

金融计算与编程第三周学习笔记

1. 在自己的终端配置好 Conda Init: 用 which conda 查看是否有这个命令, 使用 conda init --help 查看命令如何使用。

```
MINGW64/c/Users/ASUS
token See 'conda token --help'.
update (upgrade) Update conda packages to the latest compatible version.

ASUS@KC ~$ 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:
  -h, --help            Show this help message and exit.
  --all                Initialize all currently available shells.
  --anaconda-prompt     Add an 'Anaconda Prompt' icon to your desktop.
  -d, --dry-run        Only display what would have been done.

setup type:
  --user              Initialize conda for the current user (default).
  --no-user           Don't initialize conda for the current user.
  --system            Initialize conda for all users on the system.
  --reverse           Undo effects of last conda init.

Output, Prompt, and Flow Control Options:
  --json              Report all output as json. Suitable for using conda
```

使用 conda init bash 配置, 使用 ls 命令查看:

```
==> For changes to take effect, close and re-open your current shell. <==

ASUS@KC ~$ conda init bash
$ pwd
/c/Users/ASUS

ASUS@KC ~$ ls -al
total 71552
drwxr-xr-x 1 ASUS 197121      0 Mar 19 10:28 ./
drwxr-xr-x 1 ASUS 197121      0 Oct 28 2023 ../
-rw-r--r-- 1 ASUS 197121 2352 Mar 13 18:20 .bash_history
-rw-r--r-- 1 ASUS 197121 268 Mar 19 10:28 .bash_profile
drwxr-xr-x 1 ASUS 197121      0 Mar  7 21:36 .conda/
drwxr-xr-x 1 ASUS 197121      0 Dec 27 2022 .config/
drwxr-xr-x 1 ASUS 197121      0 Jan  5 09:58 .dbgate/
-rw-r--r-- 1 ASUS 197121 138 Mar 13 17:51 .gitconfig
drwxr-xr-x 1 ASUS 197121      0 Mar 29 2021 .idlerc/
drwxr-xr-x 1 ASUS 197121      0 Mar  7 21:17 .ipython/
-rw-r--r-- 1 ASUS 197121 20 Mar 13 18:14 .lessht
drwxr-xr-x 1 ASUS 197121      0 Aug 27 2022 .local/
drwxr-xr-x 1 ASUS 197121      0 Oct 22 2023 .spss/
drwxr-xr-x 1 ASUS 197121      0 Mar  7 22:14 .ssh/
drwxr-xr-x 1 ASUS 197121      0 Mar  7 18:54 .vscode/
drwxr-xr-x 1 ASUS 197121      0 May 24 2021 '3D Objects'/
drwxr-xr-x 1 ASUS 197121      0 Oct 28 2023 AppData/
lrwxrwxrwx 1 ASUS 197121      29 Oct 28 2023 'Application Data' -> /c/Users/AS
US/AppData/Roaming/
drwxr-xr-x 1 ASUS 197121      0 Oct 28 2023 Contacts/
lrwxrwxrwx 1 ASUS 197121      57 Oct 28 2023 Cookies -> /c/Users/ASUS/AppData
/Local/Microsoft/Windows/InetCookies/
drwxr-xr-x 1 ASUS 197121      0 Mar 18 20:32 Desktop/
drwxr-xr-x 1 ASUS 197121      0 Mar  9 10:35 Documents/
```

code .查看当前文件夹, profile 这个文件是 bash 这个 shell 它在启动的时候就会自动的运行这个文件里面的内容:

```
$.bash_profile x  .lessht

$.bash_profile
1
2 # >>> conda initialize >>>
3 # !! Contents within this block are managed by 'conda init' !!
4 if [ -f '/c/Users/ASUS/anaconda3/Scripts/conda.exe' ]; then
5     eval "$(`${c/Users/ASUS/anaconda3/Scripts/conda.exe} 'shell.bash' 'hook')"
```

想要运行什么命令可以在文件夹里写。

如果因为中英文命名的原因，code /c/Program/Files/Git 该命令无法运行，可以在 vs code 里手动打开文件夹，vs code 只能查看文件。

配置后出现了以下界面：

```
Exception in thread Thread-5 (_readerthread):
Traceback (most recent call last):
  File "C:\Users\ASUS\anaconda3\Lib\threading.py", line 1075, in _bootstrap_inne
r
    self.run()
  File "C:\Users\ASUS\anaconda3\Lib\threading.py", line 1012, in run
    self._target(*self._args, **self._kwargs)
  File "C:\Users\ASUS\anaconda3\Lib\subprocess.py", line 1599, in _readerthread
    buffer.append(fh.read())
    ^^^^^^^^^
UnicodeDecodeError: 'gbk' codec can't decode byte 0xb9 in position 1009: illegal
multibyte sequence
Unexpected cygpath error, fallback to manual path conversion
AttributeError: 'NoneType' object has no attribute 'strip'
(base)
ASUS@%C:~$ MINGW64 ~
$
```

根据相关人士建议，可以修改相关命令解决，在第十三行命令前面加#：

```
1  if test -f /etc/profile.d/git-sdk.sh
2  then
3      TITLEPREFIX=SDK-${MSYSTEM#MINGW}
4  else
5      TITLEPREFIX=$MSYSTEM
6  fi
7
8  if test -f ~/.config/git/git-prompt.sh
9  then
10     . ~/.config/git/git-prompt.sh
11 else
12     PS1='\[\033]0;$TITLEPREFIX:$PWD\007\]' # set window title
13     #PS1="$PS1""\n" # new line
14     PS1="$PS1""\[\033[32m\" # change to green
15     PS1="$PS1""\n$PS1"
```

如果想要加入换行，使用 PS1="\n\$PS1"命令写在.bash_profile 里。

```
$ .bash_profile
1
2  # >>> conda initialize >>>
3  # !! Contents within this block are managed by 'conda initialize'
4  if [ -f '/c/Users/ASUS/anaconda3/Scripts/conda.exe' ]
5  then
6      eval "$(/c/Users/ASUS/anaconda3/Scripts/conda.exe --help)"
7  fi
8  # <<< conda initialize <<<
9  PS1="\n$PS1"
```

2. 使用 conda info 命令查看配置信息：
3. 使用 conda env list 命令查看已有的 Conda 环境的名称和路径：

```

C:\Users\ASUS\.conda\pkgs
C:\Users\ASUS\AppData\Local\conda\conda\pkgs
envs directories : C:\Users\ASUS\anaconda3\envs
C:\Users\ASUS\.conda\envs
C:\Users\ASUS\AppData\Local\conda\conda\envs
platform : win-64
user-agent : conda/24.9.2 requests/2.32.3 CPython/3.12.7 Windows/10.0.22631 solver/libmamba conda-libmamba-solver/24.9.0 libmamb
8 aau/0.4.4 c/. s/. e/.
administrator : False
netrc file : None
offline mode : False

(base) ASUS@%C:\Users\ASUS\anaconda3 MINGW64 ~
$ conda env list
# conda environments:
#
base * C:\Users\ASUS\anaconda3

(base) ASUS@%C:\Users\ASUS\anaconda3 MINGW64 ~
$

```

Conda 环境是一个独立的目录，其中包含了特定版本的 Python 解释器以及一系列安装好的软件包。在不同的环境中，你可以安装不同版本的 Python 和软件包，而这些环境之间相互隔离，互不影响。这就好比在同一台计算机上创建了多个独立的“小世界”，每个“小世界”都有自己独特的软件配置。

版本管理：不同的项目可能依赖于不同版本的 Python 或软件包。例如，项目 A 可能需要 Python 3.7 和 NumPy 1.18，而项目 B 可能需要 Python 3.9 和 NumPy 1.20。通过创建不同的 Conda 环境，你可以为每个项目提供其所需的精确版本，避免版本冲突。

项目隔离：当你同时进行多个项目时，不同项目的依赖可能会相互干扰。使用 Conda 环境可以将每个项目的依赖隔离开来，确保每个项目都能在自己的独立环境中稳定运行。

复现性：在协作开发或分享代码时，Conda 环境可以帮助其他人轻松复现你的开发环境。你可以将环境配置文件（通常是 `environment.yml`）分享给他人，他们可以使用该文件快速创建一个与你相同的环境。

4. 使用 `conda create` 命令创建两个 Conda 环境：`$ conda create -n prj1 python=3.9 pandas statsmodels`，第一个文件夹为 `prj1`，第二个文件夹为 `prj2`。

```

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

(base) ASUS@%C:\Users\ASUS\anaconda3 MINGW64 ~
$

```

```
(base) ASUS@%C ████████ u ████████ MINGW64 ~
$ conda env list
# conda environments:
#
base                  * C:\Users\ASUS\anaconda3
prj2                  C:\Users\ASUS\anaconda3\envs\prj2
prji                  C:\Users\ASUS\anaconda3\envs\prji

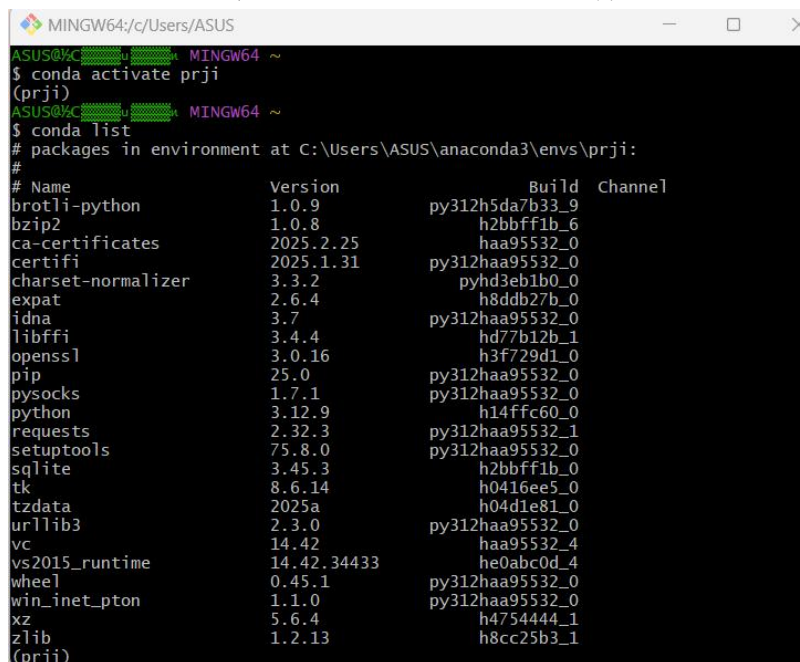
(base) ASUS@%C ████████ u ████████ MINGW64 ~
$
```

\$ conda activate prji 激活这个环境。

```
(base) ASUS@%C ████████ u ████████ MINGW64 ~
$ conda activate prji
(prji)
ASUS@%C ████████ u ████████ MINGW64 ~
$ which python
/c/Users/ASUS/anaconda3/envs/prji/python
(prji)
ASUS@%C ████████ u ████████ MINGW64 ~
$ python --version
Python 3.12.9
(prji)
ASUS@%C ████████ u ████████ MINGW64 ~
$
```

切换 python 语句后查看文件路径：requests.__file__，pandas.__file__。
pandas.__version__ 查看 pandas 版本。

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：



```
MINGW64:/c/Users/ASUS
ASUS@%C ████████ u ████████ MINGW64 ~
$ conda activate prji
(prji)
ASUS@%C ████████ u ████████ MINGW64 ~
$ conda list
# packages in environment at C:\Users\ASUS\anaconda3\envs\prji:
#
# 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
(prji)
```

6. 使用\$ conda install ipython 安装软件包：


```

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
  decorator          pkgs/main/noarch::decorator-5.1.1-pyhd3eb1b0_0
  executing           pkgs/main/noarch::executing-0.8.3-pyhd3eb1b0_0
done
(prji)
ASUS@C:\Users\ASUS\anaconda3\envs\prji: MINGW64 ~
$ conda list
# packages in environment at C:\Users\ASUS\anaconda3\envs\prji:
#
# 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

```

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。

用 conda config --set show_channel_urls yes 生成文件，使用 conda clean -i 清除本地索引，然后把新生成文件夹里的 default 改为 conda-forge，用 conda config --set channel_priority strict，然后再添加- defaults。如果不换 conda-forge 前沿的安装包找不到。

8. 用 pip install tushare 安装。

用 python -m pip install --upgrade pip 等命令升级 pip。

9. 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。

conda env export -f environment.yml 把代码保存到文件里。结束运行 conda deactivate，删掉环境：conda env remove -n prji。

运用 mkdir prj1 创建文件夹，mv ~/environment.yml ./移动文件，因为当前文件有这个文件夹，可以直接用 conda env create，不用指定文件路径。

重建时出现以下错误：

```

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
- package idna-3.7-py312haa95532_0 is excluded by strict repo priority
- package ipython-8.30.0-py312haa95532_0 is excluded by strict repo priority
- package jedi-0.19.2-py312haa95532_0 is excluded by strict repo priority
- package libffi-3.4.4-hd77b12b_1 is excluded by strict repo priority
- package prompt_toolkit-3.0.43-hd3eb1b0_0 is excluded by strict repo priority
- package pygments-2.15.1-py312haa95532_1 is excluded by strict repo priority
- package pysocks-1.7.1-py312haa95532_0 is excluded by strict repo priority
- package requests-2.32.3-py312haa95532_1 is excluded by strict repo priority
- package setuptools-75.8.0-py312haa95532_0 is excluded by strict repo priority
- package six-1.16.0-pyhd3eb1b0_1 is excluded by strict repo priority
- package sqlite-3.45.3-h2bbff1b_0 is excluded by strict repo priority
- package traitlets-5.14.3-py312haa95532_0 is excluded by strict repo priority
- package urllib3-2.3.0-py312haa95532_0 is excluded by strict repo priority

```

询问豆包如何解决错误，禁用严格仓库优先级后便能成功重建 prj1。

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

(base) ASUS@%C:~\repo\prj1 MINGW64
$ conda env list

# conda environments:
#
base                * C:\Users\ASUS\anaconda3
prj1                 C:\Users\ASUS\anaconda3\envs\prj1
prj2                 C:\Users\ASUS\anaconda3\envs\prj2

(base) ASUS@%C:~\repo\prj1 MINGW64
$ conda config --set channel_priority strict

(base) ASUS@%C:~\repo\prj1 MINGW64
$
```

10. mkdir myproject 创建文件, 然后在 vs code 里创建文件 environment.yml, yml 后缀是默认的。安装 python 扩展和 ruff。

如果在 main.py 里加入 import pandas as pd 之后无法运行, 可以在 environment.yml 文件里加入-pandas。