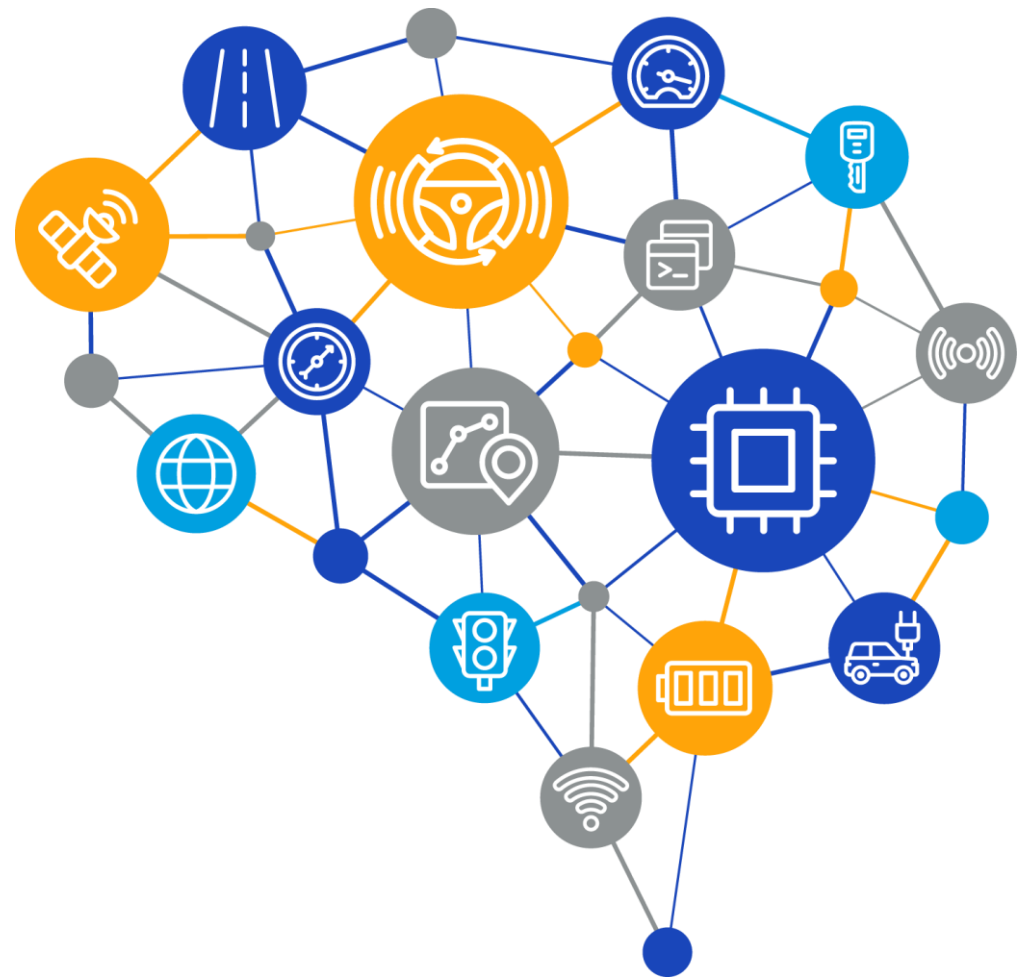


비주얼 스튜디오 코드 활용



강환수 교수

AI Experts
Who Lead
The Future

01

비주얼 스튜디오 코드 개요와 설치

- **Visual Studio Code**

- MS사가 개발하는 오픈 소스 에디터 소프트웨어, 간단히 vscode
 - Electron으로 만든 open source license로 만든 code editor
- 가볍지만 강력한 소스 코드 편집기
 - 데스크톱에서 실행
 - Windows, macOS 및 Linux에서 사용 가능
- JavaScript, TypeScript 및 Node.js를 기본적으로 지원
 - 다른 언어 (예 : C ++, C #, Java, Python, PHP, Go) 및 런타임(예 : .NET 및 Unity)에 대한 풍부한 확장 기능 에코 시스템
- VSCode Marketplace 활용
 - 아주 간단한 것부터 '또 하나의 프로그램'이라 느낄 정도로 복잡한 것까지 수 많은 extension 사용 가능

The image shows the Visual Studio Code website with the headline "Code editing. Redefined." and a "Download for Windows" button. Below the main content, four icons represent key features: IntelliSense, Run and Debug, Built-in Git, and Extensions. An inset window displays the Visual Studio Code IDE interface, showing the Extensions Marketplace on the left with a list of installed and available extensions (Python, GitLens, C/C++, ESLint, Debugger for Chrome, Language Support, vscode-icons, Vetur, C#), the main editor with a JavaScript file, and a terminal window at the bottom showing the command "node" and the message "You can now view create-react-app in the browser."

- 다운로드

- <https://code.visualstudio.com/download>

- VSCodeSetup-x64-1.87.2.exe

- 2024년 2월

- 매우 자주 업그레이드

- 버전 종류

- 유저 버전

- 현재 사용자만 설치 가능한 버전

- 시스템 버전

- 해당 컴퓨터에 모든 사람이 사용 가능

- 공용 버전으로 사용하는 걸 추천

- System Installer

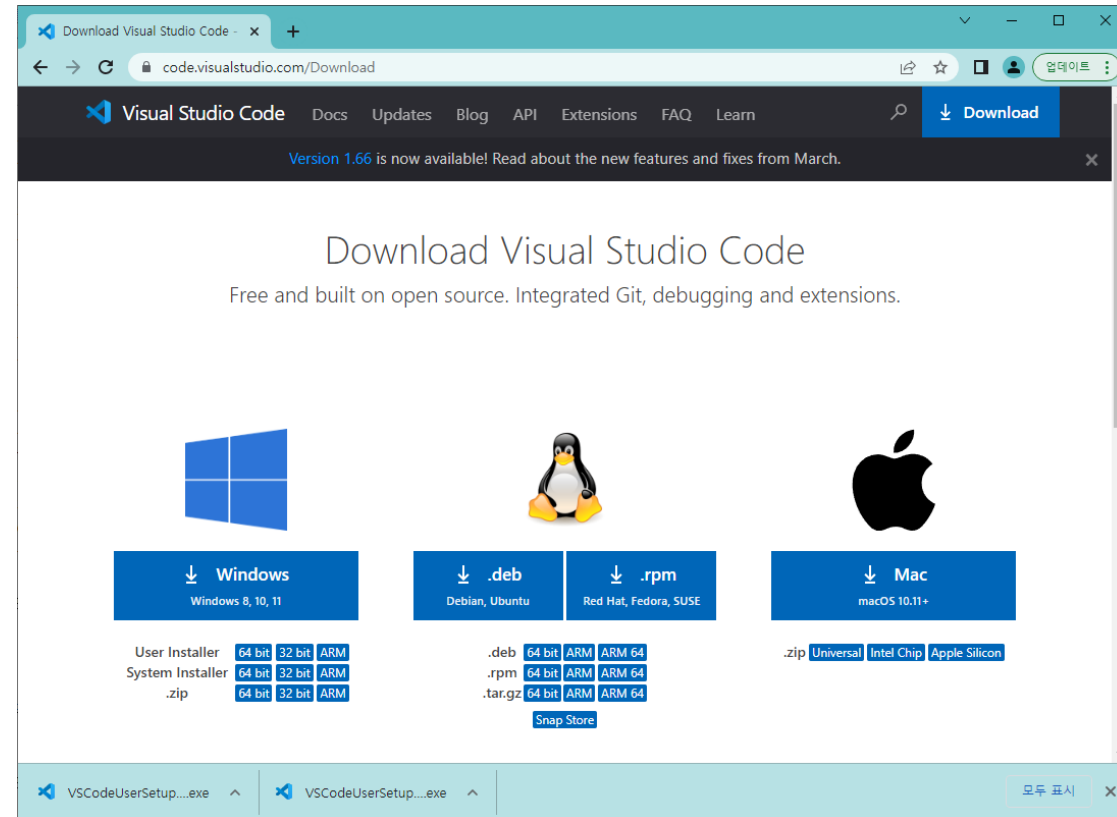
- 시스템 설치 기본 폴더

- C:\Program Files\Microsoft VS Code

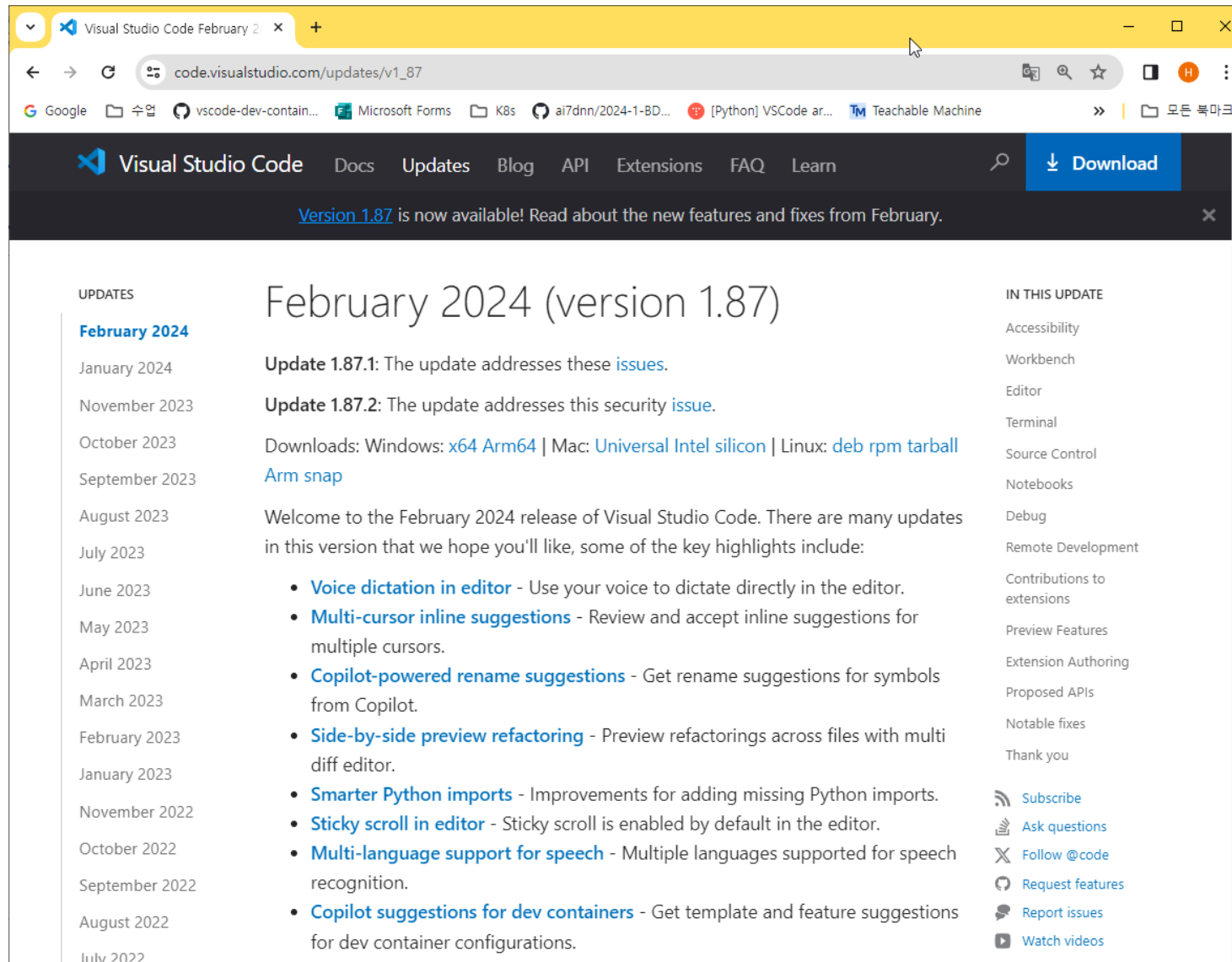
- User Installer

- 사용자 폴더에 설치

- 상관 없음











- <https://code.visualstudio.com/updates>



Top Extensions

Enable additional languages, themes, debuggers, commands, and more. VS Code's growing community shares their secret sauce to improve your workflow.

 Python ms-python 62.3M IntelliSense (Pylance), Linting, Debugging (multi-...	 Jupyter ms-toolsai 43.0M Jupyter notebook support, interactive programming...	 Pylance ms-python 35.6M A performant, feature-rich language server for Python...	 C/C++ ms-vscode 34.4M C/C++ IntelliSense, debugging, and code...
 Jupyter Keymap ms-toolsai 25.6M Jupyter keymaps for notebooks	 Live Server ritwickdey 24.4M Launch a development local Server with live reload...	 Jupyter Notebook Re... ms-toolsai 23.8M Renderers for Jupyter Notebooks (with plotly,...	 Prettier - Code format... esbenp 23.5M Code formatter using prettier

설치과정 1/3

파이썬과 vs code Python language

Microsoft Visual Studio Code 설치

사용권 계약

계속하기 전에 다음의 중요 정보를 읽어보십시오.

다음 사용권 계약을 읽어보십시오.

이 라이선스는 Visual Studio Code의 소스 코드는 MIT 라이선스 계약에 따라 배포됩니다. (<https://github.com/microsoft/vscode>)
Visual Studio Code의 소스 코드는 MIT 라이선스 계약에 따라 배포됩니다. (<https://github.com/microsoft/vscode>)
FAQ (<https://code.visualstudio.com/faq>)
입니다.

MICROSOFT 소프트웨어

☒ 동의합니다(A)
☐ 동의하지 않습니다(D)

Microsoft Visual Studio Code 설치

설치 위치 선택

Visual Studio Code의 설치 위치를 선택하십시오.

다음 폴더에 Visual Studio Code를 설치할까요?

계속하려면 "다음"을, 다른 폴더를 선택하려면 "찾아보기..."를 클릭하십시오.

C:\Program Files\Microsoft VS Code

이 프로그램은 최소 292.3 MB의 디스크 공간을 필요로 합니다.

Microsoft Visual Studio Code 설치

시작 메뉴 폴더 선택

어디에 프로그램 바로가기 위치를 지정할까요?

다음 시작 메뉴 폴더에 프로그램 바로가기를 만듭니다.

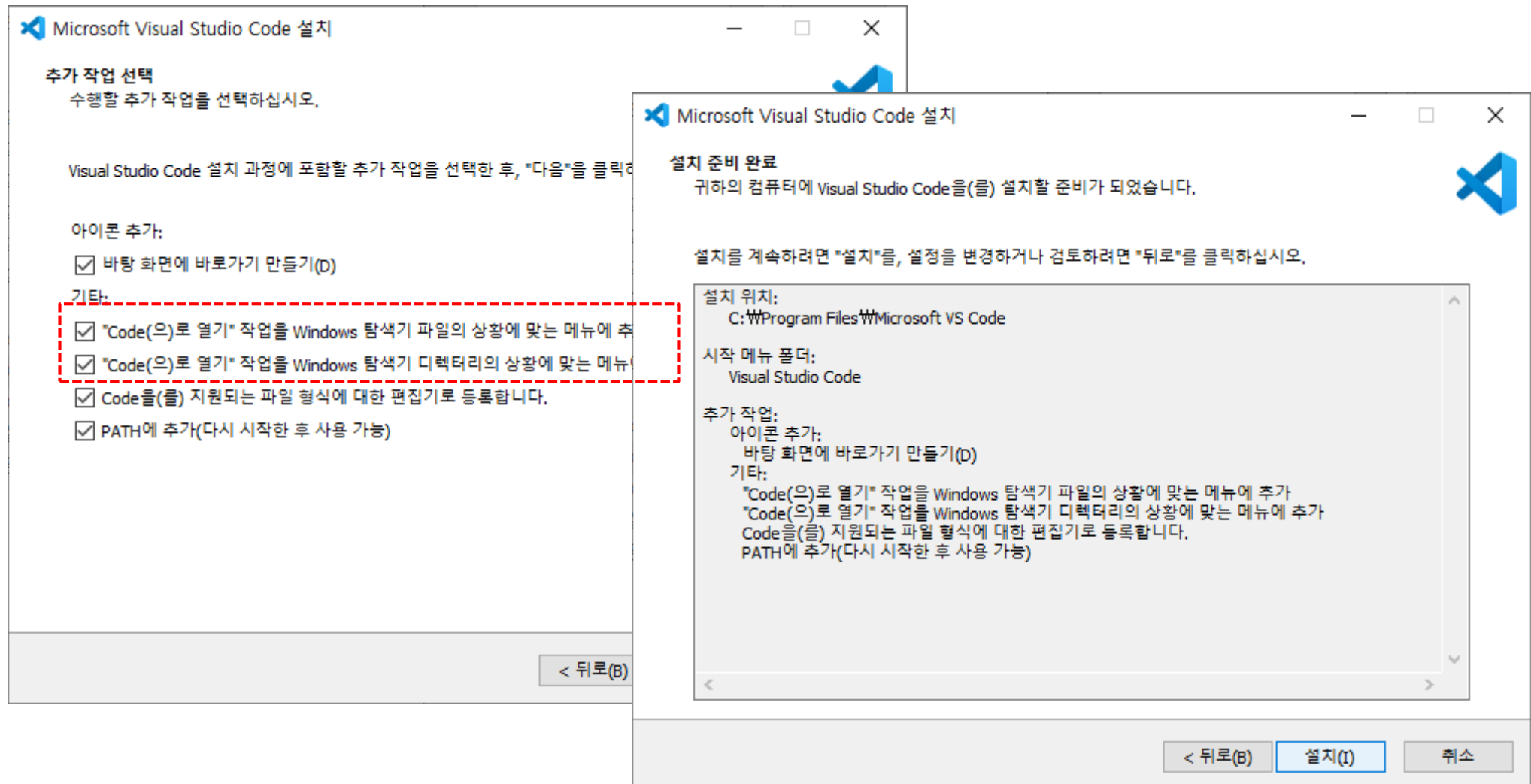
계속하려면 "다음"을 클릭하고, 다른 폴더를 선택하려면 "찾아보기..."를 클릭하십시오.

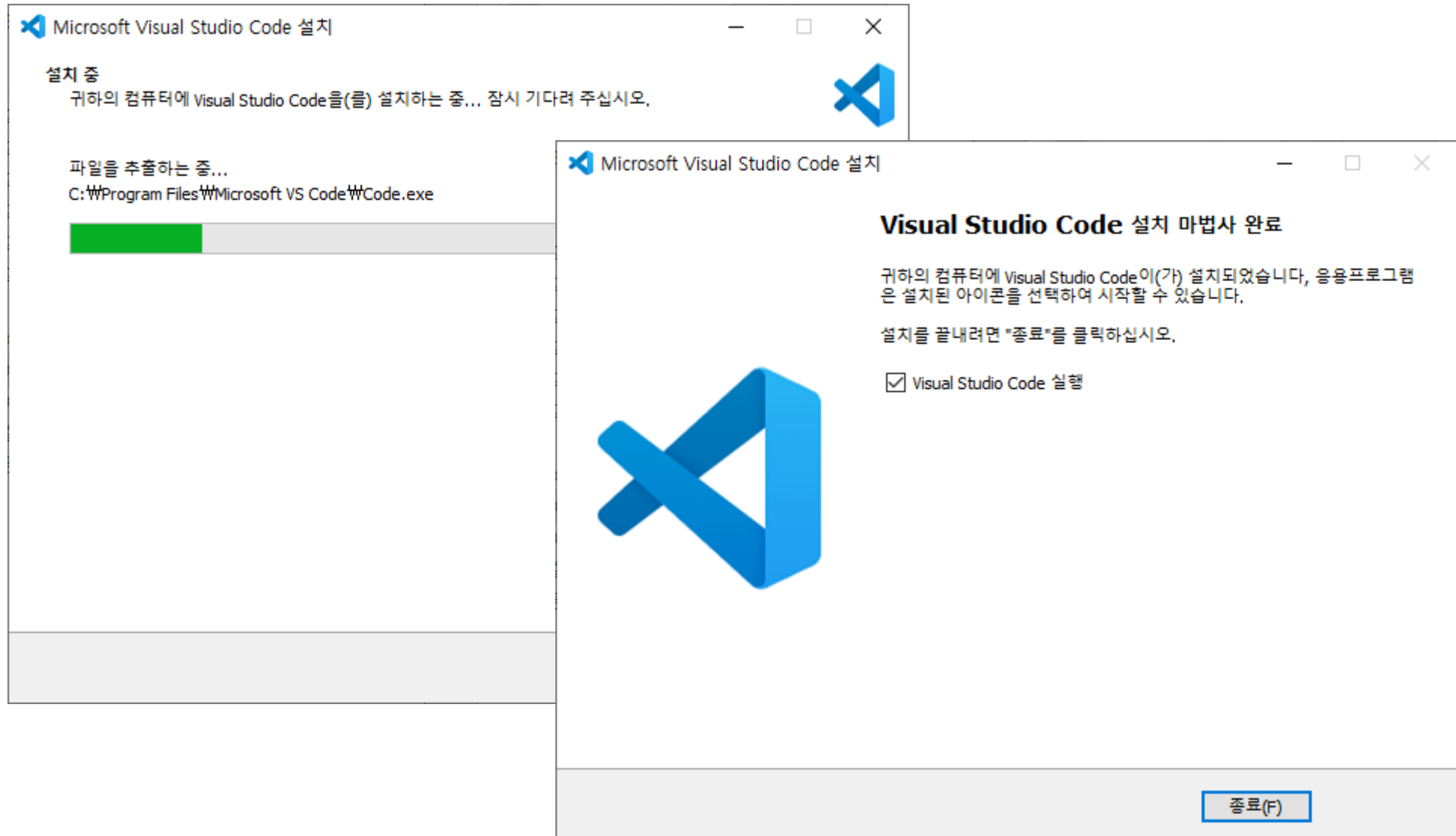
Visual Studio Code

☐ 시작 메뉴 폴더를 만들지 않음(D)

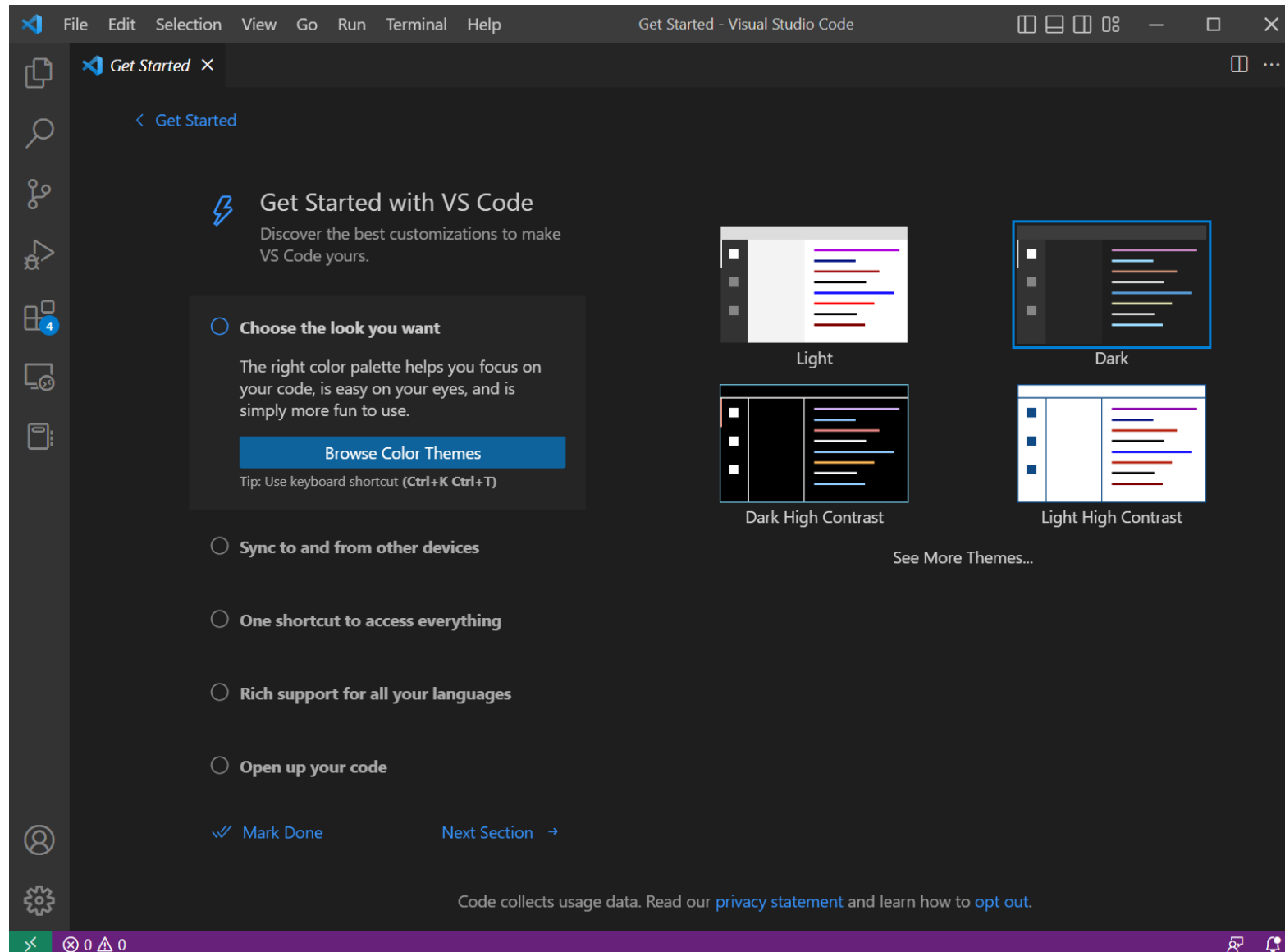
< 뒤로(B) 다음(N) > 취소

- 추가 작업 선택에서 기본으로 체크되지 않은 위 3개의 체크박스를 선택
 - 탐색기에서 파일 또는 디렉토리에서 바로 'vscode로 열기' 메뉴를 사용할 수 있어 편리

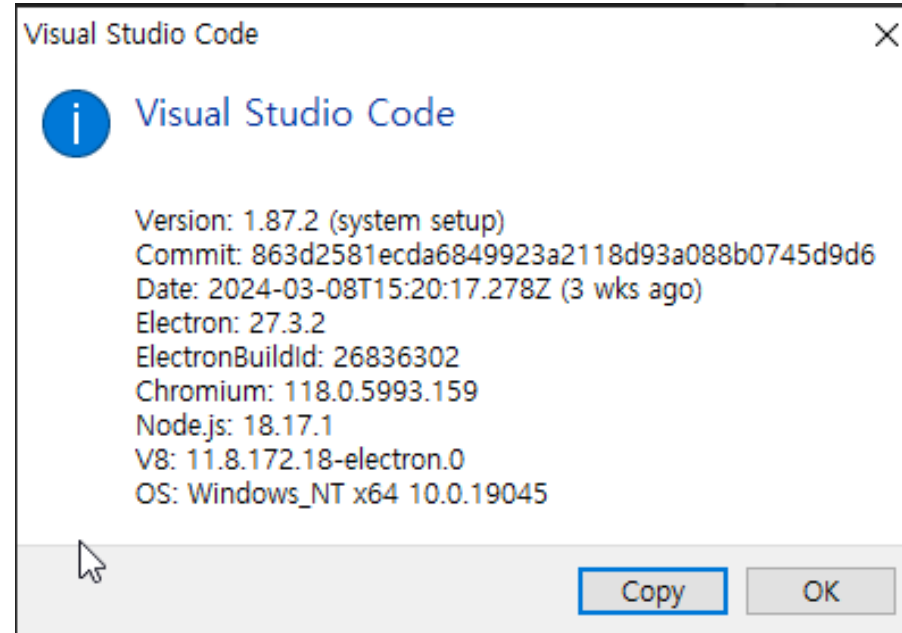




• Get Started



- 메뉴 Help | About

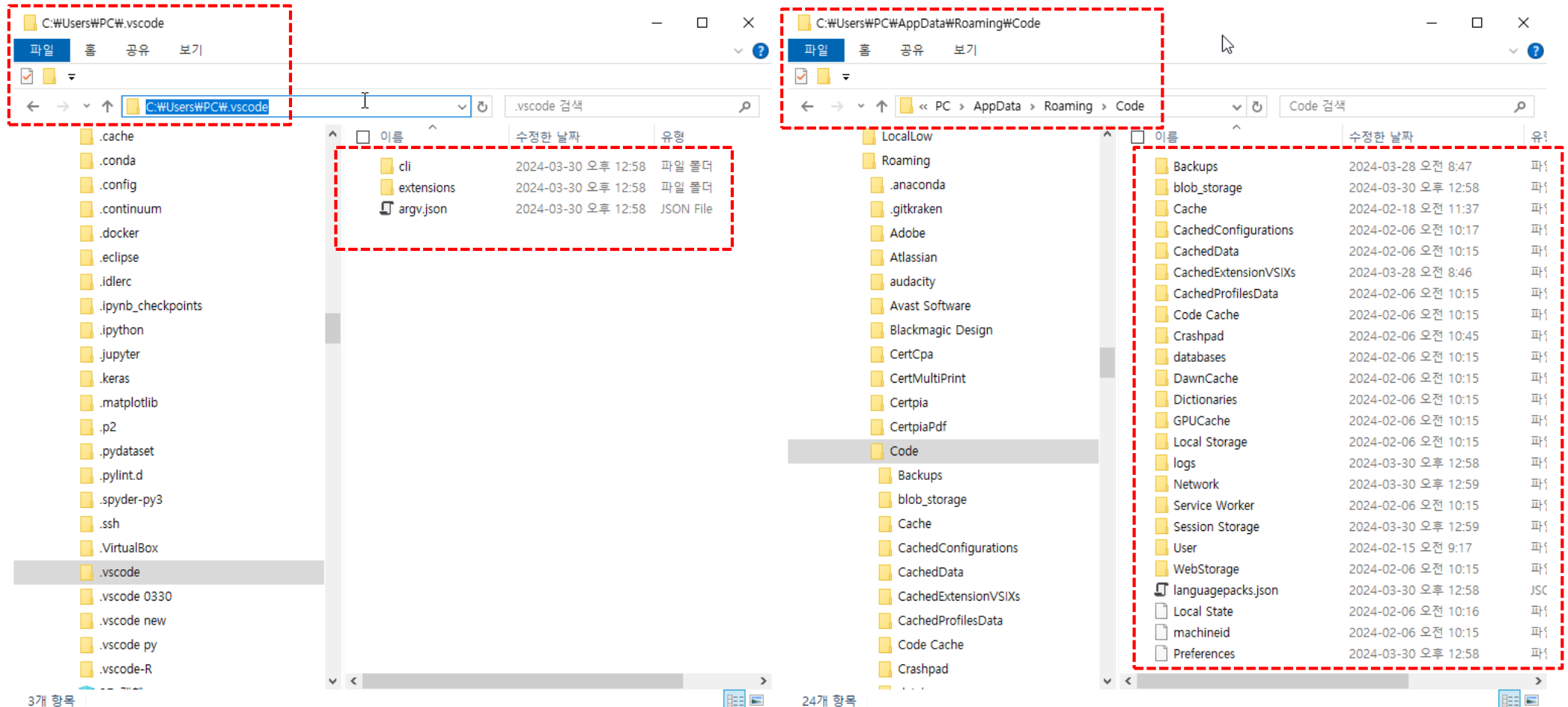


AI Experts
Who Lead
The Future

02

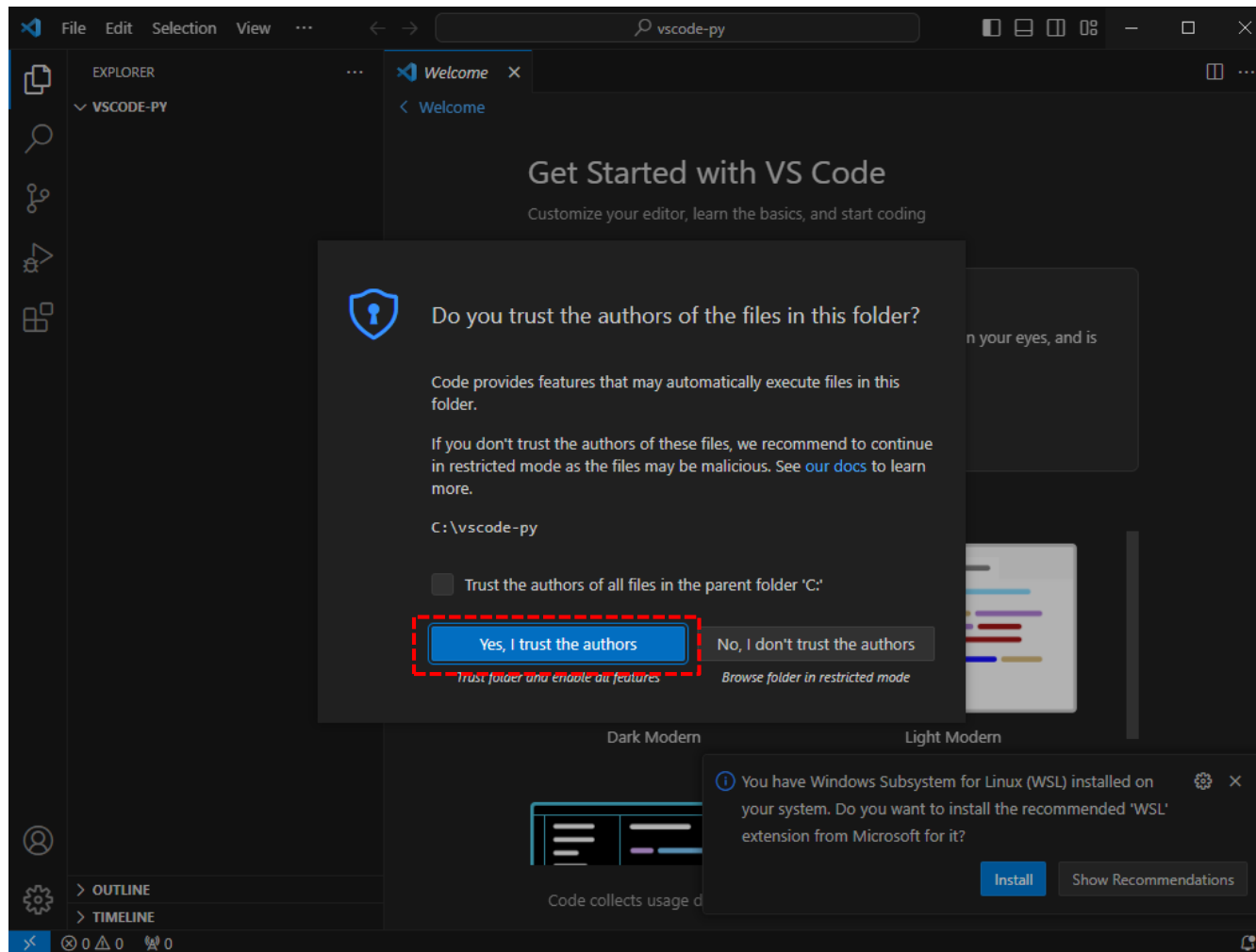
파이썬 확장 설치와 파이썬 파일 실행

- C:\Users\W[사용자계정]\W하부
 - C:\Users\WPC\W.vscodex
 - 확장 설치
 - C:\Users\WPC\AppData\Roaming\WCode
 - 환경 설정

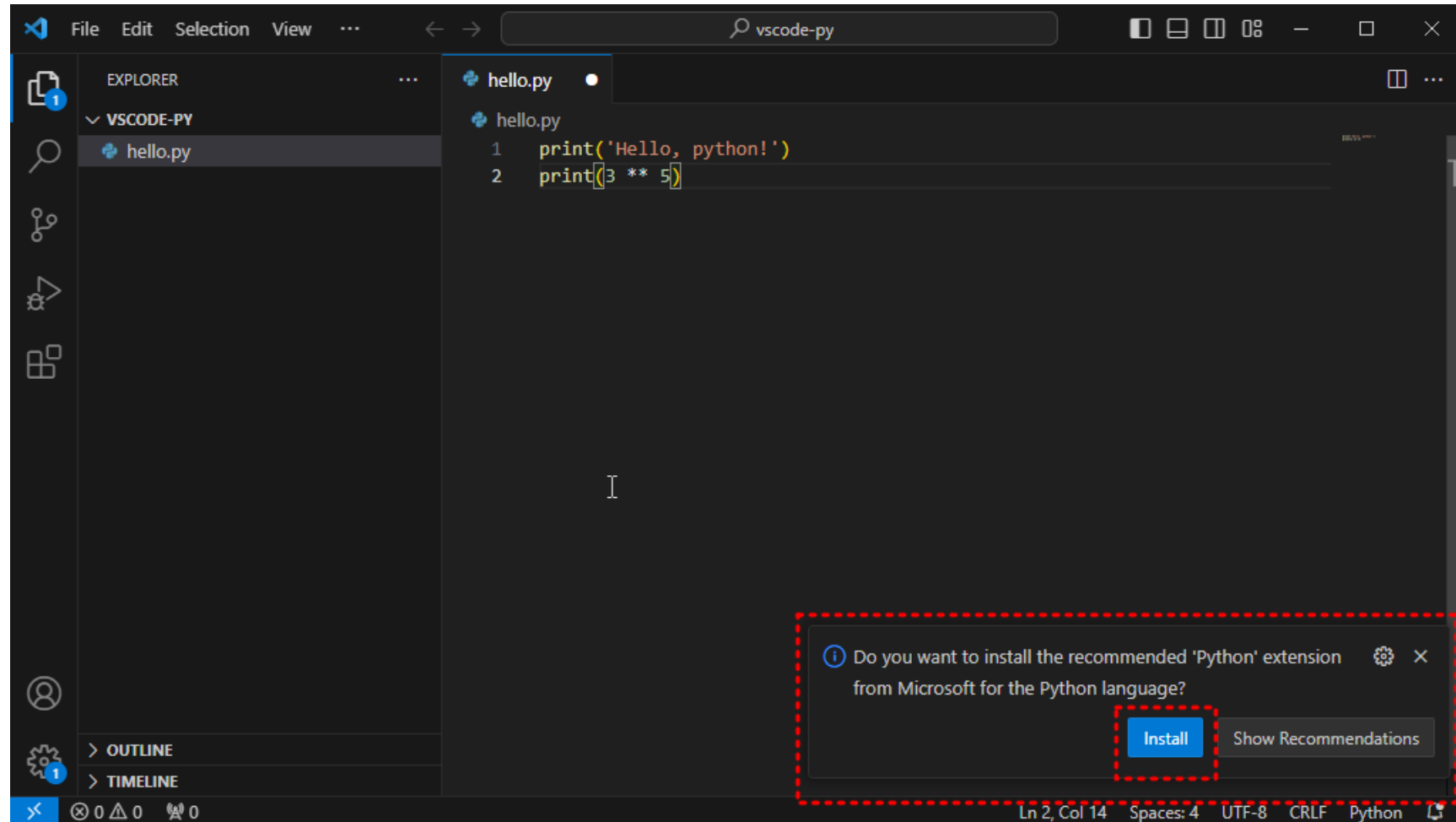


- 설정 폴더 이름 수정으로 제거
 - C:\Users\PC\vscode
 - 다음으로 수정
 - .vscode 0404
 - C:\Users\PC\AppData\Roaming\Code
 - 다음으로 수정
 - Code 0404
- Vs code 종료 후 다시 시작

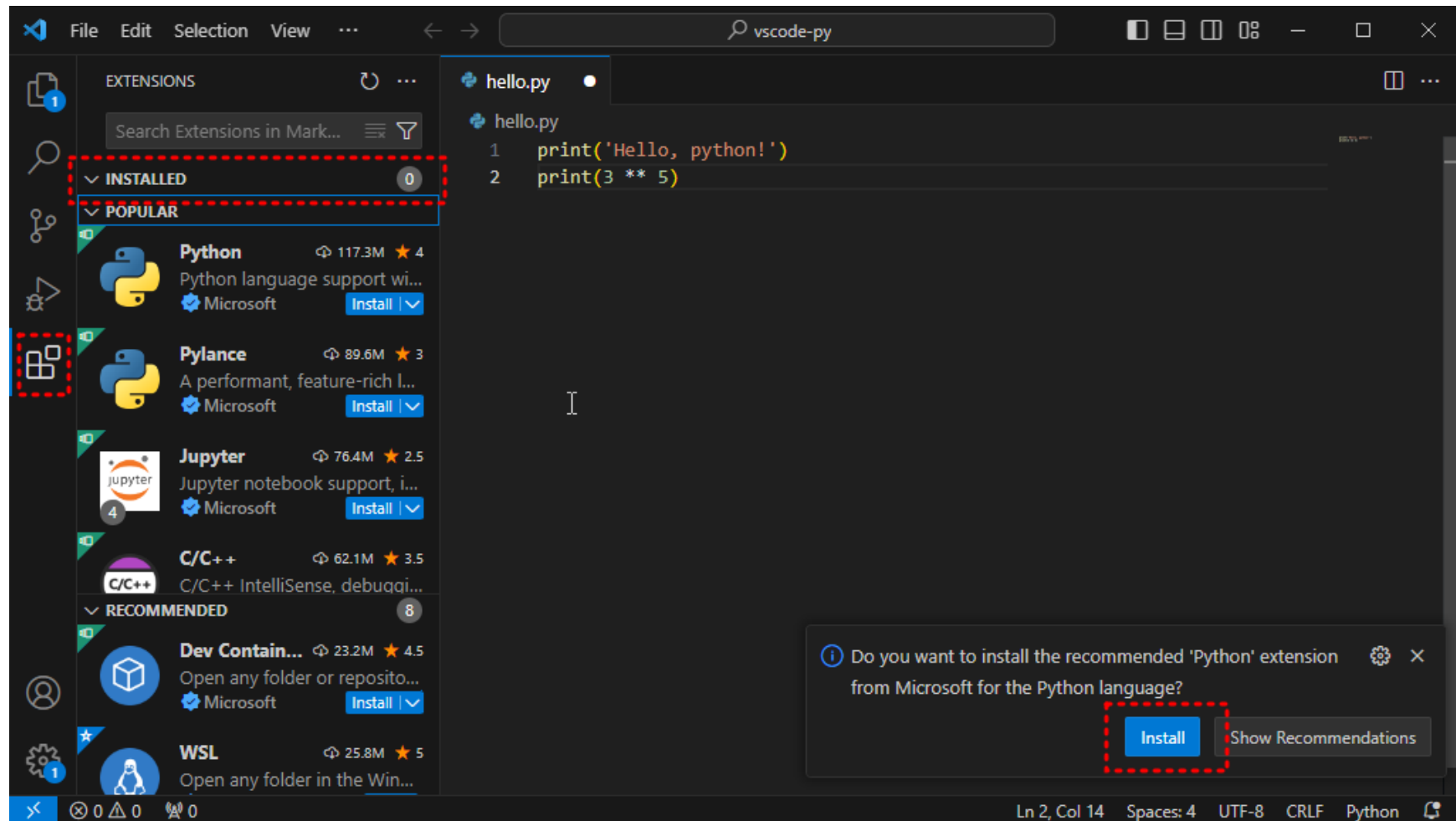
- 작업 폴더를 하나 생성 후 vscode 실행
 - C:\vscode-py



- 3개 확장 설치



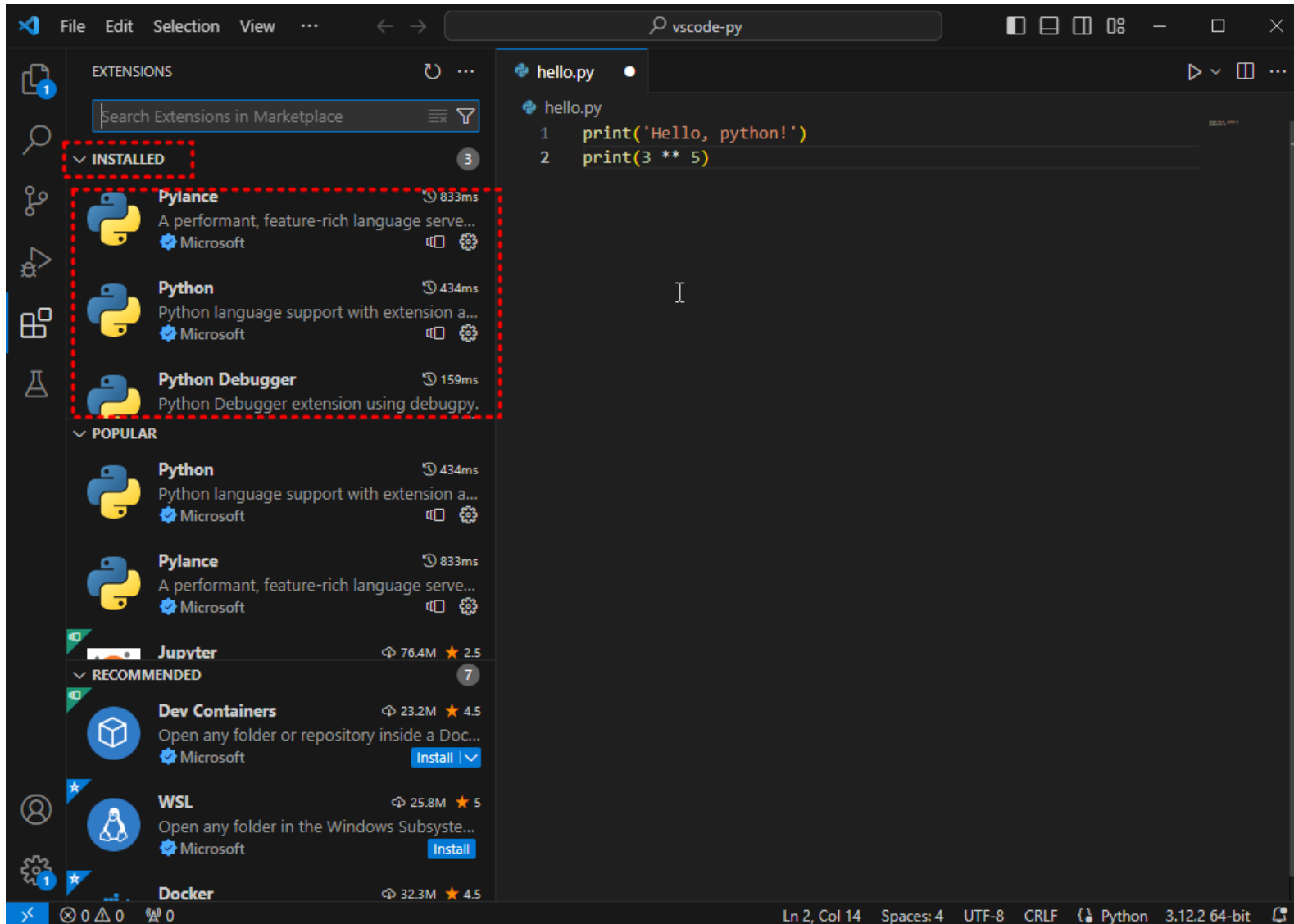
- 다음 대화 상자가 안 보이면 직접 extensions에서 설치 가능
- 0 에서 3 으로 설치 현황



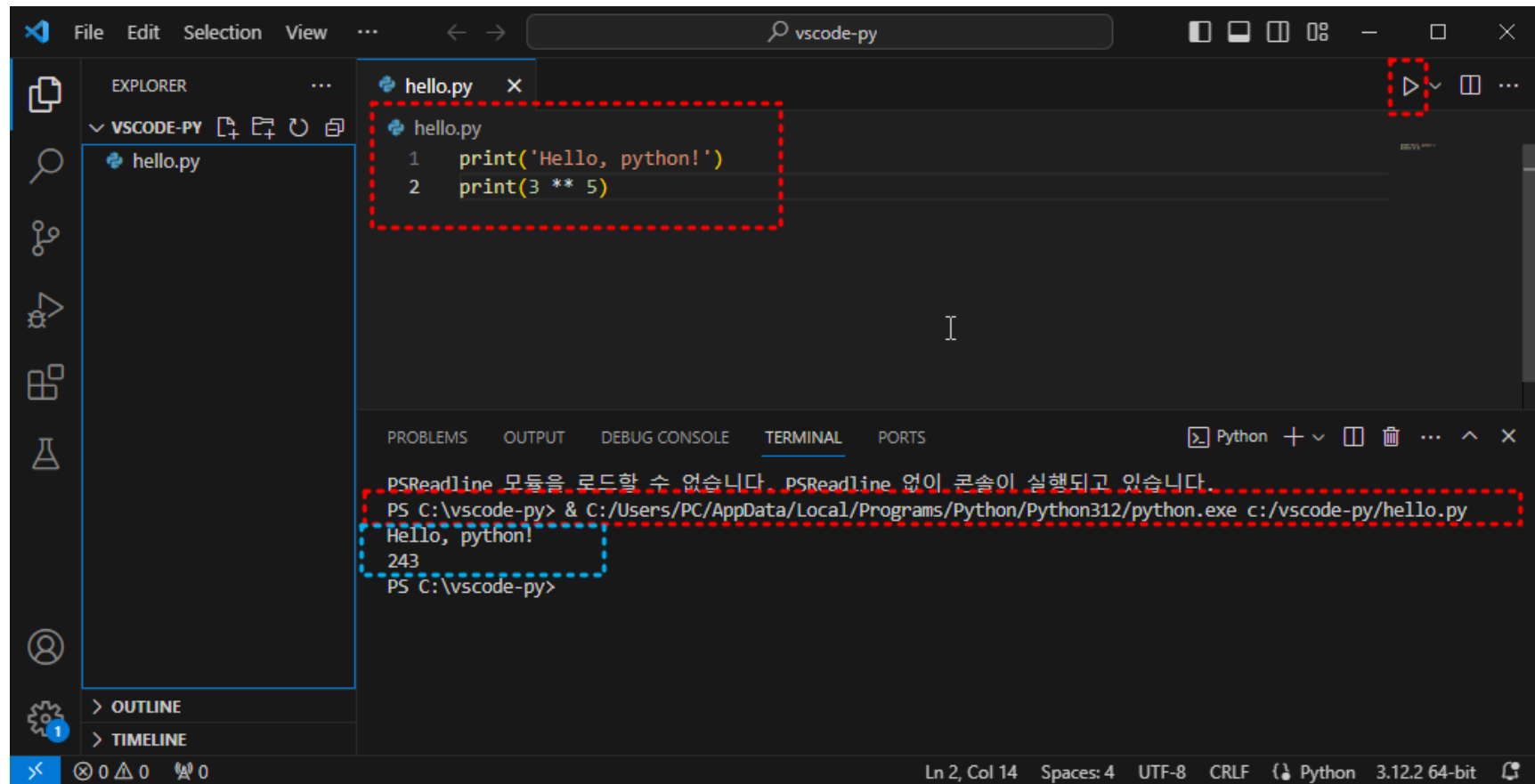
처음 설치된 확장: python 기본

파이썬과 vs code Python language

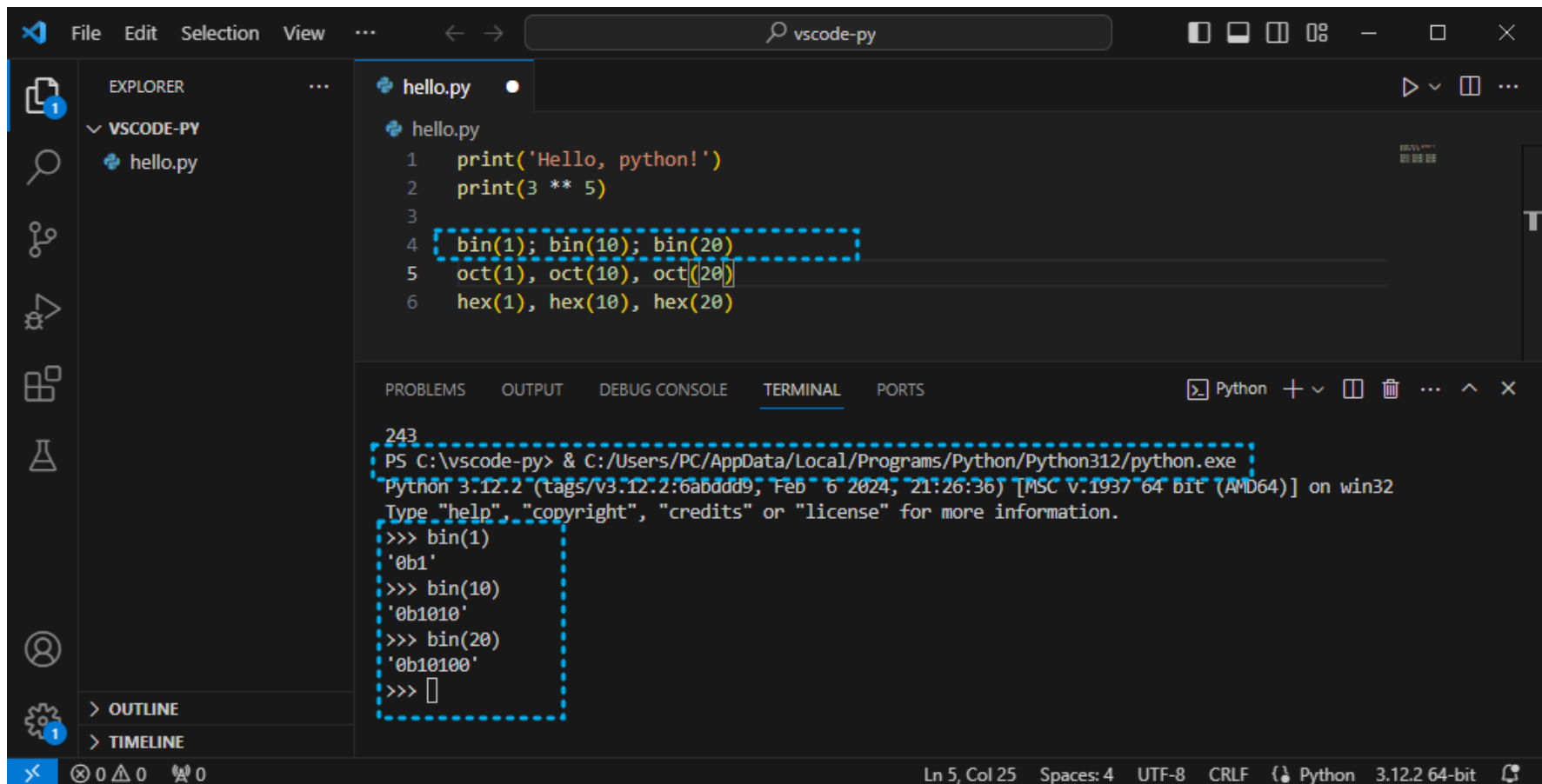
- 다음 3개의 확장 설치



- 실행 버튼 > 으로
 - 하부 터미널에서 실행됨



- Shift + Enter
 - 현재 줄 실행 후 다음 줄로 이동
 - 실행은 터미널에서 셸(shell)로 실행됨
 - 이전에 사용하던 터미널이 있다면 제거하는 것이 편리



```
File Edit Selection View ... < -> vscode-py
```

EXPLORER

- VSCODE-PY
 - hello.py

```
hello.py
1 print('Hello, python!')
2 print(3 ** 5)
3
4 bin(1); bin(10); bin(20)
5 oct(1), oct(10), oct(20)
6 hex(1), hex(10), hex(20)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
Python + - [ ] [X] ... ^ X
```

```
243
PS C:\vscode-py> & C:/Users/PC/AppData/Local/Programs/Python/Python312/python.exe
Python 3.12.2 (tags/v3.12.2:6ab0dd9, Feb 6 2024, 21:26:36) [MSC v.1937 64-bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> bin(1)
'0b1'
>>> bin(10)
'0b1010'
>>> bin(20)
'0b10100'
>>> 
```

Ln 5, Col 25 Spaces: 4 UTF-8 CRLF Python 3.12.2 64-bit

- Shift + Enter
 - 여러 줄 선택 후 실행
 - 실행은 터미널에서 셸(shell)로 실행됨

The screenshot shows the VS Code interface with a file named 'hello.py' open. The code in the editor is as follows:

```
1 print('Hello, python!')
2 print(3 ** 5)
3
4 bin(1); bin(10); bin(20)
5 oct(1), oct(10), oct(20)
6 hex(1), hex(10), hex(20)
```

Lines 4, 5, and 6 are selected, indicated by a blue dashed box. The bottom panel shows the 'TERMINAL' output for a Python 3.12.2 shell:

```
Python 3.12.2 (tags/v3.12.2:6abddd9, Feb 6 2024, 21:26:36) [MSC v.1937 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> bin(1)
'0b1'
>>> bin(10)
'0b1010'
>>> bin(20)
'0b10100'
>>> oct(1), oct(10), oct(20)
('0o1', '0o12', '0o24')
>>> hex(1), hex(10), hex(20)
('0x1', '0xa', '0x14')
>>>
```

The terminal output for the selected lines is highlighted with a red dashed box.

AI Experts
Who Lead
The Future

03

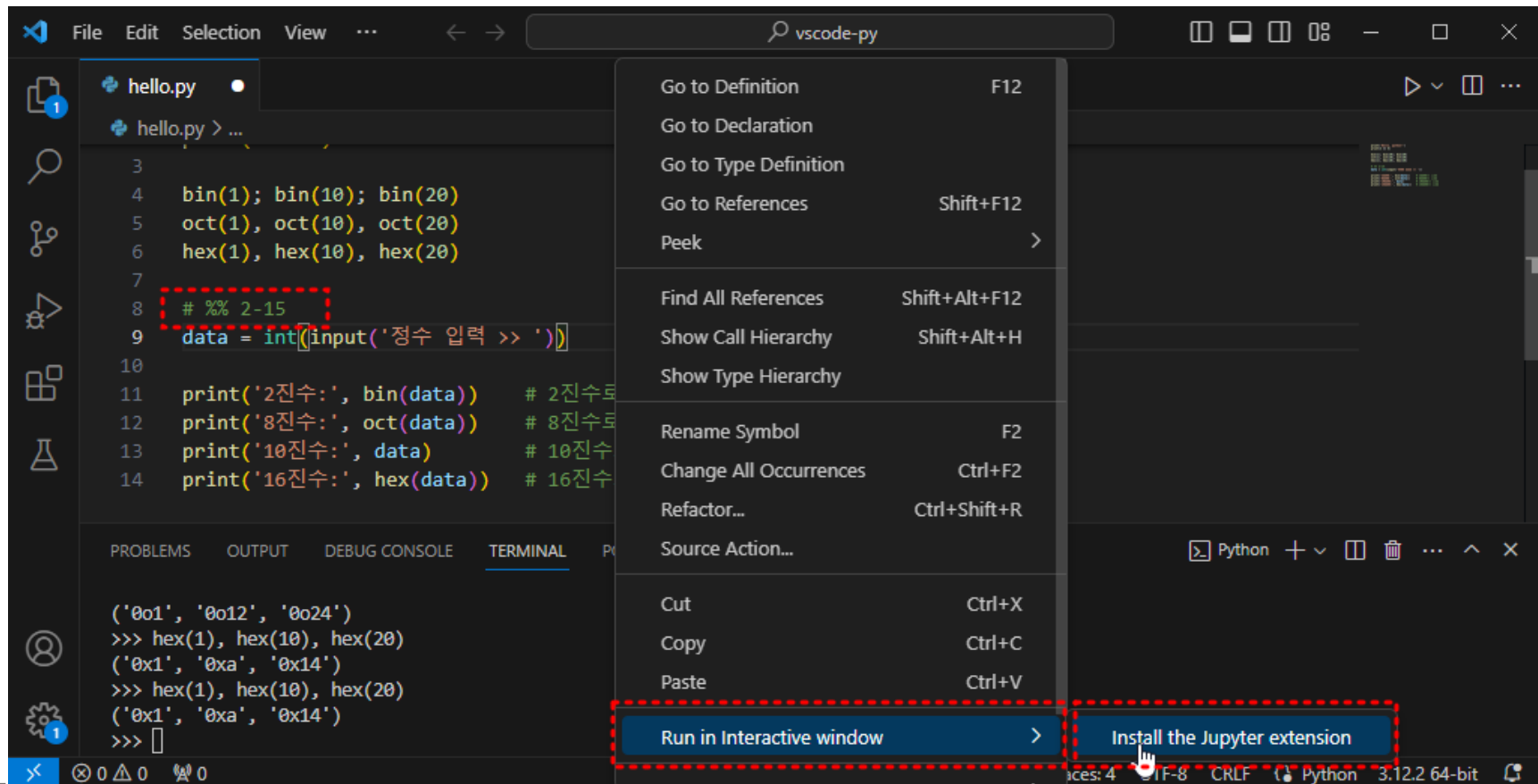
대화형(interactive) 원도 실행

• 셀 구분 표시

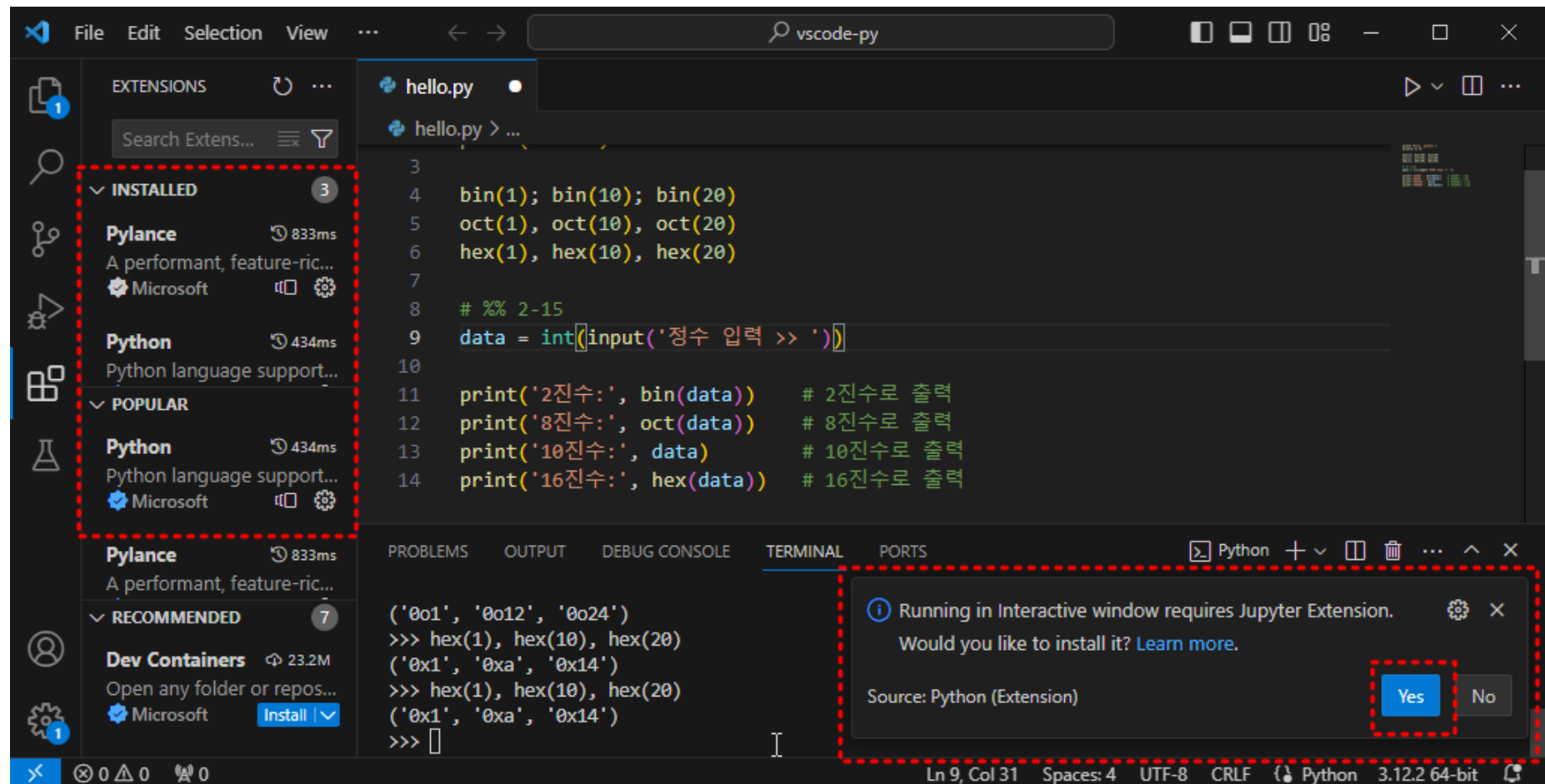
- # %%
- #%%
- 주피터 확장 설치

• 소스화면 우측 버튼 팝업 메뉴

- Run in interactive window > install Jupyter extension



- 3 개에서 8 개로 증가

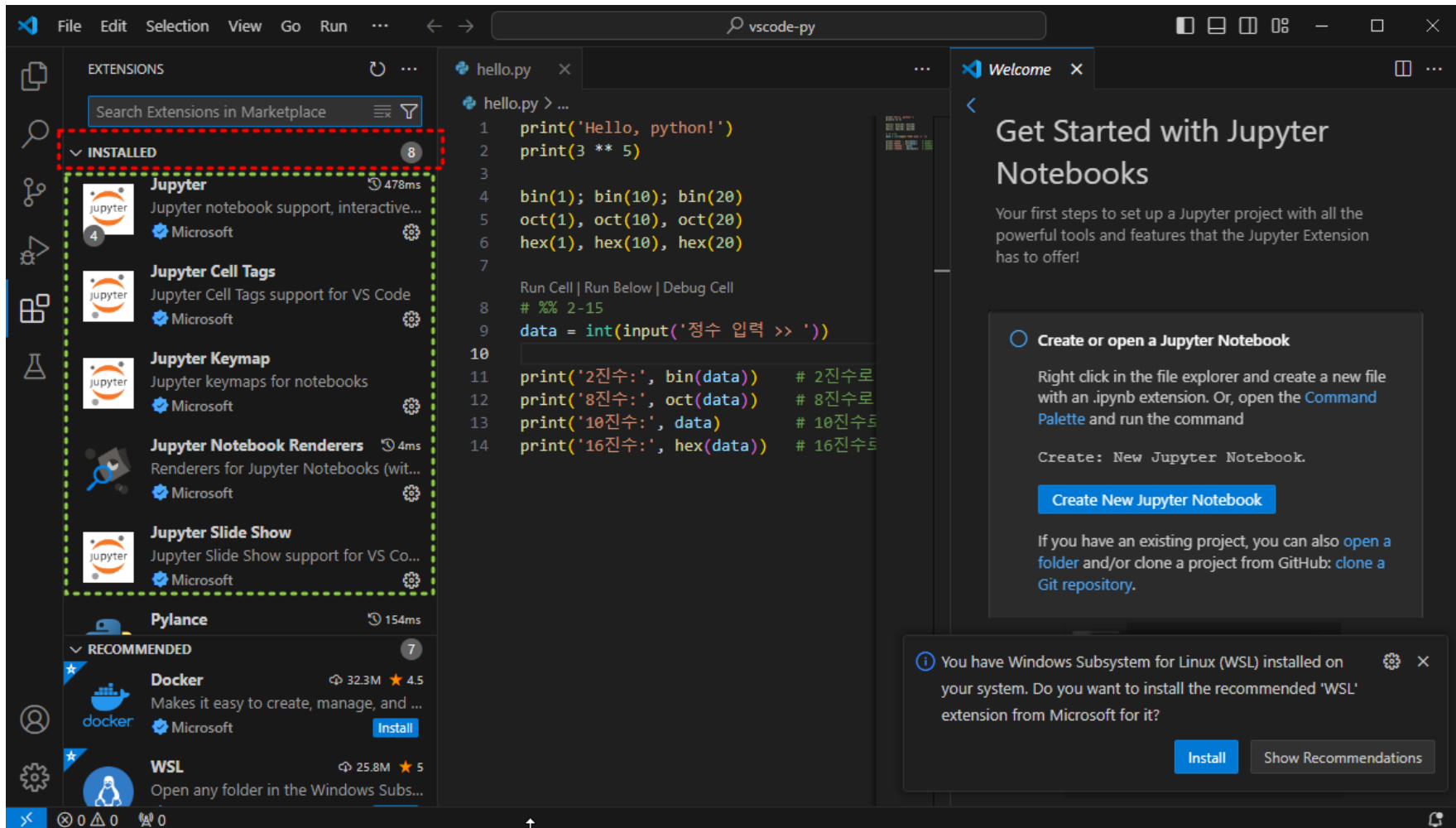


- vs code 버그
 - 모두 삭제 후 설정도 모두 제거 후 다시 설치

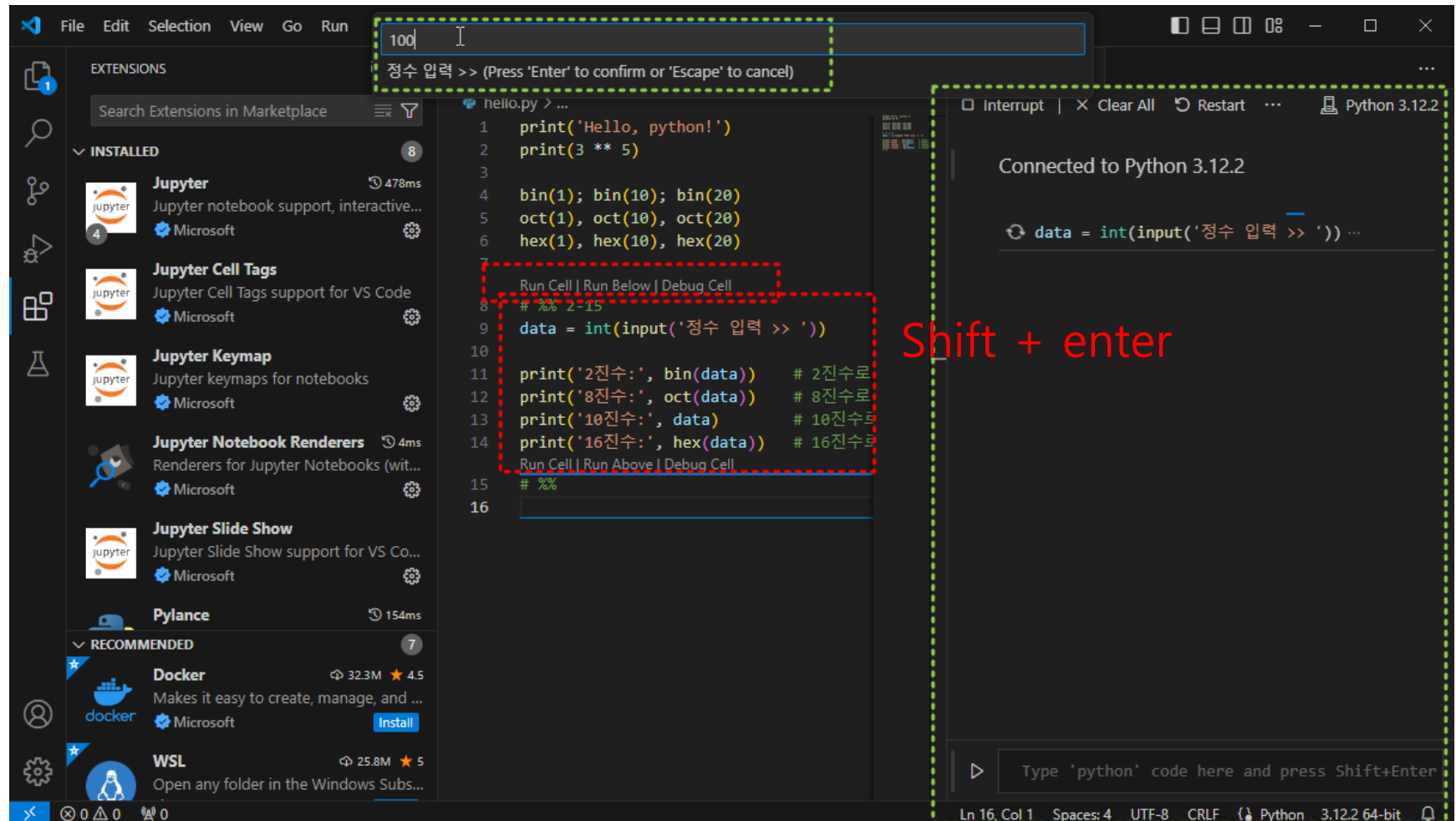
총 8개 확장 설치

파이썬과 vs code Python language

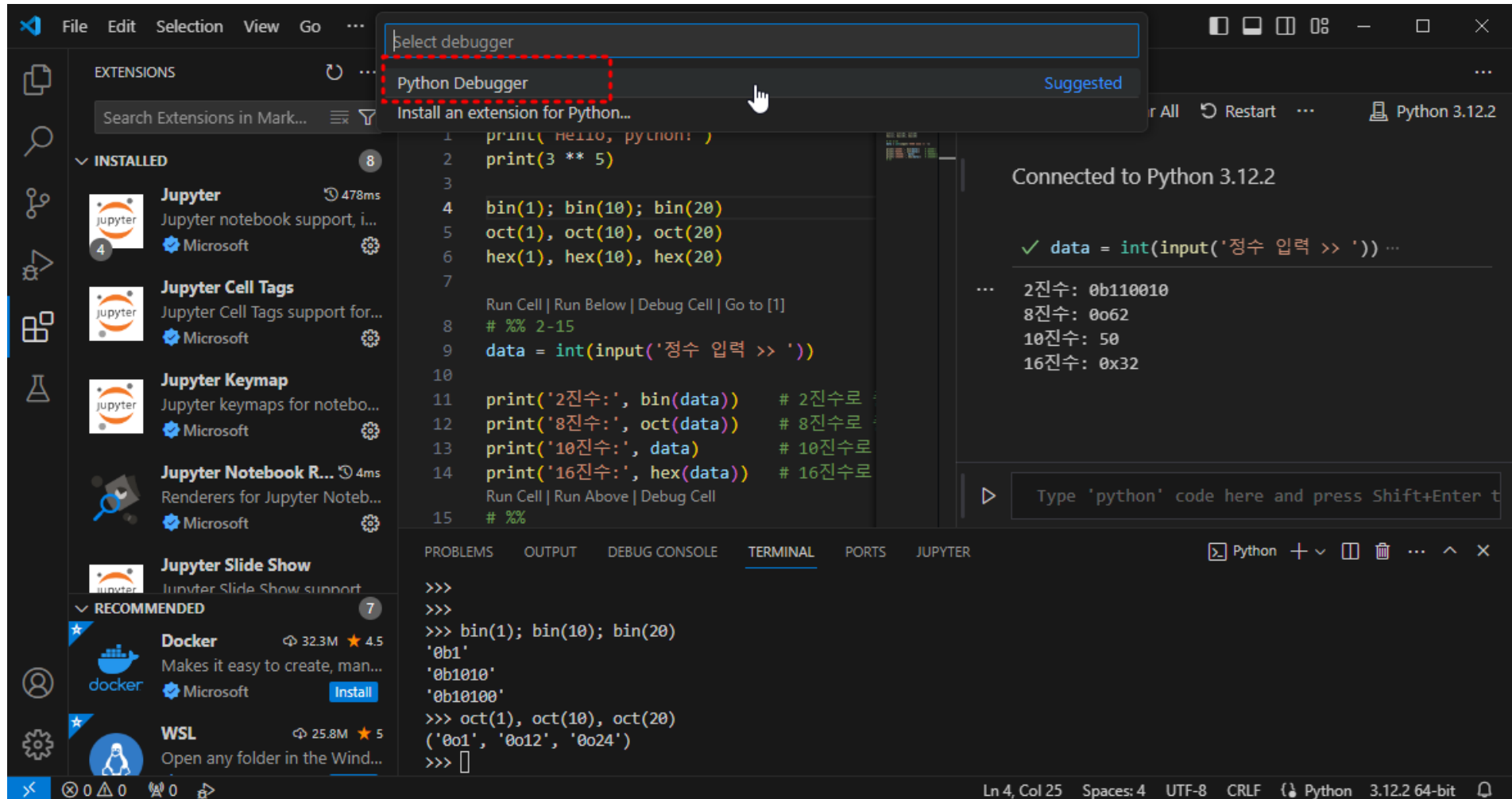
- Jupyter 확장 설치
 - Jupyter 등 5개 설치 + 이전 python 설치 3개



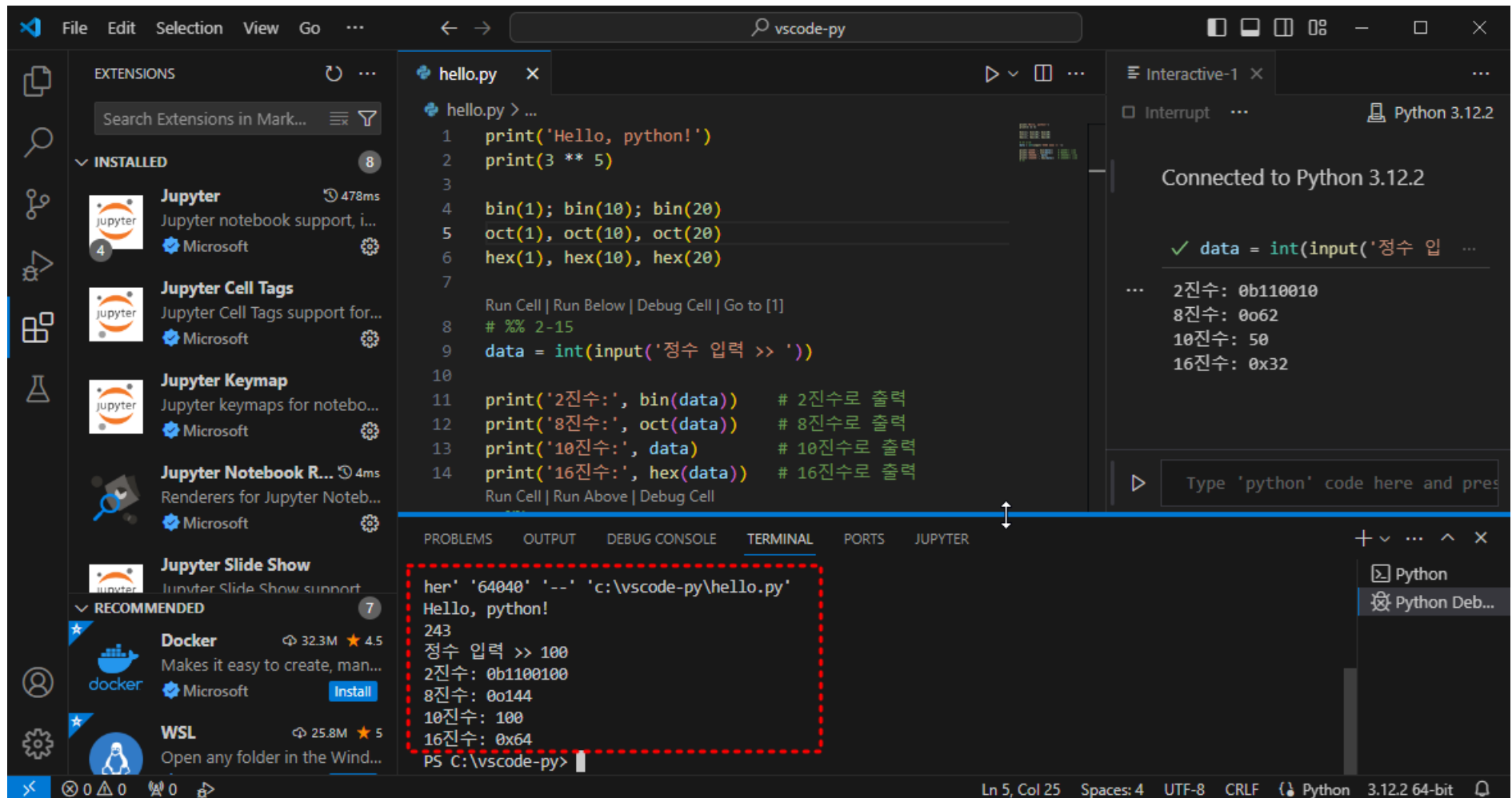
- 단축 키
 - Shift + Enter
- input()
 - 상단



- 메뉴 Run | Run without Debugging
 - ctrl + F5



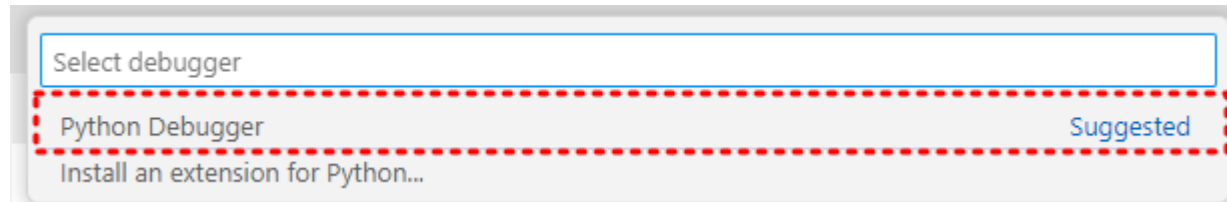
- 터미널에서 입력 자료 입력 후 Enter로 실행



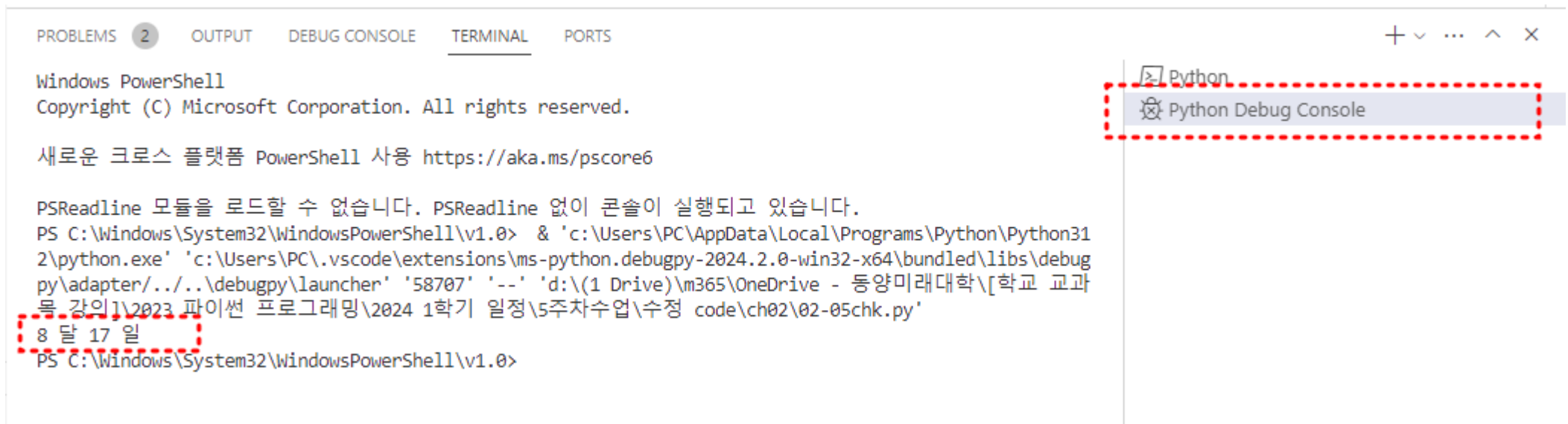
메뉴 Run without debugging

파이썬과 vs code Python language

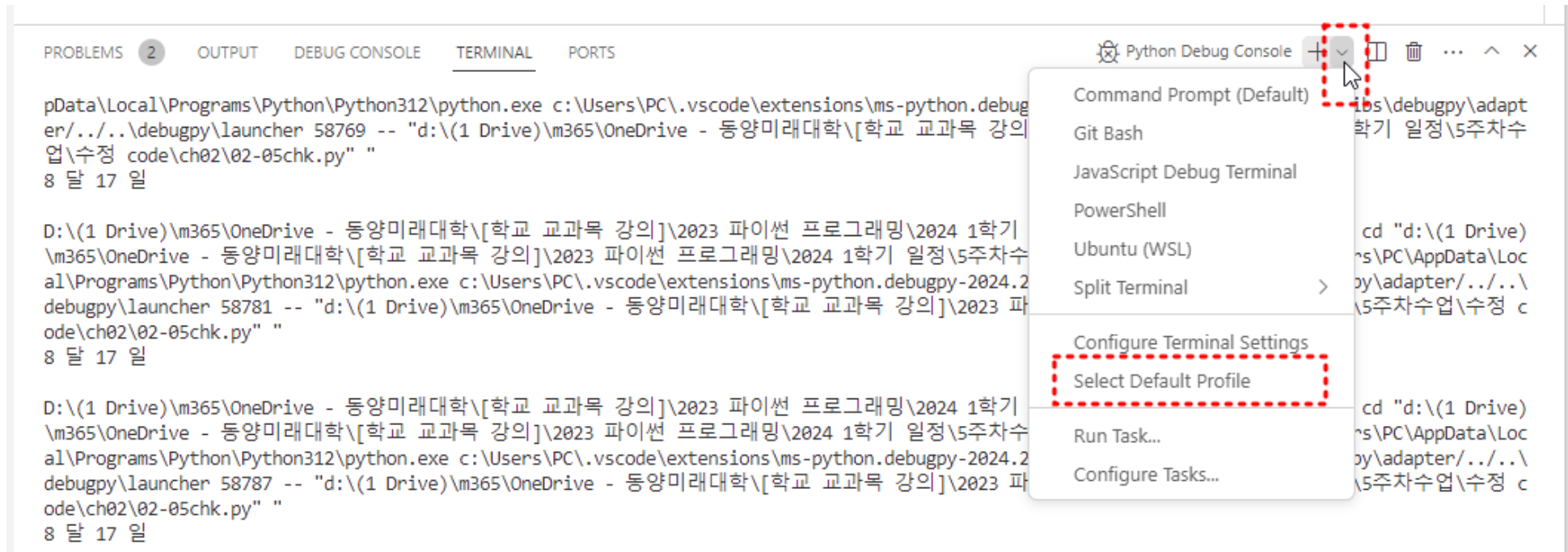
- 단축키: **ctrl + F5**



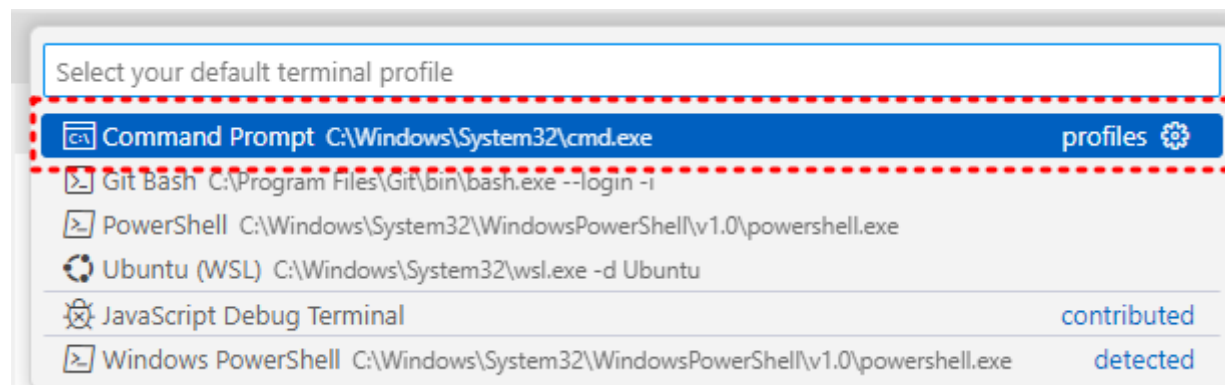
- Python Debug Console에서 실행**
 - 없다면 새로이 실행



• 메뉴 Select Default Profile



• 다음 중 선택

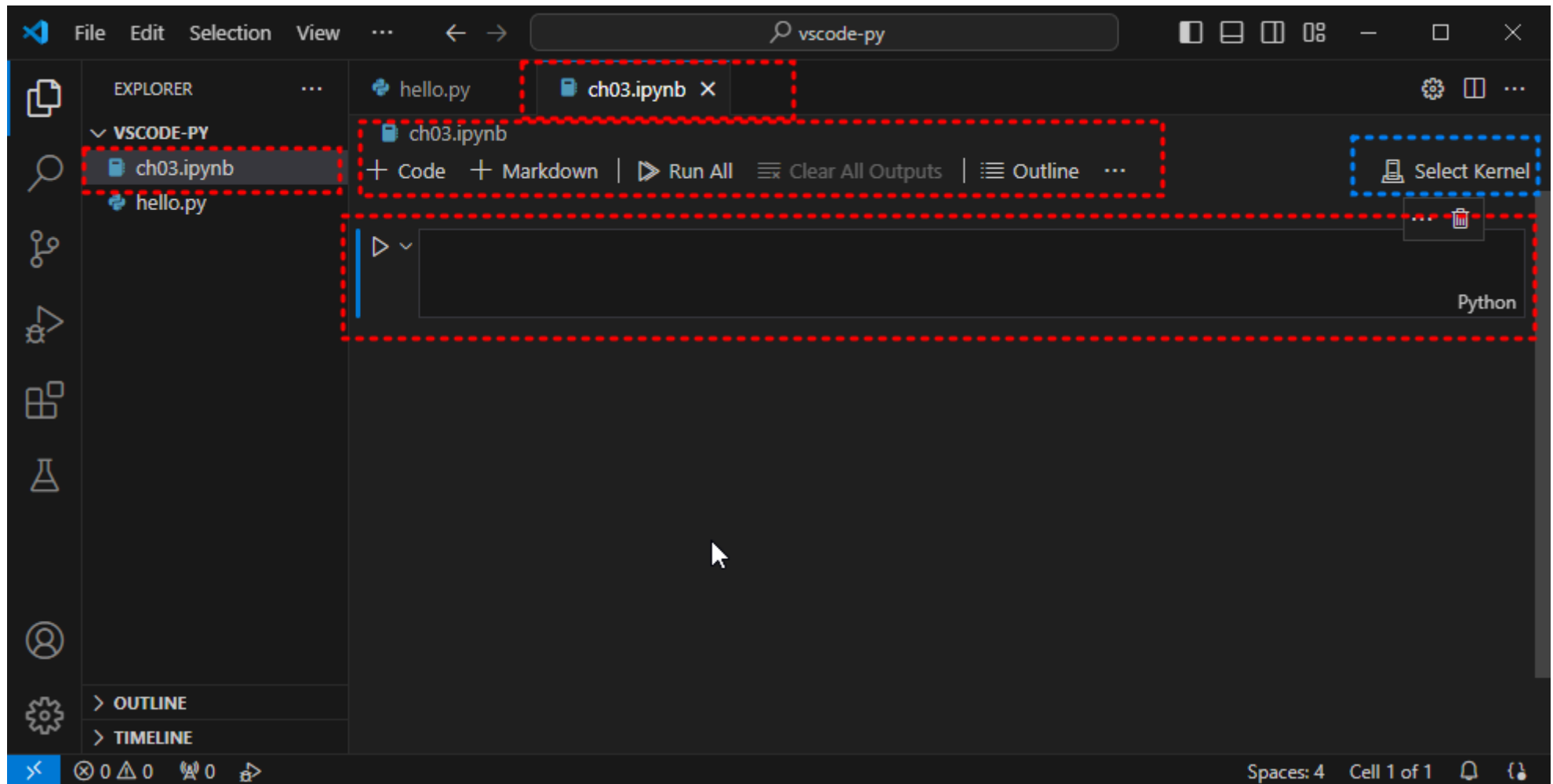


AI Experts
Who Lead
The Future

04

주피터노트북 실행

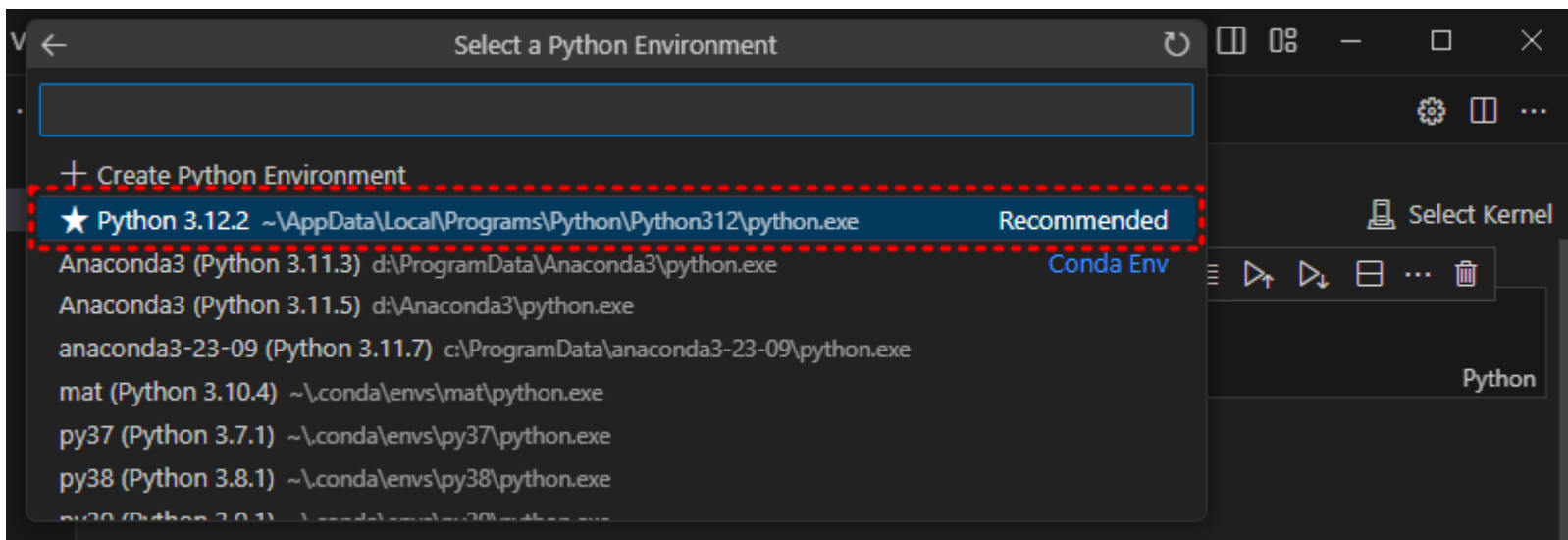
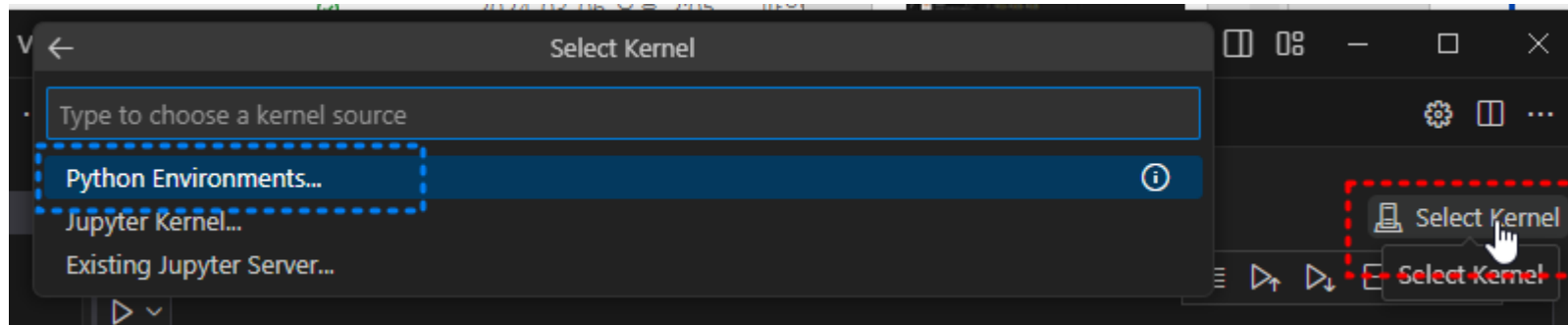
- 확장자 `ipynb`
 - `ch03.ipynb`



Select kernel

파이썬과 vs code Python language

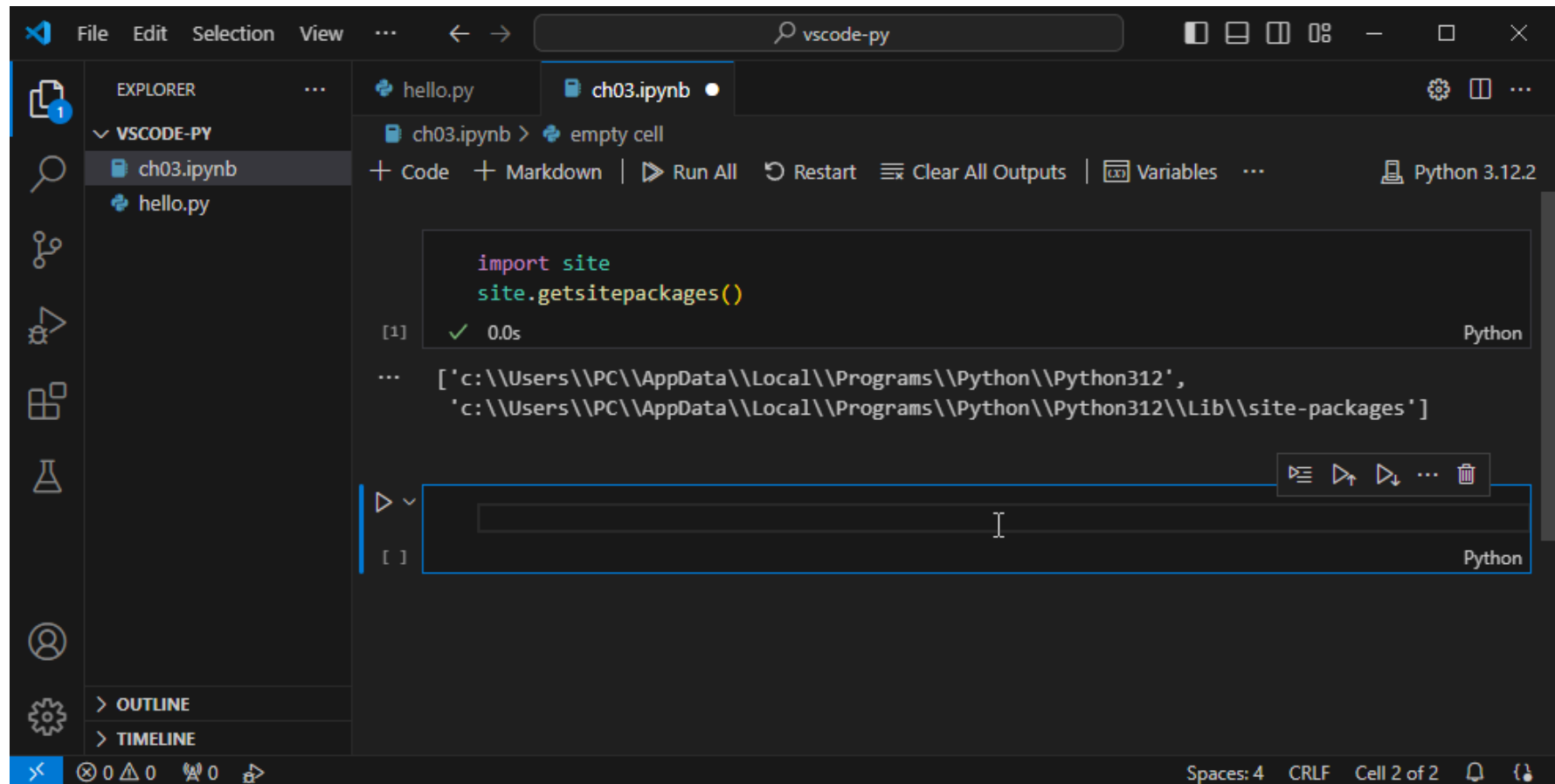
- Python Environments...



- Shift + enter

```
import site  
site.getsitepackages()
```

현재 사용하는 파이썬의 설치 폴더와 라이브러리 설치 폴더 확인



The screenshot shows the VS Code interface with a Python environment. The Explorer panel on the left shows the file structure with 'ch03.ipynb' selected. The main editor area displays the Jupyter Notebook interface. The first cell contains the code to import the 'site' module and get the site packages path. The second cell contains a Python script that demonstrates string indexing with the string 'Hello python!'. The output of the second cell shows the results of the print statements, which are highlighted with a red dashed box.

```
import site
site.getsitepackages()
```

[1] ✓ 0.0s Python

... ['c:\\Users\\PC\\AppData\\Local\\Programs\\Python\\Python312', 'c:\\Users\\PC\\AppData\\Local\\Programs\\Python\\Python312\\Lib\\site-packages']

```
# 03-01strindex.py

str = 'Hello python!'
n = len(str)
print('문자열', str, '길이', n)
print('첫 문자', str[0], str[-n] )
print('가운데 문자', str[n//2], str[-n//2] )
print('마지막 문자', str[n-1], str[-1])
```

[2] ✓ 0.0s Python

... 문자열 Hello python! 길이 13
첫 문자 H H
가운데 문자 p p
마지막 문자 ! !



Keyboard shortcuts for Windows

General

Ctrl+Shift+P, F1	Show Command Palette
Ctrl+P	Quick Open, Go to File...
Ctrl+Shift+N	New window/instance
Ctrl+Shift+W	Close window/instance
Ctrl+,	User Settings
Ctrl+K Ctrl+S	Keyboard Shortcuts

Basic editing

Ctrl+X	Cut line (empty selection)
Ctrl+C	Copy line (empty selection)
Alt+ ↑ / ↓	Move line up/down
Shift+Alt + ↑ / ↓	Copy line up/down
Ctrl+Shift+K	Delete line
Ctrl+Enter	Insert line below
Ctrl+Shift+Enter	Insert line above
Ctrl+Shift+\	Jump to matching bracket
Ctrl+] / [Indent/outdent line
Home / End	Go to beginning/end of line
Ctrl+Home	Go to beginning of file
Ctrl+End	Go to end of file
Ctrl+↑ / ↓	Scroll line up/down
Alt+PgUp / PgDn	Scroll page up/down
Ctrl+Shift+[Fold (collapse) region
Ctrl+Shift+]	Unfold (uncollapse) region
Ctrl+K Ctrl+[Fold (collapse) all subregions
Ctrl+K Ctrl+]	Unfold (uncollapse) all subregions
Ctrl+K Ctrl+O	Fold (collapse) all regions
Ctrl+K Ctrl+J	Unfold (uncollapse) all regions
Ctrl+K Ctrl+C	Add line comment
Ctrl+K Ctrl+U	Remove line comment
Ctrl+/	Toggle line comment
Shift+Alt+A	Toggle block comment
Alt+Z	Toggle word wrap

Navigation

Ctrl+T	Show all Symbols
Ctrl+G	Go to Line...
Ctrl+P	Go to File...
Ctrl+Shift+O	Go to Symbol...
Ctrl+Shift+M	Show Problems panel
F8	Go to next error or warning
Shift+F8	Go to previous error or warning
Ctrl+Shift+Tab	Navigate editor group history
Alt+ ← / →	Go back / forward

Ctrl+M Toggle Tab moves focus

Search and replace

Ctrl+F	Find
Ctrl+H	Replace
F3 / Shift+F3	Find next/previous
Alt+Enter	Select all occurrences of Find match
Ctrl+D	Add selection to next Find match
Ctrl+K Ctrl+D	Move last selection to next Find match
Alt+C / R / W	Toggle case-sensitive / regex / whole word

Multi-cursor and selection

Alt+Click	Insert cursor
Ctrl+Alt+ ↑ / ↓	Insert cursor above / below
Ctrl+U	Undo last cursor operation
Shift+Alt+I	Insert cursor at end of each line selected
Ctrl+L	Select current line
Ctrl+Shift+L	Select all occurrences of current selection
Ctrl+F2	Select all occurrences of current word
Shift+Alt+→	Expand selection
Shift+Alt+←	Shrink selection
Shift+Alt+ + (drag mouse)	Column (box) selection
Ctrl+Shift+Alt + (arrow key)	Column (box) selection
Ctrl+Shift+Alt +PgUp/PgDn	Column (box) selection page up/down

Rich languages editing

Ctrl+Space, Ctrl+I	Trigger suggestion
Ctrl+Shift+Space	Trigger parameter hints
Shift+Alt+F	Format document
Ctrl+K Ctrl+F	Format selection
F12	Go to Definition
Alt+F12	Peek Definition
Ctrl+K F12	Open Definition to the side
Ctrl+.	Quick Fix
Shift+F12	Show References
F2	Rename Symbol
Ctrl+K Ctrl+X	Trim trailing whitespace
Ctrl+K M	Change file language

Editor management

Ctrl+F4, Ctrl+W	Close editor
Ctrl+K F	Close folder
Ctrl+\	Split editor
Ctrl+ 1 / 2 / 3	Focus into 1 st , 2 nd or 3 rd editor group
Ctrl+K Ctrl+ ←/→	Focus into previous/next editor group
Ctrl+Shift+PgUp / PgDn	Move editor left/right
Ctrl+K ← / →	Move active editor group

File management

Ctrl+N	New File
Ctrl+O	Open File...
Ctrl+S	Save
Ctrl+Shift+S	Save As...
Ctrl+K S	Save All
Ctrl+F4	Close
Ctrl+K Ctrl+W	Close All
Ctrl+Shift+T	Reopen closed editor
Ctrl+K Enter	Keep preview mode editor open
Ctrl+Tab	Open next
Ctrl+Shift+Tab	Open previous
Ctrl+K P	Copy path of active file
Ctrl+K R	Reveal active file in Explorer
Ctrl+K O	Show active file in new window/instance

Display

F11	Toggle full screen
Shift+Alt+0	Toggle editor layout (horizontal/vertical)
Ctrl+ = / -	Zoom in/out
Ctrl+B	Toggle Sidebar visibility
Ctrl+Shift+E	Show Explorer / Toggle focus
Ctrl+Shift+F	Show Search
Ctrl+Shift+G	Show Source Control
Ctrl+Shift+D	Show Debug
Ctrl+Shift+X	Show Extensions
Ctrl+Shift+H	Replace in files
Ctrl+Shift+J	Toggle Search details
Ctrl+Shift+U	Show Output panel
Ctrl+Shift+V	Open Markdown preview
Ctrl+K V	Open Markdown preview to the side
Ctrl+K Z	Zen Mode (Esc Esc to exit)

Debug

F9	Toggle breakpoint
F5	Start/Continue
Shift+F5	Stop
F11 / Shift+F11	Step into/out
F10	Step over
Ctrl+K Ctrl+I	Show hover

Integrated terminal

Ctrl+`	Show integrated terminal
Ctrl+Shift+`	Create new terminal
Ctrl+C	Copy selection
Ctrl+V	Paste into active terminal
Ctrl+↑ / ↓	Scroll up/down
Shift+PgUp / PgDn	Scroll page up/down
Ctrl+Home / End	Scroll to top/bottom

Other operating systems' keyboard shortcuts and additional unassigned shortcuts available at aka.ms/vscodekeybindings