

Python語言簡介與工作環境介紹

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2020

Python語言簡介

- Python 是物件導向程式級高階程式語言，也是直譯式程式語言。
- 提供了許多自行開發的 **library**(函式庫)以提供其他 Python 程式設計者下載使用，所以具有豐富和龐大的類別函式庫。
- 各種主要的作業系統都支援 Python。
- **未來需求高**：(大數據分析、物聯網、人工智慧)。
- **絕對免費**
- **Python 缺點**：執行速度慢、新手職缺較少

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Python releases by version number: Release version Release date Click for more. Python 3.7.9 Aug. 17, 2020 [Download](#) Release Notes · Python 3.6.12 Aug.

Windows

3.8.5 - Python 2.7.18 - Python

3.8.3 - ...

3.8.5

Python 3.8.5. Release Date: July 20, 2020. This is the fifth ...

Python 3.7.7

... releases of Python 3.7 that supersede 3.7.7 and Python 3.8 ...

Python 3.8.2

Python 3.8.2. Release Date: Feb. 24, 2020. This is the second ...

Python download



The image shows a screenshot of the Python website's download page. At the top, there is a dark blue navigation bar with tabs for 'Python', 'PSF', and 'Docs'. Below this is a large dark blue header area featuring the Python logo and the word 'python' in white. A secondary navigation bar contains buttons for 'About', 'Downloads', 'Documentation', and 'Community'. The main content area has a dark blue background with a prominent yellow heading: 'Download the latest version for Windows'. Below the heading is a yellow button labeled 'Download Python 3.8.5'. Underneath the button, there are three lines of text: 'Looking for Python with a different OS? Python for [Windows](#), [Linux/UNIX](#), [Mac OS X](#), [Other](#)', 'Want to help test development versions of Python? [Prereleases](#), [Docker images](#)', and 'Looking for Python 2.7? See below for specific releases'.

Python

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Python Releases for Windows

- [Latest Python 3 Release - Python 3.8.5](#)
- [Latest Python 2 Release - Python 2.7.18](#)

Stable Releases

- [Python 3.7.9 - Aug. 17, 2020](#)

Note that Python 3.7.9 *cannot* be used on Windows XP or earlier.

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- Download [Windows x86 embeddable zip file](#)
- Download [Windows x86 executable installer](#)
- Download [Windows x86 web-based installer](#)

Python download







Files

Version	Operating System	Description	MD5 Sum	File Size	GPG
Gzipped source tarball	Source release		e2f52bcf531c8cc94732c0b6ff933ff0	24149103	SIG
XZ compressed source tarball	Source release		35b5a3d0254c1c59be9736373d429db7	18019640	SIG
macOS 64-bit installer	Mac OS X	for OS X 10.9 and later	2f8a736eeb307a27f1998cfd07f22440	30238024	SIG
Windows help file	Windows		3079d9cf19ac09d7b3e5eb3fb05581c4	8528031	SIG
Windows x86-64 embeddable zip file	Windows	for AMD64/EM64T/x64	73bd7aab047b81f83e473efb5d5652a0	8168581	SIG
Windows x86-64 executable installer	Windows	for AMD64/EM64T/x64	0ba2e9ca29b719da6e0b81f7f33f08f6	27864320	SIG
Windows x86-64 web-based installer	Windows	for AMD64/EM64T/x64	eeab52a08398a009c90189248ff43dac	1364128	SIG
Windows x86 embeddable zip file	Windows		bc354669bffd81a4ca14f06817222e50	7305731	SIG
Windows x86 executable installer	Windows		959873b37b74c1508428596b7f9df151	26777232	SIG
Windows x86 web-based installer	Windows		c813e6671f334a269e669d913b1f9b0d	1328184	SIG

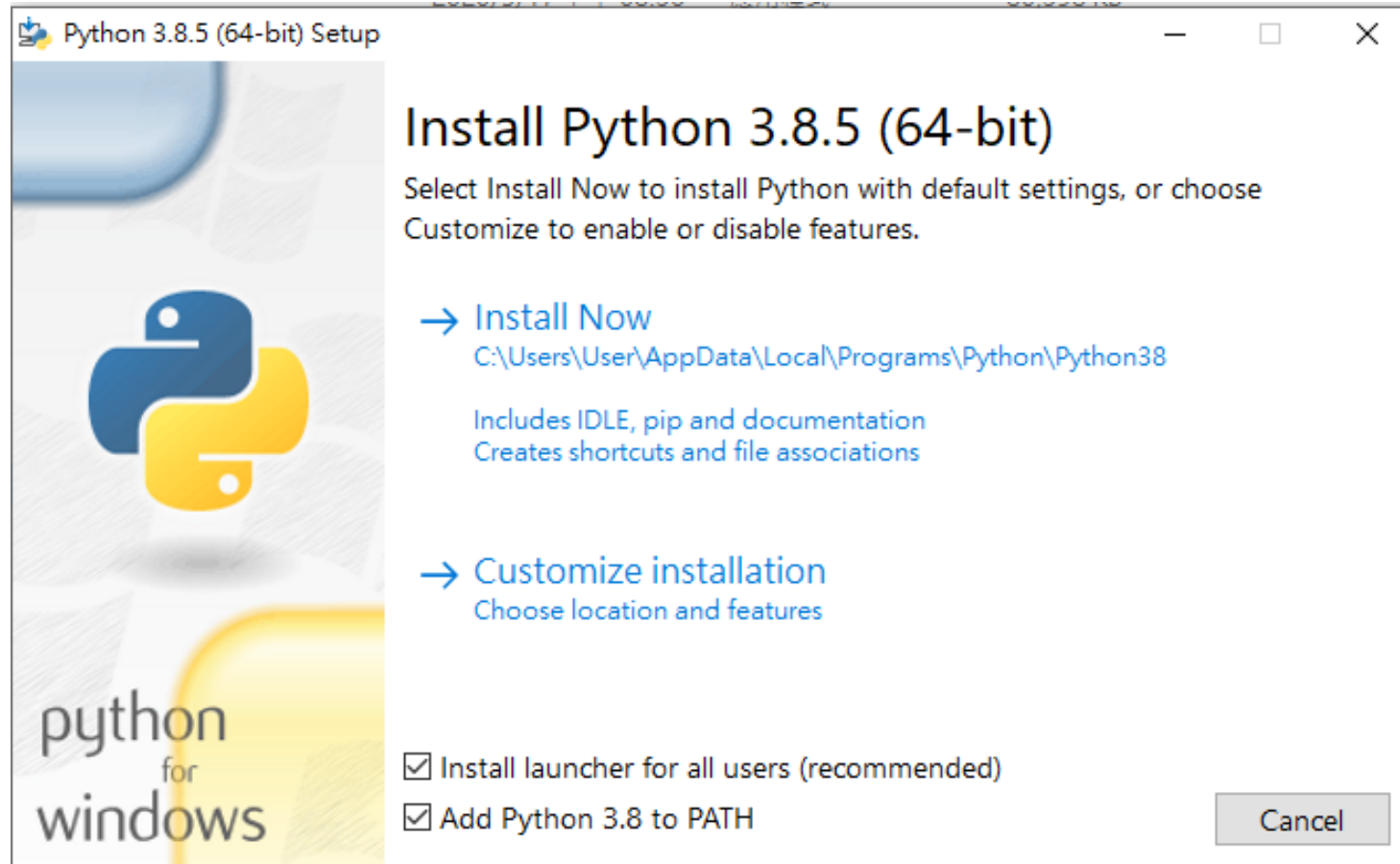
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Transcend (F:) > 109年度 > 上學期 > 應統一1-程式設計二109 > refer_tools

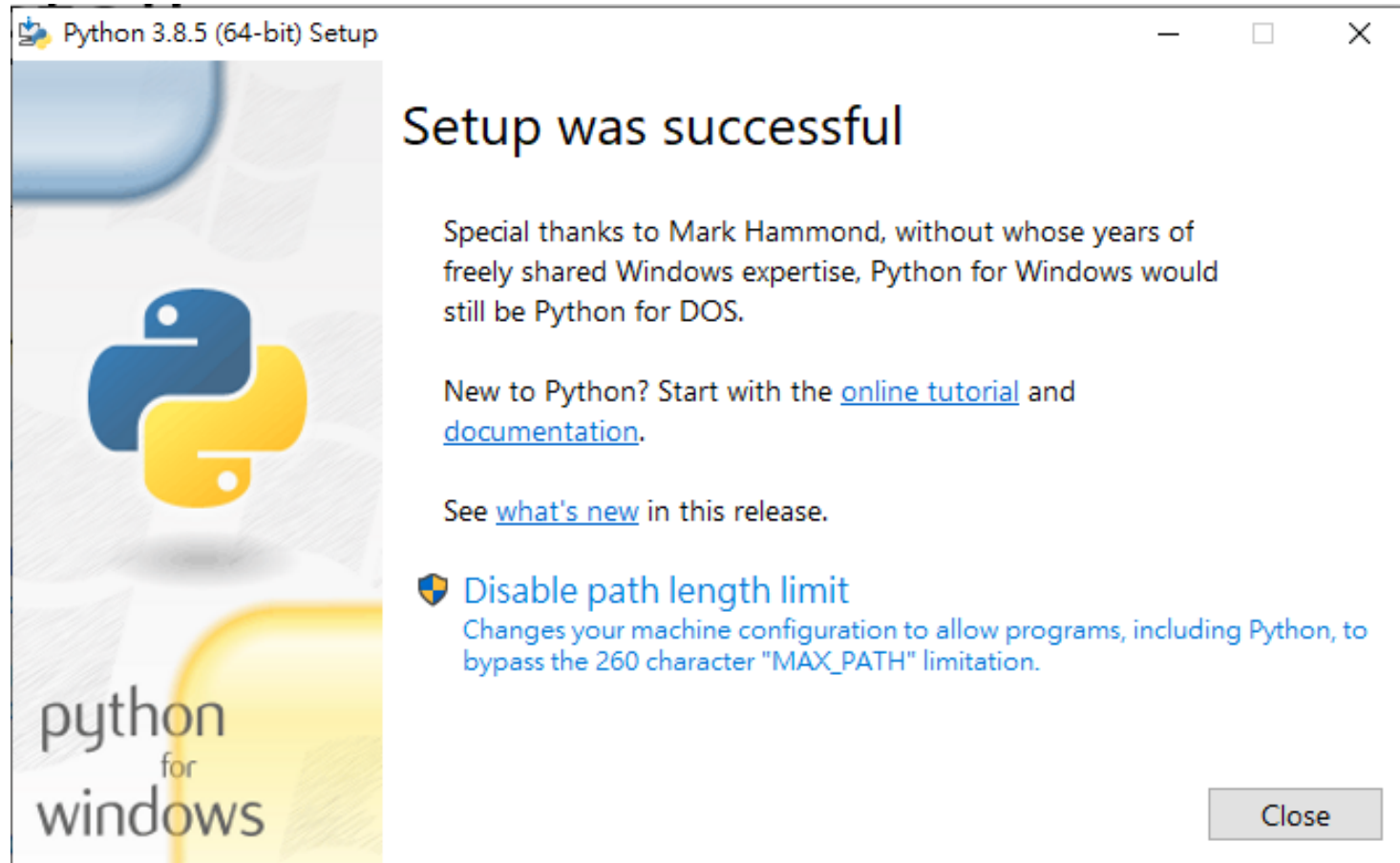
refer

名稱	修改日期	類型	大小
 python-3.8.5-amd64	2020/9/1 下午 03:34	應用程式	27,212 KB
 Anaconda3-2020.07-Windows-x86_64	2020/8/17 下午 01:23	應用程式	478,712 KB
 matlab_prog	2020/7/31 下午 11:07	Adobe Acrobat ...	4,723 KB
 WinMerge-2.16.6-Setup	2020/7/31 下午 07:58	應用程式	6,639 KB
 ue_chinese_traditional_64	2020/4/13 下午 03:06	應用程式	54,542 KB
 PSPadPortable_5.0.3_azo	2020/4/13 下午 03:04	應用程式	7,334 KB

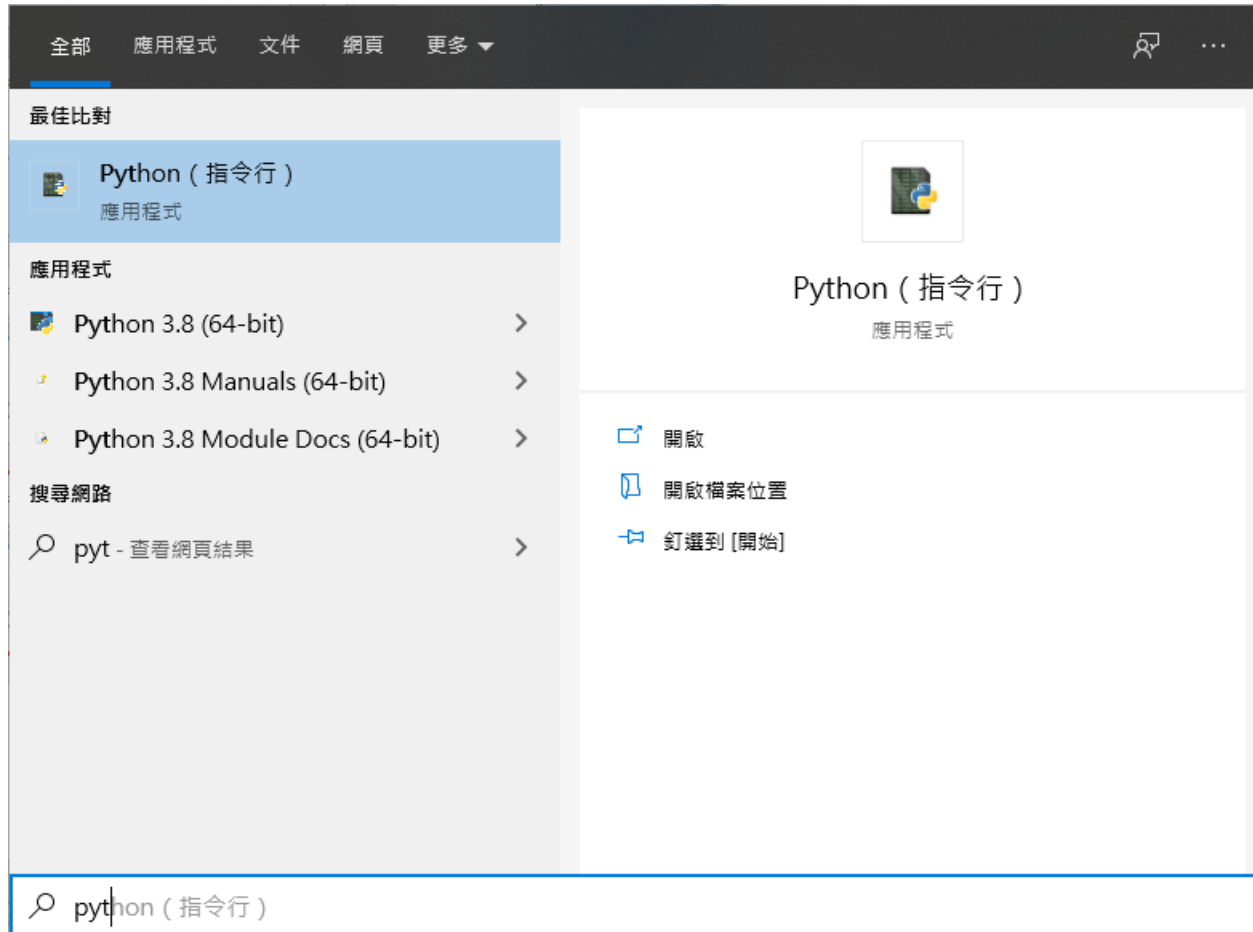
Python install



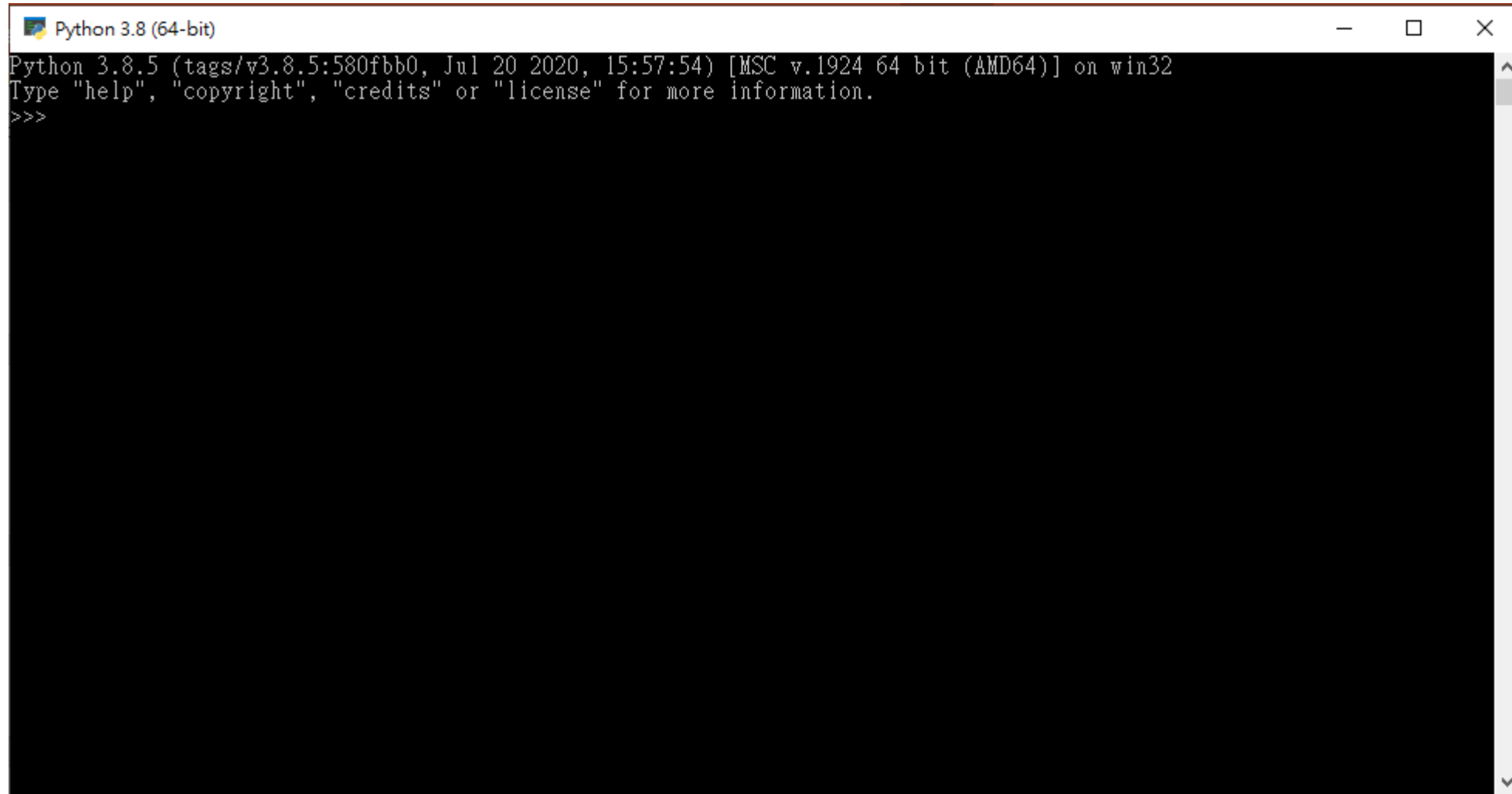
Python install



Python run for cmd



Python run for cmd

A screenshot of a Windows command prompt window titled "Python 3.8 (64-bit)". The window has standard Windows window controls (minimize, maximize, close) in the top right corner. The text inside the window is as follows:

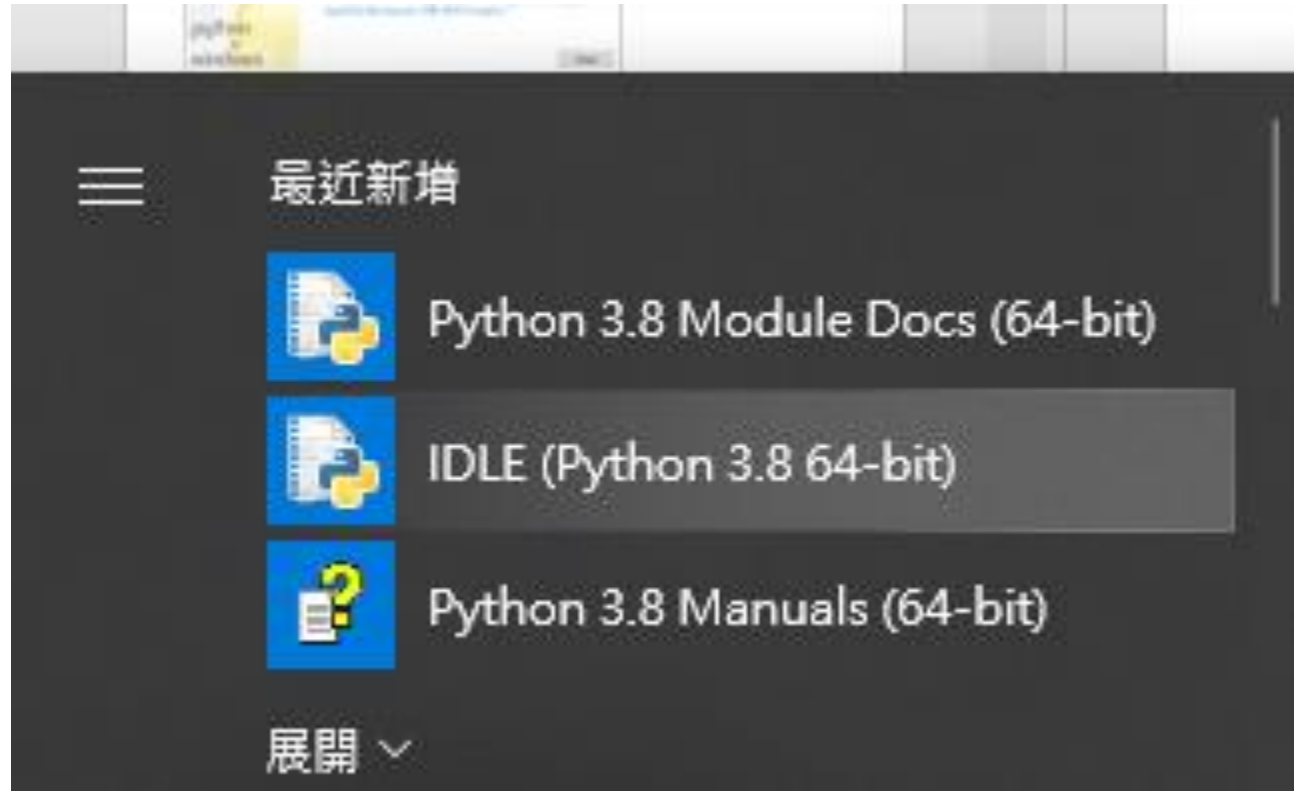
```
Python 3.8.5 (tags/v3.8.5:580fbb0, Jul 20 2020, 15:57:54) [MSC v.1924 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

Python run for cmd

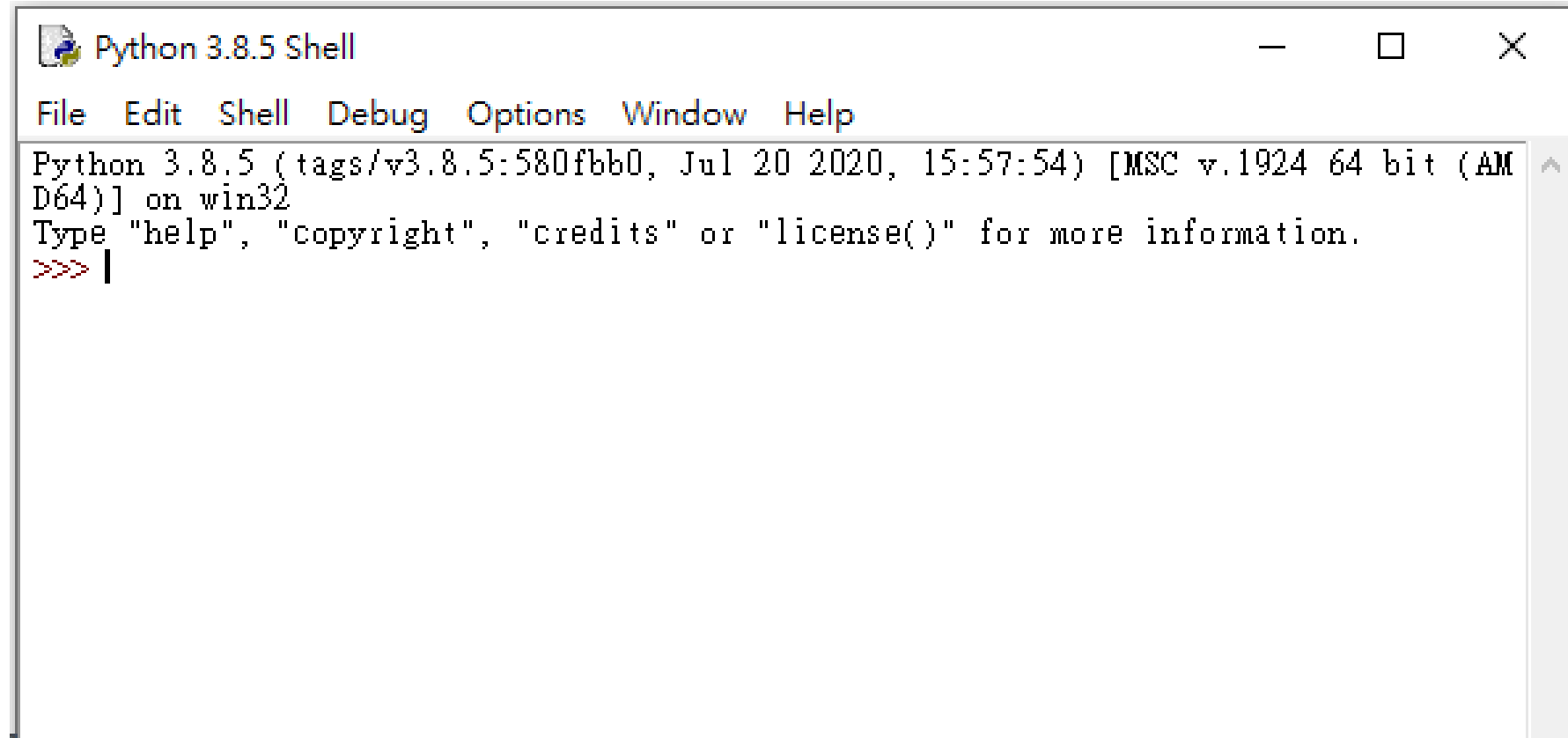
 Python 3.8 (64-bit)

```
Python 3.8.5 (tags/v3.8.5:580fbb0, Jul 20 2020, 15:57:54) [MSC v.1924 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> 1+1
2
>>>
```

Python run for idle

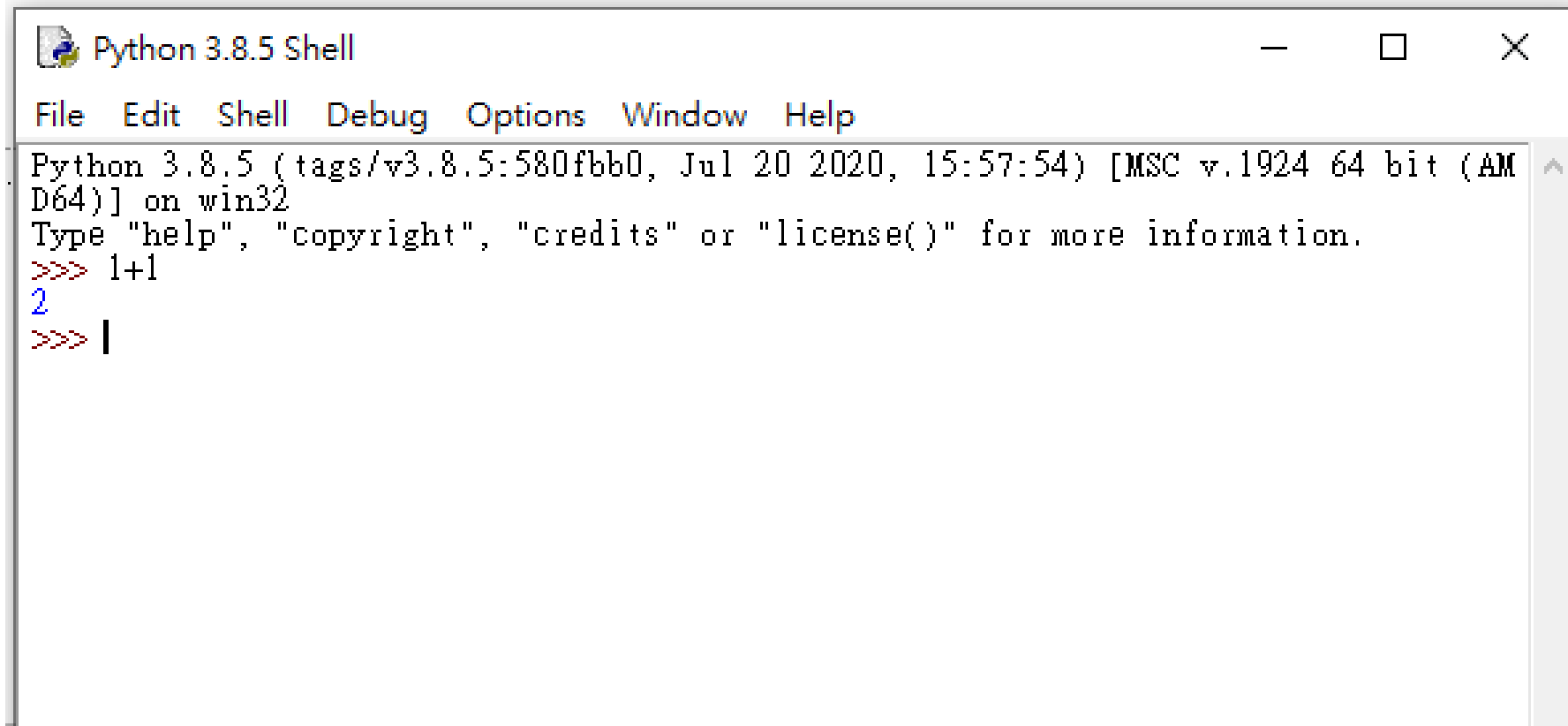


Python run for idle



```
Python 3.8.5 Shell
File Edit Shell Debug Options Window Help
Python 3.8.5 (tags/v3.8.5:580fbb0, Jul 20 2020, 15:57:54) [MSC v.1924 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> |
```

Python run for idle

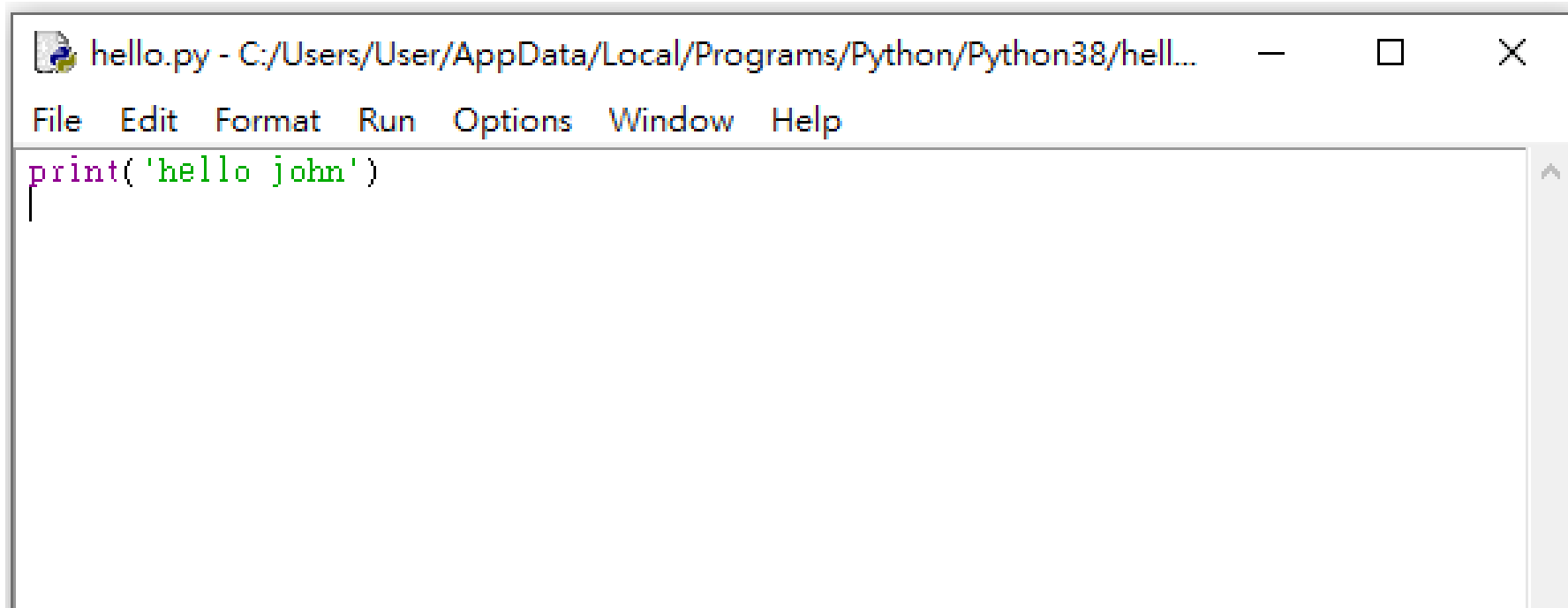


The image shows a screenshot of a Python 3.8.5 Shell window. The window title is "Python 3.8.5 Shell" and it has standard Windows window controls (minimize, maximize, close). The menu bar includes "File", "Edit", "Shell", "Debug", "Options", "Window", and "Help". The main text area displays the following content:

```
Python 3.8.5 (tags/v3.8.5:580fbb0, Jul 20 2020, 15:57:54) [MSC v.1924 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> 1+1
2
>>> |
```

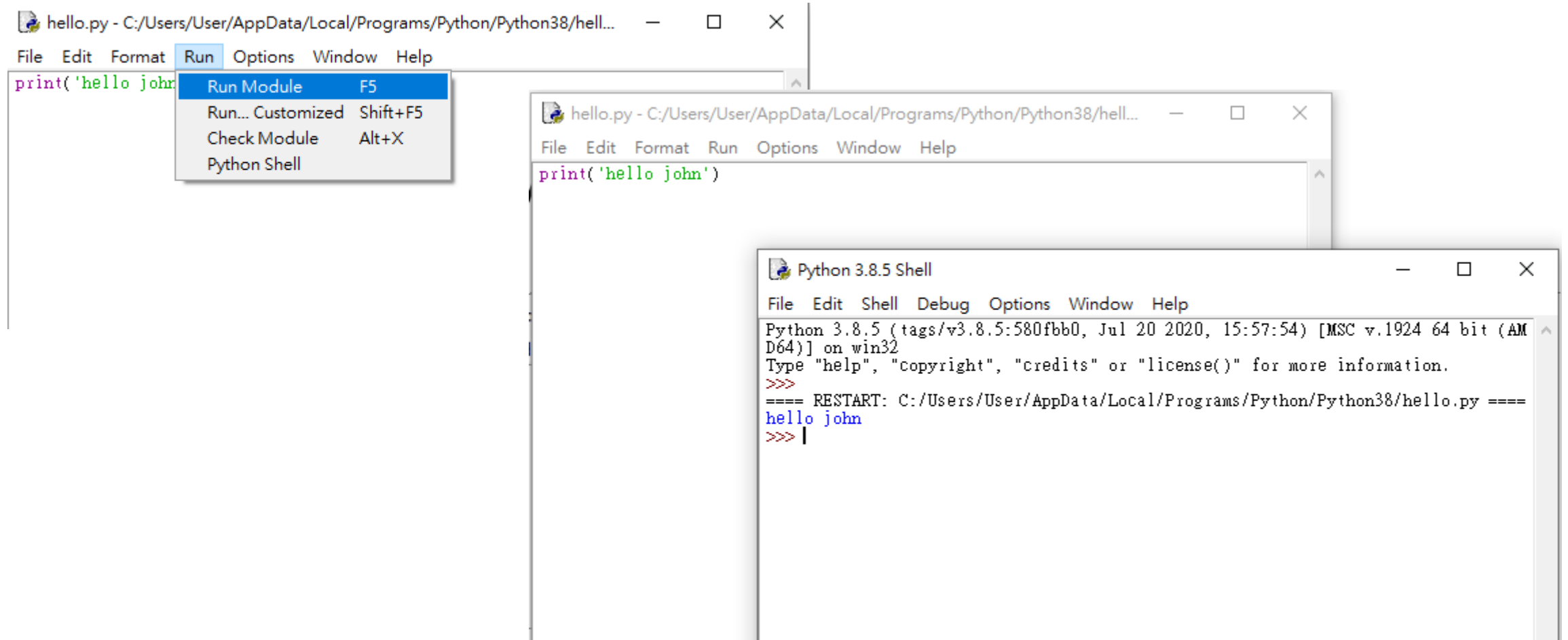
Python run for idle

- Create or Open new file



The image shows a screenshot of the Python IDLE (Integrated Development and Learning Environment) window. The window title bar reads "hello.py - C:/Users/User/AppData/Local/Programs/Python/Python38/hell...". The menu bar includes "File", "Edit", "Format", "Run", "Options", "Window", and "Help". The main text area contains a single line of Python code: `print('hello john')`. The cursor is positioned at the end of the line, ready for further input.

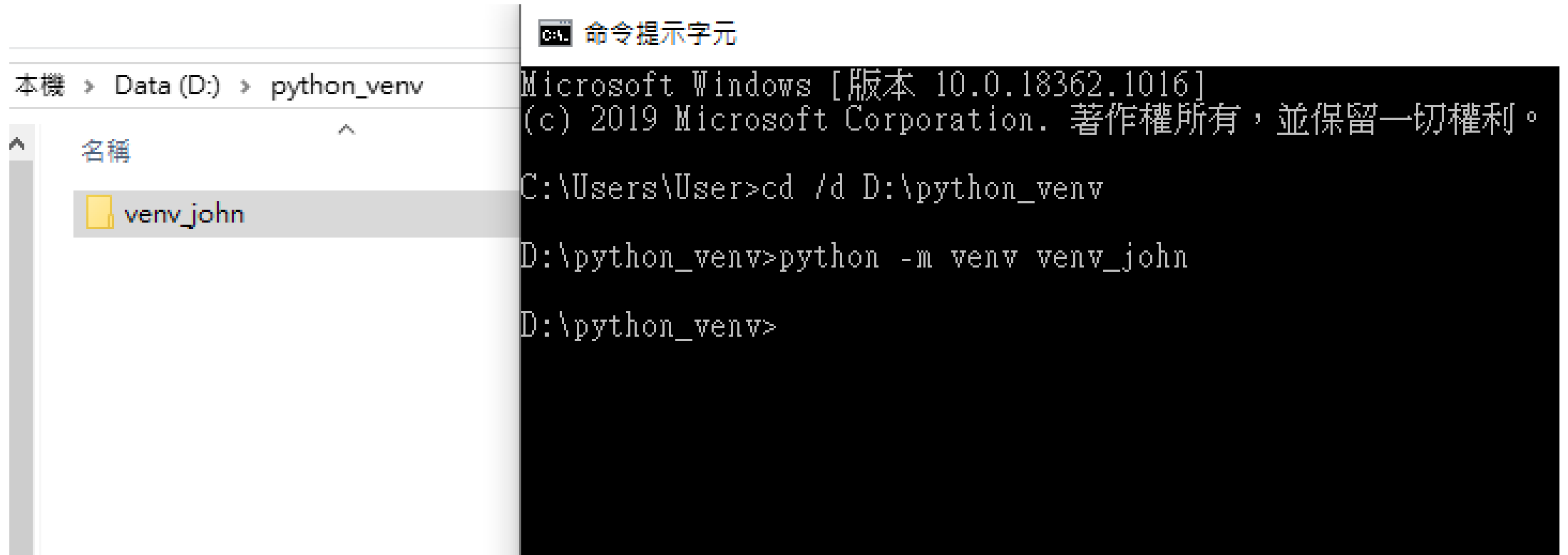
Python run for idle



Python creation of virtual environments

- 在 python 中，我們常常需要建立環境應付各個 project，如果沒有切割環境，會非常難維護，所以，建立 virtual environments 是一件非常重要的事情。
- 使用 [venv](#) 建立 virtual environments
- 參考來源：<https://github.com/twtrubiks/python-creation-of-virtual-environments>

Python creation of virtual environments



The image shows a Windows File Explorer window on the left and a Command Prompt window on the right. The File Explorer window displays the path '本機 > Data (D:) > python_venv' and a folder named 'venv_john'. The Command Prompt window shows the following commands and output:

```
命令提示字元
Microsoft Windows [版本 10.0.18362.1016]
(c) 2019 Microsoft Corporation. 著作權所有，並保留一切權利。
C:\Users\User>cd /d D:\python_venv
D:\python_venv>python -m venv venv_john
D:\python_venv>
```

Python creation of virtual environments

- 如何啟動 **virtual environments**
- `venv_john\Scripts\activate.bat` #啟動 virtual environments
- 執行 `hellojohn.py`
- `venv_john\Scripts\deactivate.bat` #關閉 virtual environments

```
命令提示字元
Microsoft Windows [版本 10.0.18362.1016]
(c) 2019 Microsoft Corporation. 著作權所有，並保留一切權利。
C:\Users\User>D:
D:\>cd python_venv\venv_john\Scripts
D:\python_venv\venv_john\Scripts>activate.bat
```

```
命令提示字元
(venv_john) D:\python_venv\venv_john\Scripts>
```

```
命令提示字元
(venv_john) D:\python_venv\venv_john\Scripts>python.exe hellojohn.py
hello john
(venv_john) D:\python_venv\venv_john\Scripts>deactivate.bat
D:\python_venv\venv_john\Scripts>
```

Visual Studio Code 簡介

- **Visual Studio Code**（簡稱**VS Code**）是一個由[微軟](#)開發，同時支援[Windows](#)、[Linux](#)和[macOS](#)等操作系統的[免費程式碼編輯器](#)^[4]，它支援[測試](#)，並內建了[Git 版本控制](#)功能，同時也具有開發環境功能，例如代碼補全（類似於[IntelliSense](#)）、代碼片段和[代碼重構](#)等。該編輯器支援用戶個性化組態，例如改變主題顏色、鍵盤捷徑等各種屬性和參數，同時還在編輯器中內建了擴充程式管理的功能。

參考來源：wiki

Visual Studio Code 簡介

- Visual Studio Code 支援多種程式語言，整合終端，可以在編輯器中執行指令碼、編譯軟體、除錯指令碼、設定斷點、做版本管理。
- VSCode 的許多功能可以通過「命令面板」來調用。用戶可以在命令面板中搜尋和輸入命令，從而實現指定功能，例如安裝擴展、設定屬性等。預設情況下，打開命令面板的快捷鍵是 **Ctrl+Shift+P**。
- 內建一套易於使用的組態介面，同時支援使用 json 檔案組態，在控制面板做的所有設定都會自動儲存到 json。方便備份或部署。
- Code 具備了現代文字編輯器所具有的功能，例如更改 [字元編碼](#)、更換換行符、語法突顯、支援正規表示式、安裝擴展、建立 snippet 等。

Visual Studio Code(VSCode) download



VSCode



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code.visualstudio.com ▾ [翻譯這個網頁](#)

Visual Studio Code - Code Editing. Redefined

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Updates

Notebook UX updates - New Cell menu, enhanced drag and drop ...

Documentation for Visual ...

Visual Studio Code is a lightweight but powerful source code editor ...

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Visual Studio Code FAQ. Our docs contain a Common questions ...

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VSCode download










↓ Windows

Windows 7, 8, 10

User Installer	64 bit	32 bit	ARM
System Installer	64 bit	32 bit	ARM
.zip	64 bit	32 bit	ARM

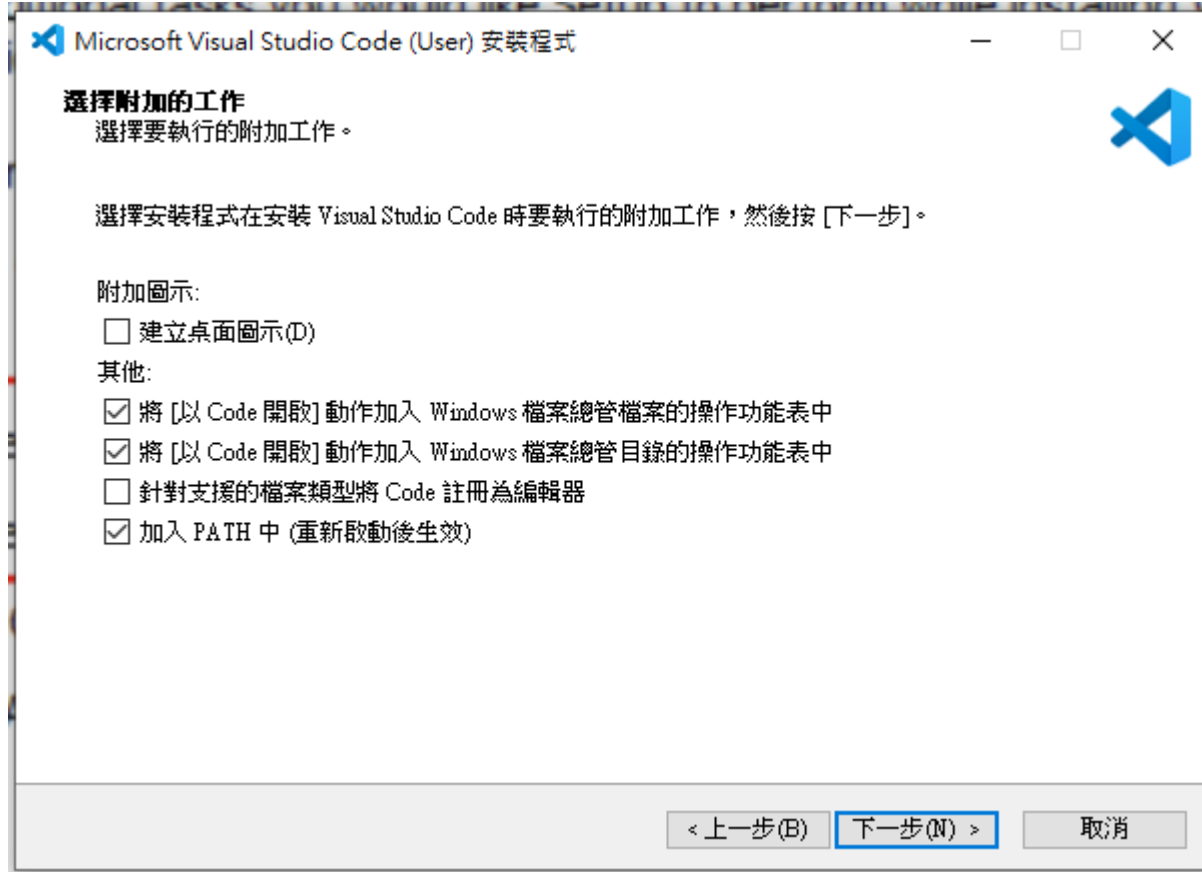
VSCode install

← → ↕ ↑ << 109年度 > 上學期 > 應統一1-程式設計二109 > refer_tools > 🔍 搜尋 refer_tools

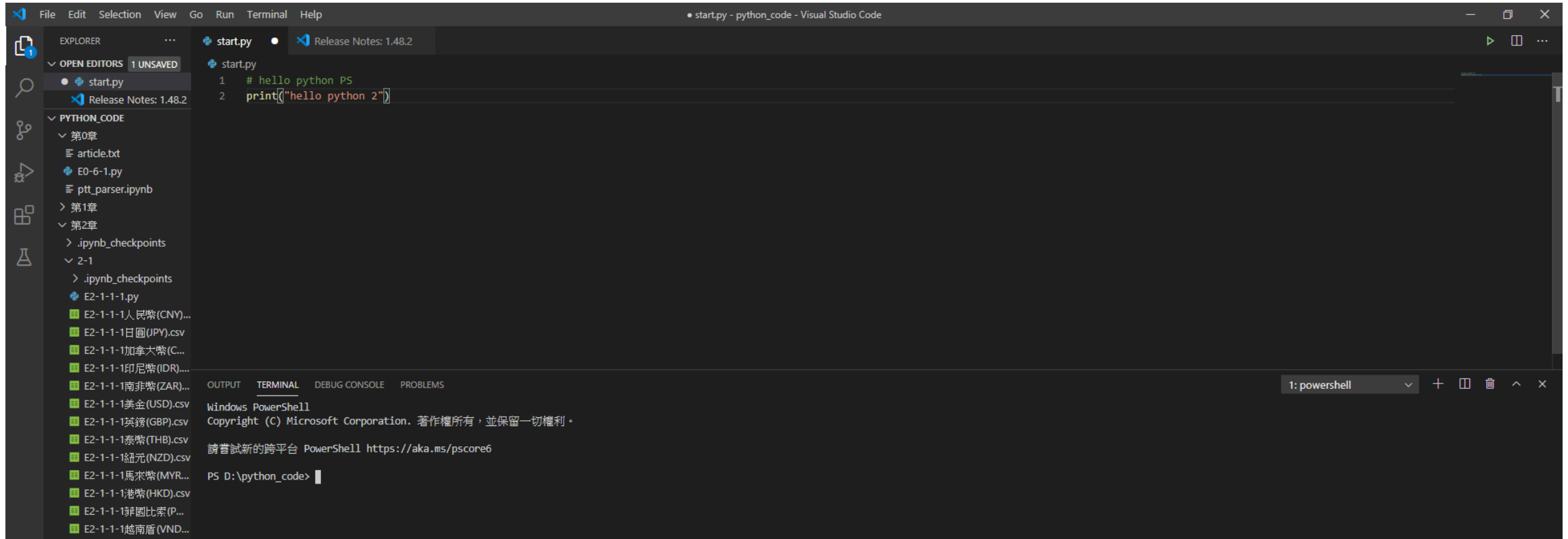
名稱	修改日期	類型	大小
 VSCodeUserSetup-x64-1.48.2	2020/9/1 下午 05:18	應用程式	57,283 KB
 python-3.8.5-amd64	2020/9/1 下午 03:34	應用程式	27,212 KB
 Anaconda3-2020.07-Windows-x86_64	2020/8/17 下午 01:23	應用程式	478,712 KB
 matlab_prog	2020/7/31 下午 11:07	Adobe Acrobat ...	4,723 KB
 WinMerge-2.16.6-Setup	2020/7/31 下午 07:58	應用程式	6,639 KB
 ue_chinese_traditional_64	2020/4/13 下午 03:06	應用程式	54,542 KB
 PSPadPortable_5.0.3_azo	2020/4/13 下午 03:04	應用程式	7,334 KB

本機
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影片

VSCode install

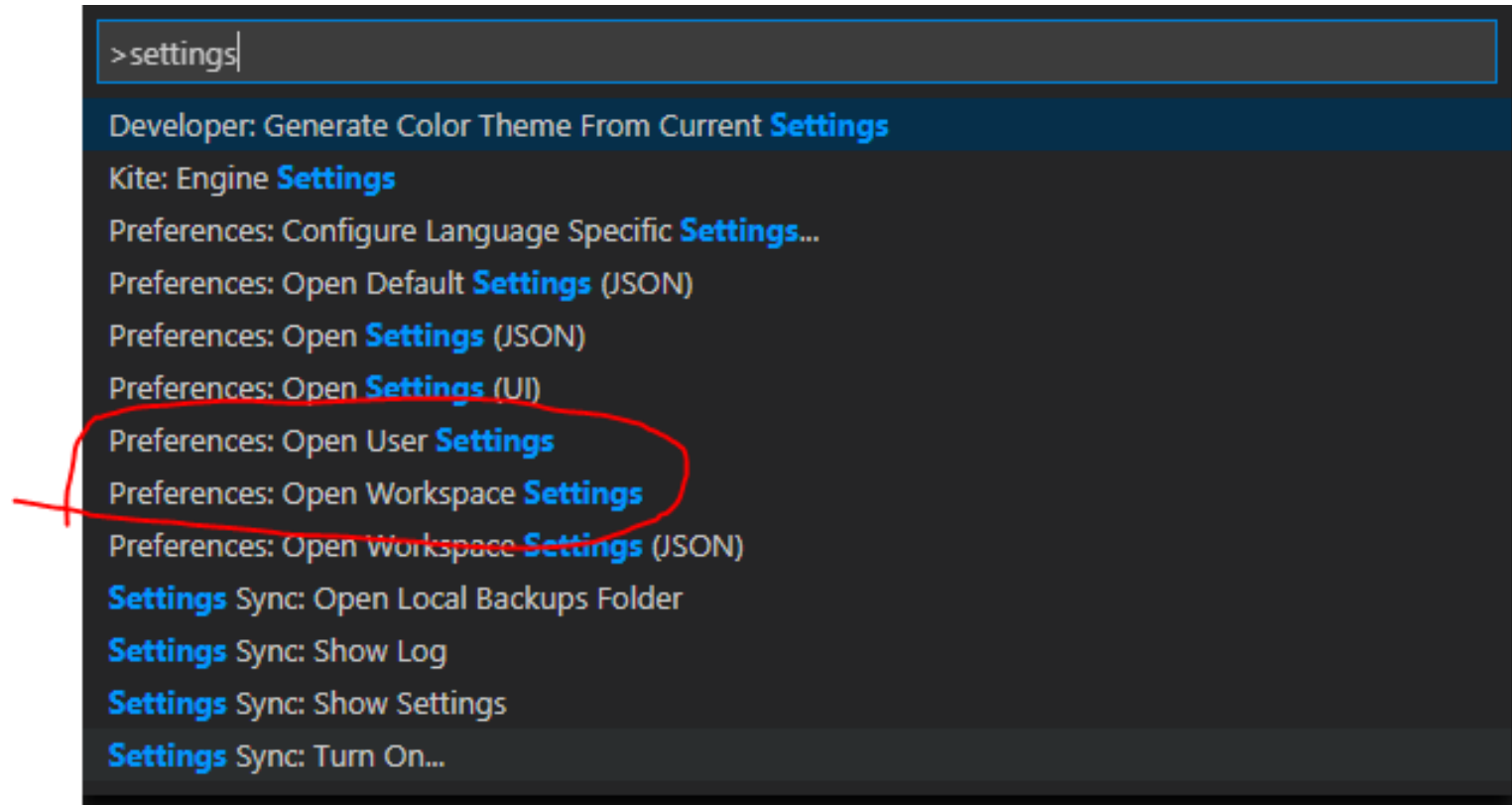


VSCode idle



VSCode Setting

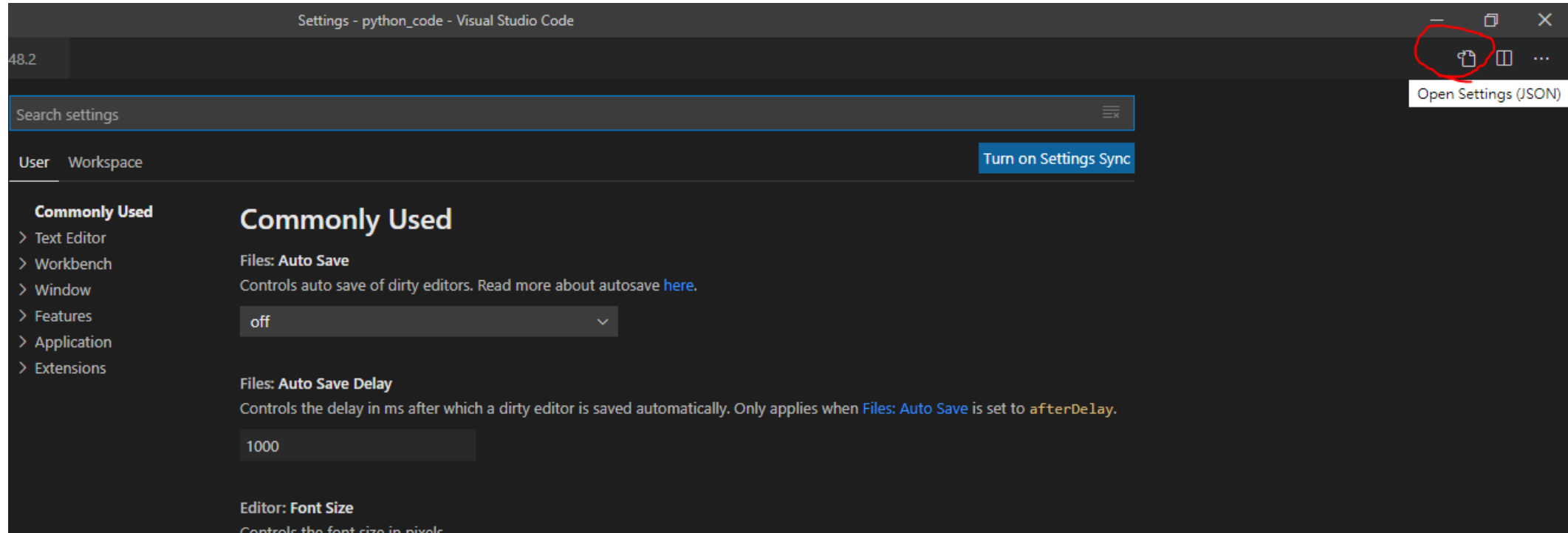
- 打開後，快捷鍵 Ctrl+Shift+P，然後輸入 settings



VSCode Setting

- Preferences: Open User Settings : 你可以簡單把他想成是全域的。
- Preferences: Open Workspace Settings : 只在你的工作目錄內才會生效 (工作目錄內會多出一個資料夾) 。

VSCode Setting(Open User Settings)



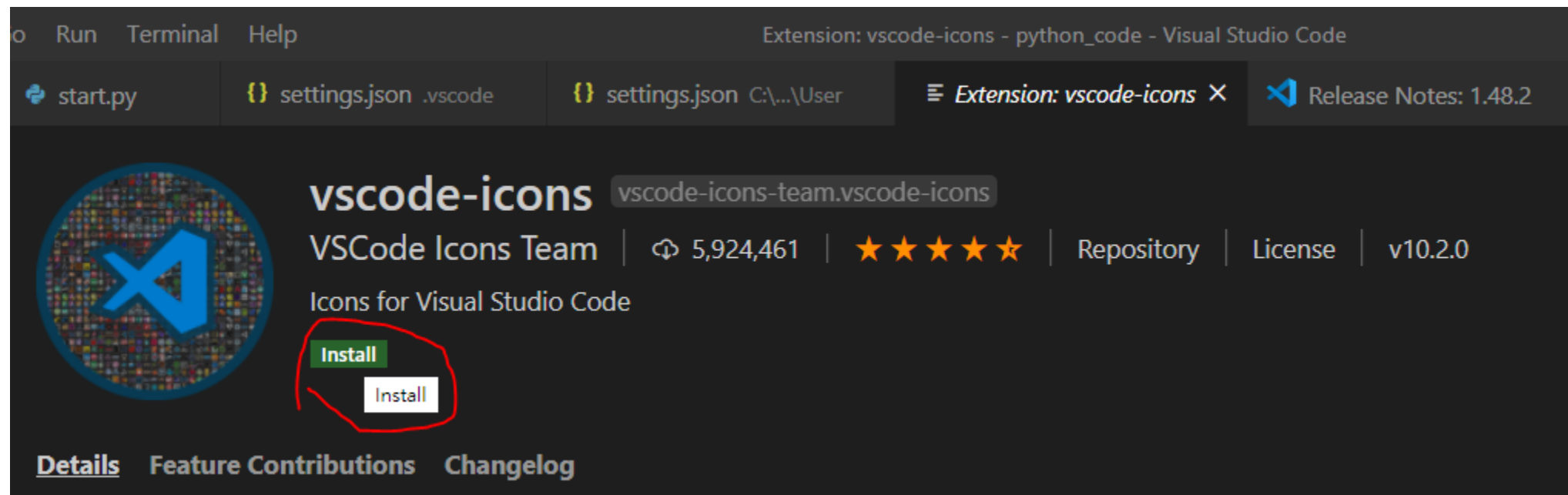
VSCode Setting(Open User Settings)

```
hellojohn.py Python - Get Started Settings {} settings.json ×
C: > Users > User > AppData > Roaming > Code > User > {} settings.json > ...
1 {
2   // User Settings
3
4   "window.zoomLevel": 1, // 視窗縮放
5   // "editor.fontSize": 22,
6   // "editor.lineHeight": 26,
7   // "terminal.integrated.fontSize": 30, // terminal 字體大小
8   // "editor.formatOnSave": true, // 當儲存時，是否自動格式化
9   "files.autoSave": "onFocusChange", // 是否自動儲存檔案
10
11  // 注意，win 用戶都要使用 "\\"
12  "python.pythonPath": "D:\\python_venv\\venv_john\\Scripts\\python.exe", // 預設的 PYTHON 執行環境
13
14  "extensions.ignoreRecommendations": true, // 是否忽略顯示建議的套件
15  "files.encoding": "utf8", // 設定預設編碼
16  "files.trimTrailingWhitespace": true, // 儲存的時候，會幫你自動過濾多餘的空格
17  "files.autoGuessEncoding": false, // 是否自動猜測檔案的編碼
18  "terminal.integrated.shell.windows": "C:\\WINDOWS\\System32\\cmd.exe",
19  "terminal.integrated.cwd": "D:\\python_venv\\venv_john\\Scripts" //整合終端的預設路徑
20  // "workbench.welcome.enabled": false, // 使否關閉 vscode 歡迎的顯示頁面
21  "workbench.startupEditor": "newUntitledFile",
22  "explorer.confirmDelete": false,
23
24  // "workbench.colorTheme": "One Dark Pro", // 需安裝 One Dark Pro
25  "workbench.iconTheme": "vscode-icons", // 需安裝 vscode-icons
26 }
```

VSCode Setting(Open User Settings)


- `// User Settings`
- `"window.zoomLevel": 1, // 視窗縮放`
- `// "editor.fontSize": 22,`
- `// "editor.lineHeight": 26,`
- `// "terminal.integrated.fontSize": 30, // terminal 字體大小`
- `// "editor.formatOnSave": true, // 當儲存時，是否自動格式化`
- `"files.autoSave": "onFocusChange", // 是否自動儲存檔案`
- `// 注意，win 用戶都要使用 "\\"`
- `"python.pythonPath": "D:\\python_venv\\venv_john\\Scripts\\python.exe", // 預設的 PYTHON 執行環境`
- `"extensions.ignoreRecommendations": true, // 是否忽略顯示建議的套件`
- `"files.encoding": "utf8", // 設定預設編碼`
- `"files.trimTrailingWhitespace": true, // 儲存的時候，會幫你自動過濾多餘的空格`
- `"files.autoGuessEncoding": false, // 是否自動猜測檔案的編碼`
- `"terminal.integrated.shell.windows": "C:\\WINDOWS\\System32\\cmd.exe",`
- `"terminal.integrated.cwd": "D:\\python_venv\\venv_john\\Scripts", // 整合終端的預設路徑`
- `// "workbench.welcome.enabled": false, // 使否關閉 vscode 歡迎的顯示頁面`
- `"workbench.startupEditor": "newUntitledFile",`
- `"explorer.confirmDelete": false,`
- `// "workbench.colorTheme": "One Dark Pro", // 需安裝 One Dark Pro`
- `"workbench.iconTheme": "vscode-icons", // 需安裝 vscode-icons`

需安裝 vscode-icons



o Run Terminal Help Extension: vscode-icons - python_code - Visual Studio Code

start.py settings.json .vscode settings.json C:\...\User Extension: vscode-icons X Release Notes: 1.48.2

 **vscode-icons** `vscode-icons-team.vscode-icons`

VSCoDe Icons Team | 5,924,461 | ★★★★★ | Repository | License | v10.2.0

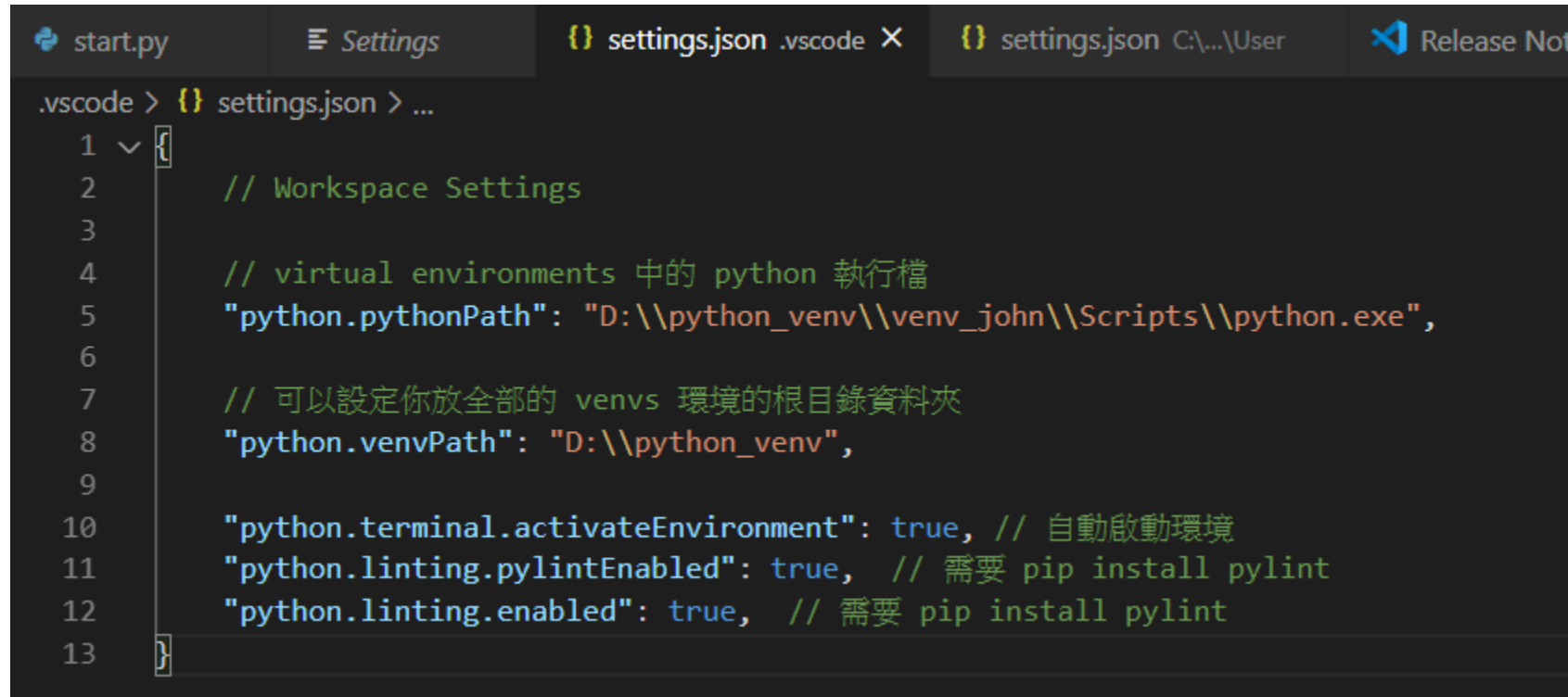
Icons for Visual Studio Code

Install

Install

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VSCode Setting(Open Workspace Settings)



The image shows a screenshot of the Visual Studio Code editor interface. The top bar displays several tabs: 'start.py', 'Settings', 'settings.json .vscode', 'settings.json C:\...\User', and 'Release Not'. The main editor area shows the content of the selected 'settings.json .vscode' file. The file is a JSON object containing workspace settings for Python. The settings include the Python path, the venv path, and flags for activating the environment and enabling linting (pylint).

```
.vscode > {} settings.json > ...
1  {
2    // Workspace Settings
3
4    // virtual environments 中的 python 執行檔
5    "python.pythonPath": "D:\\python_venv\\venv_john\\Scripts\\python.exe",
6
7    // 可以設定你放全部的 venvs 環境的根目錄資料夾
8    "python.venvPath": "D:\\python_venv",
9
10   "python.terminal.activateEnvironment": true, // 自動啟動環境
11   "python.linting.pylintEnabled": true, // 需要 pip install pylint
12   "python.linting.enabled": true, // 需要 pip install pylint
13 }
```

VSCode Setting(Open Workspace Settings)

- // Workspace Settings
-
- // virtual environments 中的 python 執行檔
- // "python.pythonPath": "D:\\python_venv\\venv_john\\Scripts\\python.exe",
-
- // 可以設定你放全部的 venvs 環境的根目錄資料夾
- "python.venvPath": "D:\\python_venv",
-
- "python.terminal.activateEnvironment": true, // 自動啟動環境
- "python.linting.pylintEnabled": true, // 需要 pip install pylint
- "python.linting.enabled": true, // 需要 pip install pylint

需要 pip install pylint

- `>>>D:/python_venv/venv_john/Scripts/python.exe -m pip install -U pylint`
- `>>>python.exe -m pip install --upgrade pip`

Python語言簡介與工作環境介紹

- Q&Q