
Python

安裝與環境建置

臺北科技大學資訊工程系

安裝 Anaconda

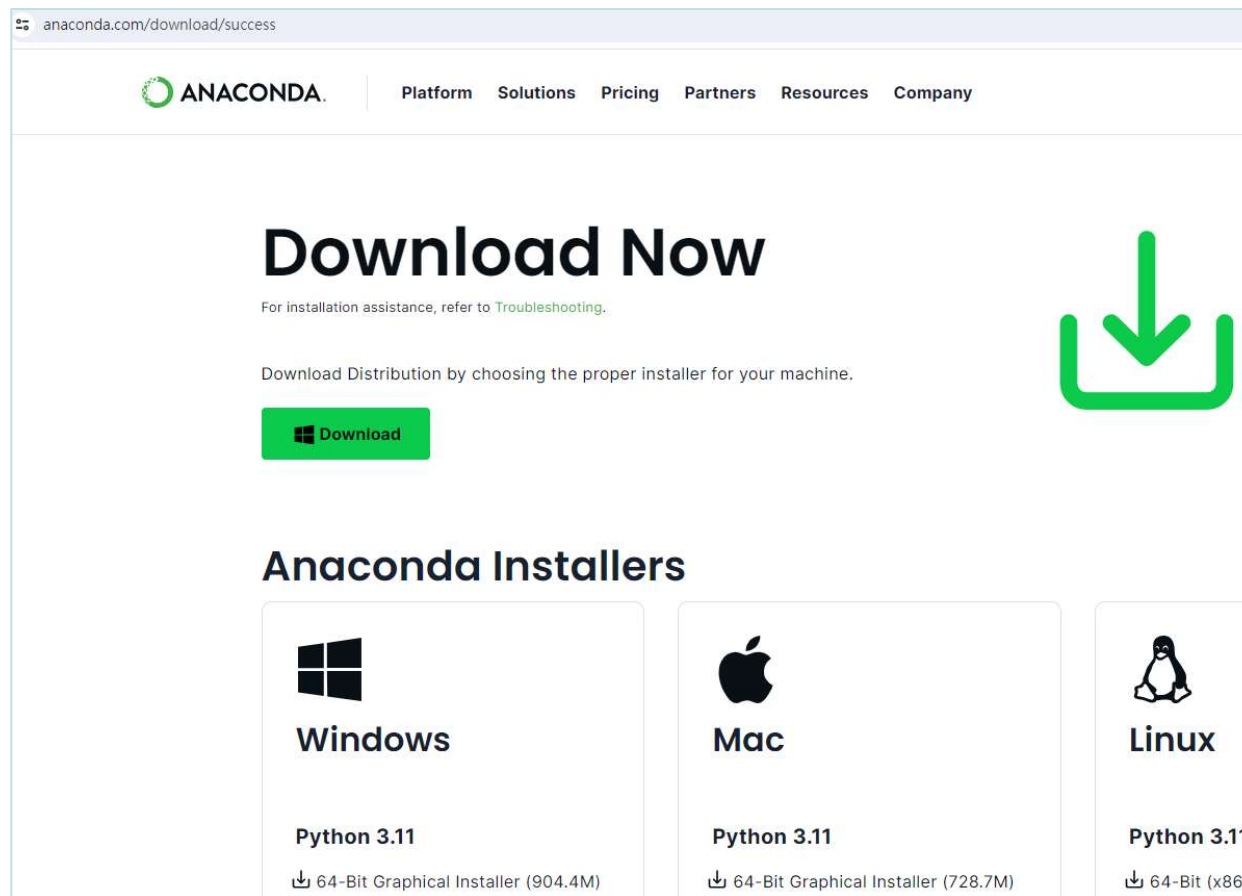
- Anaconda 安裝管理程式。
 - Anaconda 透過 Conda 進行軟體套件管理。

The image shows the word "CONDA" in a large, bold, green sans-serif font. The letter 'C' is stylized with a white and green geometric pattern on its left side.

安裝 Anaconda

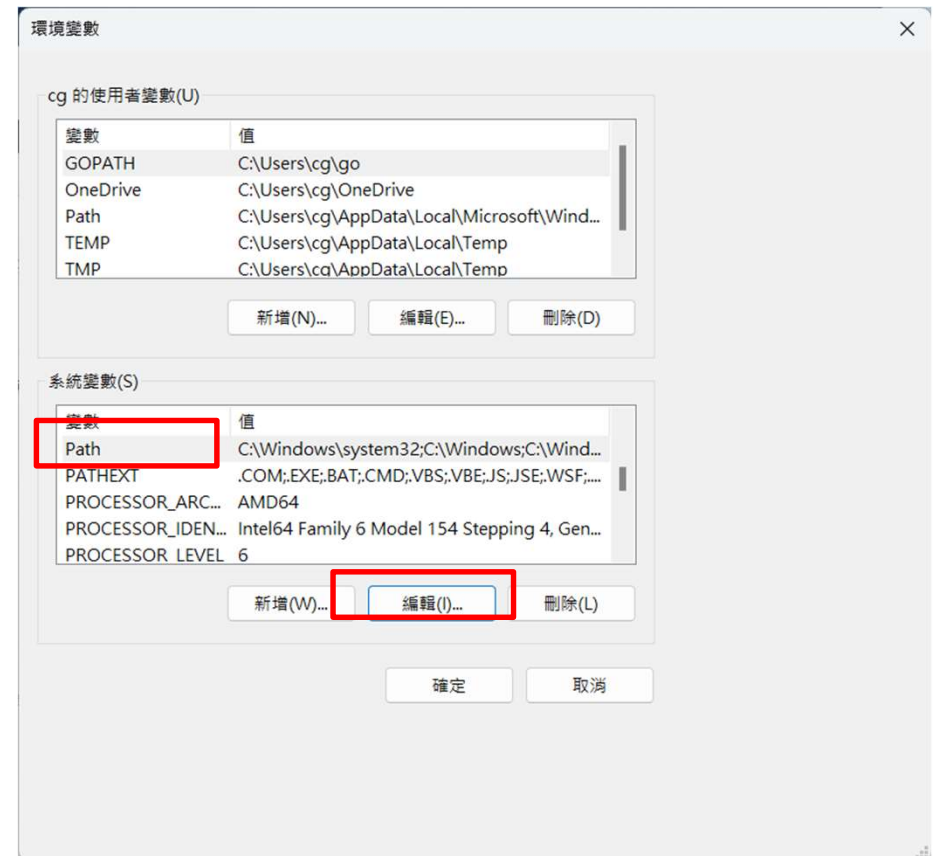
□ <https://www.anaconda.com/download/success>

○ 下載執行 **Anaconda3-2024.02-1-Windows-x86_64**



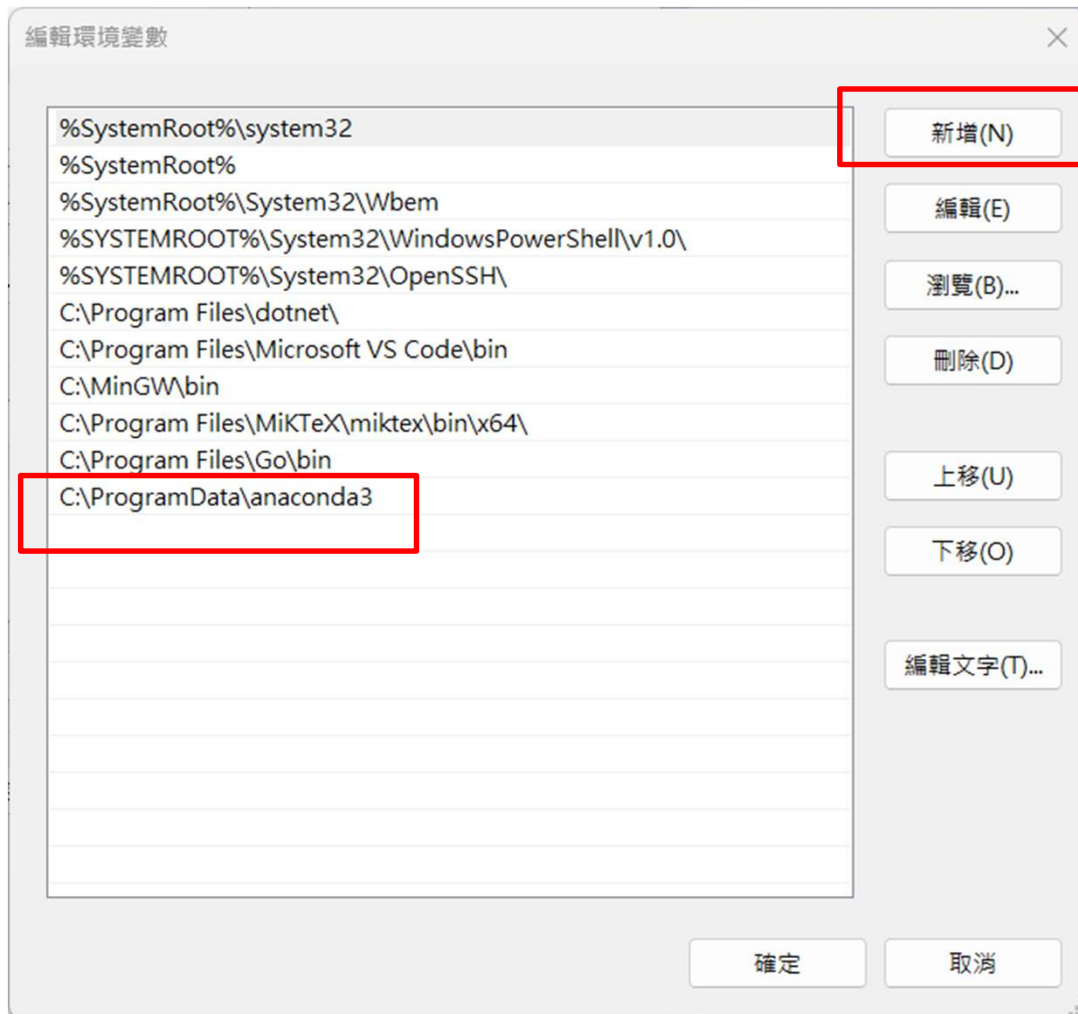
安裝 Anaconda

□ 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

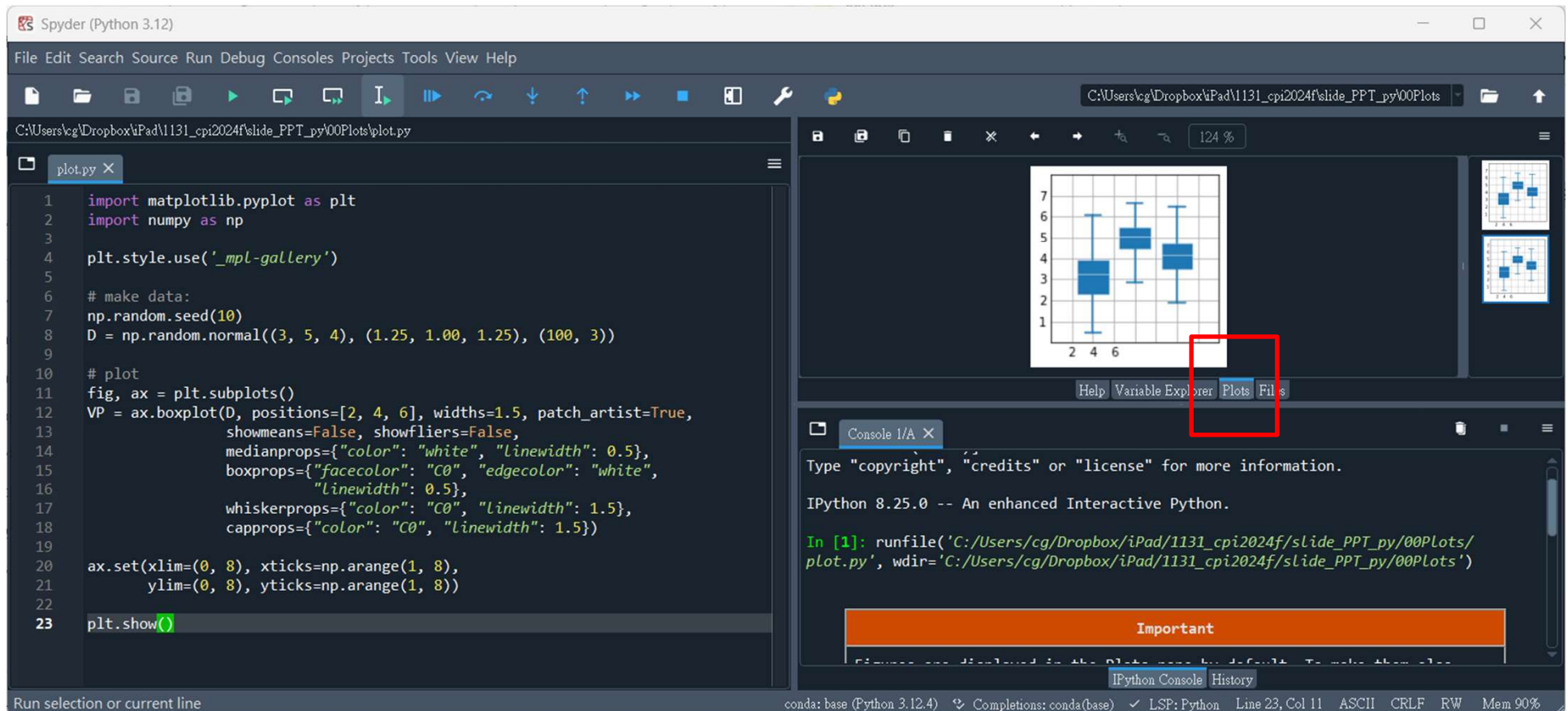
```
import matplotlib.pyplot as plt
import numpy as np

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))

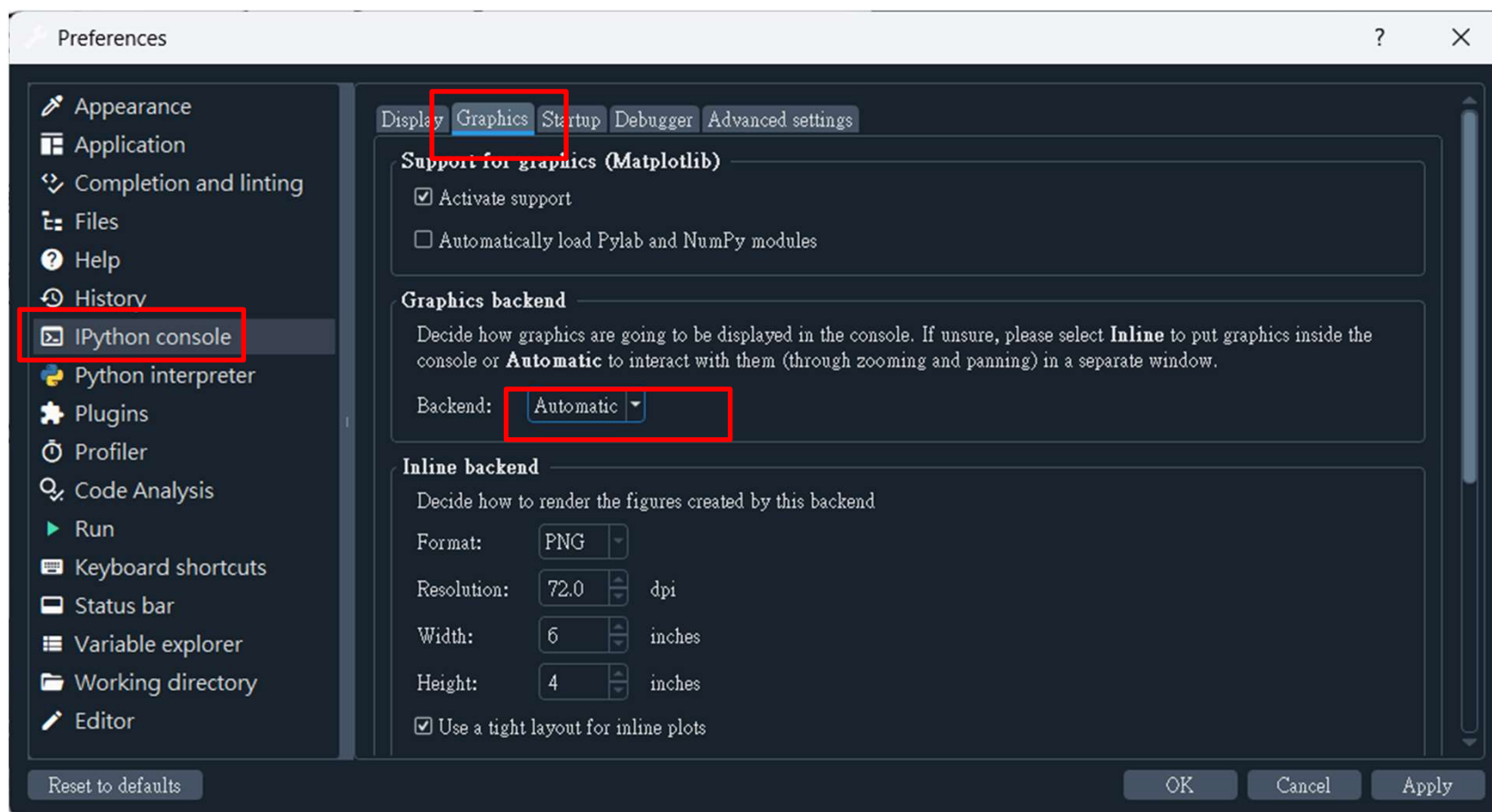
# plot
fig, ax = plt.subplots()
VP = ax.boxplot(D, positions=[2, 4, 6], widths=1.5, patch_artist=True,
                showmeans=False, showfliers=False,
                medianprops={"color": "white", "linewidth": 0.5},
                boxprops={"facecolor": "C0", "edgecolor": "white",
             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



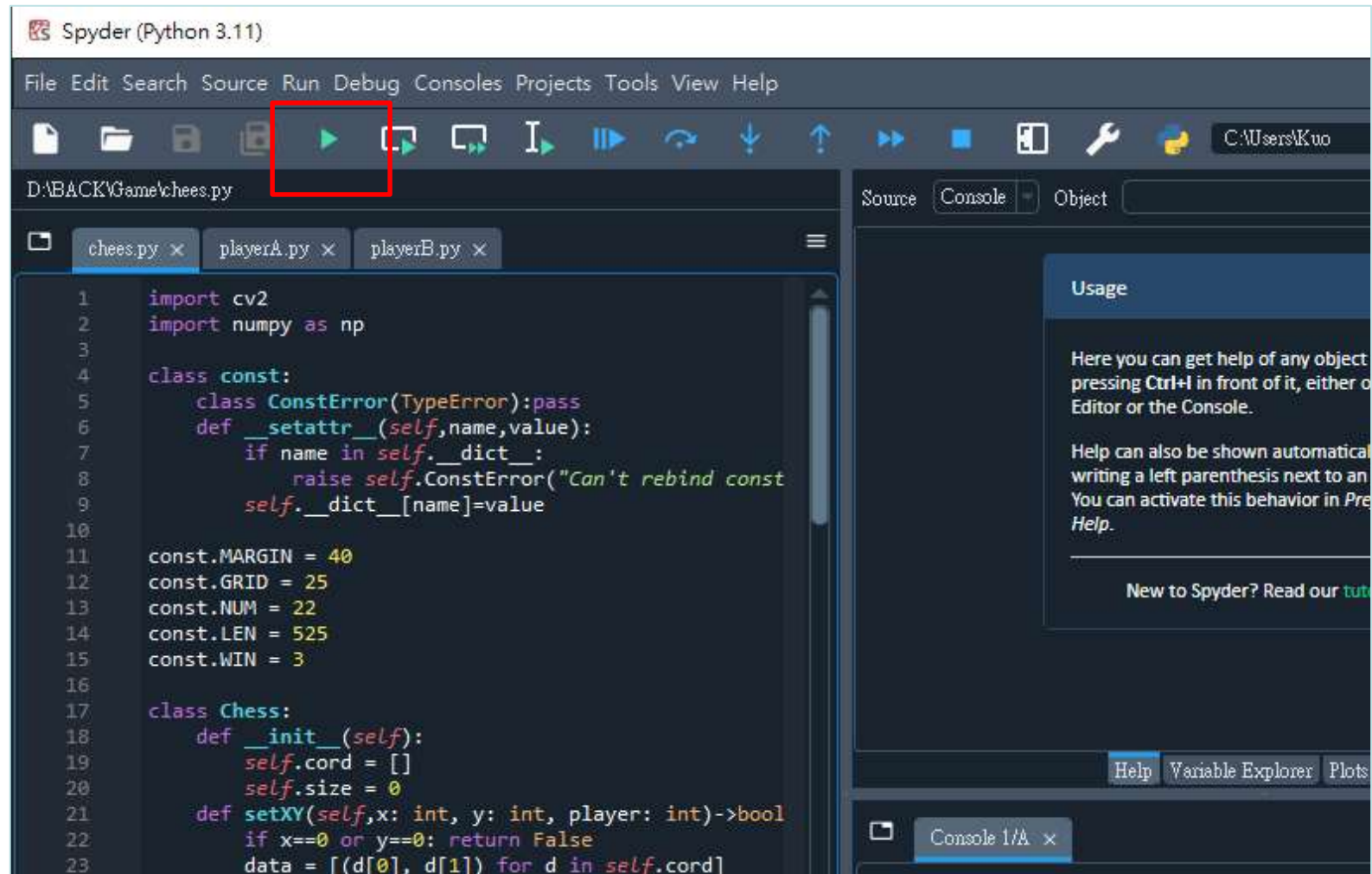
使用 Spyder 撰寫程式

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



使用 Spyder 撰寫程式

□ Anaconda3: Spyder



程式

測資

```
# 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")
```

```
# 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

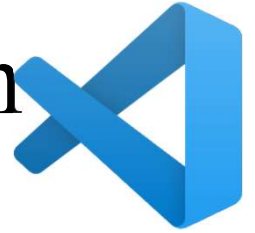
使用 VS Code 撰寫 / 安裝 Python



□ 安裝 Python



使用 VS Code 撰寫 / 安裝 Python

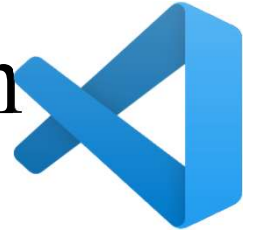


❑ 下載 Python

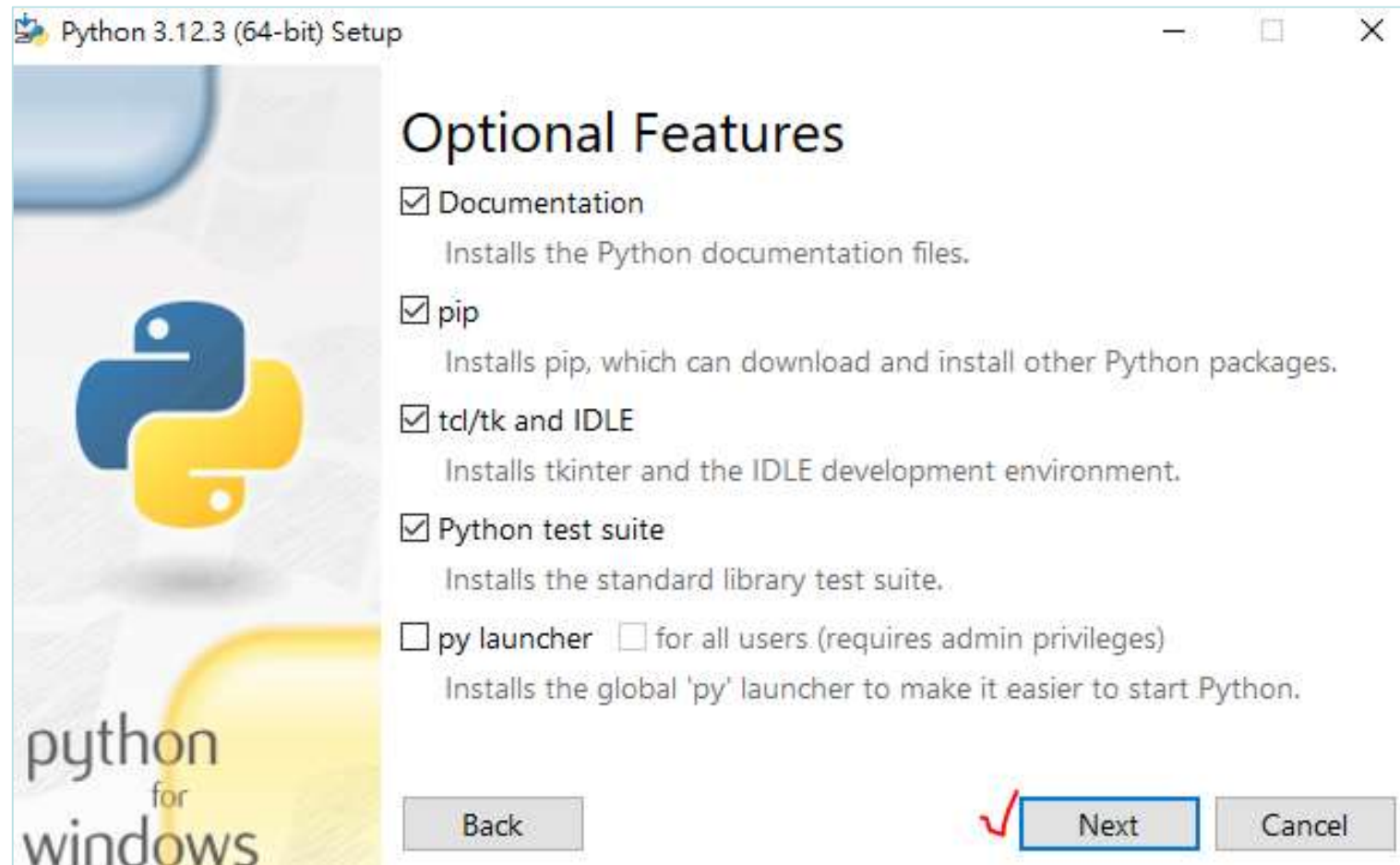
❑ <https://www.python.org/downloads/windows/>



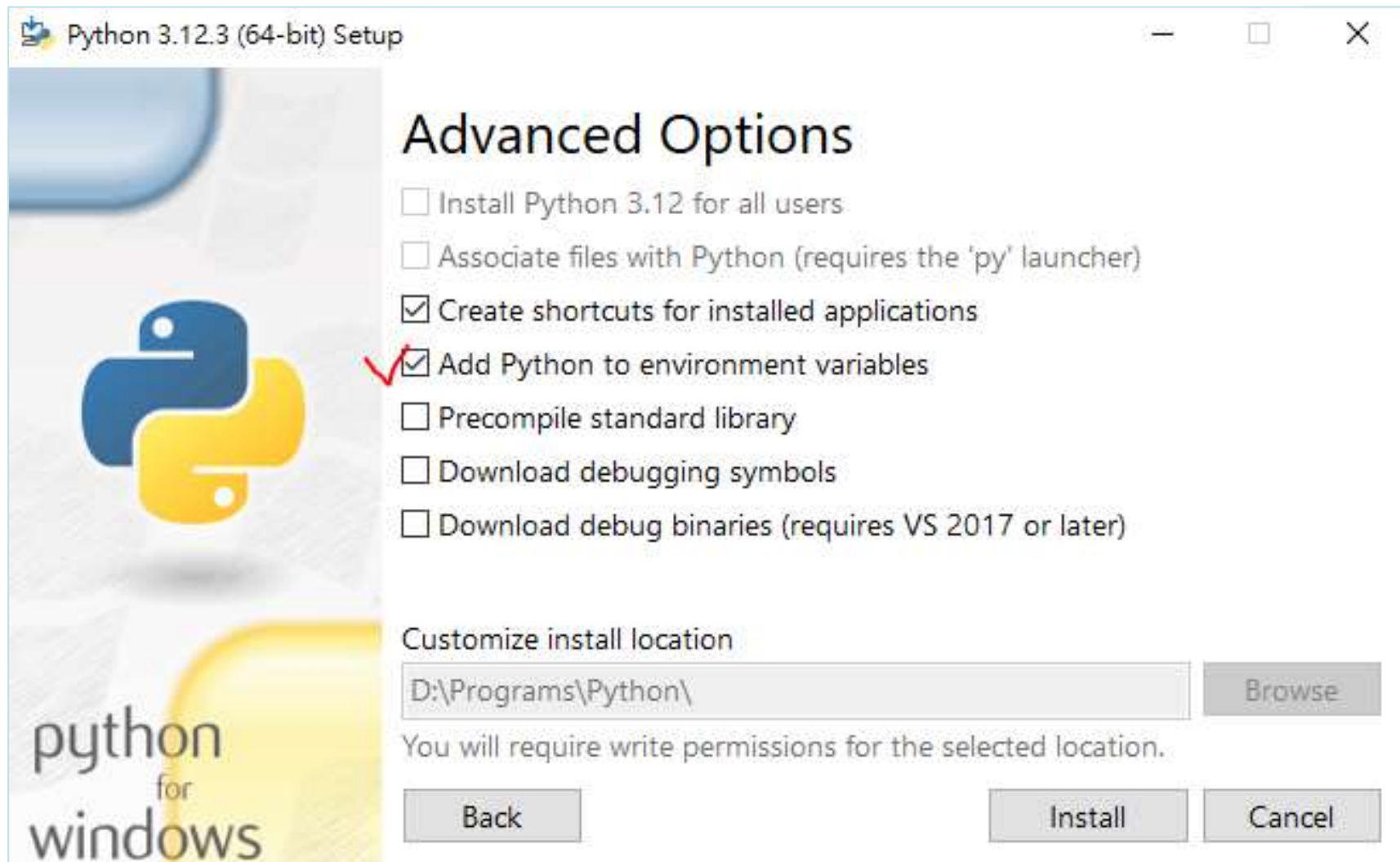
使用 VS Code 撰寫 / 安裝 Python



□ 安裝 Python



使用 VS Code 撰寫 / 安裝 Python



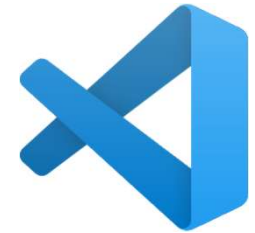
使用 VS Code 撰寫



□ 安裝 VS Code



使用 VS Code 撰寫

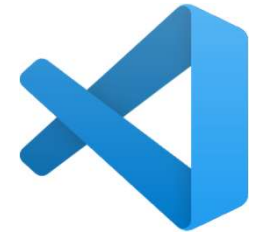


- 安裝 VS Code <https://code.visualstudio.com/download>

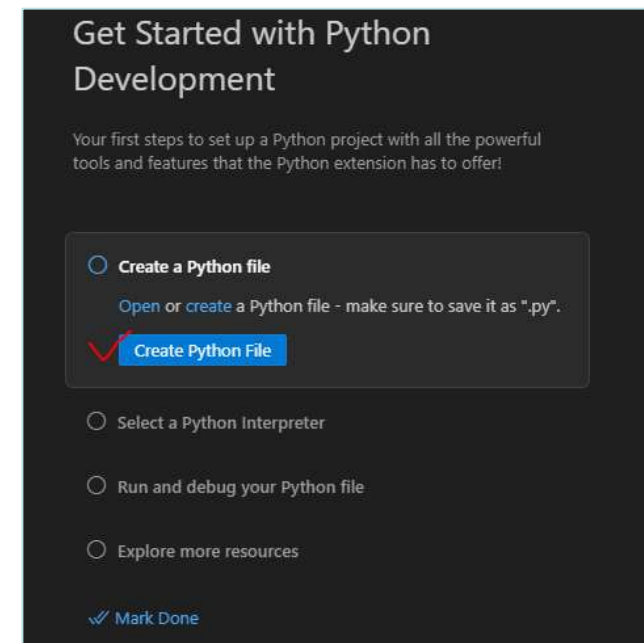
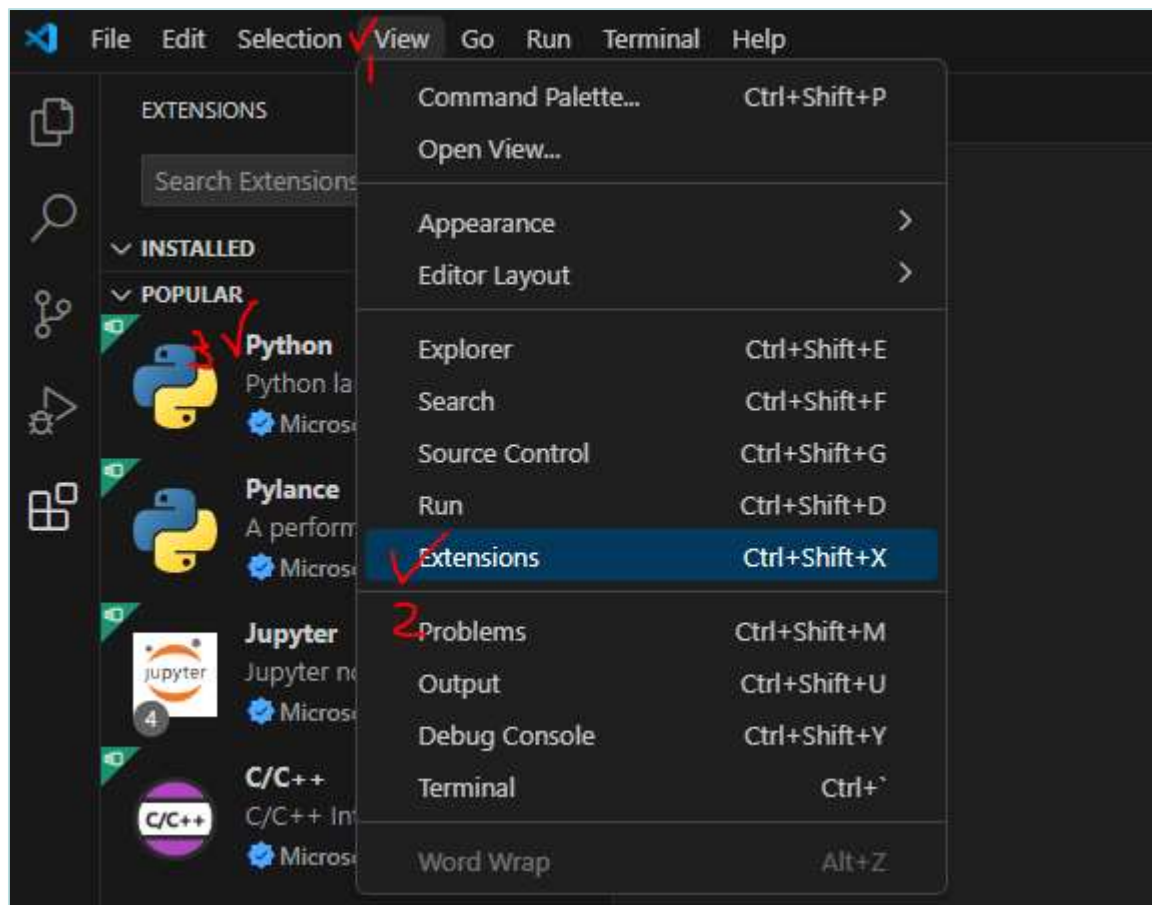
The screenshot shows the Visual Studio Code download page. At the top, there's a navigation bar with links to Docs, Updates, Blog, API, Extensions, FAQ, and Learn. A 'Down' button is on the right. Below the navigation bar, a message states 'Version 1.88 is now available! Read about the new features and fixes from March.' The main heading is 'Download Visual Studio Code' with the tagline 'Free and built on open source. Integrated Git, debugging and extensions.' Below this, there are three main sections for different operating systems: Windows, Linux, and Mac. Each section has a download button and a list of available download options with their respective architectures.

Operating System	Download Options	Architectures	
Windows	User Installer	x64, Arm64	
	System Installer	x64, Arm64	
	.zip	x64, Arm64	
	CLI	x64, Arm64	
	CLI	x64, Arm64	
Linux	.deb	x64, Arm32, Arm64	
		x64, Arm32, Arm64	
	.rpm	x64, Arm32, Arm64	
		x64, Arm32, Arm64	
	.tar.gz	x64, Arm32, Arm64	
	Snap	Snap Store	
	CLI	x64, Arm32, Arm64	
	Mac	.zip	Intel chip, Apple silicon, Universal
		CLI	Intel chip, Apple silicon
		CLI	Intel chip, Apple silicon

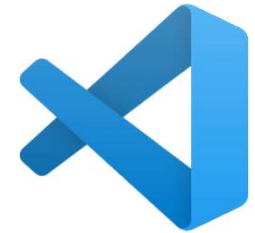
使用 VS Code 撰寫



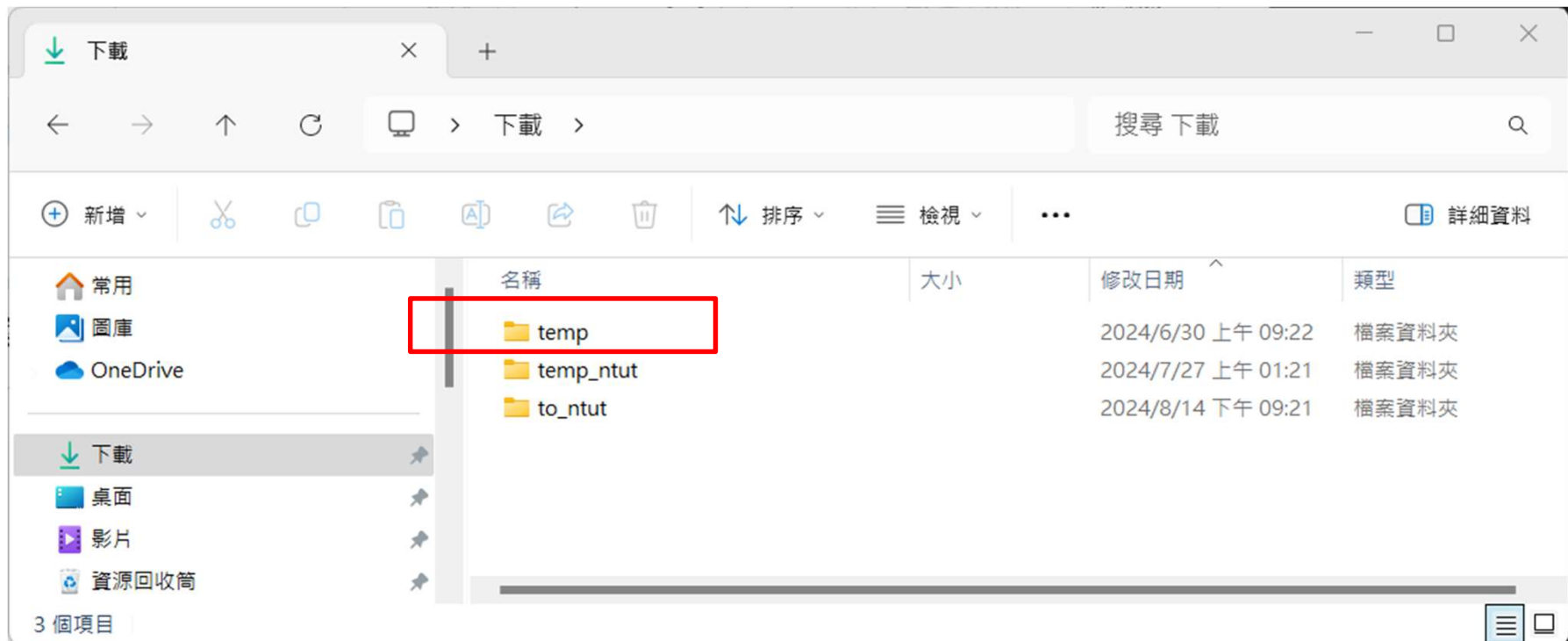
- View: Extensions:
- Python: Install



使用 VS Code 撰寫

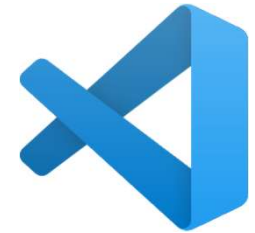


- ❑ 到檔案總管，造一個資料夾 d:\Temp

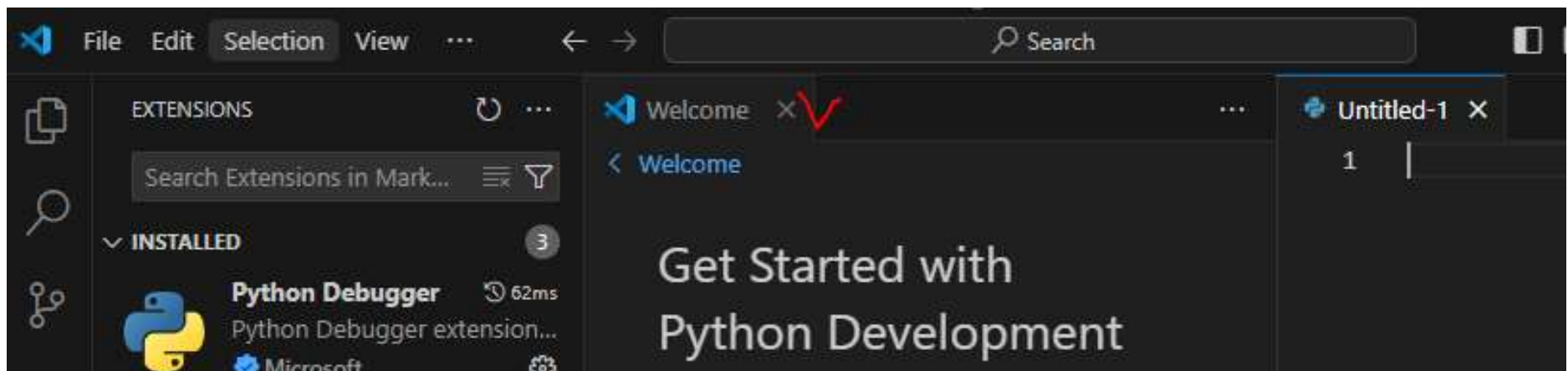


- ❑ 關閉welcome視窗

使用 VS Code 撰寫



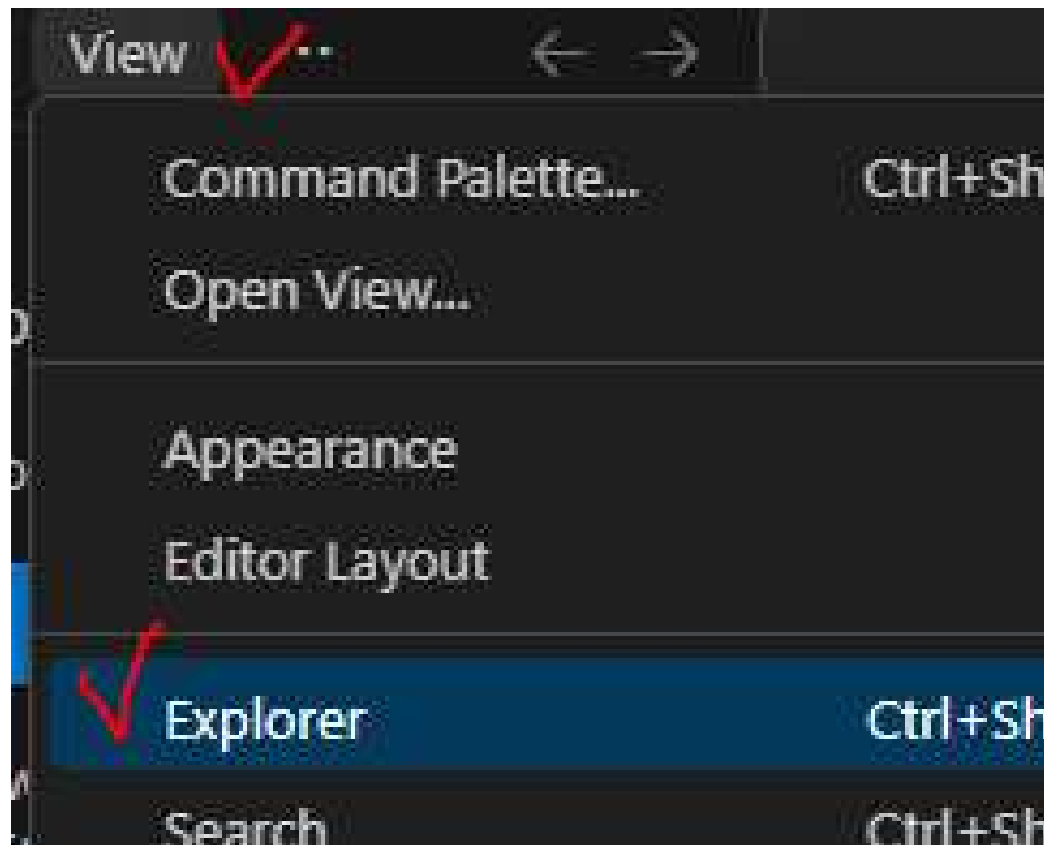
- 關閉 Visual Studio Code 的 **Welcome** 視窗



使用 VS Code 撰寫



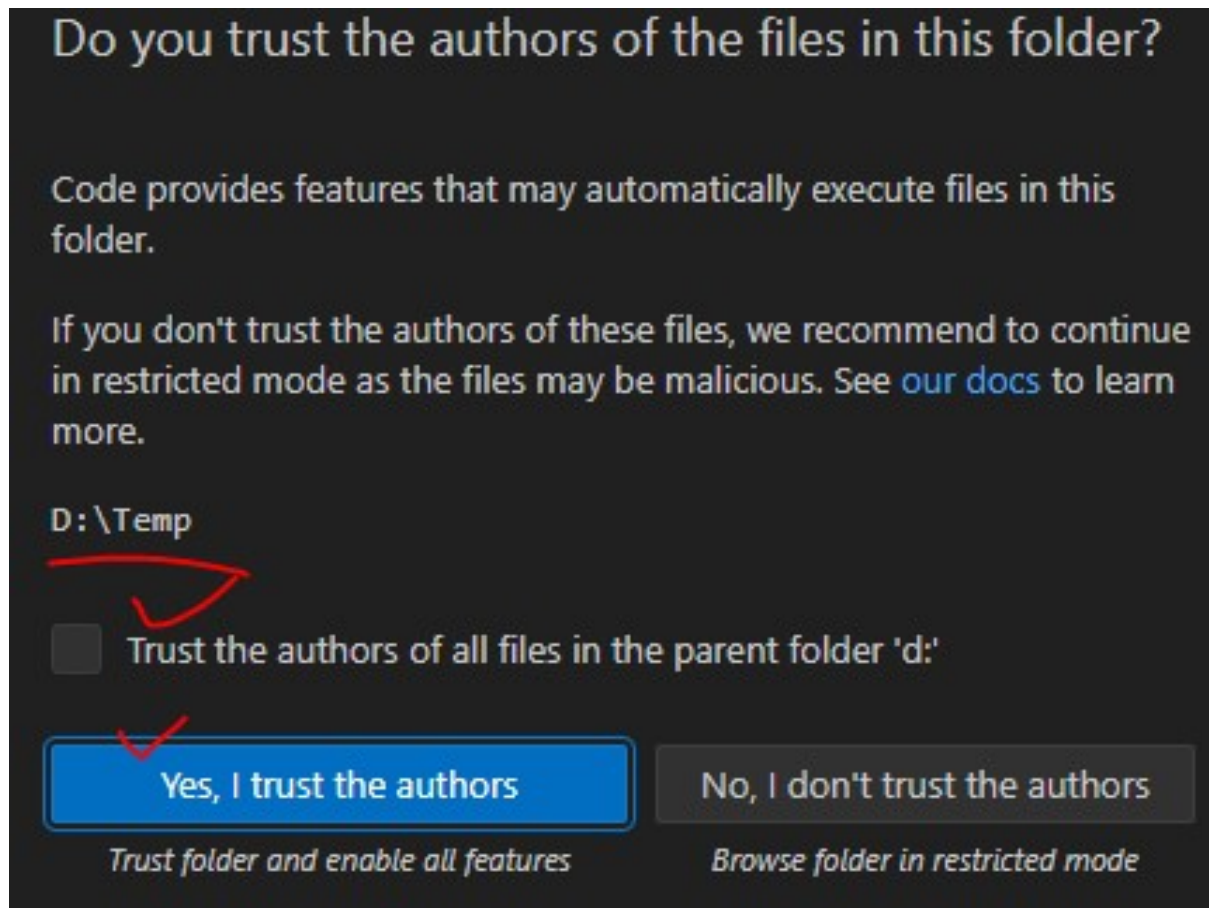
- 點選 View: Explorer



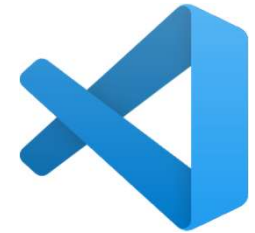
使用 VS Code 撰寫



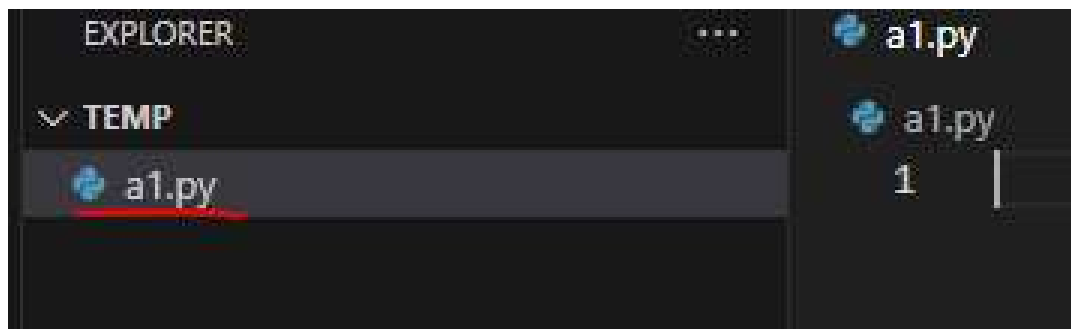
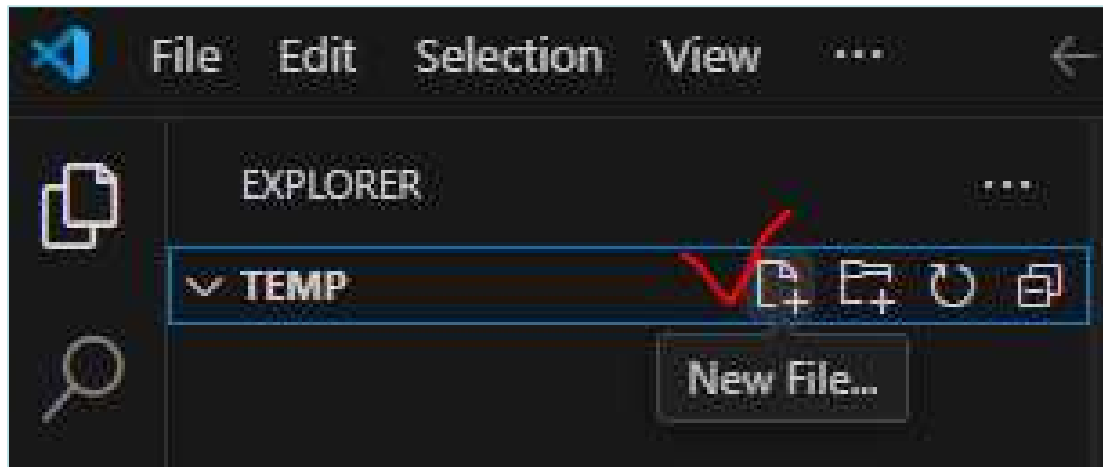
- Open Folder: 選擇 **d:\Temp**



使用 VS Code 撰寫



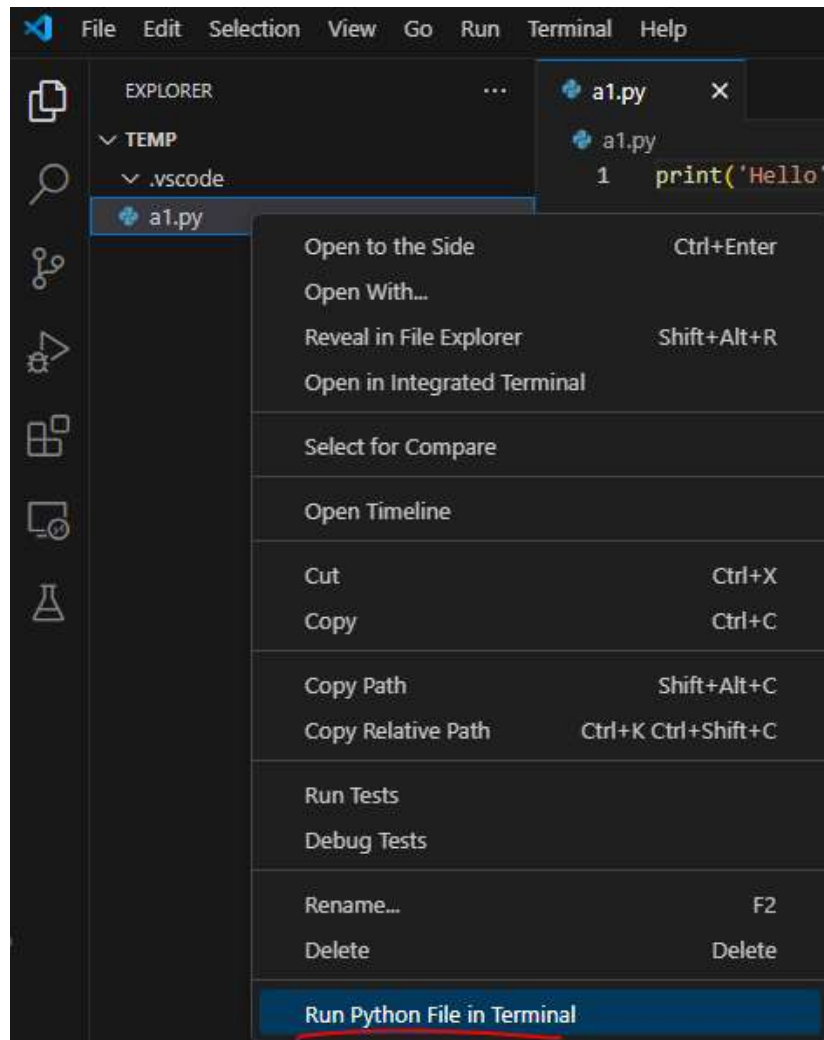
- ❑ 點選 New File...，輸入 file name **a1.py**
- ❑ 撰寫程式碼 `print('Hello')`



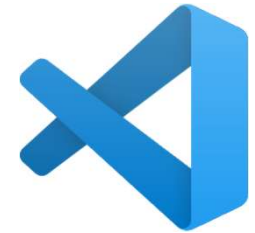
使用 VS Code 撰寫



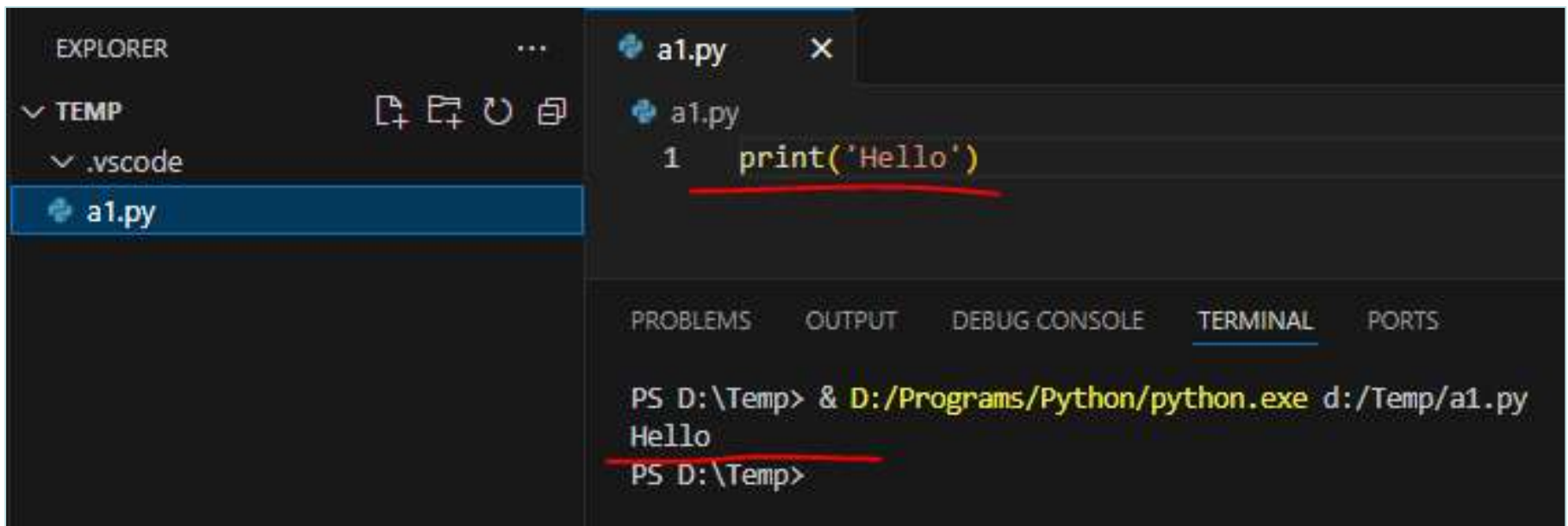
- 按 a1.py 點選**右鍵**，選擇 **Run Python File in Terminal**



使用 VS Code 撰寫

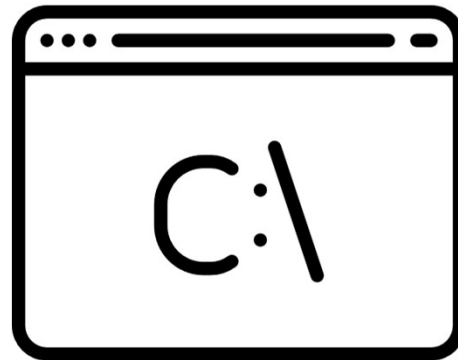
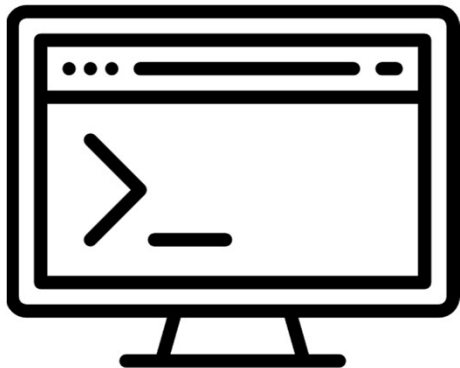


- 右下方的視窗，看到 **Hello**

A screenshot of the Visual Studio Code (VS Code) interface. The Explorer sidebar on the left shows a workspace named 'TEMP' containing a folder '.vscode' and a file 'a1.py'. The file 'a1.py' is selected and open in the editor. The editor shows a single line of Python code: `1 print('Hello')`, with the entire line underlined in red. Below the editor, the 'TERMINAL' tab is active, displaying the command prompt output: `PS D:\Temp> & D:/Programs/Python/python.exe d:/Temp/a1.py`, followed by the output `Hello`, which is also underlined in red. The terminal prompt then returns to `PS D:\Temp>`.

cmd 指令行視窗

□ 執行



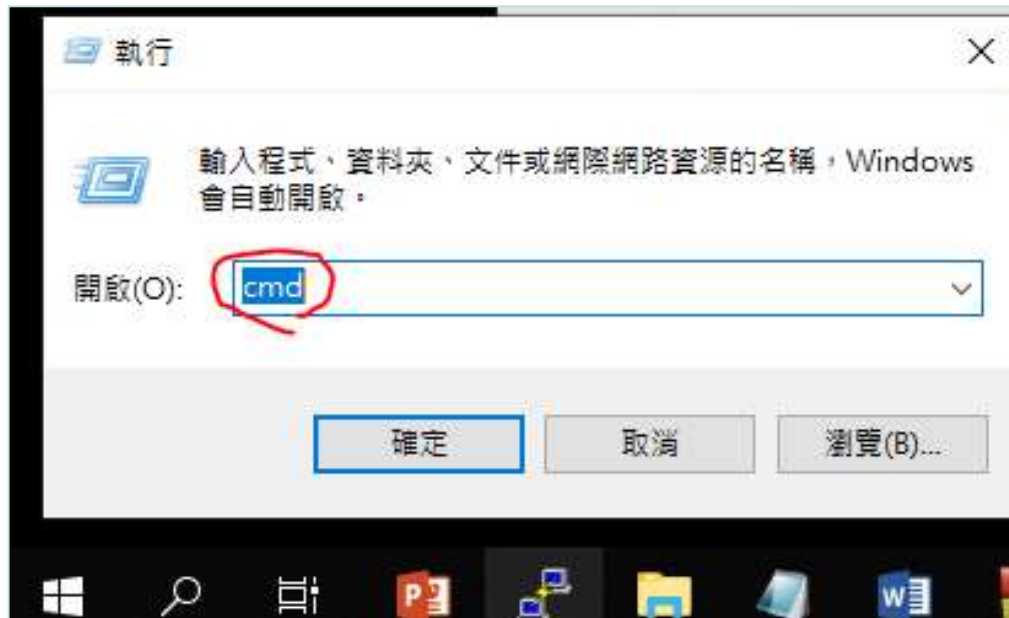
開啟 cmd 指令行視窗

- Windows 左下角圖示點選，**右鍵**，執行

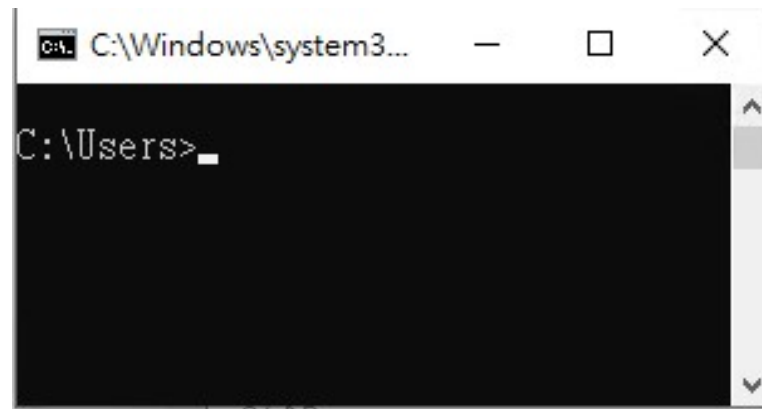


開啟指令行視窗

- 輸入 **cmd** 按**確定**，



- 開啟 **指令行執行視窗**

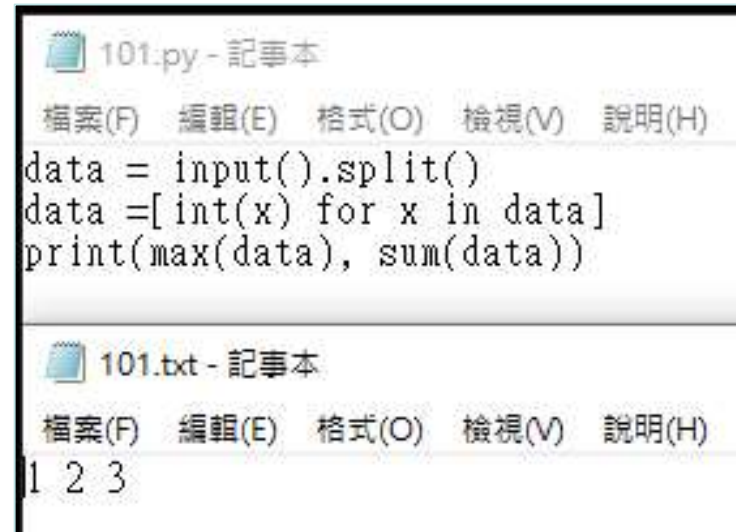


編輯程式與測試資料檔案

□ 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



```
101.py - 記事本
檔案(F) 編輯(E) 格式(O) 檢視(V) 說明(H)
data = input().split()
data=[int(x) for x in data]
print(max(data), sum(data))

101.txt - 記事本
檔案(F) 編輯(E) 格式(O) 檢視(V) 說明(H)
1 2 3
```

○ 將 101.py, 101.txt, 放置於 d:\Test

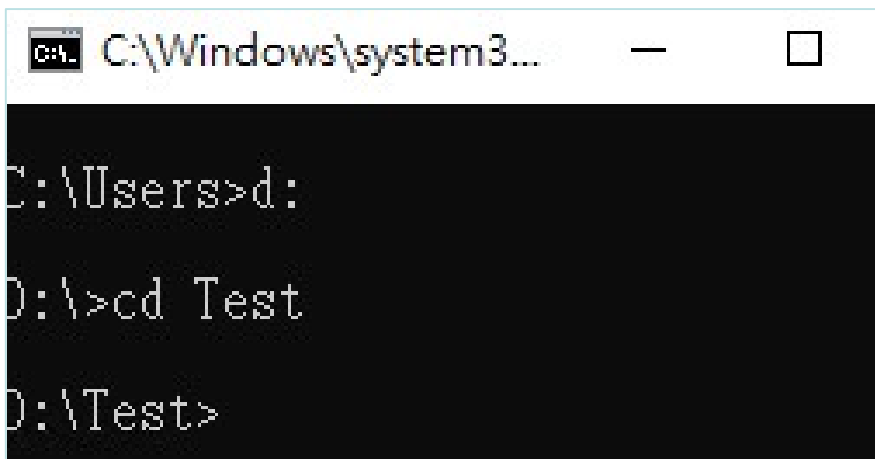


執行程式

□ 在 **cmd 視窗** 下指令切換到**d:\Test**

○ d:

○ cd Test



```
C:\Windows\system32>C:\Users>d:  
D:\>cd Test  
D:\Test>
```

The image shows a screenshot of a Windows Command Prompt window. The title bar at the top reads 'C:\Windows\system32'. The command history shows the user starting at 'C:\Users', switching to drive 'd:', and then navigating to the 'Test' directory using the 'cd' command. The prompt is currently at 'D:\Test>'.

執行程式

□ 確認 101.py, 101.txt 在該目錄

○ dir

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

D:\Test>dir
磁碟區 D 中的磁碟是 DTAT3T
磁碟區序號: 82EF-AFE4

D:\Test 的目錄

2022/01/16 下午 01:00 <DIR> .
2022/01/16 下午 01:00 <DIR> ..
2022/01/16 下午 01:01      81 101.py
2022/01/16 下午 12:59       5 101.txt
                2 個檔案      86 位元組
                2 個目錄 1,873,009,532,928 位元組可用
```

○ type 101.py

○ type 101.txt

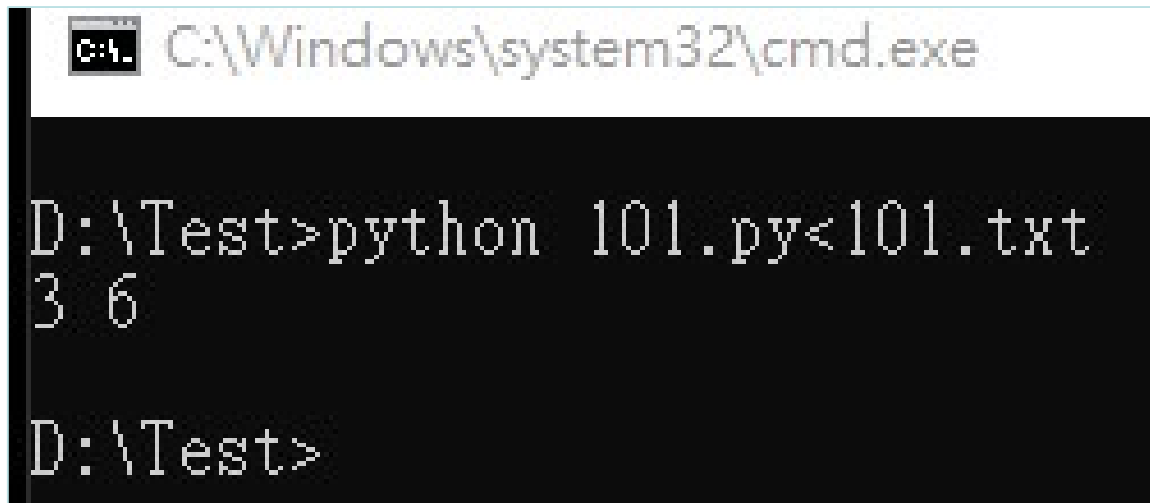
```
C:\Windows\system32\cmd.exe

D:\Test>type 101.py
data = input().split()
data = [int(x) for x in data]
print(max(data), sum(data))
D:\Test>type 101.txt
1 2 3
D:\Test>_
```


執行程式

□ 執行 101.py，使用 101.txt 當輸入

○ python 101.py < 101.txt



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

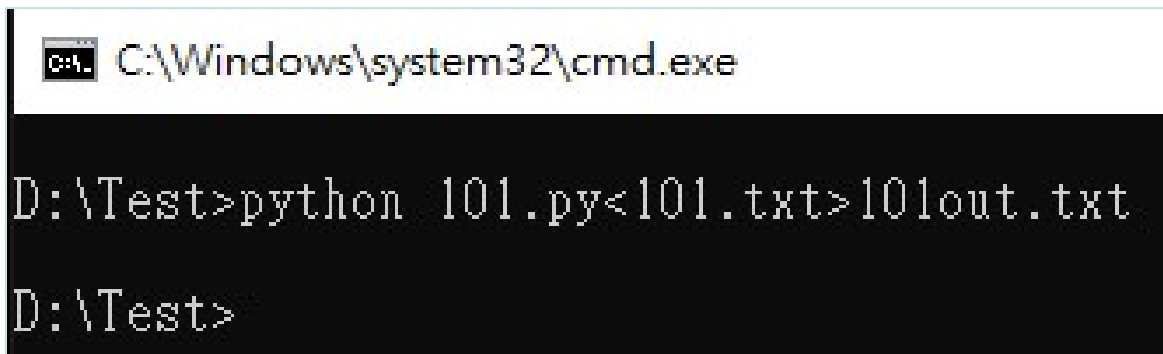
D:\Test>python 101.py<101.txt
3 6

D:\Test>
```

執行程式

□ 執行 **101.py**，使用 **101.txt** 當輸入，輸出到 **101out.txt**

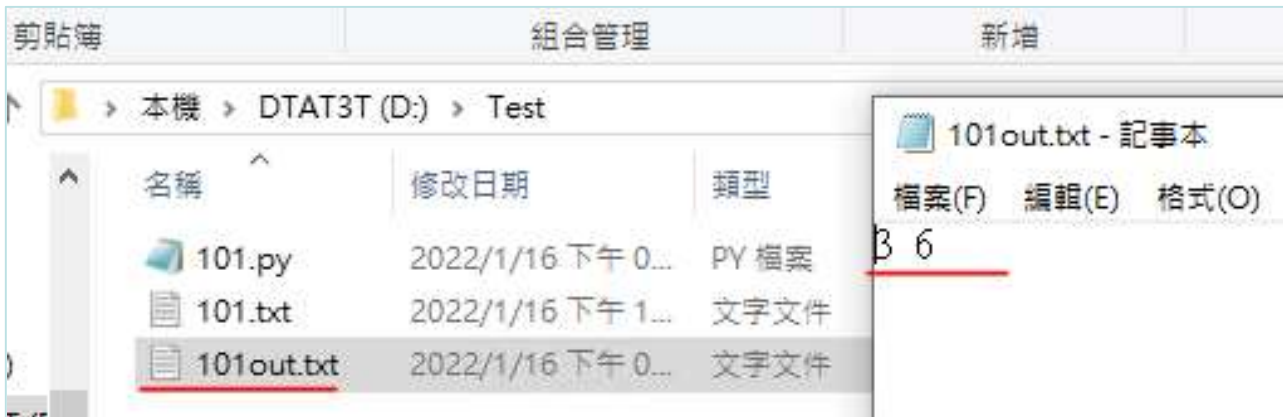
○ `python 101.py < 101.txt > 101out.txt`



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

D:\Test>python 101.py<101.txt>101out.txt

D:\Test>
```



Python 線上編譯

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

END

