# Practice of Information Processing

（IMACU）

## First lecture (part 1)：setup

Makoto Hirota

# About lecturer

- **Makoto Hirota**
  - Institute of Fluid Science, Associate Professor
  - Office： Institute of Fluid Science, 2nd building, 4th floor 406 (in Katahira campus)
  - Tel：022-217-5251
  - E-mail：makoto.hirota.d5@tohoku.ac.jp

# Lecture style

- **Google Classroom**

  **[TB14131] Practice of Information Processing**

  **(情報処理演習)**

  Class code: f724i3w

  - Announcements
  - Slide files, sample program sources
  - Submissions
    - Exercises
    - Mid-term and Final Assignments
- **In-person classes**
  - Wednesday 4th-5th periods
  - Place: MM104 (Bld. A05) Kawauchi
  - Bring your own devices (windows or mac laptop is recommended)

# Schedule

- 10/2　(Wed) 14:40-17:50 (Setup)
- 10/9　(Wed) 14:40-17:50 (Introduction⇒Lecture)
- 10/16 (Wed) 14:40-17:50
- 10/23 (Wed) 14:40-17:50 (Mid-term assignments)
- 10/30 (Wed) 14:40-17:50
- 11/6　(Wed) 14:40-17:50
- 11/13 (Wed) 14:40-17:50 (Final assignments)
- 11/20 (Wed) 14:40-17:50 No class (spare)

# Today's job: Setup software

**For Windows 10/11 users,**

- **7-zip**
  - Used as a file archiver/unarchiver
- **MinGW-w64**
  - Used as C-language compiler
- **Visual Studio Code**
  - Used as editor

**(If you prefer other compilers and editors, you may use them on your own responsibility.)**

**e.g., Windows Subsystem for Linux (WSL)**

# For Mac user

**Please setup the followings by yourself.**

- **Visual Studio Code**

- **Compiler**
  - Please use Xcode
  - You can find it by searching “C language command line tool”

# If you have questions

- **Please ask me or TA during the class time.**
  - Ayapilla Aditya Sai Pranith (ayapilla.aditya.sai.pranith.t6@dc.tohoku.ac.jp)

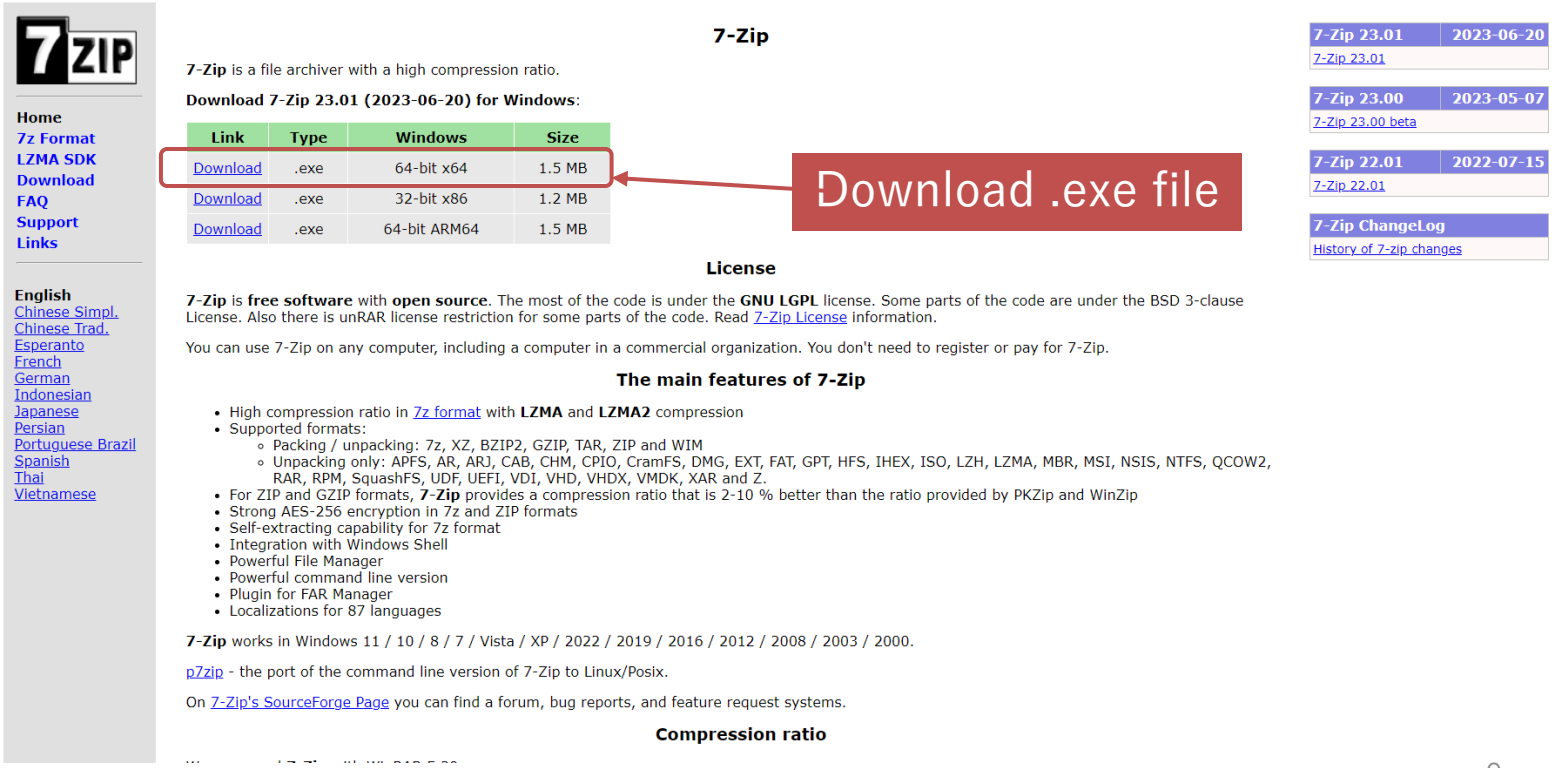
# If you didn't bring your PC

- **Please follow the today's instruction below at home. Finish the setup until the next class.**

# Installation of 7-zip

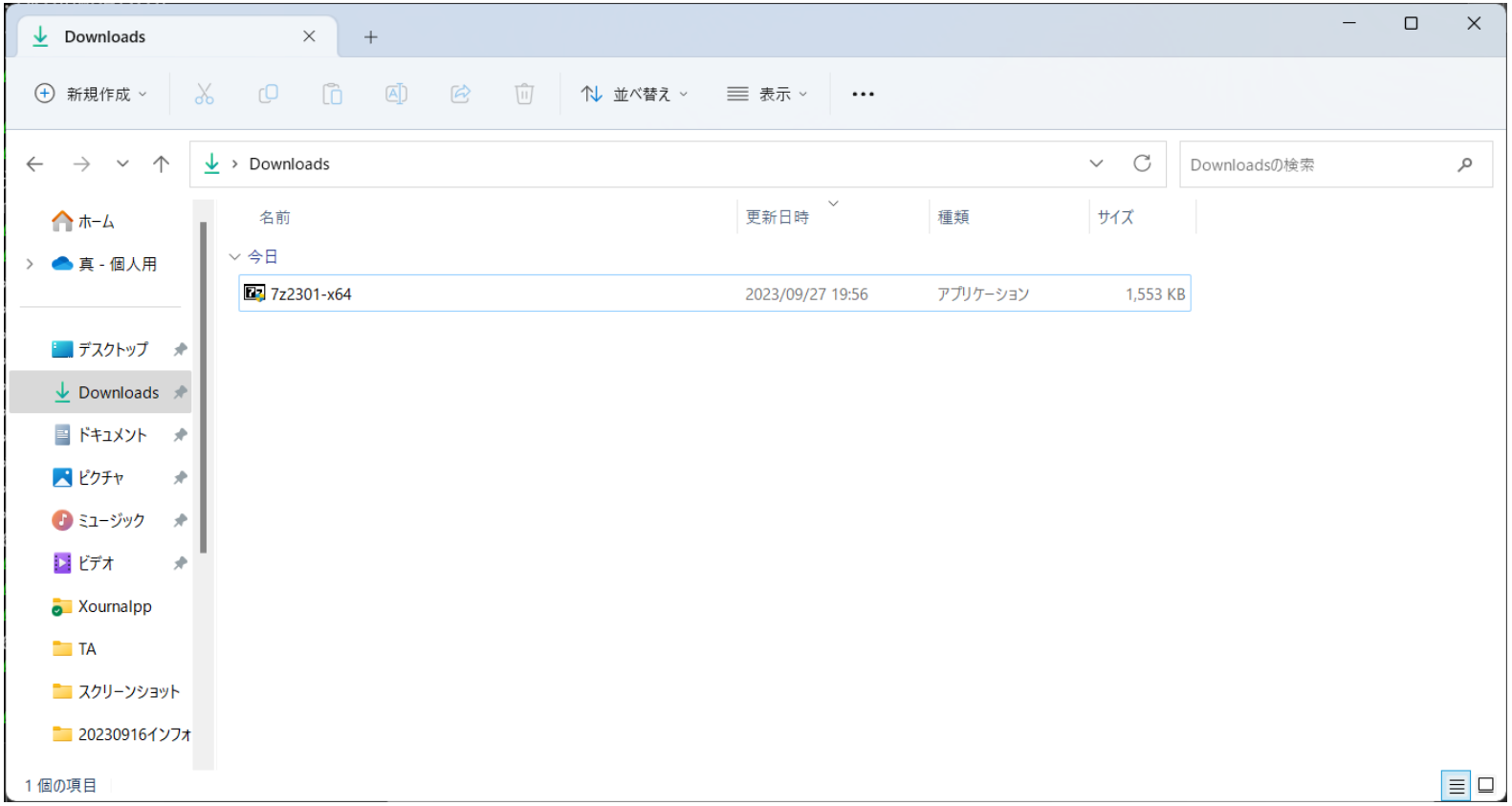
# Download 7-Zip

- Google “7-zip” and access https://www.7-zip.org/



# Install 7-Zip

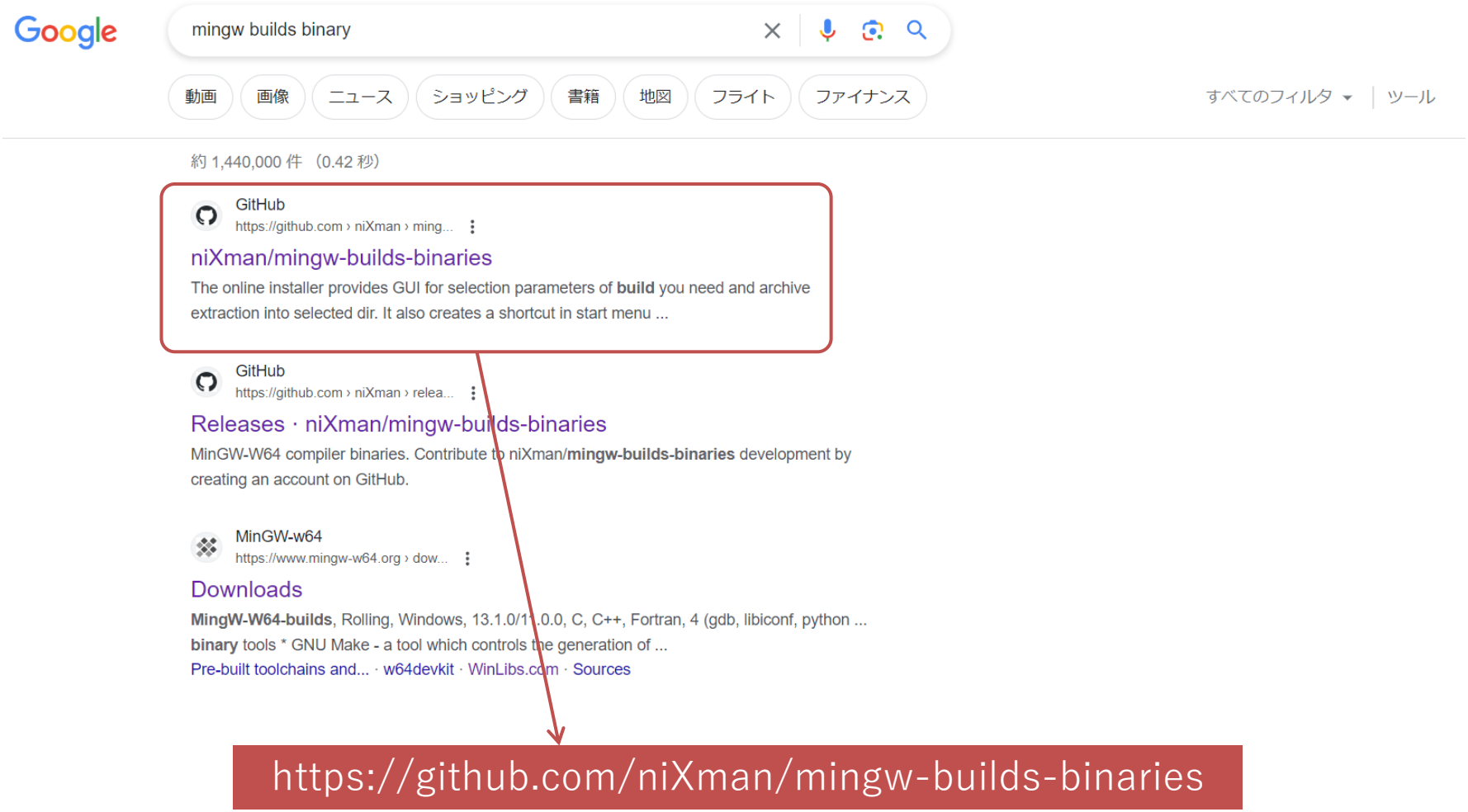
- Go to your Downloads folder
- Run “7z2301-x64.exe” and install



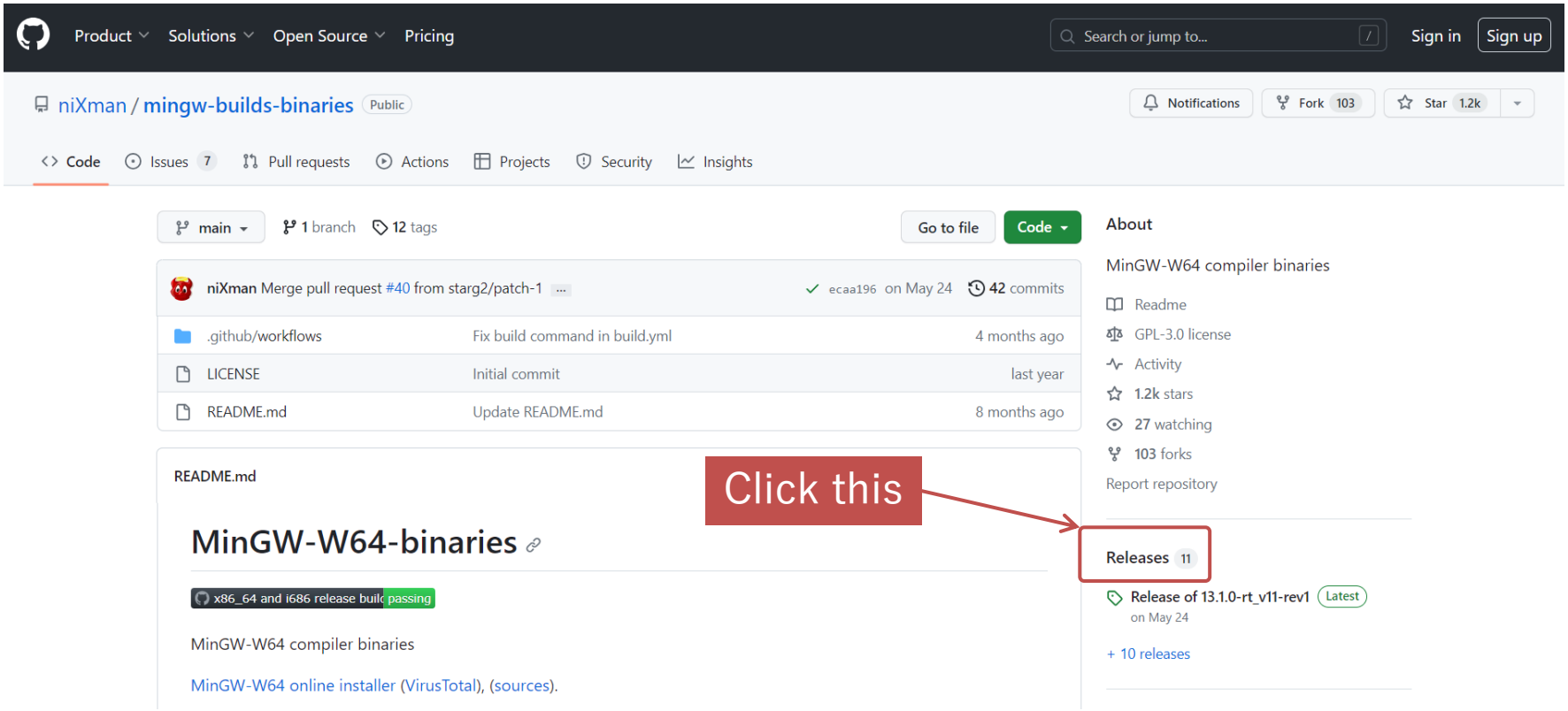
# Setup of MinGW

1. Setup MinGW
2. Configuration of Path
3. Operation check

# Search “mingw builds binaries”



# MinGW site


Product
Solutions
Open Source
Pricing
Search or jump to...
Sign in
Sign up
niXman / mingw-builds-binaries
Public
Notifications
Fork 103
Star 1.2k
Code
Issues 7
Pull requests
Actions
Projects
Security
Insights
main
1 branch
12 tags
Go to file
Code
About
MinGW-W64 compiler binaries
niXman Merge pull request #40 from starg2/patch-1
ecaa196 on May 24
42 commits
.github/workflows
Fix build command in build.yml
4 months ago
LICENSE
Initial commit
last year
README.md
Update README.md
8 months ago
Readme
GPL-3.0 license
Activity
1.2k stars
27 watching
103 forks
Report repository
README.md
Click this
MinGW-W64-binaries
x86_64 and i686 release buil passing
MinGW-W64 compiler binaries
MinGW-W64 online installer (VirusTotal), (sources).
Releases 11
Release of 13.1.0-rt_v11-rev1 Latest
on May 24
+ 10 releases

# Download MinGW binaries

May 24

niXman

13.1.0-rt_v11-r...

ecaa196

Compare

## Release of 13.1.0-rt_v11-rev1 Latest

- Release for GCC-13.1.0 with MinGW-W64 runtime version 11

Click this and download

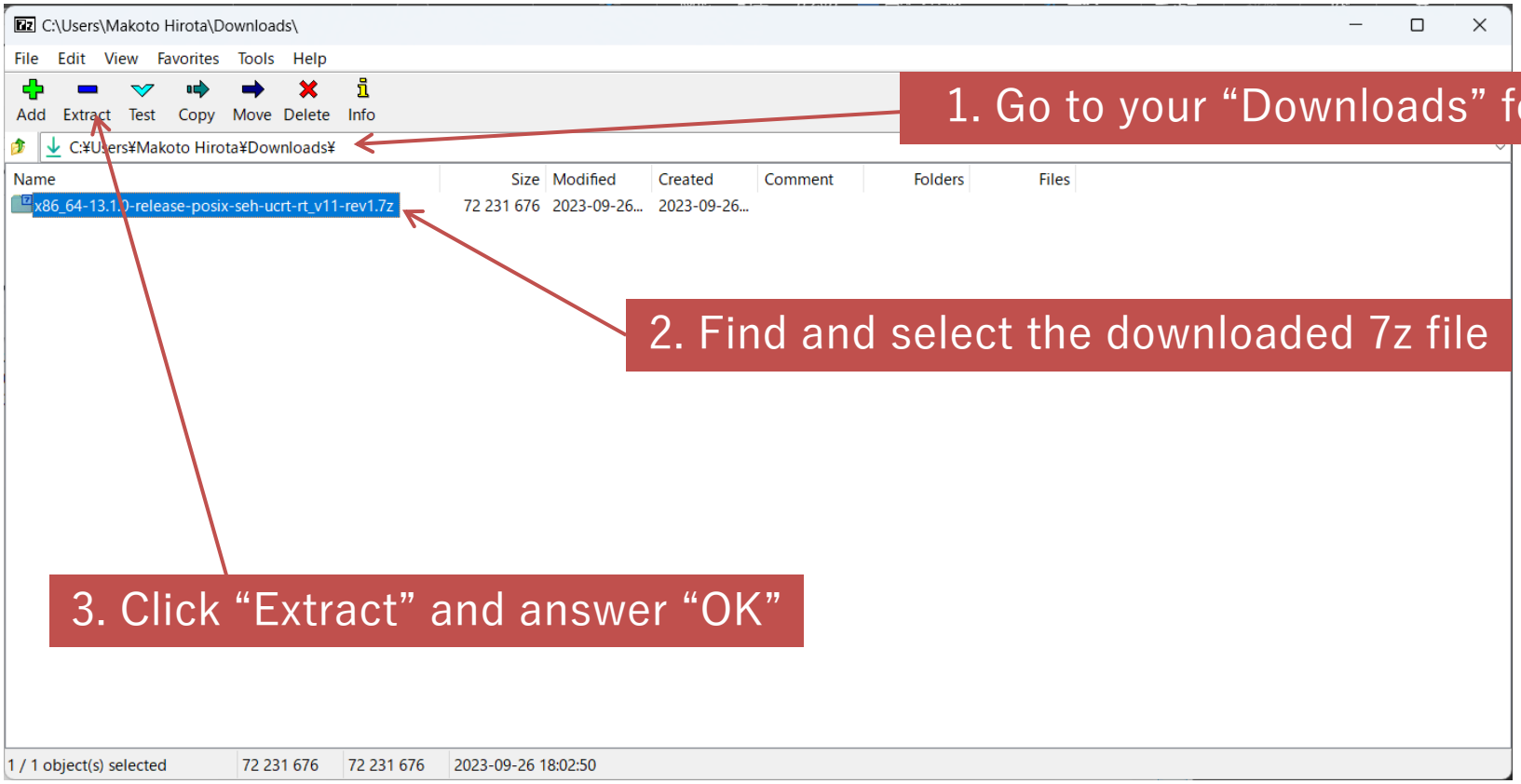
### ▾ Assets 10

| | | |
|---|---|---|
| i686-13.1.0-release-posix-dwarf-msvcrt-rt_v11-rev1.7z | 72.7 MB | May 28 |
| i686-13.1.0-release-posix-dwarf-ucrt-rt_v11-rev1.7z | 72.6 MB | May 28 |
| i686-13.1.0-release-win32-dwarf-msvcrt-rt_v11-rev1.7z | 72.7 MB | May 28 |
| i686-13.1.0-release-win32-dwarf-ucrt-rt_v11-rev1.7z | 72.7 MB | May 28 |
| x86_64-13.1.0-release-posix-seh-msvcrt-rt_v11-rev1.7z | 68.9 MB | May 28 |
| x86_64-13.1.0-release-posix-seh-ucrt-rt_v11-rev1.7z | 68.9 MB | May 28 |
| x86_64-13.1.0-release-win32-seh-msvcrt-rt_v11-rev1.7z | 68.9 MB | May 28 |
| x86_64-13.1.0-release-win32-seh-ucrt-rt_v11-rev1.7z | 68.9 MB | May 28 |
| Source code (zip) | | May 24 |
| Source code (tar.gz) | | May 24 |

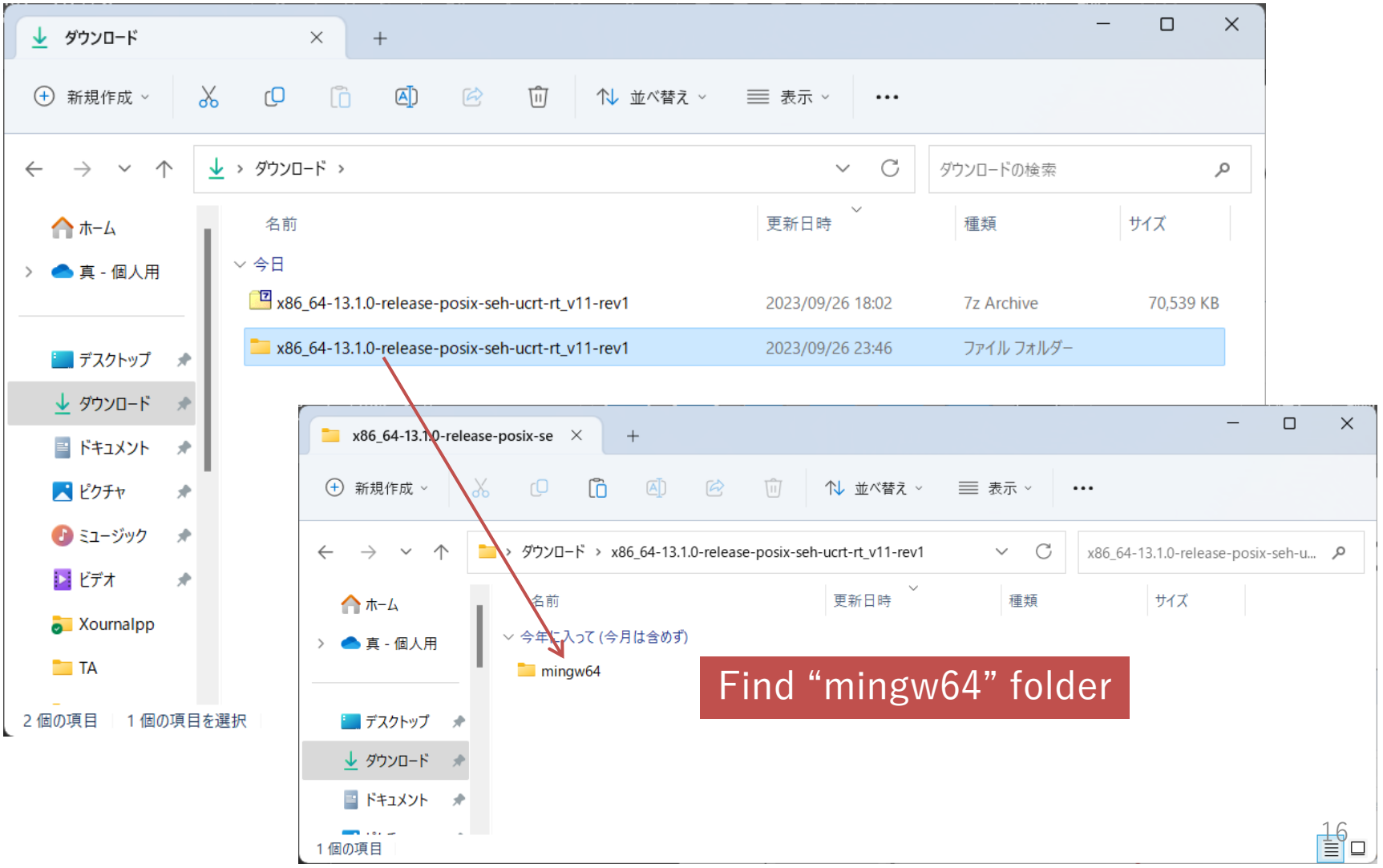
76 5 13 6 13 10 101 people reacted

# Extract the 7z file

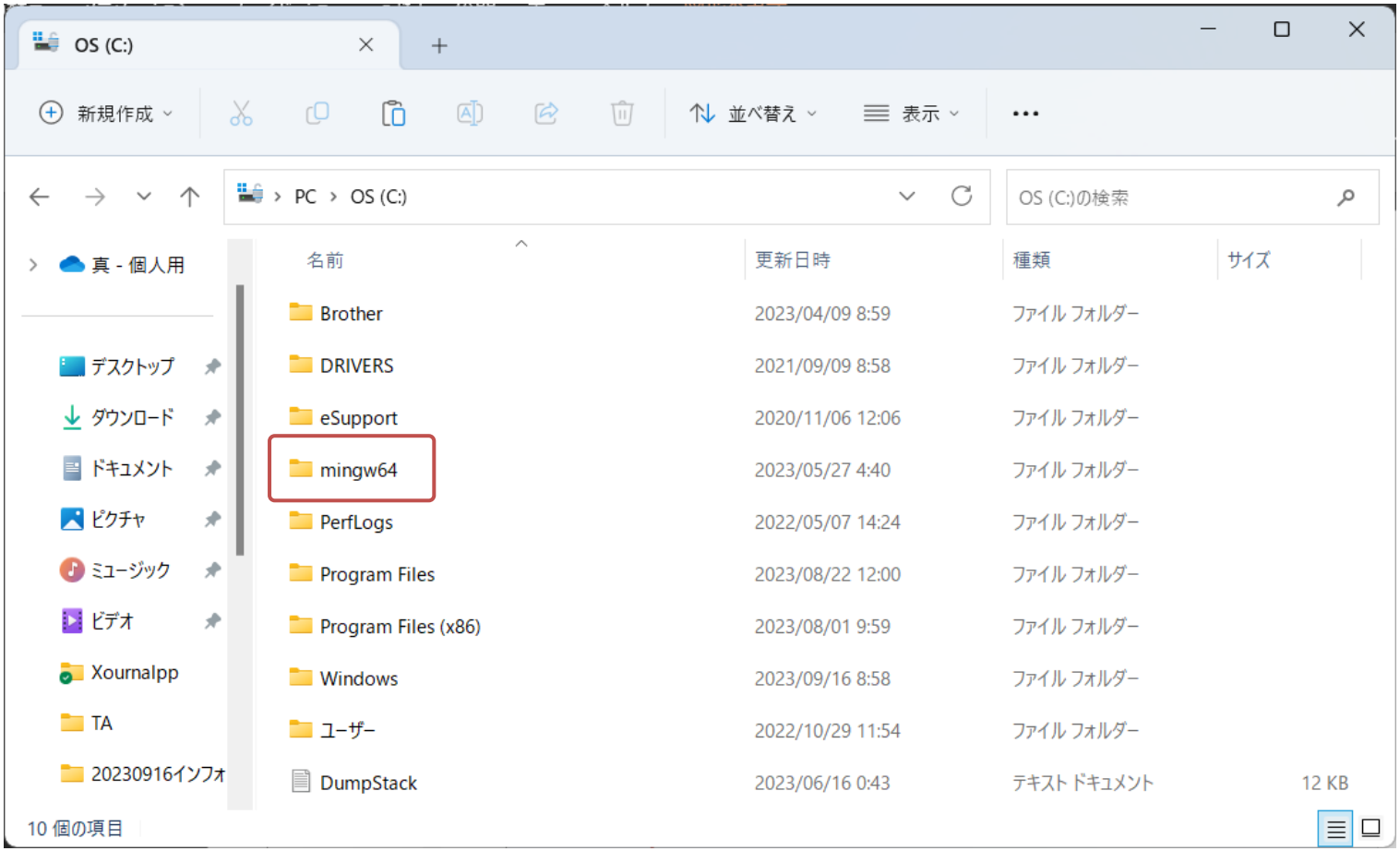
- Run “7-Zip” from the start menu



# See “Downloads” in explorer



# Move the folder to C:¥

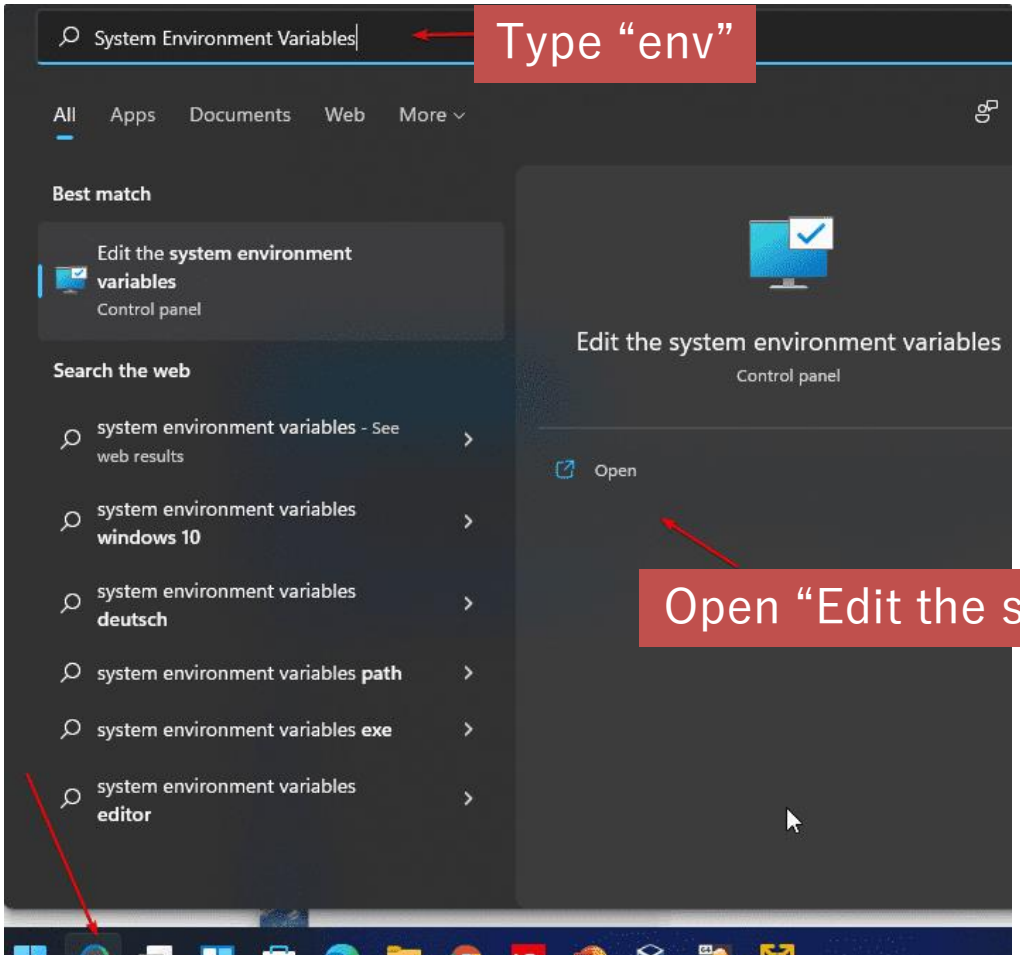



Move the “mignw64” folder to “C:¥mingw64”

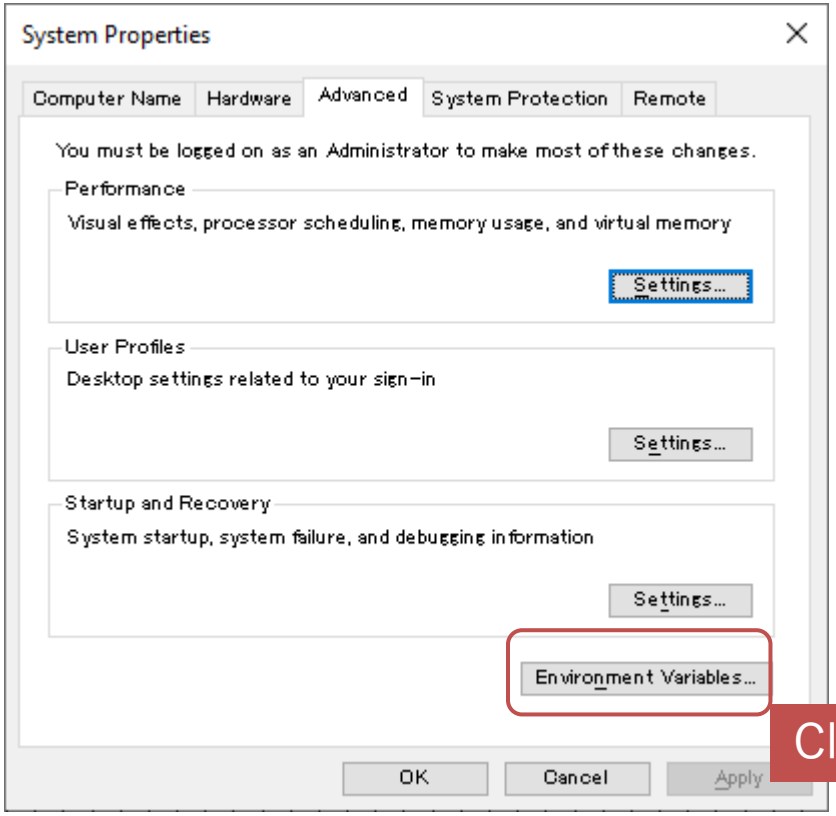
(“¥” is the backslash.)

# Configure Environment Variable: Path

- Click the Windows button, type “env” into the search bar and hit Enter.

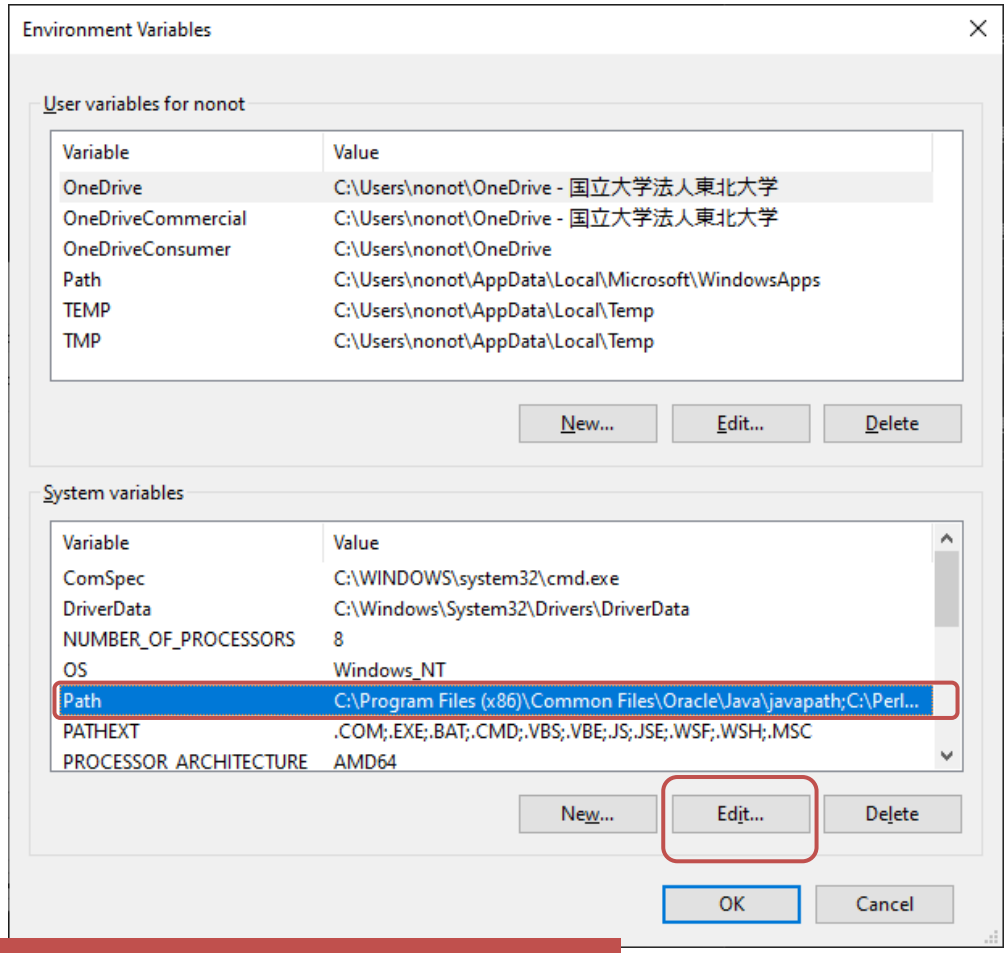


# “System Properties” Window



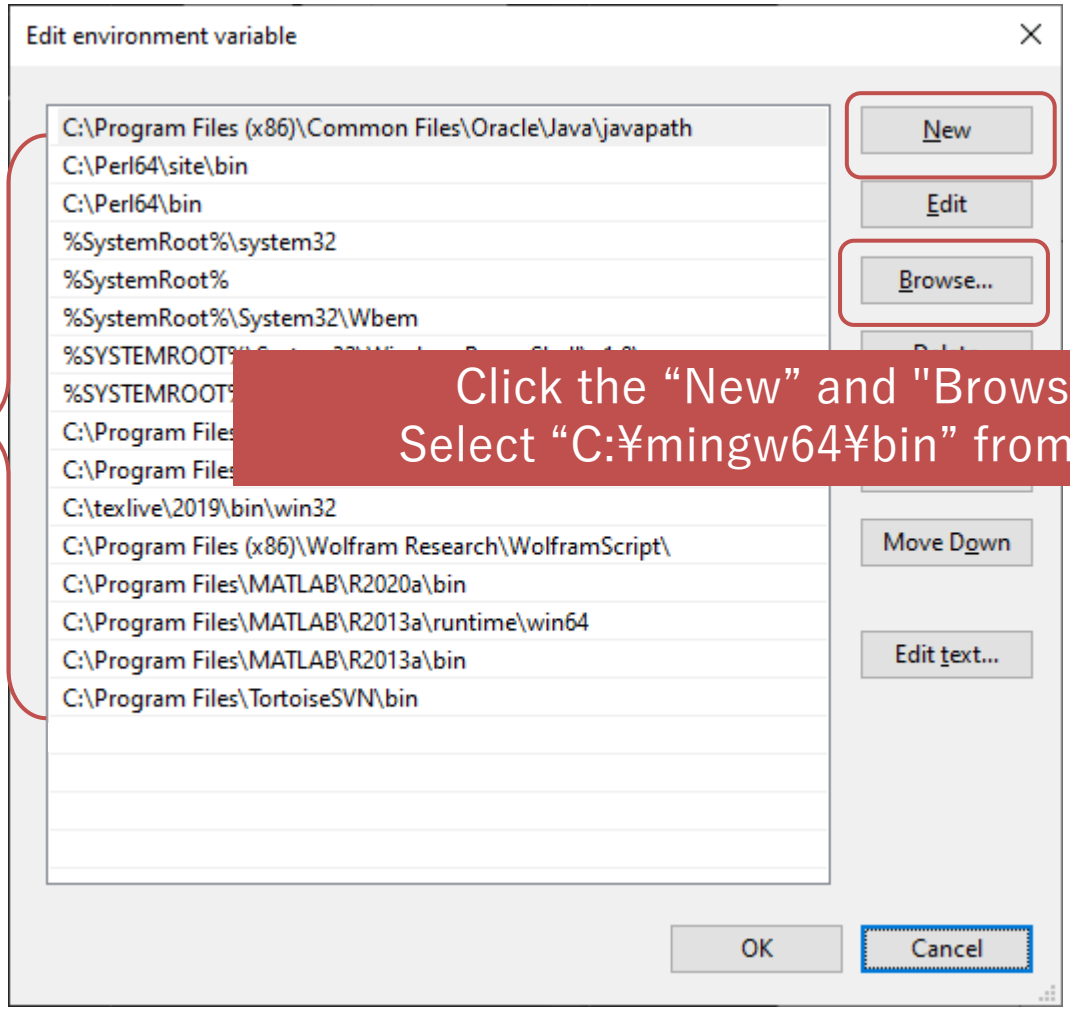

Click “Environment variables”

# “Environment Variables” window




Select “Path” from ”System variables” and Click edit button

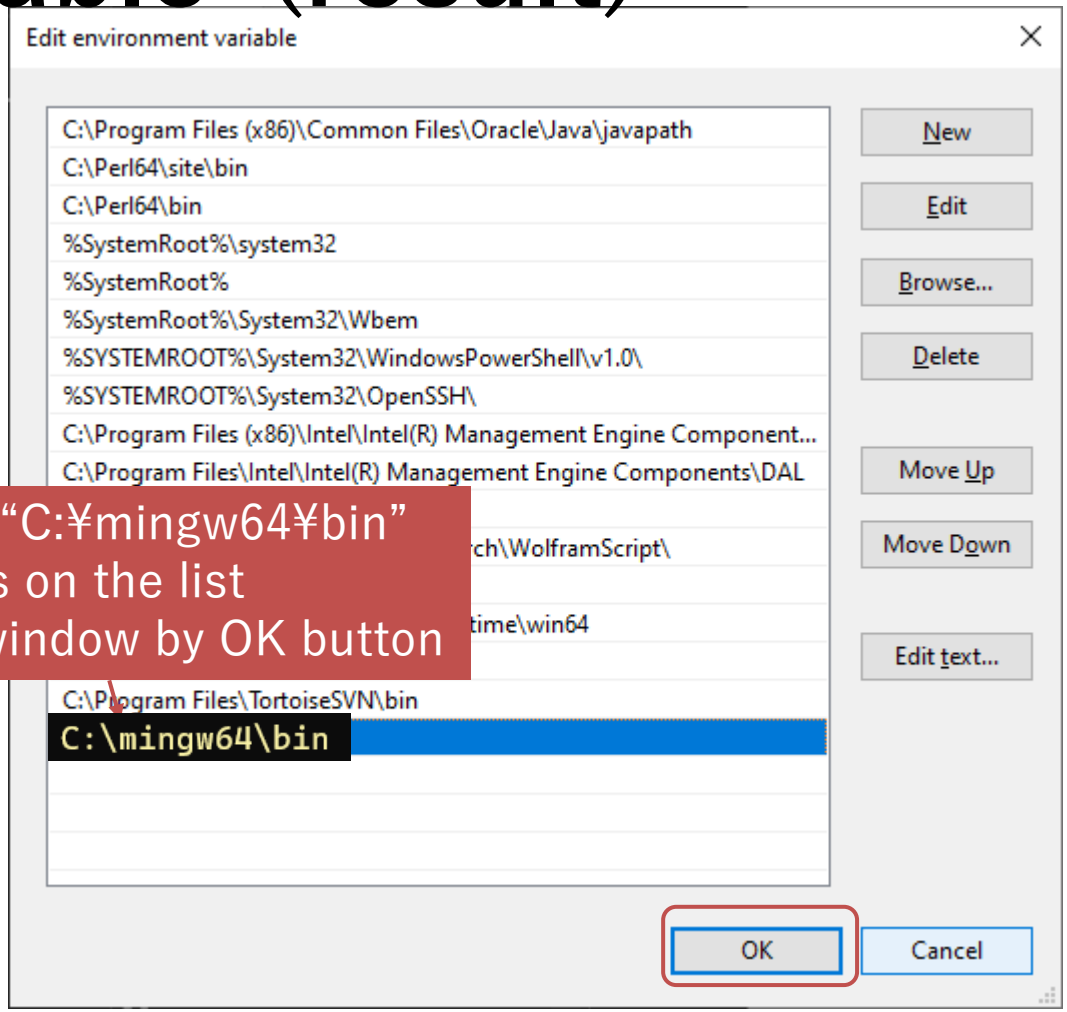
# “Edit environment variable”




Do not remove those lines

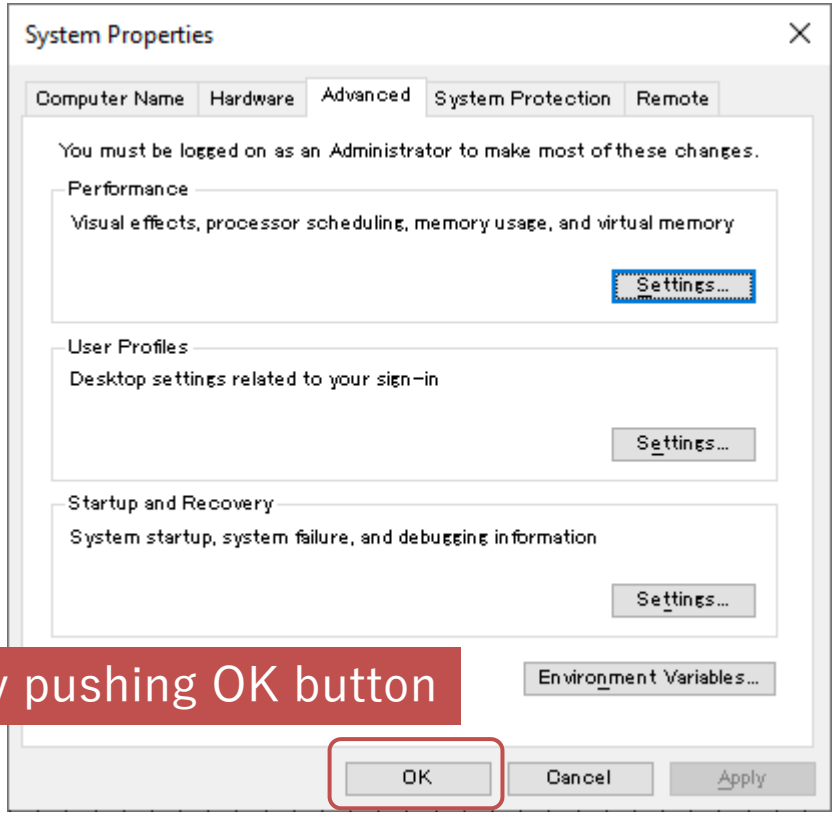
Click the “New” and "Browse" button.
Select “C:¥mingw64¥bin” from the file tree

# “Edit environment variable”(result)




Confirm “C:¥mingw64¥bin” is on the list
→ Close window by OK button

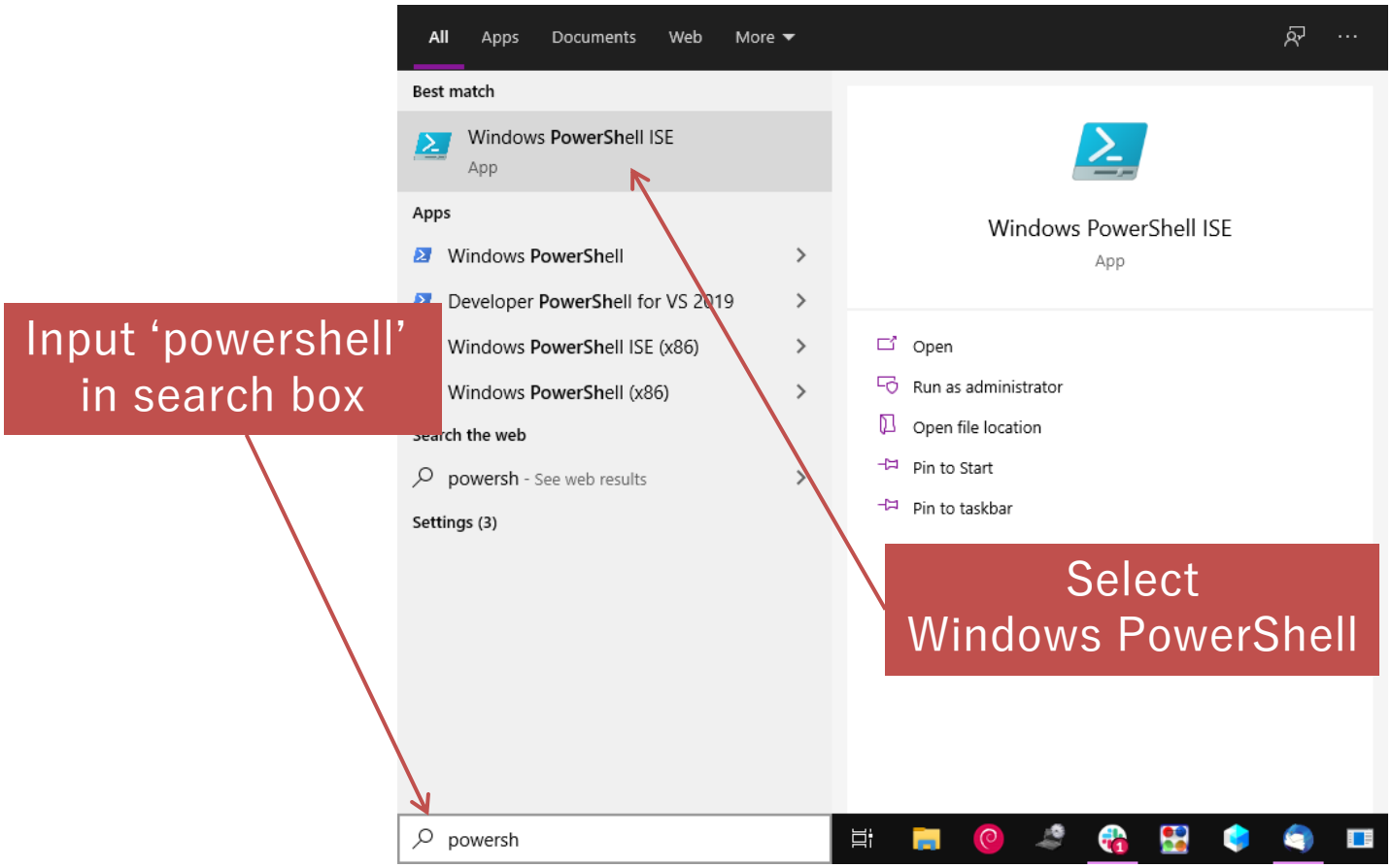
# “System Properties” window




Close window by pushing OK button

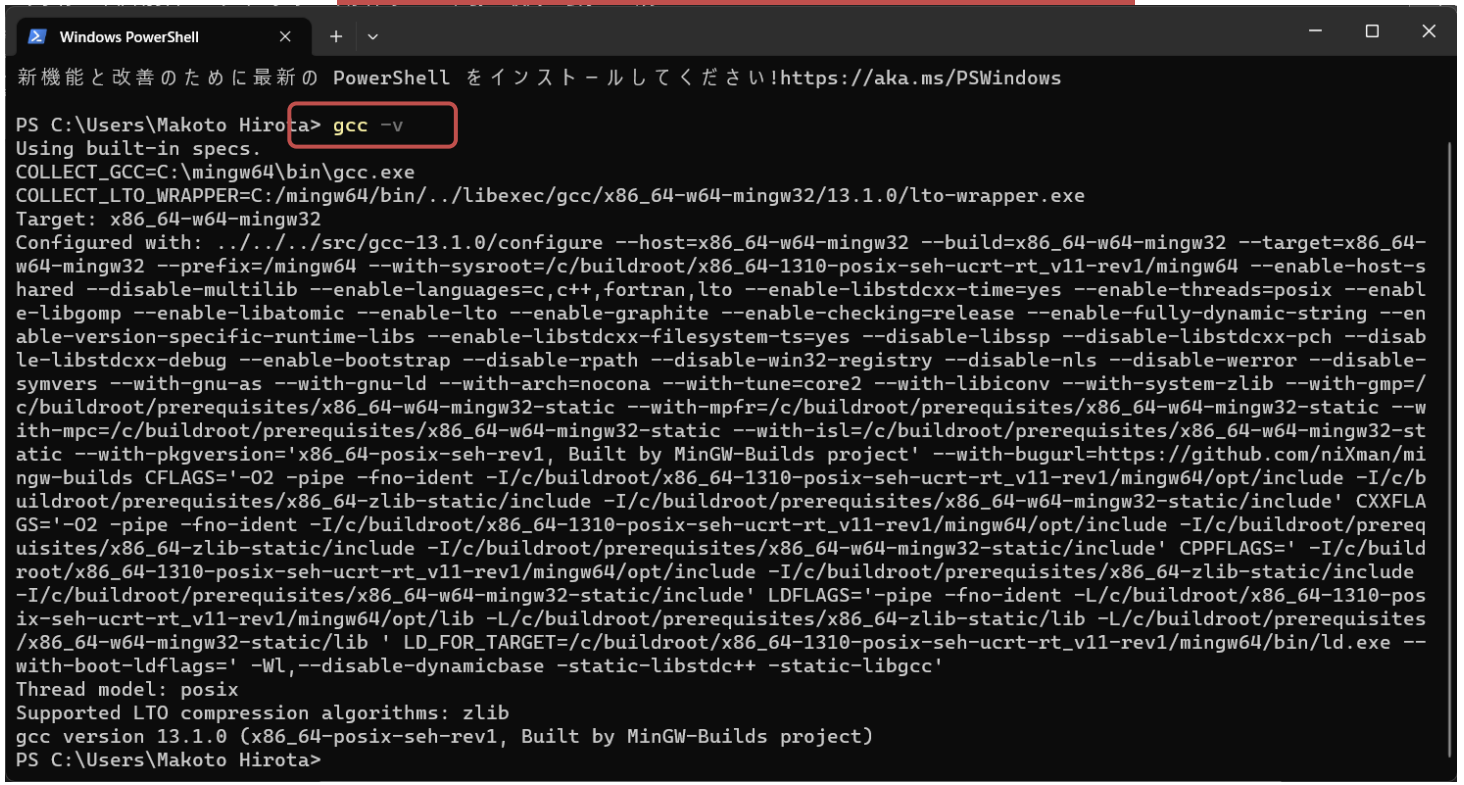
Now, reboot your PC.

# Open PowerShell



# Check operation of MinGW

Type “gcc –v” and press Enter key



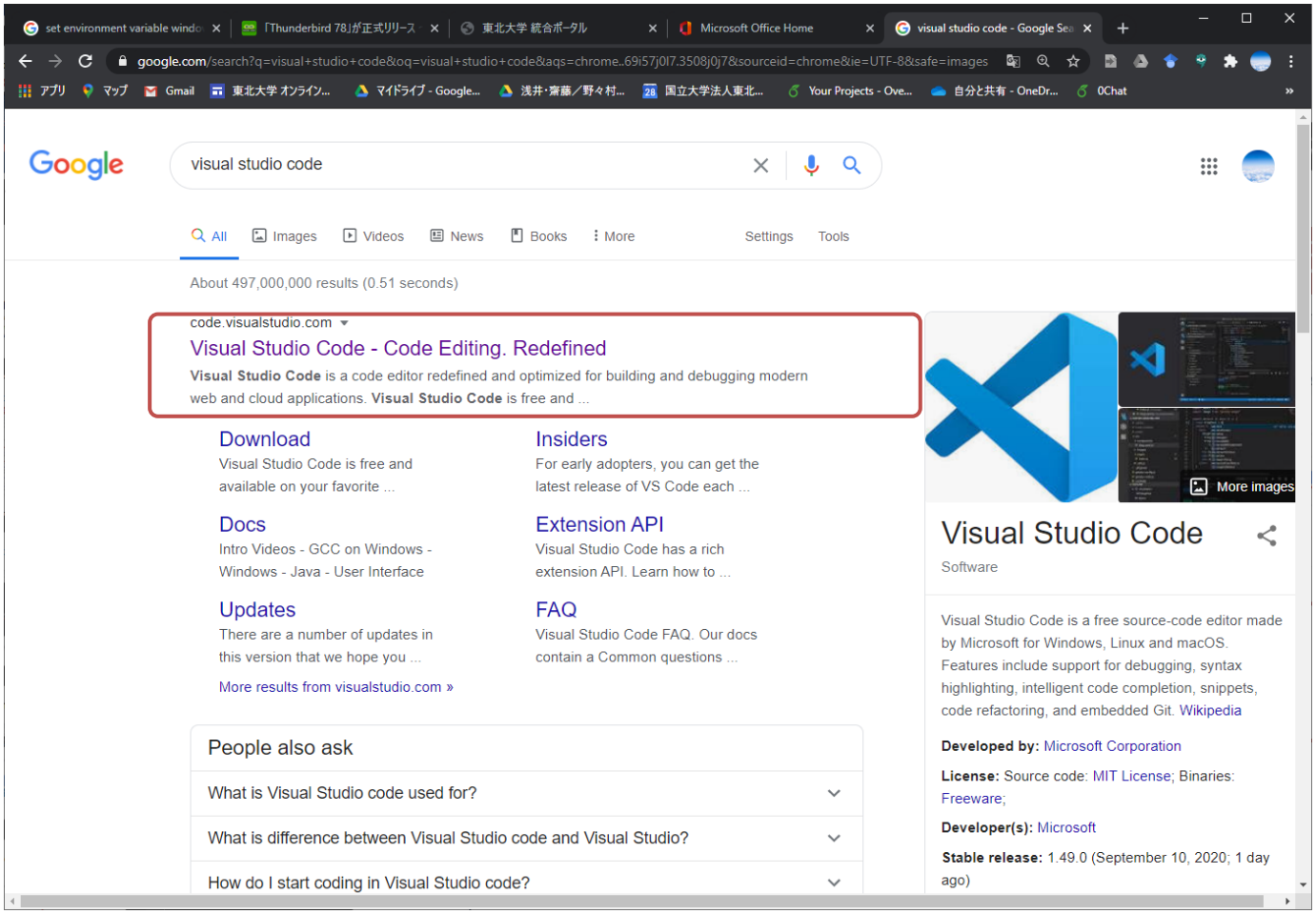

Setup is successful if you can check the version of gcc

# Setup of Visual Studio Code

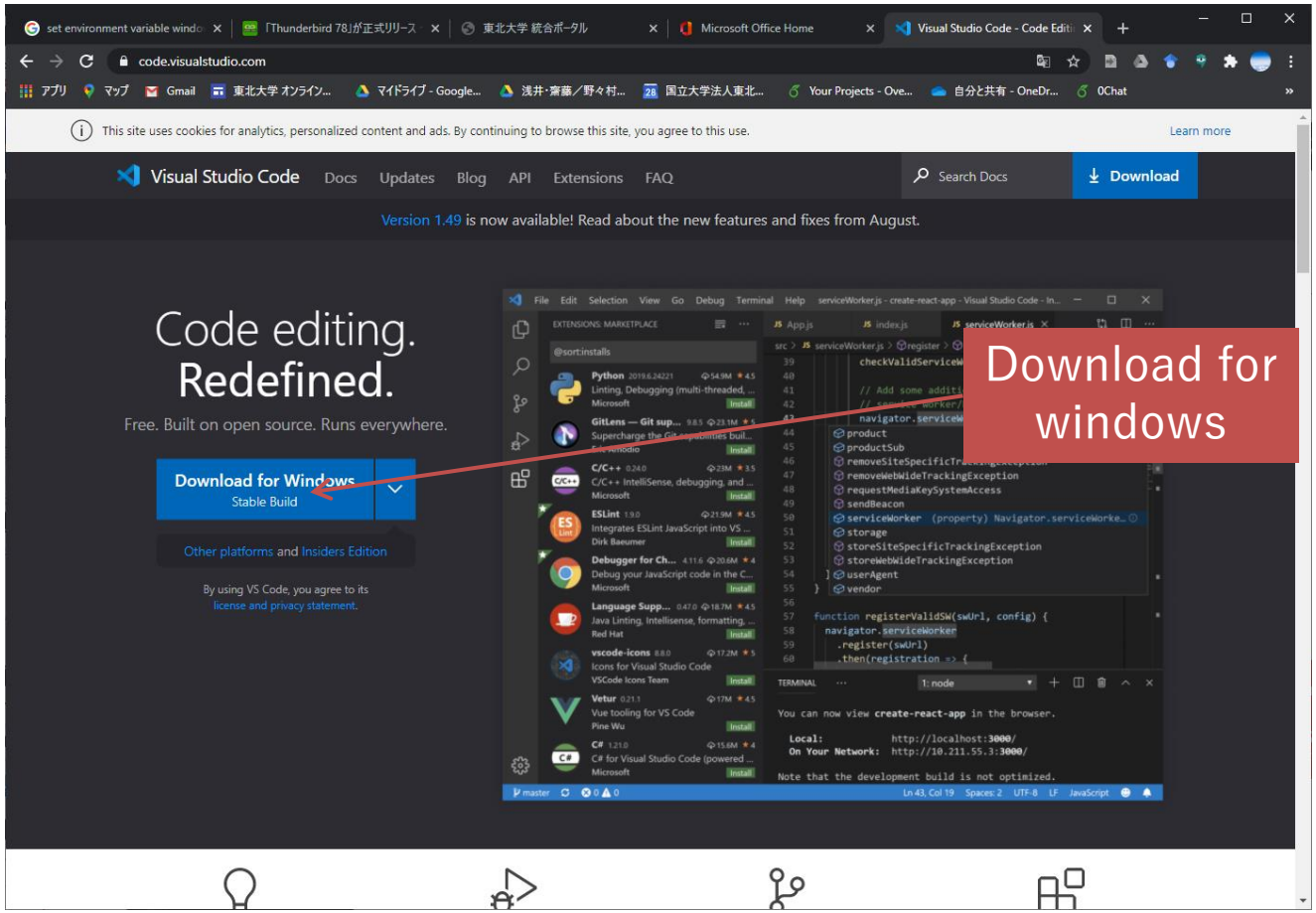
1. Install VSCode
2. Install extension
3. Check operation

You can easily install Visual Studio Code from the “Microsoft Store”.
If you have done it, skip to “Install extension”.

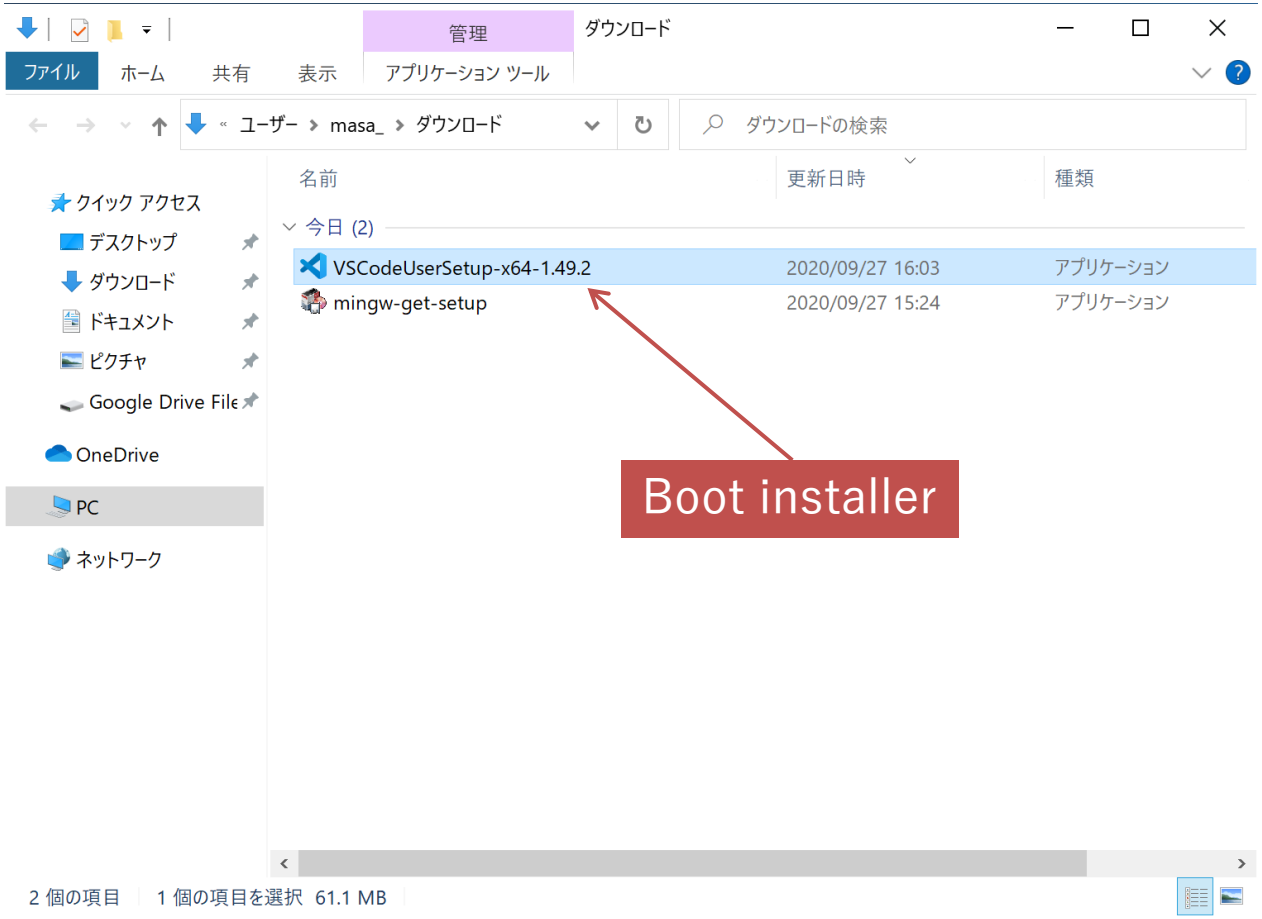
# Go to page of Visual Studio Code



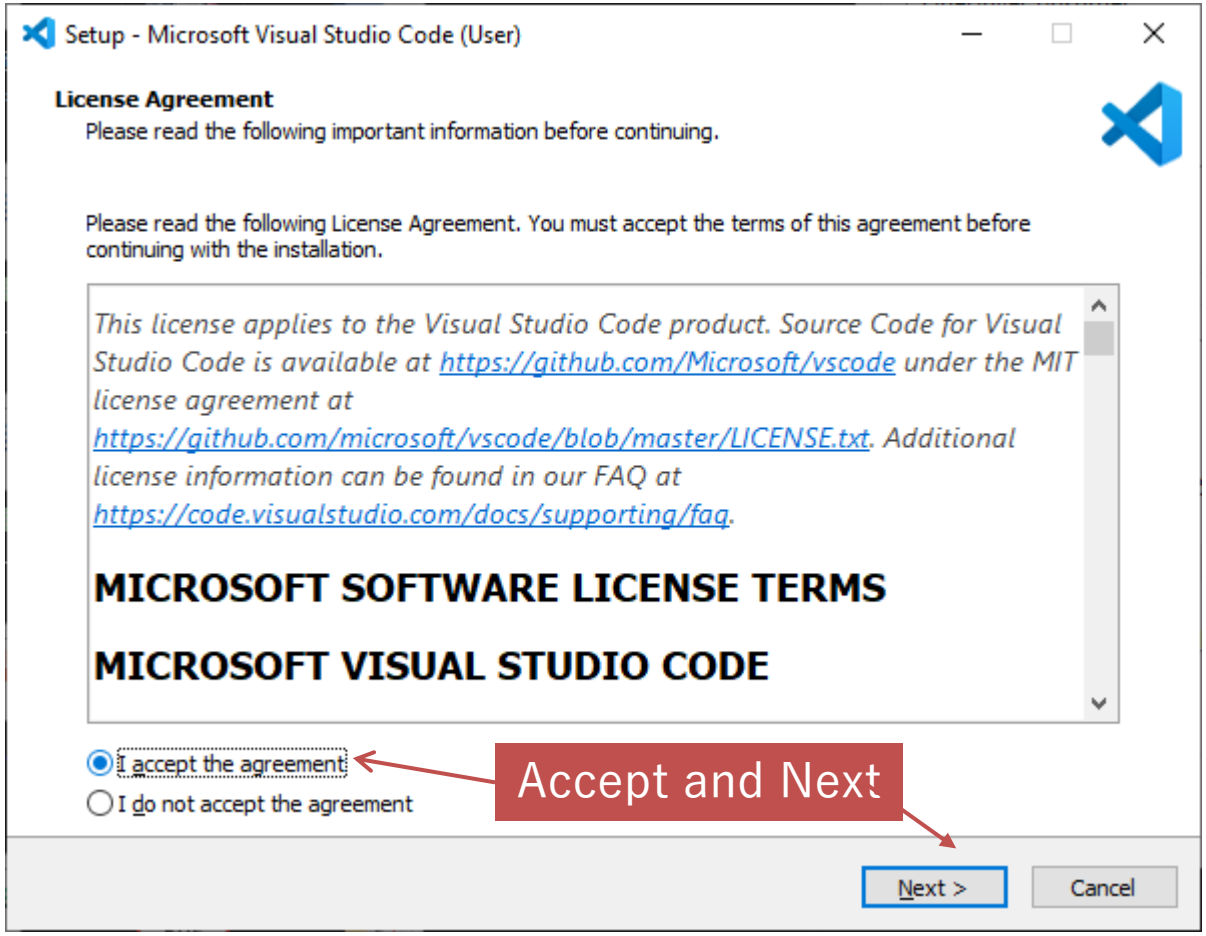
# Webpage of Visual Studio Code



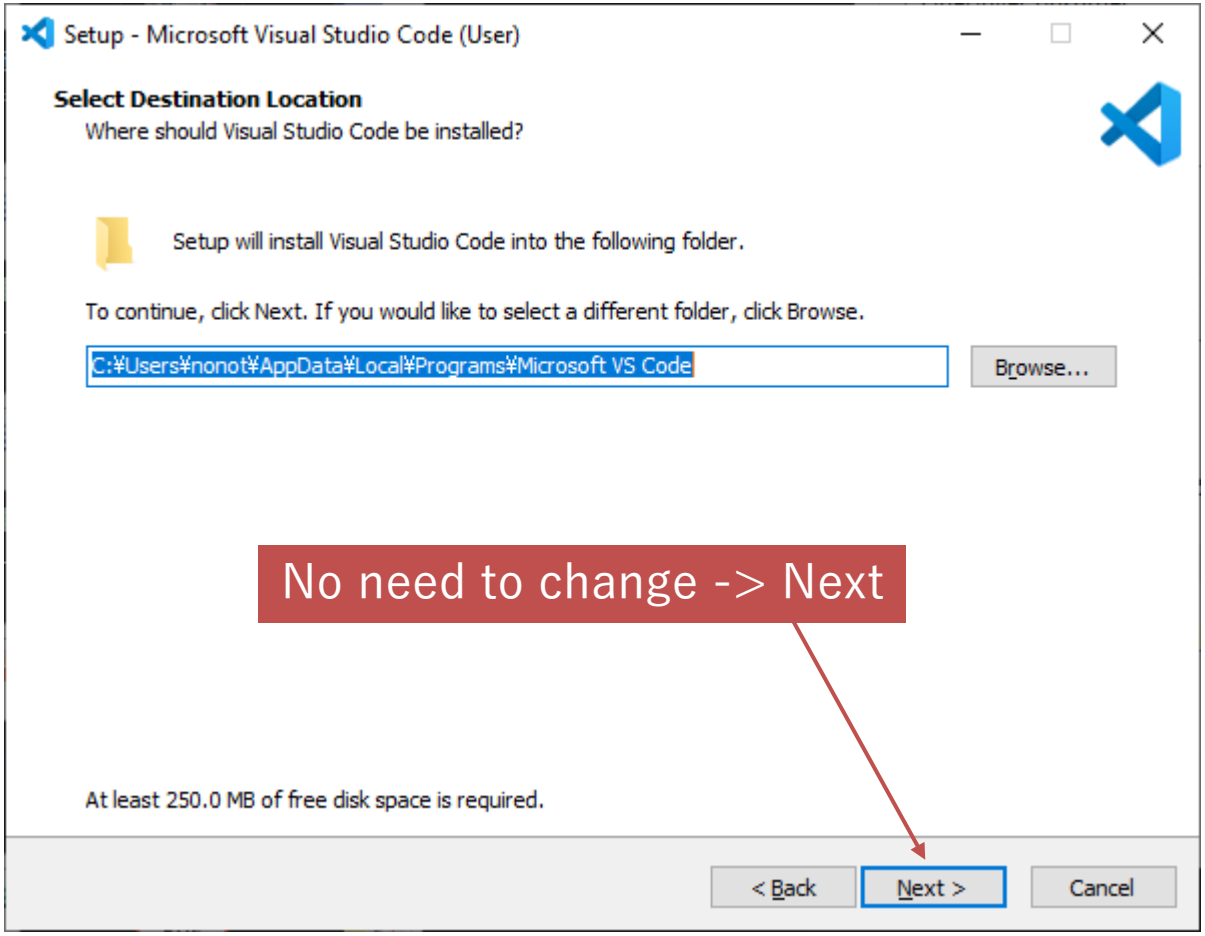
# Downloaded file



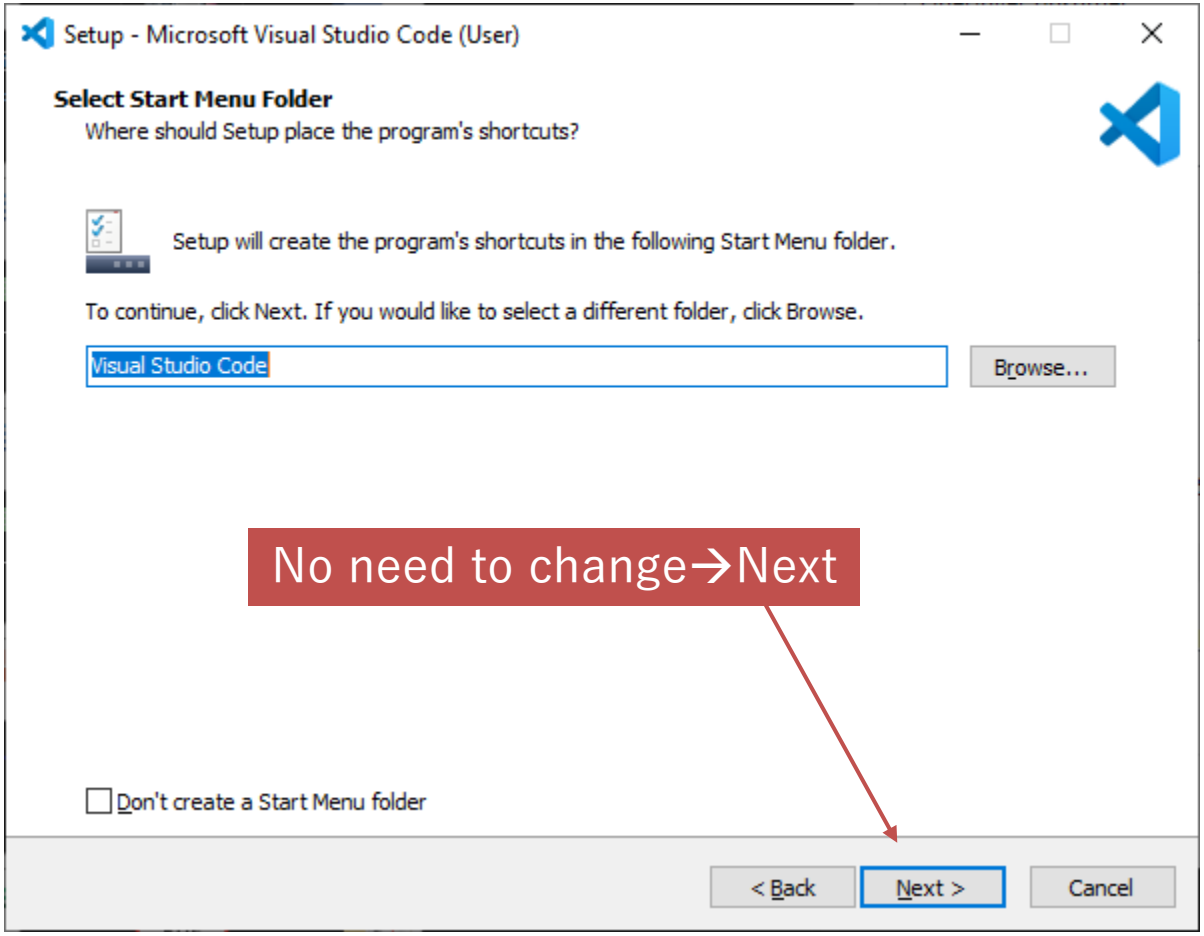
# Setup window



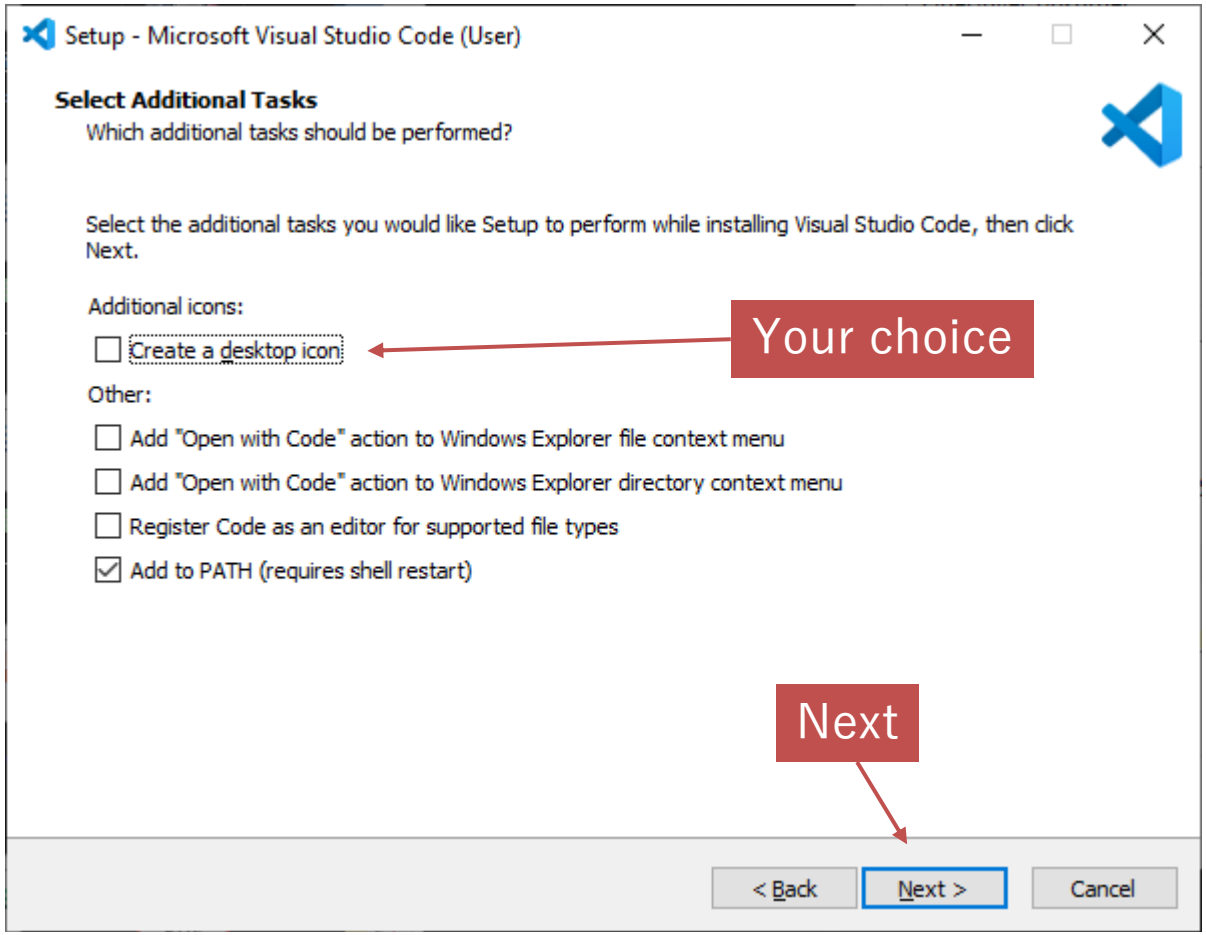
# Destination location



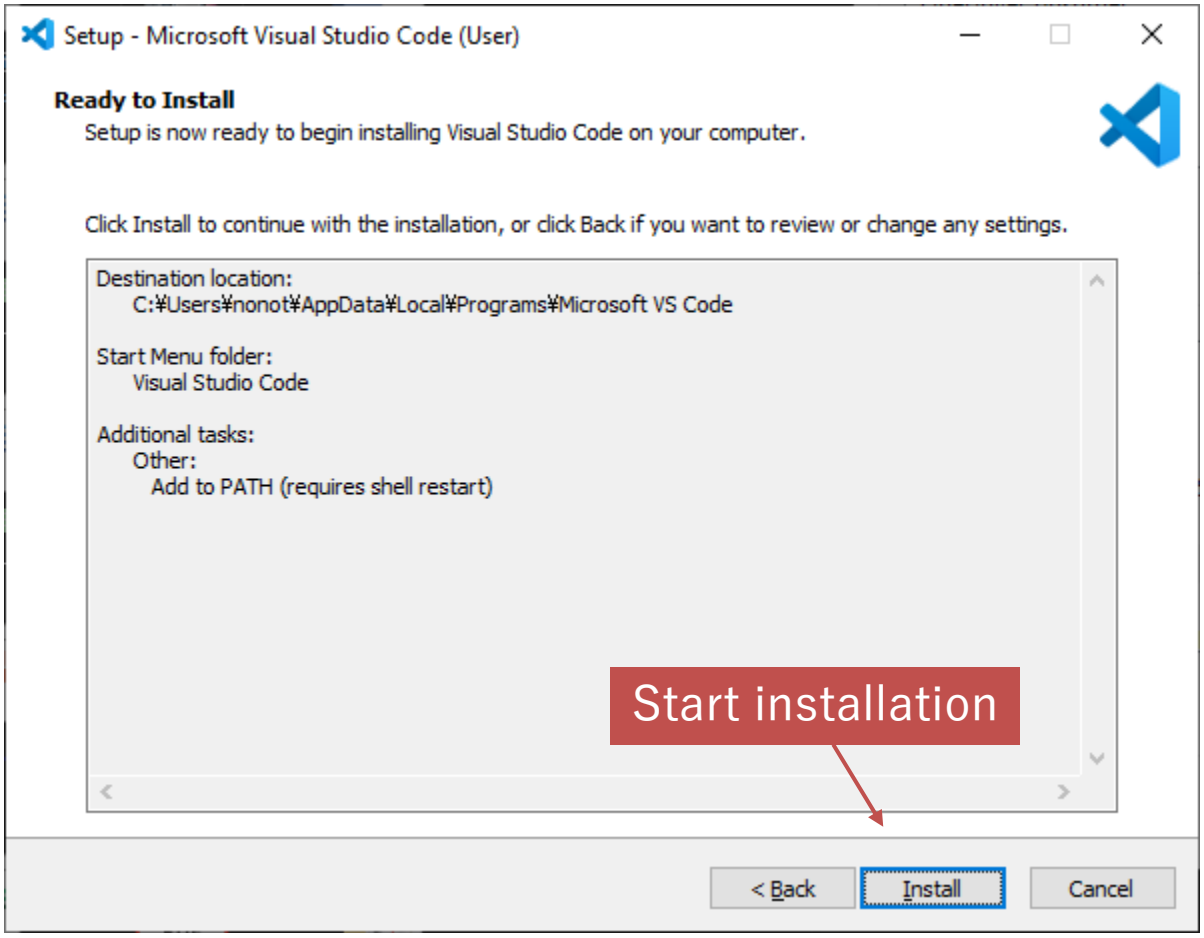
# Start Menu Folder setting



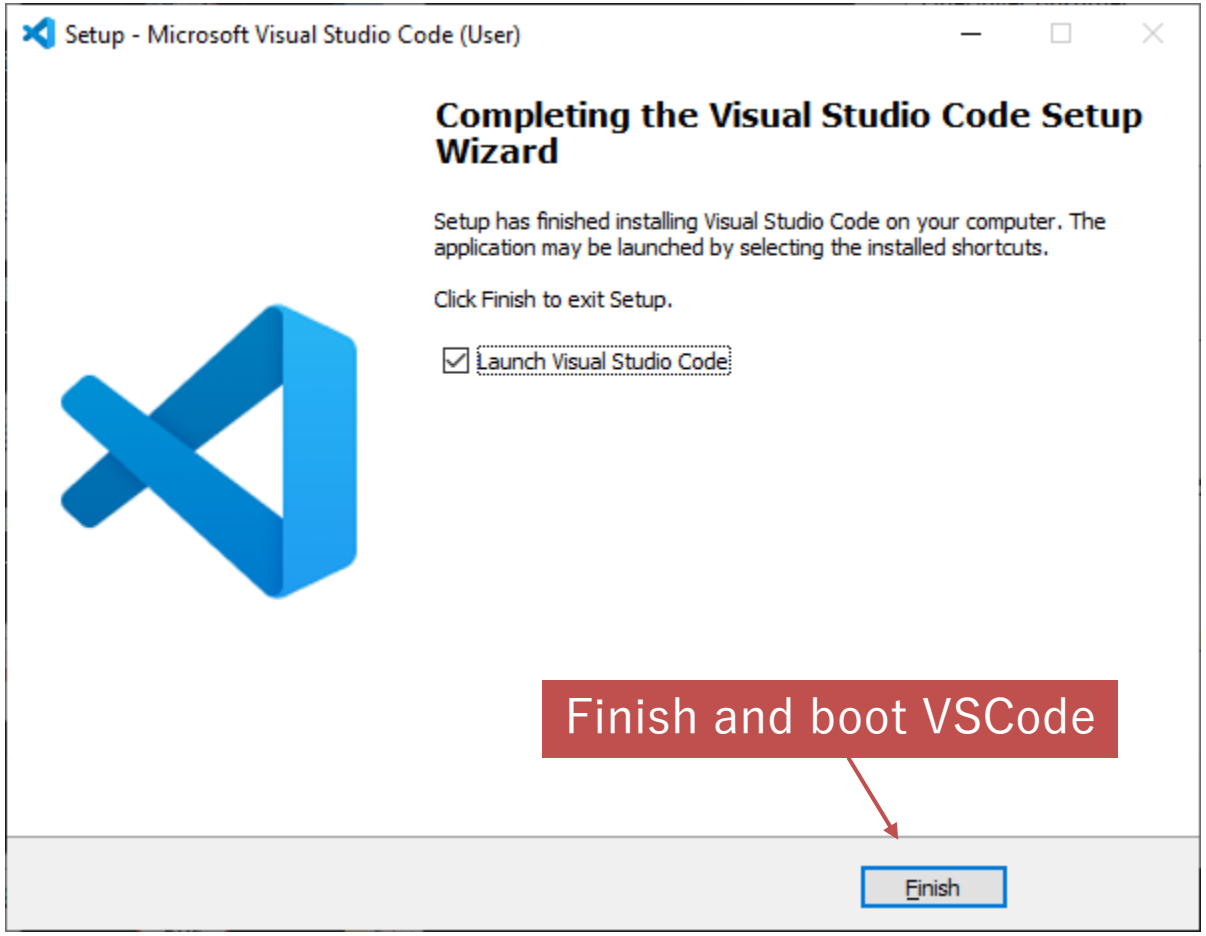
# Additional Tasks



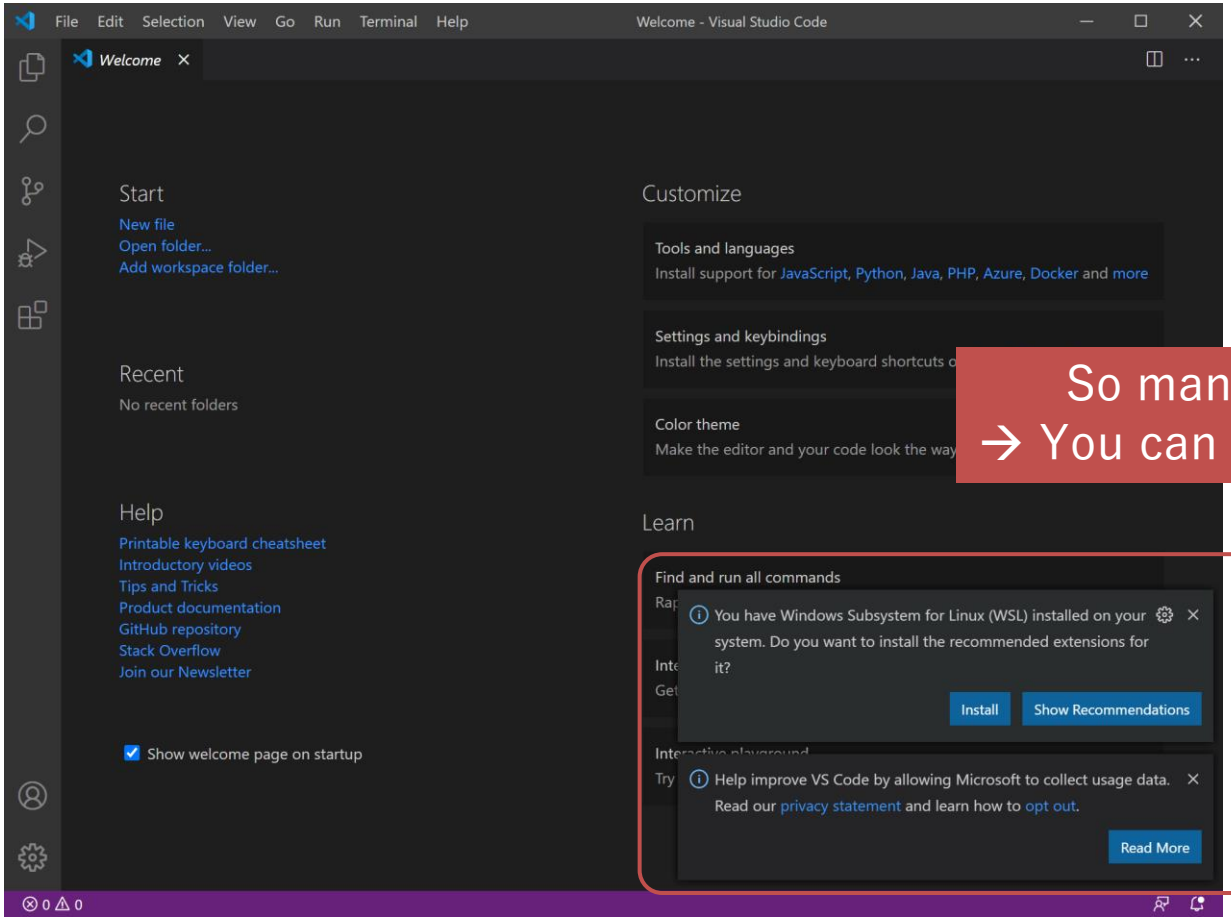
# Ready to Install



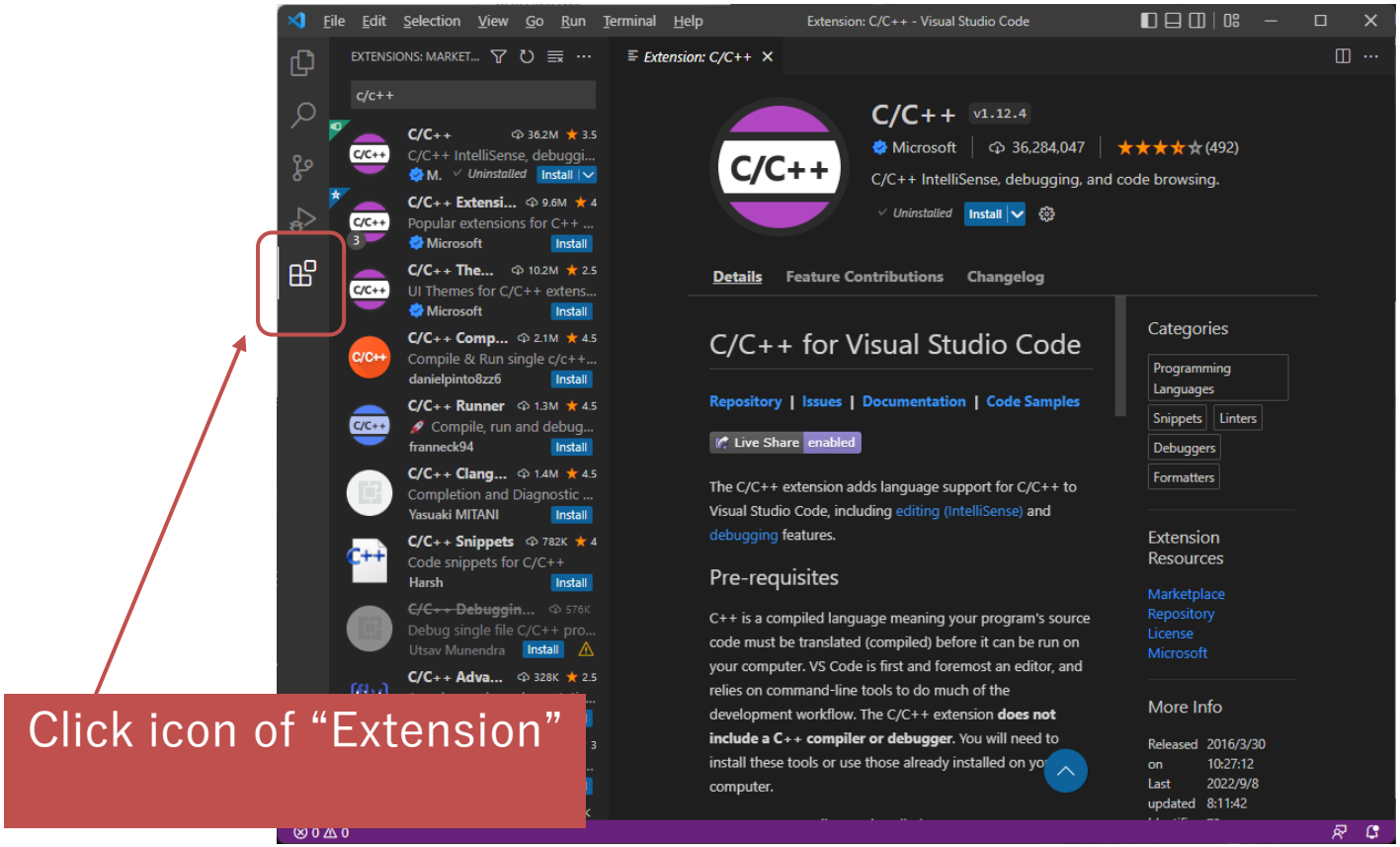
# Completing installation



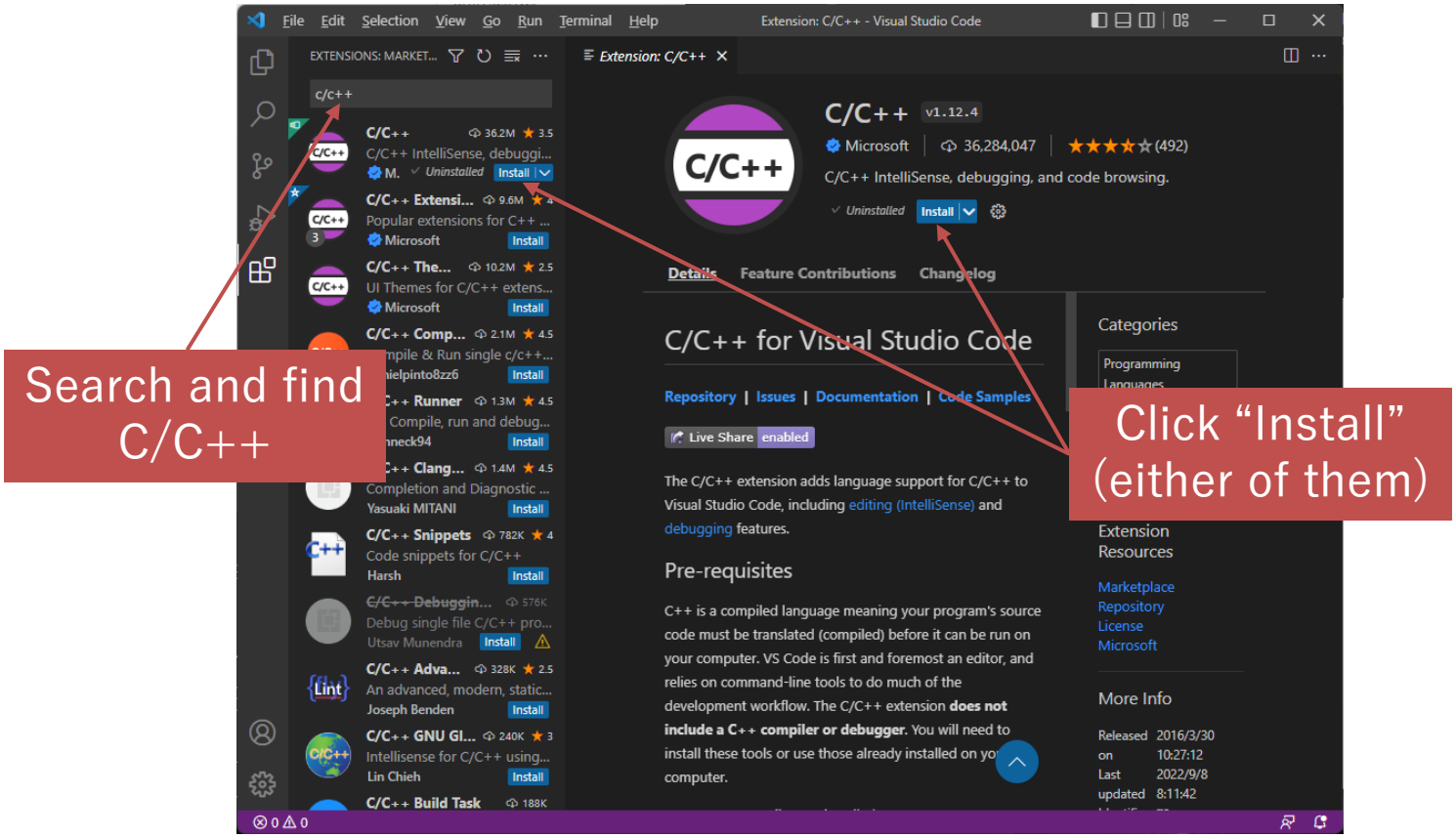
# Visual Studio Code



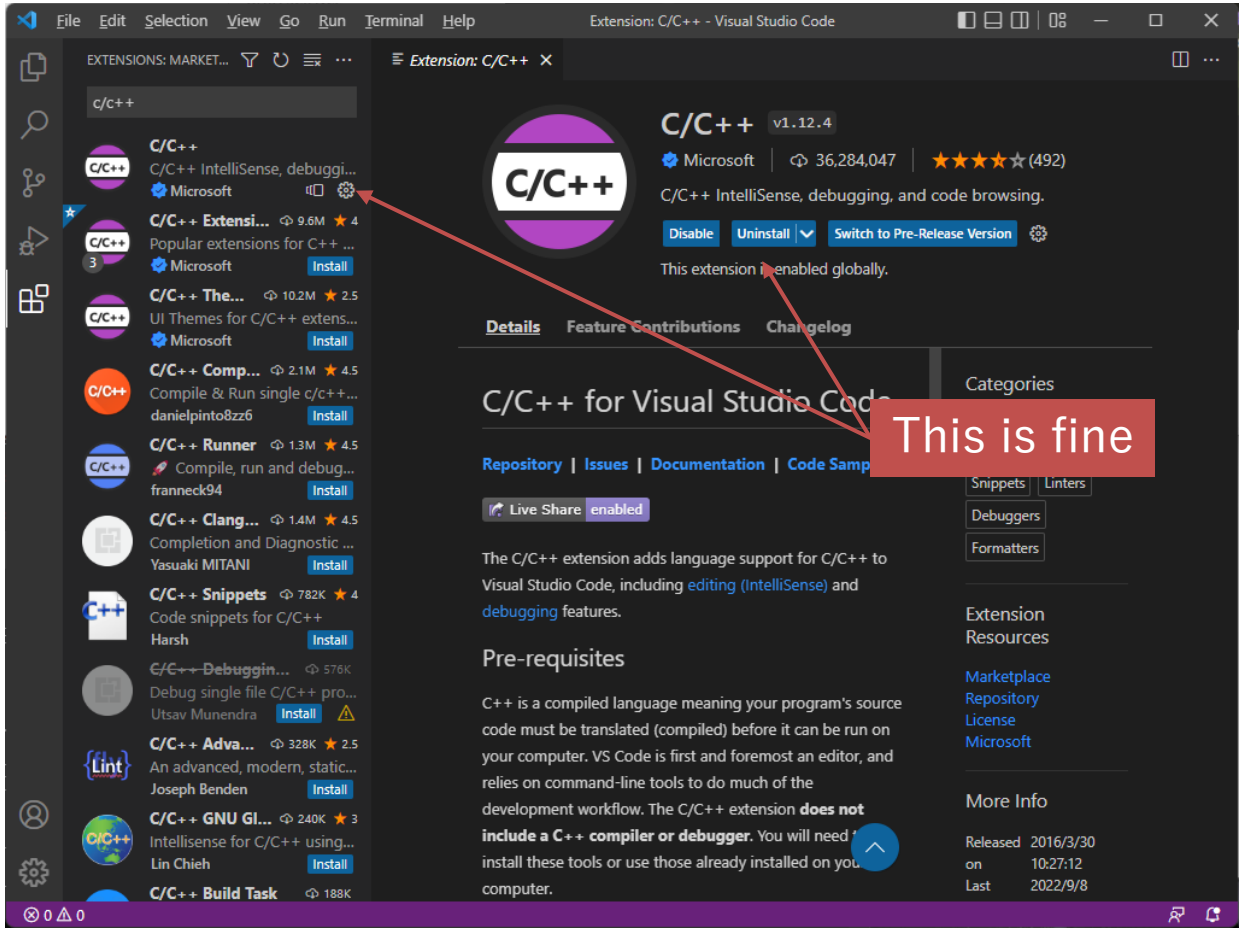
# Install extension



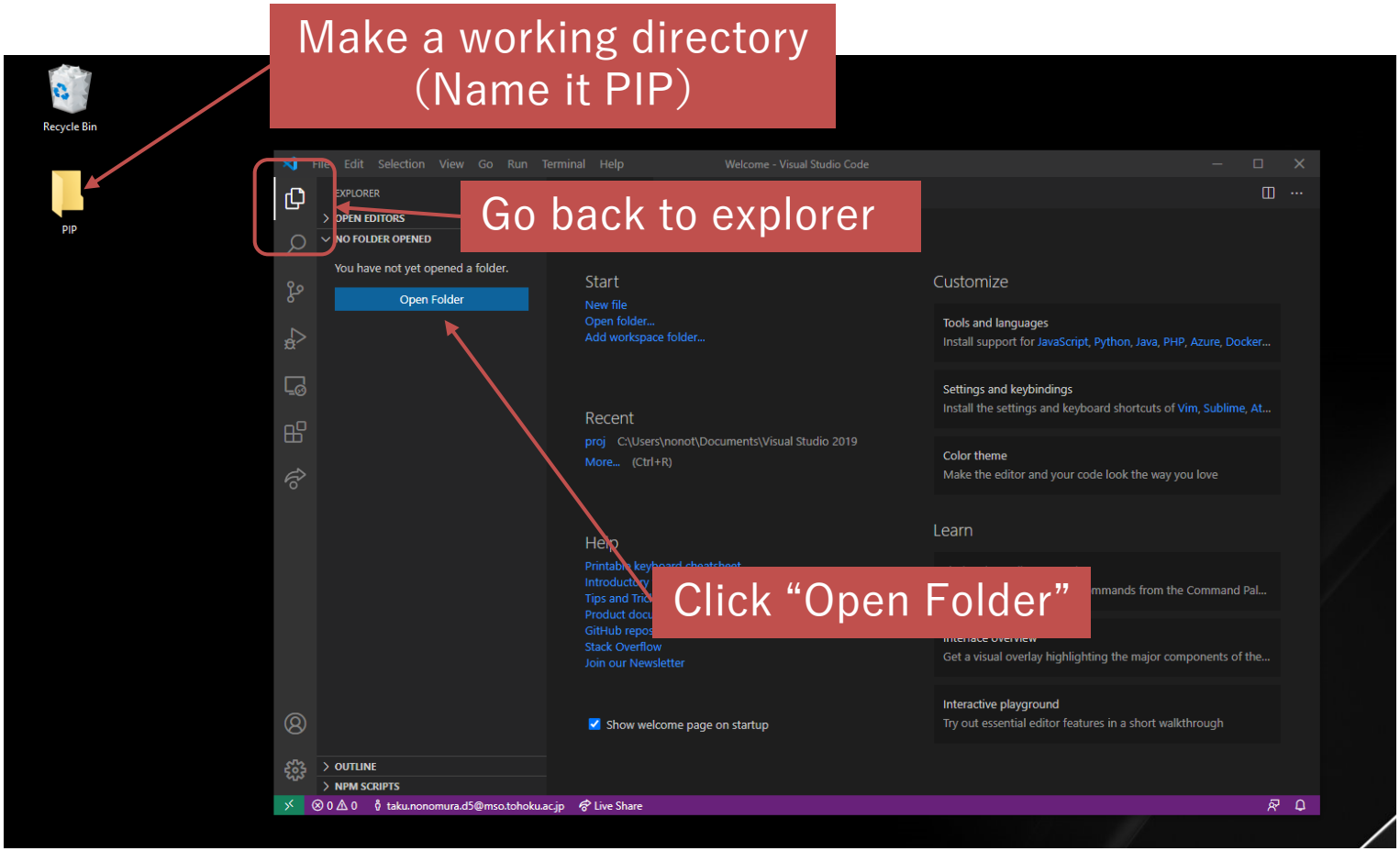
# Install C/C++ extension



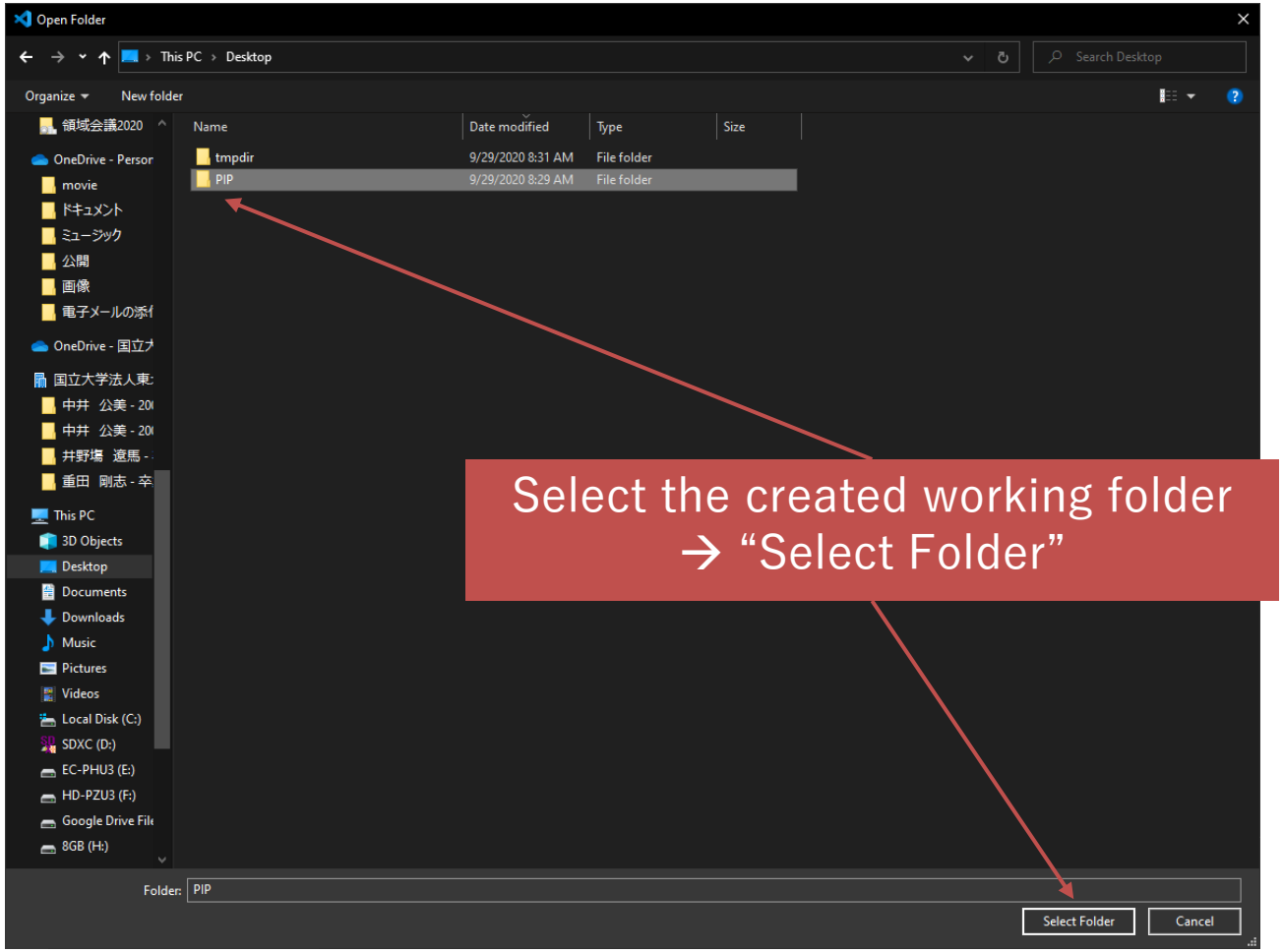
# Finish installation of C/C++ extension



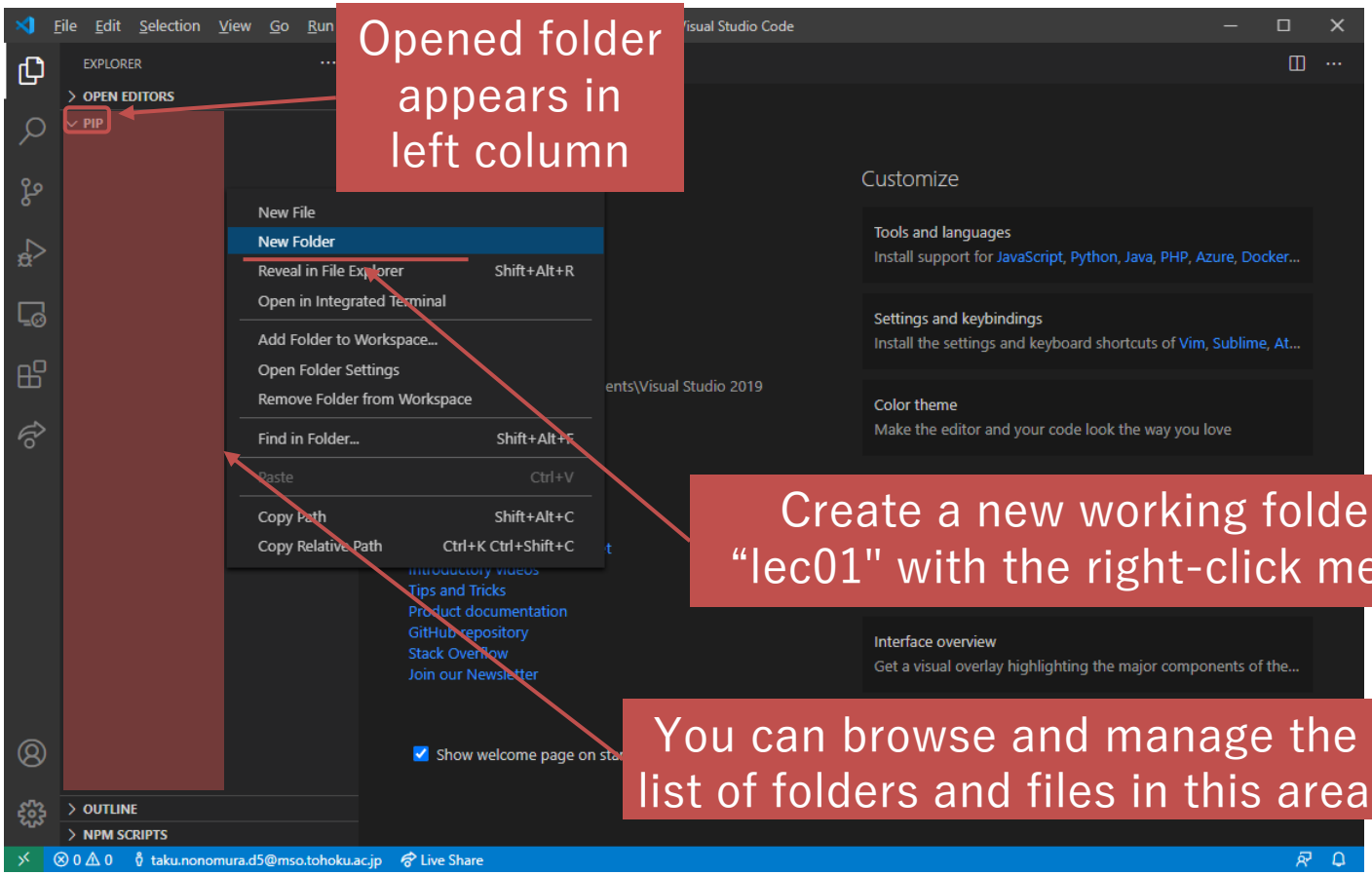
# Operation test : Make a C language program and Execute it



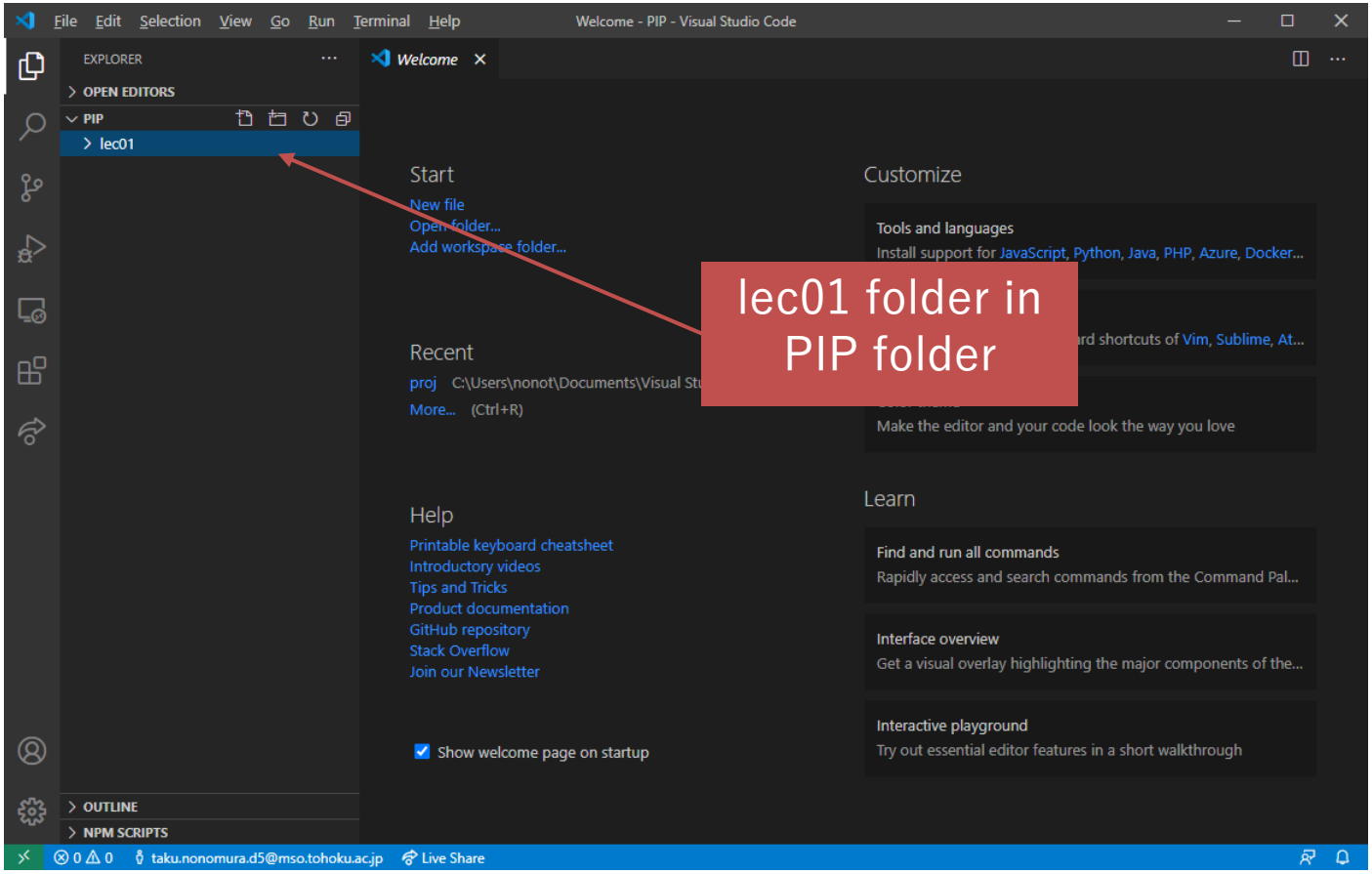
# “Open folder”window



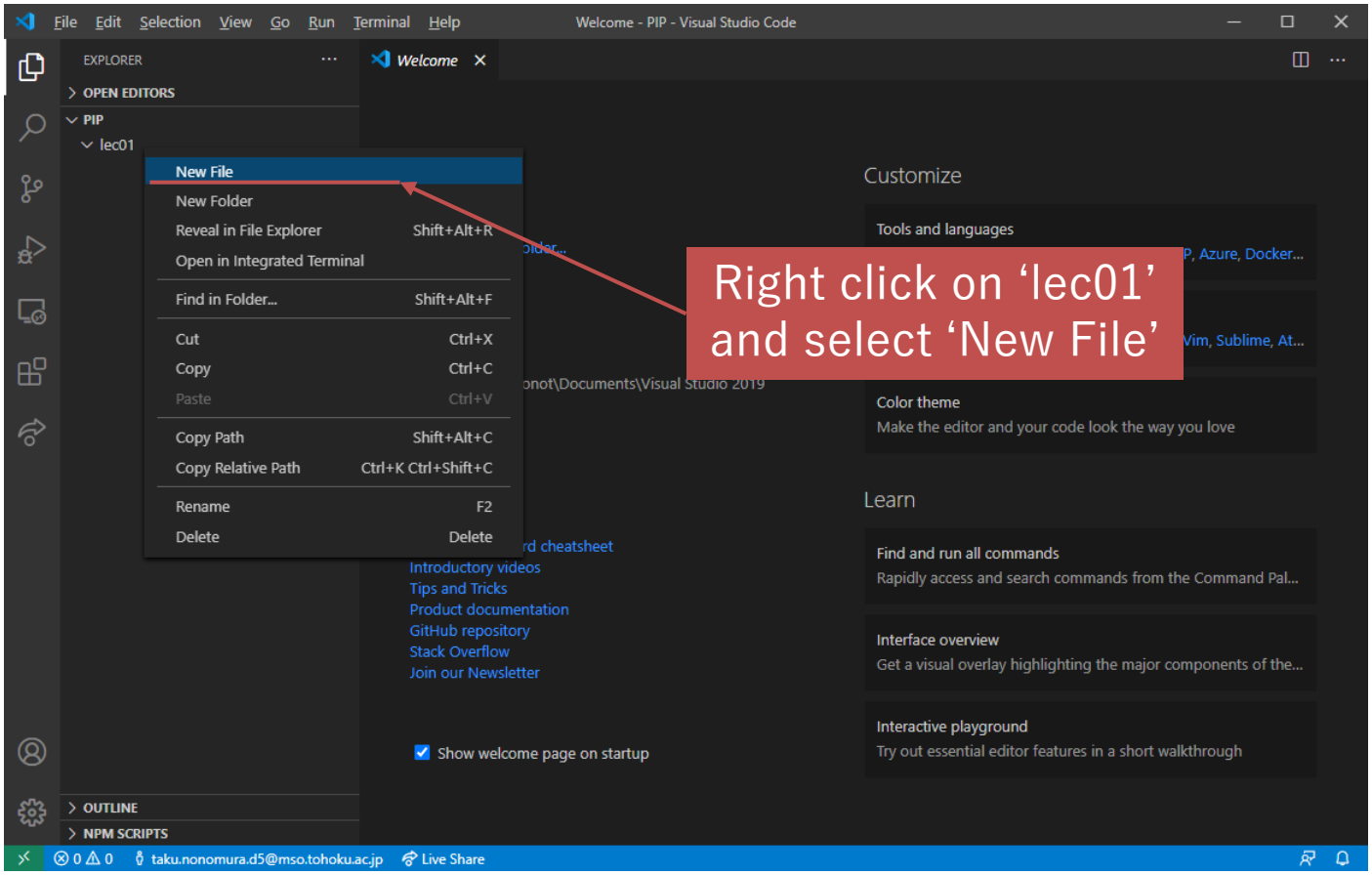
# Open folder in VSCode and make a new subfolder



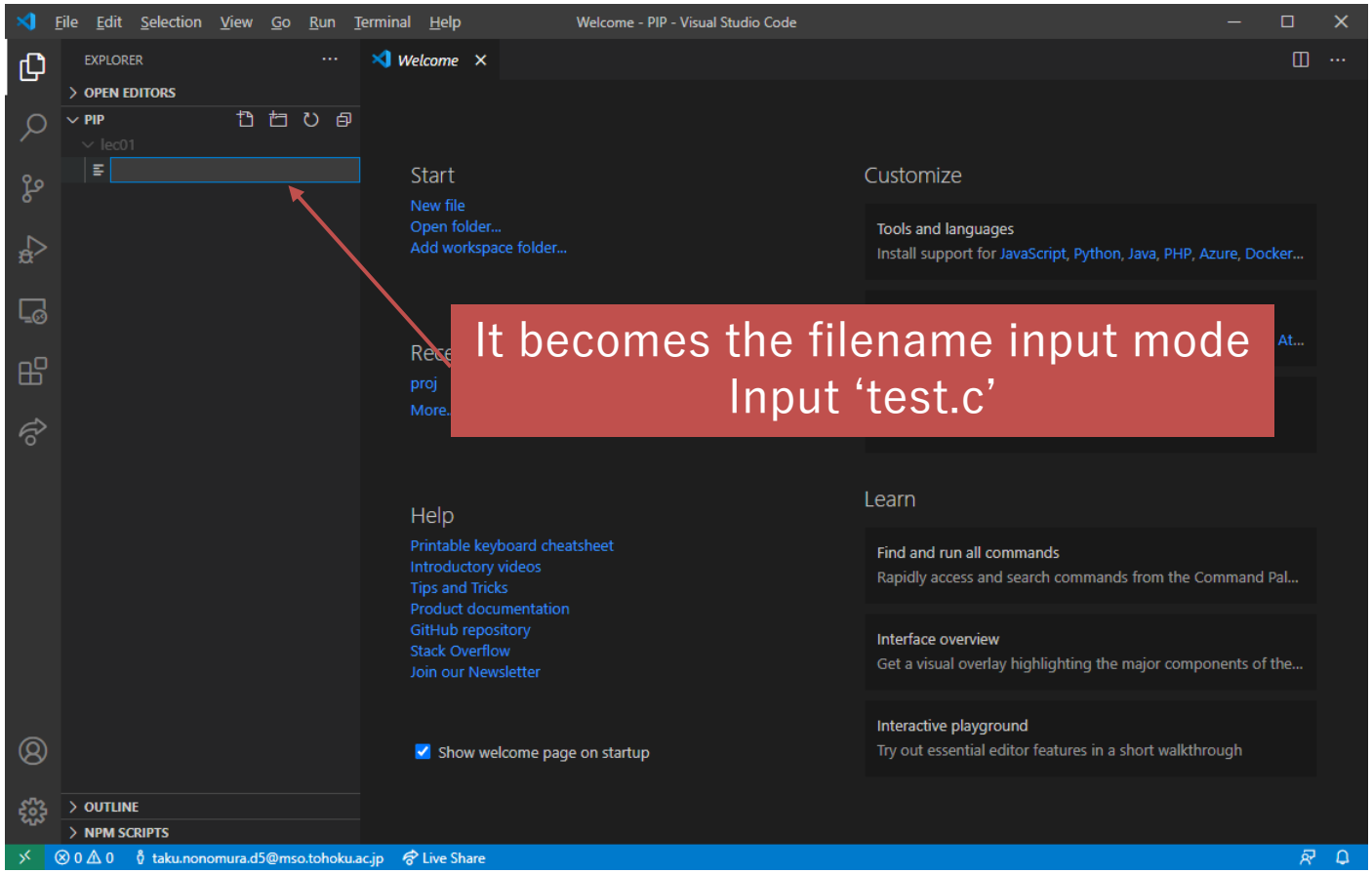
# Subfolder for lecture in folder



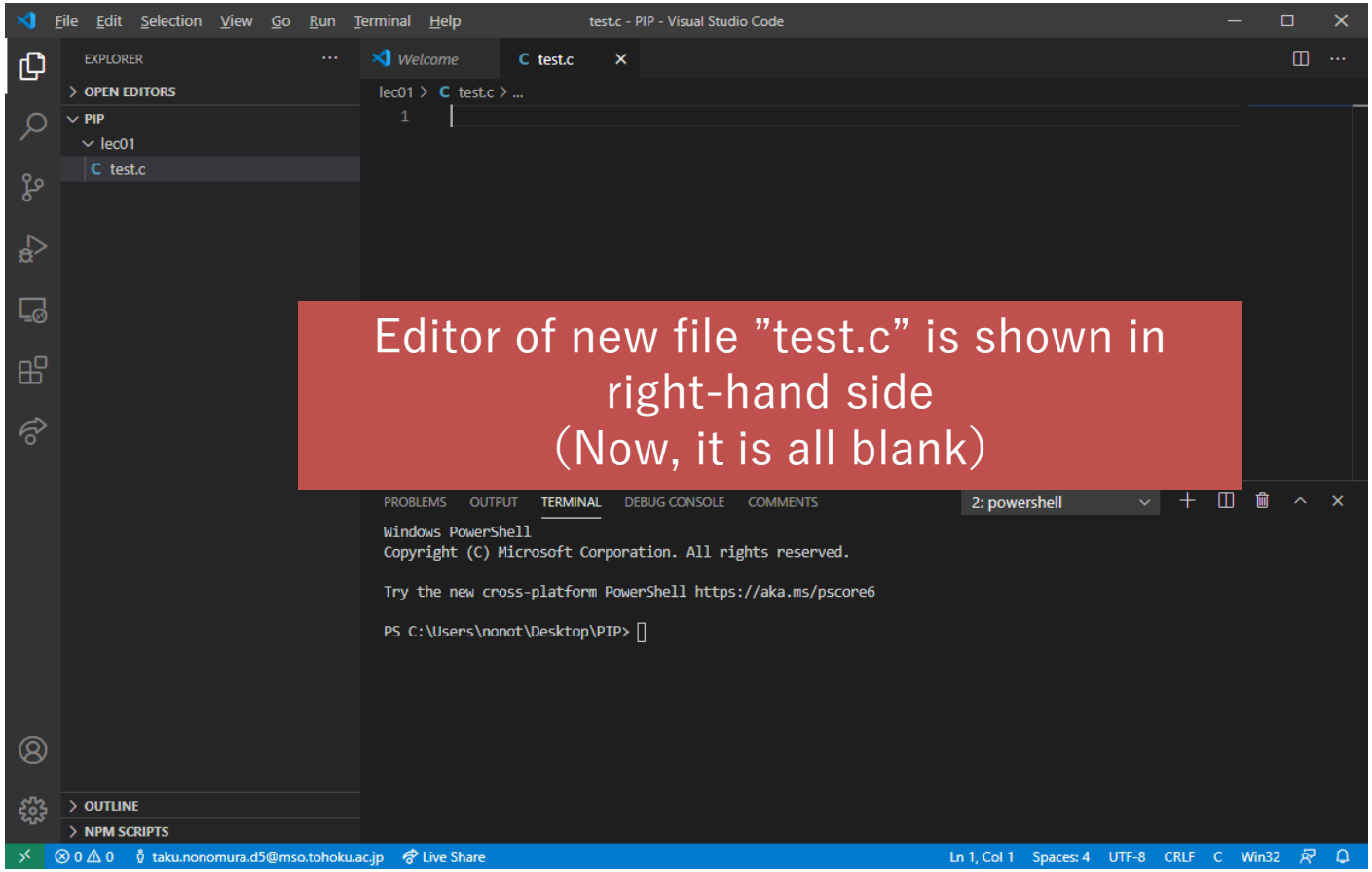
# Create source file in lec01



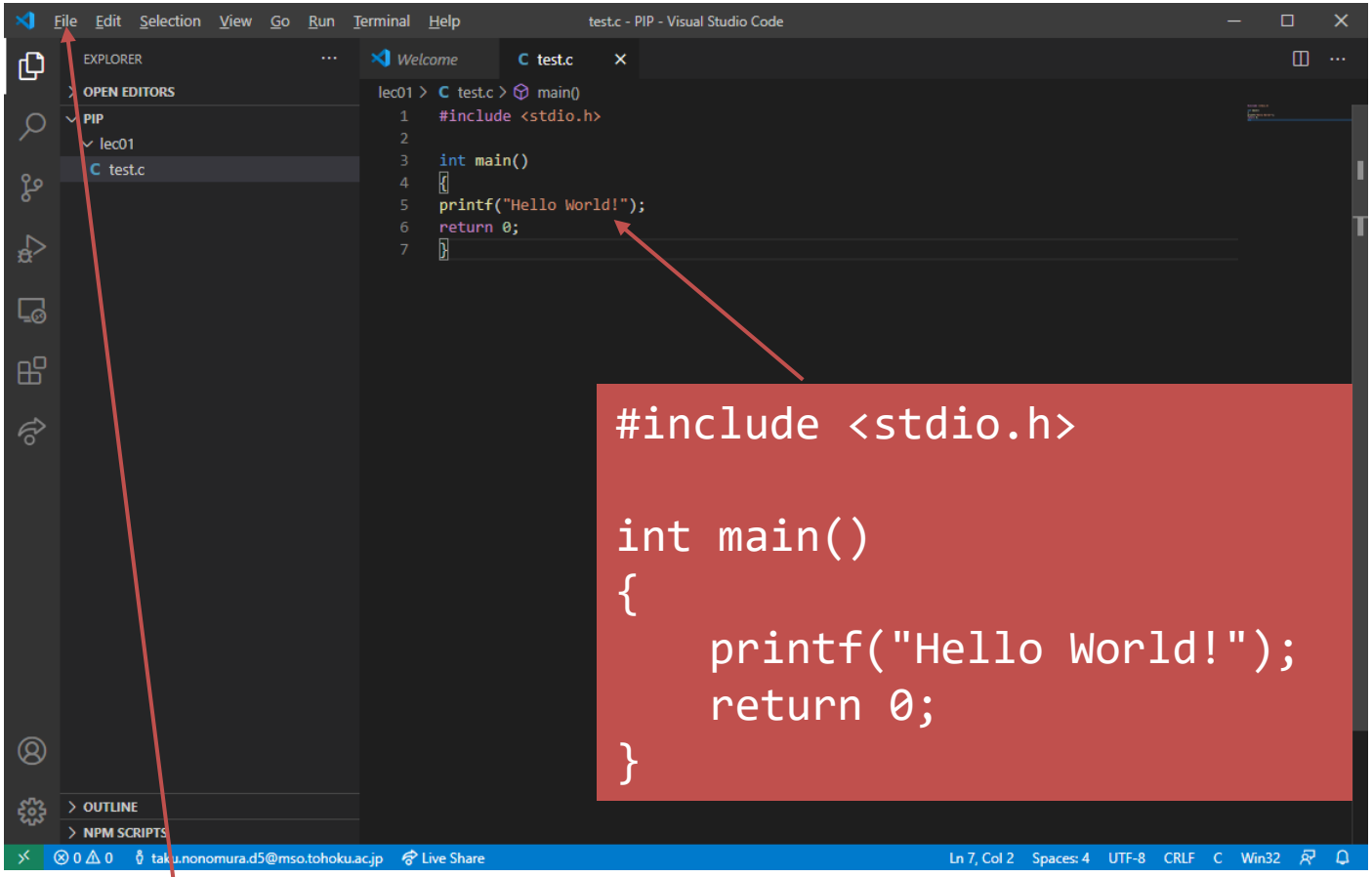
# Input name of “New File”



# Completion of new file generation

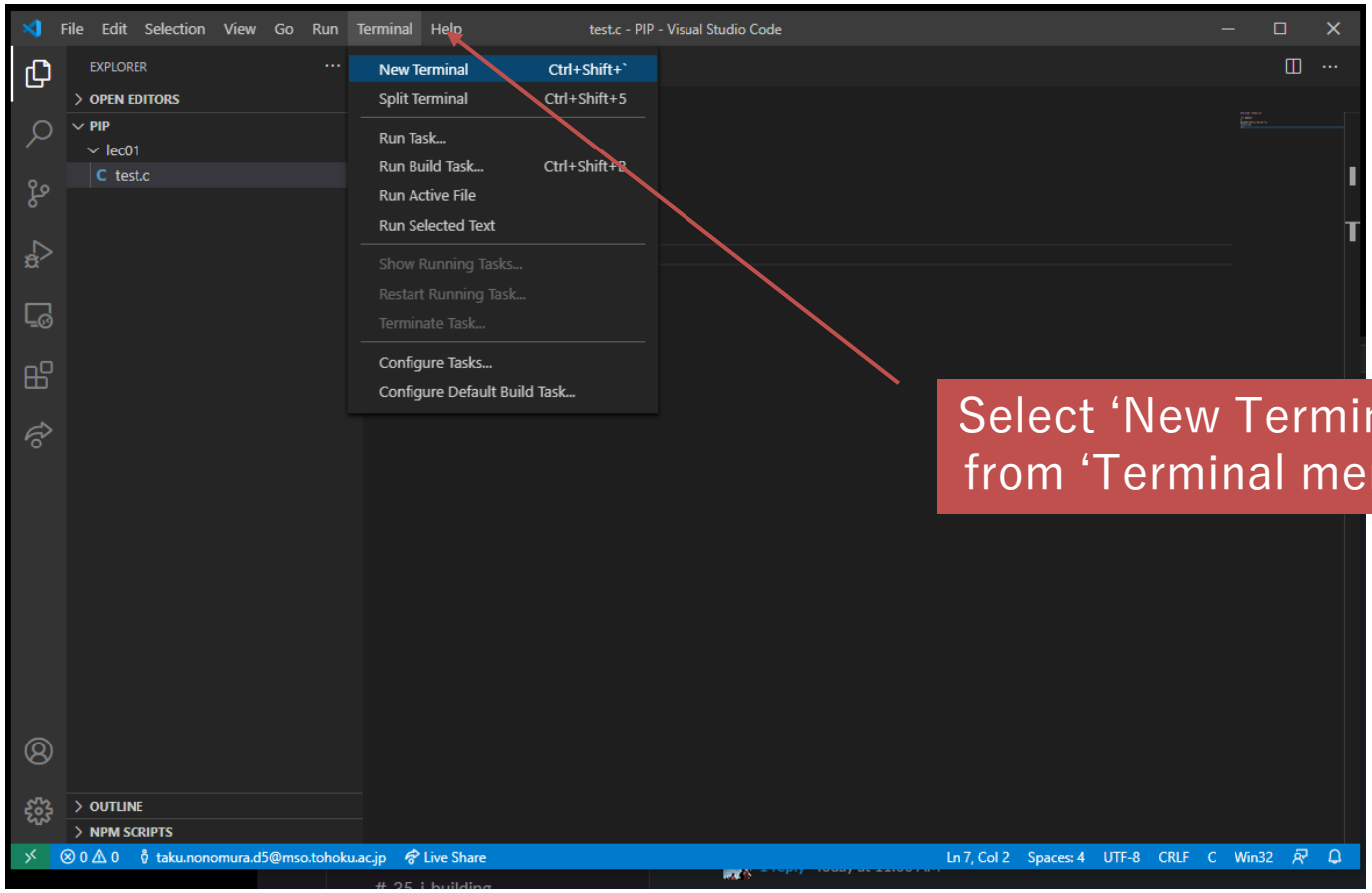


# Write source code contents:

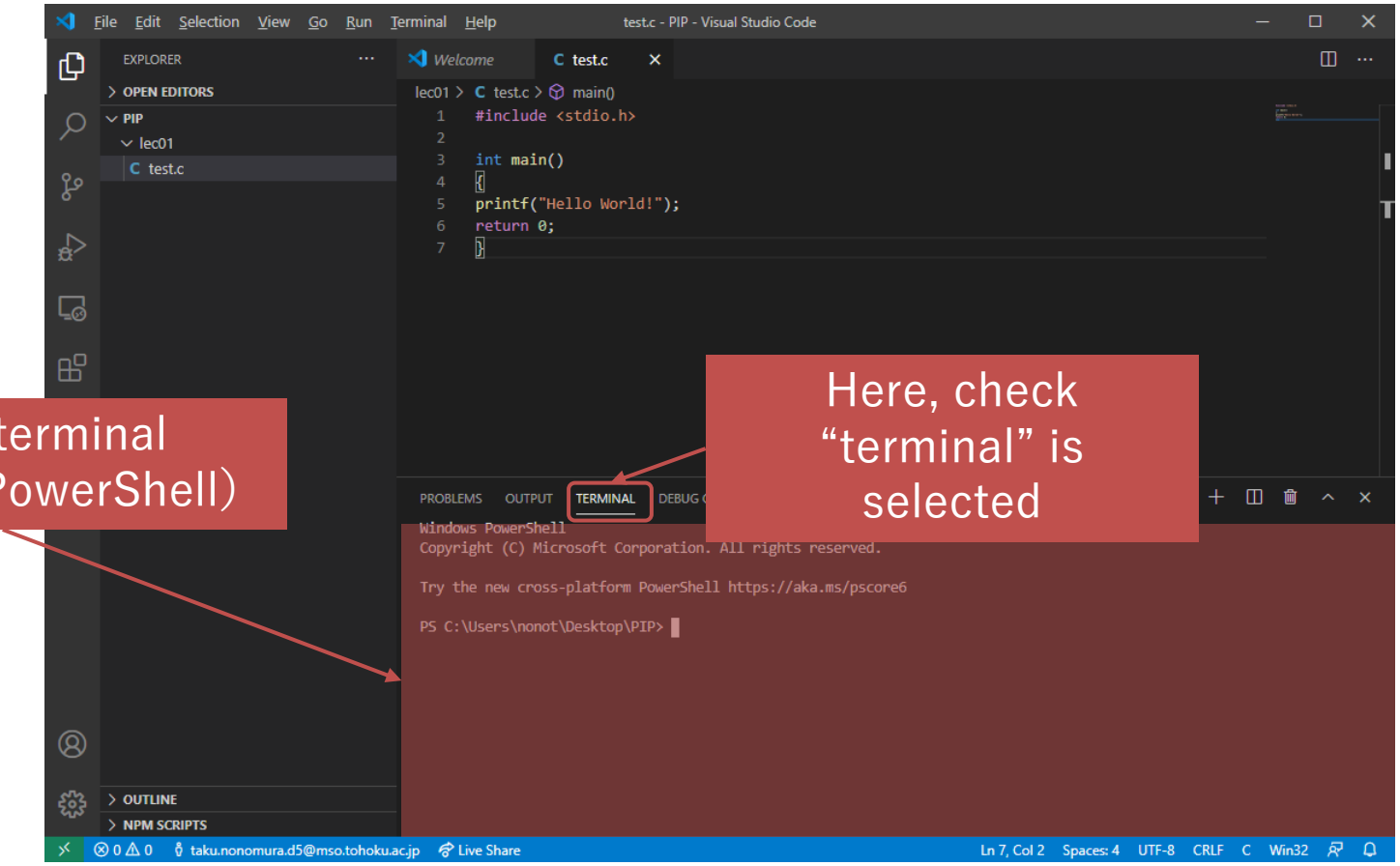



'Save' file from 'File' menu after you write the program

# Open Terminal



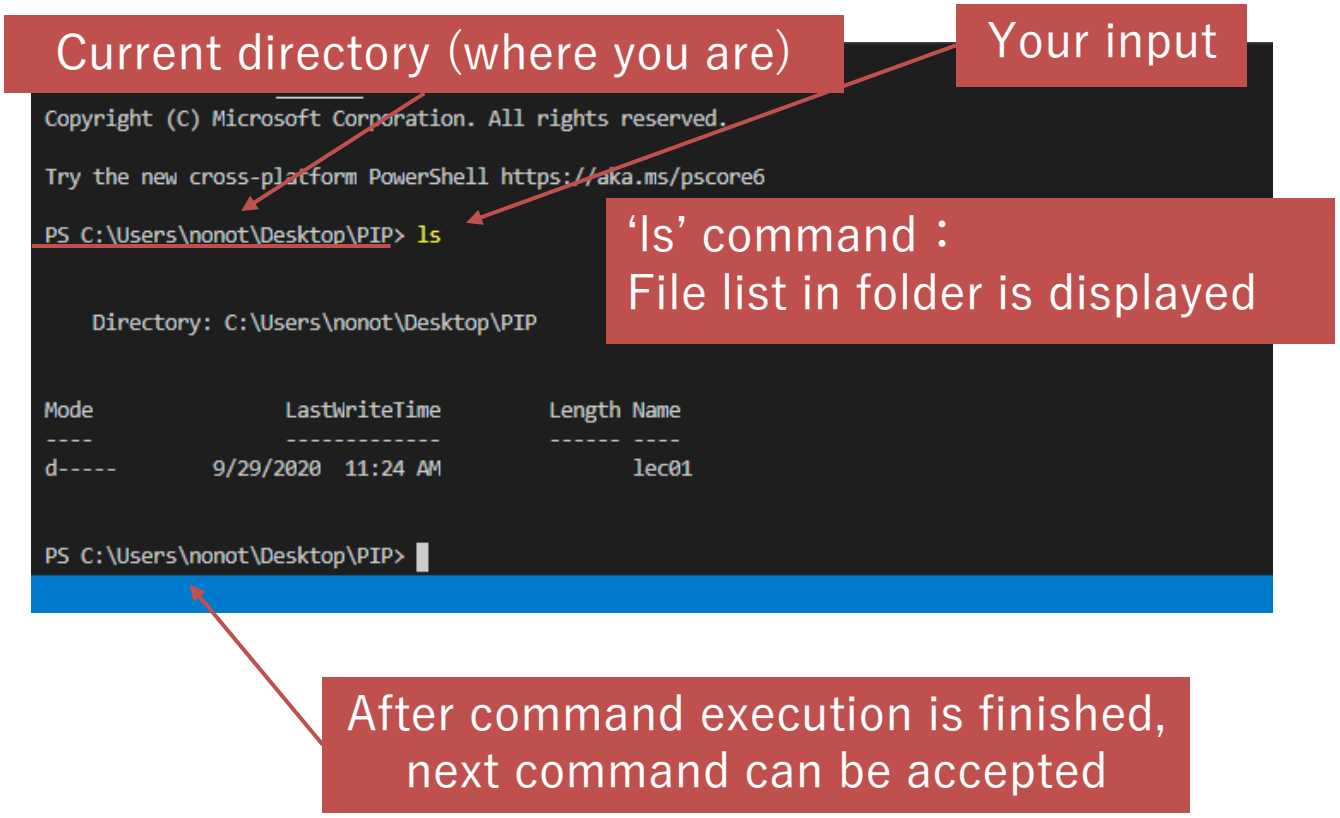
# Terminal opens



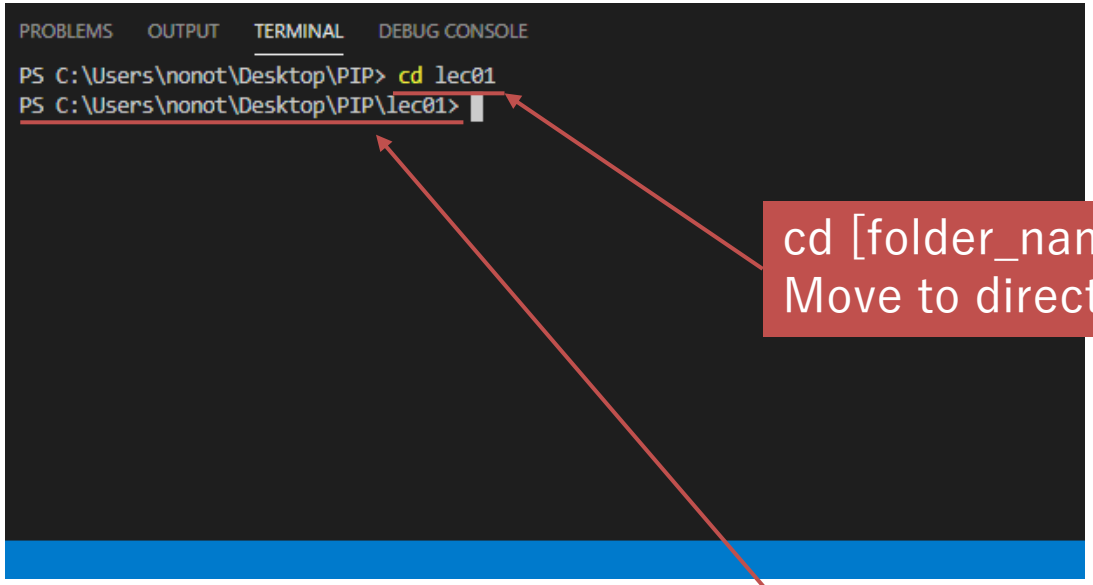

This is terminal
(same as PowerShell)

Here, check
“terminal” is
selected

# Command for list display



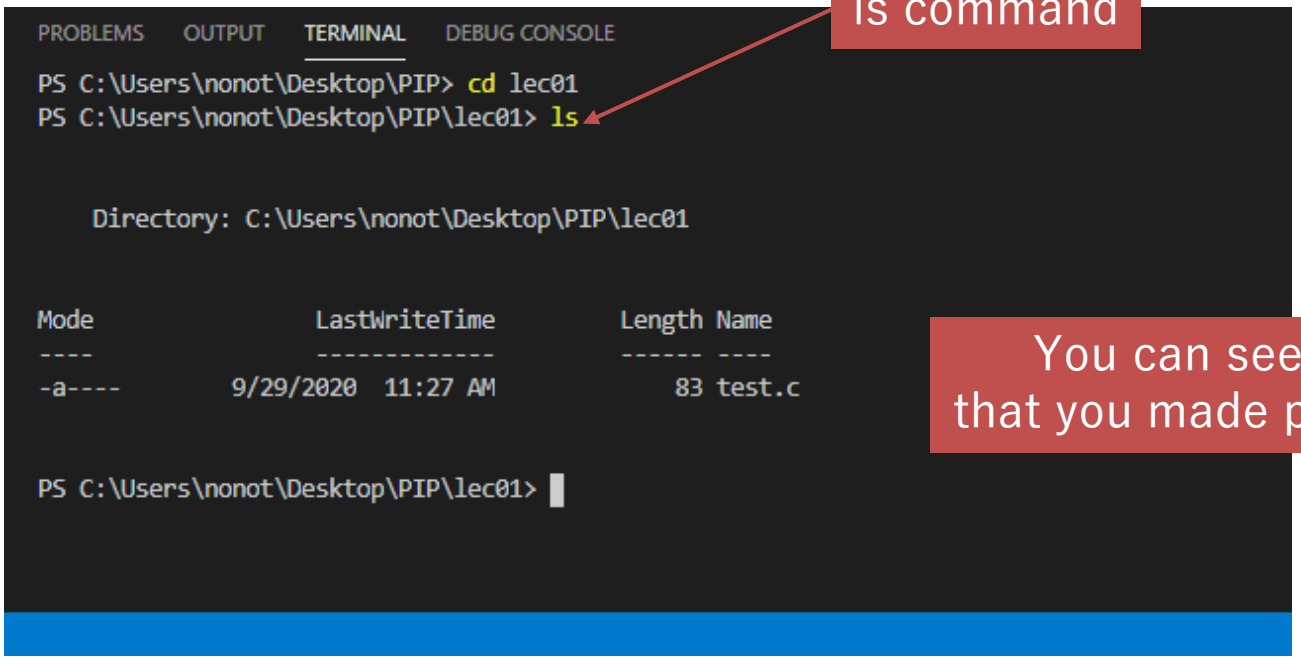
# Move to subfolder



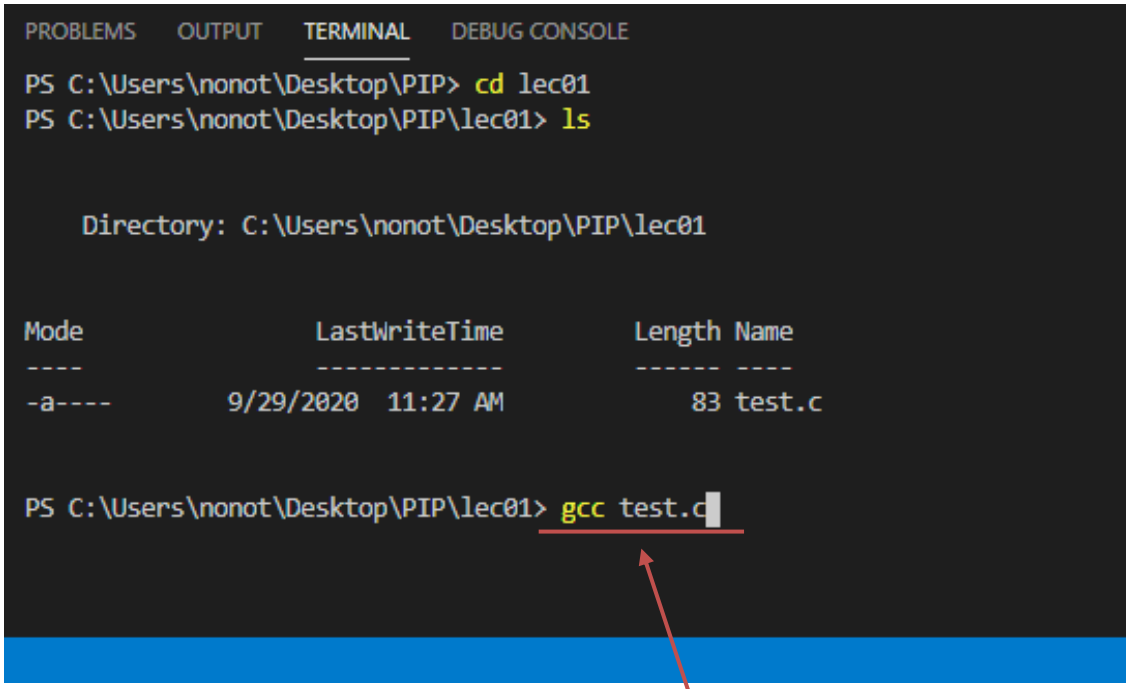

cd [folder_name]:
Move to directory ‘folder_name’

Moved into ‘lec01’

# Confirm the contents of folder

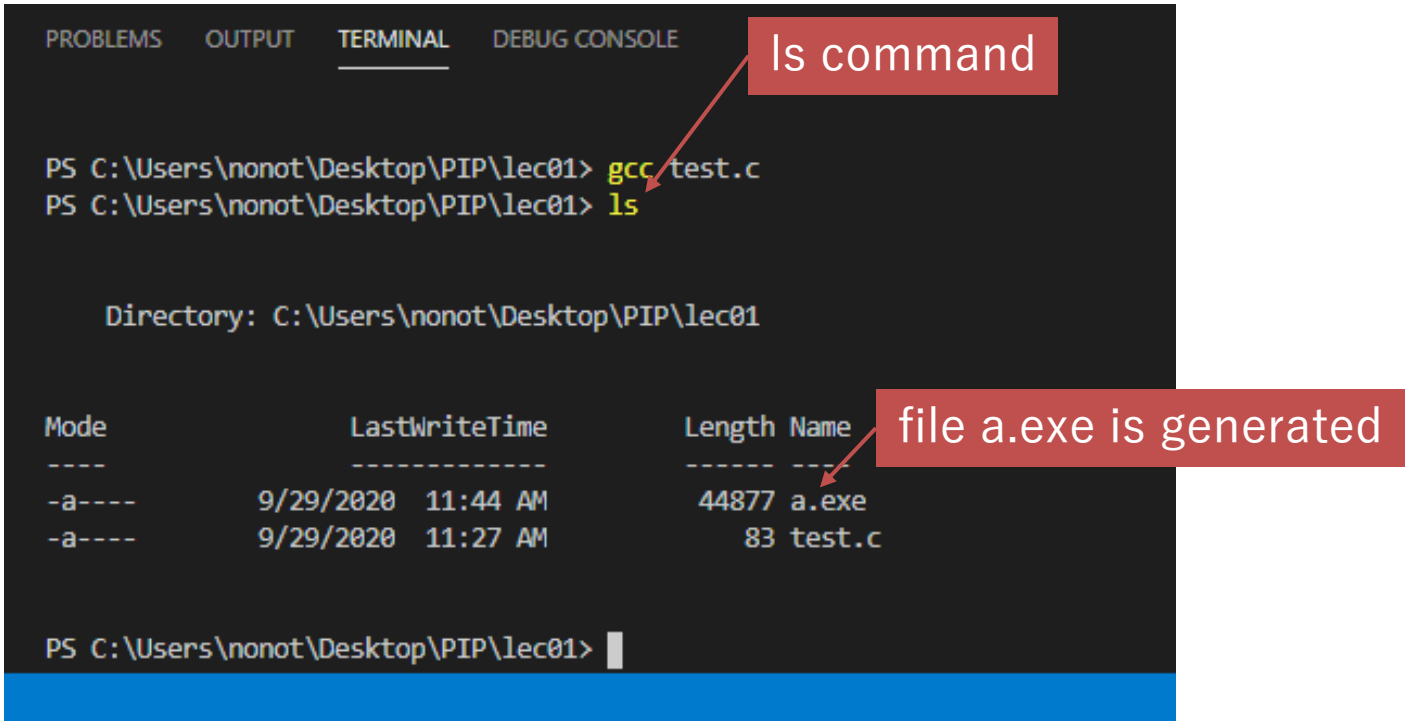


# Compile of source code

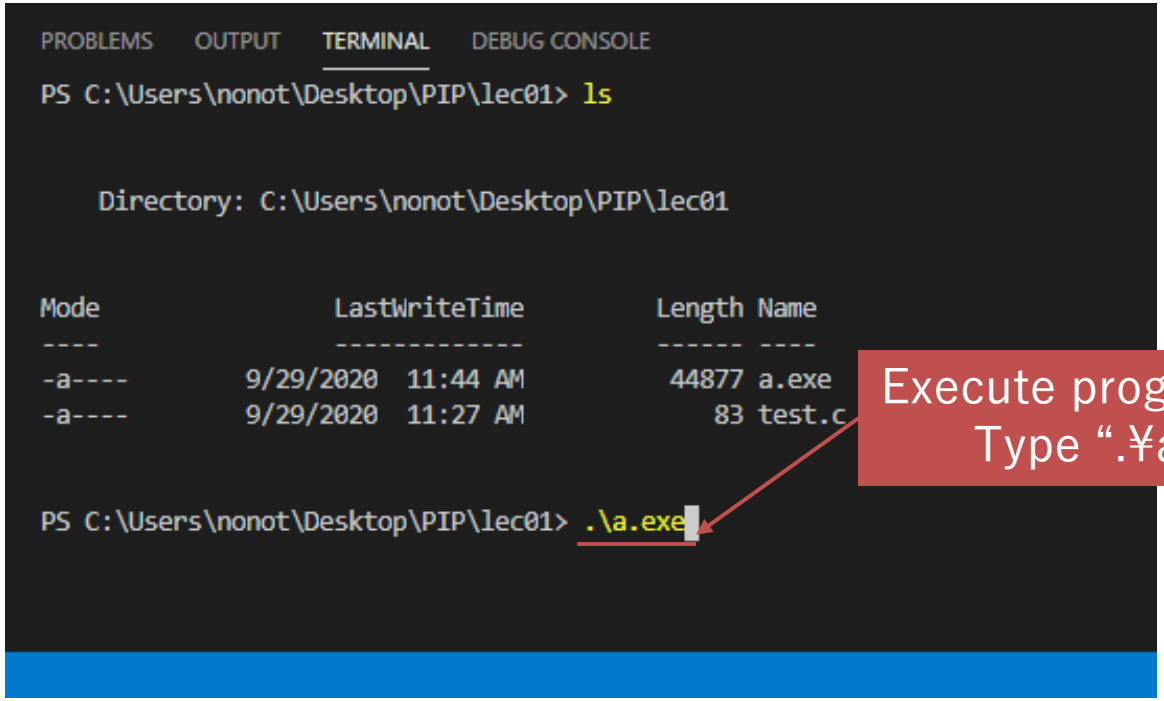



Type ‘gcc test.c’
Push Enter key

# Execution file is generated



# Execution of program




Program will finish with displaying HelloWorld! If it is success

If required

# Failed to run : Anti-virus software

```
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\nonot\Desktop\PIP> cd lec01
PS C:\Users\nonot\Desktop\PIP\lec01> .\a.exe
Program 'a.exe' failed to run: Access is deniedAt line:1 char:1
+ .\a.exe
+ ~~~~~~~~.
At line:1 char:1
+ .\a.exe
+ ~~~~~~~~
    + CategoryInfo          : ResourceUnavailable: (:) [], ApplicationFailedException
    + FullyQualifiedErrorId : NativeCommandFailed

PS C:\Users\nonot\Desktop\PIP\lec01>
```
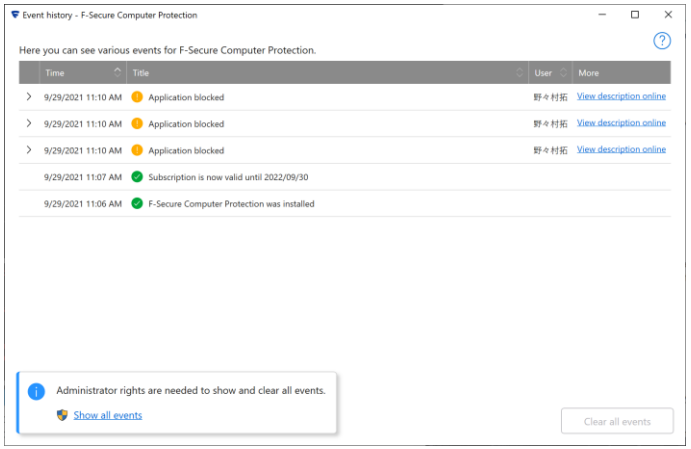

c:jp  Live Share  Ln 3, Col 2  Spaces: 4





Sometimes the program you just created is judged to be a suspicious program and execution is blocked.

If required

# Configuration of with-secure that is distributed by University

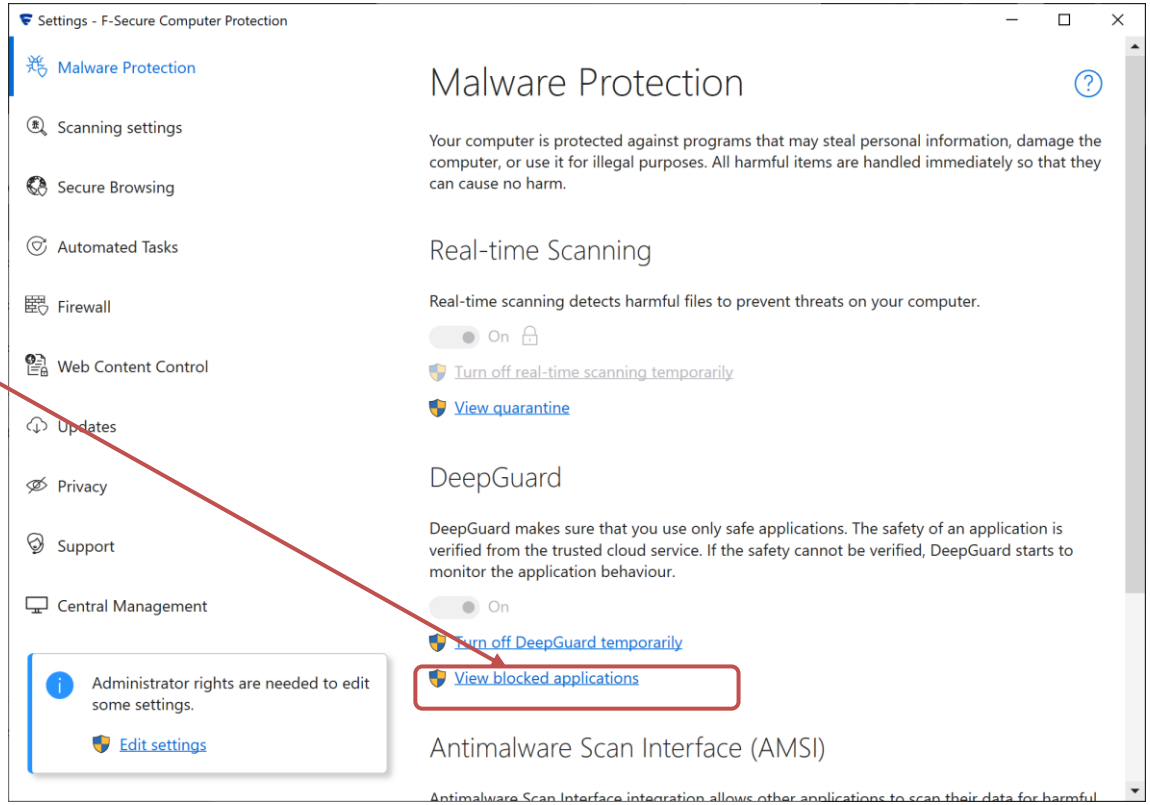
Click F-Secure of
the right bottom bar of windows


Click Settings

If required

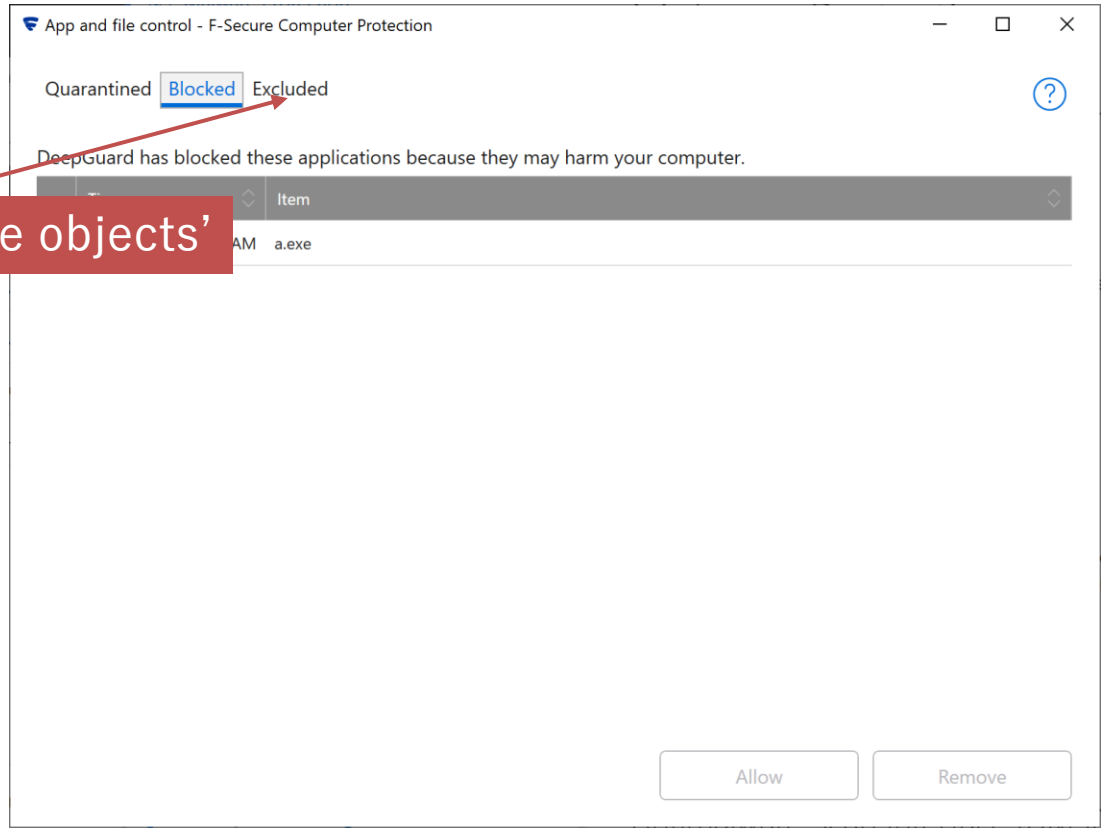
# F-Secure set up

Select
“View blocked application”



If required

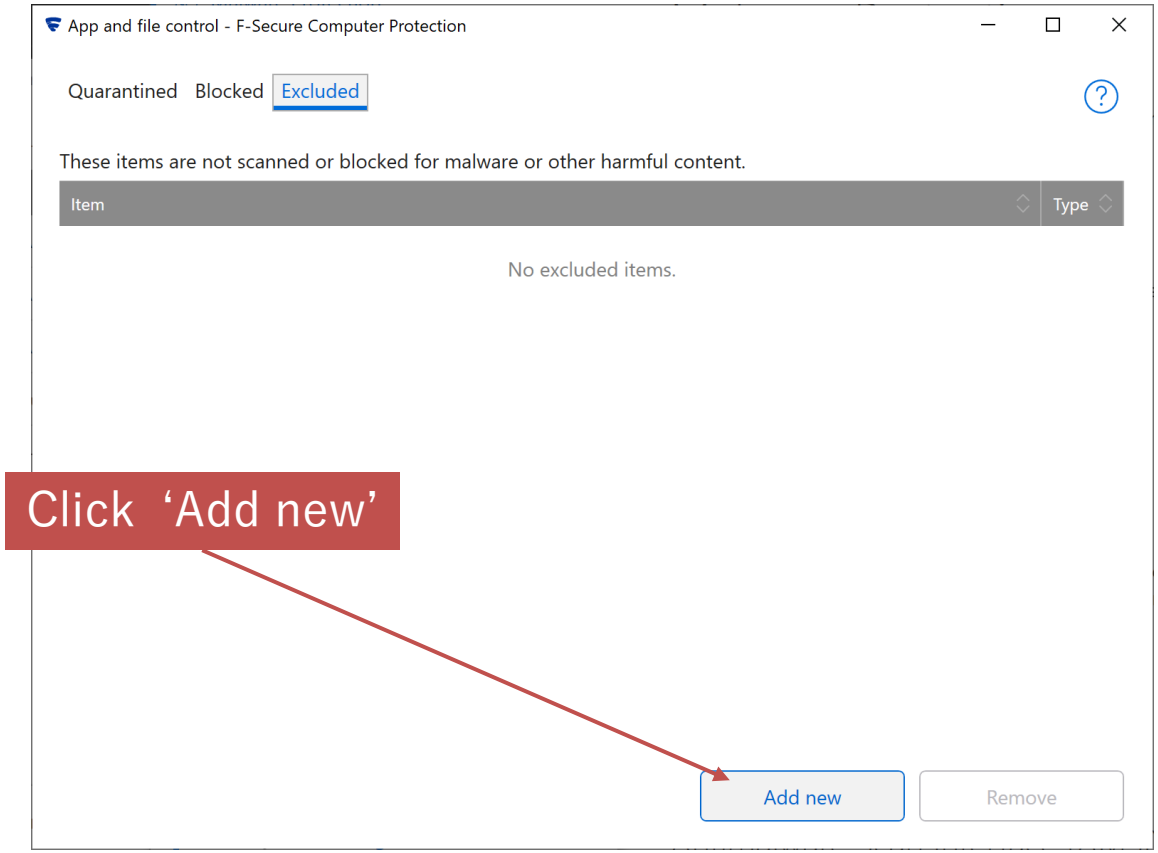
# “App and file control” window




Check in ‘Exclude objects’

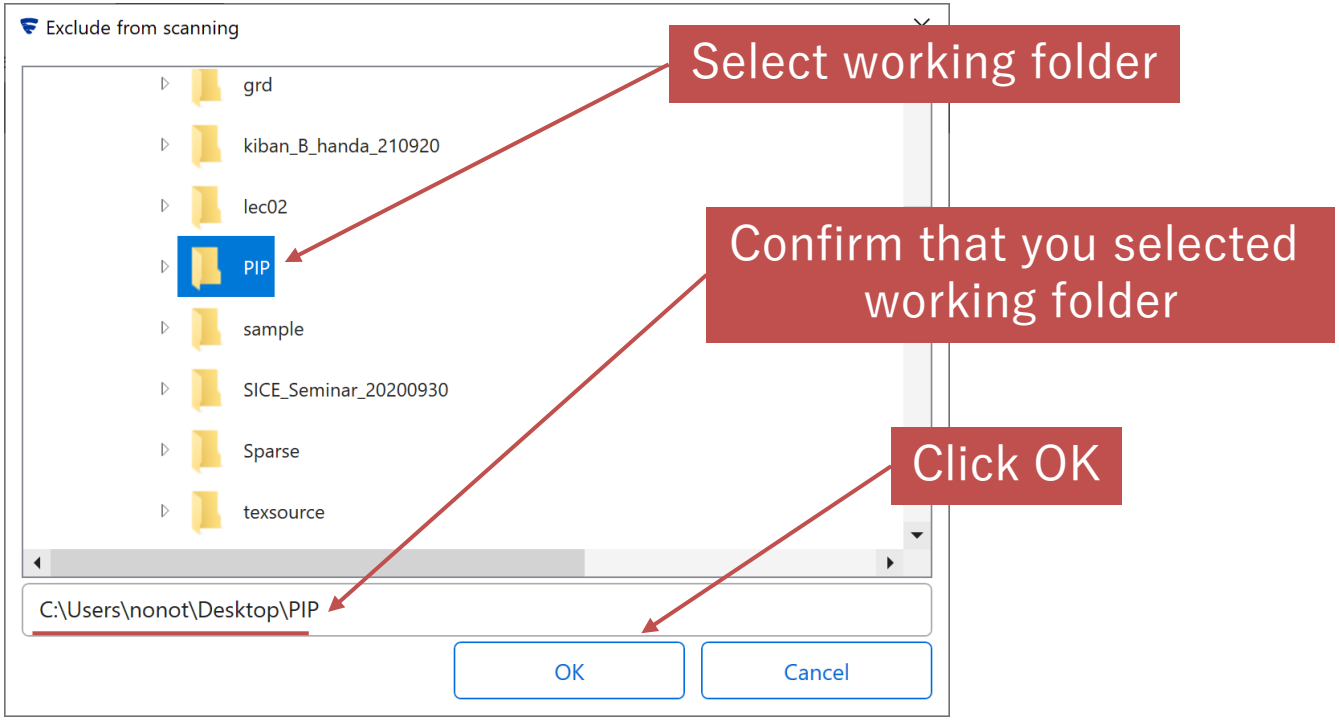
If required

# “App and file control” window



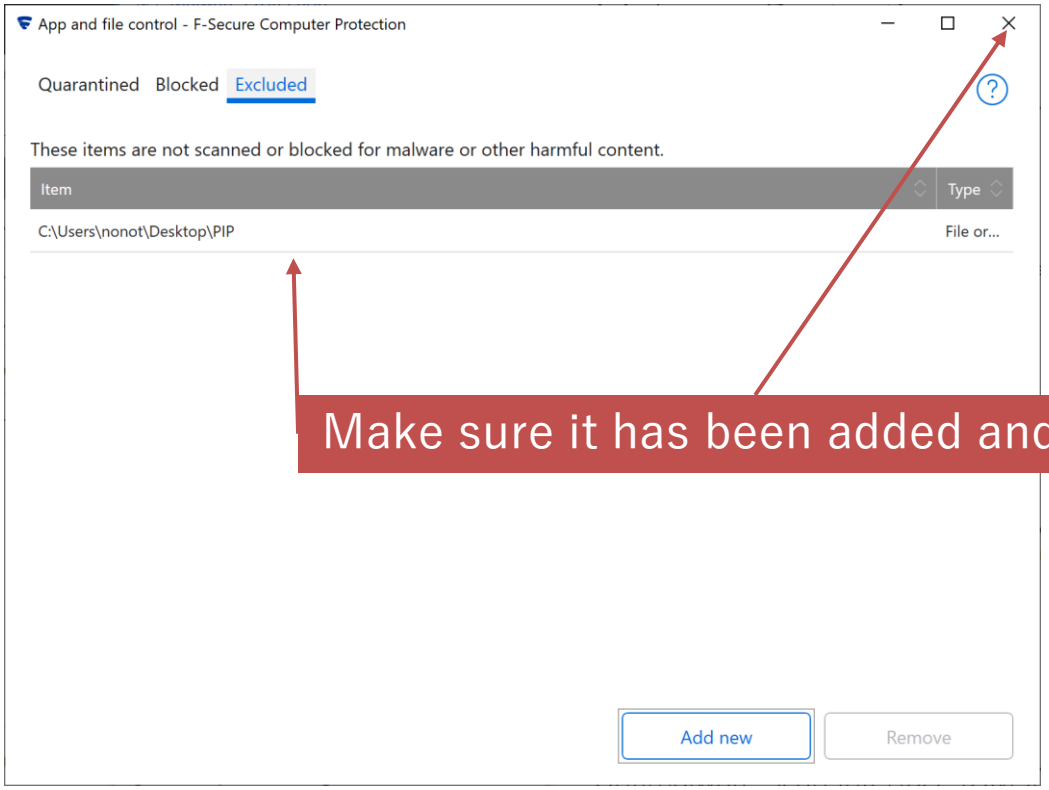
If required

# Specify the “Exclude folder’



If required

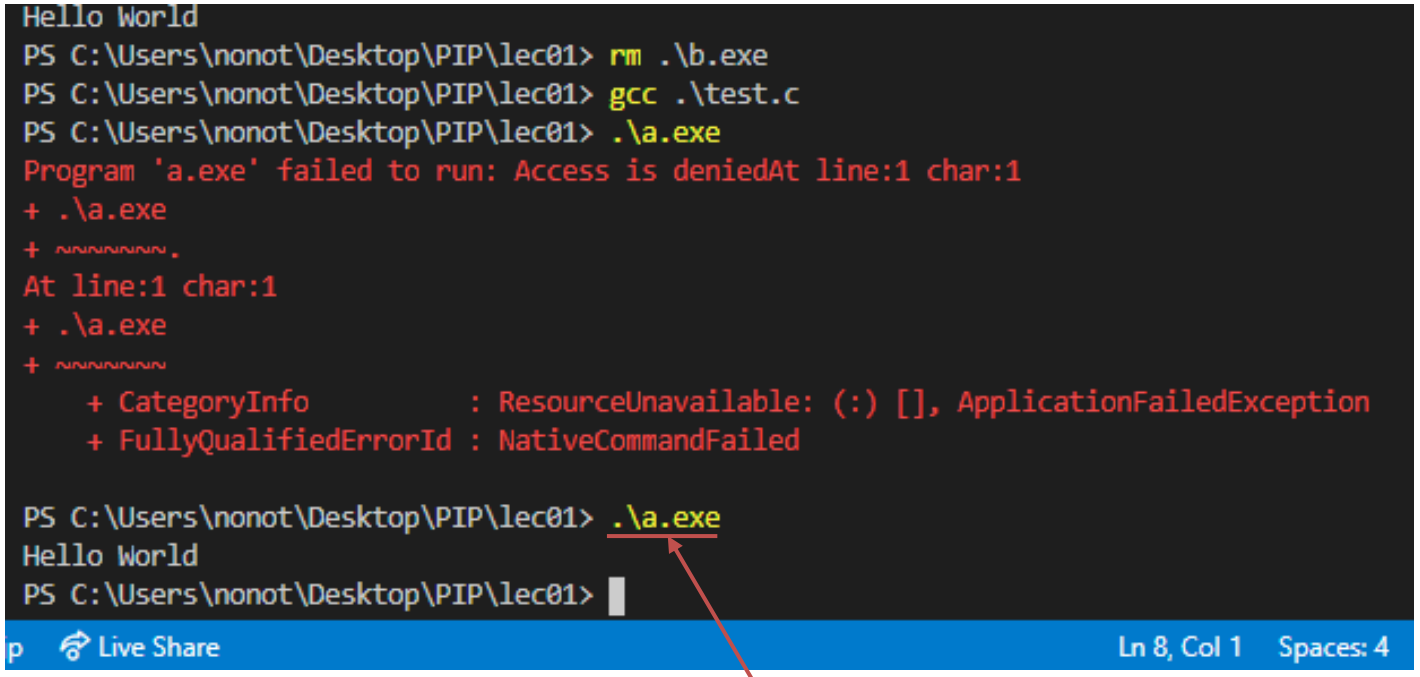
# “Exclude from scanning” Window




- Basically, do not work on this lecture outside this directory
- Delete this setting when this lecture is over

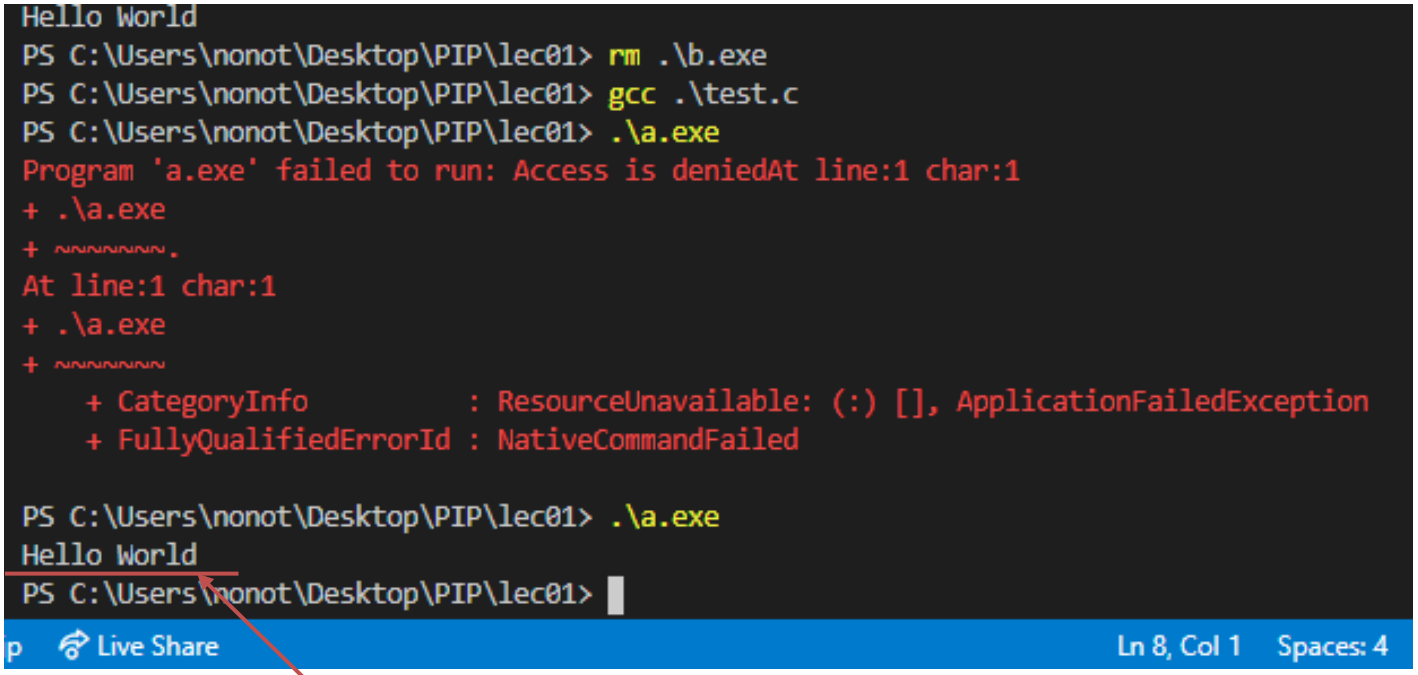
If required

# Confirm it works




Run the program a.exe again
Enter ".¥a.exe"

# Completion!!


Hello World
PS C:\Users\nonot\Desktop\PIP\lec01> rm .\b.exe
PS C:\Users\nonot\Desktop\PIP\lec01> gcc .\test.c
PS C:\Users\nonot\Desktop\PIP\lec01> .\a.exe
Program 'a.exe' failed to run: Access is deniedAt line:1 char:1
+ .\a.exe
+ ~~~~~~~~.
At line:1 char:1
+ .\a.exe
+ ~~~~~~~~
+ CategoryInfo : ResourceUnavailable: (:) [], ApplicationFailedException
+ FullyQualifiedErrorId : NativeCommandFailed
PS C:\Users\nonot\Desktop\PIP\lec01> .\a.exe
Hello World
PS C:\Users\nonot\Desktop\PIP\lec01>
p
Live Share
Ln 8, Col 1
Spaces: 4
Results