

教程 (Windows)

1. Anaconda

➤ 打开链接

清华大学开源软件镜像站:

<https://mirrors.tuna.tsinghua.edu.cn/anaconda/archive/>

或 Anaconda 网站:

<https://www.anaconda.com/download#downloads>

➤ 以清华大学开源软件镜像站为例, 根据需求选择下载 Anaconda 版本

Anaconda3-2022.05-Linux-aarch64.sh	567.6 MiB	2022-05-11 02:35
Anaconda3-2022.05-Linux-ppc64le.sh	367.3 MiB	2022-05-11 02:35
Anaconda3-2022.05-Linux-s390x.sh	279.8 MiB	2022-05-11 02:35
Anaconda3-2022.05-Linux-x86_64.sh	658.8 MiB	2022-05-11 02:35
Anaconda3-2022.05-MacOSX-arm64.pkg	316.4 MiB	2022-06-08 01:42
Anaconda3-2022.05-MacOSX-arm64.sh	304.8 MiB	2022-06-08 01:42
Anaconda3-2022.05-MacOSX-x86_64.pkg	591.0 MiB	2022-05-11 02:36
Anaconda3-2022.05-MacOSX-x86_64.sh	584.0 MiB	2022-05-11 02:36
Anaconda3-2022.05-Windows-x86.exe	487.8 MiB	2022-05-11 02:36
Anaconda3-2022.05-Windows-x86_64.exe	593.9 MiB	2022-05-11 02:36
Anaconda3-2022.10-Linux-aarch64.sh	534.5 MiB	2022-10-18 05:24
Anaconda3-2022.10-Linux-ppc64le.sh	360.0 MiB	2022-10-18 05:24
Anaconda3-2022.10-Linux-s390x.sh	282.4 MiB	2022-10-18 05:24
Anaconda3-2022.10-Linux-x86_64.sh	737.6 MiB	2022-10-18 05:24
Anaconda3-2022.10-MacOSX-arm64.pkg	484.1 MiB	2022-10-18 05:24
Anaconda3-2022.10-MacOSX-arm64.sh	472.5 MiB	2022-10-18 05:25
Anaconda3-2022.10-MacOSX-x86_64.pkg	688.6 MiB	2022-10-18 05:25
Anaconda3-2022.10-MacOSX-x86_64.sh	681.6 MiB	2022-10-18 05:25
Anaconda3-2022.10-Windows-x86_64.exe	621.2 MiB	2022-10-18 05:26

图 1 2022 版本示例, 下载 xx.exe

➤ 安装

- 直接双击下载下来的 xx.exe, 根据提示完成安装即可。

注意: 记住安装路径, 后续步骤会用到该路径。

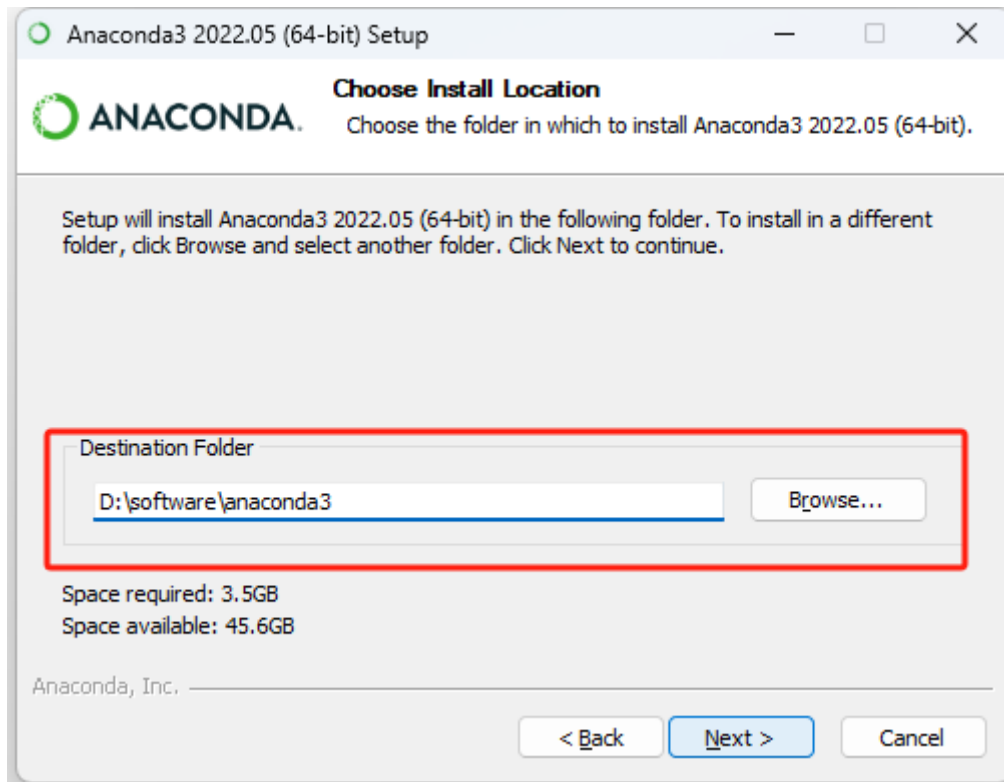




图 2 安装路径示例

2. PyTorch（此步骤可跳过，可第二次课程结束后再安装 PyTorch）

➤ 安装完成 Anaconda 后，打开“开始”菜单

方法一：在任务栏的中心或左端，选择“开始”图标。

方法二：按键盘上的 Windows 徽标键。

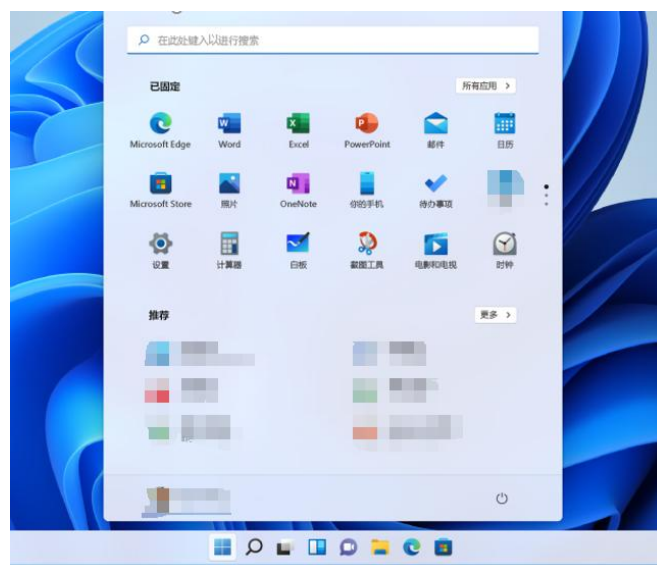


图 3 “开始”菜单

- 输入 anaconda 进行搜索，打开 Anaconda Prompt。

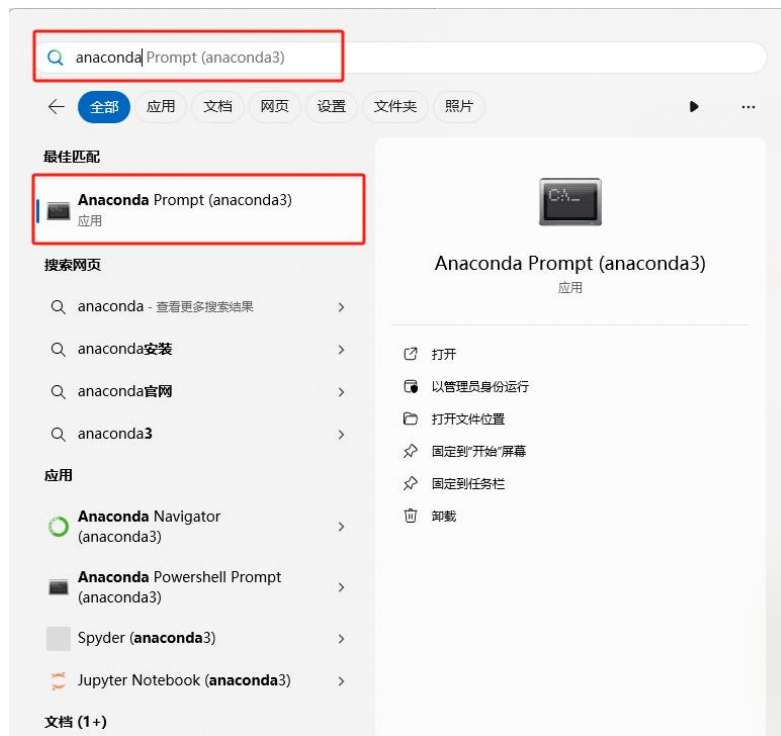


图 4 “开始”菜单搜索示例

- 采用 pip 安装 PyTorch
 - 在 Anaconda Prompt 中输入 pip install torch，然后按回车键

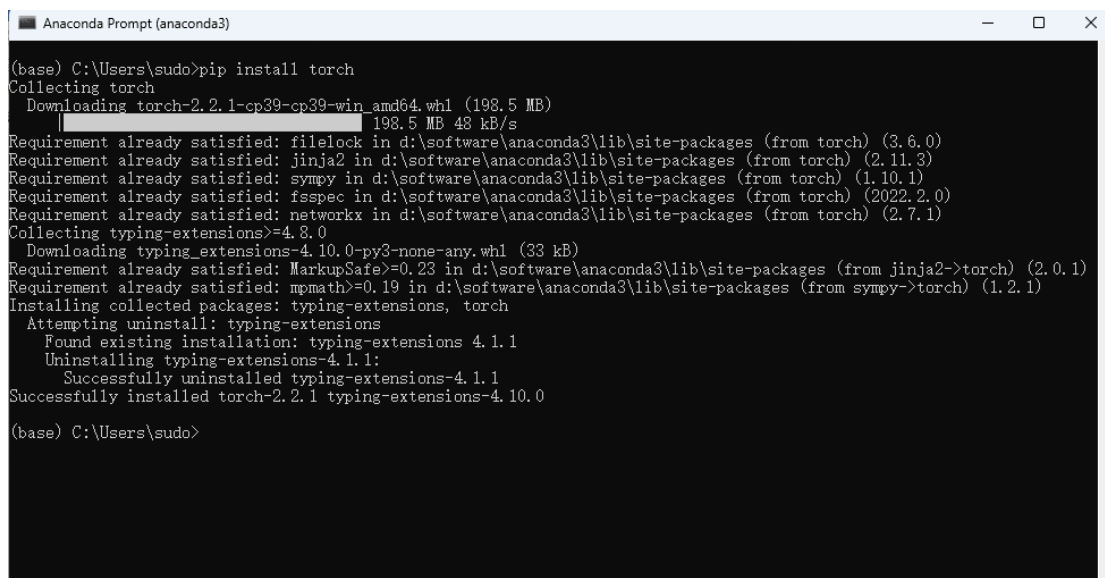


图 5 PyTorch 下载及安装过程示例

- 可以指定 torch 版本：
 - ✧ pip install torch==xx

```
Anaconda Prompt (anaconda3)
(base) C:\Users\sudo>pip install torch==2.1.2
Collecting torch==2.1.2
  Downloading torch-2.1.2-cp39-cp39-win_amd64.whl (192.2 MB)
    192.2 MB 3.3 MB/s
Requirement already satisfied: networkx in d:\software\anaconda3\lib\site-packages (from torch==2.1.2) (2.7.1)
Requirement already satisfied: typing-extensions in d:\software\anaconda3\lib\site-packages (from torch==2.1.2) (4.10.0)
Requirement already satisfied: filelock in d:\software\anaconda3\lib\site-packages (from torch==2.1.2) (3.5.0)
Requirement already satisfied: fsspec in d:\software\anaconda3\lib\site-packages (from torch==2.1.2) (2022.2.0)
Requirement already satisfied: sympy in d:\software\anaconda3\lib\site-packages (from torch==2.1.2) (1.10.1)
Requirement already satisfied: jinja2 in d:\software\anaconda3\lib\site-packages (from torch==2.1.2) (2.11.3)
Requirement already satisfied: MarkupSafe>=0.23 in d:\software\anaconda3\lib\site-packages (from jinja2->torch==2.1.2) (2.0.1)
Requirement already satisfied: mpmath>=0.19 in d:\software\anaconda3\lib\site-packages (from sympy->torch==2.1.2) (1.2.1)
Installing collected packages: torch
  Attempting uninstall: torch
    Found existing installation: torch 2.2.0
    Uninstalling torch-2.2.0:
      Successfully uninstalled torch-2.2.0
Successfully installed torch-2.1.2
(base) C:\Users\sudo>
```

图 6 PyTorch 下载及安装过程示例

- 如果下载速度慢，可换源：

✧ `pip install torch==xx -i https://pypi.tuna.tsinghua.edu.cn/simple`

```
Anaconda Prompt (anaconda3)
(base) C:\Users\sudo>pip install torch==2.2.0 -i https://pypi.tuna.tsinghua.edu.cn/simple
Collecting torch==2.2.0
  Downloading https://pypi.tuna.tsinghua.edu.cn/packages/de/33/9cbf0b8727a567734774bc64a8b71333d8a20572432c20618ab12f33b78/torch-2.2.0-cp39-cp39-win_amd64.whl (198.5 MB)
    198.5 MB 17 MB/s
Requirement already satisfied: filelock in d:\software\anaconda3\lib\site-packages (from torch==2.2.0) (3.6.0)
Requirement already satisfied: jinja2 in d:\software\anaconda3\lib\site-packages (from torch==2.2.0) (2.11.3)
Requirement already satisfied: sympy in d:\software\anaconda3\lib\site-packages (from torch==2.2.0) (1.10.1)
Requirement already satisfied: fsspec in d:\software\anaconda3\lib\site-packages (from torch==2.2.0) (2022.2.0)
Requirement already satisfied: typing-extensions>=4.8.0 in d:\software\anaconda3\lib\site-packages (from torch==2.2.0) (4.10.0)
Requirement already satisfied: networkx in d:\software\anaconda3\lib\site-packages (from torch==2.2.0) (2.7.1)
Requirement already satisfied: MarkupSafe>=0.23 in d:\software\anaconda3\lib\site-packages (from jinja2->torch==2.2.0) (2.0.1)
Requirement already satisfied: mpmath>=0.19 in d:\software\anaconda3\lib\site-packages (from sympy->torch==2.2.0) (1.2.1)
Installing collected packages: torch
  Attempting uninstall: torch
    Found existing installation: torch 2.2.1
    Uninstalling torch-2.2.1:
      Successfully uninstalled torch-2.2.1
Successfully installed torch-2.2.0
(base) C:\Users\sudo>
```

图 7 PyTorch 下载及安装过程示例

3. 下载并安装 PyCharm

- 打开链接

✧ <https://www.jetbrains.com/pycharm/download/?section=windows>

- 下载 PyCharm Community Edition

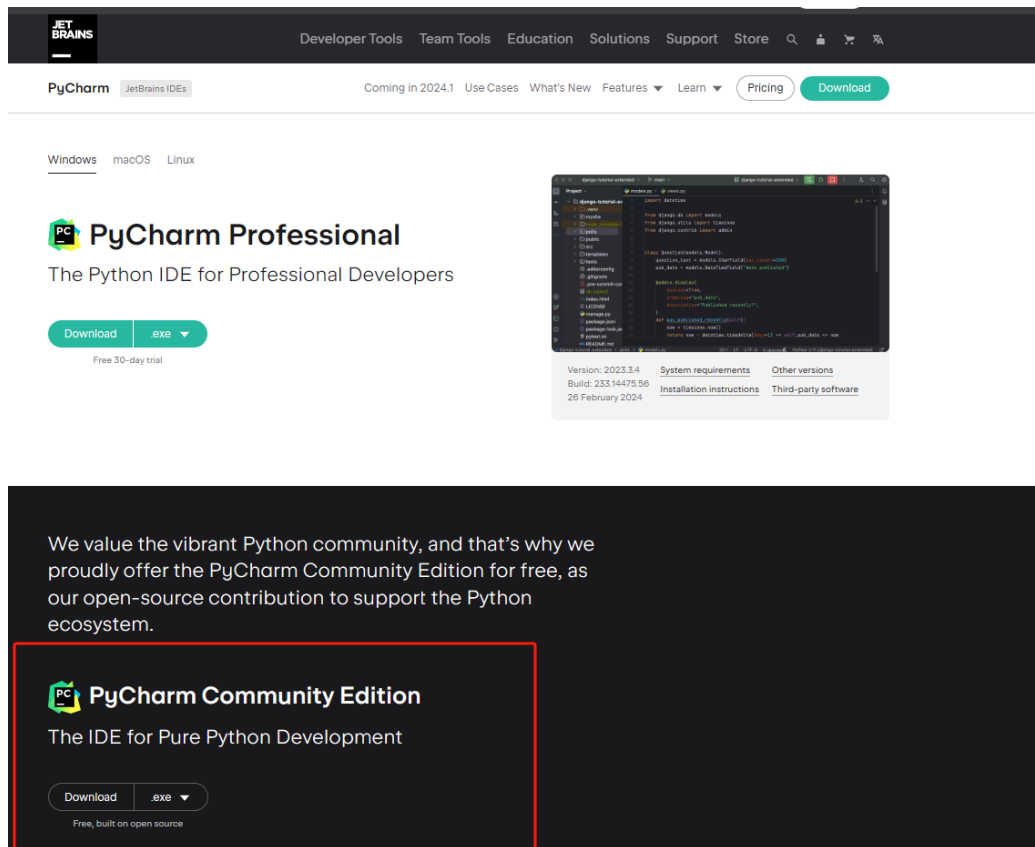


图 8 PyCharm 下载示例

➤ 安装

- 直接双击下载下来的 xx.exe，根据提示完成安装即可。
- 安装完成后打开 PyCharm

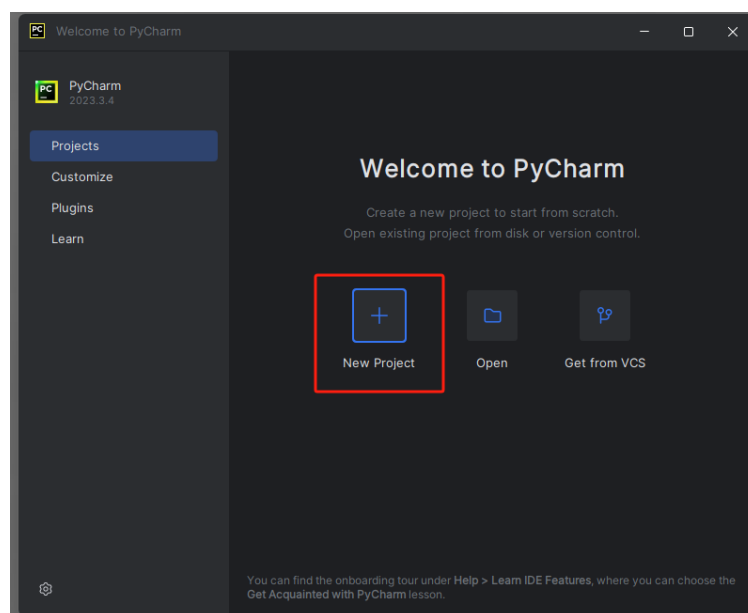


图 9 第一步，点击“New Project”

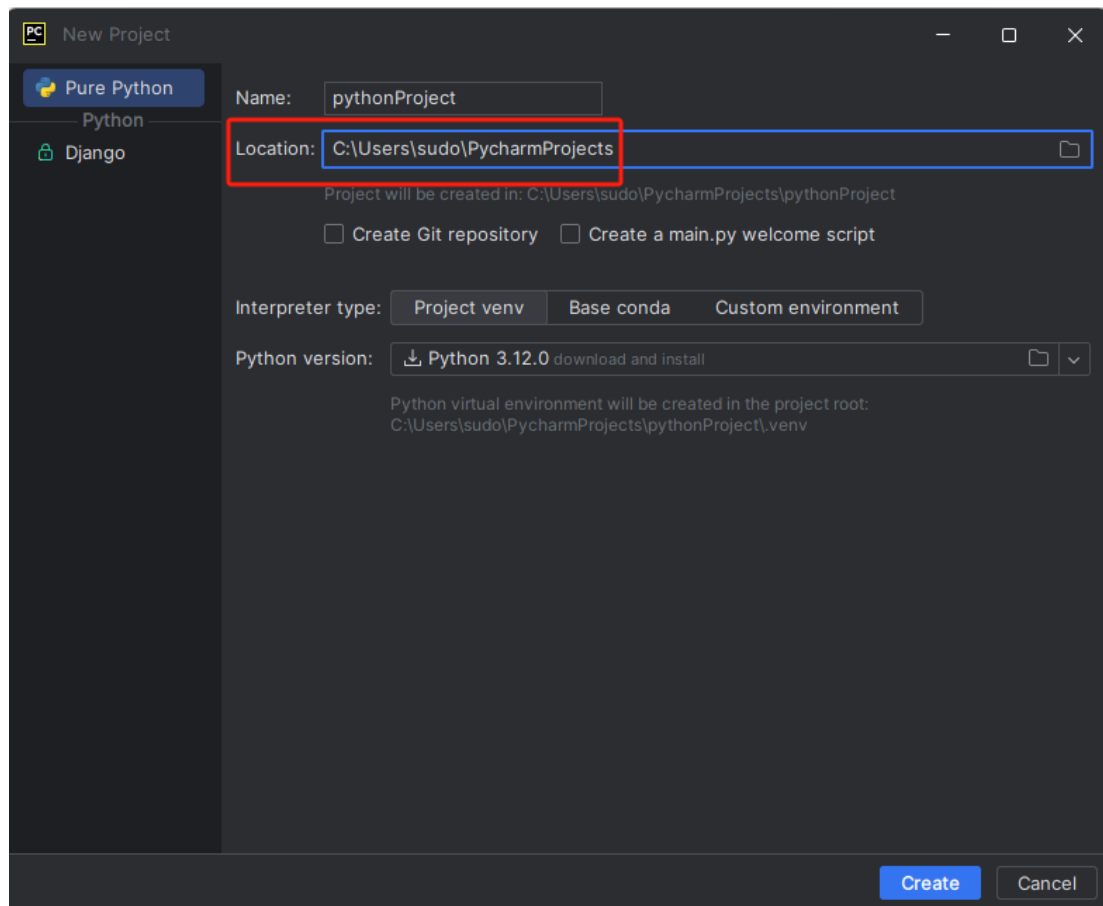


图 10 第二步，可修改工程路径

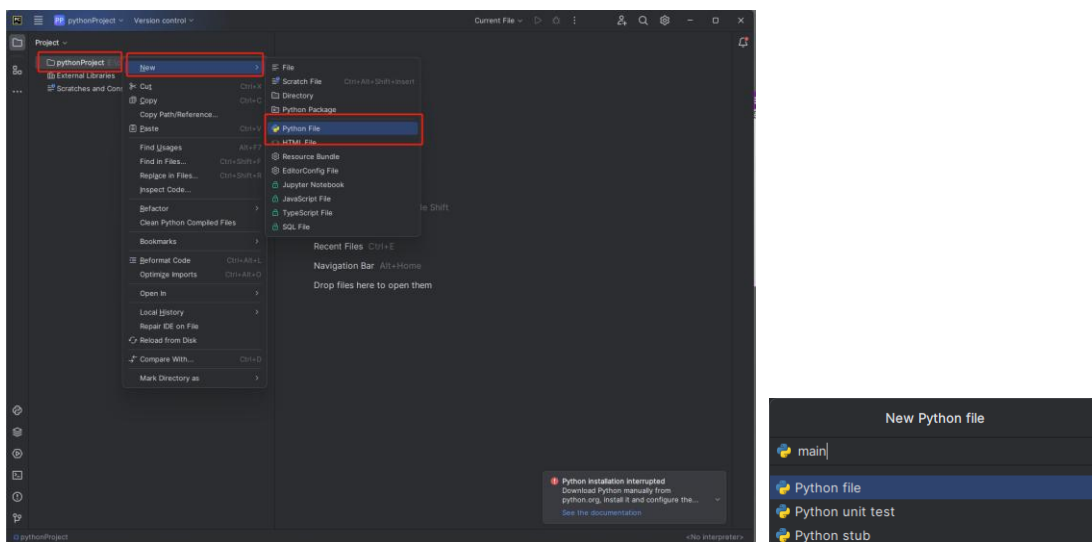


图 11 第三步，新建 python 文件

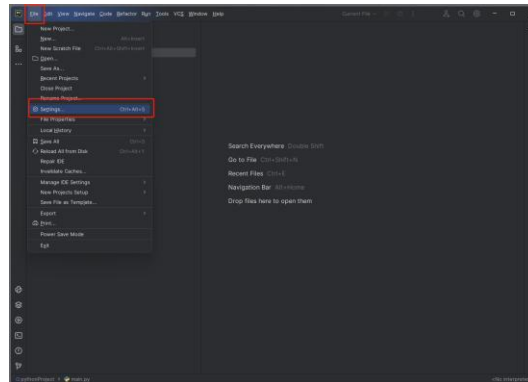


图 12 第四步，点击 file->Settings

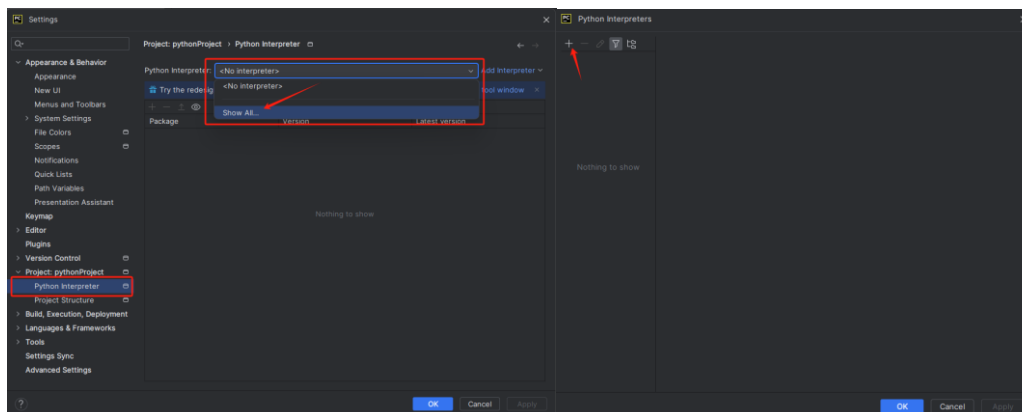


图 13 第五步，选择 Python Interpreter->Show All

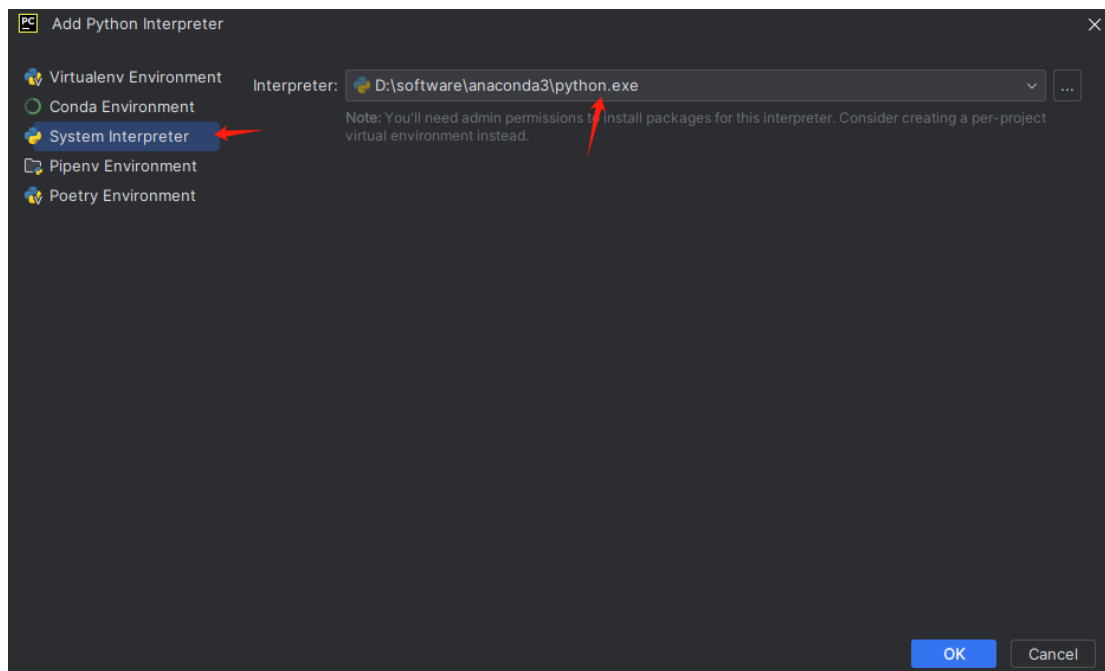


图 14 第六步，选择 System Interpreter-> Interpreter 路径

设置为 Anaconda 路径中 python.exe 的路径，点击 ok

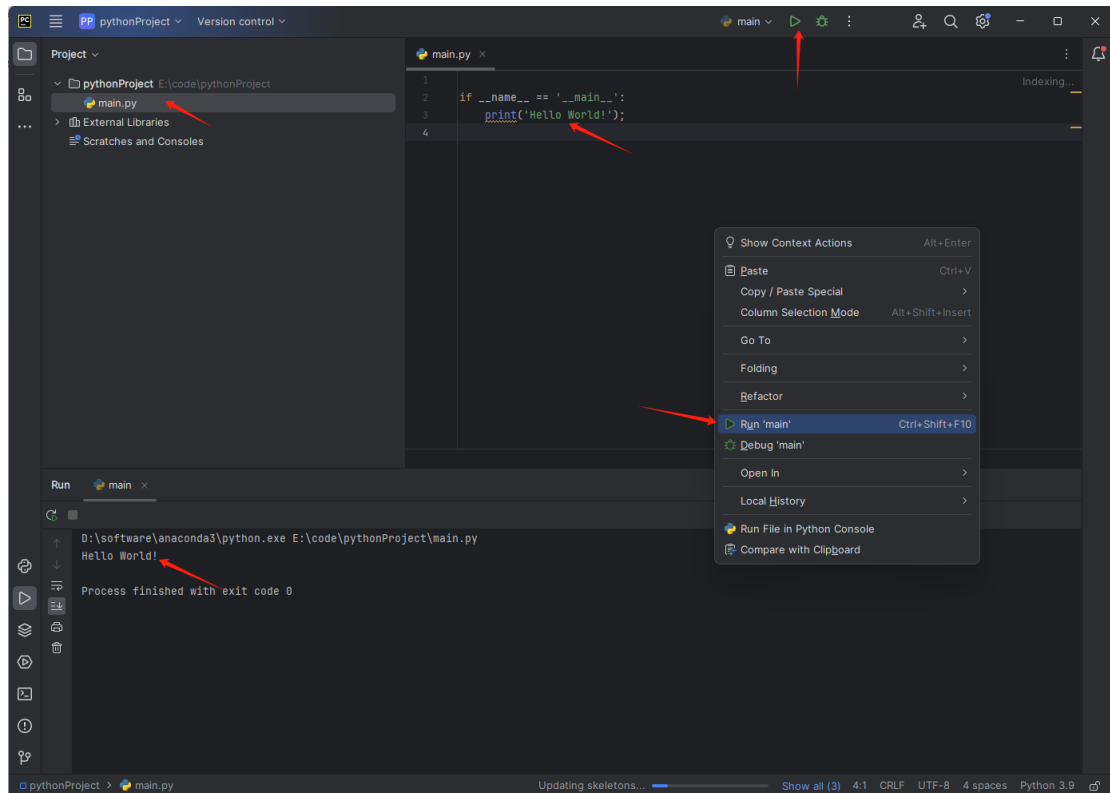
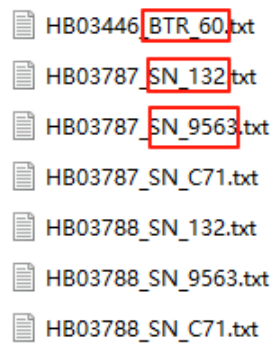


图 15 第七步，双击打开 main.py，输入代码，点击右键 Run 或右上角图标

作业

- 1, 用 python 代码将 txt_MSTAR 文件夹中的 TXT 格式数据转换为 jpg 格式图片;
- 2, **分类新建文件夹保存**, 文件夹名称为类别名称; TXT 文件名从左至右第一个下划线为分隔线, 左边为图片文件名, 右边为该图片所属类别, 例如下图中 BTR_60、SN_132、SN_9536 即为类别名称; 将相同类别的图片存到同一文件夹下。



HB03446_BTR_60.txt
HB03787_SN_132.txt
HB03787_SN_9563.txt
HB03787_SN_C71.txt
HB03788_SN_132.txt
HB03788_SN_9563.txt
HB03788_SN_C71.txt

- 3, 输出每张图片平均处理时间。

提示: 参考 jpg_txt.py 文件