Python
安裝與環境建置

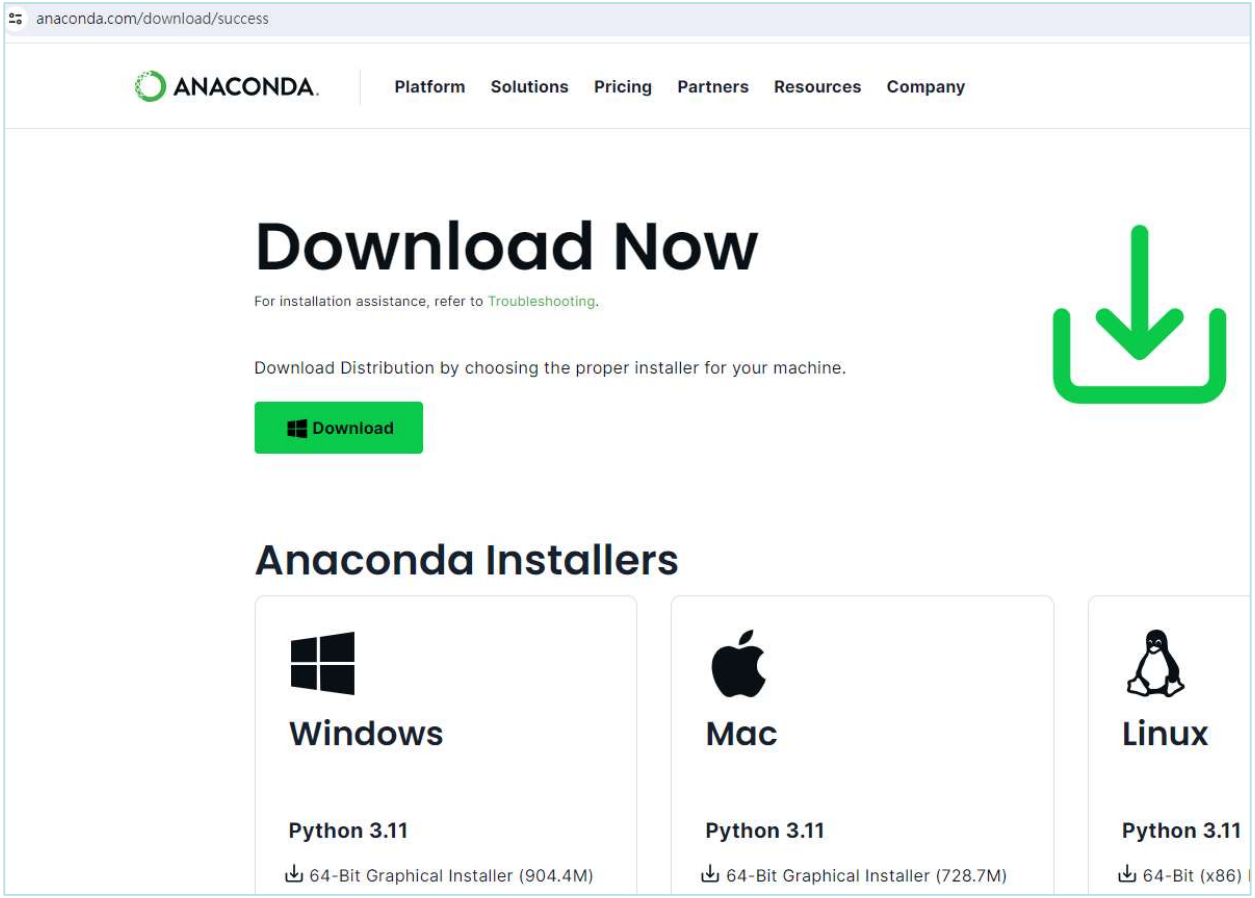
臺北科技大學資訊工程系

安裝 Anaconda

- Anaconda 安裝管理程式。
  - Anaconda 透過 Conda 進行軟體套件管理。

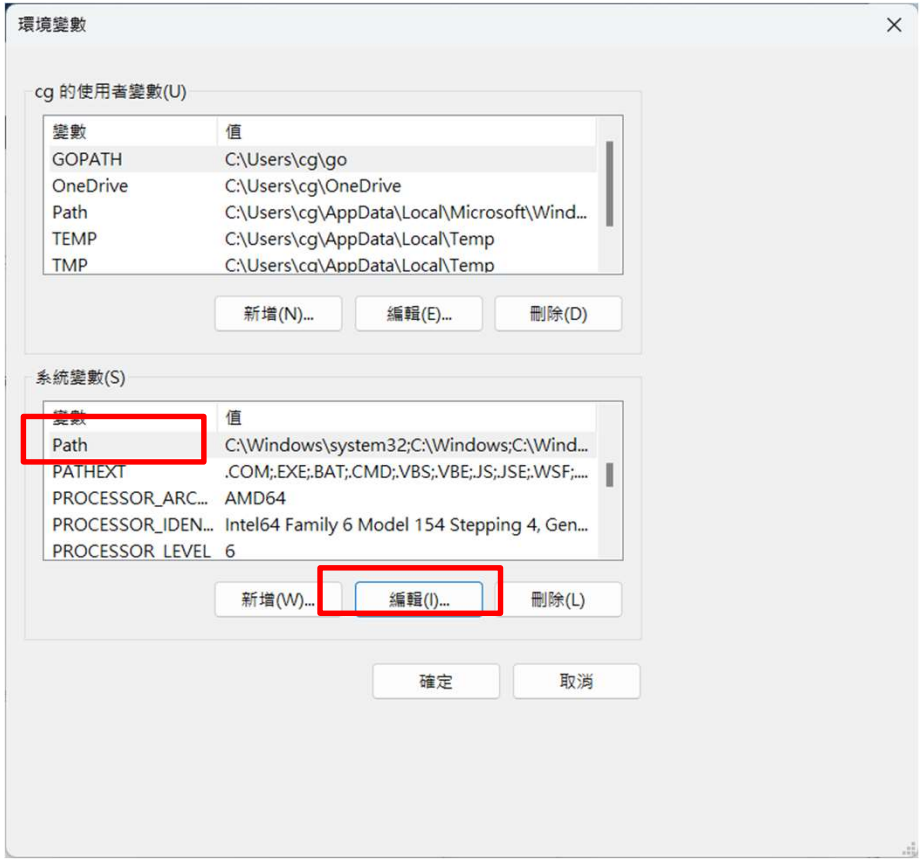
安裝 Anaconda

- https://www.anaconda.com/download/success
  - 下載執行 Anaconda3-2024.02-1-Windows-x86_64



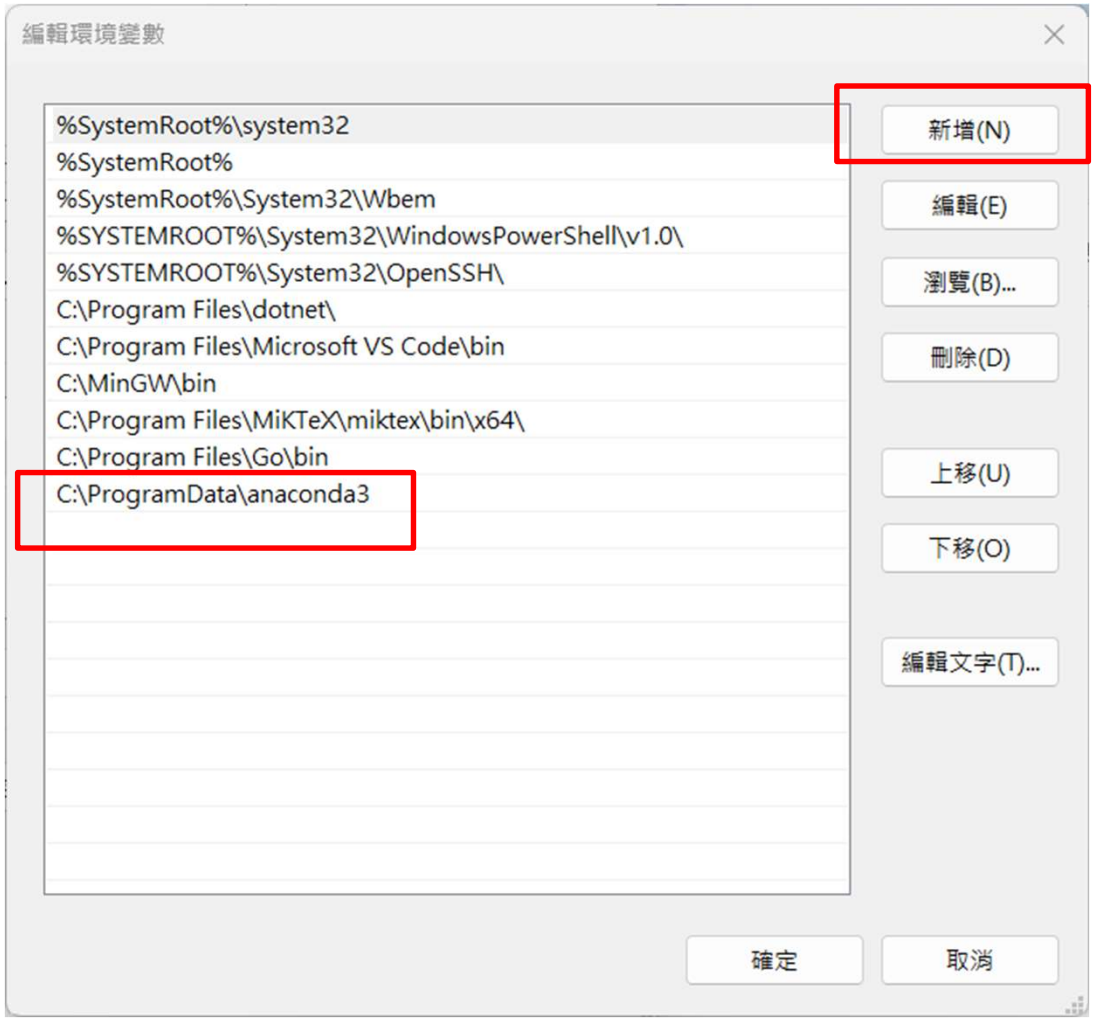
安裝 Anaconda

- 設定路徑， C:\ProgramData\Anaconda3



安裝 Anaconda

- 設定路徑， C:\ProgramData\Anaconda3



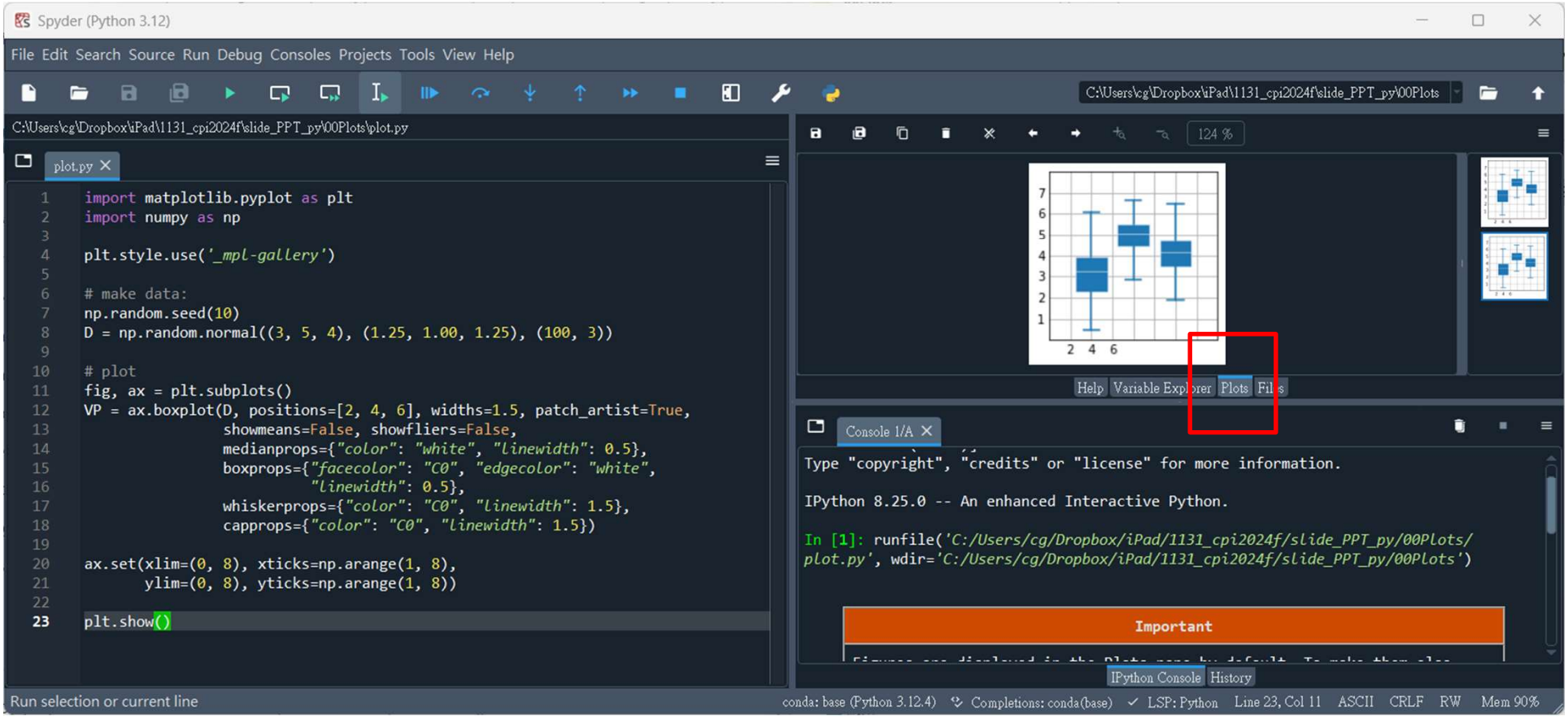
使用 Spyder 撰寫程式

- Spyder:
  - IDE 整合編輯環境

使用 Spyder 撰寫程式

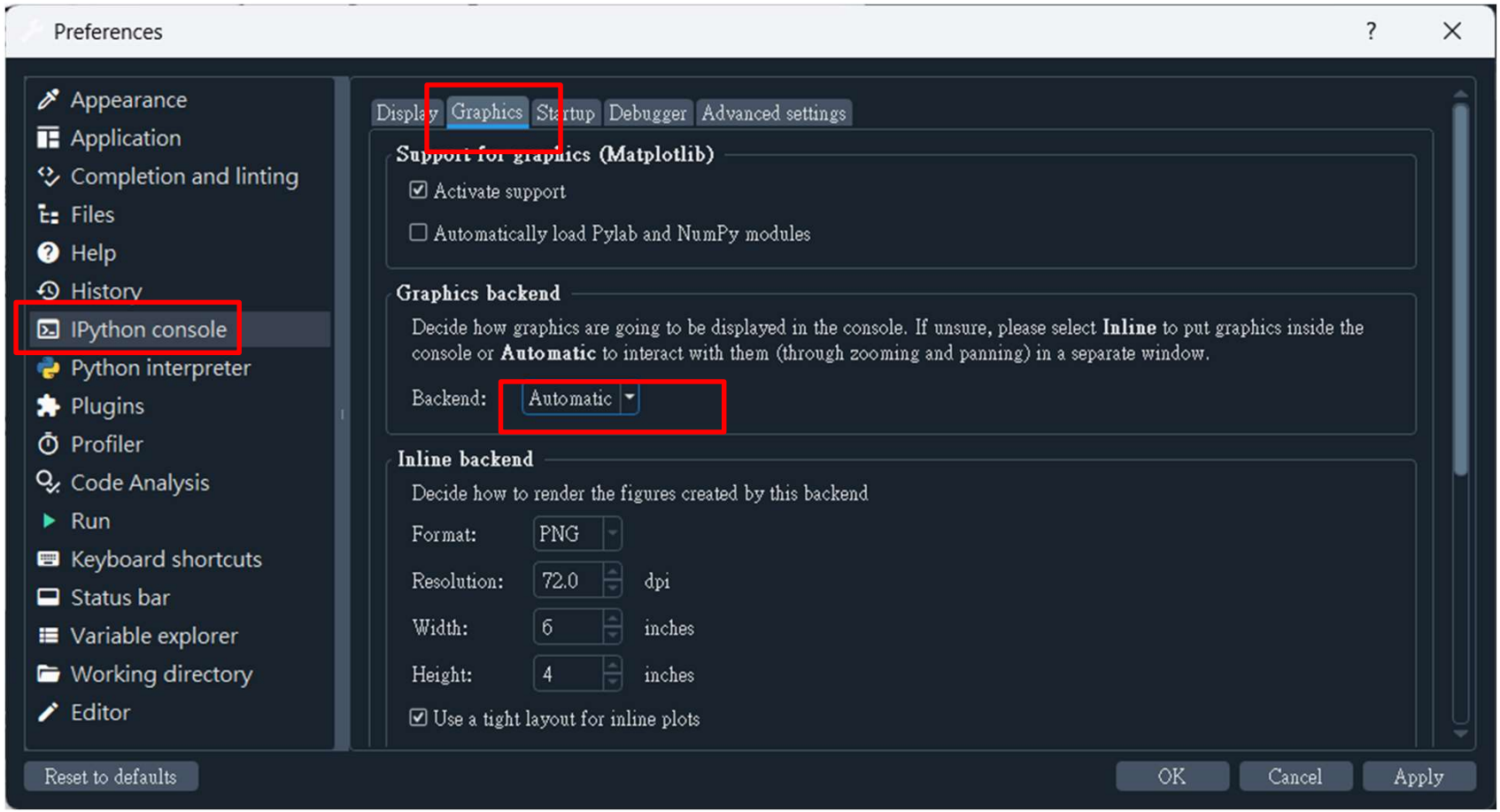
- matplotlib.pyplot 要能畫圖,選 Plots

```
import matplotlib.pyplot as plt
import numpy as np

plt.style.use('_mpl-gallery')

# make data:
np.random.seed(10)
D = np.random.normal((3, 5, 4), (1.25, 1.00, 1.25), (100, 3))

# plot
fig, ax = plt.subplots()
VP = ax.boxplot(D, positions=[2, 4, 6], widths=1.5, patch_artist=True,
                showmeans=False, showfliers=False,
                medianprops={"color": "white", "linewidth": 0.5},
                boxprops={"facecolor": "C0", "edgecolor": "white",
                          "linewidth": 0.5},
                whiskerprops={"color": "C0", "linewidth": 1.5},
                capprops={"color": "C0", "linewidth": 1.5})

ax.set(xlim=(0, 8), xticks=np.arange(1, 8),
       ylim=(0, 8), yticks=np.arange(1, 8))
plt.savefig("test.svg")
plt.show()
```



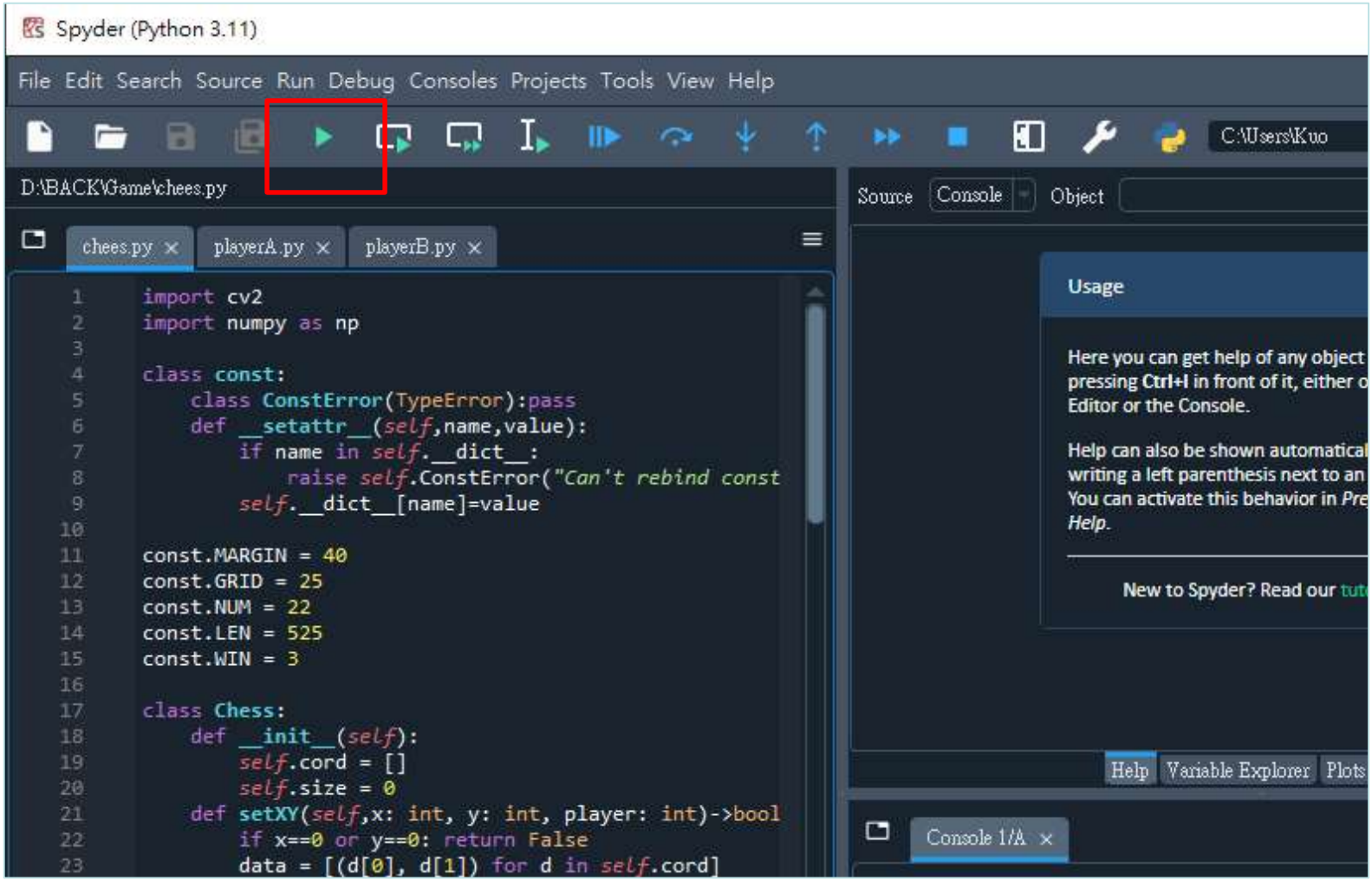
使用 Spyder 撰寫程式

- Tools > Preferences > iPython console >
- Graphics > Graphics backend > Automatic



使用 Spyder 撰寫程式

- Anaconda3: Spyder



程式

```
# 101.py

import os

print('\n')
print('Enter some numbers:')
data = input().split()
data = [int(x) for x in data]
print(max(data), sum(data) )

os.system("pause")
```

測資

```
# 101.txt

1 2 3
```

Input Redirection

- VS Code (Windows)
- https://www.youtube.com/watch?v=gu3_f48xibk

- Spyder (Windows)
- https://www.reddit.com/r/learnpython/comments/1ad0ujq/running_python_script_from_spyder_with_input/

- VS Code (Mac)
- https://www.youtube.com/watch?v=hZr771uONS8

- Spyder (Mac)
- https://www.youtube.com/watch?v=DiAlEuY1zlg

Anaconda Prompt 安裝套件

- 指令執行安裝套件
  - conda install "套件名稱"
  - conda update "套件名稱"
  - conda update –all

- 若為非 anaconda repository package
  - 安裝 association rule 套件
  - pip install apyori

使用 VS Code 撰寫 / 安裝 Python

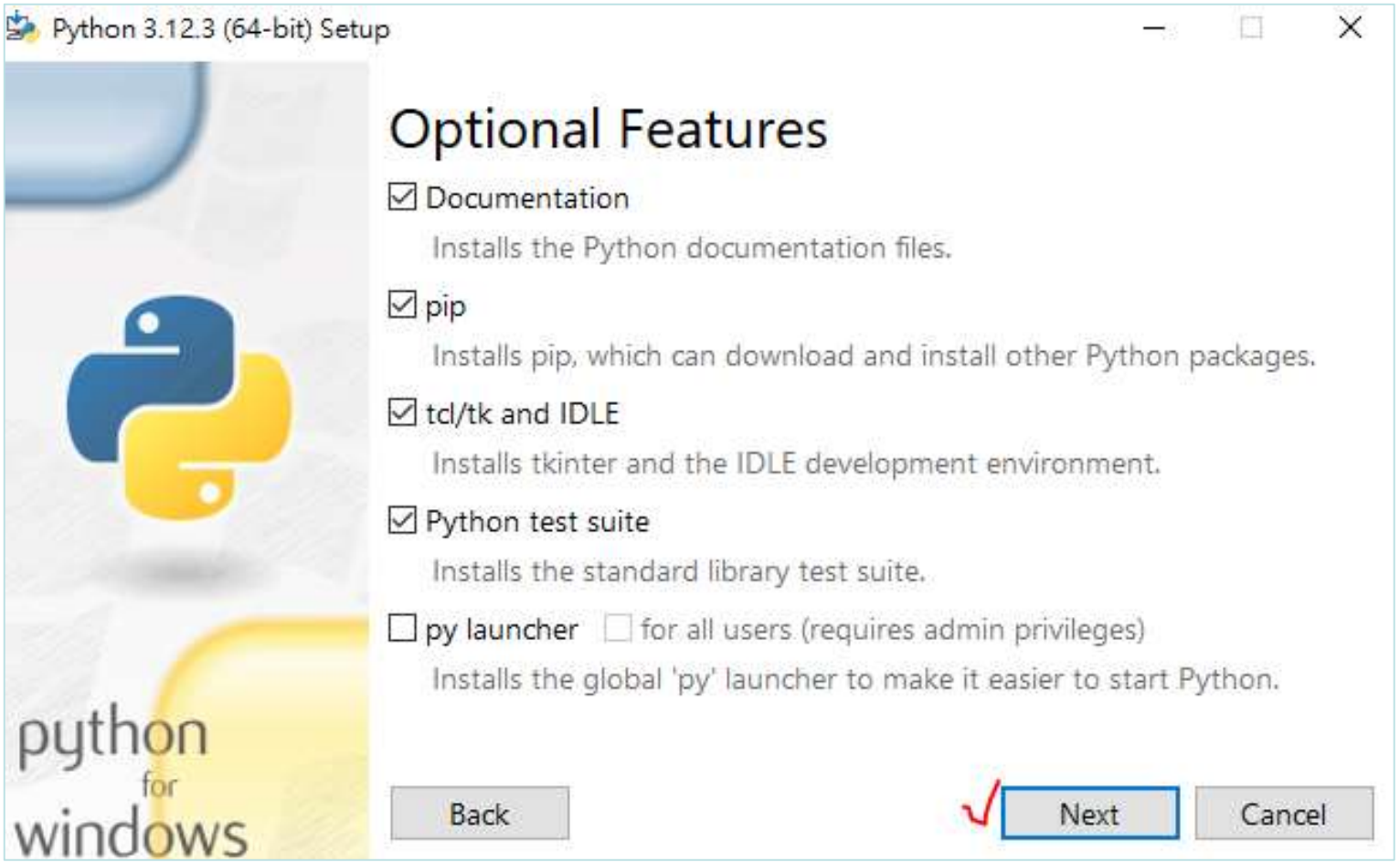
- 安裝 Python

使用 VS Code 撰寫 / 安裝 Python

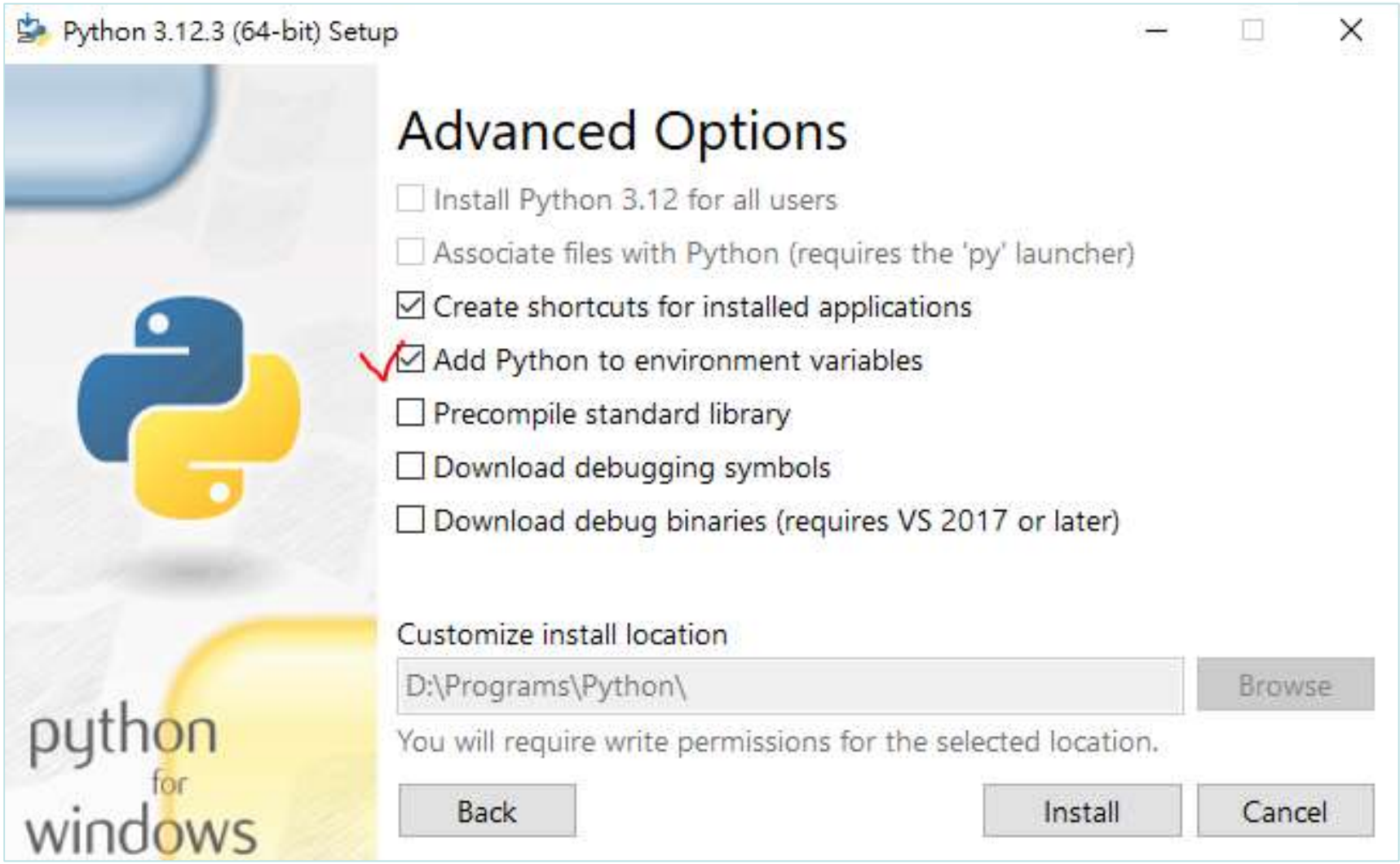
- 下載 Python
- https://www.python.org/downloads/windows/

使用 VS Code 撰寫 / 安裝 Python

- 安裝 Python



使用 VS Code 撰寫 / 安裝 Python

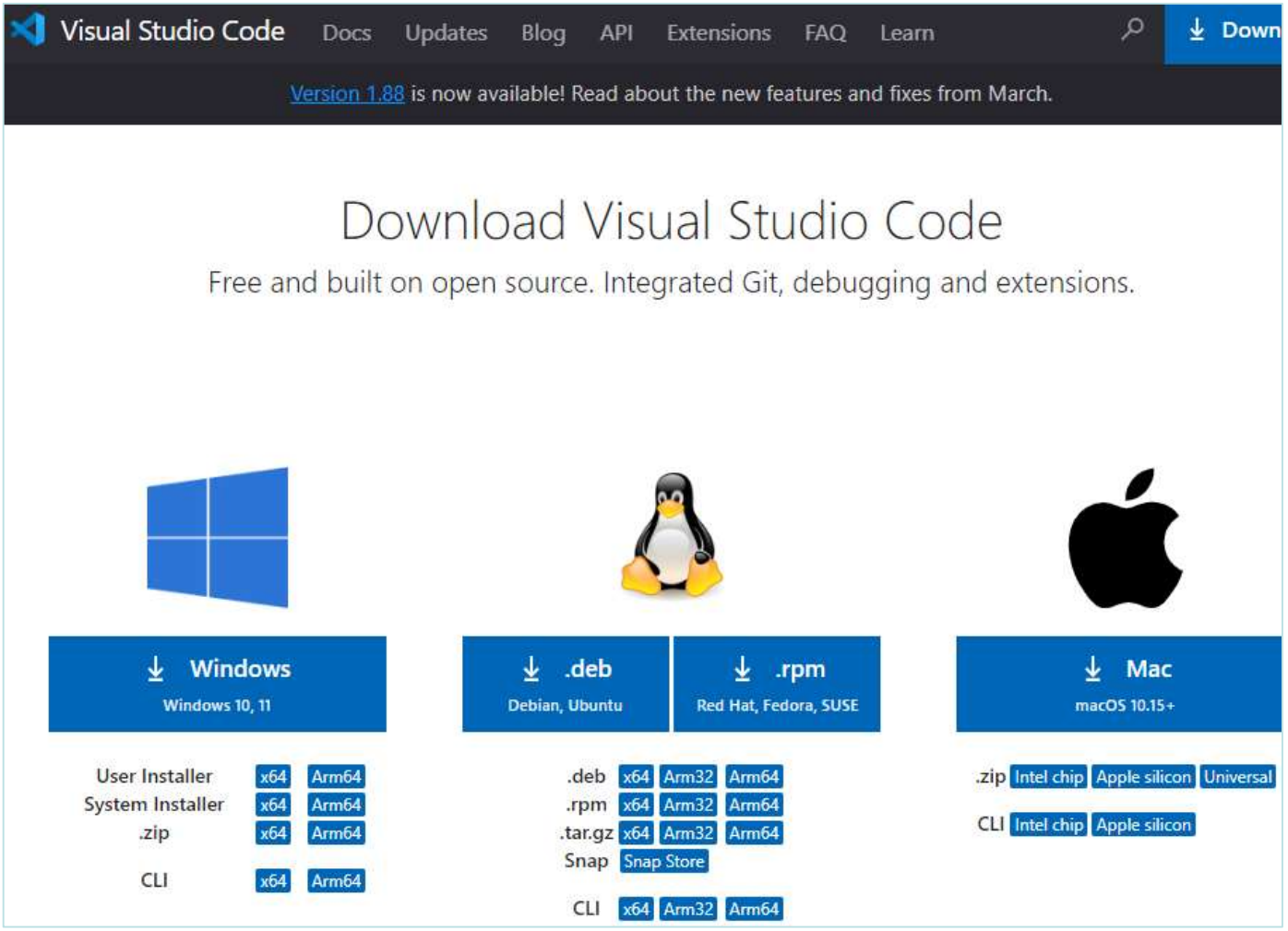


使用 VS Code 撰寫

- 安裝 VS Code

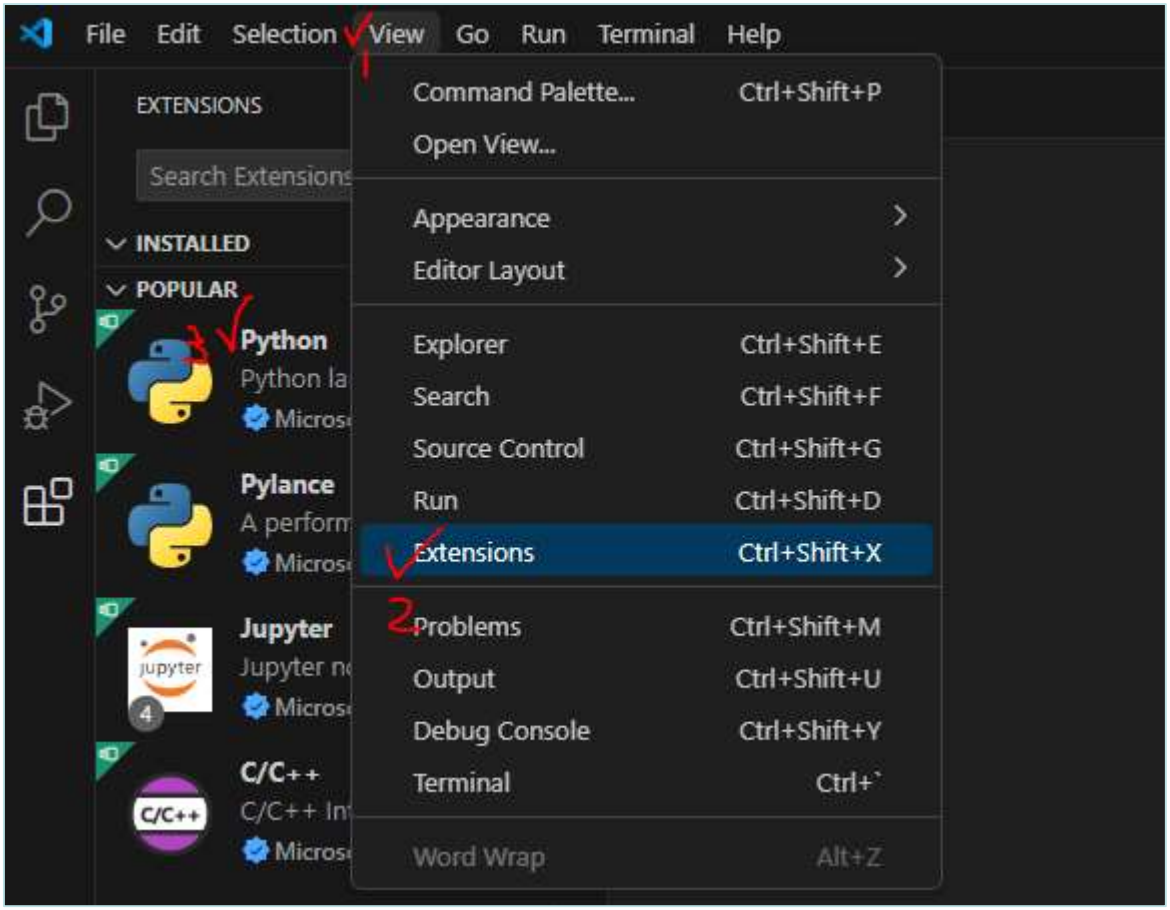
使用 VS Code 撰寫

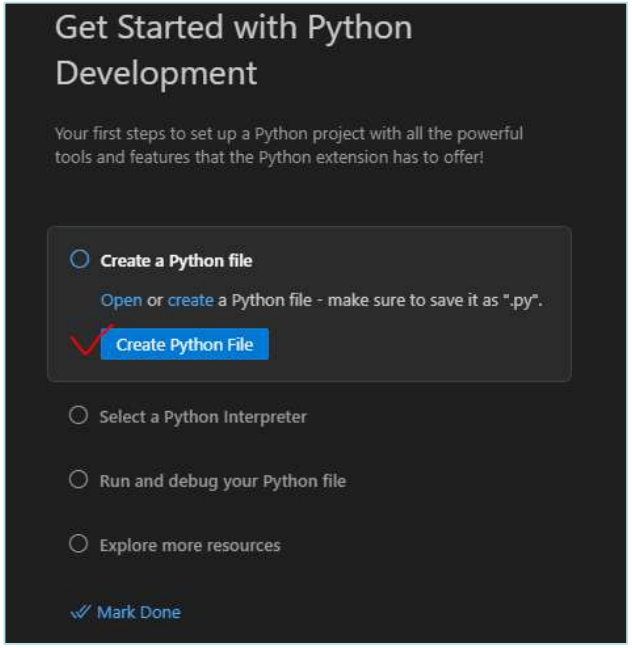
- 安裝 VS Code https://code.visualstudio.com/download



使用 VS Code 撰寫

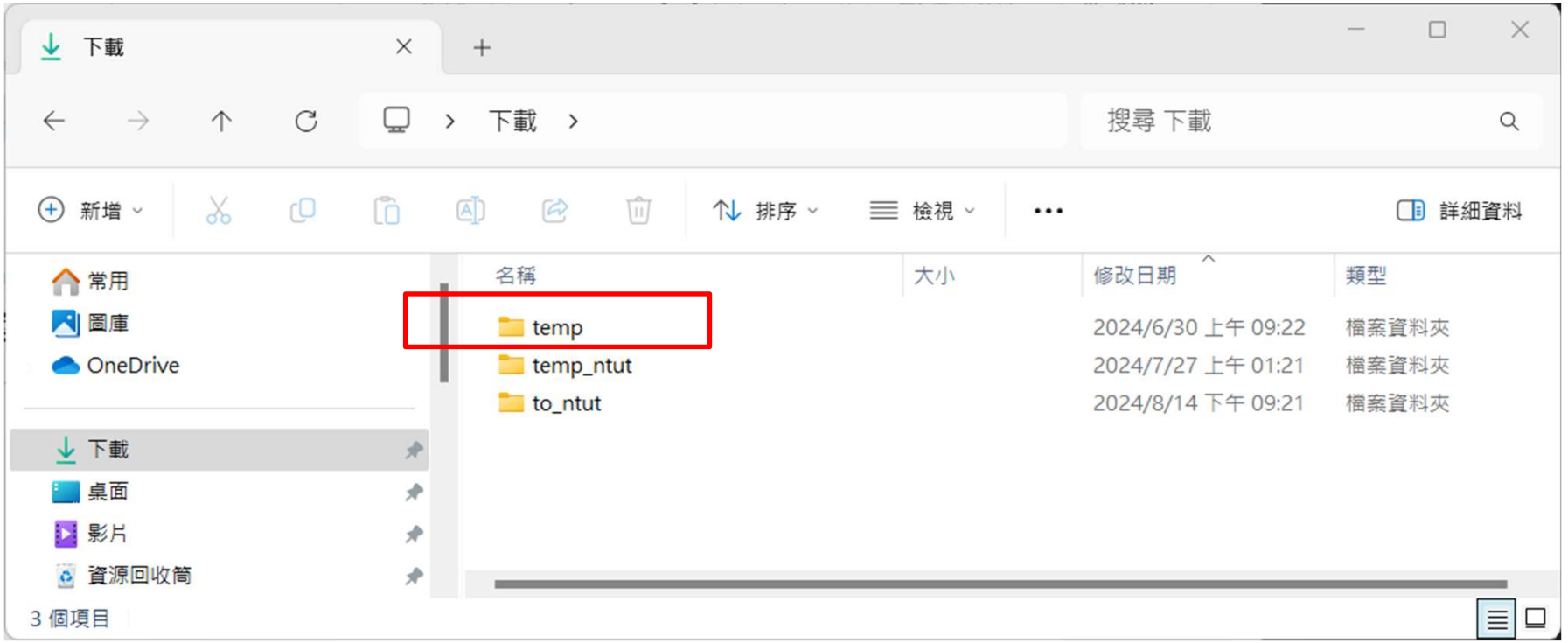
- View: Extensions:
- Python: Install





使用 VS Code 撰寫

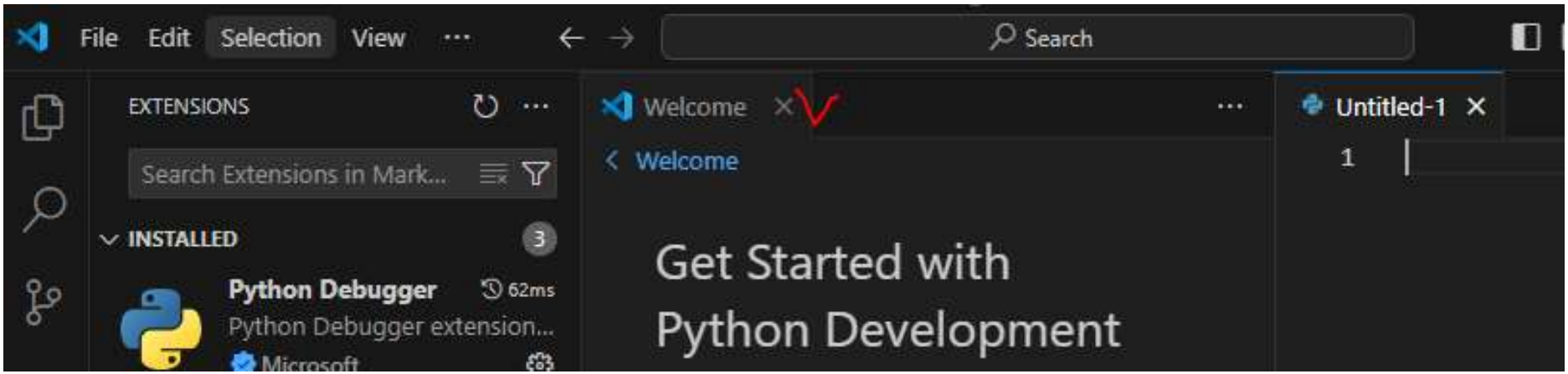
- 到檔案總管，造一個資料夾 d:\Temp



- 關閉welcome視窗

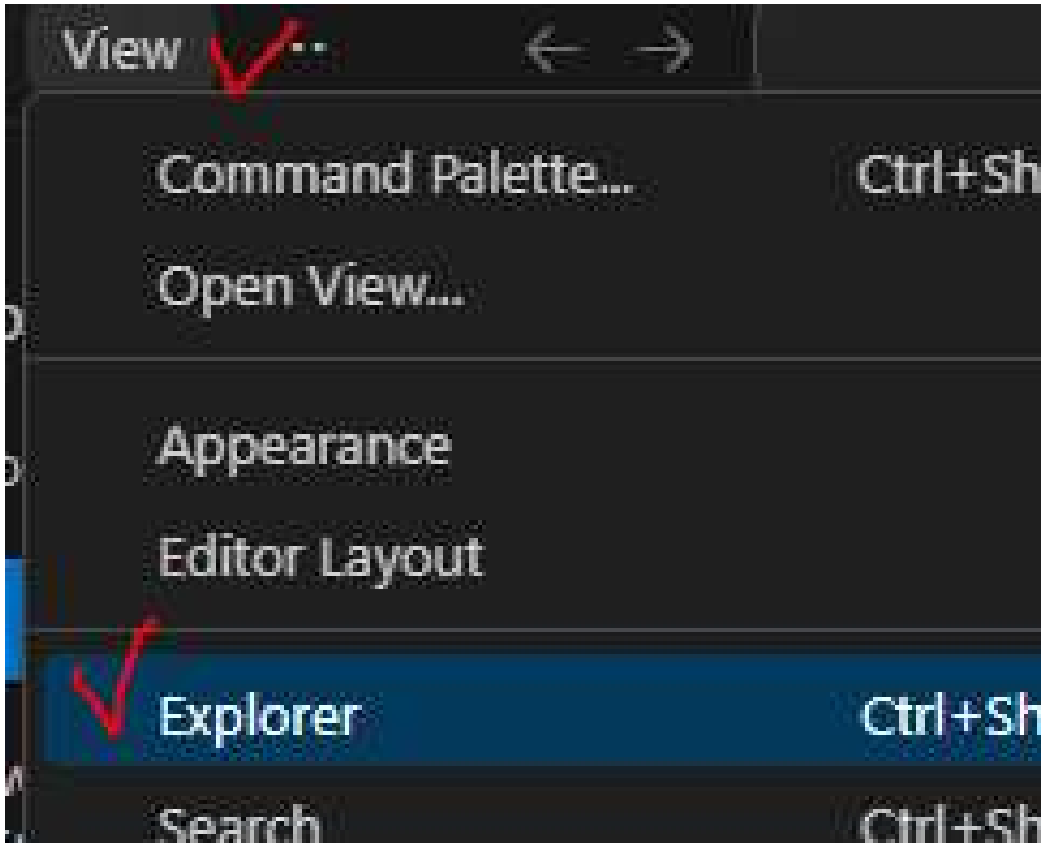
使用 VS Code 撰寫

- 關閉 Visual Studio Code 的 Welcome 視窗



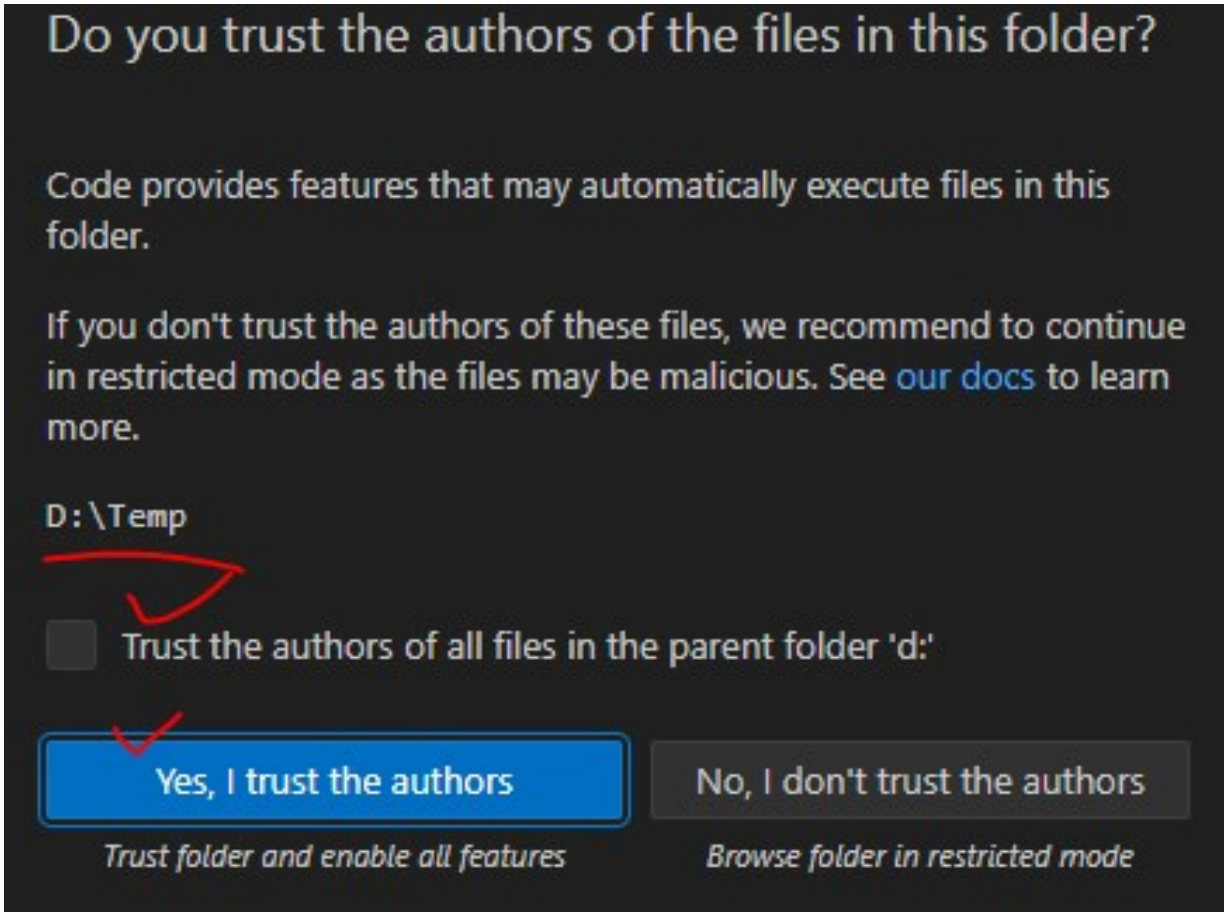
使用 VS Code 撰寫

- 點選 View: Explorer



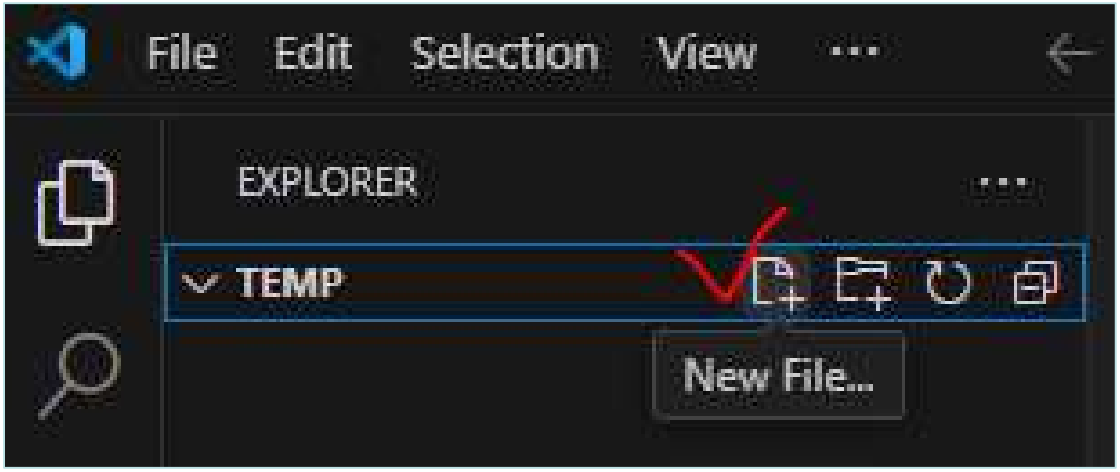
使用 VS Code 撰寫

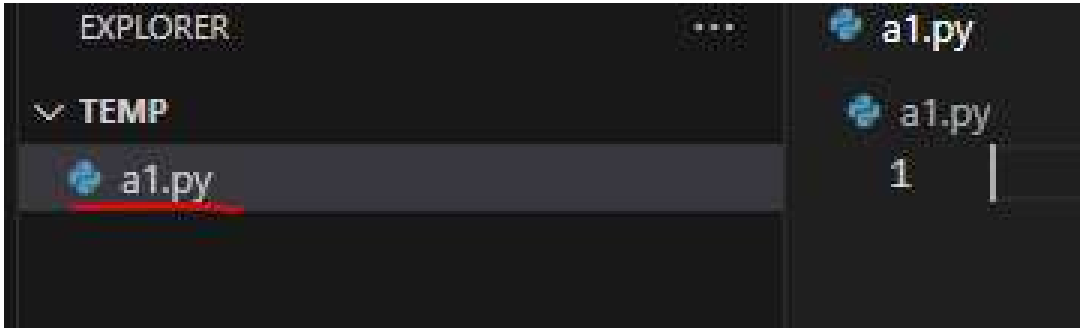
- Open Folder: 選擇 d:\Temp



使用 VS Code 撰寫

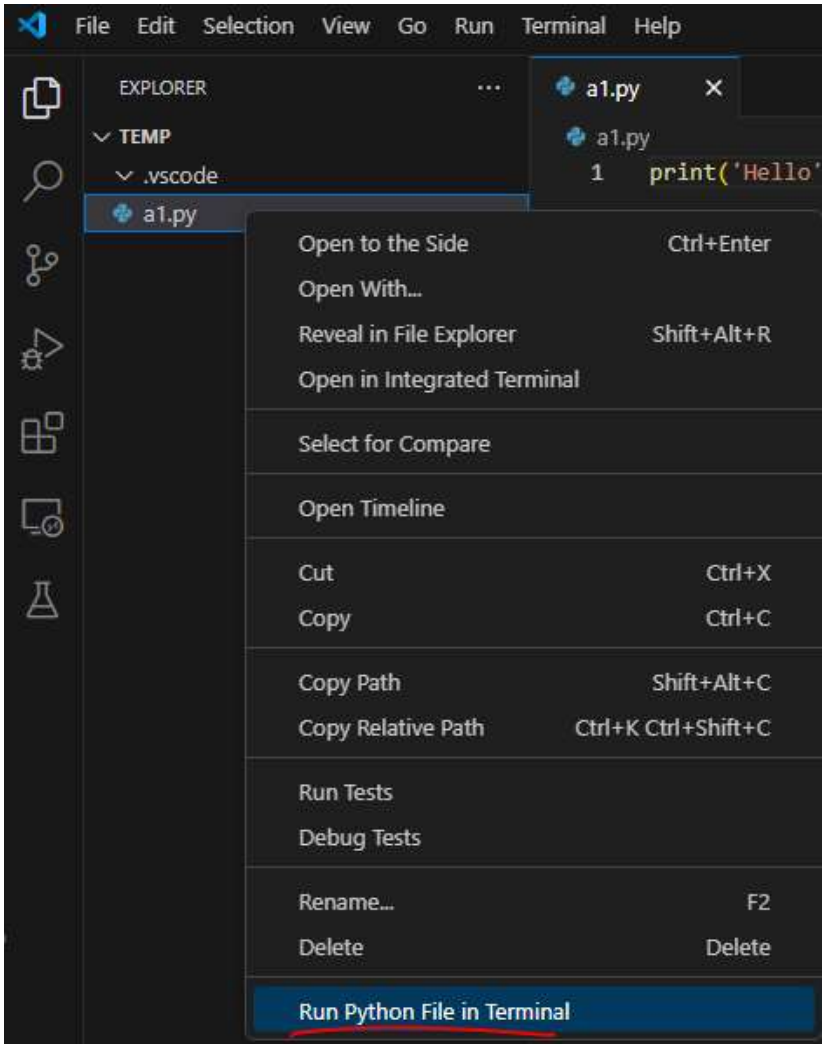
- 點選 New File…，輸入 file name a1.py
- 撰寫程式碼 `print('Hello')`





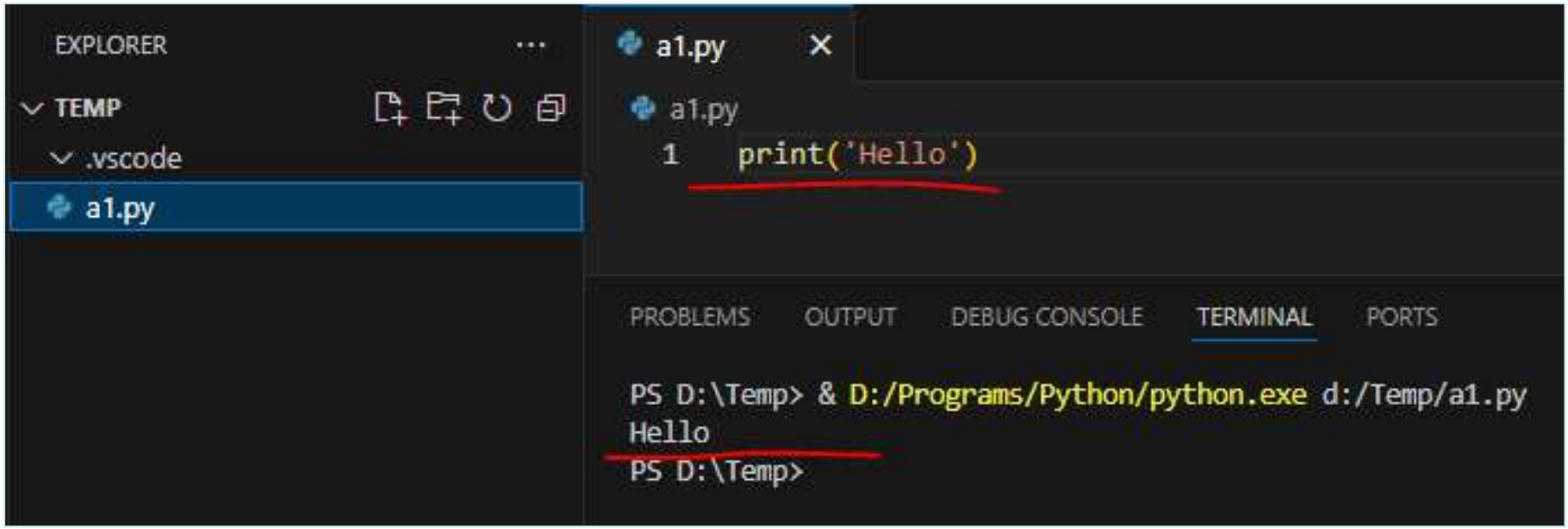
使用 VS Code 撰寫

- 按 a1.py 點選右鍵，選擇 Run Python File in Terminal



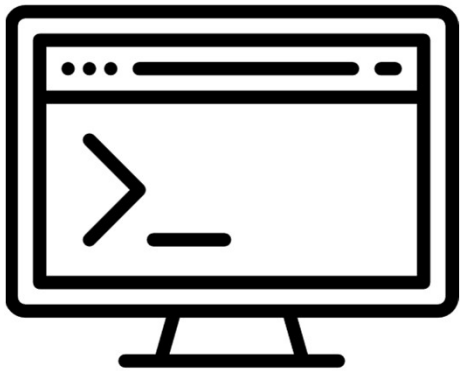
使用 VS Code 撰寫

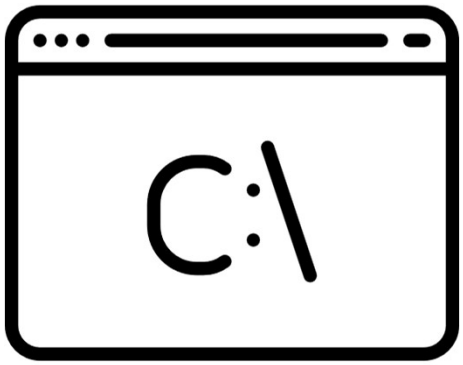
- 右下方的視窗，看到 Hello



cmd 指令行視窗

- 執行



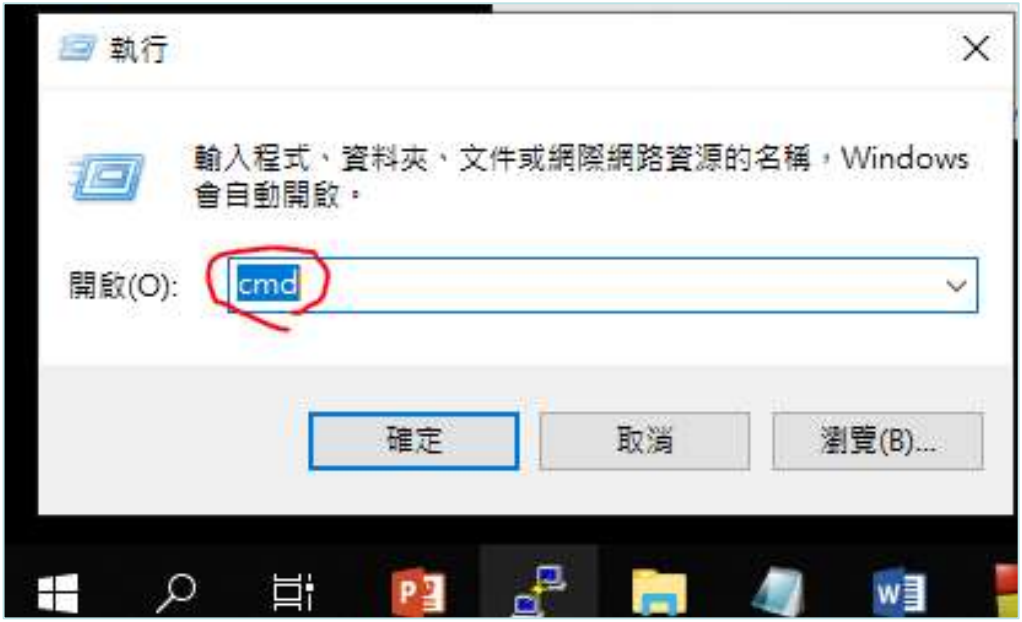


開啟 cmd 指令行視窗

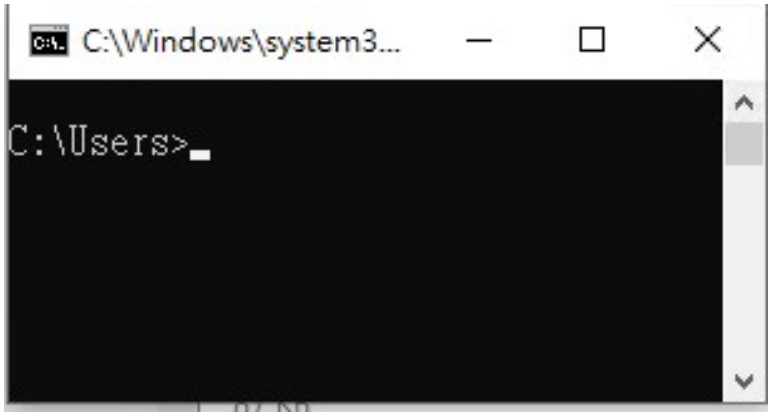
- Windows 左下角圖示點選，右鍵，執行

開啟指令行視窗

- 輸入 cmd 按確定，

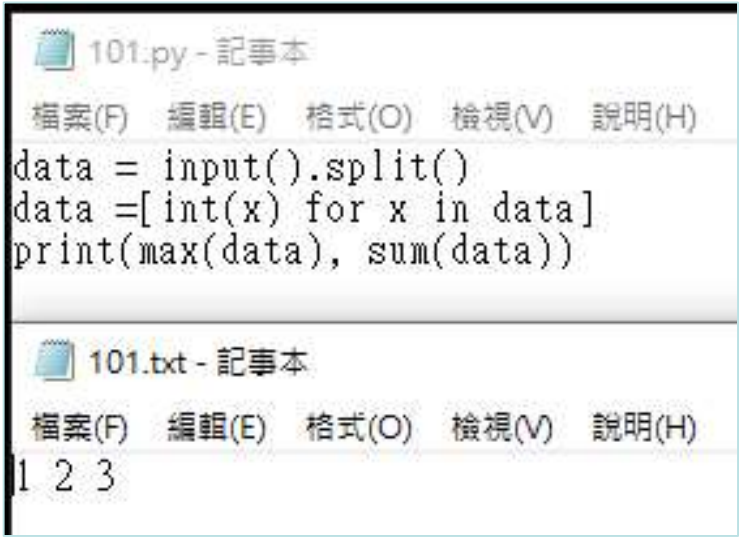


- 開啟 指令行執行視窗

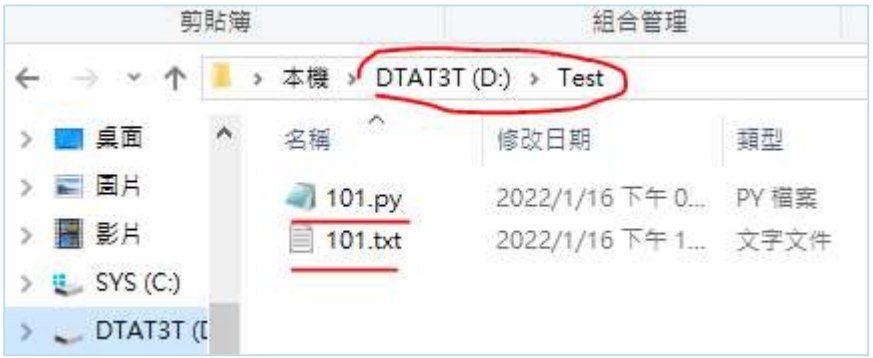


編輯程式與測試資料檔案

- 將 101.py 程式、測試資料文字檔 101.txt 放置於 Test 目錄
  - 編輯 101.py
  - 編輯測試資料檔案 101.txt

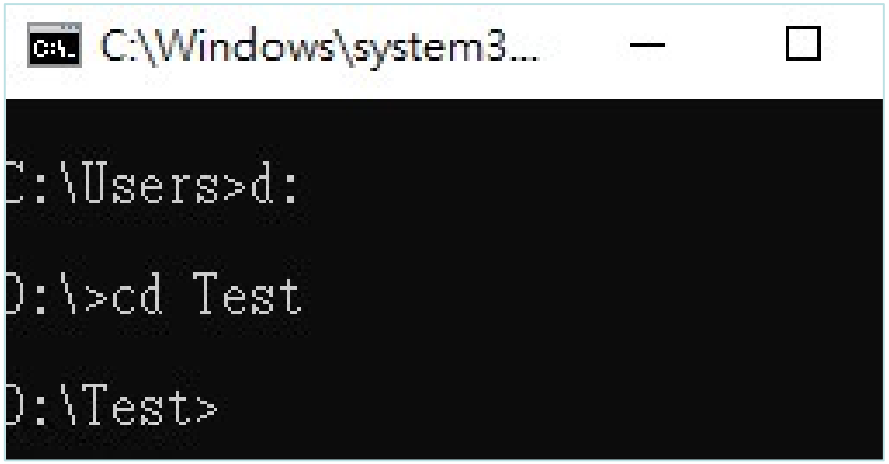


  - 將 101.py, 101.txt，放置於 d:\Test



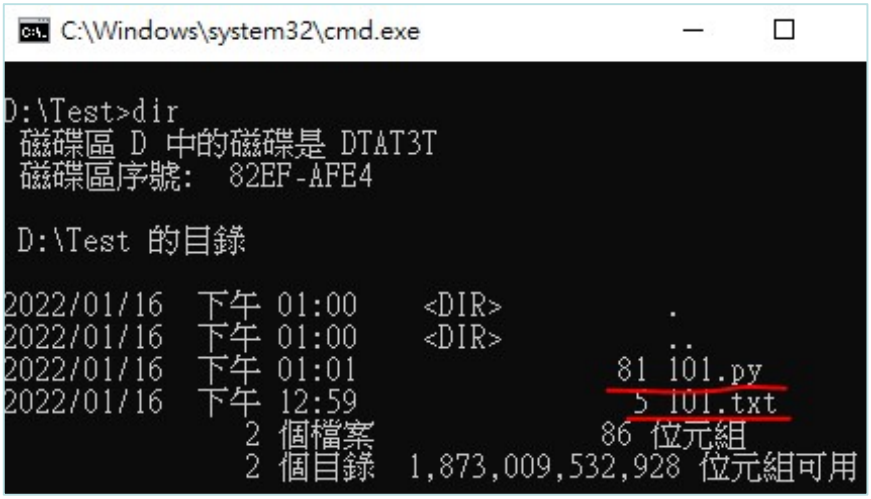
執行程式

- 在 cmd 視窗 下指令切換到d:\Test
  - d:
  - cd Test

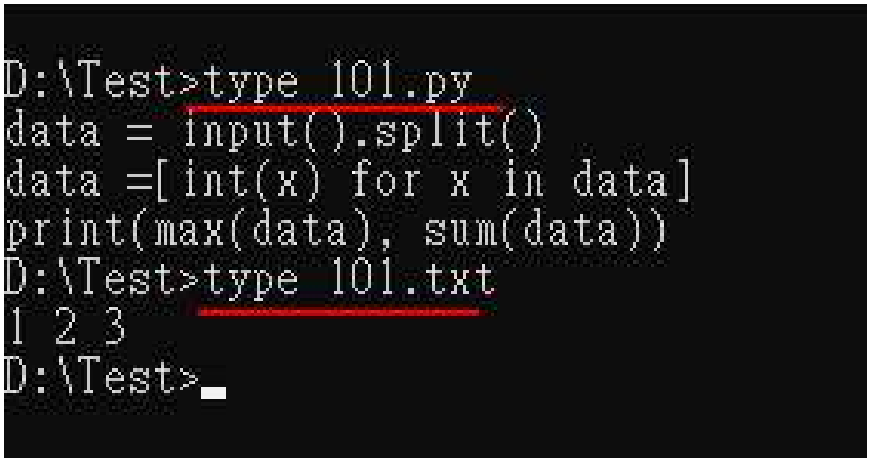


執行程式

- 確認 101.py, 101.txt 在該目錄
  - dir

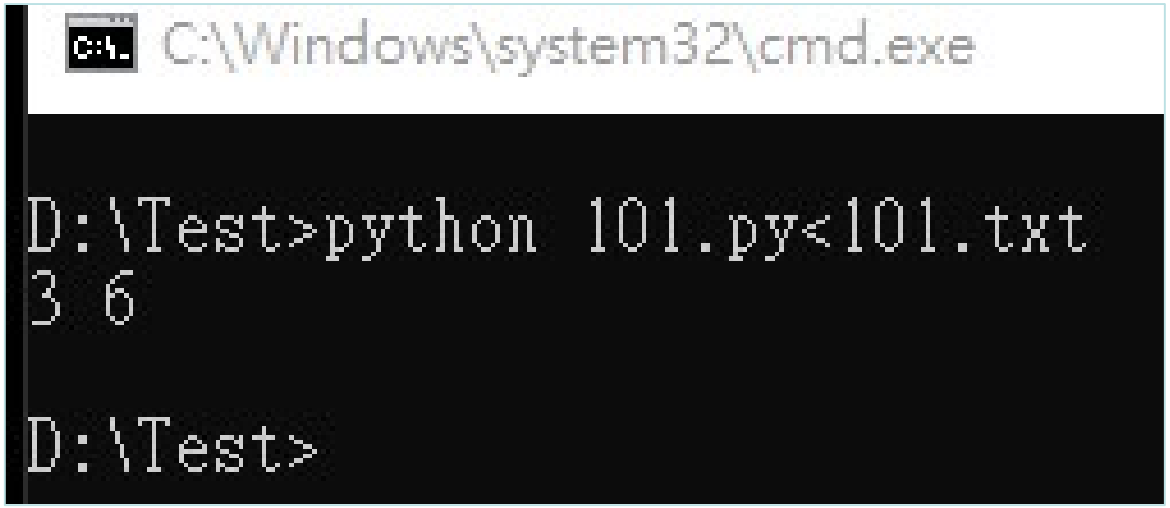


  - type 101.py
  - type 101.txt



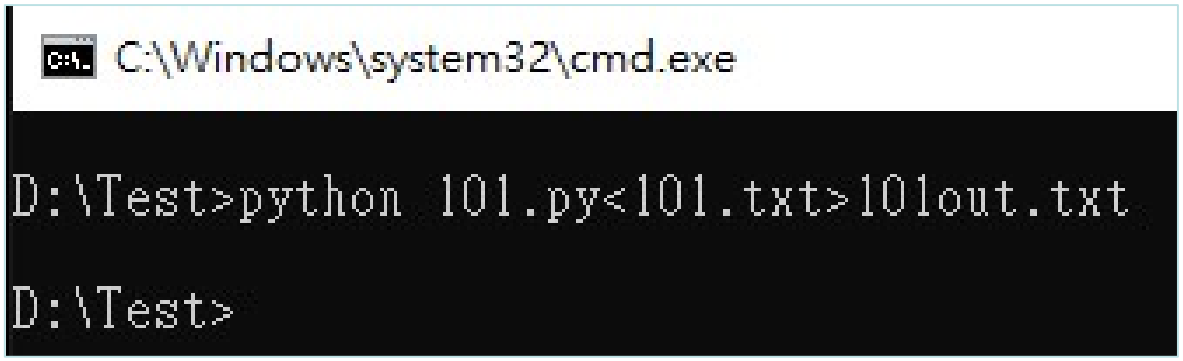
執行程式

- 執行 101.py，使用 101.txt 當輸入
  - python 101.py < 101.txt



執行程式

- 執行 101.py，使用 101.txt 當輸入，輸出到 101out.txt
  - python 101.py < 101.txt > 101out.txt



Python 線上編譯

- https://www.online-python.com/
- https://www.programiz.com/python-programming/online-compiler/
- https://www.onlinegdb.com/

END