

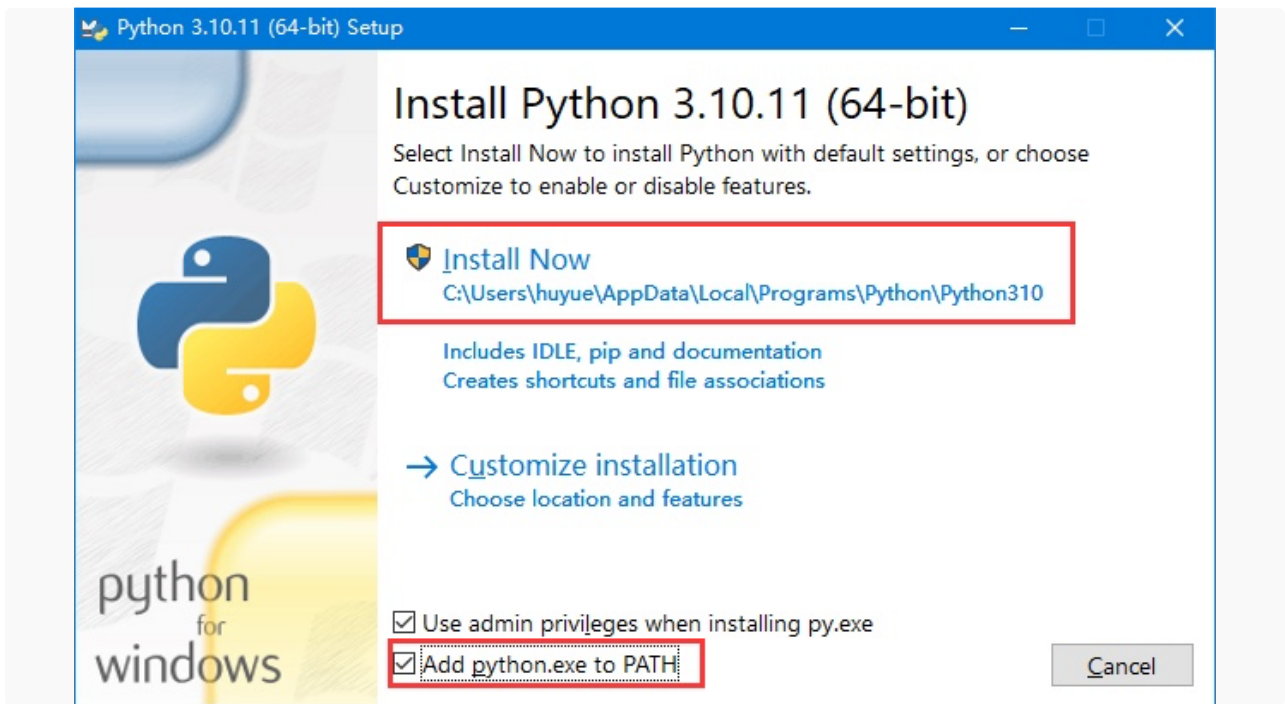
```
1 # checking response.status_code (if you get 502, try rerunning the code)
2 if response.status_code != 200:
3     print(f"Status: {response.status_code} - Try rerunning the code!")
4 else:
5     print(f"Status: {response.status_code}\n")
6
7 # using BeautifulSoup to parse the response object
8 soup = BeautifulSoup(response.content, "html.parser")
9
10 # finding Post images in the soup
11 images = soup.find_all("img", attrs={"alt": "Post image"})
12
13 # finding images
```

OpenCV 开发环境搭建

安装 Python

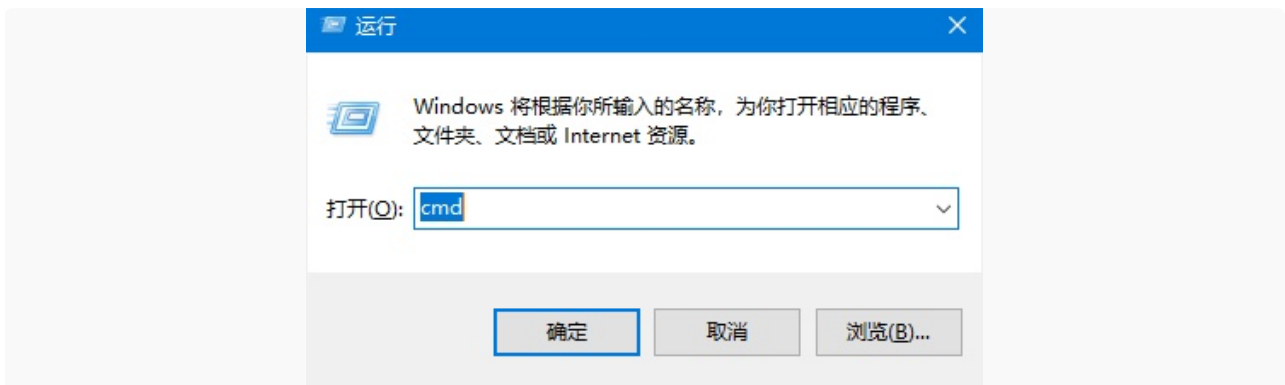
安装

从 [Python 官网](#) 下载最新版本 Python3 安装文件，Windows64位 3.10.11 版本可点此 [下载](#)。下载完成后，双击安装文件开始安装。勾选 `Add python.exe to PATH`，方便后续在命令行中使用 Python，点击 `Install Now`，等待安装完成。



验证

安装完成后, 按 Win+R 后输入 cmd 打开 windows 命令行工具。



提示符后输入 python, 回车, 出现以下界面表示 Python 安装成功。

```
C:\WINDOWS\system32\cmd.exe - python
Microsoft Windows [版本 10.0.19045.2728]
(c) Microsoft Corporation。保留所有权利。

C:\Users\huyue>python
Python 3.10.11 (tags/v3.10.11:7d4cc5a, Apr  5 2023, 00:38:17) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

修改 pypi 源

默认的 pypi 源访问速度较慢，我们可以在命令行中 (windows cmd 界面，非 python 解释器界面) 执行以下命令替换为清华大学 pypi 源，提升依赖包下载速度。

```
python -m pip install -i https://pypi.tuna.tsinghua.edu.cn/simple --upgrade pip
pip config set global.index-url https://pypi.tuna.tsinghua.edu.cn/simple
```

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [版本 10.0.19045.2846]
(c) Microsoft Corporation。保留所有权利。

C:\Users\huyue>python -m pip install -i https://pypi.tuna.tsinghua.edu.cn/simple --upgrade pip
Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple
Requirement already satisfied: pip in c:\users\huyue\appdata\local\programs\python\python310\lib\site-packages (23.0.1)
Collecting pip
  Downloading https://pypi.tuna.tsinghua.edu.cn/packages/ae/db/a8821cdac455a1740580c92de3ed7b7f257cfdbad8b1ba8864e0abe58a08/pip-23.1-py3-none-any.whl (2.1 MB)
    2.1/2.1 MB 5.7 MB/s eta 0:00:00
Installing collected packages: pip
  Attempting uninstall: pip
    Found existing installation: pip 23.0.1
    Uninstalling pip-23.0.1:
      Successfully uninstalled pip-23.0.1
  Successfully installed pip-23.1

C:\Users\huyue>_
```

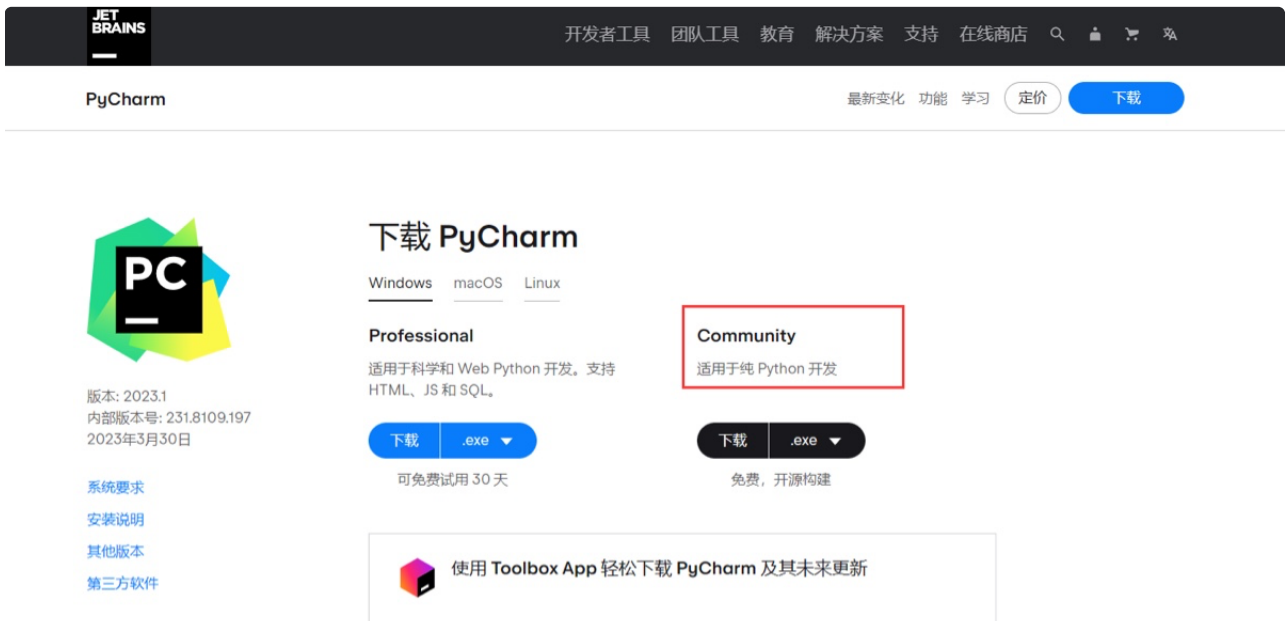
```
C:\WINDOWS\system32\cmd.exe

C:\Users\huyue>pip config set global.index-url https://pypi.tuna.tsinghua.edu.cn/simple
Writing to C:\Users\huyue\AppData\Roaming\pip\pip.ini

C:\Users\huyue>
```

安装 PyCharm IDE

本课程使用 PyCharm IDE 作为 Python 开发工具，登录 [Jetbrains 官网](#) 下载 PyCharm Community 版本。[下载链接](#)。按照默认选项安装即可。



创建 OpenCV 工程

安装依赖

在合适位置创建工程目录（工程文件夹），比如 `C:\Dev\python_projects\opencv-project`，在命令行中输入以下命令跳转到工程目录：

```
C:\WINDOWS\system32\cmd.exe

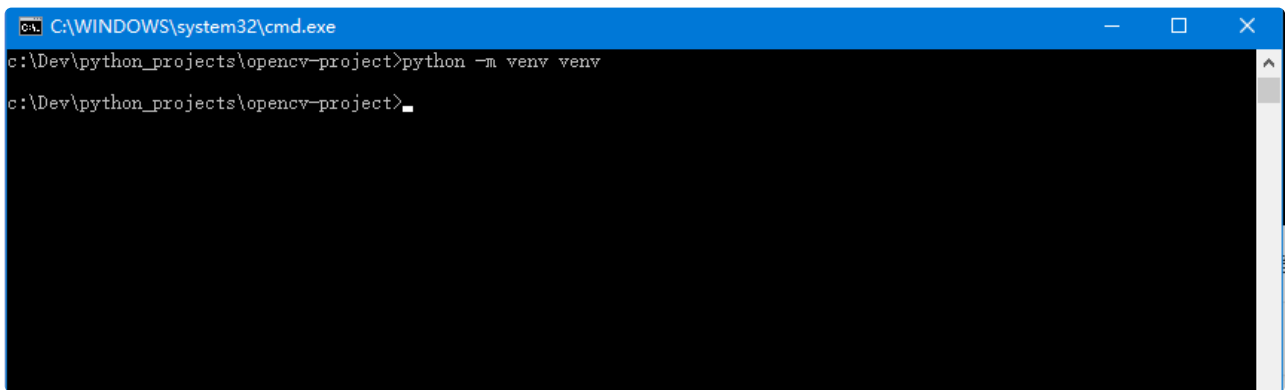
Microsoft Windows [版本 10.0.19045.2728]
(c) Microsoft Corporation。保留所有权利。

C:\Users\huyue>cd C:\Dev\python_projects\opencv-project

C:\Dev\python_projects\opencv-project>
```

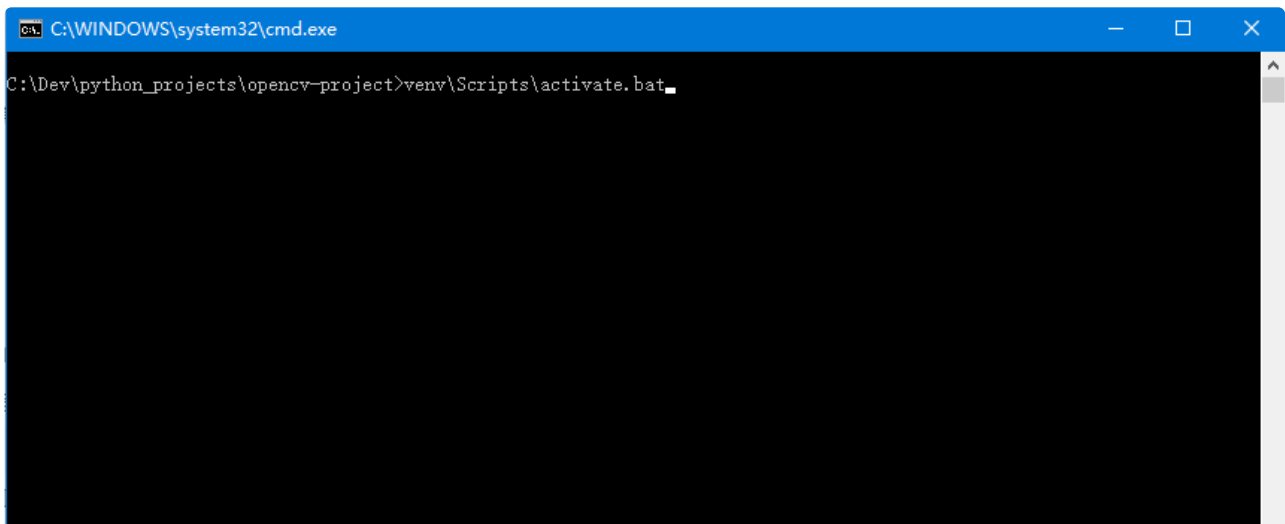
跳转到该目录后，执行以下命令创建 Python 虚拟开发环境（以下简称 venv）

```
python -m venv venv
```



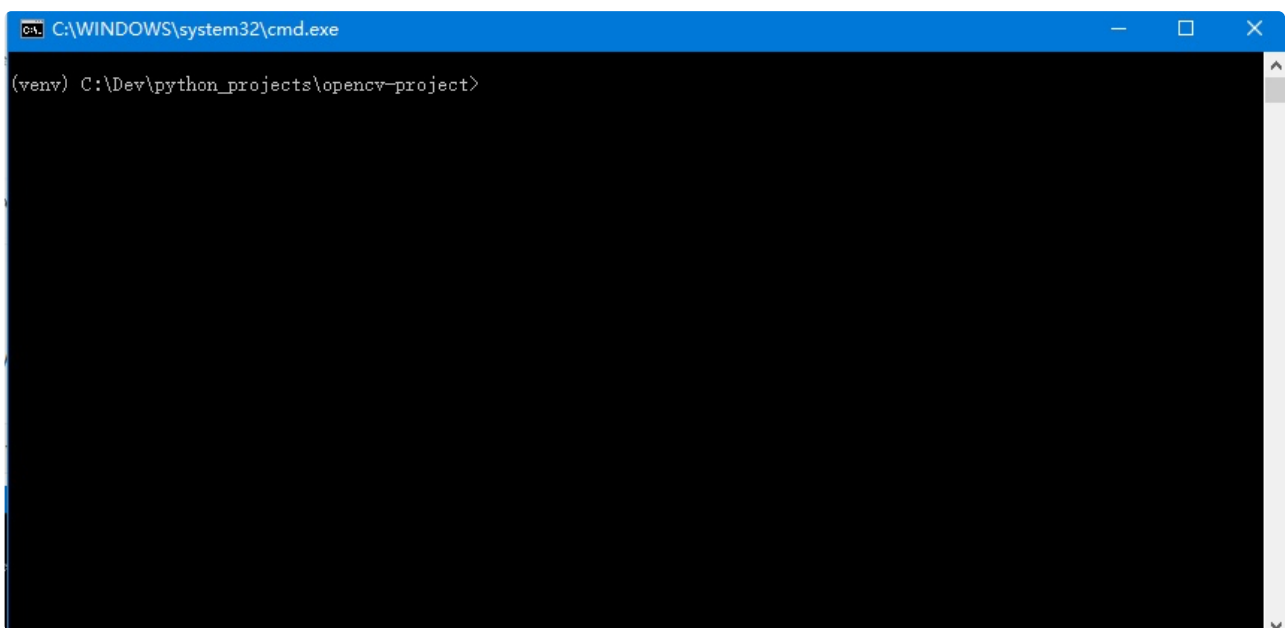
```
C:\WINDOWS\system32\cmd.exe
c:\Dev\python_projects\opencv-project>python -m venv venv
c:\Dev\python_projects\opencv-project>_
```

创建完成后，执行 `venv\Scripts\activate.bat` 激活 venv



```
C:\WINDOWS\system32\cmd.exe
C:\Dev\python_projects\opencv-project>venv\Scripts\activate.bat_
```

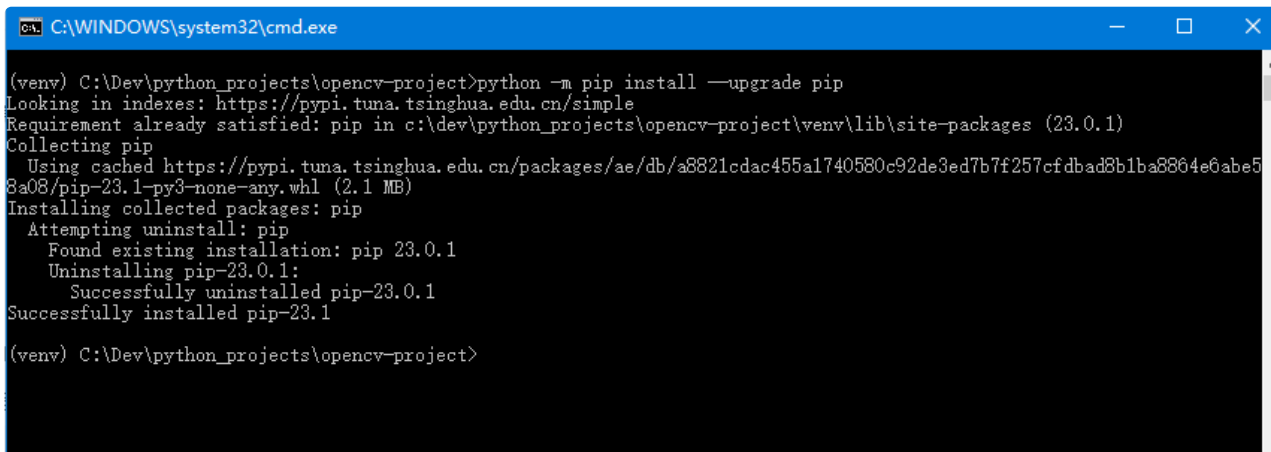
弹出以下类似窗口表示环境激活成功



```
C:\WINDOWS\system32\cmd.exe
(venv) C:\Dev\python_projects\opencv-project>
```

在 venv 窗口中输入以下命令更新 pip

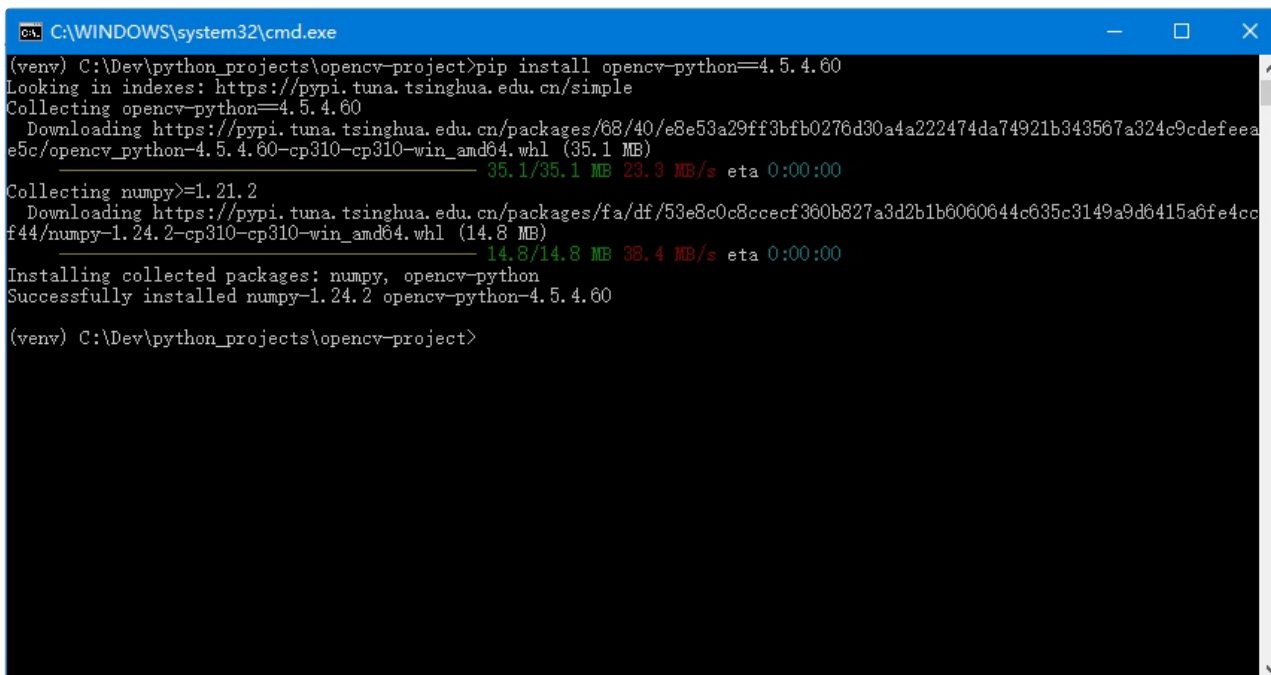
```
python -m pip install --upgrade pip
```



```
C:\WINDOWS\system32\cmd.exe
(venv) C:\Dev\python_projects\opencv-project>python -m pip install --upgrade pip
Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple
Requirement already satisfied: pip in c:\dev\python_projects\opencv-project\venv\lib\site-packages (23.0.1)
Collecting pip
  Using cached https://pypi.tuna.tsinghua.edu.cn/packages/ae/db/a8821cdac455a1740580c92de3ed7b7f257cfdbad8b1ba8864e0abe58a08/pip-23.1-py3-none-any.whl (2.1 MB)
Installing collected packages: pip
  Attempting uninstall: pip
    Found existing installation: pip 23.0.1
    Uninstalling pip-23.0.1:
      Successfully uninstalled pip-23.0.1
Successfully installed pip-23.1
(venv) C:\Dev\python_projects\opencv-project>
```

在venv窗口中输入以下命令安装opencv-python依赖(必须安装4.5.4.60版本, 否则IDE下无自动补全)

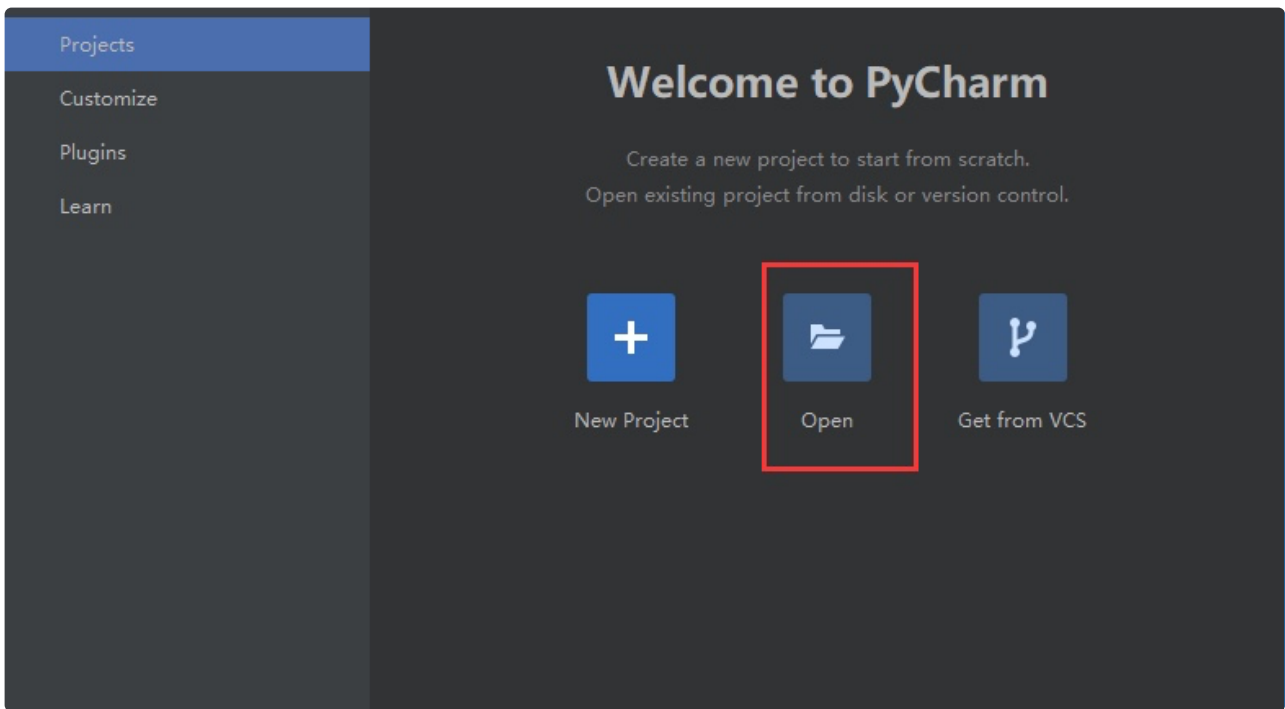
```
pip install opencv-python==4.5.4.60
```



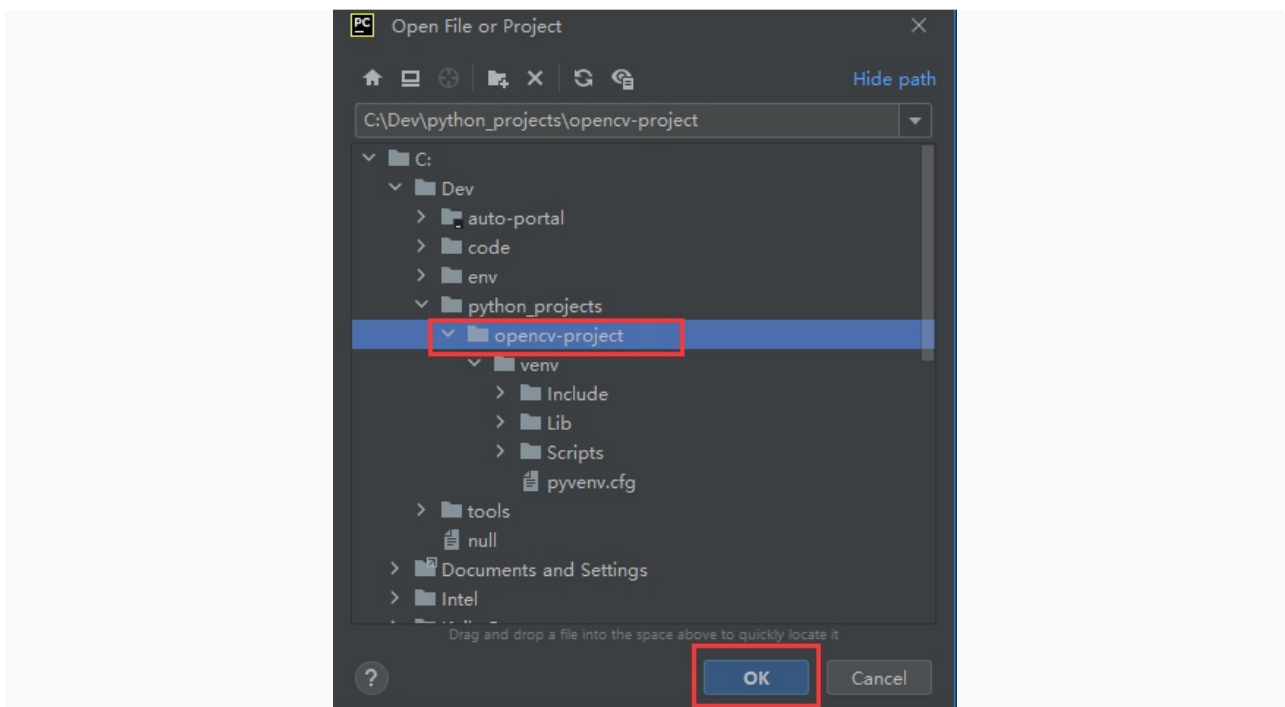
```
C:\WINDOWS\system32\cmd.exe
(venv) C:\Dev\python_projects\opencv-project>pip install opencv-python==4.5.4.60
Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple
Collecting opencv-python==4.5.4.60
  Downloading https://pypi.tuna.tsinghua.edu.cn/packages/68/40/e8e53a29ff3bfb0276d30a4a222474da74921b343567a324c9cdefeea5c/opencv_python-4.5.4.60-cp310-cp310-win_amd64.whl (35.1 MB)
    35.1/35.1 MB 23.3 MB/s eta 0:00:00
Collecting numpy>=1.21.2
  Downloading https://pypi.tuna.tsinghua.edu.cn/packages/fa/df/53e8c0c8cccf360b827a3d2b1b6060644c635c3149a9d6415a6fe4ccf44/numpy-1.24.2-cp310-cp310-win_amd64.whl (14.8 MB)
    14.8/14.8 MB 38.4 MB/s eta 0:00:00
Installing collected packages: numpy, opencv-python
Successfully installed numpy-1.24.2 opencv-python-4.5.4.60
(venv) C:\Dev\python_projects\opencv-project>
```

PyCharm打开工程

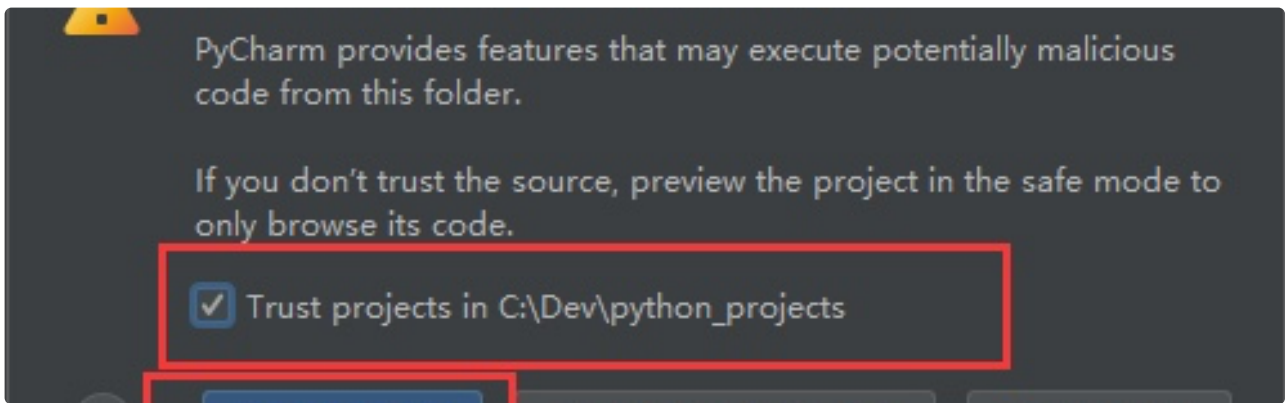
打开PyCharm, 点击 **Open**



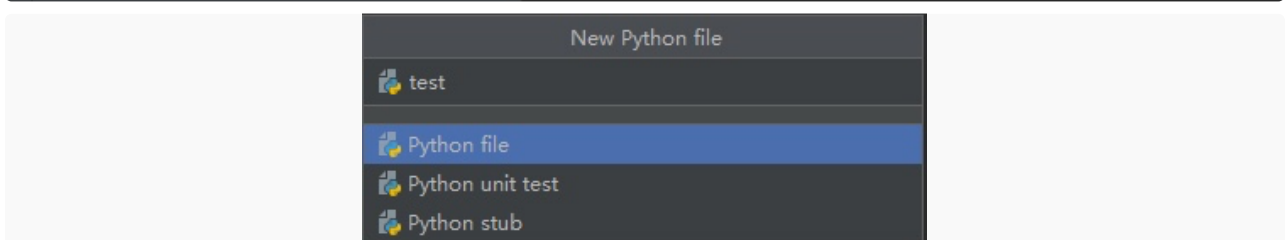
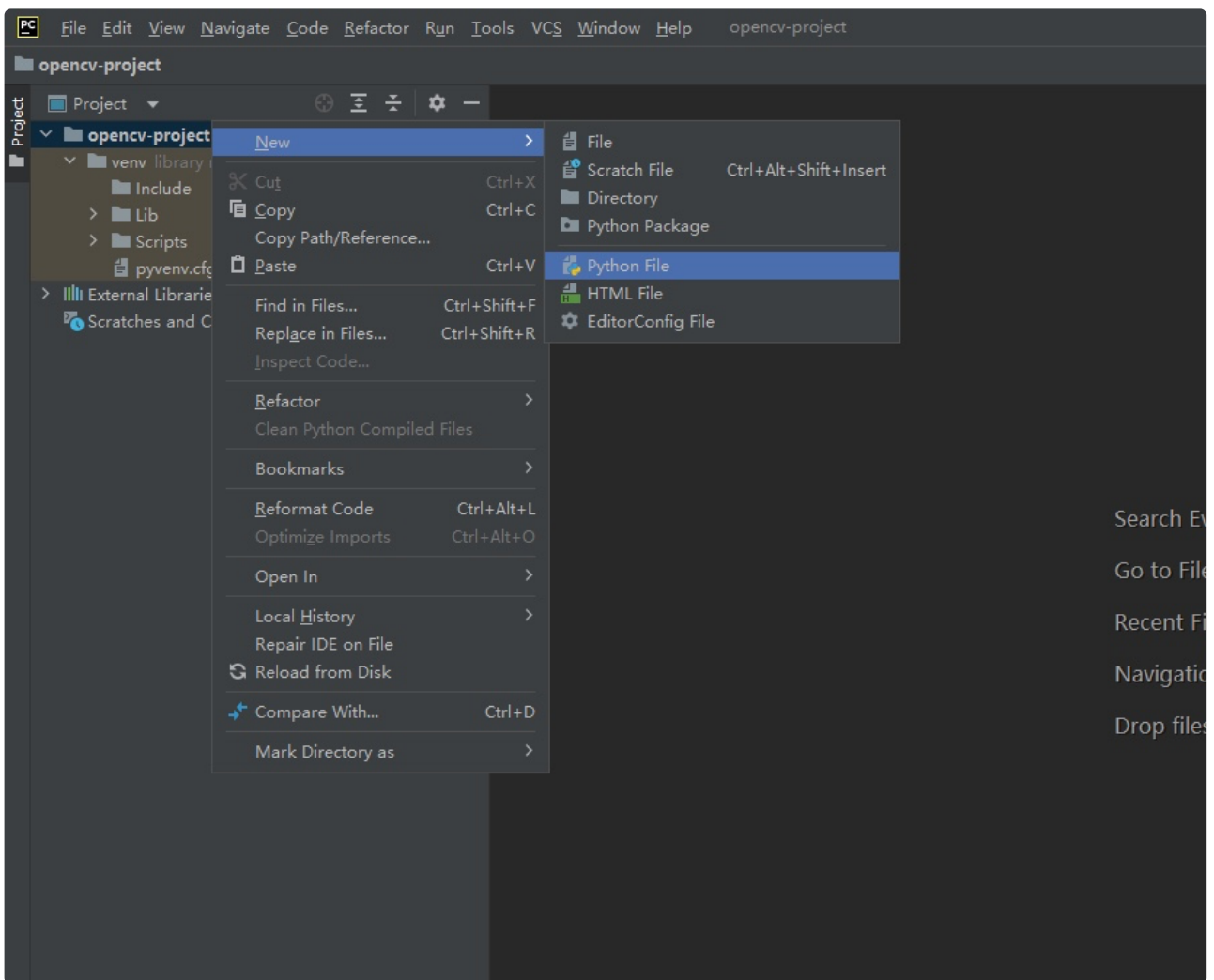
选中刚才创建的工程目录，点击 **OK**



如果弹出下图提示框，参考下图操作



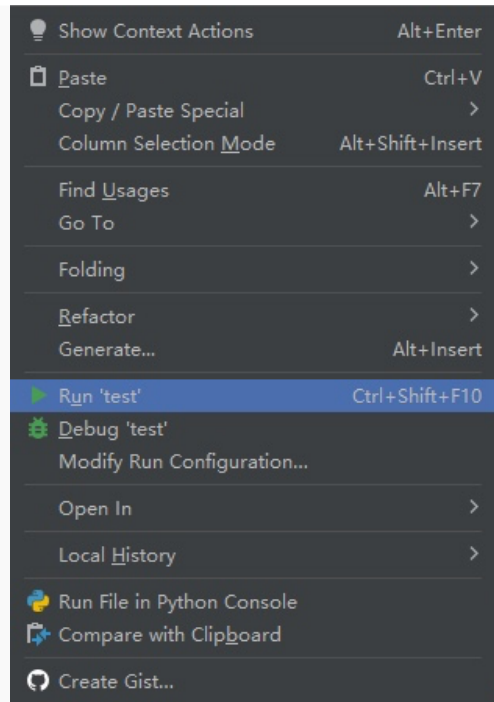
创建 OpenCV 验证程序



输入以下代码 (路径替换为自己工程目录, 1.png 可以为任意图片, 在当前路径下)


```
import cv2
img = cv2.imread(r"C:\Dev\python_projects\opencv-project\1.png", cv2.IMREAD_COLOR)
cv2.imshow('image', img)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

右键执行 `Run 'test'`



弹出 `1.png` 图片即表示 OpenCV 环境搭建成功

