

# C Programming Environment Setup on Windows

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Using Visual Studio Code and GCC

Prepared by: Chunghyun Lim (Class of 2019)

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### 1. Installing VS Code

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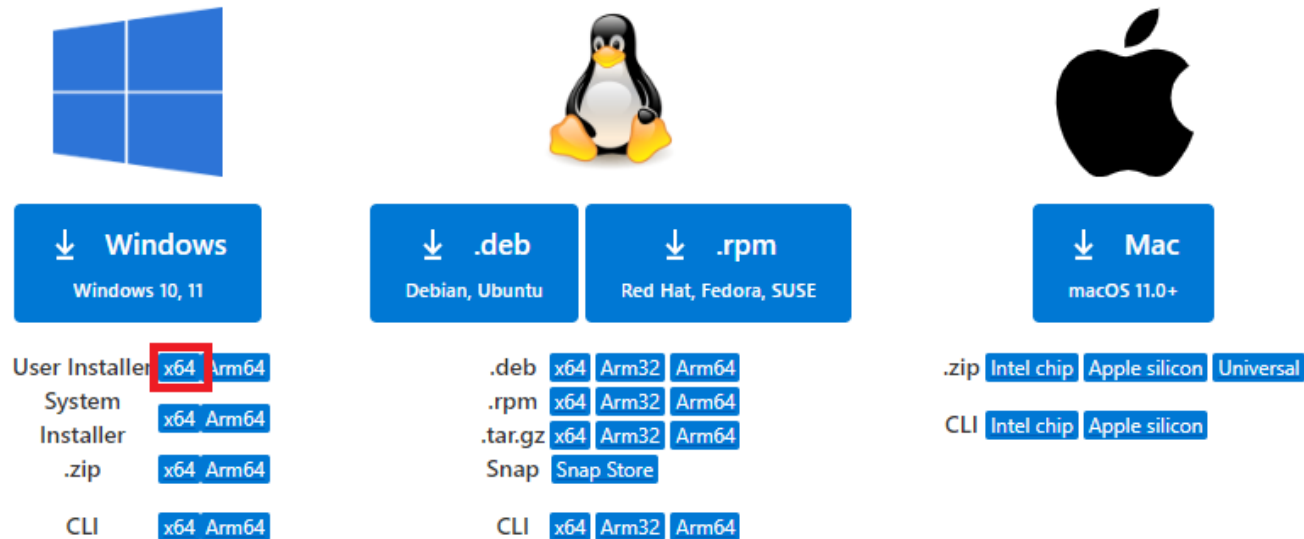
# 1.1. Installing VS Code(1/3)

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Download link: <https://code.visualstudio.com/Download>

## Download Visual Studio Code

Free and built on open source. Integrated Git, debugging and extensions.

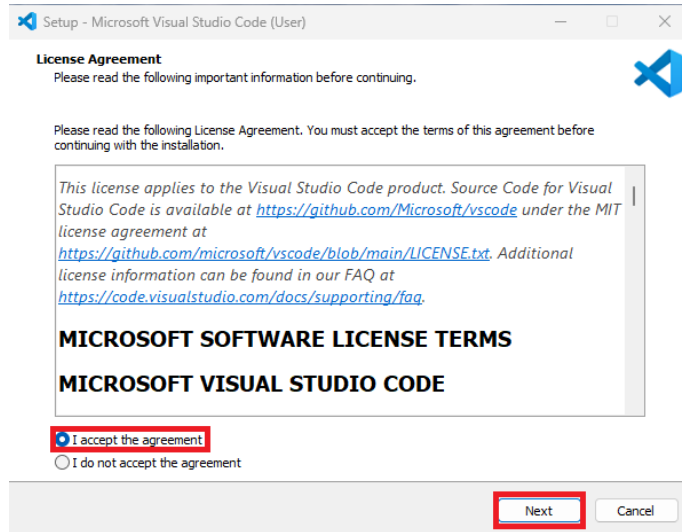


The image shows the download page for Visual Studio Code. It features three main sections: Windows, Linux, and Mac. Each section has a logo at the top, a download button, and a list of available installers. The Windows section has a blue Windows logo and a button labeled 'Windows' with 'Windows 10, 11' below it. The Linux section has a Tux penguin logo and two buttons: '.deb' for 'Debian, Ubuntu' and '.rpm' for 'Red Hat, Fedora, SUSE'. The Mac section has an Apple logo and a button labeled 'Mac' with 'macOS 11.0+' below it. Below each button is a list of available installers. In the Windows section, the 'User Installer' is highlighted with a red box, and the 'x64' option is also highlighted. In the Linux section, the '.deb' and '.rpm' buttons are highlighted. In the Mac section, the '.zip' button is highlighted.

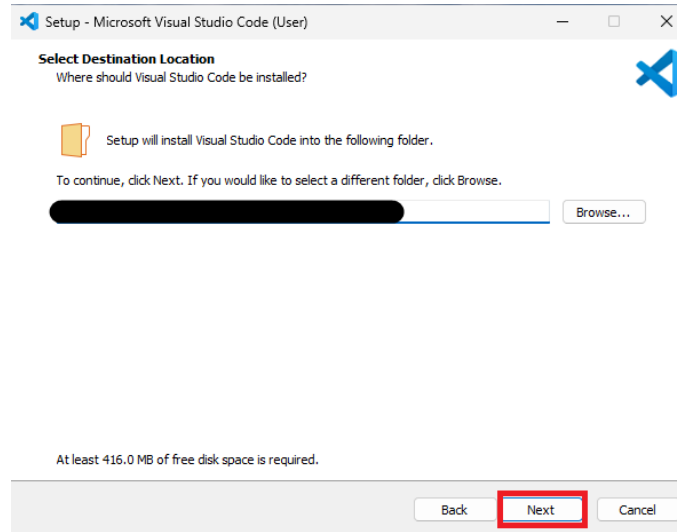
Platform	Installer Type	Architecture
Windows	User Installer	x64, Arm64
	System Installer	x64, Arm64
	.zip	x64, Arm64
	CLI	x64, Arm64
Linux	.deb	x64, Arm32, Arm64
	.rpm	x64, Arm32, Arm64
	.tar.gz	x64, Arm32, Arm64
	Snap	Snap Store
	CLI	x64, Arm32, Arm64
Mac	.zip	Intel chip, Apple silicon, Universal
	CLI	Intel chip, Apple silicon

Click User Installer (x64) → Run the downloaded file to begin installation

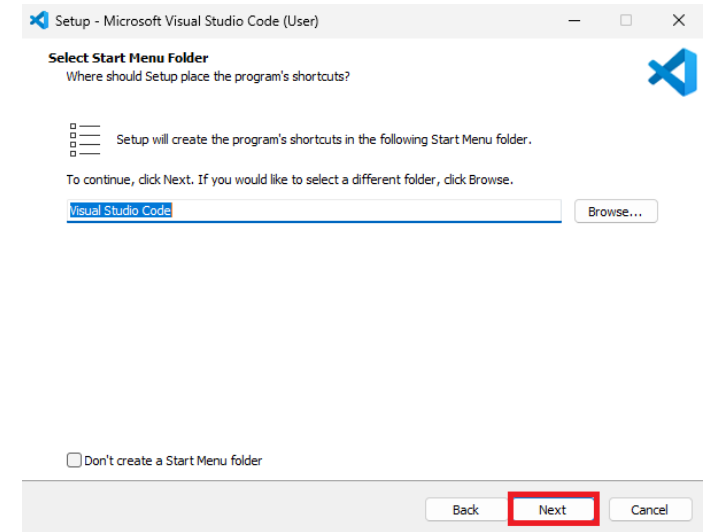
# 1.1. Installing VS Code(2/3)



- Check I accept the agreement.
- Click Next to continue.

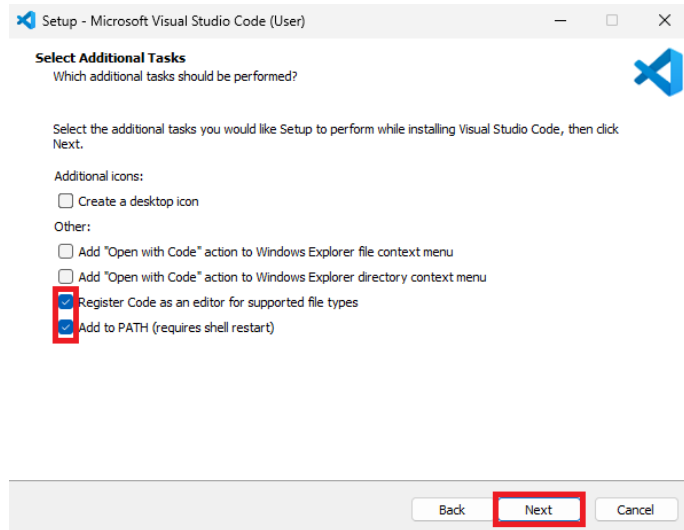


- Click Next to continue.

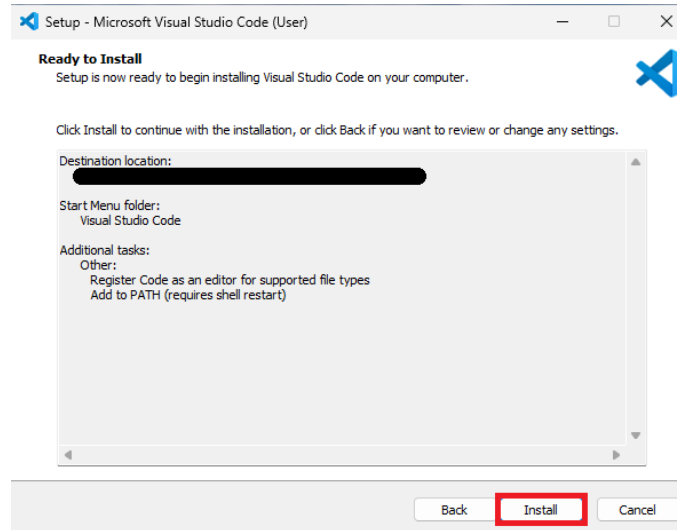


- Do not check Don't create a Start Menu folder.
- Click Next to continue

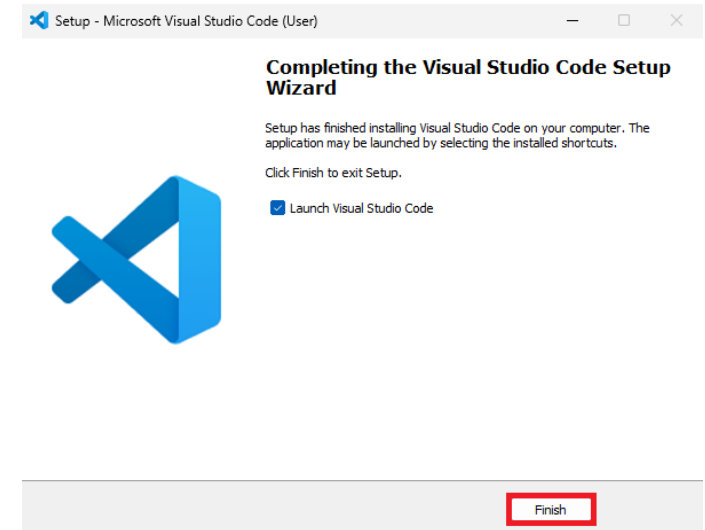
# 1.1. Installing VS Code(3/3)



- Check Register Code as an editor for supported file types.
- Check Add to PATH.
- Click Next to continue.

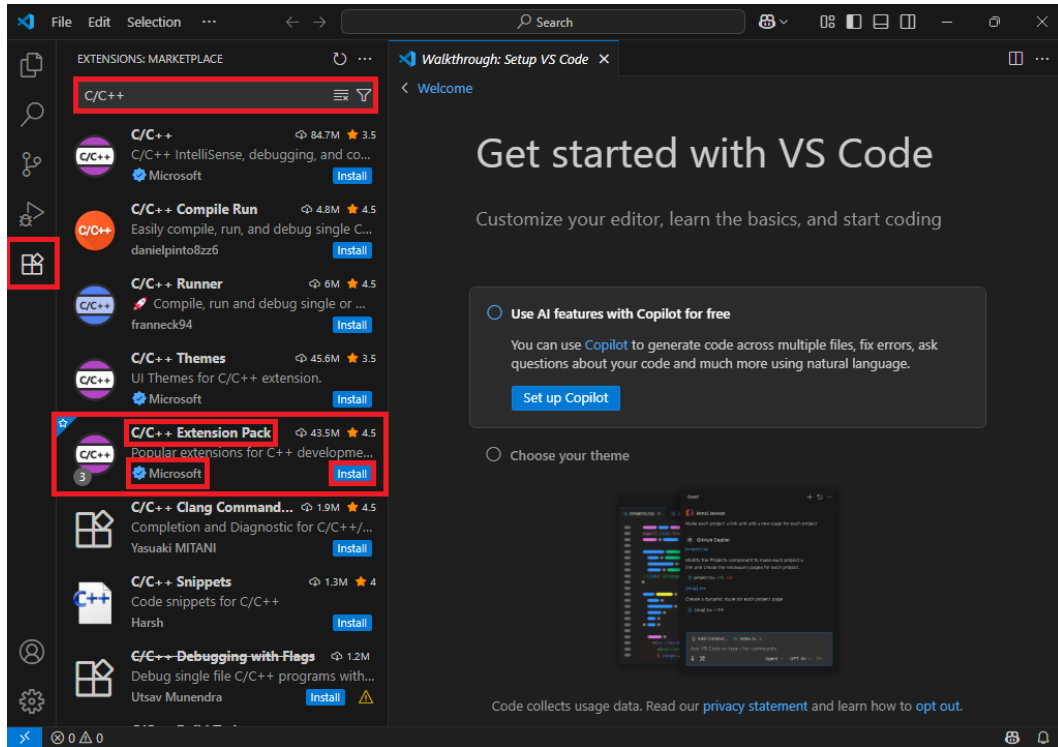


- Click Install to begin the installation.

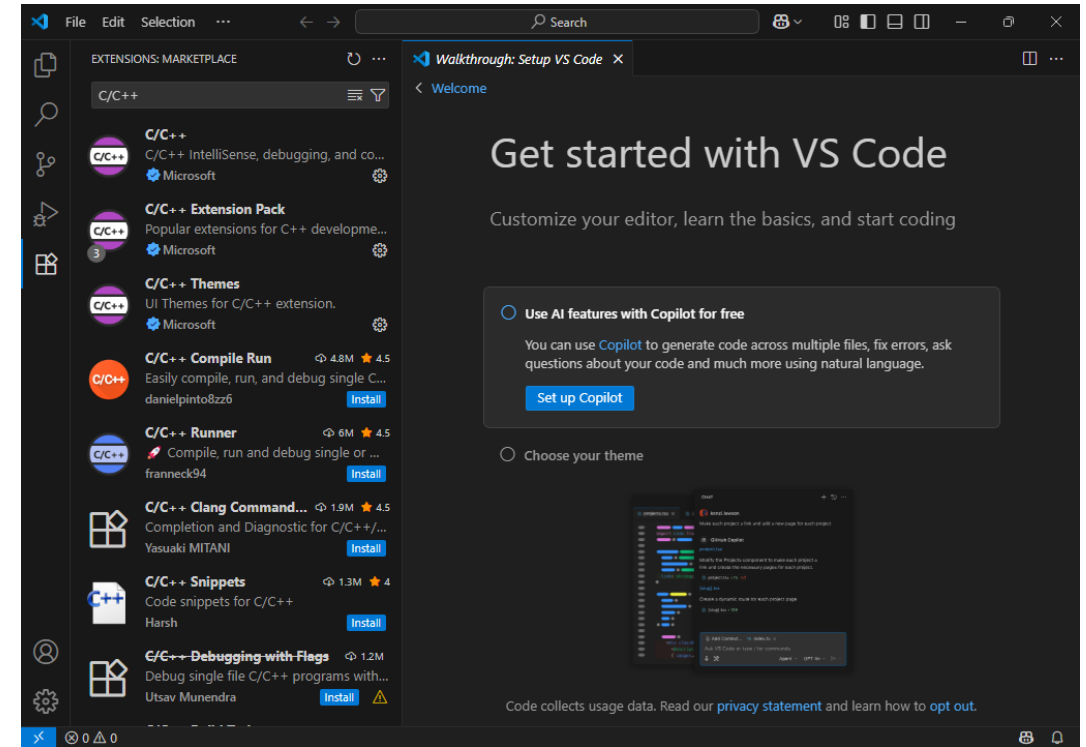


- Check Launch Visual Studio Code.
- Click Finish to complete the installation.

# 1.2. Installing C/C++ Extensions for VS Code



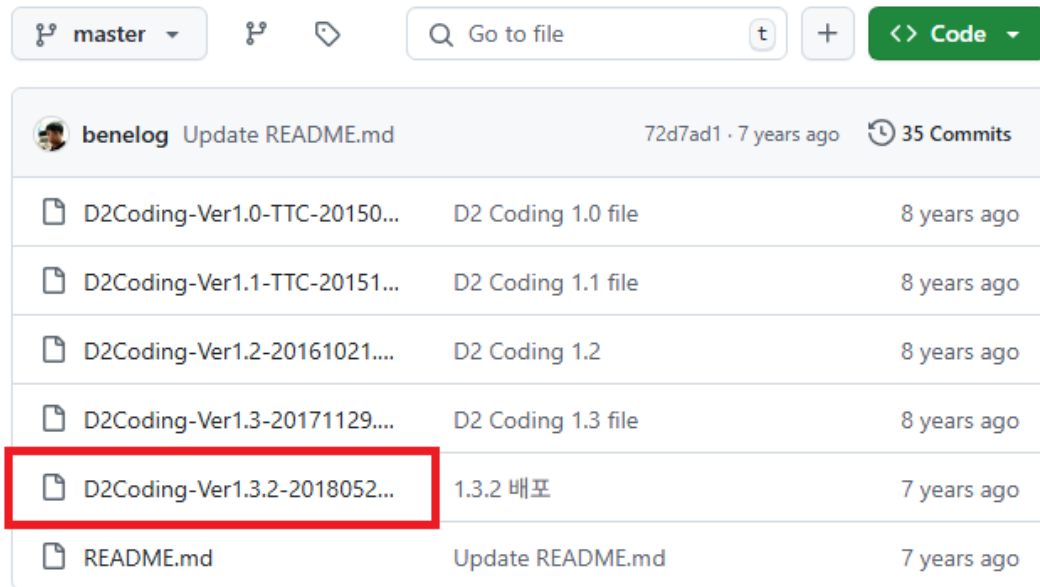
- Click the Extensions icon in the Activity Bar on the left.
- In the search bar, type C/C++.
- Find and install C/C++ Extension Pack by Microsoft.



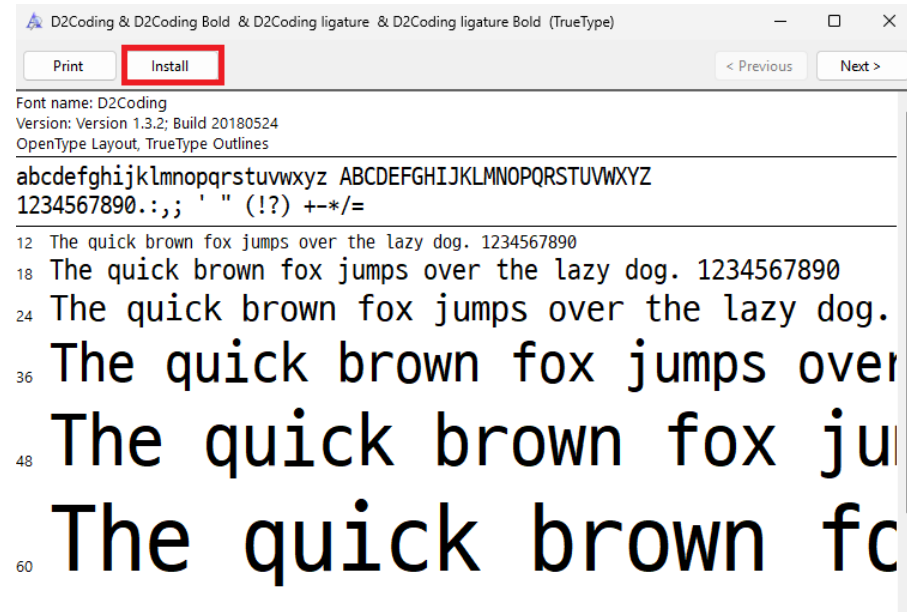
- After installing, 4 extensions are automatically added: C/C++, C/C++ Extension Pack, C/C++ Themes, CMake Tools

# 1.3. Additional Settings (Optional) – Fonts(1/2)

Download link: <https://github.com/naver/d2codingfont>

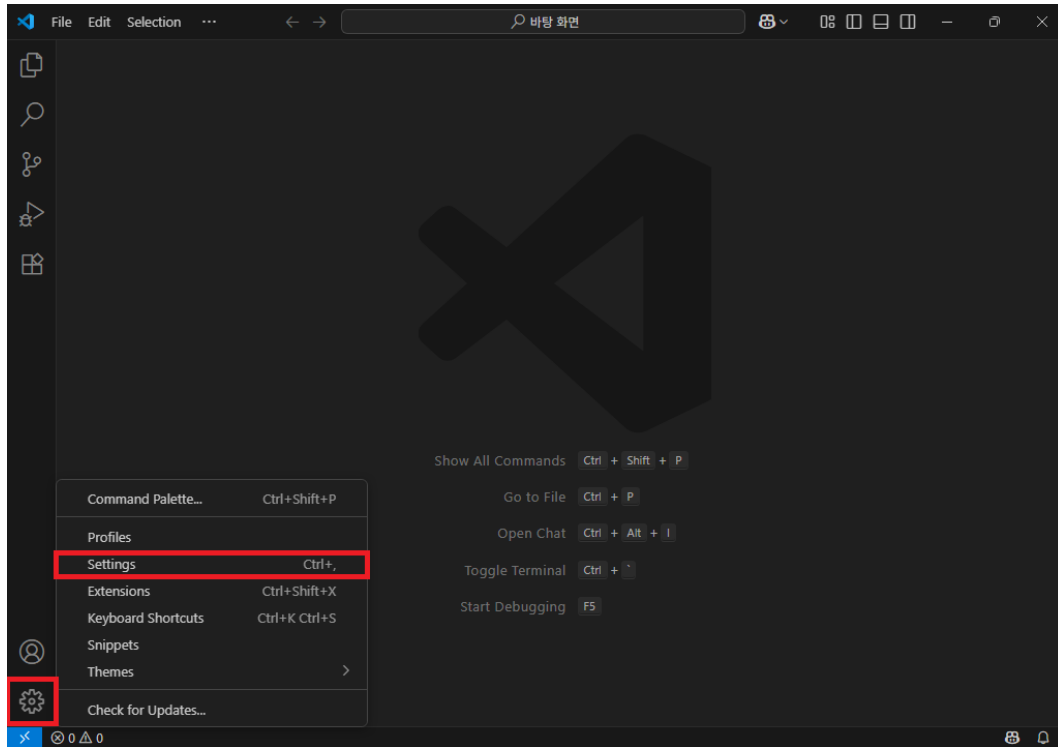


- Download the latest version.
- Extract the downloaded archive.

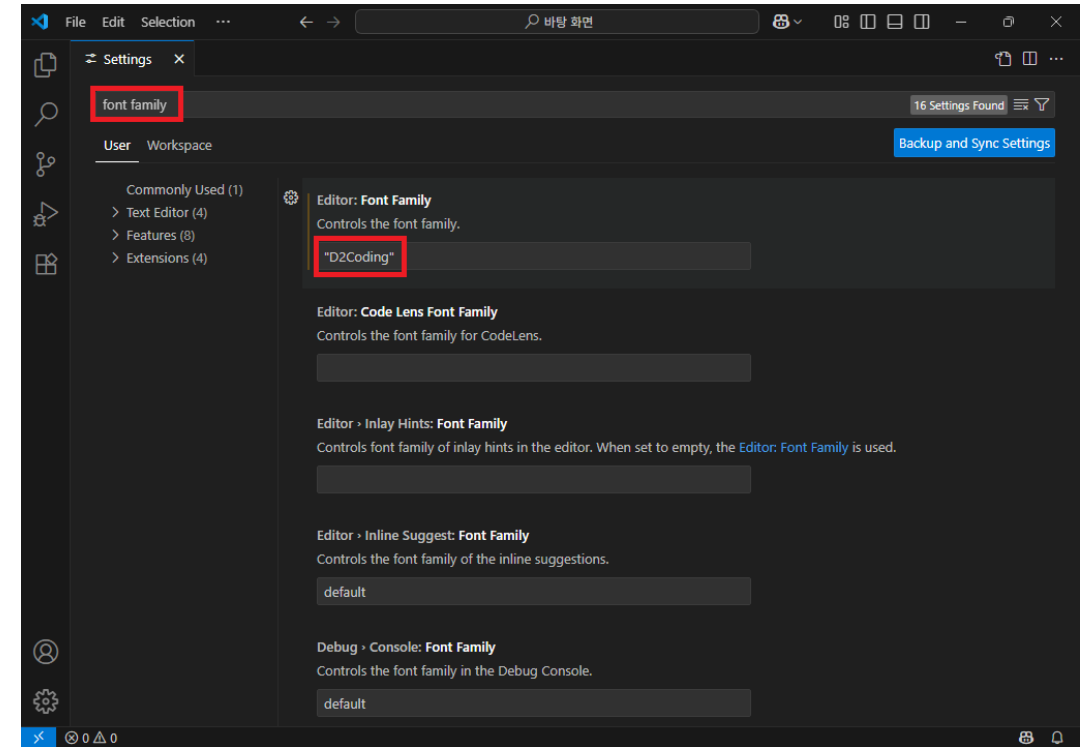


- Open the .ttc file inside the D2CodingAll.
- Click the Install button to install the font.

# 1.3. Additional Settings (Optional) – Fonts(2/2)



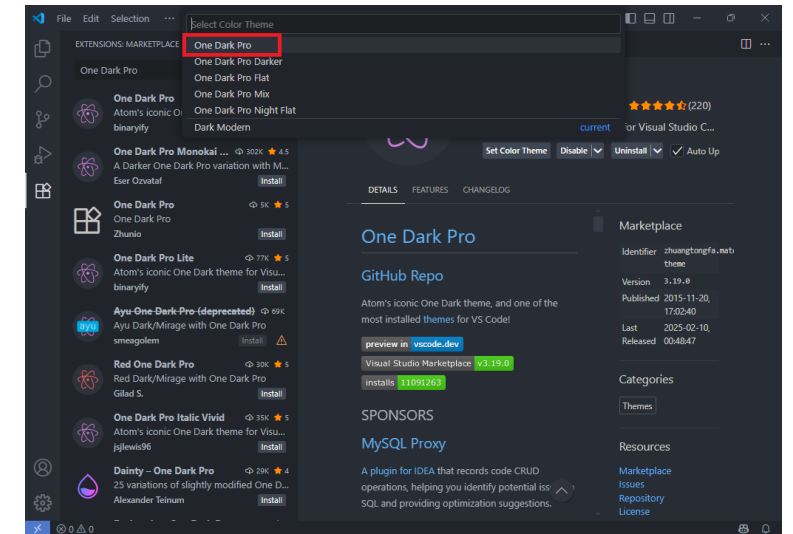
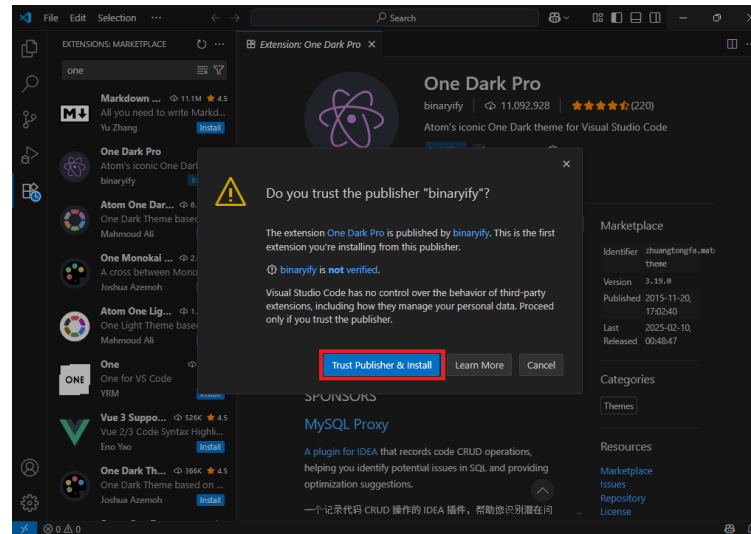
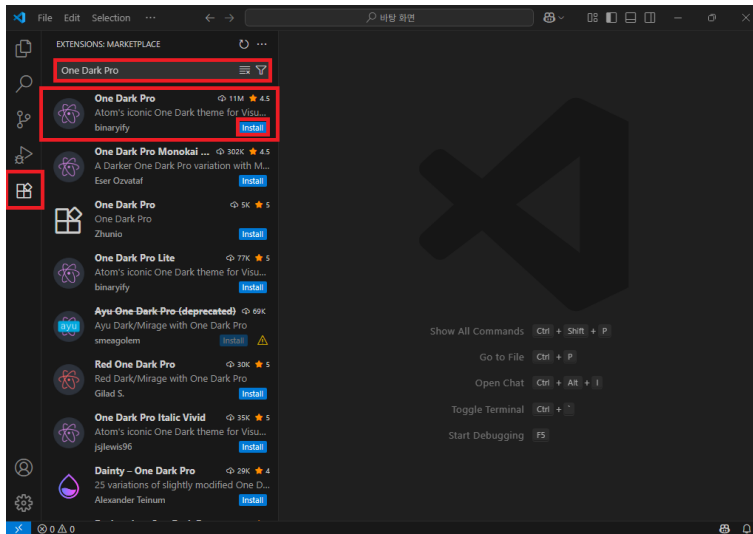
- Click the gear icon in the bottom-left corner to open the menu.
- From the menu, select Settings.



- In the search bar at the top, type font family.
- In Editor: Font Family, type "D2Coding" to set the editor font.



# 1.3. Additional Settings (Optional) – Themes



- Click the Extensions icon in the Activity Bar on the left.
- In the search bar, type One Dark Pro.
- Find and install One Dark Pro by binaryify.

- Click Trust Publisher & Install when prompted.
- This completes the theme installation.

- After installation, a list of themes appears.
- Select One Dark Pro to apply it.

## 2. Installing the GCC Compiler(1/4)

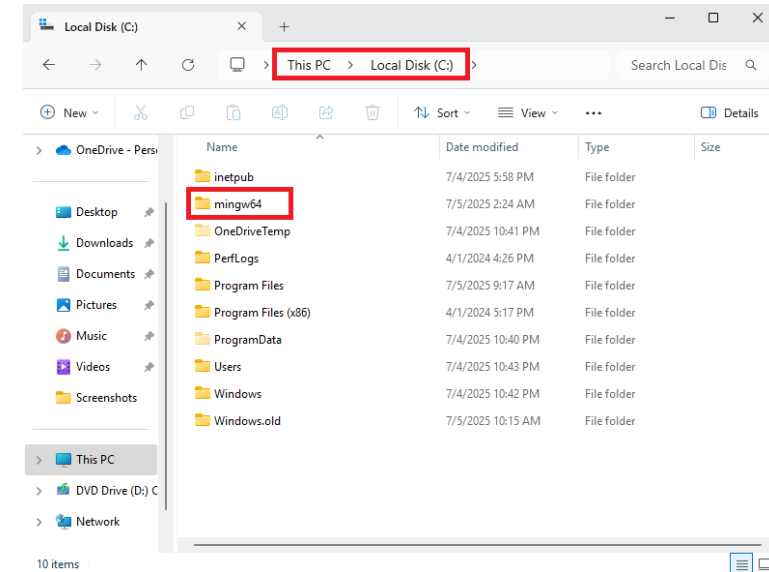
Download link: <https://winlibs.com>

**Release versions**

**UCRT runtime**

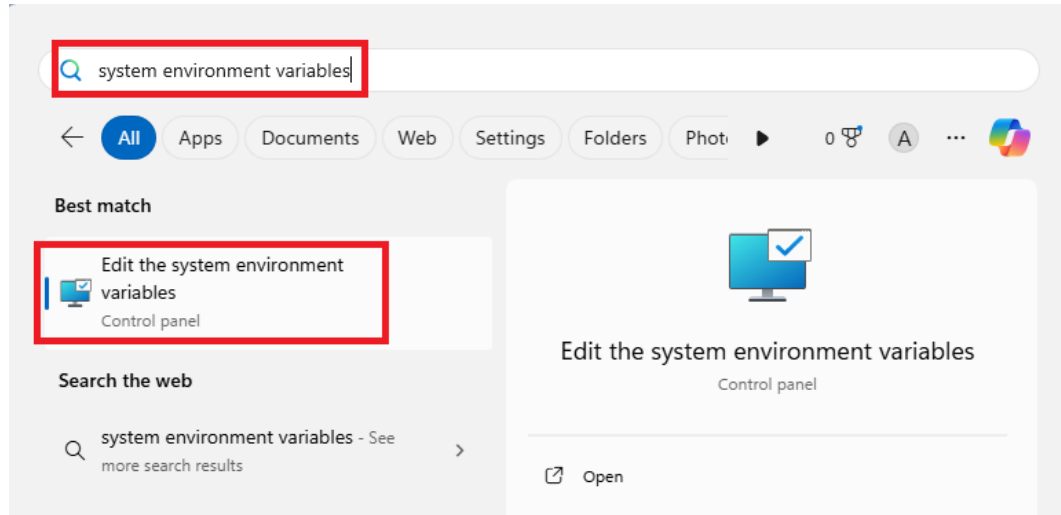
- GCC 15.1.0 (with **POSIX** threads) + MinGW-w64 13.0.0 UCRT - release 2 **(LATEST)**
  - Win32 (without LLVM/Clang/LLD/LLDB): [7-Zip archive\\*](#) | [Zip archive](#)
  - Win64 (without LLVM/Clang/LLD/LLDB): [7-Zip archive\\*](#) | [Zip archive](#)
- GCC 15.1.0 (with **POSIX** threads) + MinGW-w64 12.0.0 UCRT - release 1
  - Win32 (without LLVM/Clang/LLD/LLDB): [7-Zip archive\\*](#) | [Zip archive](#)
  - Win64 (without LLVM/Clang/LLD/LLDB): [7-Zip archive\\*](#) | [Zip archive](#)

- Click on Zip archive (Win64, UCRT) to download the latest GCC version.  
Recommended: version with POSIX threads
- Extract the downloaded archive.

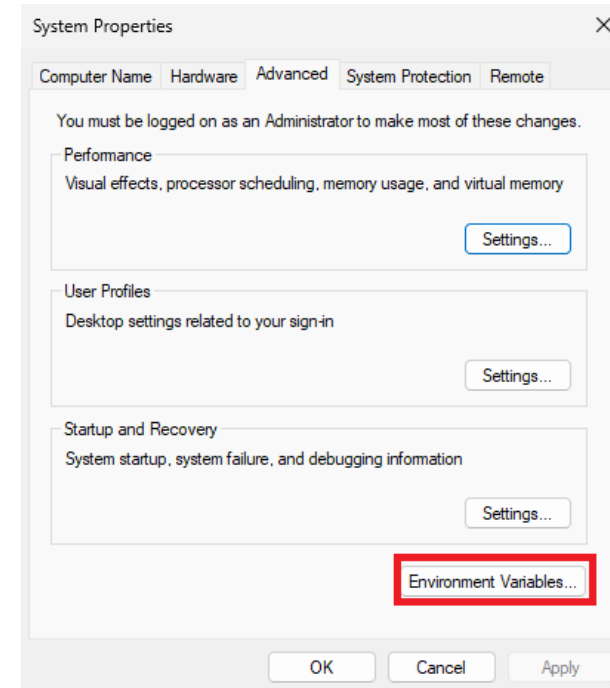


- Move the root-level mingw64 folder to the C: drive.
- Make sure the final path is exactly C:\mingw64.

## 2. Installing the GCC Compiler(2/4)

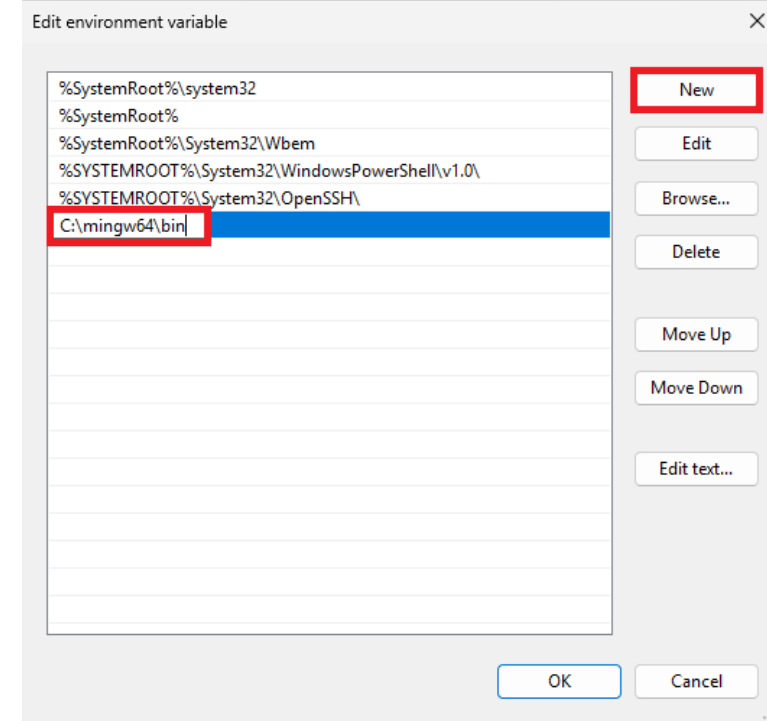
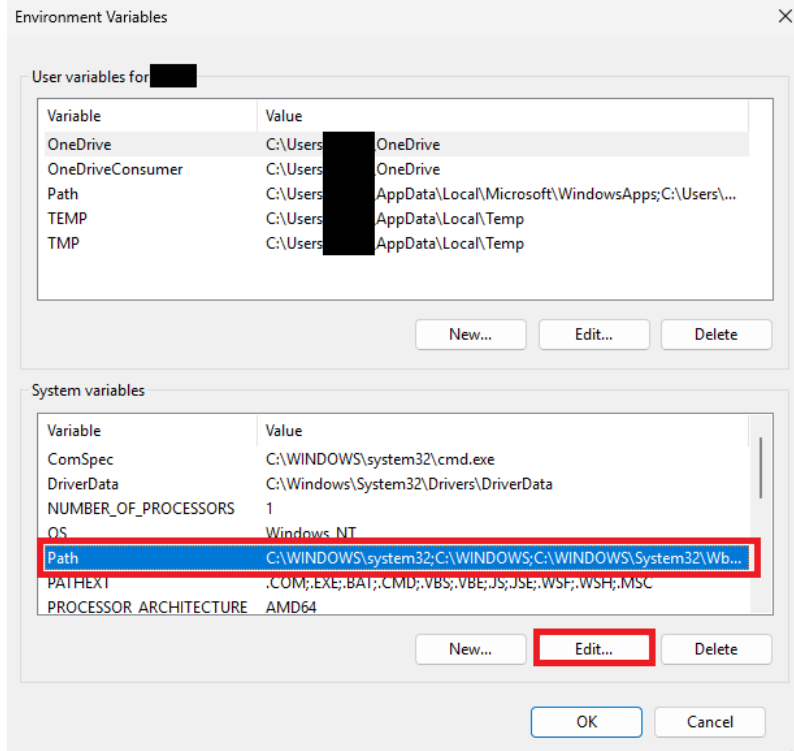


- Press the Windows key and type system environment variables.
- Select "Edit the system environment variables" from the search results.



- Click the "Environment Variables..." button at the bottom.

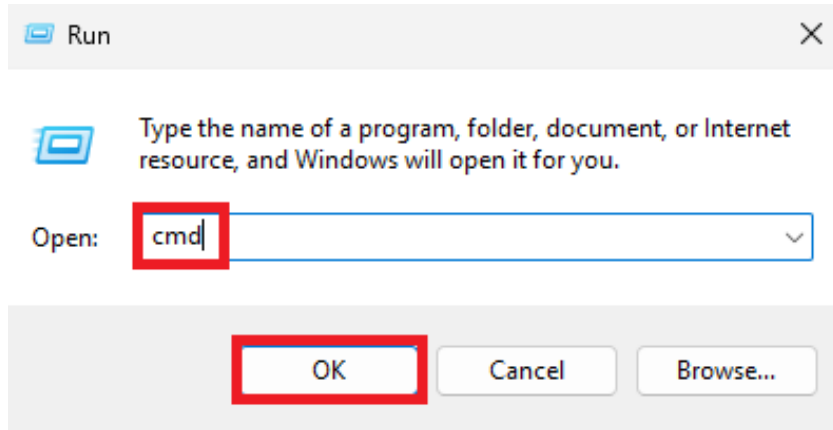
## 2. Installing the GCC Compiler(3/4)



- Under System variables, find and select the Path variable.
- Click "Edit..." to open the list of environment paths.

- Click "New" and add the following path: C:\mingw64\bin
- This allows you to run gcc and related commands from any terminal.
- Click OK on all open dialogs to save the changes and close the windows.

## 2. Installing the GCC Compiler(4/4)



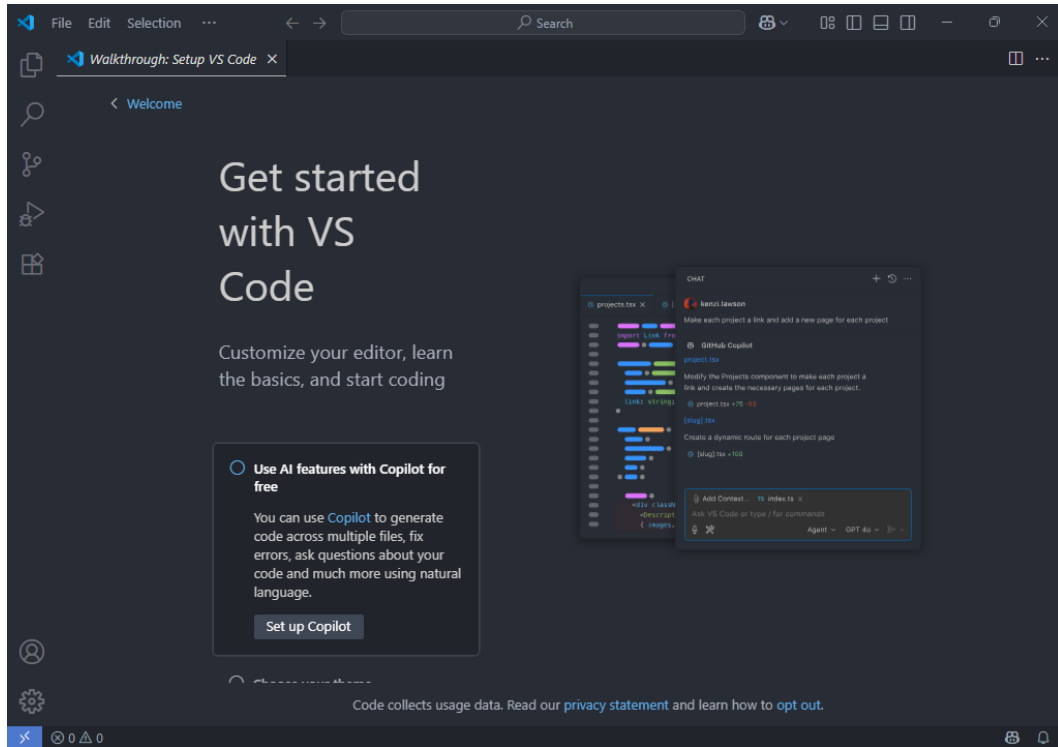
- Press Windows + R, type cmd in the Run dialog box, and click OK

A screenshot of the Windows Command Prompt window. The title bar shows the path "C:\WINDOWS\system32\cmd.". The window content shows the output of the command "gcc --version". The output text is highlighted with a red rectangle.

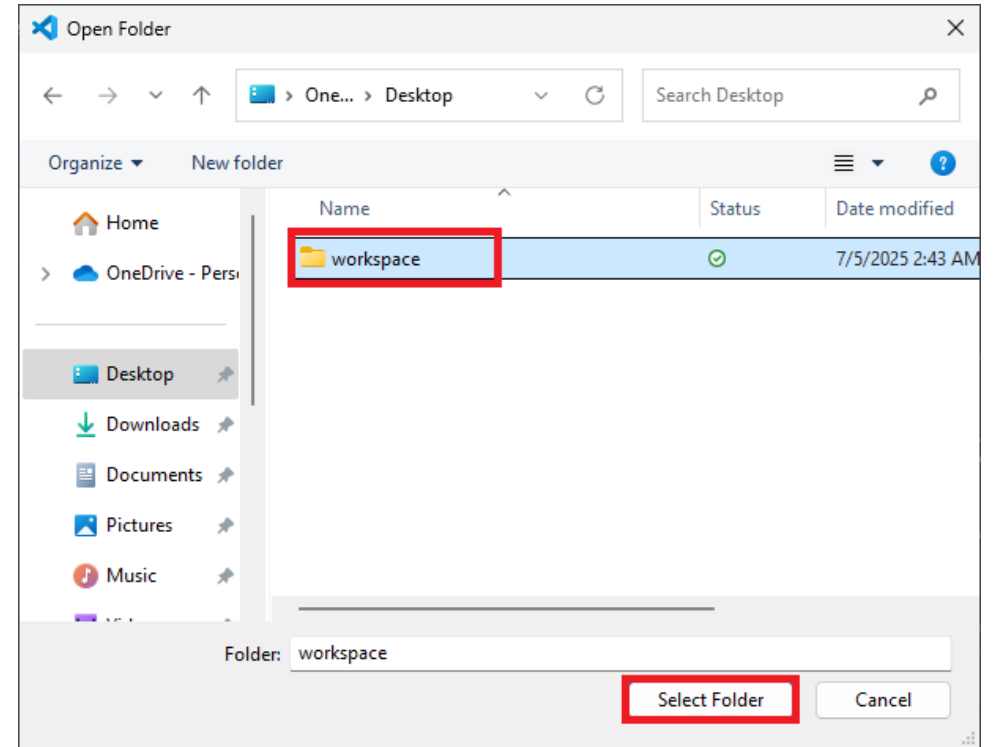
```
C:\WINDOWS\system32\cmd. x + -  
Microsoft Windows [Version 10.0.26100.4351]  
(c) Microsoft Corporation. All rights reserved.  
  
C:\Users\>gcc --version  
gcc (MinGW-W64 x86_64-ucrt-posix-seh, built by Brecht Sanders, r2) 15.1.0  
Copyright (C) 2025 Free Software Foundation, Inc.  
This is free software; see the source for copying conditions. There is NO  
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  
  
C:\Users\>
```

- To verify the setup, open Command Prompt and run gcc --version.
- The version number should be displayed without any errors.

# 3. Writing and Running Your First C Program(1/2)

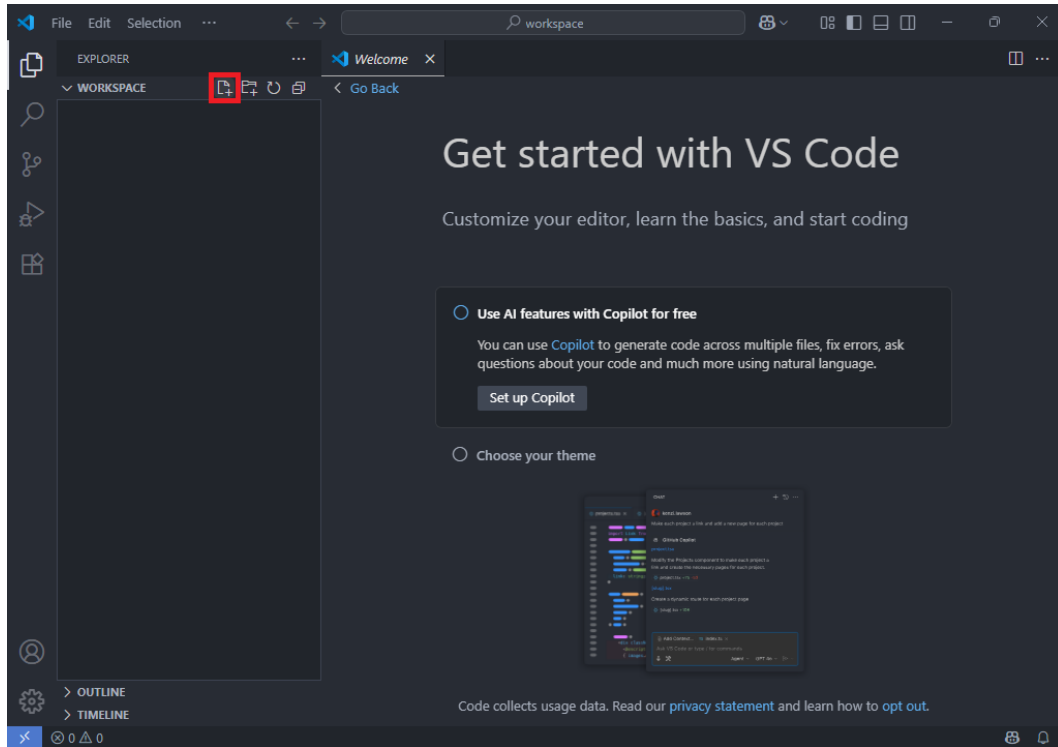


- Launch Visual Studio Code.
- Press Ctrl + K, then O to open folder you want to use.

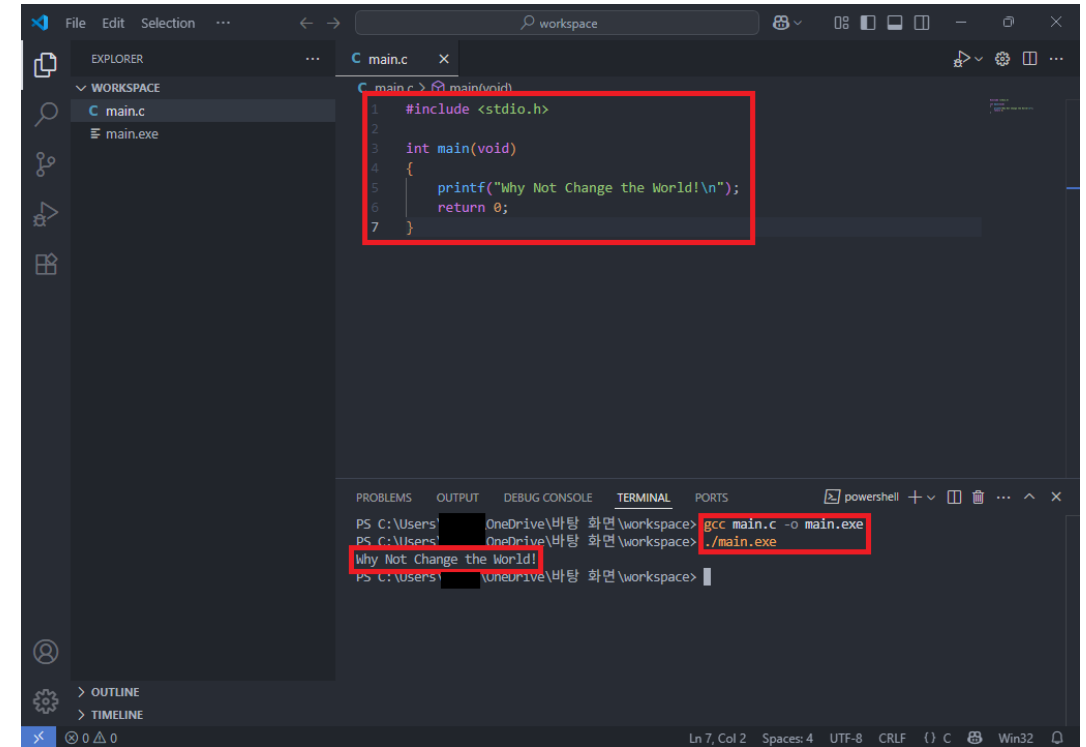


- Create a folder and click Select Folder.  
In this example, a folder named workspace was created on the Desktop.

# 3. Writing and Running Your First C Program(2/2)



- Click the New File icon and create a file named main.c.



- Follow the example and write the code in main.c.
- In the terminal, type: `gcc main.c -o main.exe`
- In the terminal, type: `./main.exe`
- Seeing the printed message means the setup is complete.

# Thank you

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Wishing you an enjoyable and meaningful learning experience.

May you grow into an engineer who learns with joy and shares with others.

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