 Python 3.7，另一个项目需要 Python 3.9，

使用 Conda 就能为每个项目创建独立的环境，避免版本冲突。

- **包管理**：Conda 可以安装、更新和删除 Python 软件包。它会自动处理软件包之间的依赖关系，确保安装的软件包能兼容。比如，当你使用 ``conda install numpy`` 时，Conda 会自动安装 ``numpy`` 及其依赖项。

Conda-Forge 与 Conda 的关系

Conda-Forge 是一个社区驱动的 Conda 软件包仓库，它和 Conda 的关系如下：

- **补充软件包源**：Conda 本身有官方的软件包源，但 Conda-Forge 提供了更多的软件包选择，尤其是一些社区开发的或者新兴的软件包。例如，某些特定领域的数据分析库，可能在官方源中没有，但能在 Conda-Forge 找到。

- **独立维护**：Conda-Forge 有自己的维护团队和构建系统，他们会及时更新软件包版本，确保用户能使用到最新的软件。你可以通过添加 Conda-Forge 渠道到 Conda 配置中，让 Conda 从这个仓库搜索和安装软件包，命令如下：

```
``bash
conda config --add channels conda-forge
``
```

Python 解释器、第三方软件包、PyPI 软件仓库

- **Python 解释器**：它是执行 Python 代码的程序。Python 有多种解释器，如 CPython（官方解释器）、Jython（运行在 Java 虚拟机上）等。Conda 可以管理不同版本的 Python 解释器，你可以使用 ``conda create -n myenv python=3.8`` 来创建一个包含 Python 3.8 解释器的环境。

- **第三方软件包**：指除了 Python 标准库之外的软件包，由开发者社区开发和维护。这些软件包能扩展 Python 的功能，例如 ``numpy`` 用于科学计算，``pandas`` 用于数据处理。使用 Conda 或 ``pip`` 可以方便地安装第三方软件包。

- **PyPI 软件仓库**：Python Package Index，是 Python 官方的软件包仓库，包含了大量的第三方软件包。``pip`` 是默认从 PyPI 下载和安装软件包的工具。例如，使用 ``pip install requests`` 会从 PyPI 下载并安装 ``requests`` 软件包。

程序/软件包的路径问题

- **Conda 环境路径**：每个 Conda 环境都有自己独立的安装路径，通常在 ``anaconda3/envs`` 目录下（Anaconda 安装在默认路径时）。例如，名为 ``myenv`` 的环境路径可能是 ``anaconda3/envs/myenv``。当激活一个 Conda 环境时，系统会将该环境的 ``bin`` 目录（在 Windows 上是 ``Scripts`` 目录）添加到系统的 ``PATH`` 环境变量中，这样就可以直接使用该环境中安装的程序和软件包。

- **Python 解释器路径**：在不同的 Conda 环境中，Python 解释器的路径也不同。例如，在 ``myenv`` 环境中，Python 解释器的路径可能是

``anaconda3/envs/myenv/bin/python``（在 macOS/Linux 上）或 ``anaconda3/envs/myenv/Scripts/python.exe``（在 Windows 上）。

- **第三方软件包路径**：第三方软件包安装在相应 Conda 环境的 ``lib/pythonX.X/site-packages`` 目录下（``X.X`` 是 Python 版本号）。例如，在 ``myenv`` 环境中，``numpy`` 软件包可能安装在 ``anaconda3/envs/myenv/lib/python3.8/site-packages/numpy`` 目录下。

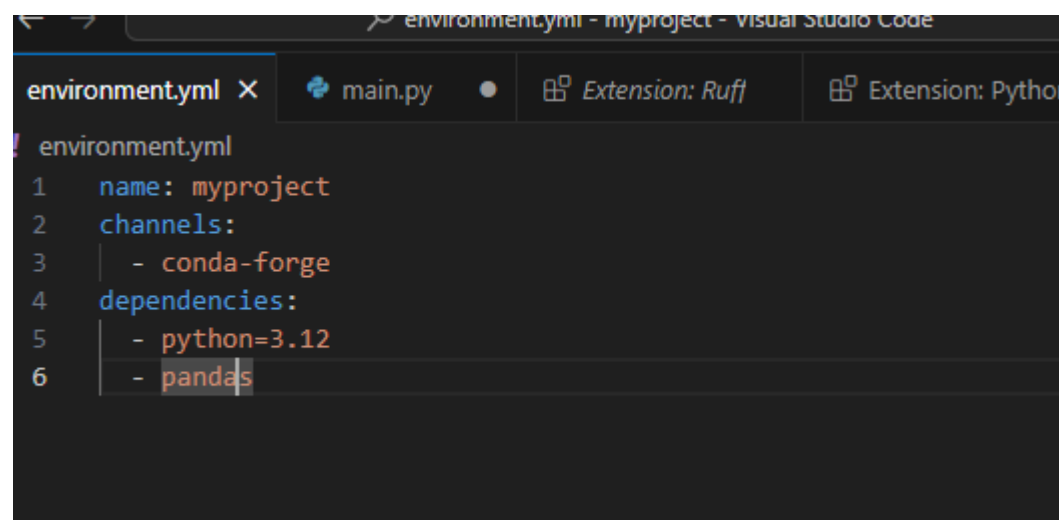
通过理解这些概念和路径问题，你可以更好地管理 Python 环境和软件包，避免因版本冲

突或路径问题导致的错误。

12 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

```
(base)
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/myproject
$ cat environment.yml
name: myproject
channels:
  - conda-forge
dependencies:
  - python=3.12(base)
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/myproject
$ pwd
/c/Users/xie/repo/myproject
(base)
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/myproject
$ conda env create
C:\Users\xie\anaconda3\Lib\argparse.py:2006: FutureWarning: 'remote_definition' is deprecated and will be removed in 25.9. Use 'conda env create --file=URL' instead.
  action(self, namespace, argument_values, option_string)
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

Downloading and Extracting Packages:
pip-25.0.1                | 1.2 MB | #####7
setuptools-75.8.2         | 760 KB | #####4
ca-certificates-2025     | 155 KB | #####1
tzdata-2025a             | 120 KB | #####
wheel-0.45.1              | 61 KB  | #####
bzip2-1.0.8               | 54 KB  | #####
libffi-3.4.6              | 40 KB  | #####7
vc-14.3                   | 17 KB  | #####
```



```
environment.yml
1 name: myproject
2 channels:
3   - conda-forge
4 dependencies:
5   - python=3.12
6   - pandas
```

```
(myproject)
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/myproject
$ conda env update
C:\Users\xie\anaconda3\Lib\argparse.py:2006: FutureWarning: 'remote_definition' is deprecated and will be removed in 25.9. Use 'conda env create --file=URL' instead.
  action(self, namespace, argument_values, option_string)
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): \
```



```

$ python main.py
Hello, conda!
(myproject)
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/myproject
$ python main.py
Hello, conda!
Traceback (most recent call last):
  File "C:\Users\xie\repo\myproject\main.py", line 9, in <module>
    main()
  File "C:\Users\xie\repo\myproject\main.py", line 6, in main
    print(pd.__version__)
          ^^^^^^^^^^^^^
NameError: name '__version__' is not defined
(myproject)
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/myproject
$ python main.py
Hello, conda!
2.2.3
C:\Users\xie\anaconda3\envs\myproject\Lib\site-packages\pandas\__init__.py
(myproject)
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/myproject
$

```

```

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

```

```

NameError: name '__version__' is not defined
(myproject)
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/myproject
$ python main.py
Hello, conda!
2.2.3
C:\Users\xie\anaconda3\envs\myproject\Lib\site-packages\pandas\__init__.py
(myproject)
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/myproject
$ curl -O 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  489k      0  0:06:42  0:06:42 --:--:-- 870k
(myproject)
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/myproject
$ ls -l
total 196846
-rw-r--r-- 1 xie 197121      87  3月 21 16:58 environment.yml
-rw-r--r-- 1 xie 197121 201568176  3月 21 17:18 EPA_SmartLocationDatabase_V3_Jan_2021_Final.csv
-rw-r--r-- 1 xie 197121     155  3月 21 17:10 main.py
(myproject)
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/myproject
$ ls -lh
total 193M
-rw-r--r-- 1 xie 197121   87  3月 21 16:58 environment.yml
-rw-r--r-- 1 xie 197121 193M  3月 21 17:18 EPA_SmartLocationDatabase_V3_Jan_2021_Final.csv
-rw-r--r-- 1 xie 197121  155  3月 21 17:10 main.py
(myproject)
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/myproject
$

```

```
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/myproject
$ python main.py
10.69% of U.S. residents live in highlywalkable neighborhoods.
(myproject)
xie@DESKTOP-F7F7UC4 MINGW64 ~/repo/myproject
```