

任务一

```
86152@LAPTOP-QOK67RV0 MINGW64 /
$ which conda
/d/Anaconda3_install/Scripts/conda

86152@LAPTOP-QOK67RV0 MINGW64 /
$ conda
usage: conda-script.py [-h] [-v] [--no-plugins] [-V] COMMAND ...

conda is a tool for managing and deploying applications, environments and packages.

options:
  -h, --help            Show this help message and exit.
  -v, --verbose          Can be used multiple times. Once for detailed output,
                        twice for INFO logging, thrice for DEBUG logging, four
                        times for TRACE logging.
  --no-plugins          Disable all plugins that are not built into conda.
  -V, --version          Show the conda version number and exit.

commands:
  The following built-in and plugins subcommands are available.

COMMAND
```

```
version.

86152@LAPTOP-QOK67RV0 MINGW64 /
$ which conda
/d/Anaconda3_install/Scripts/conda

86152@LAPTOP-QOK67RV0 MINGW64 /
$ conda init --help
usage: conda-script.py init [-h] [--all] [--user] [--no-user] [--system]
                        [--reverse] [--anaconda-prompt] [--json] [-v] [-q]
                        [-d]
                        [SHELLS ...]

Initialize conda for shell interaction.

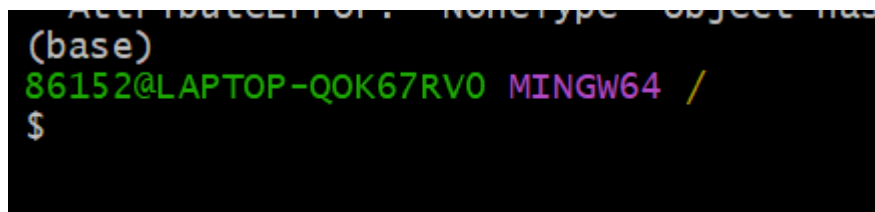
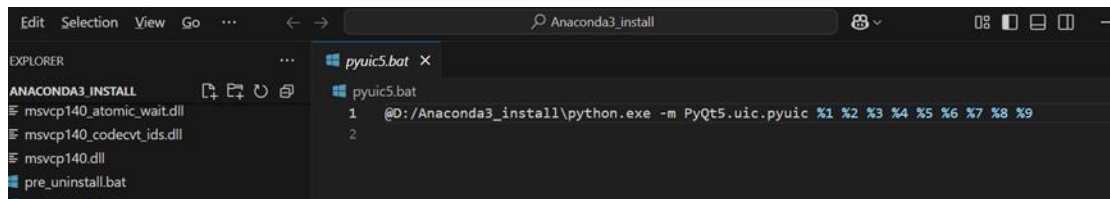
positional arguments:
  SHELLS                One or more shells to be initialized. If not given, the
                        default value is 'bash' on unix and 'cmd.exe' &
                        'powershell' on Windows. Use the '--all' flag to
                        initialize all shells. Available shells: ['bash',
                        'cmd.exe', 'fish', 'powershell', 'tcsh', 'xonsh', 'zsh']

options:
```

```
$ .bash_profile X
$ .bash_profile
1
2 # >>> conda initialize >>>
3 # !! Contents within this block are managed by 'conda init' !!
4 if [ -f '/d/Anaconda3_install/Scripts/conda.exe' ]; then
5 |     eval "$('/d/Anaconda3_install/Scripts/conda.exe' 'shell.bash' 'hook')"
6 | fi
7 # <<< conda initialize <<<
8
9
```

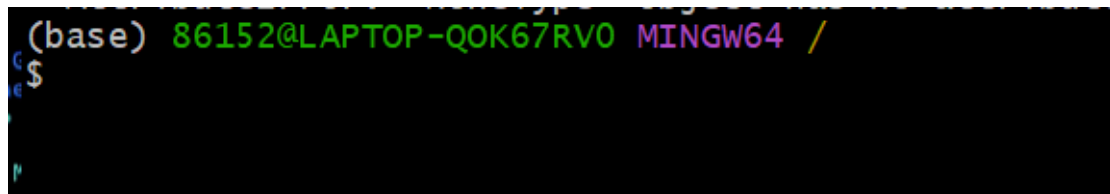
Bash_profile 在启动时能够运行里面的命令

用户名和计算机名为中文时，可能会出现报错。解决办法是，在 vs code 的 file 的 open folder 里面自己找到目标文件夹。但是由于 vs code 只是文本编辑器，只能查文本类型。

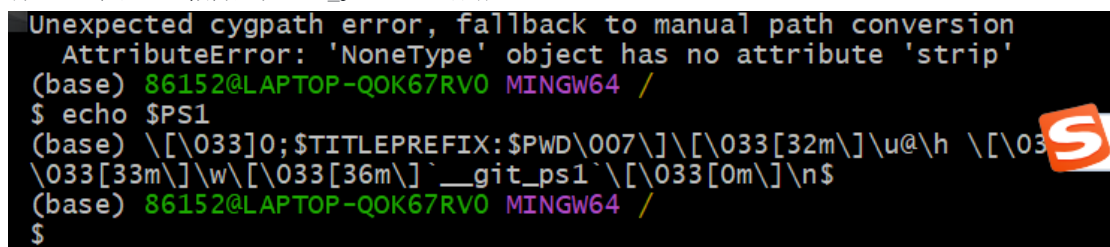


重新打开 git bash 后，出现 base。但问题是 bash 在用户名上面，接下来解决这一个问题。解决办法：

- 1、直接在 vs code 里面打开 git-prompt.sh,
- 2、进行下一步，删除第 13 行：PS1="\$PS1""\n" # new line，未删除，直接加了#号将这行变为注释



将PS1="\n\$PS1" 粘贴到 .bash_profile，保存



重新打开 git bash 终端，完成初始化，

任务二

使用 conda info 命令查看本机 Conda 的配置信息

```
conda info

active environment : base
active env location : D:\Anaconda3_install
shell level : 1
user config file : C:\Users\86152\.condarc
populated config files : D:\Anaconda3_install\.condarc
                        C:\Users\86152\.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=x86_64_v3
                  __conda=24.9.2=0
                  __win=0=0
```

user-agent

定义

User - Agent（用户代理）是一个特殊字符串头，是客户端（如浏览器、搜索引擎爬虫等）向服务器发送的标识。服务器可根据它来识别客户端类型，进而返回合适格式的内容。

作用

- **内容适配**：服务器依据 User - Agent 判断是桌面浏览器还是其他设备访问，从而返回对应布局和功能的面。例如，手机访问网页时，服务器若识别出移动设备的 User - Agent，可能返回移动端适配的

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) 86152@LAPTOP-QOK67RVO MINGW64 /
$ conda env list
# conda environments:
#
base * D:\Anaconda3_install

(base) 86152@LAPTOP-QOK67RVO MINGW64 /
```

解释conda 环境

定义

Conda 环境是一个隔离的软件运行环境，由 Anaconda 或 Miniconda 创建和管理。在这个环境里，可安装、运行特定版本的软件包及其依赖项，且不同环境间相互独立，避免软件包版本冲突。

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) 86152@LAPTOP-QOK67RV0 MINGW64 /
$ conda env list
# conda environments:
#
base                                * D:\Anaconda3_install

(base) 86152@LAPTOP-QOK67RV0 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: D:\Anaconda3_install\envs\prj1

added / updated specs:
- python=3.12
- requests

```

位置

完成第一个创建

安装的这些软件包起支撑作用

prj1	2025/3/18 18:45
prj2	2025/3/18 19:01
.conda_envs_dir_test	2025/3/18 18:41

两个 conda 环境都安装完成，用 conda env list 来查看环境路径

```

(base) 86152@LAPTOP-QOK67RV0 MINGW64 /
$ conda env list
# conda environments:
#
base                                * D:\Anaconda3_install
prj1                                D:\Anaconda3_install\envs\prj1
prj2                                D:\Anaconda3_install\envs\prj2

(base) 86152@LAPTOP-QOK67RV0 MINGW64 /
$

```

终端里切换 Conda 环境，验证 Python 和软件包的版本

激活 prj1 这个环境，查找 python 的路径和版本。

```
(base) 86152@LAPTOP-QOK67RV0 MINGW64 /
$ conda activate prj1
(prj1) 86152@LAPTOP-QOK67RV0 MINGW64 /
$ which python
/d/Anaconda3_install/envs/prj1/python
(prj1) 86152@LAPTOP-QOK67RV0 MINGW64 /
$ python 3.12.9
D:\Anaconda3_install\envs\prj1\python.exe: can't open file 'D:\\软件下载\\Git\\3.12.9': [Errno 2] No such file or directory
(prj1) 86152@LAPTOP-QOK67RV0 MINGW64 /
$ python --version
Python 3.12.9
(prj1) 86152@LAPTOP-QOK67RV0 MINGW64 /
$
```

验证版本

```
/d/Anaconda3_install/envs/prj2/python
(prj2) 86152@LAPTOP-QOK67RV0 MINGW64 /
$ python --version
Python 3.9.21
(prj2) 86152@LAPTOP-QOK67RV0 MINGW64 /
$ python
Python 3.9.21 (main, Dec 11 2024, 16:35:24) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import requests
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
ModuleNotFoundError: No module named 'requests'
>>> import pandas
>>> pandas.__file__
'D:\\Anaconda3_install\\envs\\prj2\\lib\\site-packages\\pandas\\__init__.py'
>>> pandas.__version__
'2.2.3'
>>> import statsmodels
>>> statsmodels
<module 'statsmodels' from 'D:\\Anaconda3_install\\envs\\prj2\\lib\\site-packages\\statsmodels\\__init__.py'>
>>> 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

```

(prj2) C:\Users\user\Anaconda3\envs\prj2>conda list
# packages in environment at D:\Anaconda3_install\envs\prj2:
#
# Name                                Version                                Build                                Chan
blas                                  1.0                                    mk1
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
mk1                                    2023.1.0                              h6b88ed4_46358
mk1-service                           2.4.0                                py39h827c3e9_2
mk1_fft                              1.3.11                               py39h827c3e9_0
mk1_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-abii                         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) 86152@LAPTOP-QOK67RV0 MINGW64 /
$ conda activate prj1
(prj1) 86152@LAPTOP-QOK67RV0 MINGW64 /
$ conda list
# packages in environment at D:\Anaconda3_install\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) 86152@LAPTOP-QOK67RV0 MINGW64 /
$
```

要往哪个项目里安装软件包，首先都要先激活这个项目

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

```
base                                D:\Anaconda3_install
prj1                                * D:\Anaconda3_install\envs\
prj2                                D:\Anaconda3_install\envs\
b
0(prj1) 86152@LAPTOP-QOK67RV0 MINGW64 /
5$ conda install ipython
1Channels:
2- defaults
2Platform: win_64
```

Windows 用户无法直接创建名为 `.condarc` 的文件，可先执行 `conda config --set show_channel_urls yes` 生成该文件之后再修改。

```
$ .bash_profile  ! .condarc X
! .condarc
1  ssl_verify: true
2  > channels: ...
4  show_channel_urls: true
5
```

加入 polars 后重现创建 prj1

```
(base) 86152@LAPTOP-QOK67RVO MINGW64 /
$ conda create -n prj1 python=3.12 requests polars-lts-cpu
WARNING: A directory already exists at the target location 'D:\Anaconda3\envs\prj1'
but it is not a conda environment.
Continue creating environment (y/[n])? y

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

## Package Plan ##

environment location: D:\Anaconda3_install\envs\prj1

added / updated specs:
- polars-lts-cpu
- python=3.12
- requests
```




```

(base) 86152@LAPTOP-QOK67RV0 MINGW64 /
$ conda env list
# conda environments:
#
base                  * D:\Anaconda3_install
prj1                  D:\Anaconda3_install\envs\prj1
prj2                  D:\Anaconda3_install\envs\prj2

(base) 86152@LAPTOP-QOK67RV0 MINGW64 /
$ conda activate prj1
(prj1) 86152@LAPTOP-QOK67RV0 MINGW64 /
$ python
Python 3.12.9 | packaged by conda-forge | (main, Mar  4 2025, 22:37:18) [MSC v.
943 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import polars
>>> quit()
(prj1) 86152@LAPTOP-QOK67RV0 MINGW64 /
$

```

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

```

conda activate prj1
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

CondaError: packagesNotNotFoundError: The following packages are not available from
channels:

- tushare

Current channels:

- https://mirrors.tuna.tsinghua.edu.cn/anaconda/cloud/conda-forge
- https://repo.anaconda.com/pkgs/main
- https://repo.anaconda.com/pkgs/r
- https://repo.anaconda.com/pkgs/msys2

To search for alternate channels that may provide the conda package you're
looking for, navigate to

    https://anaconda.org

and use the search bar at the top of the page.

```

Tushare 安装失败，解决办法如下：

```

(prj1) 86152@LAPTOP-QOK67RV0 MINGW64 /
$
(prj1) 86152@LAPTOP-QOK67RV0 MINGW64 /
$ pip install tushare
Collecting tushare
  Downloading tushare-1.4.19-py3-none-any.whl.metadata (3.1 kB)
Collecting pandas (from tushare)

```

根据文档 配置 PyPI 清华镜像，加快 pip install 安装软件包的速度。

```
(prj1) 86152@LAPTOP-QOK67RV0 MINGW64 /
$ python -m pip install --upgrade pip
Requirement already satisfied: pip in d:\anaconda3_install\envs\prj1\lib\site-packages (25.0.1)
(prj1) 86152@LAPTOP-QOK67RV0 MINGW64 /
$ pip config set global.index-url https://mirrors.tuna.tsinghua.edu.cn/pypi/web/simple
Writing to C:\Users\86152\AppData\Roaming\pip\pip.ini
(prj1) 86152@LAPTOP-QOK67RV0 MINGW64 /

zstandard 0.23.0 py312h4389bb4_1 conda-forge
(prj1) 86152@LAPTOP-QOK67RV0 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__
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
AttributeError: module 'tushare' has no attribute '__version__'. Did you mean: '__version__'?
>>> tushare.__file__
'D:\Anaconda3_install\envs\prj1\Lib\site-packages\tushare\__init__.py'
>>> |
```

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

```
# To activate this environment, use
#
#     $ conda activate prj1
#
# To deactivate an active environment, use
#
#     $ conda deactivate

(base) 86152@LAPTOP-QOK67RV0 MINGW64 ~/prj1
$ conda env list
# conda environments:
#
base                  * D:\Anaconda3_install
prj1                  D:\Anaconda3_install\envs\prj1
prj2                  D:\Anaconda3_install\envs\prj2

(base) 86152@LAPTOP-QOK67RV0 MINGW64 ~/prj1
$ conda list
# packages in environment at D:\Anaconda3_install:
#
# Name                      Version                      Build      Channel
#-----
anaconda-deps               2024.10                      py312h4389bb4_0 https://mirrors.tuna.tsinghua.edu.cn/pypi/web/simple
```

重建完成

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

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

```

$ ^C
(base) 86152@LAPTOP-QOK67RV0 MINGW64 ~/repo/myproject
$ ^[[200~ cat environment.yml
bash: $'\E[200~': command not found
(base) 86152@LAPTOP-QOK67RV0 MINGW64 ~/repo/myproject
$ cat environment.yml
name: myproject
channels:
  - conda-forge
dependencies:
  - python=3.12
(base) 86152@LAPTOP-QOK67RV0 MINGW64 ~/repo/myproject
$

```

```

(base) 86152@LAPTOP-QOK67RV0 MINGW64 ~/repo/myproject
$ conda env list
# conda environments:
#
base                * D:\Anaconda3_install
prj1                 D:\Anaconda3_install\envs\prj1
prj2                 D:\Anaconda3_install\envs\prj2

(base) 86152@LAPTOP-QOK67RV0 MINGW64 ~/repo/myproject
$ conda env create
D:\Anaconda3_install\Lib\argparse.py:2006: FutureWarning: `remote_definition`
deprecated and will be removed in 25.9. Use `conda env create --file=URL`
ad.
  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

```

```

bb 2021.13.0 h62715c5_1 conda-forge
tk 8.6.13 h5226925_1 conda-forge
tzdata 2025a h78e105d_0 conda-forge
ucrt 10.0.22621.0 h57928b3_1 conda-forge
vc 14.3 hbf610ac_24 conda-forge
vc14_runtime 14.42.34438 hfd919c2_24 conda-forge
wheel 0.45.1 pyhd8ed1ab_1 conda-forge
(myproject) 86152@LAPTOP-QOK67RV0 MINGW64 ~/repo/myproject
$ python main.py
Hello, conda!
(myproject) 86152@LAPTOP-QOK67RV0 MINGW64 ~/repo/myproject
$ python main.py
Hello, conda!
2.2.3
D:\Anaconda3_install\envs\myproject\Lib\site-packages\pandas\__init__.py
(myproject) 86152@LAPTOP-QOK67RV0 MINGW64 ~/repo/myproject
$

```



```
100 192M 100 192M 0 0 475K 0 0.00194 0.00194 1 1 429
(myproject) 86152@LAPTOP-QOK67RV0 MINGW64 ~/repo/myproject
$ ls -l
total 196846
-rw-r--r-- 1 86152 197609 201568176 Mar 20 15:59 EPA_SmartLocationDatabase_V3
n_2021_Final.csv
-rw-r--r-- 1 86152 197609 87 Mar 20 15:45 environment.yml
-rw-r--r-- 1 86152 197609 157 Mar 20 15:50 main.py
(myproject) 86152@LAPTOP-QOK67RV0 MINGW64 ~/repo/myproject
$ ls -lh
total 193M
-rw-r--r-- 1 86152 197609 193M Mar 20 15:59 EPA_SmartLocationDatabase_V3_Jan_
1_Final.csv
-rw-r--r-- 1 86152 197609 87 Mar 20 15:45 environment.yml
-rw-r--r-- 1 86152 197609 157 Mar 20 15:50 main.py
(myproject) 86152@LAPTOP-QOK67RV0 MINGW64 ~/repo/myproject
$
```