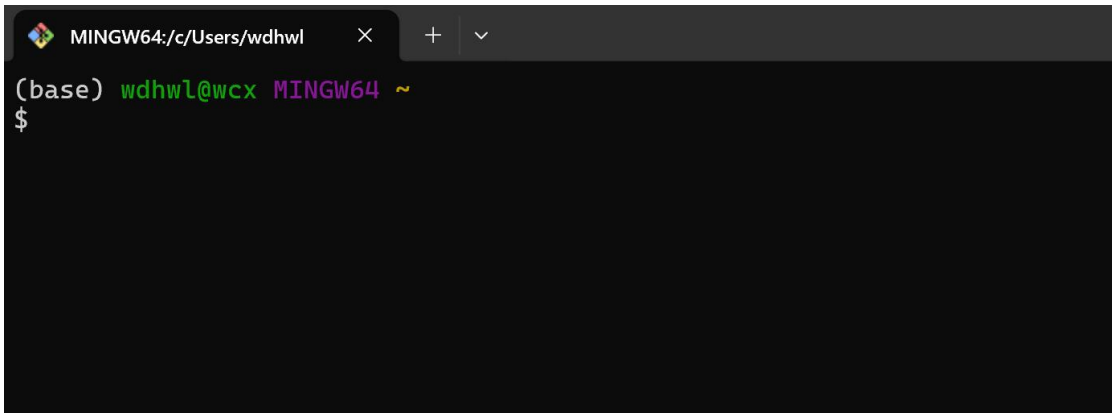
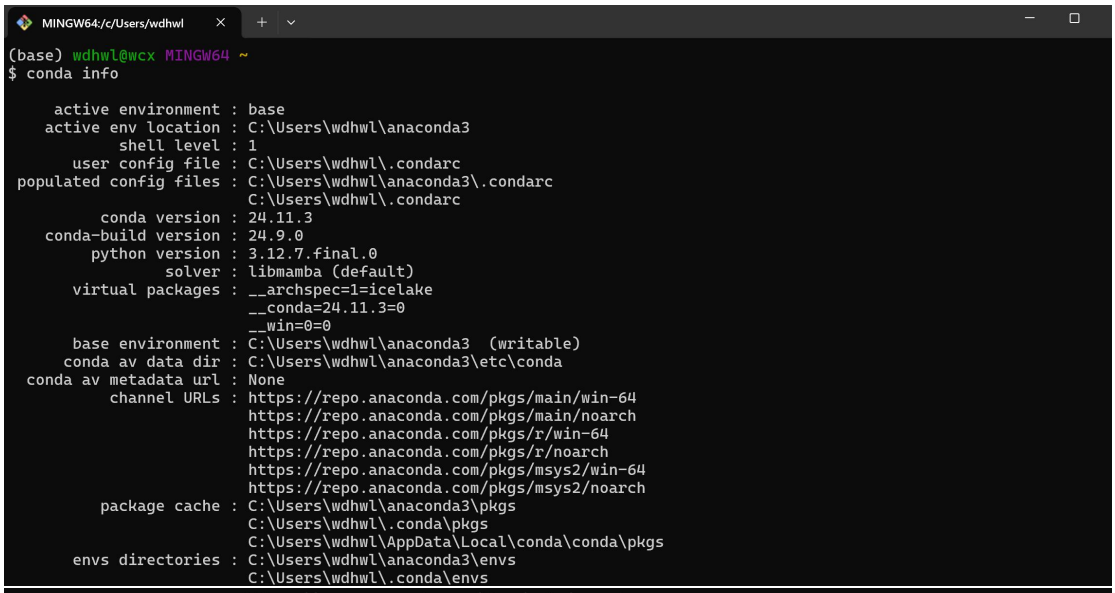
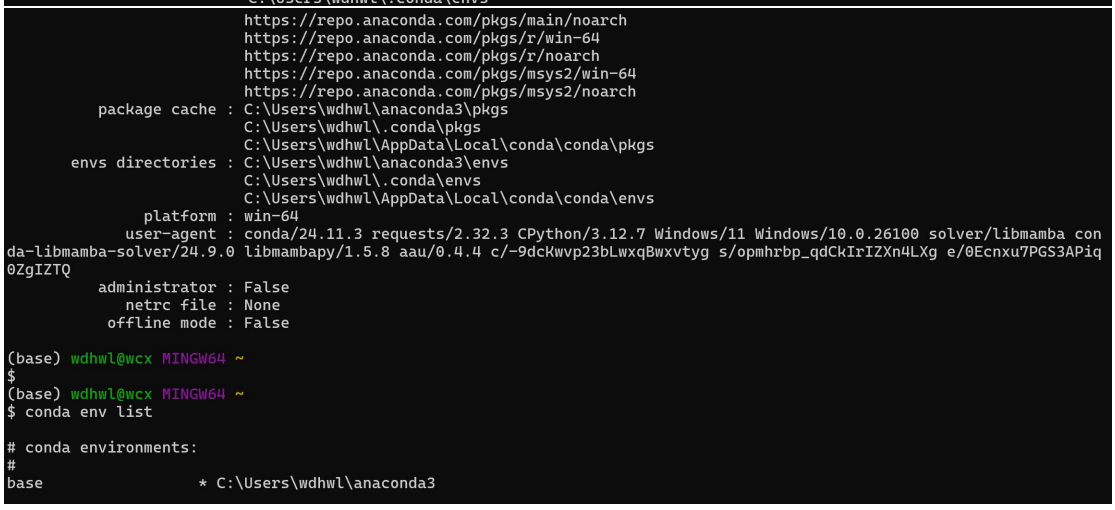
第三周学习笔记：

Git Bash 默认提示符：$　Zsh：%







```
(base) wdhwl@wcx 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\wdhwl\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
    expat-2.6.4                |       h8ddb27b_0         257 KB
    pip-25.0                   |  py312haa95532_0         3.0 MB
    python-3.12.9              |       h14ffc60_0        16.5 MB
    requests-2.32.3            |  py312haa95532_1         124 KB
    setuptools-75.8.0          |  py312haa95532_0         2.2 MB
    tzdata-2025a               |       h04d1e81_0         117 KB
    urllib3-2.3.0              |  py312haa95532_0         238 KB
```

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

```
MINGW64:/c/Users/wdhwl

(base) wdhwl@wcx 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: C:\Users\wdhwl\anaconda3\envs\prj2

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


The following packages will be downloaded:

    package                    |            build
    ---------------------------|-----------------
    bottleneck-1.4.2           |   py39hc99e966_0         129 KB
    mkl-service-2.4.0          |   py39h827c3e9_2          66 KB
    mkl_fft-1.3.11             |   py39h827c3e9_0         167 KB
    mkl_random-1.2.8           |   py39hc64d2fc_0         257 KB
    numexpr-2.10.1             |   py39h4cd664f_0         177 KB
    numpy-2.0.2                |   py39h055cbcc_0          12 KB
    numpy-base-2.0.2           |   py39h65a83cf_0         9.2 MB
```

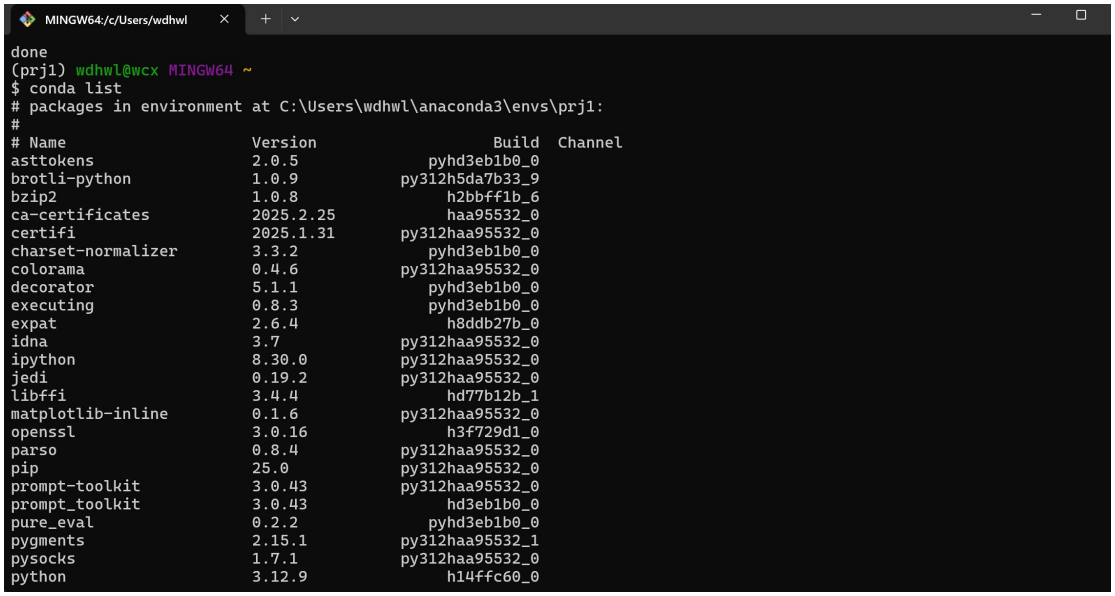
```
done
#
# To activate this environment, use
#
#     $ conda activate prj2
#
# To deactivate an active environment, use
#
#     $ conda deactivate
```

```
(base) wdhwl@wcx MINGW64 ~
$ conda env list

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

(base) wdhwl@wcx MINGW64 ~
$ conda activate prj1
(prj1) wdhwl@wcx MINGW64 ~
$ conda activate prj2
(prj2) wdhwl@wcx MINGW64 ~
$
```

```
$ conda activate prj1
(prj1) wdhwl@wcx MINGW64 ~
$ which python
/c/Users/wdhwl/anaconda3/envs/prj1/python
(prj1) wdhwl@wcx MINGW64 ~
$ python --version
Python 3.12.9
(prj1) wdhwl@wcx 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\\wdhwl\\anaconda3\\envs\\prj1\\Lib\\site-packages\\requests\\__init__.py'>
```

```
(prj1) wdhwl@wcx MINGW64 ~
$ conda activate prj2
(prj2) wdhwl@wcx 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.__version__
'2.2.3'
>>> import statsmodels
>>> statsmodels.__version__
'0.14.4'
>>>
```

```
(prj2) wdhwl@wcx MINGW64 ~
$ conda list
# packages in environment at C:\Users\wdhwl\anaconda3\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
```




```
(prj1) wdhwl@wcx MINGW64 ~
$ conda config --set show_channel_urls yes
(prj1) wdhwl@wcx MINGW64 ~
$ conda clean -i
Will remove 1 index cache(s).
Proceed ([y]/n)? y

(prj1) wdhwl@wcx MINGW64 ~
$ conda create -n myenv numpy
Channels:
 - defaults
 - 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: C:\Users\wdhwl\anaconda3\envs\myenv

  added / updated specs:
    - numpy
```

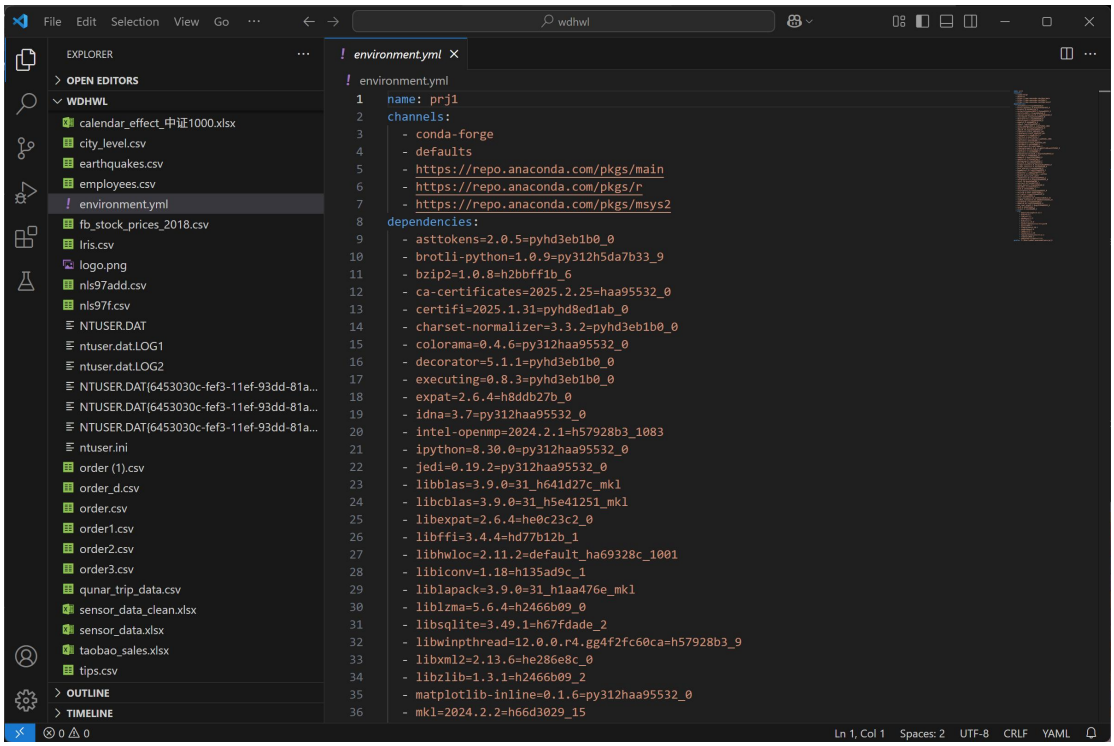
```
(prj1) wdhwl@wcx MINGW64 ~
$ python
Python 3.12.9 | packaged by conda-forge | (main, Mar  4 2025, 22:37:18) [MSC v.1943 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import polars
>>> quit()
(prj1) wdhwl@wcx MINGW64 ~
$
```

```
(prj1) wdhwl@wcx MINGW64 ~
$ pip install tushare
Collecting tushare
  Downloading tushare-1.4.19-py3-none-any.whl.metadata (3.1 kB)
Collecting pandas (from tushare)
  Downloading pandas-2.2.3-cp312-cp312-win_amd64.whl.metadata (19 kB)
Requirement already satisfied: requests in c:\users\wdhwl\anaconda3\envs\prj1\lib\site-packages (from tushare) (2.32.3)
Collecting lxml (from tushare)
  Downloading lxml-5.3.1-cp312-cp312-win_amd64.whl.metadata (3.8 kB)
Collecting simplejson (from tushare)
  Downloading simplejson-3.20.1-cp312-cp312-win_amd64.whl.metadata (3.4 kB)
Collecting bs4 (from tushare)
  Downloading bs4-0.0.2-py2.py3-none-any.whl.metadata (411 bytes)
Collecting websocket-client>=0.57.0 (from tushare)
  Downloading websocket_client-1.8.0-py3-none-any.whl.metadata (8.0 kB)
Collecting tqdm (from tushare)
  Downloading tqdm-4.67.1-py3-none-any.whl.metadata (57 kB)
Collecting beautifulsoup4 (from bs4->tushare)
  Downloading beautifulsoup4-4.13.3-py3-none-any.whl.metadata (3.8 kB)
Requirement already satisfied: numpy>=1.26.0 in c:\users\wdhwl\anaconda3\envs\prj1\lib\site-packages (from pandas->tusha
re) (2.2.4)
Collecting python-dateutil>=2.8.2 (from pandas->tushare)
  Downloading 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-2025.2-py2.py3-none-any.whl.metadata (1.4 kB)
Requirement already satisfied: charset-normalizer<4,>=2 in c:\users\wdhwl\ana[截图(Alt + A)]nvs\prj1\lib\site-packages (from re
```

```
(prj1) wdhwl@wcx MINGW64 ~
$ python -m pip install --upgrade pip
Requirement already satisfied: pip in c:\users\wdhwl\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 1.2 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) wdhwl@wcx MINGW64 ~
$ pip config set global.index-url https://mirrors.tuna.tsinghua.edu.cn/pypi/web/simple
Writing to C:\Users\wdhwl\AppData\Roaming\pip\pip.ini
```

```
(base) wdhwl@wcx MINGW64 ~
$ conda activate prj1
(prj1) wdhwl@wcx MINGW64 ~
$ pip install tushare
Looking in indexes: https://mirrors.tuna.tsinghua.edu.cn/pypi/web/simple
Requirement already satisfied: tushare in c:\users\wdhwl\anaconda3\envs\prj1\lib\site-packages (1.4.19)
Requirement already satisfied: pandas in c:\users\wdhwl\anaconda3\envs\prj1\lib\site-packages (from tushare) (2.2.3)
Requirement already satisfied: requests in c:\users\wdhwl\anaconda3\envs\prj1\lib\site-packages (from tushare) (2.32.3)
Requirement already satisfied: lxml in c:\users\wdhwl\anaconda3\envs\prj1\lib\site-packages (from tushare) (5.3.1)
Requirement already satisfied: simplejson in c:\users\wdhwl\anaconda3\envs\prj1\lib\site-packages (from tushare) (3.20.1
)
```

```
(prj1) wdhwl@wcx 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
  - 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
```




```
(base) wdhwl@wcx MINGW64 ~
$ cd hello
(base) wdhwl@wcx MINGW64 ~/hello
$ mkdir prj1
(base) wdhwl@wcx MINGW64 ~/hello
$ cd prj1
(base) wdhwl@wcx MINGW64 ~/hello/prj1
$ ls -l
total 0
(base) wdhwl@wcx MINGW64 ~/hello/prj1
$ mv ~/environment.yml ./
```

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，它可以在不同的操作系统上运行，如 Windows、macOS 和 Linux。Python 则是一种高级编程语言。

Conda 能创建相互隔离的 Python 环境，在不同环境里可安装不同版本的 Python 和第三方软件包。比如，你可以用 Conda 创建一个使用 Python 3.8 的环境，同时再创建一个使用 Python 3.11 的环境，这样就可以在不同项目里使用不同版本的 Python。

Conda-Forge 与 Conda 的关系

Conda 拥有多个软件包仓库，Conda-Forge 是其中社区驱动的一个。Conda-Forge 提供了大量的软件包，这些软件包不仅有 Python 相关的，还涵盖了其他编程语言的。

Conda 默认的软件包仓库可能不会包含所有你需要的软件包，而 Conda-Forge 通常会更及时地更新软件包版本，并且有更多种类的软件包可供选择。你可以将 Conda-Forge 添加到 Conda 的软件包仓库列表中，这样在安装软件包时，Conda 就会从 Conda-Forge 中查找。

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

Python 解释器

Python 解释器是执行 Python 代码的程序。当你安装 Python 时，会安装一个对应的解释器。在使用 Conda 创建 Python 环境时，也会为该环境安装一个独立的 Python 解释器。

第三方软件包

第三方软件包是其他人开发并分享出来的 Python 代码库，它们可以帮助你更高效地完成各种任务，例如数据处理、机器学习等。

PyPI 软件仓库

Python Package Index（PyPI）是 Python 官方的软件包仓库，它包含了大量的第三方软件包。你可以使用 pip（Python 的包管理工具）从 PyPI 上安装软件包。

程序 / 软件包的路径问题

Python 解释器路径：当你使用 Conda 创建 Python 环境时，每个环境的 Python 解释器都会安装在该环境的目录下。例如，在 Windows 系统上，Conda 环境通常位于 C:\Users\YourUsername\miniconda3\envs\myenv ， Python 解释器的路径就是 C:\Users\YourUsername\miniconda3\envs\myenv\python.exe。

第三方软件包路径：使用 pip 安装的第三方软件包通常会被安装到 Python 解释器所在环境的 site-packages 目录下。例如，在上述的 myenv 环境中，软件包会被安装到 C:\Users\YourUsername\miniconda3\envs\myenv\Lib\site-packages 目录。使用 Conda 安装的软件包则会被安装到 Conda 环境的 pkgs 目录下。

综上所述，Conda 为 Python 提供了环境管理和包管理的功能，Conda-Forge 是 Conda 的一个软件包仓库，Python 解释器执行 Python 代码，第三方软件包可从 PyPI 等软件包仓库获取，并且它们都有各自的安装路径。

```
(base) wdhwl@wcx MINGW64 ~/hello
$ cd myproject/
(base) wdhwl@wcx MINGW64 ~/hello/myproject
$ cat environment.yml
name: myproject
channels:
done
#
# To activate this environment, use
#
#     $ conda activate myproject
#
# To deactivate an active environment, use
#
#     $ conda deactivate

(base) wdhwl@wcx MINGW64 ~/hello/myproject
$ conda env list

# conda environments:
#
base                  * C:\Users\wdhwl\anaconda3
myproject               C:\Users\wdhwl\anaconda3\envs\myproject
prj2                    C:\Users\wdhwl\anaconda3\envs\prj2
```

```
(myproject) wdhwl@wcx MINGW64 ~/hello/myproject
$ python main.py
Hello, conda!
```