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DU012(A)

2023 年度全国中学生程式设计竞赛 - 第二次工作坊

National Secondary School Programming Contest -

Software Installation Workshop

Speaker: Mr. Sun Teik Heng

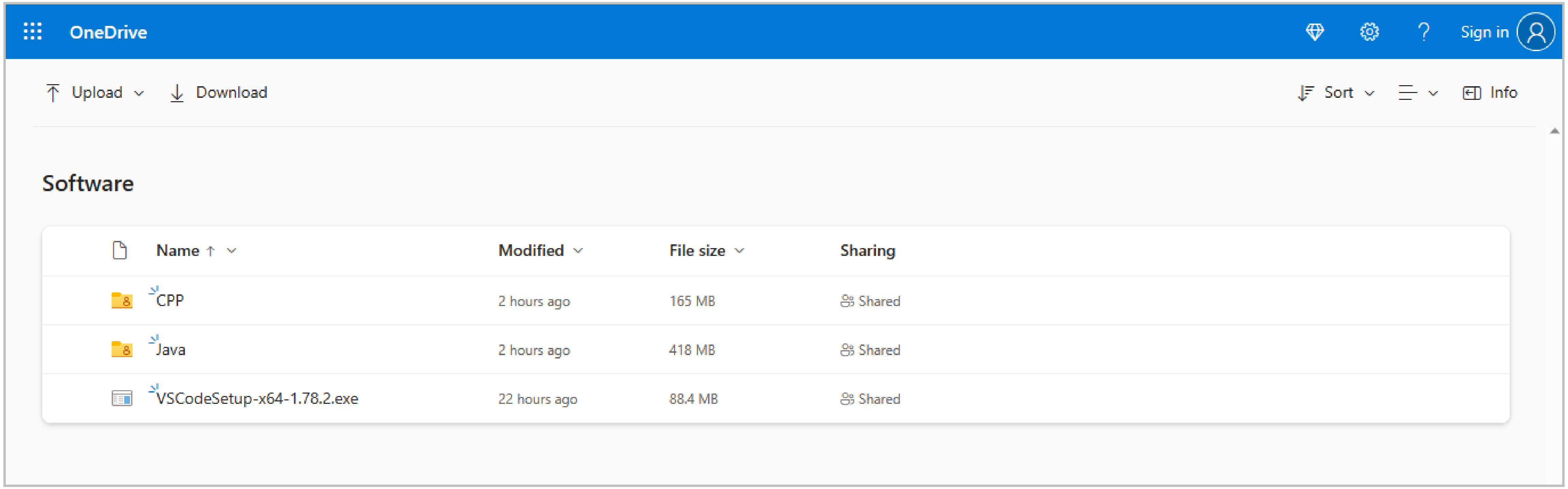
Date: 4th JUNE 2023

Contents

- Installing JDK
- Install and Setup Visual Studio Code
- Installing Extensions for JAVA
- Installing C++ Compiler
- Installing C++ Tools for Visual Studio Code

Software

- You can download the software from the link, https://1drv.ms/f/s!AoyzyTUP6tVvgfhByIHJNRgYL-3r3w?e=PkMKvX



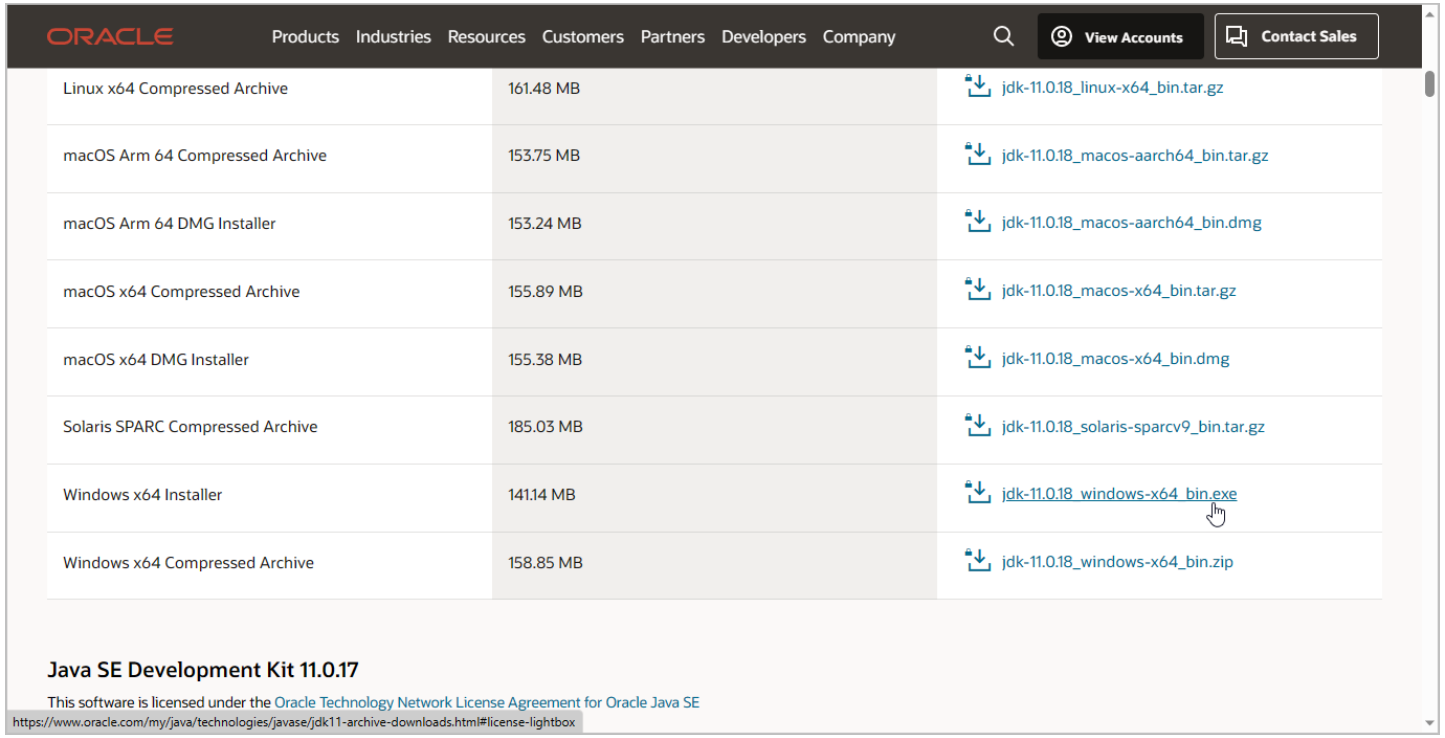
Software

Name ↑	Modified	File size	Sharing
CPP	2 hours ago	165 MB	Shared
Java	2 hours ago	418 MB	Shared
VSCodeSetup-x64-1.78.2.exe	22 hours ago	88.4 MB	Shared

Installing JDK from Adoption

Download Oracle jdk-11.0.18_windows-x64_bin.exe

- [Java Archive Downloads - Java SE 11 | Oracle Malaysia](https://www.oracle.com/my/java/technologies/javase/jdk11-archive-downloads.html), https://www.oracle.com/my/java/technologies/javase/jdk11-archive-downloads.html



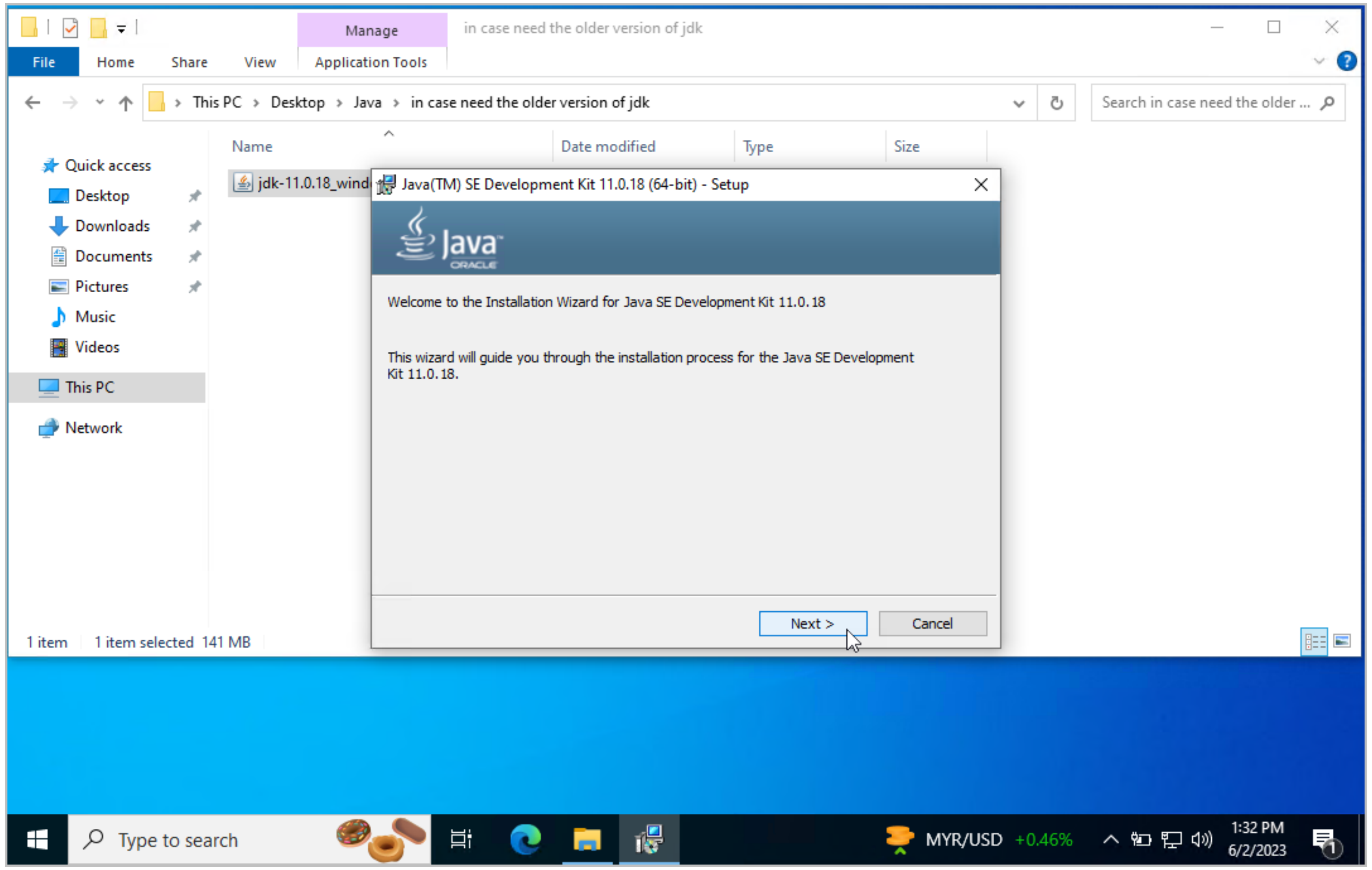
Linux x64 Compressed Archive	161.48 MB	jdk-11.0.18_linux-x64_bin.tar.gz
macOS Arm 64 Compressed Archive	153.75 MB	jdk-11.0.18_macos-aarch64_bin.tar.gz
macOS Arm 64 DMG Installer	153.24 MB	jdk-11.0.18_macos-aarch64_bin.dmg
macOS x64 Compressed Archive	155.89 MB	jdk-11.0.18_macos-x64_bin.tar.gz
macOS x64 DMG Installer	155.38 MB	jdk-11.0.18_macos-x64_bin.dmg
Solaris SPARC Compressed Archive	185.03 MB	jdk-11.0.18_solaris-sparcv9_bin.tar.gz
Windows x64 Installer	141.14 MB	jdk-11.0.18_windows-x64_bin.exe
Windows x64 Compressed Archive	158.85 MB	jdk-11.0.18_windows-x64_bin.zip

Java SE Development Kit 11.0.17

This software is licensed under the Oracle Technology Network License Agreement for Oracle Java SE

https://www.oracle.com/my/java/technologies/javase/jdk11-archive-downloads.html#license-lightbox

Install JAVA 11.0.18

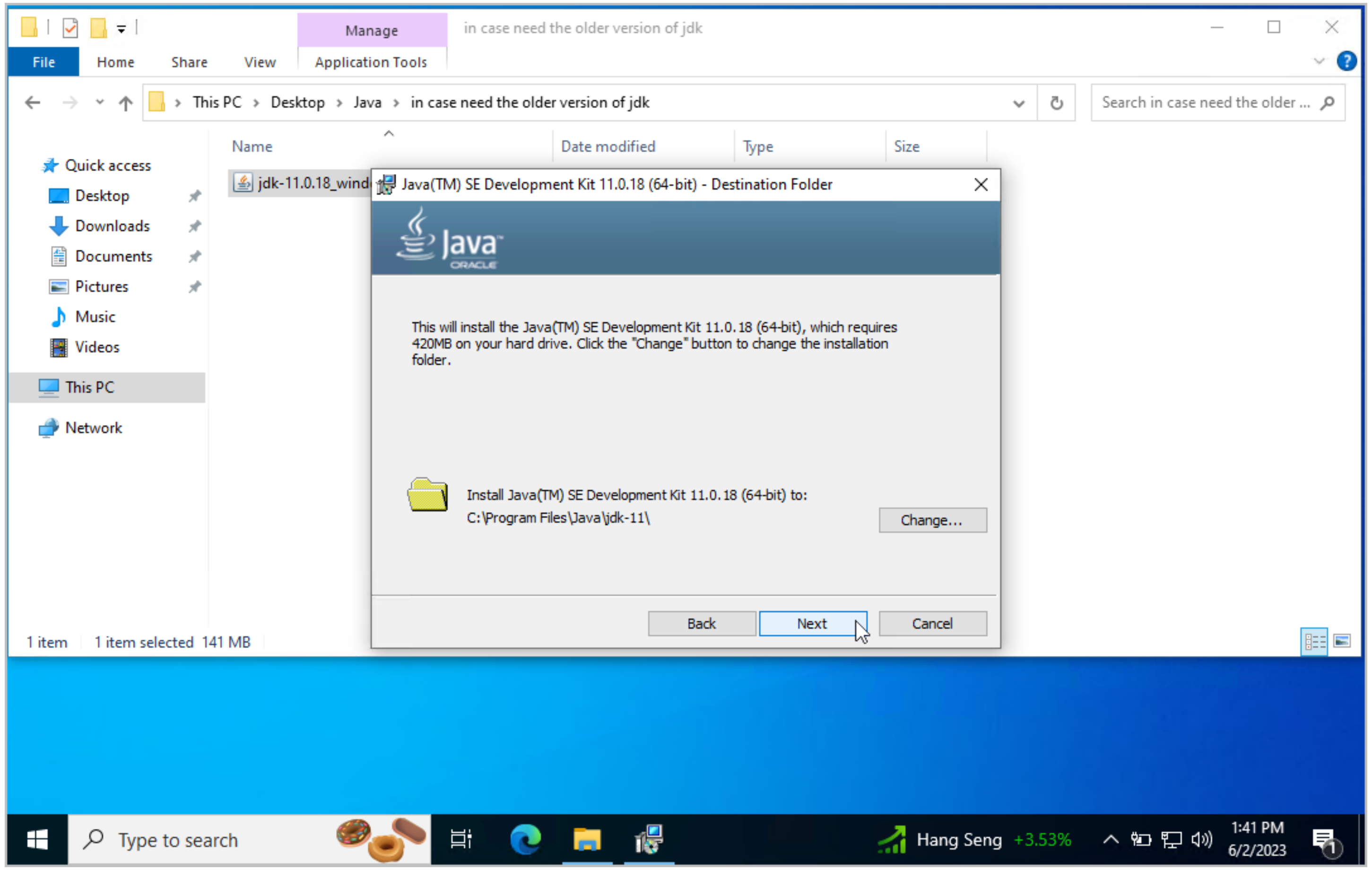


Java(TM) SE Development Kit 11.0.18 (64-bit) - Setup

Welcome to the Installation Wizard for Java SE Development Kit 11.0.18

This wizard will guide you through the installation process for the Java SE Development Kit 11.0.18.

Click “Next”

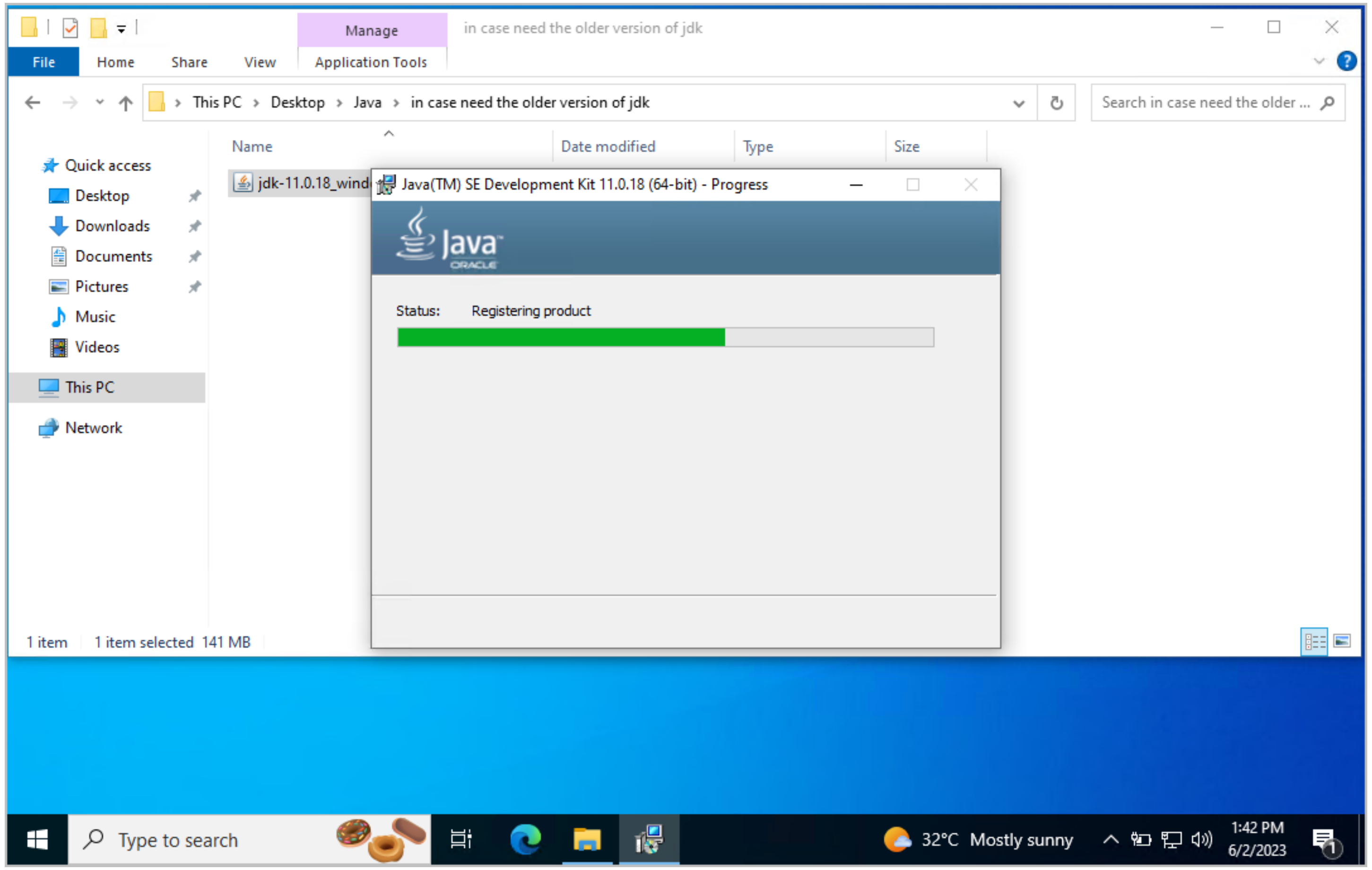


Java(TM) SE Development Kit 11.0.18 (64-bit) - Destination Folder

This will install the Java(TM) SE Development Kit 11.0.18 (64-bit), which requires 420MB on your hard drive. Click the "Change" button to change the installation folder.

Install Java(TM) SE Development Kit 11.0.18 (64-bit) to:
C:\Program Files\Java\jdk-11\

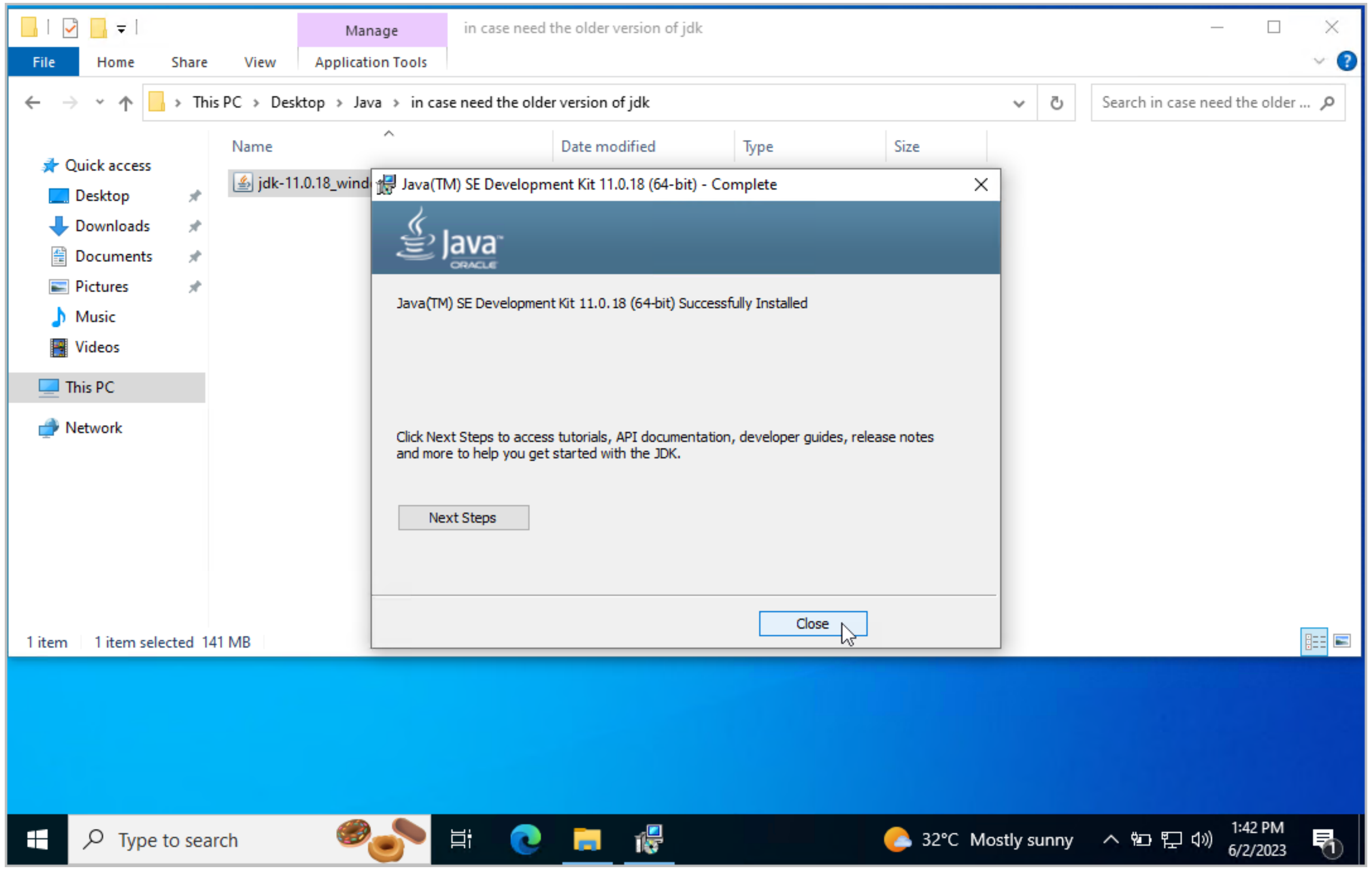
Installation in progress …



Java(TM) SE Development Kit 11.0.18 (64-bit) - Progress

Status: Registering product

Click “Close”

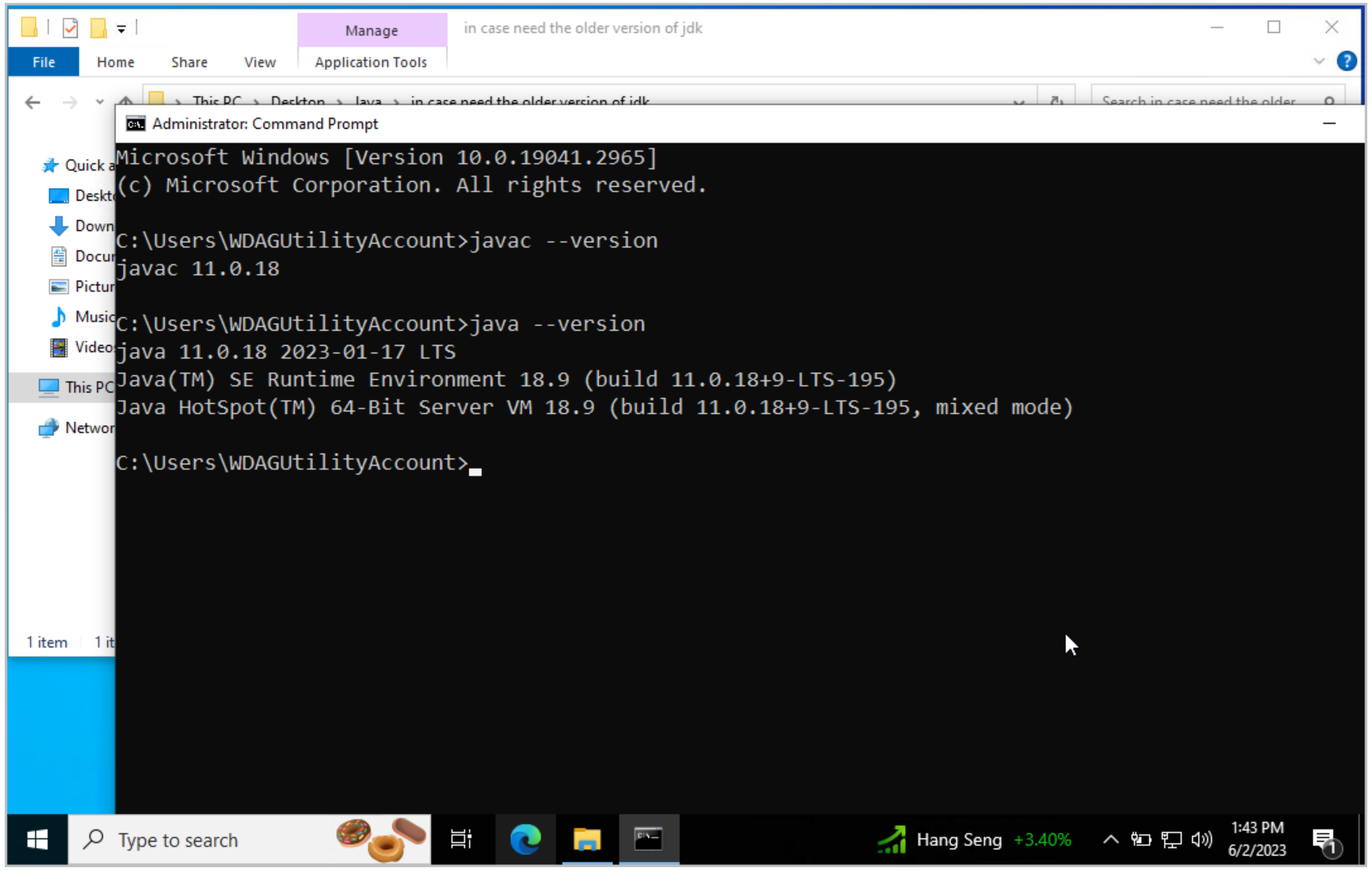


Java(TM) SE Development Kit 11.0.18 (64-bit) - Complete

Java(TM) SE Development Kit 11.0.18 (64-bit) Successfully Installed

Click Next Steps to access tutorials, API documentation, developer guides, release notes and more to help you get started with the JDK.

Check the version of JAVAC and JAVA

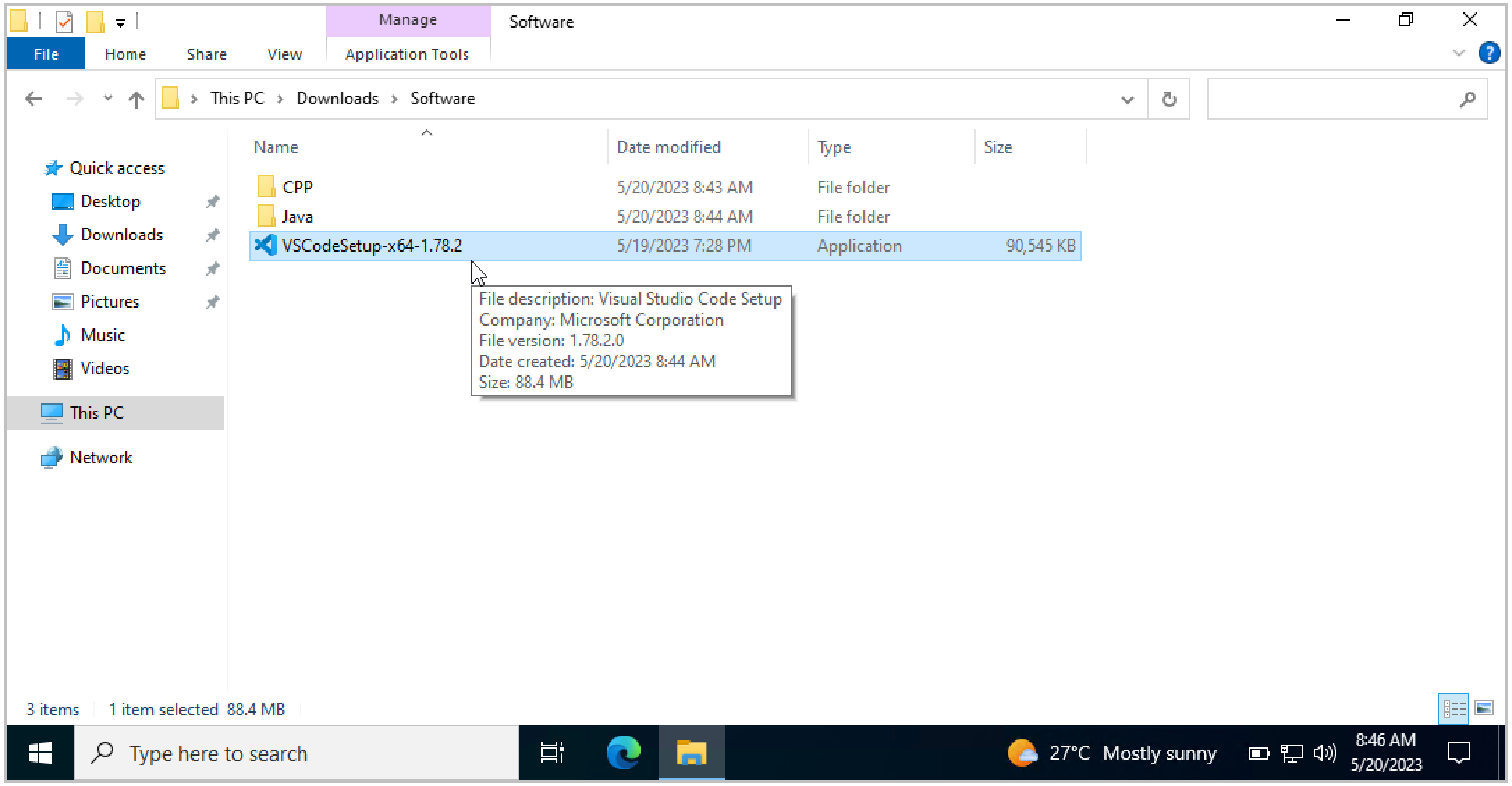


Manage
in case need the older version of jdk
File
Home
Share
View
Application Tools
This PC › Desktop › Java › in case need the older version of jdk
Search in case need the older
Quick a
Deskt
Down
Docur
Pictur
Music
Video
This PC
Networ
1 item
1 it
Administrator: Command Prompt
Type to search
Hang Seng +3.40%
1:43 PM
6/2/2023

```
Microsoft Windows [Version 10.0.19041.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\WDAGUtilityAccount>javac --version
javac 11.0.18

C:\Users\WDAGUtilityAccount>java --version
java 11.0.18 2023-01-17 LTS
Java(TM) SE Runtime Environment 18.9 (build 11.0.18+9-LTS-195)
Java HotSpot(TM) 64-Bit Server VM 18.9 (build 11.0.18+9-LTS-195, mixed mode)

C:\Users\WDAGUtilityAccount>
```

Install and Setup Visual Studio Code

Install Visual Studio Code

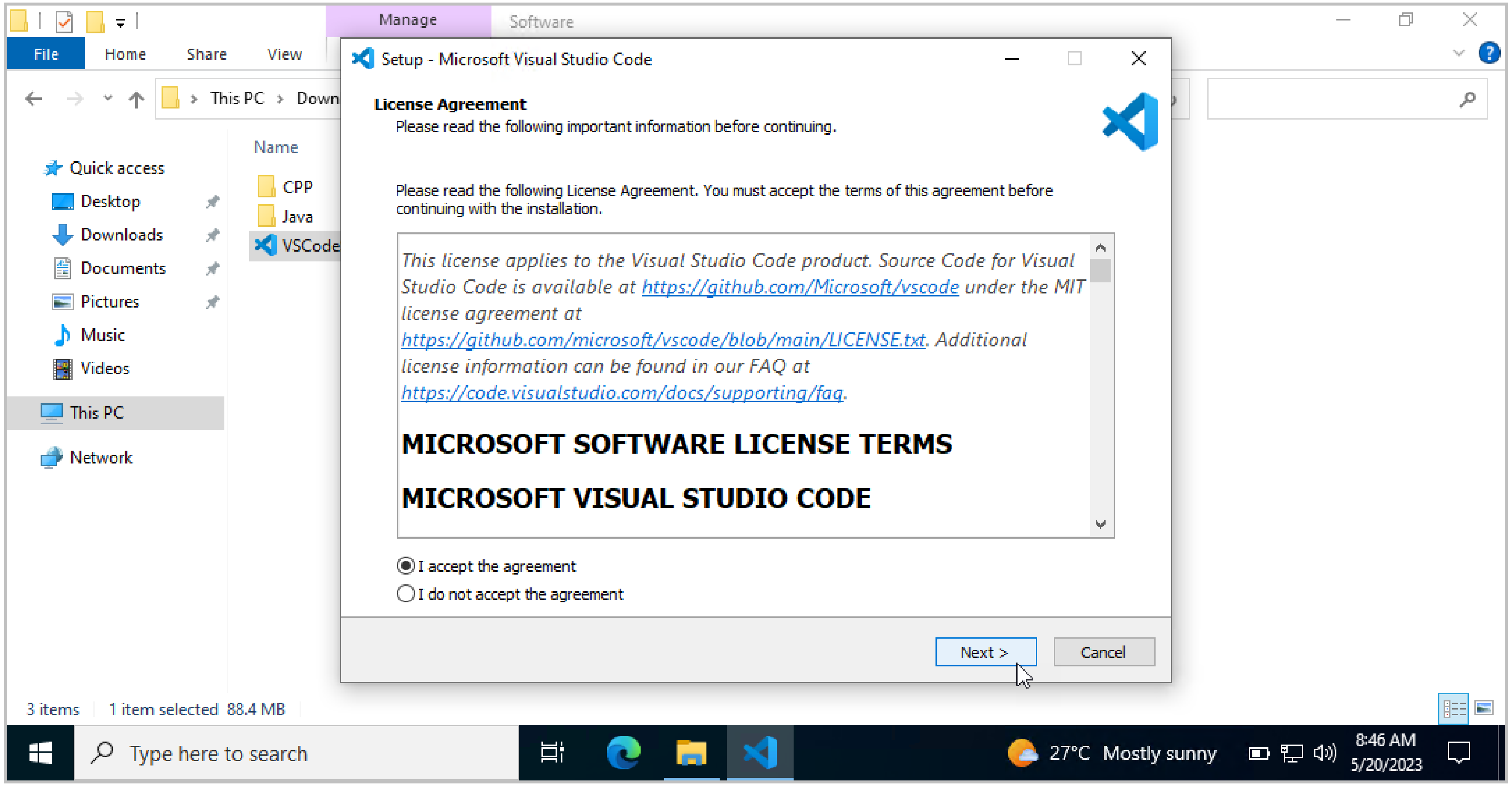


Name	Date modified	Type	Size
CPP	5/20/2023 8:43 AM	File folder	
Java	5/20/2023 8:44 AM	File folder	
VSCodeSetup-x64-1.78.2	5/19/2023 7:28 PM	Application	90,545 KB

File description: Visual Studio Code Setup
Company: Microsoft Corporation
File version: 1.78.2.0
Date created: 5/20/2023 8:44 AM
Size: 88.4 MB

3 items 1 item selected 88.4 MB

Click “Next” to continue



Setup - Microsoft Visual Studio Code

License Agreement

Please read the following important information before continuing.

Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.

This license applies to the Visual Studio Code product. Source Code for Visual Studio Code is available at https://github.com/Microsoft/vscode under the MIT license agreement at https://github.com/microsoft/vscode/blob/main/LICENSE.txt. Additional license information can be found in our FAQ at https://code.visualstudio.com/docs/supporting/faq.

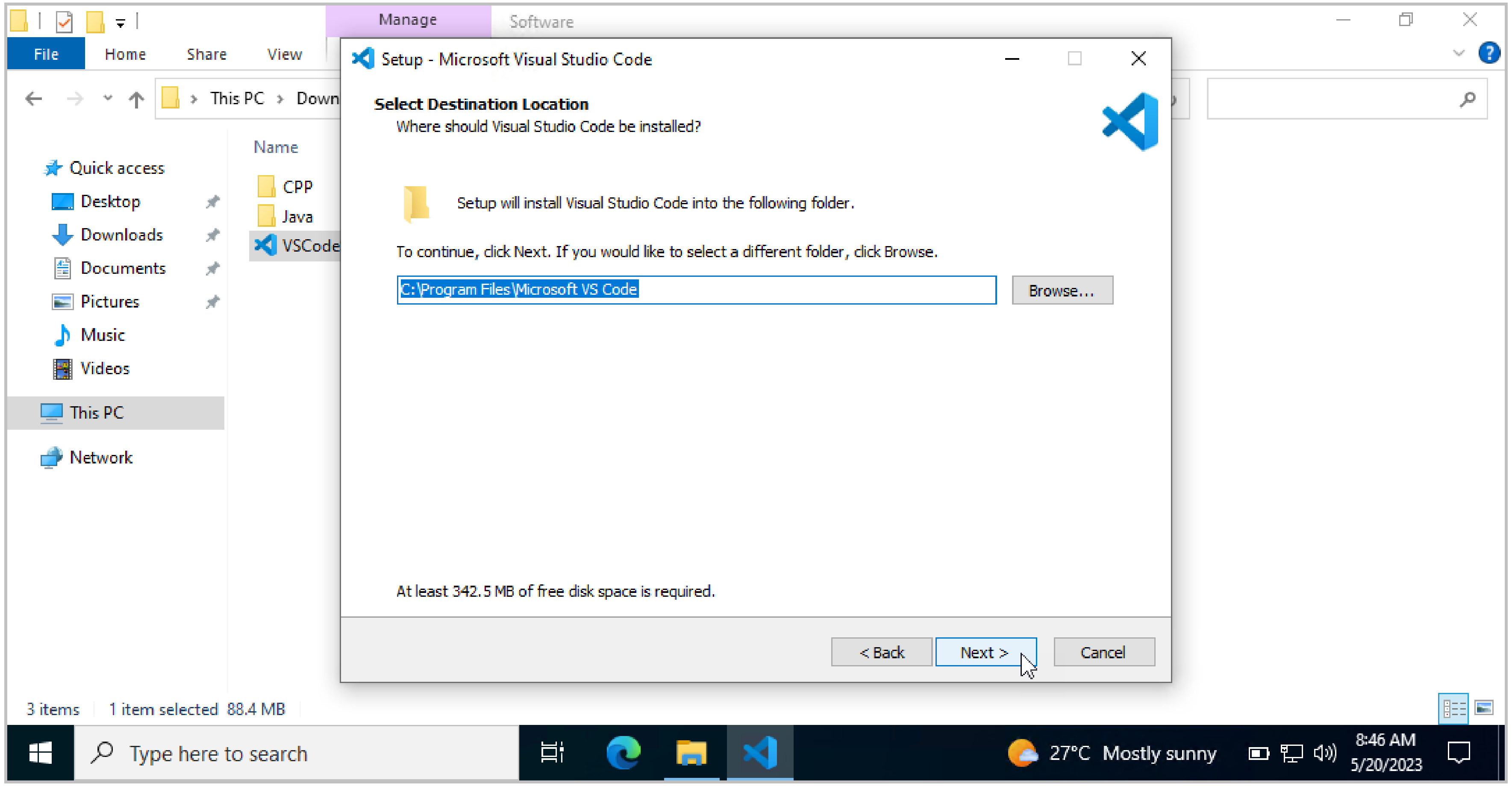
MICROSOFT SOFTWARE LICENSE TERMS

MICROSOFT VISUAL STUDIO CODE

● I accept the agreement

○ I do not accept the agreement

Select the destination folder and click “Next” to continue



Setup - Microsoft Visual Studio Code

Select Destination Location

Where should Visual Studio Code be installed?

Setup will install Visual Studio Code into the following folder.

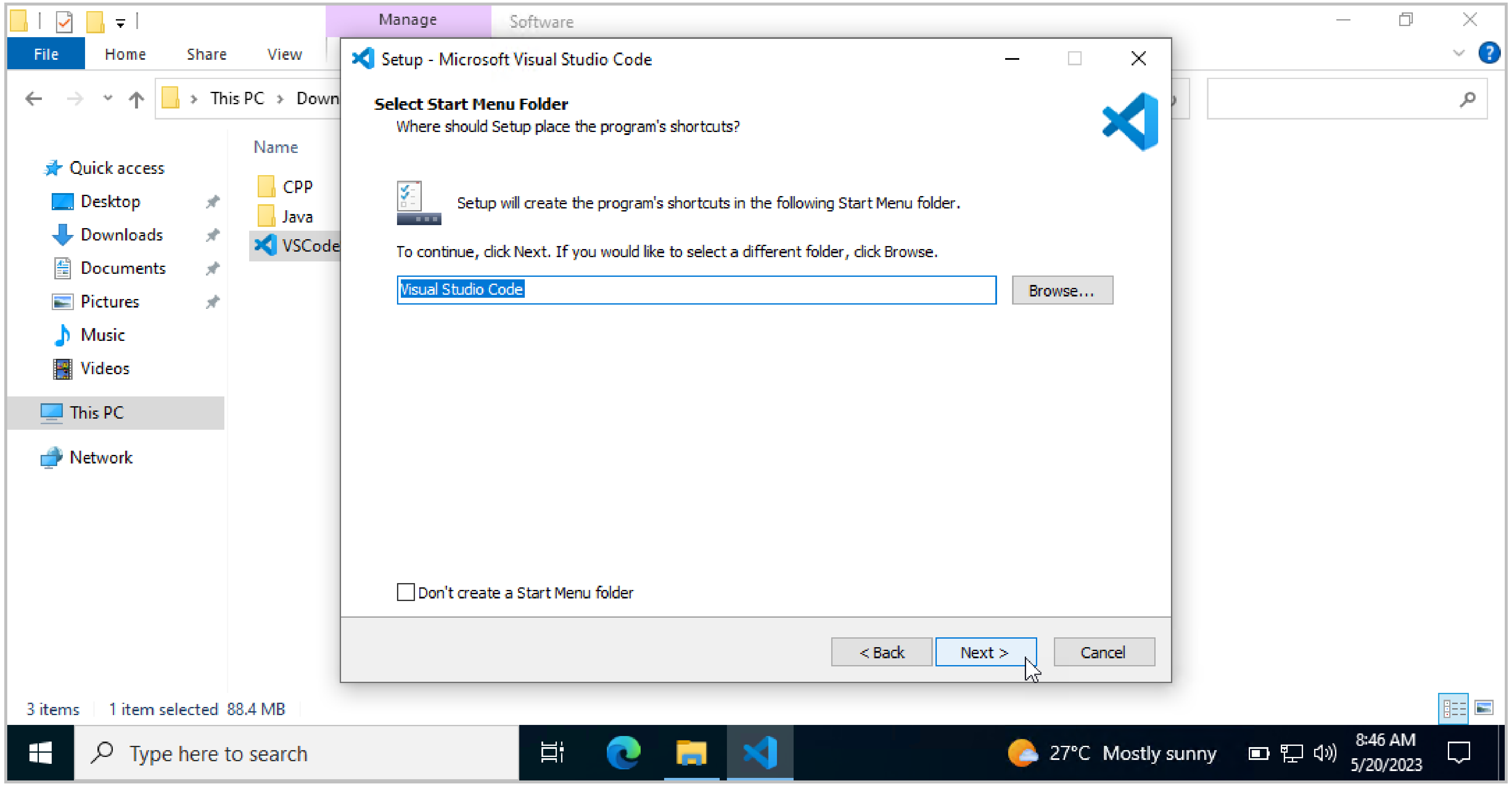
To continue, click Next. If you would like to select a different folder, click Browse.

C:\Program Files\Microsoft VS Code

At least 342.5 MB of free disk space is required.

3 items 1 item selected 88.4 MB

Select the Start Menu Folder and click “Next” to continue



Setup - Microsoft Visual Studio Code

Select Start Menu Folder

Where should Setup place the program's shortcuts?

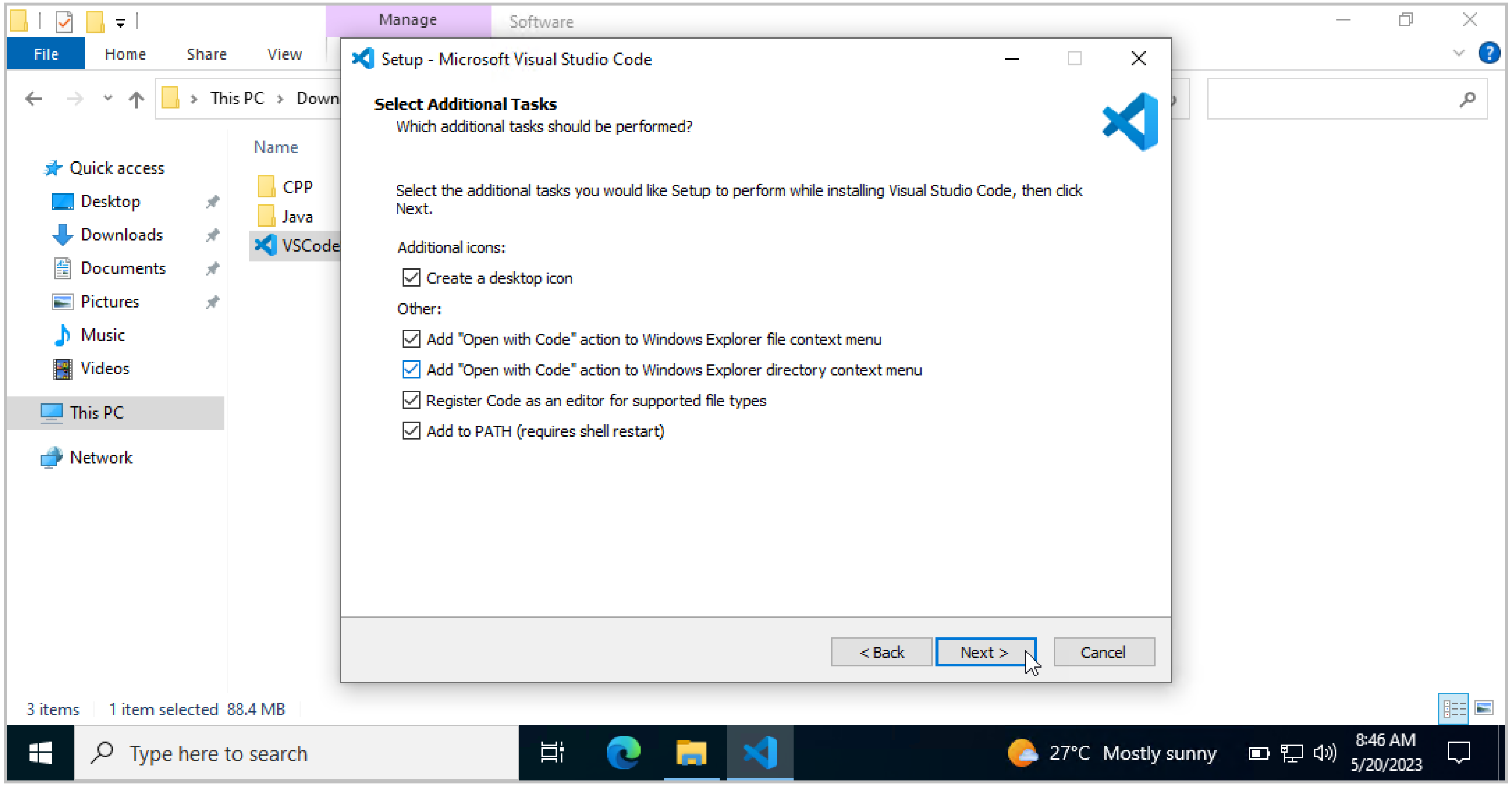
Setup will create the program's shortcuts in the following Start Menu folder.

To continue, click Next. If you would like to select a different folder, click Browse.

Visual Studio Code

□ Don't create a Start Menu folder

Select all the Additional Tasks and click “Next” to continue



Setup - Microsoft Visual Studio Code

Select Additional Tasks

Which additional tasks should be performed?

Select the additional tasks you would like Setup to perform while installing Visual Studio Code, then click Next.

Additional icons:

☑ Create a desktop icon

Other:

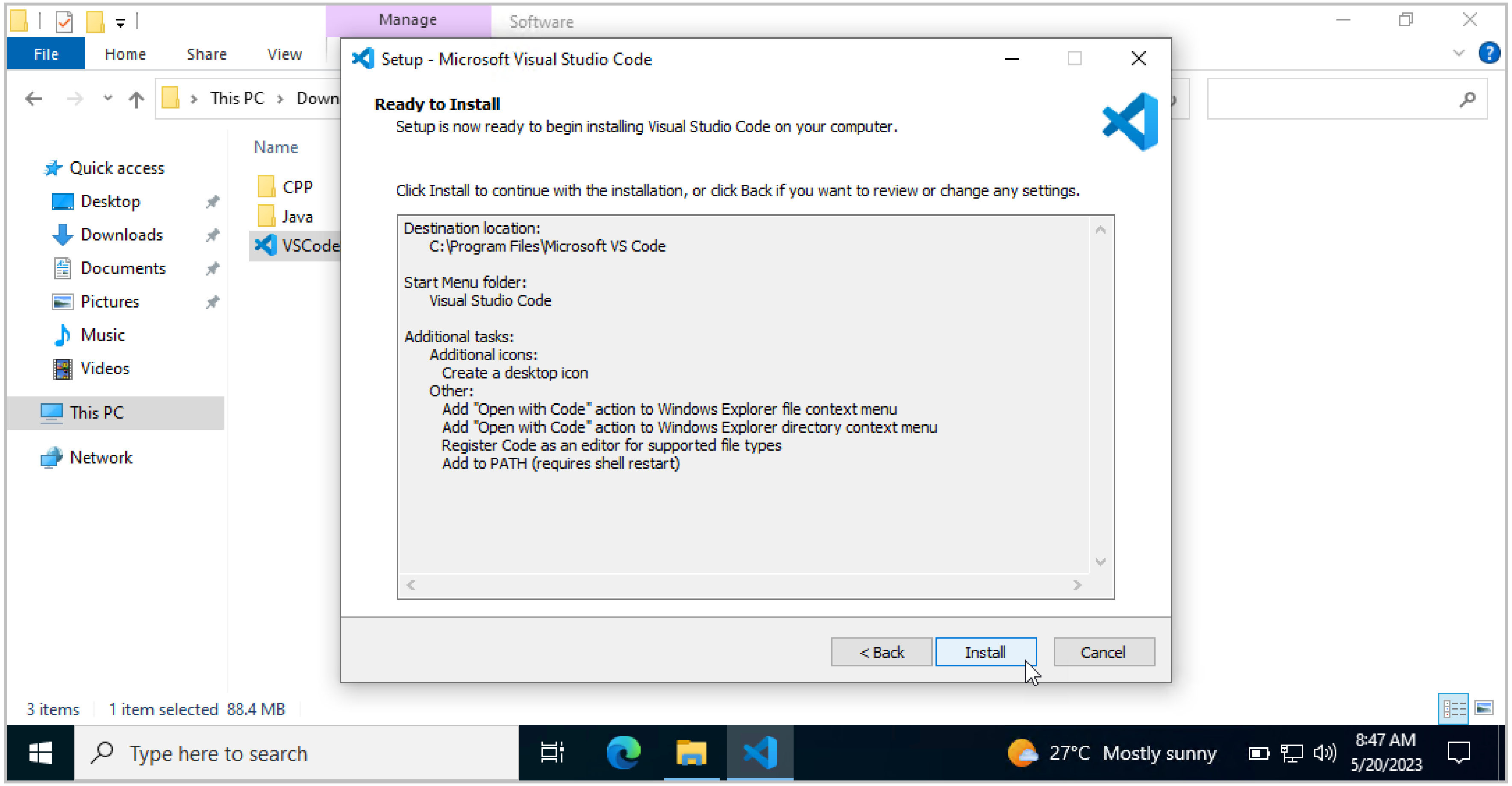
☑ Add "Open with Code" action to Windows Explorer file context menu

☑ Add "Open with Code" action to Windows Explorer directory context menu

☑ Register Code as an editor for supported file types

☑ Add to PATH (requires shell restart)

Click “Install”



Setup - Microsoft Visual Studio Code

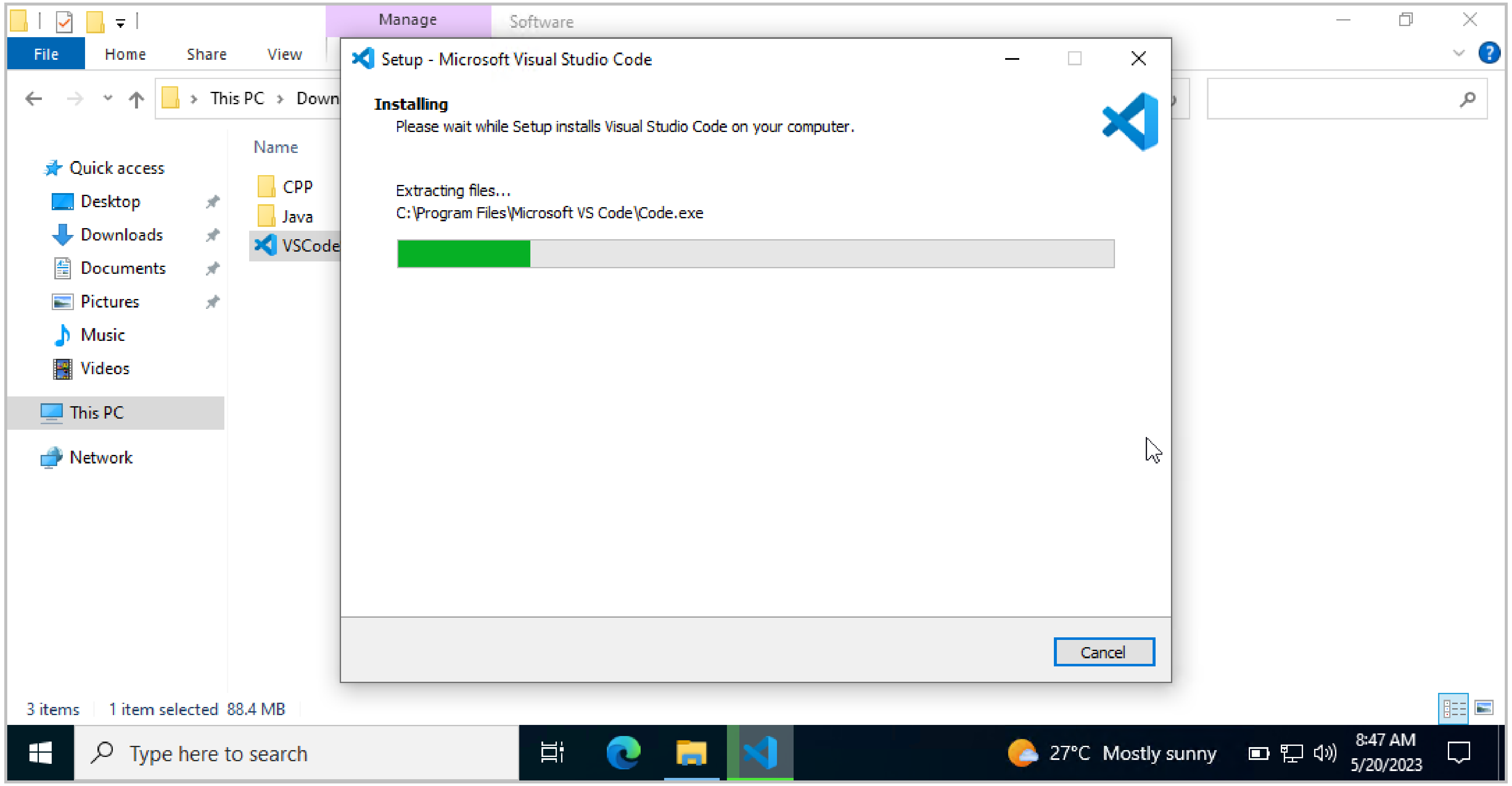
Ready to Install

Setup is now ready to begin installing Visual Studio Code on your computer.

Click Install to continue with the installation, or click Back if you want to review or change any settings.

```
Destination location:
    C:\Program Files\Microsoft VS Code

Start Menu folder:
    Visual Studio Code

Additional tasks:
    Additional icons:
      Create a desktop icon
    Other:
      Add "Open with Code" action to Windows Explorer file context menu
      Add "Open with Code" action to Windows Explorer directory context menu
      Register Code as an editor for supported file types
      Add to PATH (requires shell restart)
```

Installation in progress



Setup - Microsoft Visual Studio Code

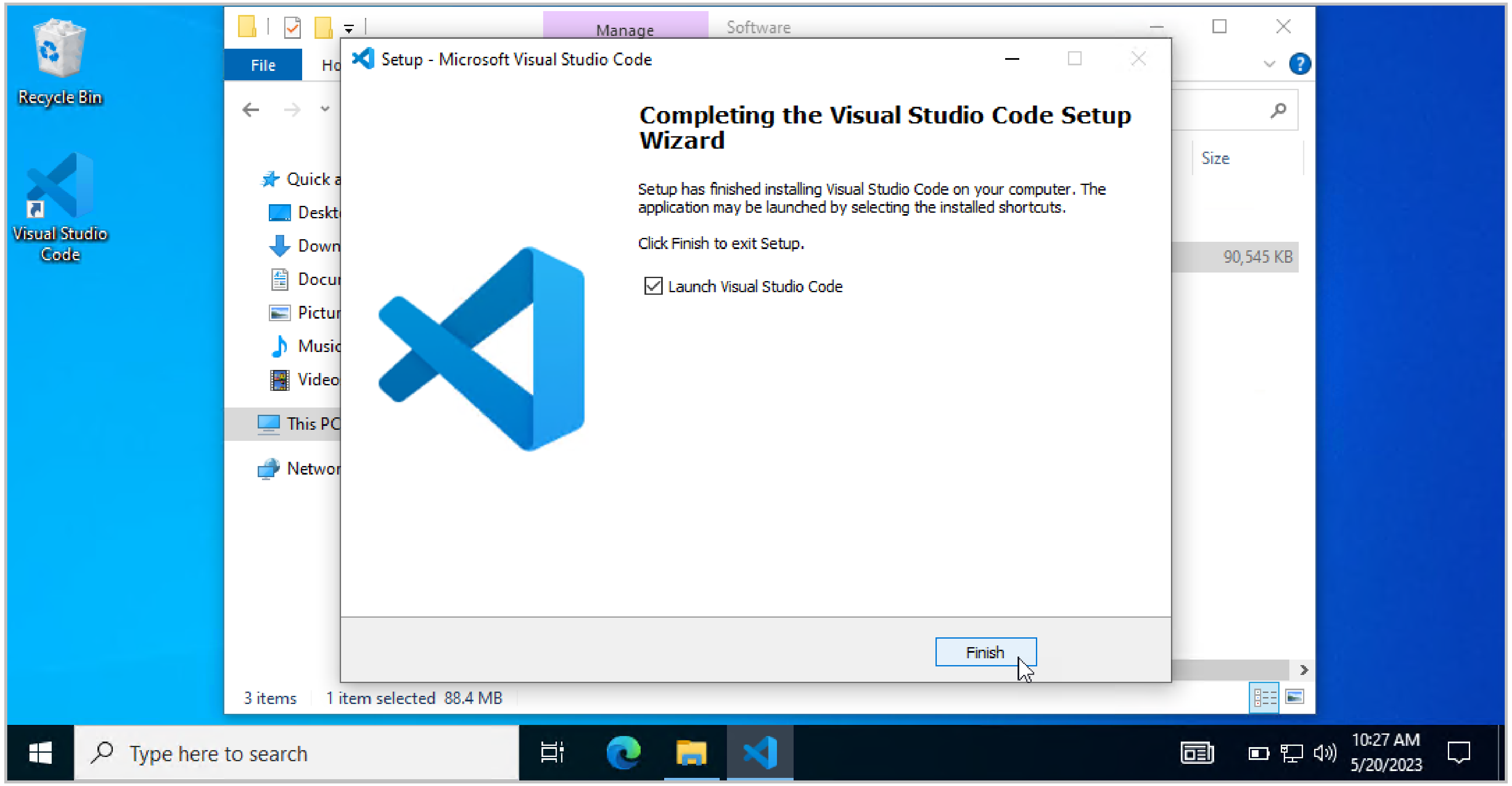
Installing

Please wait while Setup installs Visual Studio Code on your computer.

Extracting files...

C:\Program Files\Microsoft VS Code\Code.exe

Select “Launch Visual Studio Code” and click “Finish”



Setup - Microsoft Visual Studio Code

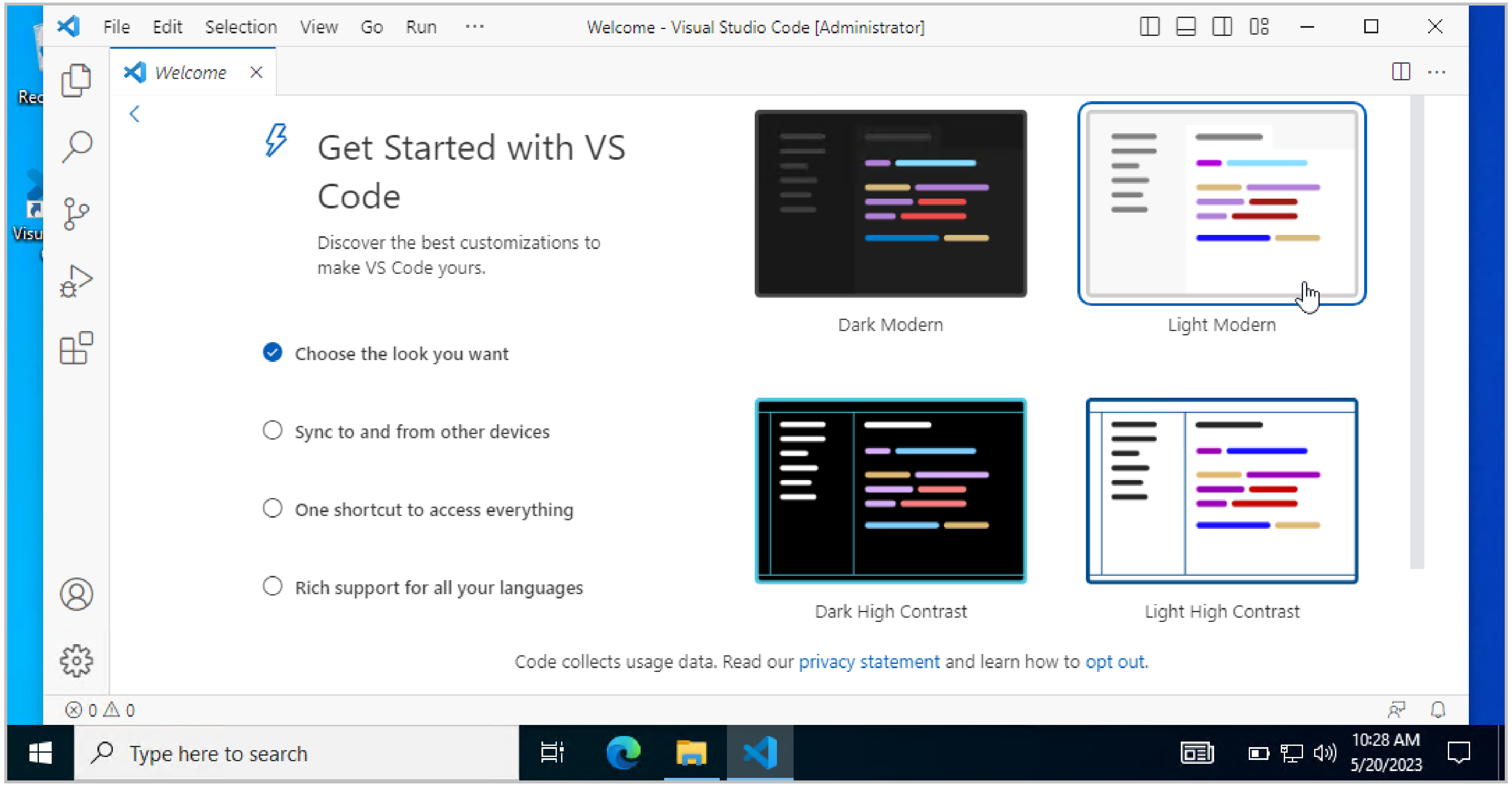
Completing the Visual Studio Code Setup Wizard

Setup has finished installing Visual Studio Code on your computer. The application may be launched by selecting the installed shortcuts.

Click Finish to exit Setup.

☑ Launch Visual Studio Code

Choose “Light Modern”



Get Started with VS Code

Discover the best customizations to make VS Code yours.

☑ Choose the look you want

○ Sync to and from other devices

○ One shortcut to access everything

○ Rich support for all your languages

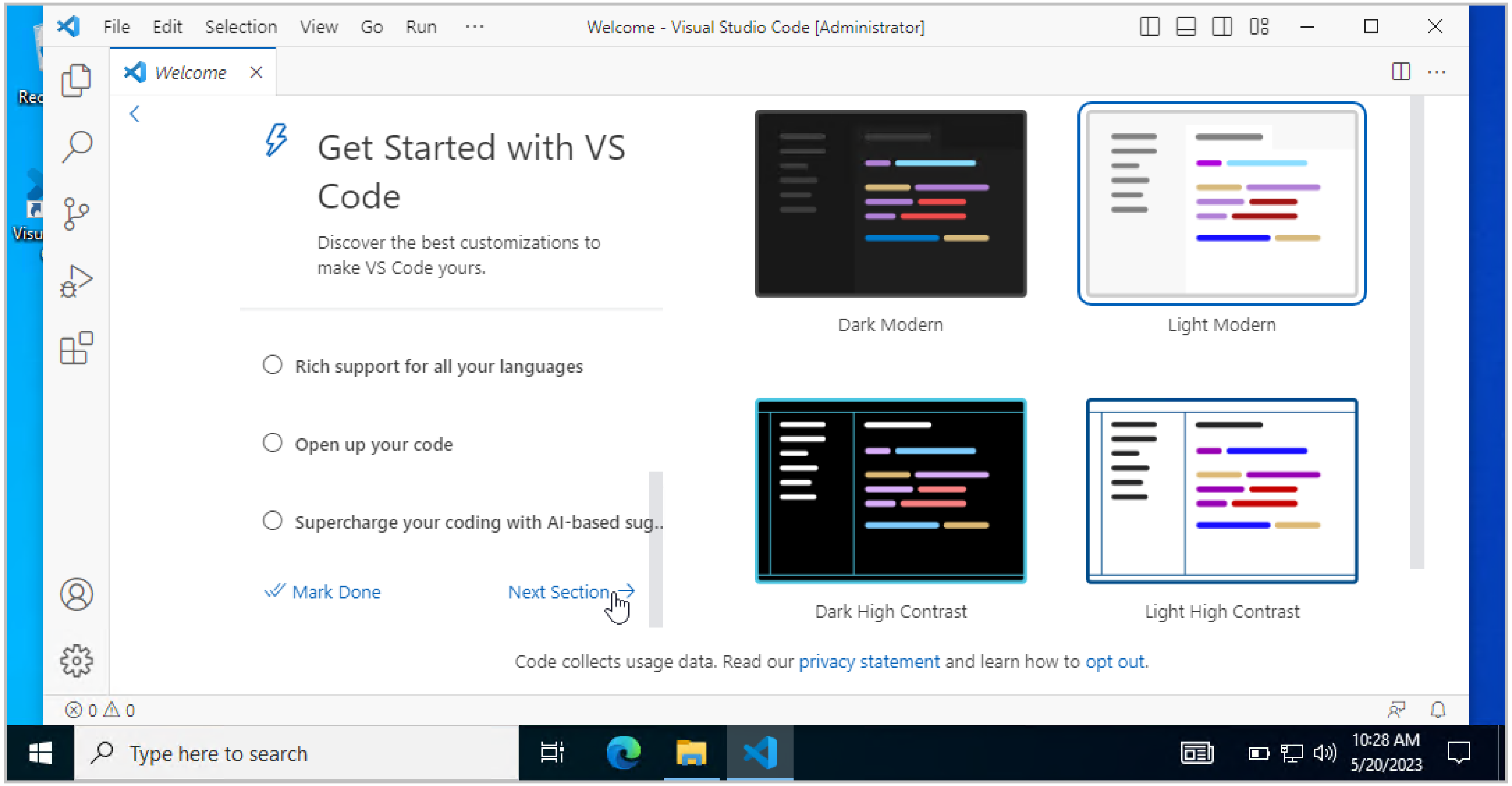
Dark Modern

Light Modern

Dark High Contrast

Light High Contrast

Code collects usage data. Read our privacy statement and learn how to opt out.



Get Started with VS Code

Discover the best customizations to make VS Code yours.

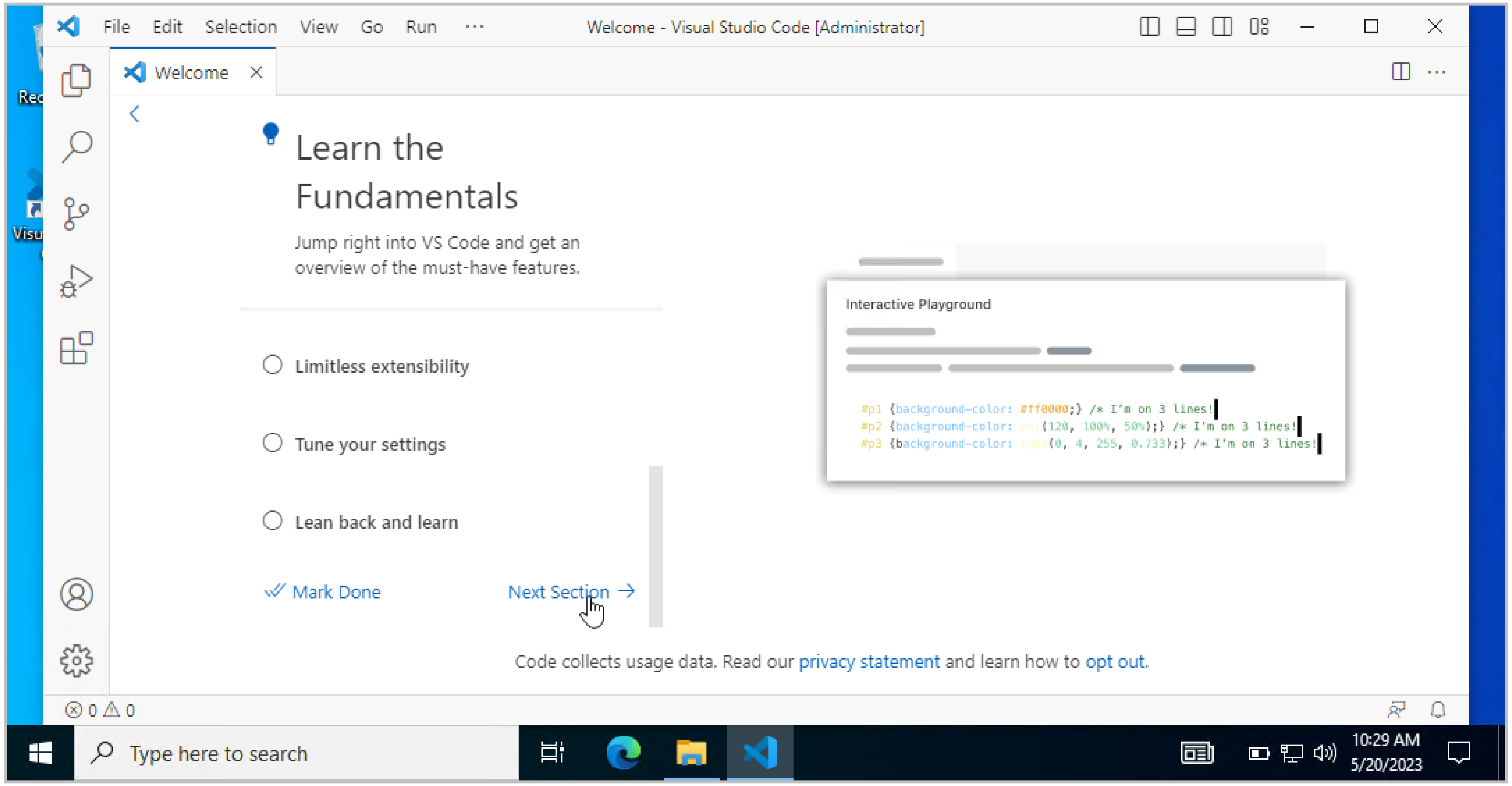
○ Rich support for all your languages

○ Open up your code

○ Supercharge your coding with AI-based sug...

Code collects usage data. Read our privacy statement and learn how to opt out.

Click “Next Section”



Learn the Fundamentals

Jump right into VS Code and get an overview of the must-have features.

○ Limitless extensibility

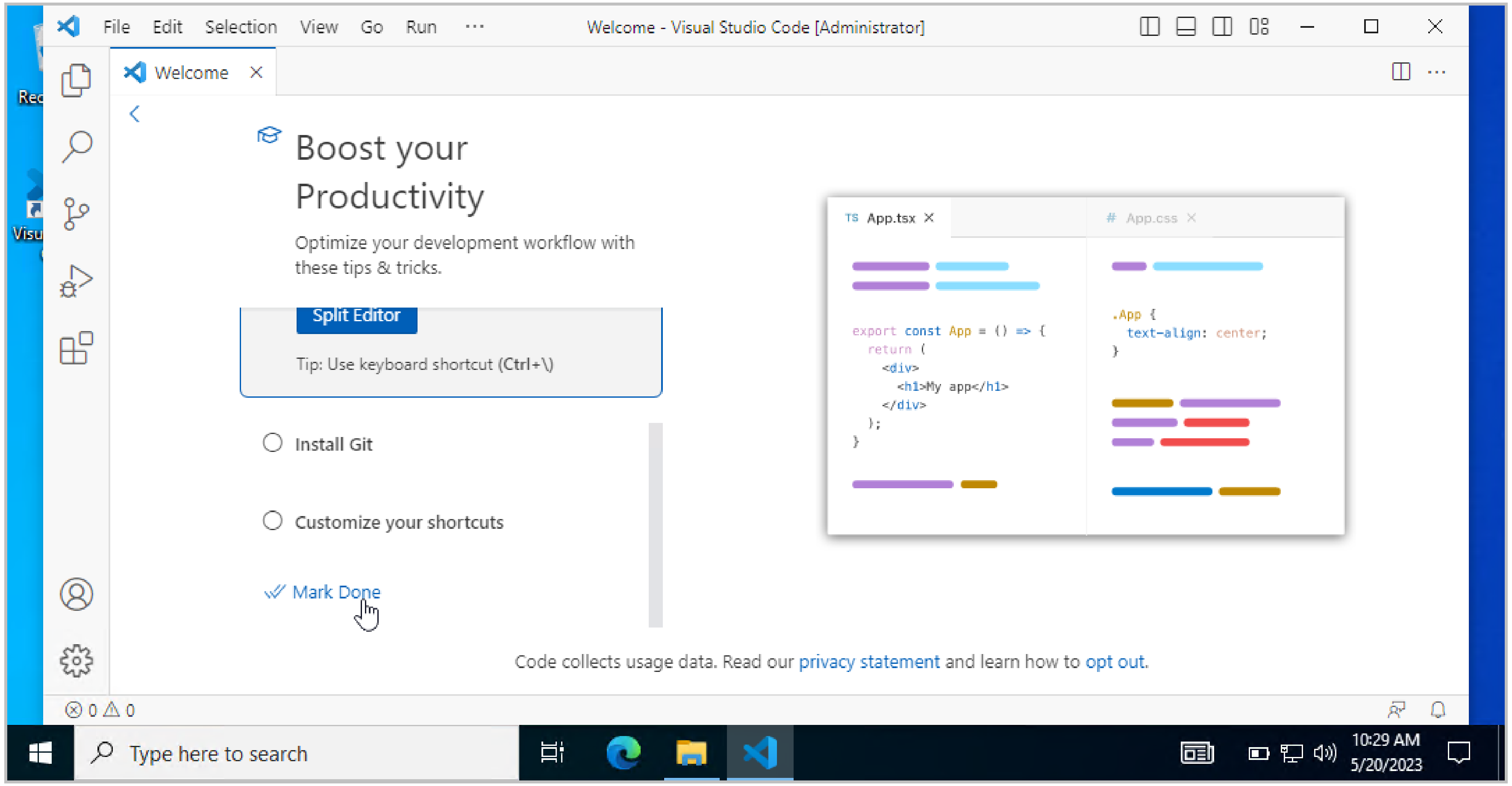
○ Tune your settings

○ Lean back and learn

```
#p1 {background-color: #ff0000;} /* I'm on 3 lines!
#p2 {background-color: hsl(120, 100%, 50%);} /* I'm on 3 lines!
#p3 {background-color: rgba(0, 4, 255, 0.733);} /* I'm on 3 lines!
```

Code collects usage data. Read our privacy statement and learn how to opt out.

Click “Mark Done”

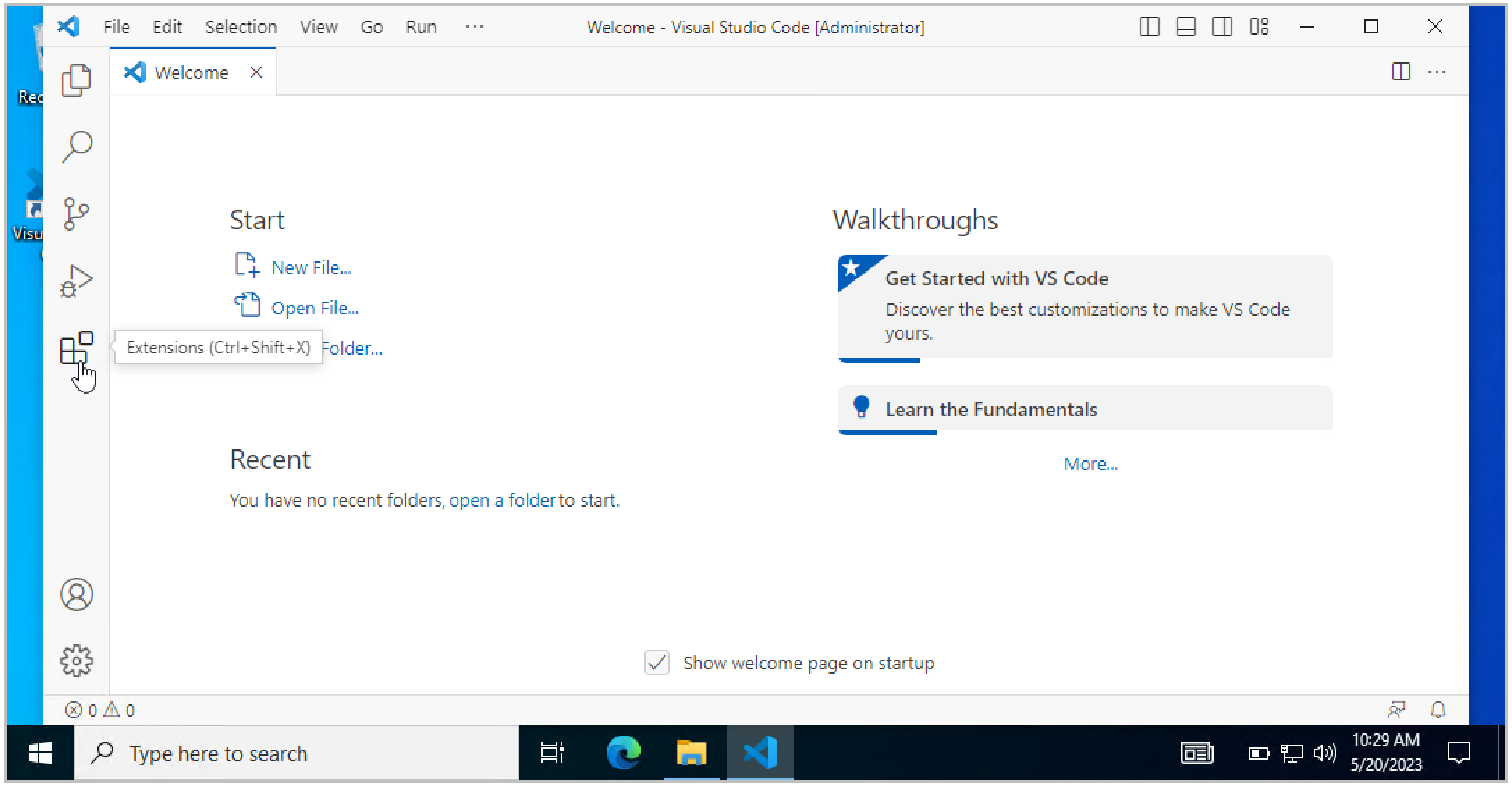


File
Edit
Selection
View
Go
Run
···
Welcome - Visual Studio Code [Administrator]
Welcome
Boost your Productivity
Optimize your development workflow with these tips & tricks.
Split Editor
Tip: Use keyboard shortcut (Ctrl+\)
○ Install Git
○ Customize your shortcuts
Mark Done
TS App.tsx
# App.css
Code collects usage data. Read our privacy statement and learn how to opt out.
⊗ 0 ⚠ 0
Type here to search
10:29 AM
5/20/2023

```
export const App = () => {
  return (
    <div>
      <h1>My app</h1>
    </div>
  );
}
```

```
.App {
  text-align: center;
}
```

Visual Studio Code is opened



Start

New File...

Open File...

Folder...

Walkthroughs

Get Started with VS Code

Discover the best customizations to make VS Code yours.

Learn the Fundamentals

More...

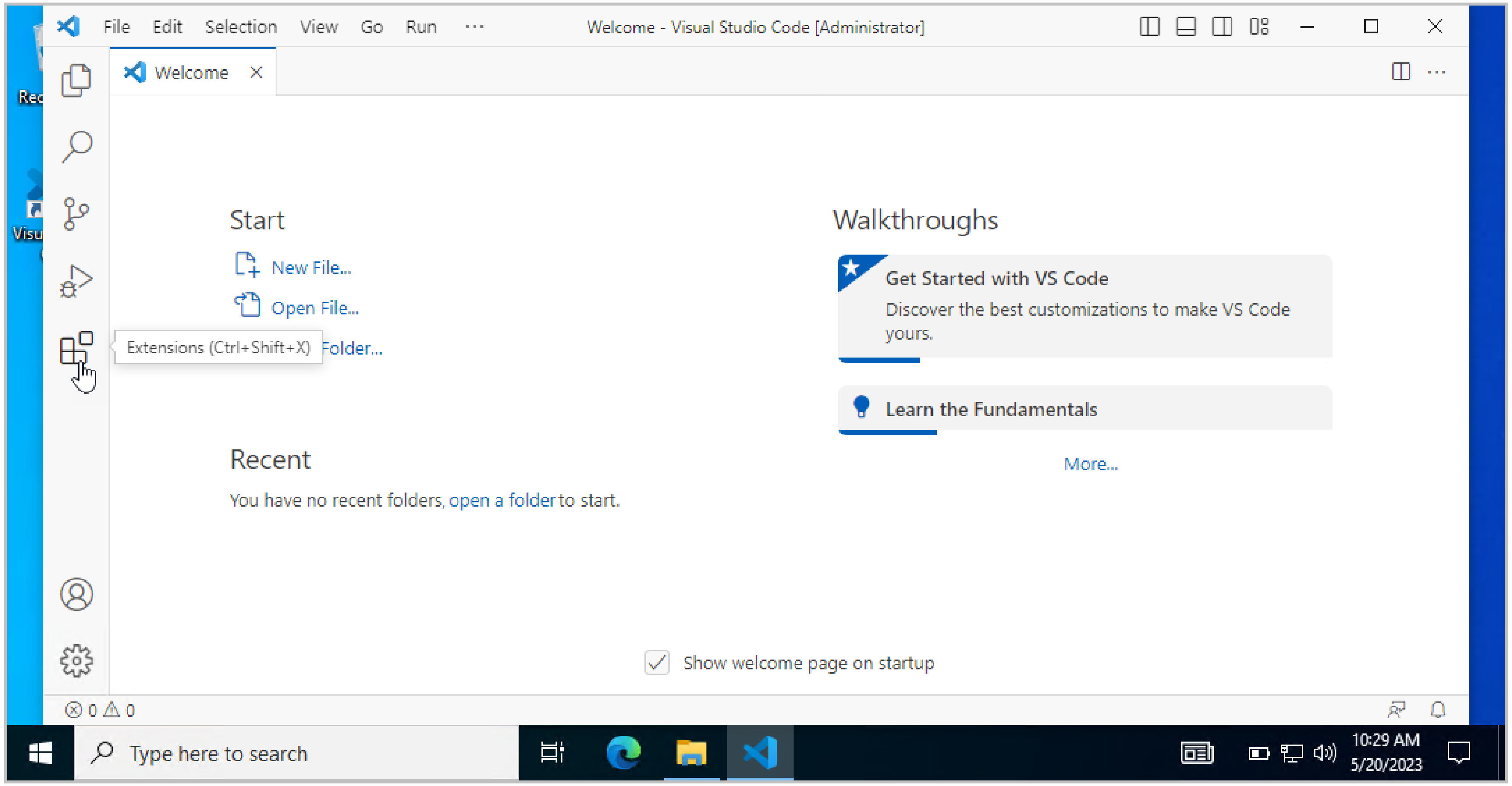
Recent

You have no recent folders, open a folder to start.

☑ Show welcome page on startup

Installing Extensions for JAVA

Click on the Extensions icon in the Activity Bar on the side of VS Code or the View: Extensions command (Ctrl+Shift+X)



Welcome - Visual Studio Code [Administrator]

Start

New File...

Open File...

Extensions (Ctrl+Shift+X) Folder...

Recent

You have no recent folders, open a folder to start.

Walkthroughs

Get Started with VS Code

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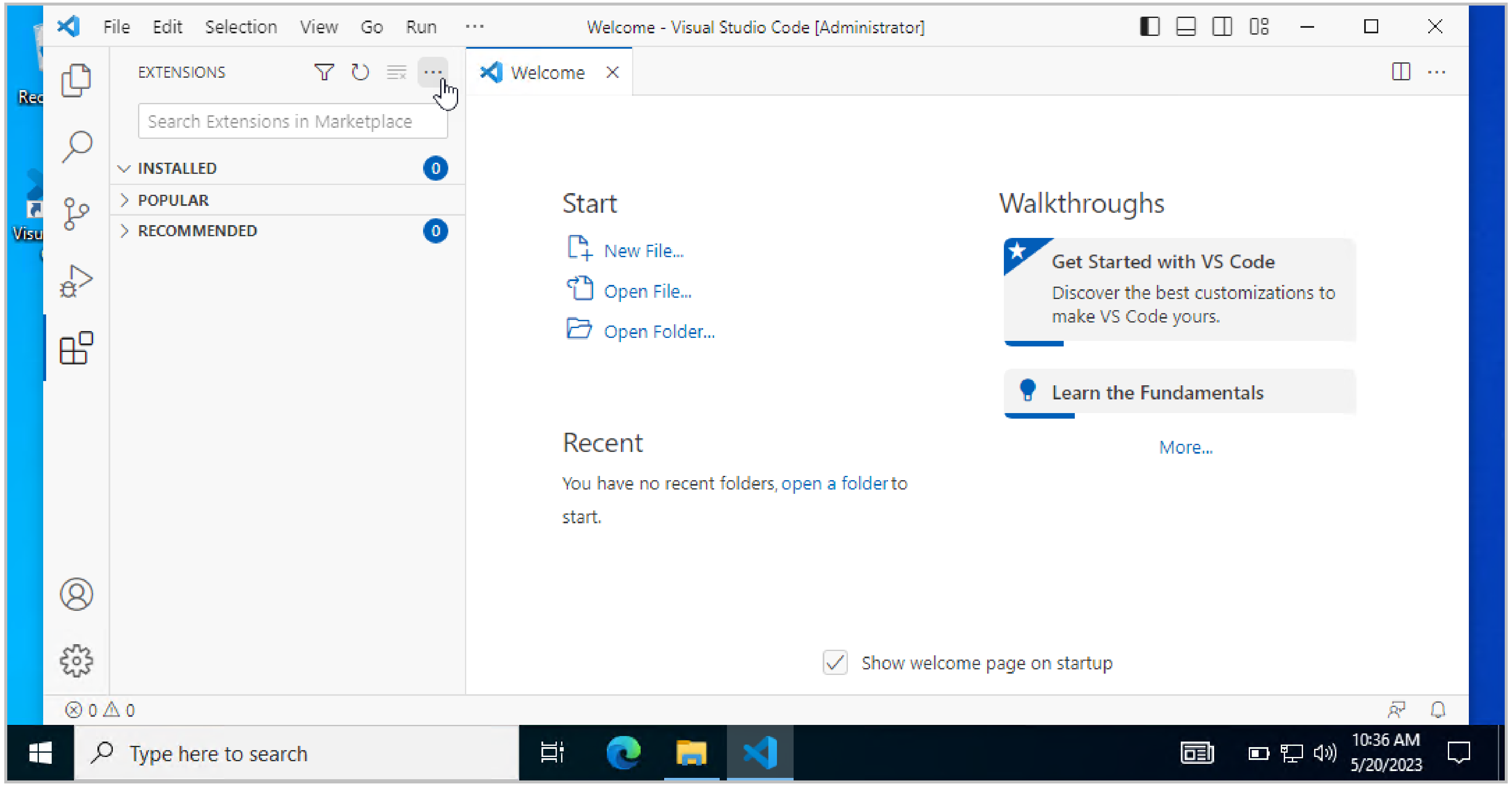
Learn the Fundamentals

More...

☑ Show welcome page on startup

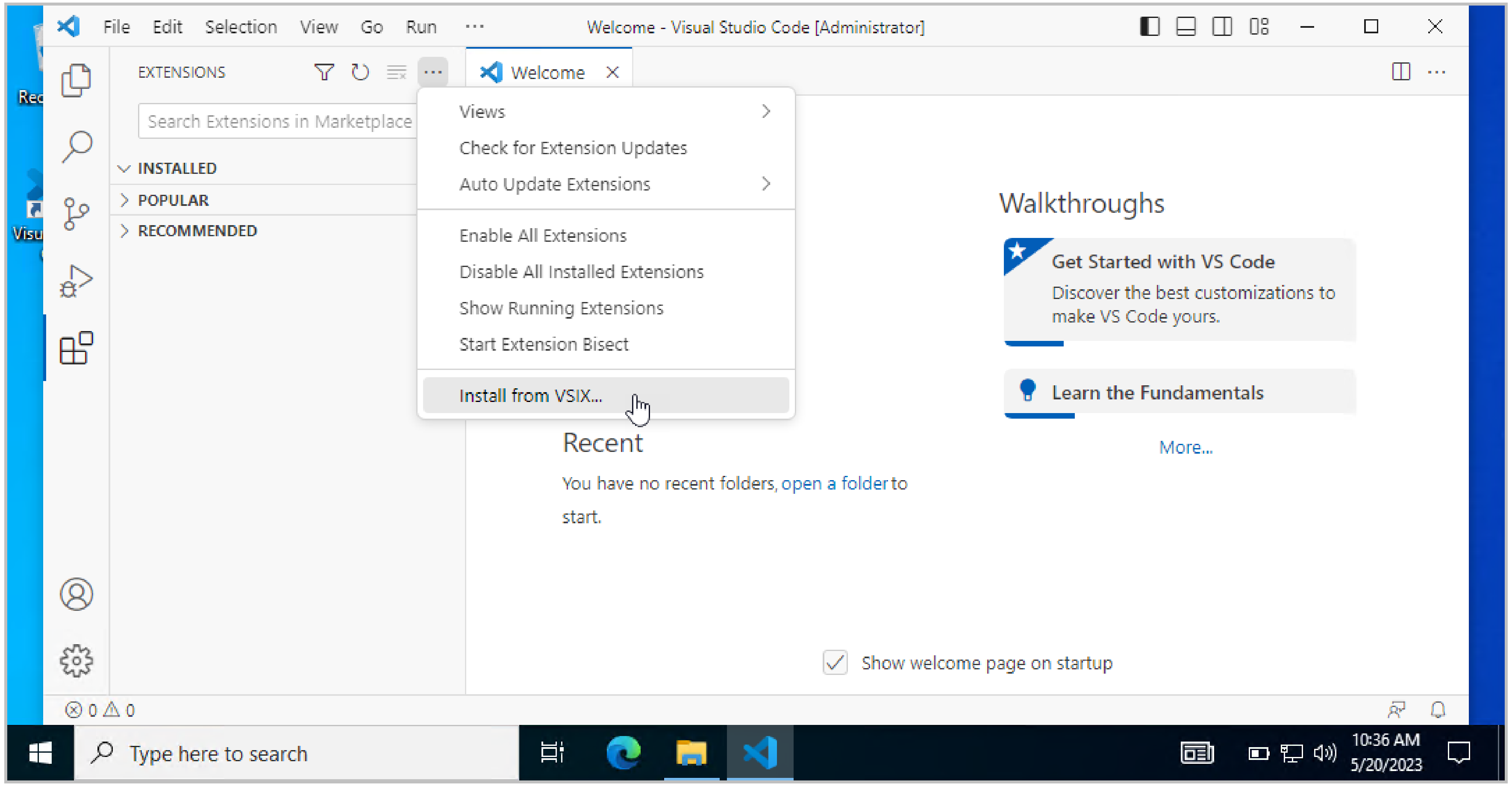
Click "…"



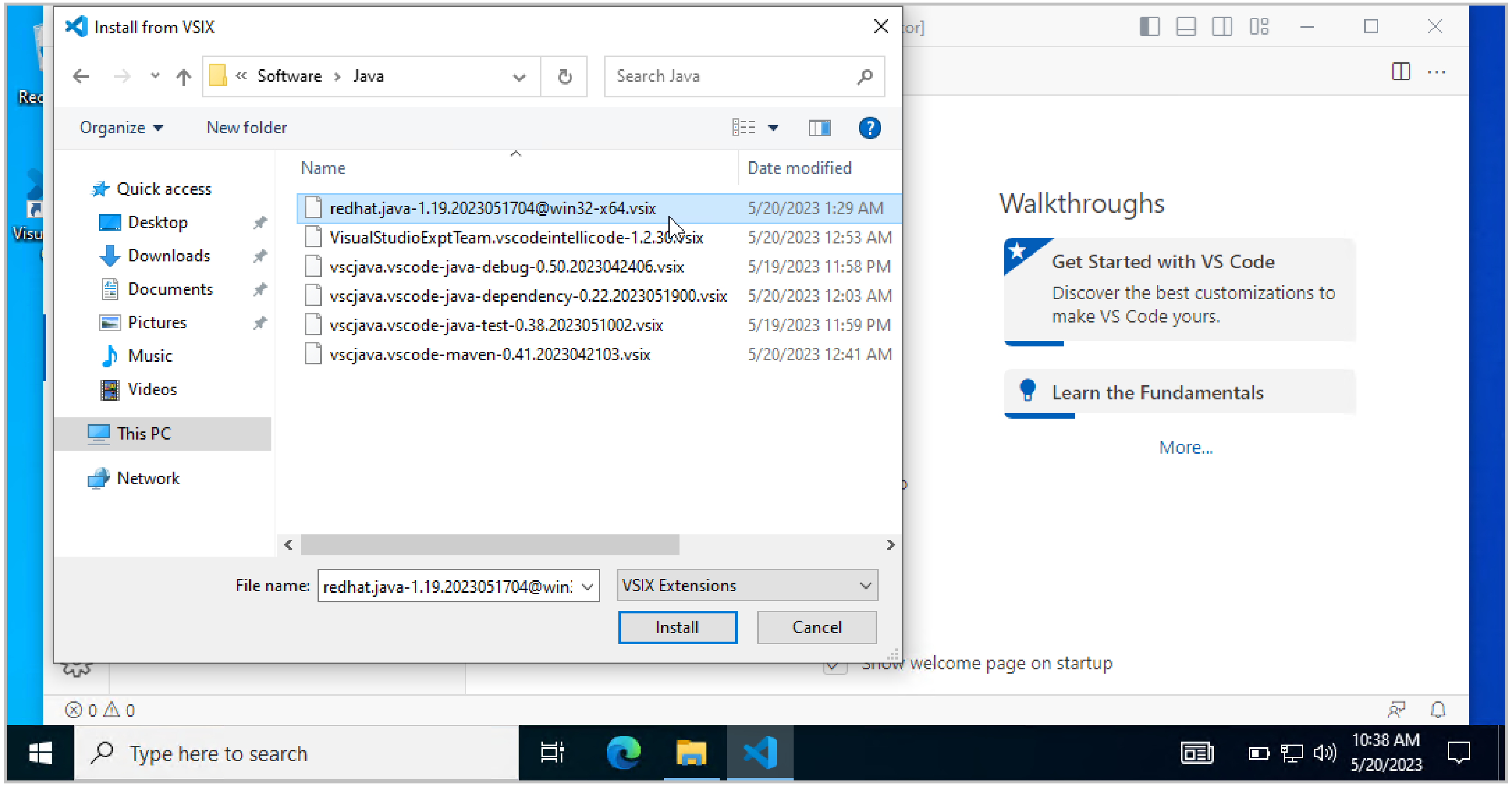
Discover the best customizations to make VS Code yours.

You have no recent folders, open a folder to start.

Select Install from VSIX command in the Extensions view command dropdown



Select “Language Support for Java™ by Red Hat” extension



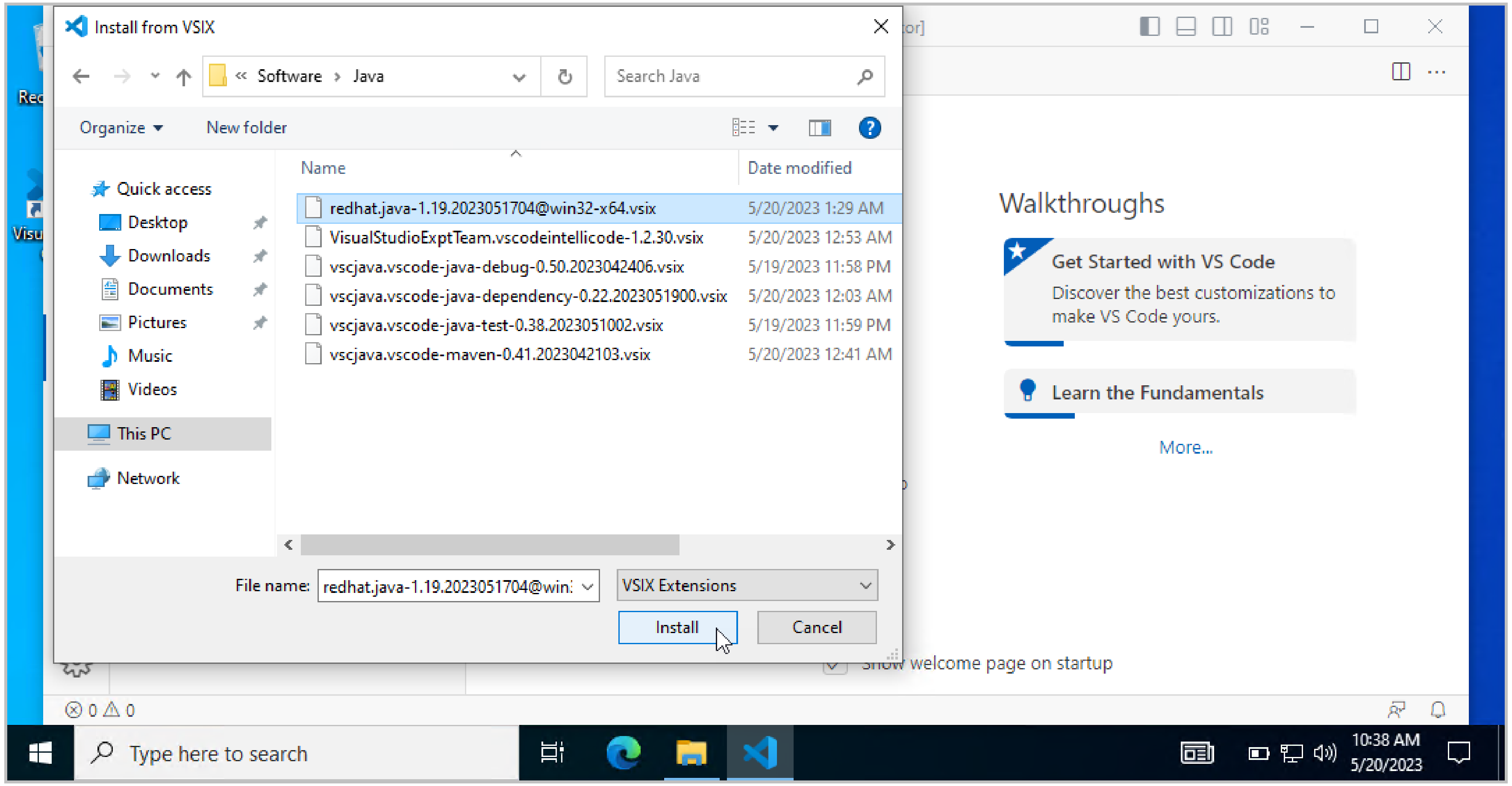
Install from VSIX

Name	Date modified
redhat.java-1.19.2023051704@win32-x64.vsix	5/20/2023 1:29 AM
VisualStudioExptTeam.vscodeintellicode-1.2.30.vsix	5/20/2023 12:53 AM
vscjava.vscode-java-debug-0.50.2023042406.vsix	5/19/2023 11:58 PM
vscjava.vscode-java-dependency-0.22.2023051900.vsix	5/20/2023 12:03 AM
vscjava.vscode-java-test-0.38.2023051002.vsix	5/19/2023 11:59 PM
vscjava.vscode-maven-0.41.2023042103.vsix	5/20/2023 12:41 AM

File name: redhat.java-1.19.2023051704@win:

VSIX Extensions

Click “Install”



Install from VSIX

« Software › Java

Name	Date modified
redhat.java-1.19.2023051704@win32-x64.vsix	5/20/2023 1:29 AM
VisualStudioExptTeam.vscodeintellicode-1.2.30.vsix	5/20/2023 12:53 AM
vscjava.vscode-java-debug-0.50.2023042406.vsix	5/19/2023 11:58 PM
vscjava.vscode-java-dependency-0.22.2023051900.vsix	5/20/2023 12:03 AM
vscjava.vscode-java-test-0.38.2023051002.vsix	5/19/2023 11:59 PM
vscjava.vscode-maven-0.41.2023042103.vsix	5/20/2023 12:41 AM

File name: redhat.java-1.19.2023051704@win:

VSIX Extensions

Walkthroughs

Get Started with VS Code

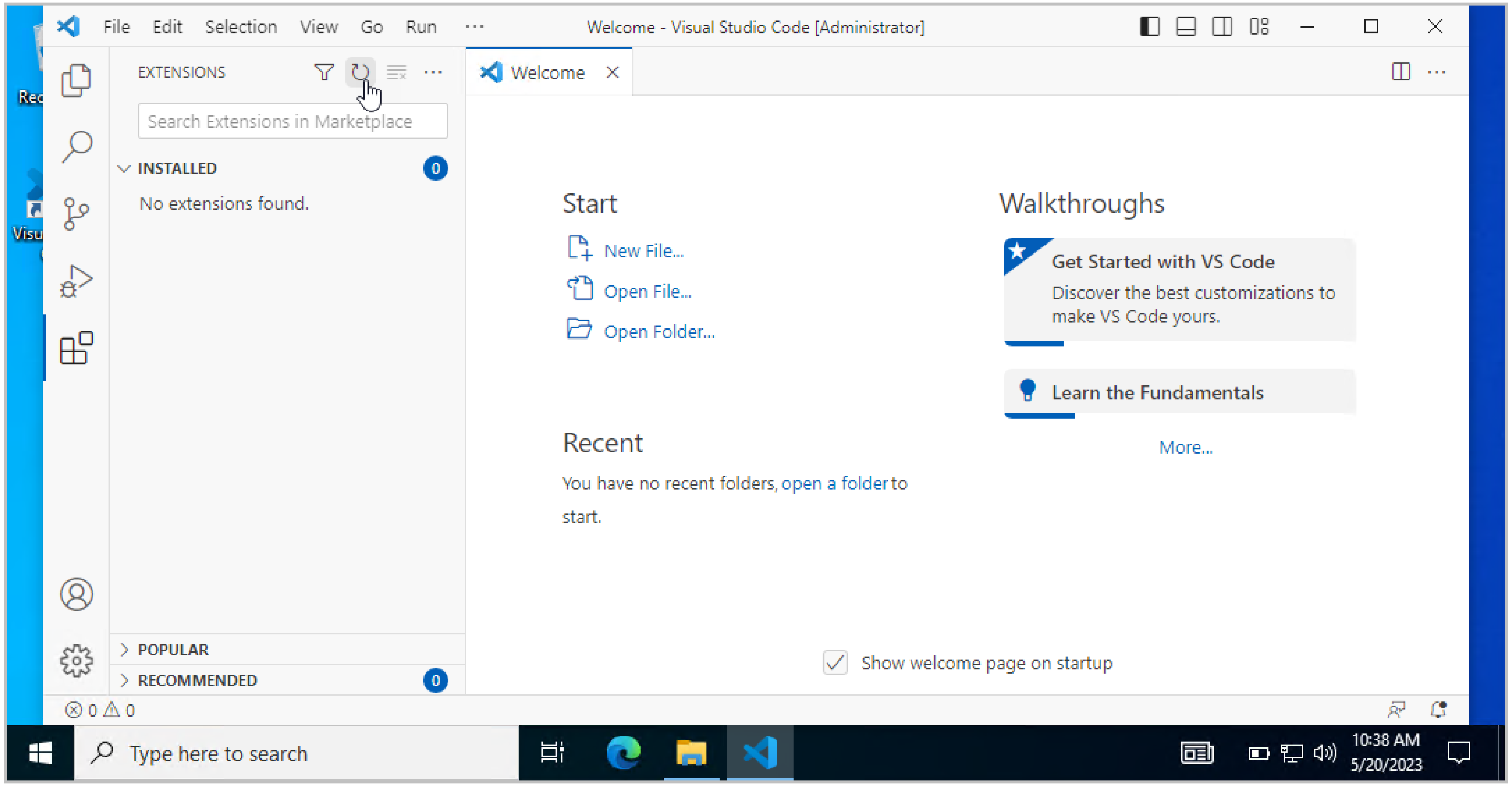
Discover the best customizations to make VS Code yours.

Learn the Fundamentals

More...

Show welcome page on startup

Click the “Refresh” icon to refresh the screen for Installed extensions

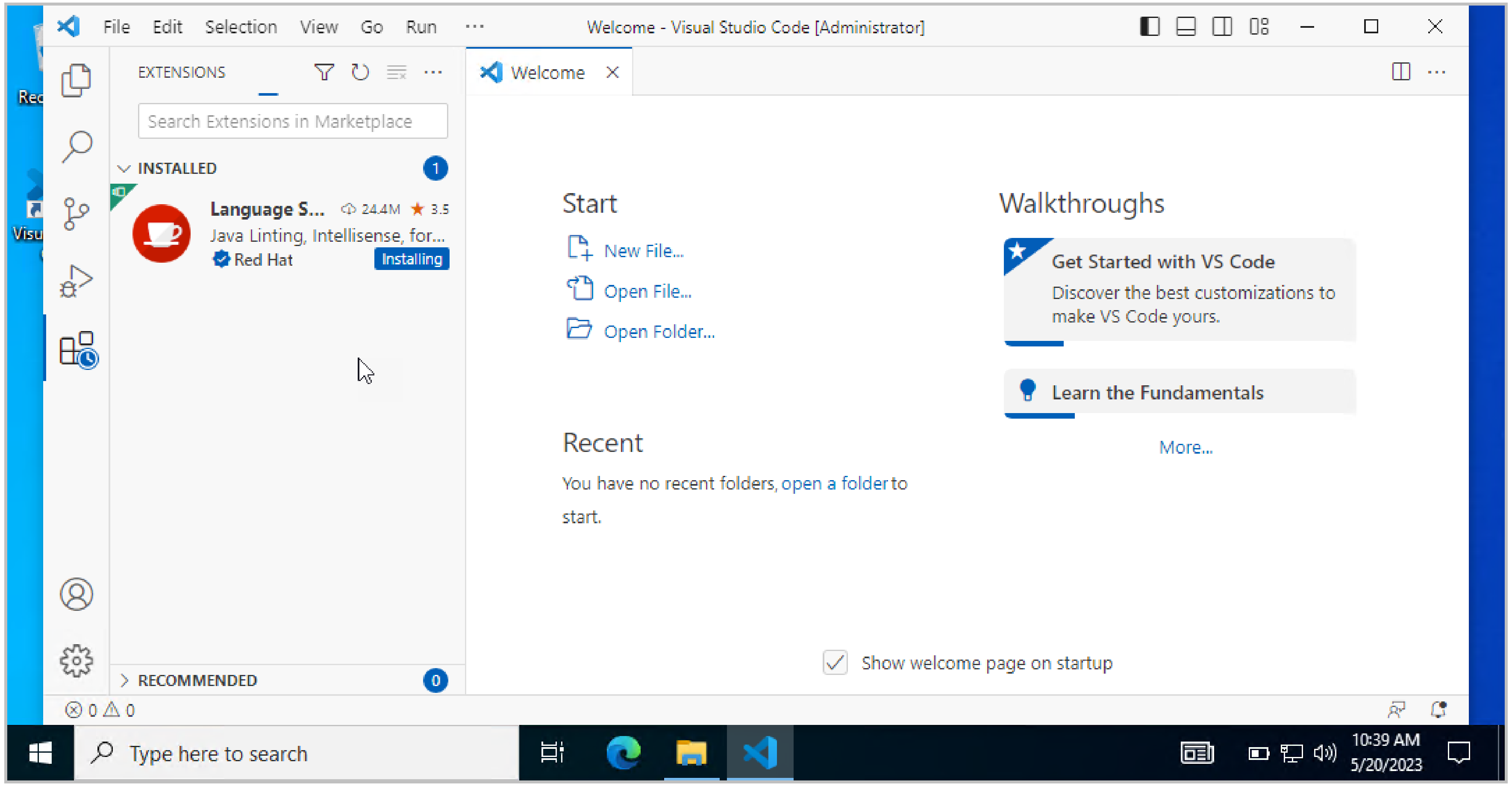


No extensions found.

Discover the best customizations to make VS Code yours.

You have no recent folders, open a folder to start.

Installation in progress



Welcome - Visual Studio Code [Administrator]

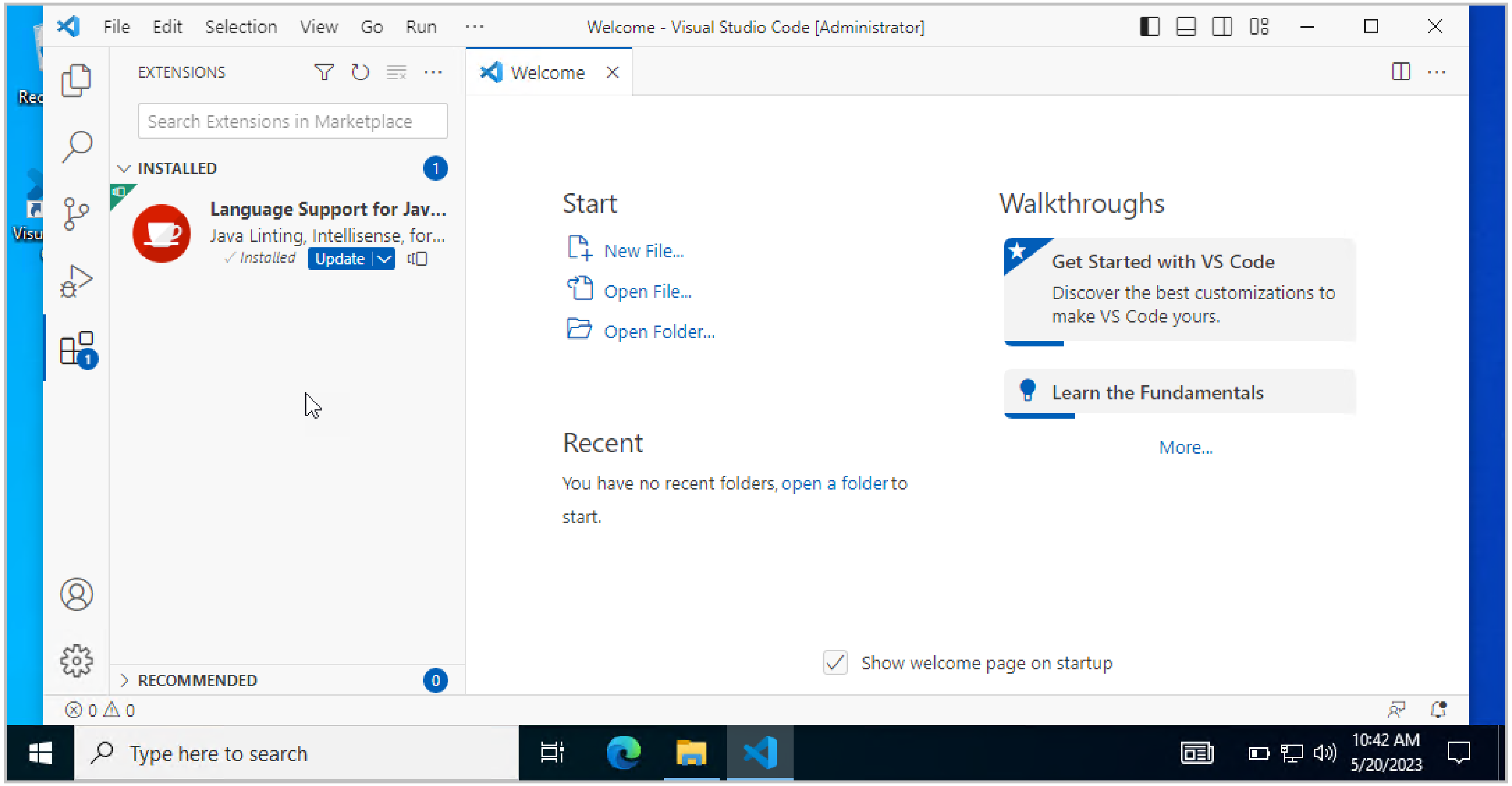
Language S... 24.4M ★ 3.5
Java Linting, Intellisense, for...
Red Hat Installing

Get Started with VS Code
Discover the best customizations to make VS Code yours.

Recent
You have no recent folders, open a folder to start.

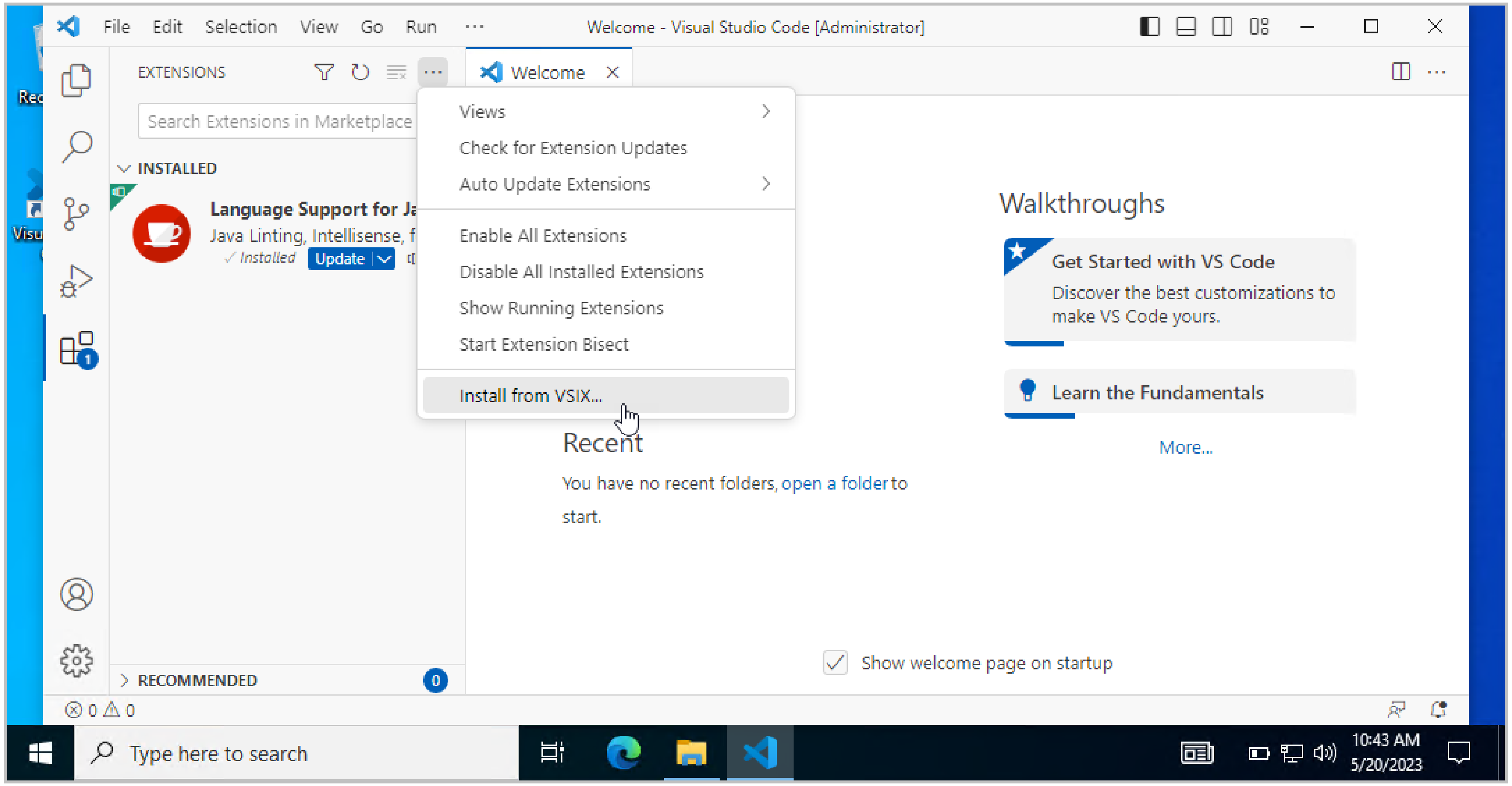
☑ Show welcome page on startup

Language Support for Java™ by Red Hat extension installation done

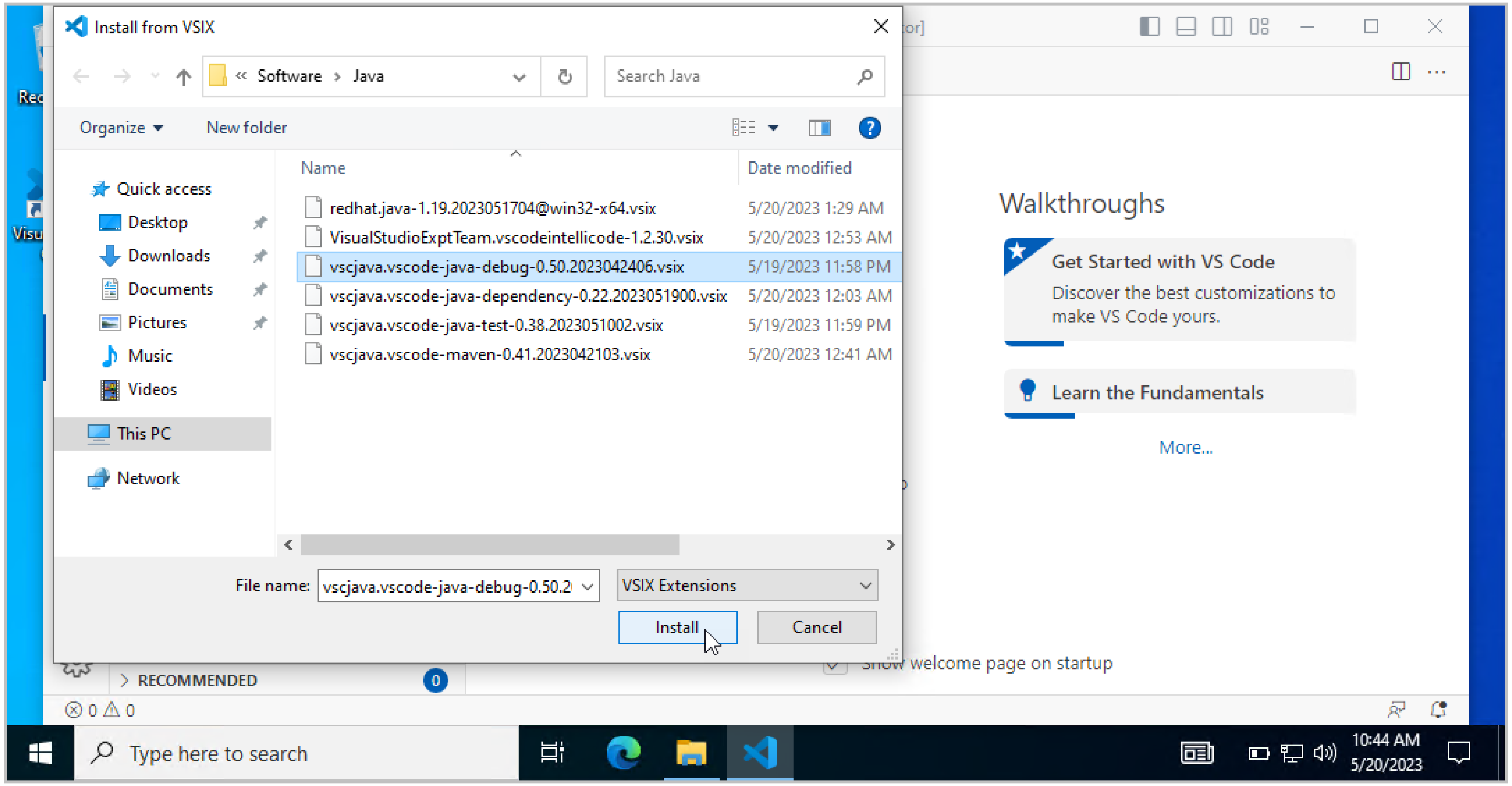


File
Edit
Selection
View
Go
Run
...
Welcome - Visual Studio Code [Administrator]
EXTENSIONS
Search Extensions in Marketplace
INSTALLED 1
Language Support for Jav...
Java Linting, Intellisense, for...
✓ Installed
Update
Welcome
Start
New File...
Open File...
Open Folder...
Walkthroughs
Get Started with VS Code
Discover the best customizations to make VS Code yours.
Learn the Fundamentals
More...
Recent
You have no recent folders, open a folder to start.
☑ Show welcome page on startup
RECOMMENDED 0
⊗ 0 ⚠ 0
Type here to search
10:42 AM
5/20/2023

Click “Install from VSIX...”



Select “Debugger for Java” extension and click “Install”



Install from VSIX

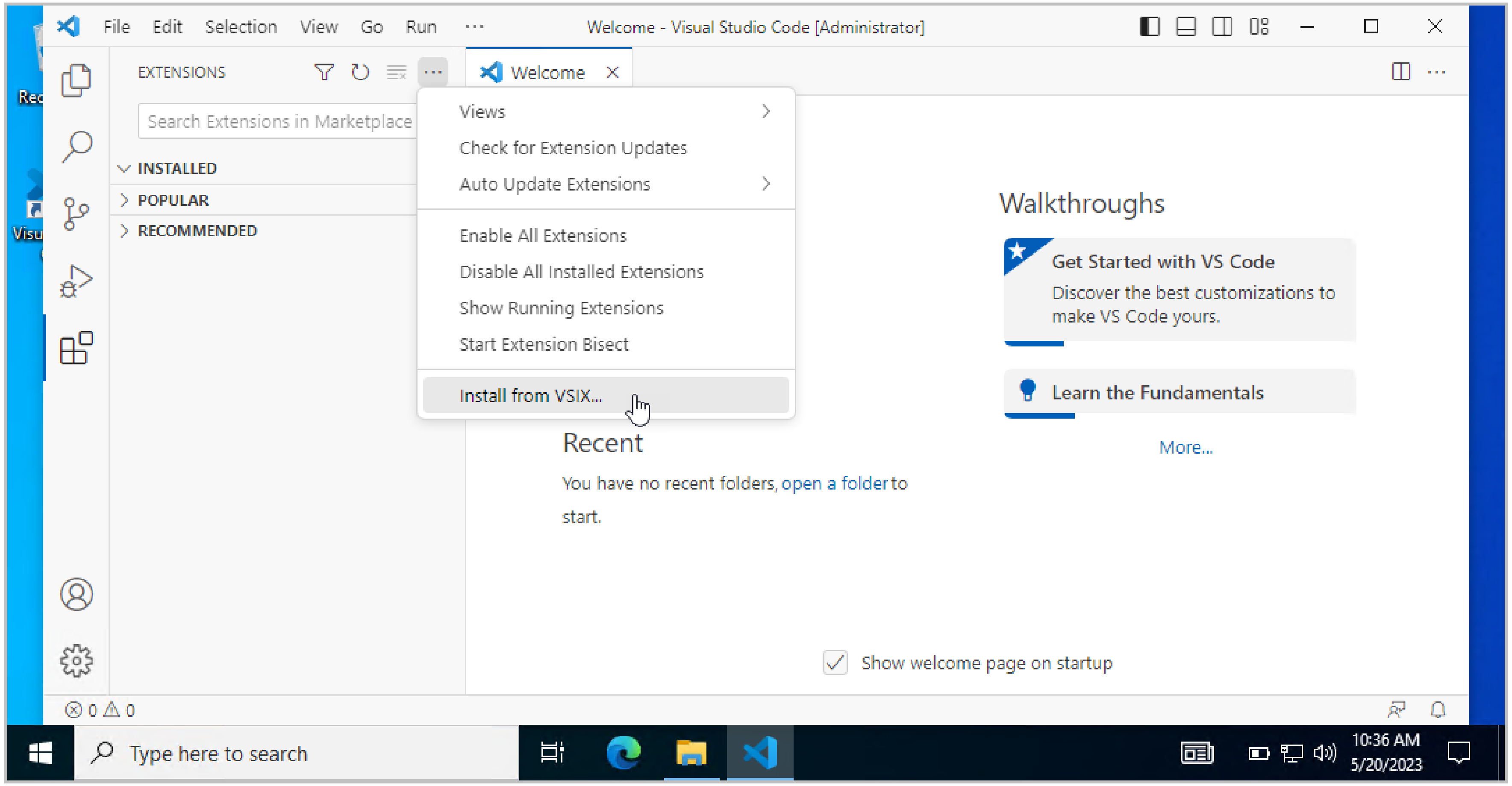
« Software › Java

Name	Date modified
redhat.java-1.19.2023051704@win32-x64.vsix	5/20/2023 1:29 AM
VisualStudioExptTeam.vscodeintellicode-1.2.30.vsix	5/20/2023 12:53 AM
vscjava.vscode-java-debug-0.50.2023042406.vsix	5/19/2023 11:58 PM
vscjava.vscode-java-dependency-0.22.2023051900.vsix	5/20/2023 12:03 AM
vscjava.vscode-java-test-0.38.2023051002.vsix	5/19/2023 11:59 PM
vscjava.vscode-maven-0.41.2023042103.vsix	5/20/2023 12:41 AM

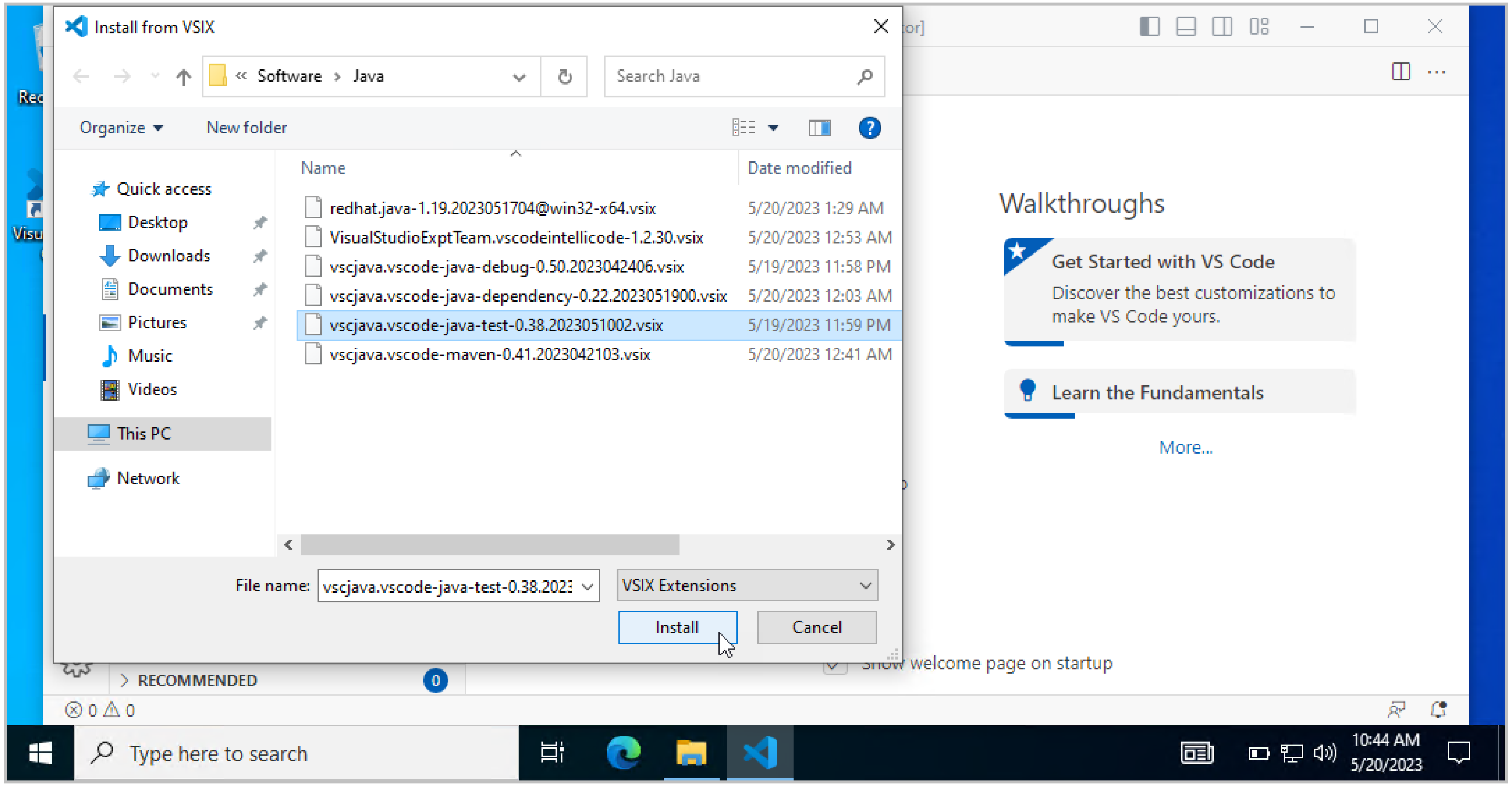
File name: vscjava.vscode-java-debug-0.50.2

VSIX Extensions

Click “Install from VSIX...”



Select “Test Runner for Java” extension and click “Install”



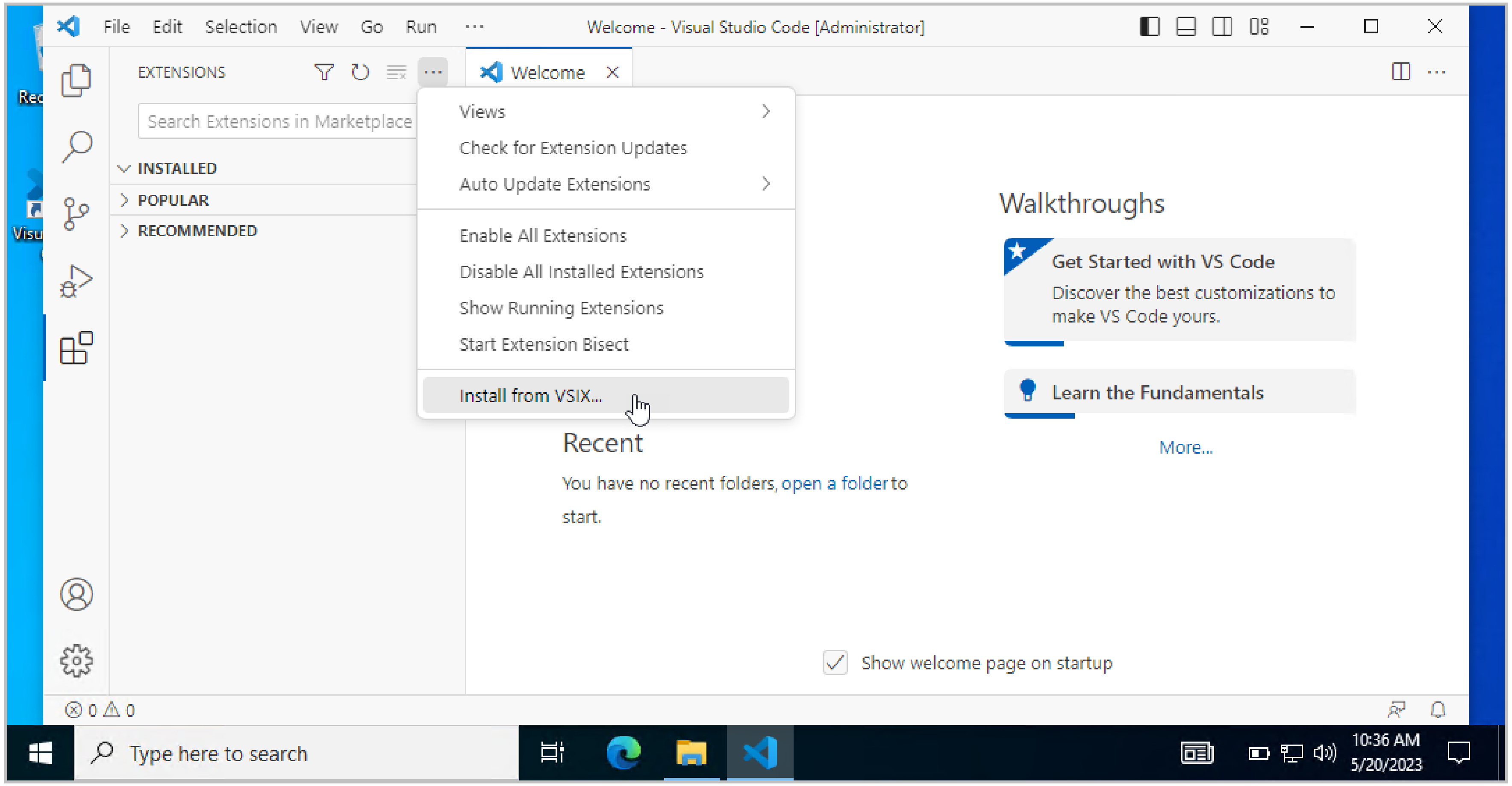
Name	Date modified
redhat.java-1.19.2023051704@win32-x64.vsix	5/20/2023 1:29 AM
VisualStudioExptTeam.vscodeintellicode-1.2.30.vsix	5/20/2023 12:53 AM
vscjava.vscode-java-debug-0.50.2023042406.vsix	5/19/2023 11:58 PM
vscjava.vscode-java-dependency-0.22.2023051900.vsix	5/20/2023 12:03 AM
vscjava.vscode-java-test-0.38.2023051002.vsix	5/19/2023 11:59 PM
vscjava.vscode-maven-0.41.2023042103.vsix	5/20/2023 12:41 AM

File name: vscjava.vscode-java-test-0.38.202

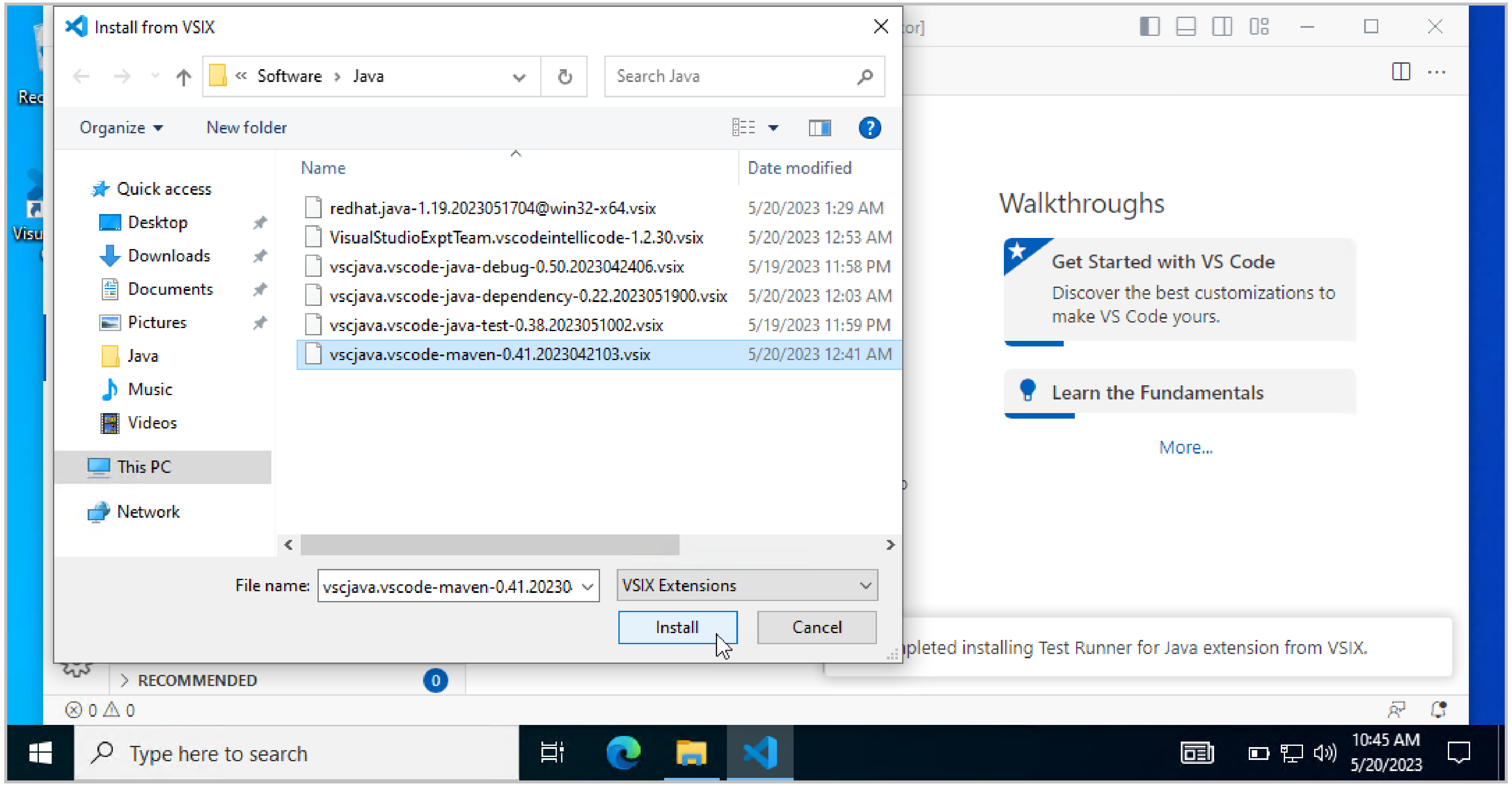
VSIX Extensions

Discover the best customizations to make VS Code yours.

Click “Install from VSIX...”



Select “Maven for Java” extension and click “Install”



Install from VSIX

« Software › Java

Name	Date modified
redhat.java-1.19.2023051704@win32-x64.vsix	5/20/2023 1:29 AM
VisualStudioExptTeam.vscodeintellicode-1.2.30.vsix	5/20/2023 12:53 AM
vscjava.vscode-java-debug-0.50.2023042406.vsix	5/19/2023 11:58 PM
vscjava.vscode-java-dependency-0.22.2023051900.vsix	5/20/2023 12:03 AM
vscjava.vscode-java-test-0.38.2023051002.vsix	5/19/2023 11:59 PM
vscjava.vscode-maven-0.41.2023042103.vsix	5/20/2023 12:41 AM

File name: vscjava.vscode-maven-0.41.20230

VSIX Extensions

Walkthroughs

Get Started with VS Code

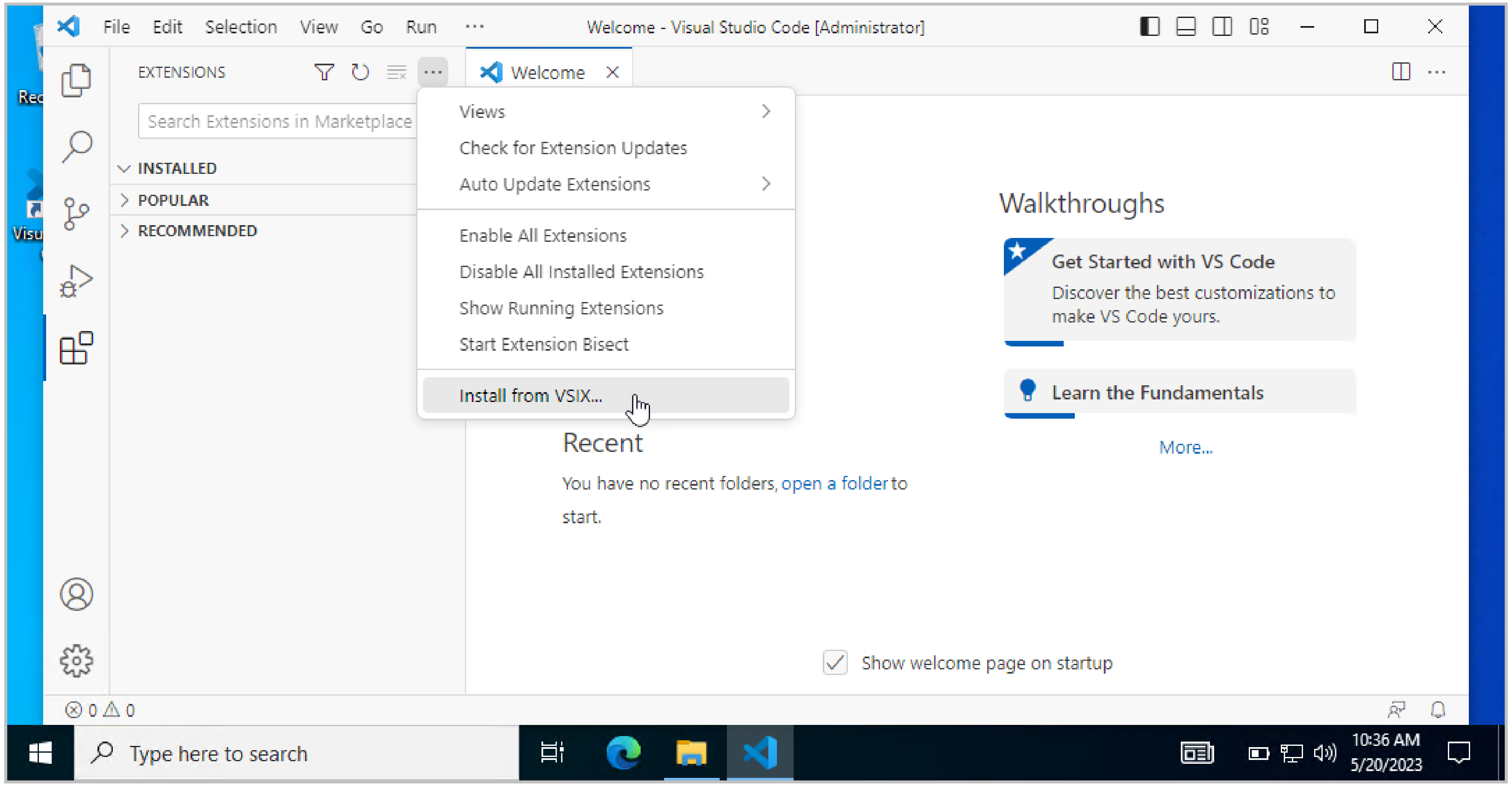
Discover the best customizations to make VS Code yours.

Learn the Fundamentals

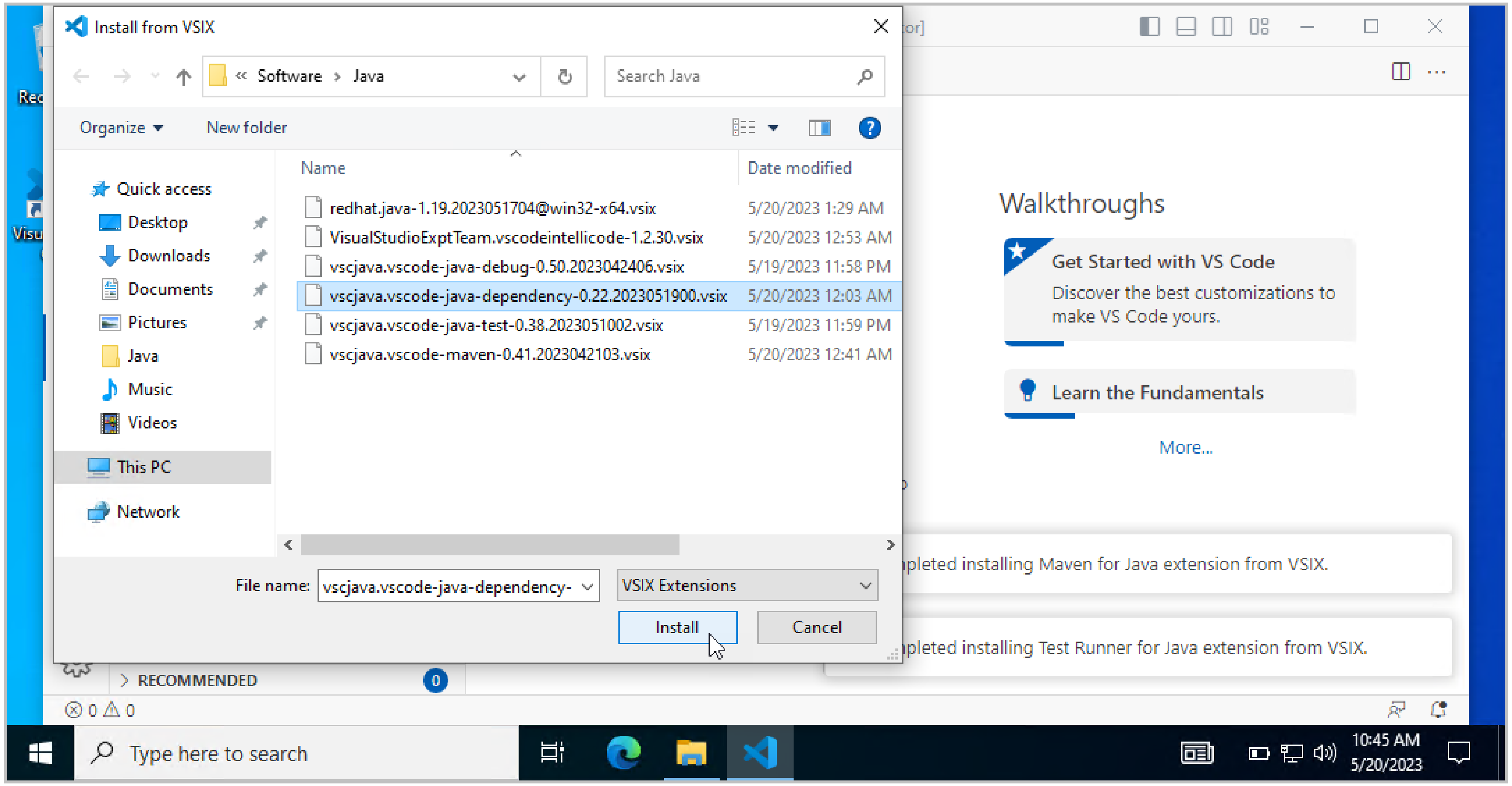
More...

pleted installing Test Runner for Java extension from VSIX.

Click “Install from VSIX...”



Select “Project Manager for Java” extension and click “Install”



Install from VSIX

« Software › Java

Search Java

Organize ▾ New folder

Name	Date modified
redhat.java-1.19.2023051704@win32-x64.vsix	5/20/2023 1:29 AM
VisualStudioExptTeam.vscodeintellicode-1.2.30.vsix	5/20/2023 12:53 AM
vscjava.vscode-java-debug-0.50.2023042406.vsix	5/19/2023 11:58 PM
vscjava.vscode-java-dependency-0.22.2023051900.vsix	5/20/2023 12:03 AM
vscjava.vscode-java-test-0.38.2023051002.vsix	5/19/2023 11:59 PM
vscjava.vscode-maven-0.41.2023042103.vsix	5/20/2023 12:41 AM

File name: vscjava.vscode-java-dependency-

VSIX Extensions

Install Cancel

Walkthroughs

Get Started with VS Code

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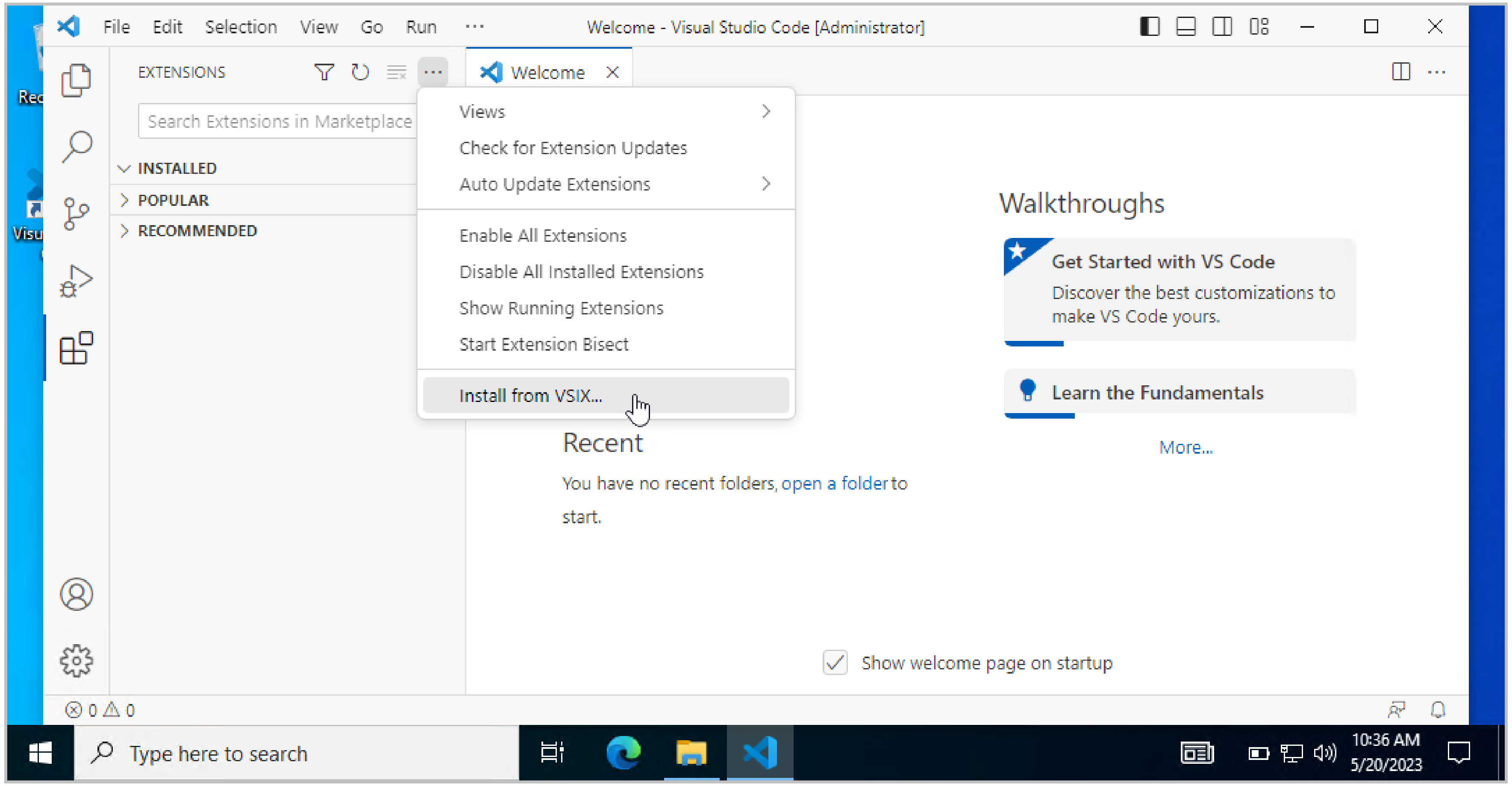
More...

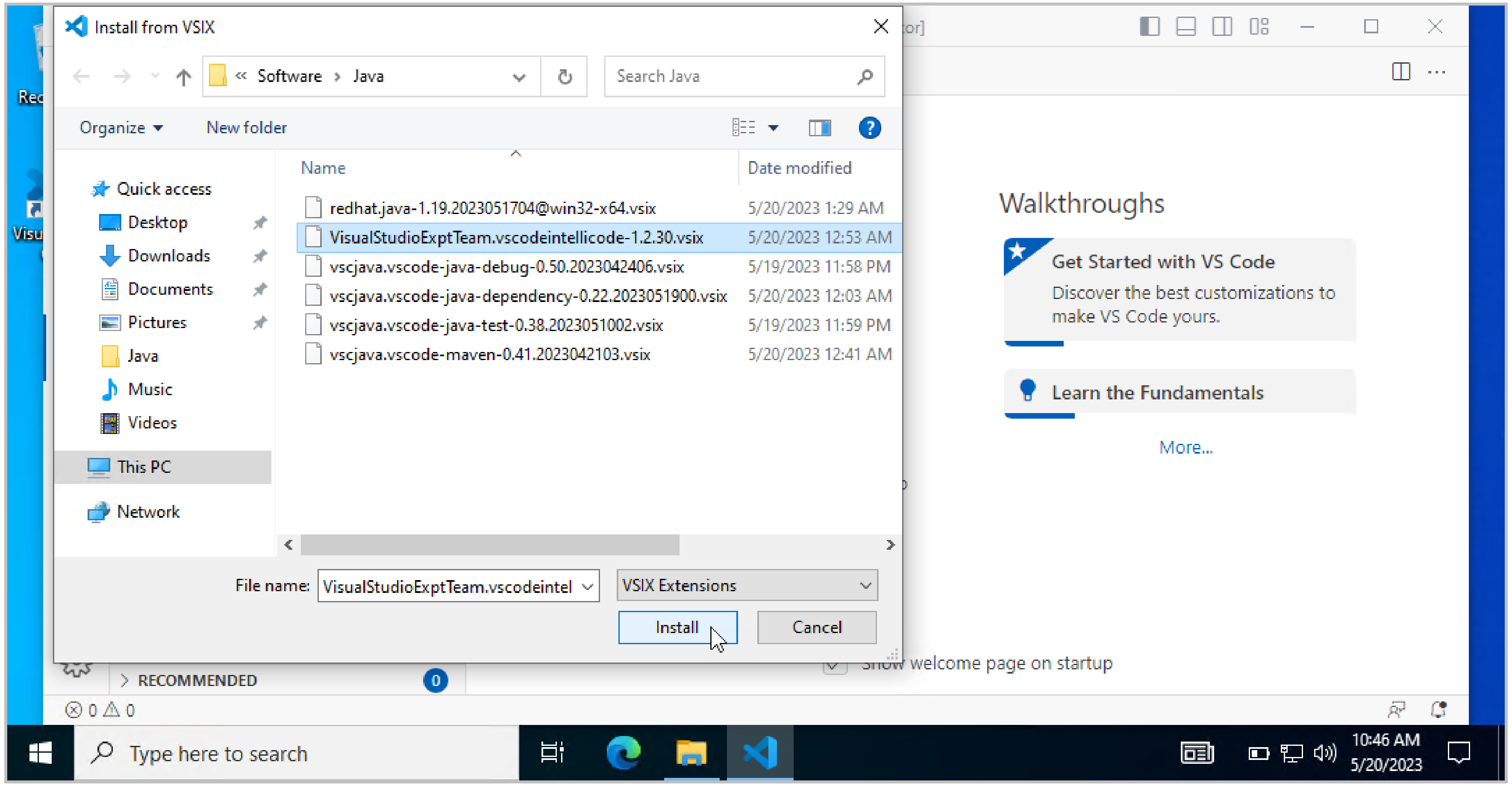
...pleted installing Maven for Java extension from VSIX.

...pleted installing Test Runner for Java extension from VSIX.

Click “Install from VSIX...”



Select “Visual Studio IntelliCode” extension and click “Install”



Install from VSIX

Name	Date modified
redhat.java-1.19.2023051704@win32-x64.vsix	5/20/2023 1:29 AM
VisualStudioExptTeam.vscodeintellicode-1.2.30.vsix	5/20/2023 12:53 AM
vscjava.vscode-java-debug-0.50.2023042406.vsix	5/19/2023 11:58 PM
vscjava.vscode-java-dependency-0.22.2023051900.vsix	5/20/2023 12:03 AM
vscjava.vscode-java-test-0.38.2023051002.vsix	5/19/2023 11:59 PM
vscjava.vscode-maven-0.41.2023042103.vsix	5/20/2023 12:41 AM

File name: VisualStudioExptTeam.vscodeintel

VSIX Extensions

Walkthroughs

Get Started with VS Code

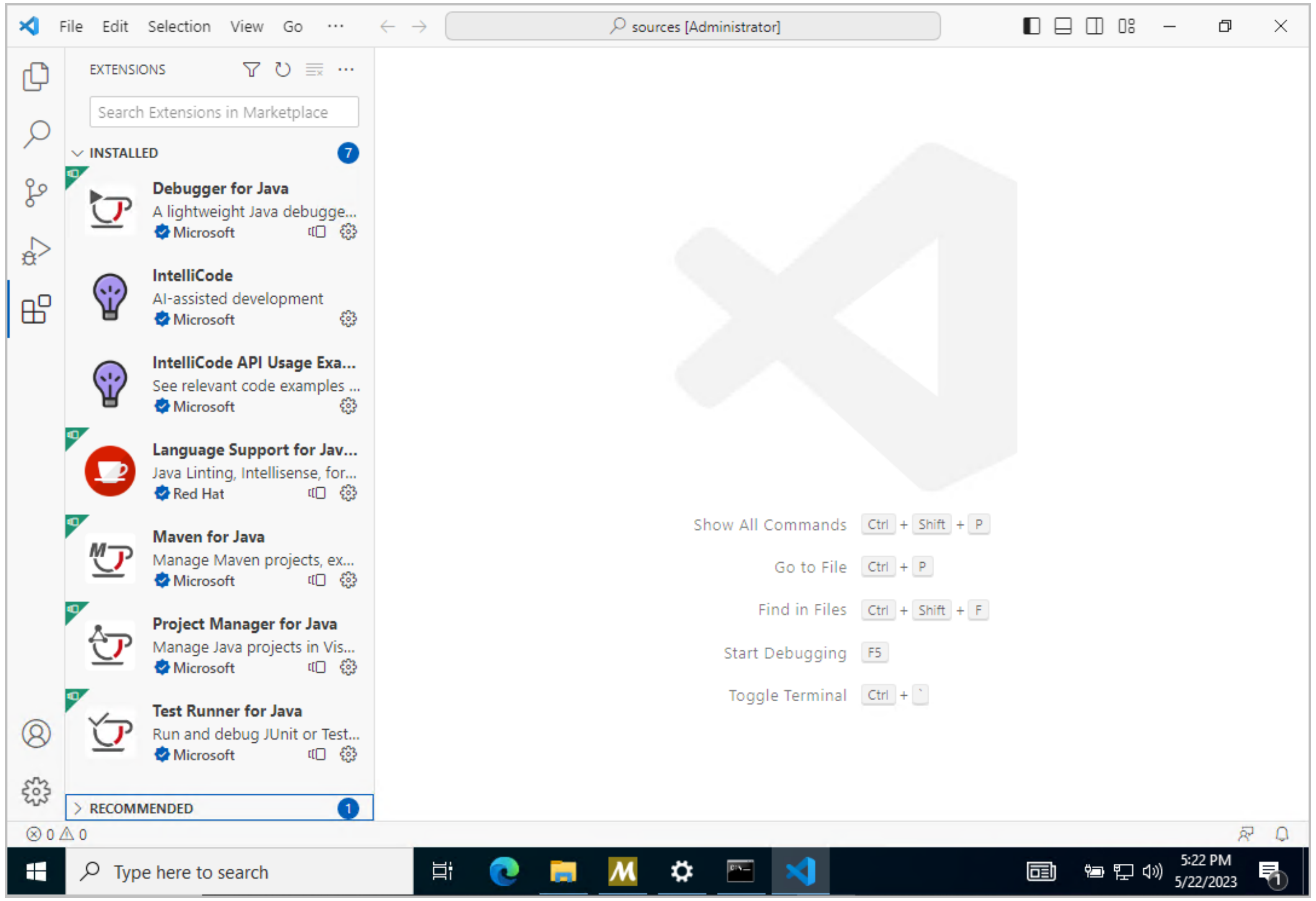
Discover the best customizations to make VS Code yours.

Learn the Fundamentals

More...

Show welcome page on startup

7 Extensions Installed



File Edit Selection View Go ···
sources [Administrator]
EXTENSIONS
Search Extensions in Marketplace
INSTALLED 7

Debugger for Java
A lightweight Java debugge...
Microsoft

IntelliCode
AI-assisted development
Microsoft

IntelliCode API Usage Exa...
See relevant code examples ...
Microsoft

Language Support for Jav...
Java Linting, Intellisense, for...
Red Hat

Maven for Java
Manage Maven projects, ex...
Microsoft

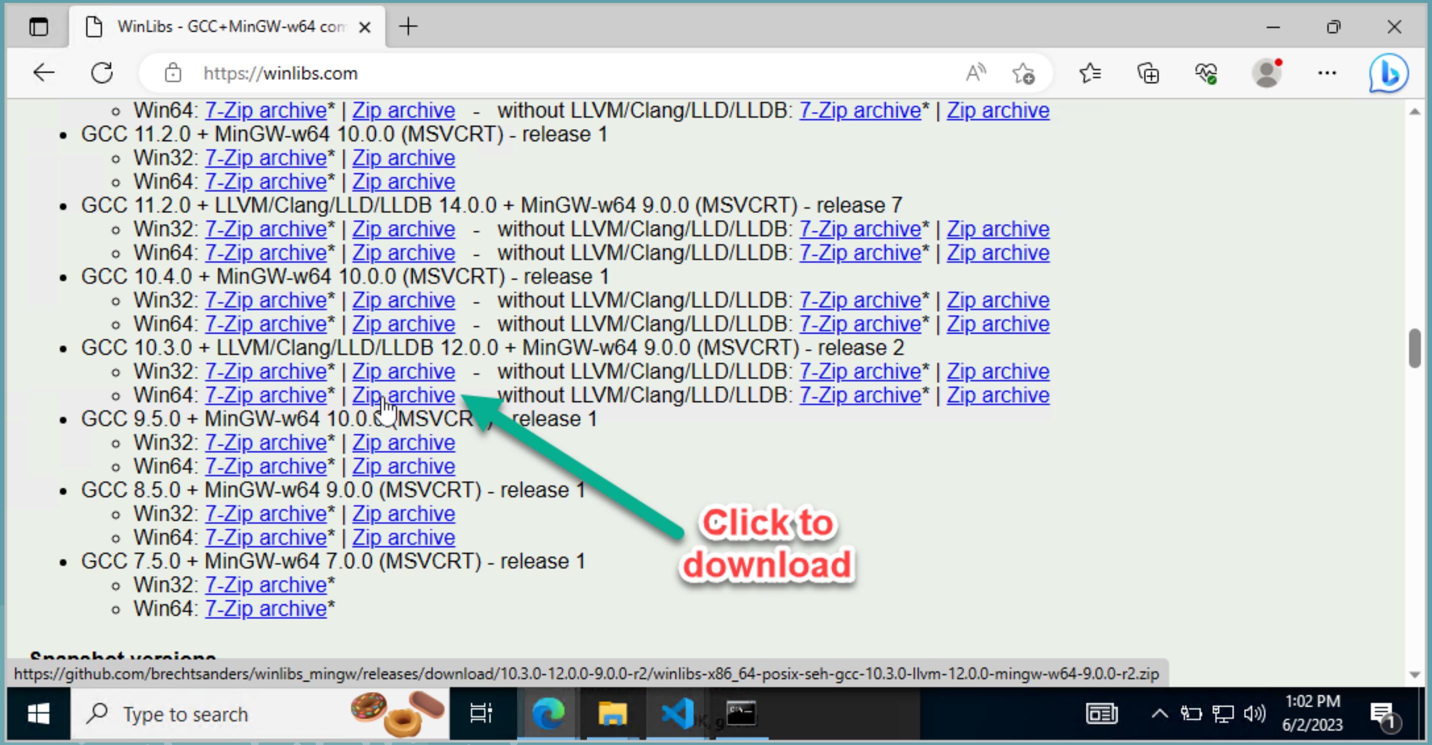
Project Manager for Java
Manage Java projects in Vis...
Microsoft

Test Runner for Java
Run and debug JUnit or Test...
Microsoft

Installing C++ Compiler

Versions of GCC

- For computers with Windows OS, you can download the version of gcc required from,
- [WinLibs - GCC+MinGW-w64 compiler for Windows](https://winlibs.com/) (https://winlibs.com/)



  - Win64: 7-Zip archive* | Zip archive - without LLVM/Clang/LLD/LLDB: 7-Zip archive* | Zip archive
- GCC 11.2.0 + MinGW-w64 10.0.0 (MSVCRT) - release 1
  - Win32: 7-Zip archive* | Zip archive
  - Win64: 7-Zip archive* | Zip archive
- GCC 11.2.0 + LLVM/Clang/LLD/LLDB 14.0.0 + MinGW-w64 9.0.0 (MSVCRT) - release 7
  - Win32: 7-Zip archive* | Zip archive - without LLVM/Clang/LLD/LLDB: 7-Zip archive* | Zip archive
  - Win64: 7-Zip archive* | Zip archive - without LLVM/Clang/LLD/LLDB: 7-Zip archive* | Zip archive
- GCC 10.4.0 + MinGW-w64 10.0.0 (MSVCRT) - release 1
  - Win32: 7-Zip archive* | Zip archive - without LLVM/Clang/LLD/LLDB: 7-Zip archive* | Zip archive
  - Win64: 7-Zip archive* | Zip archive - without LLVM/Clang/LLD/LLDB: 7-Zip archive* | Zip archive
- GCC 10.3.0 + LLVM/Clang/LLD/LLDB 12.0.0 + MinGW-w64 9.0.0 (MSVCRT) - release 2
  - Win32: 7-Zip archive* | Zip archive - without LLVM/Clang/LLD/LLDB: 7-Zip archive* | Zip archive
  - Win64: 7-Zip archive* | Zip archive - without LLVM/Clang/LLD/LLDB: 7-Zip archive* | Zip archive
- GCC 9.5.0 + MinGW-w64 10.0.0 (MSVCRT) - release 1
  - Win32: 7-Zip archive* | Zip archive
  - Win64: 7-Zip archive* | Zip archive
- GCC 8.5.0 + MinGW-w64 9.0.0 (MSVCRT) - release 1
  - Win32: 7-Zip archive* | Zip archive
  - Win64: 7-Zip archive* | Zip archive
- GCC 7.5.0 + MinGW-w64 7.0.0 (MSVCRT) - release 1
  - Win32: 7-Zip archive*
  - Win64: 7-Zip archive*

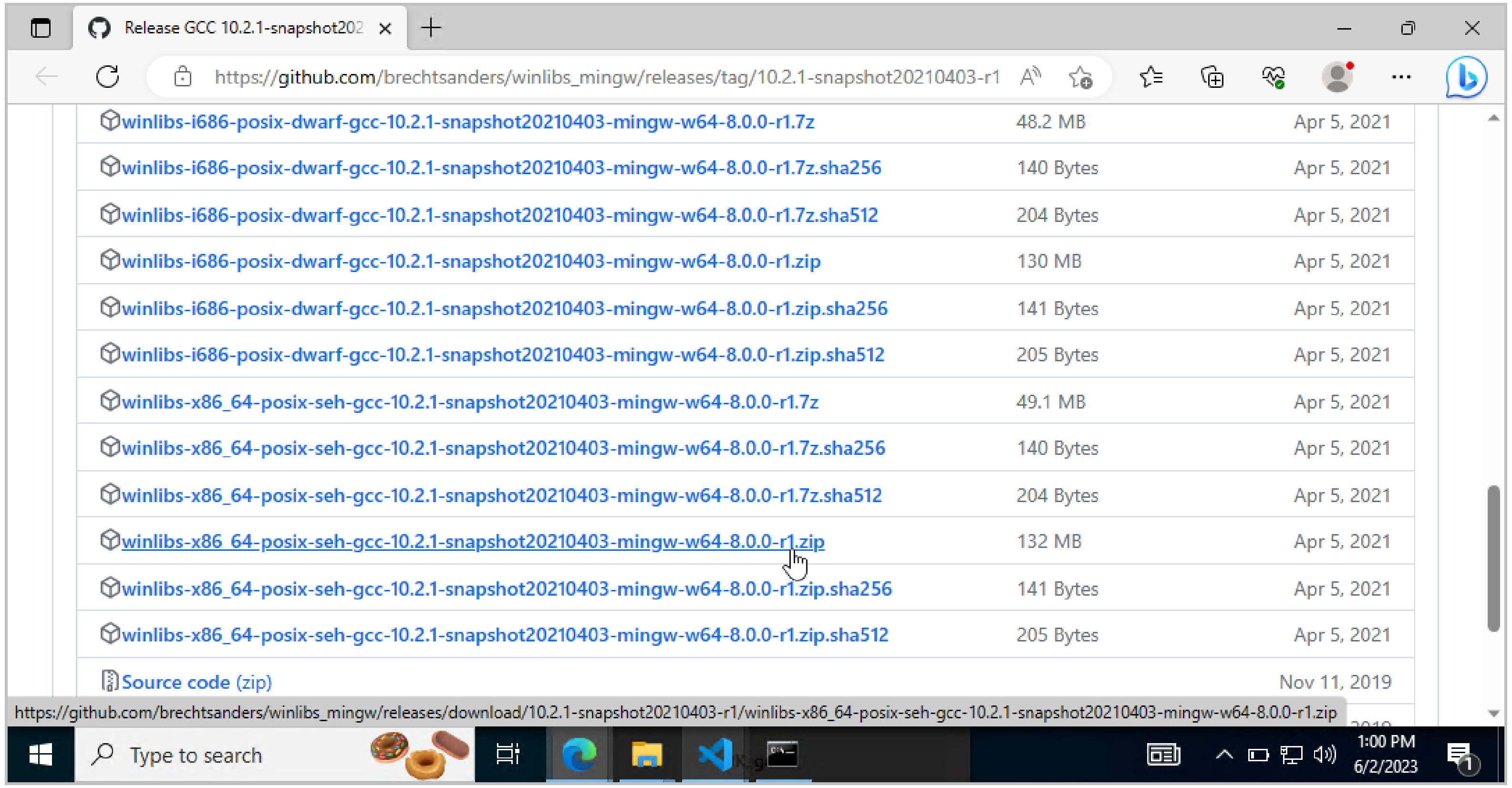
Snapshot versions

https://github.com/brechtsanders/winlibs_mingw/releases/download/10.3.0-12.0.0-9.0.0-r2/winlibs-x86_64-posix-seh-gcc-10.3.0-llvm-12.0.0-mingw-w64-9.0.0-r2.zip

Click to download

GCC 10.2.1-snapshot20210403 + MinGW-w64 8.0.0 (r1)

- https://github.com/brechtsanders/winlibs_mingw/releases/tag/10.2.1-snapshot20210403-r1



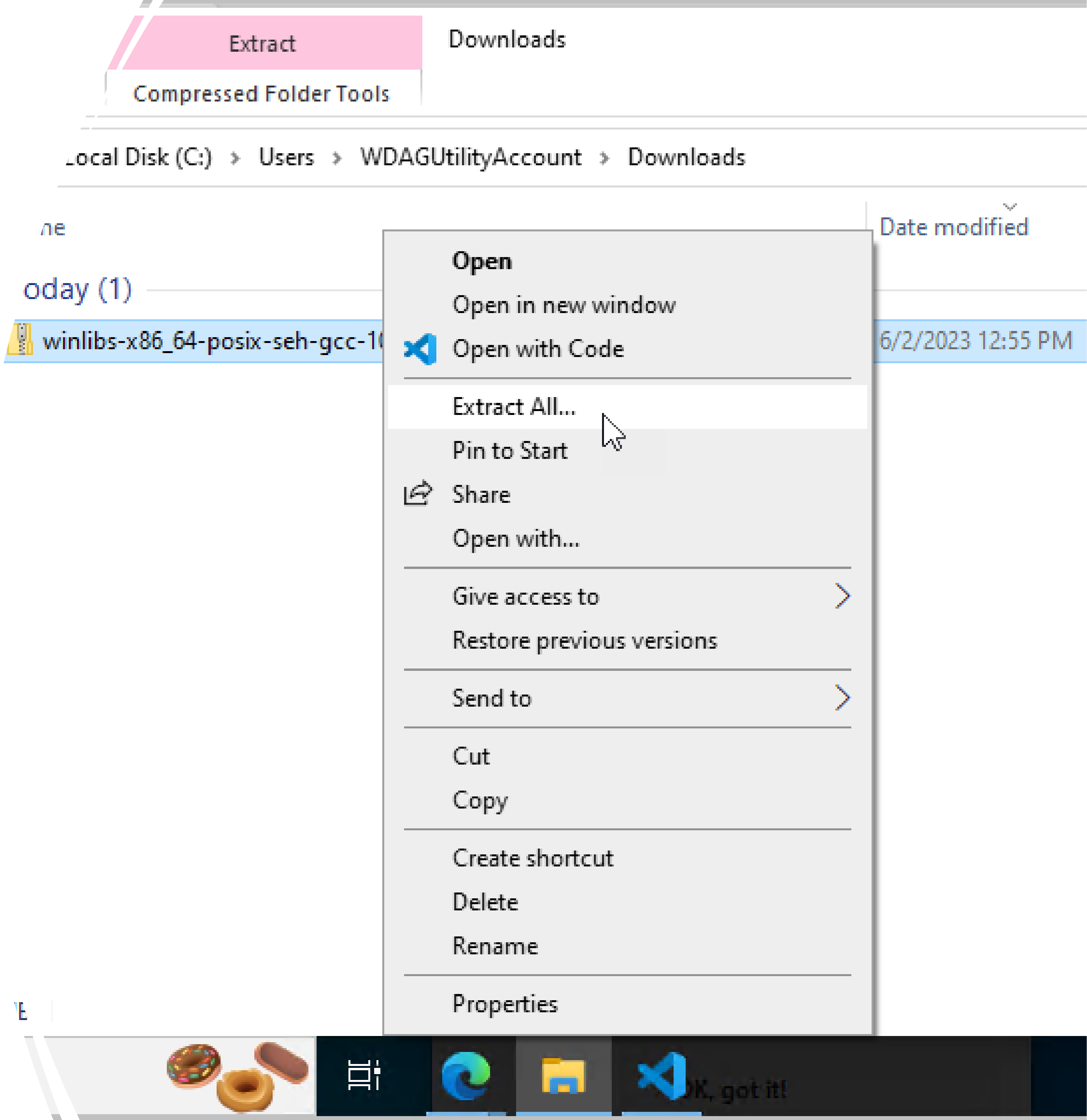
https://github.com/brechtsanders/winlibs_mingw/releases/tag/10.2.1-snapshot20210403-r1

winlibs-i686-posix-dwarf-gcc-10.2.1-snapshot20210403-mingw-w64-8.0.0-r1.7z	48.2 MB	Apr 5, 2021
winlibs-i686-posix-dwarf-gcc-10.2.1-snapshot20210403-mingw-w64-8.0.0-r1.7z.sha256	140 Bytes	Apr 5, 2021
winlibs-i686-posix-dwarf-gcc-10.2.1-snapshot20210403-mingw-w64-8.0.0-r1.7z.sha512	204 Bytes	Apr 5, 2021
winlibs-i686-posix-dwarf-gcc-10.2.1-snapshot20210403-mingw-w64-8.0.0-r1.zip	130 MB	Apr 5, 2021
winlibs-i686-posix-dwarf-gcc-10.2.1-snapshot20210403-mingw-w64-8.0.0-r1.zip.sha256	141 Bytes	Apr 5, 2021
winlibs-i686-posix-dwarf-gcc-10.2.1-snapshot20210403-mingw-w64-8.0.0-r1.zip.sha512	205 Bytes	Apr 5, 2021
winlibs-x86_64-posix-seh-gcc-10.2.1-snapshot20210403-mingw-w64-8.0.0-r1.7z	49.1 MB	Apr 5, 2021
winlibs-x86_64-posix-seh-gcc-10.2.1-snapshot20210403-mingw-w64-8.0.0-r1.7z.sha256	140 Bytes	Apr 5, 2021
winlibs-x86_64-posix-seh-gcc-10.2.1-snapshot20210403-mingw-w64-8.0.0-r1.7z.sha512	204 Bytes	Apr 5, 2021
winlibs-x86_64-posix-seh-gcc-10.2.1-snapshot20210403-mingw-w64-8.0.0-r1.zip	132 MB	Apr 5, 2021
winlibs-x86_64-posix-seh-gcc-10.2.1-snapshot20210403-mingw-w64-8.0.0-r1.zip.sha256	141 Bytes	Apr 5, 2021
winlibs-x86_64-posix-seh-gcc-10.2.1-snapshot20210403-mingw-w64-8.0.0-r1.zip.sha512	205 Bytes	Apr 5, 2021
Source code (zip)		Nov 11, 2019

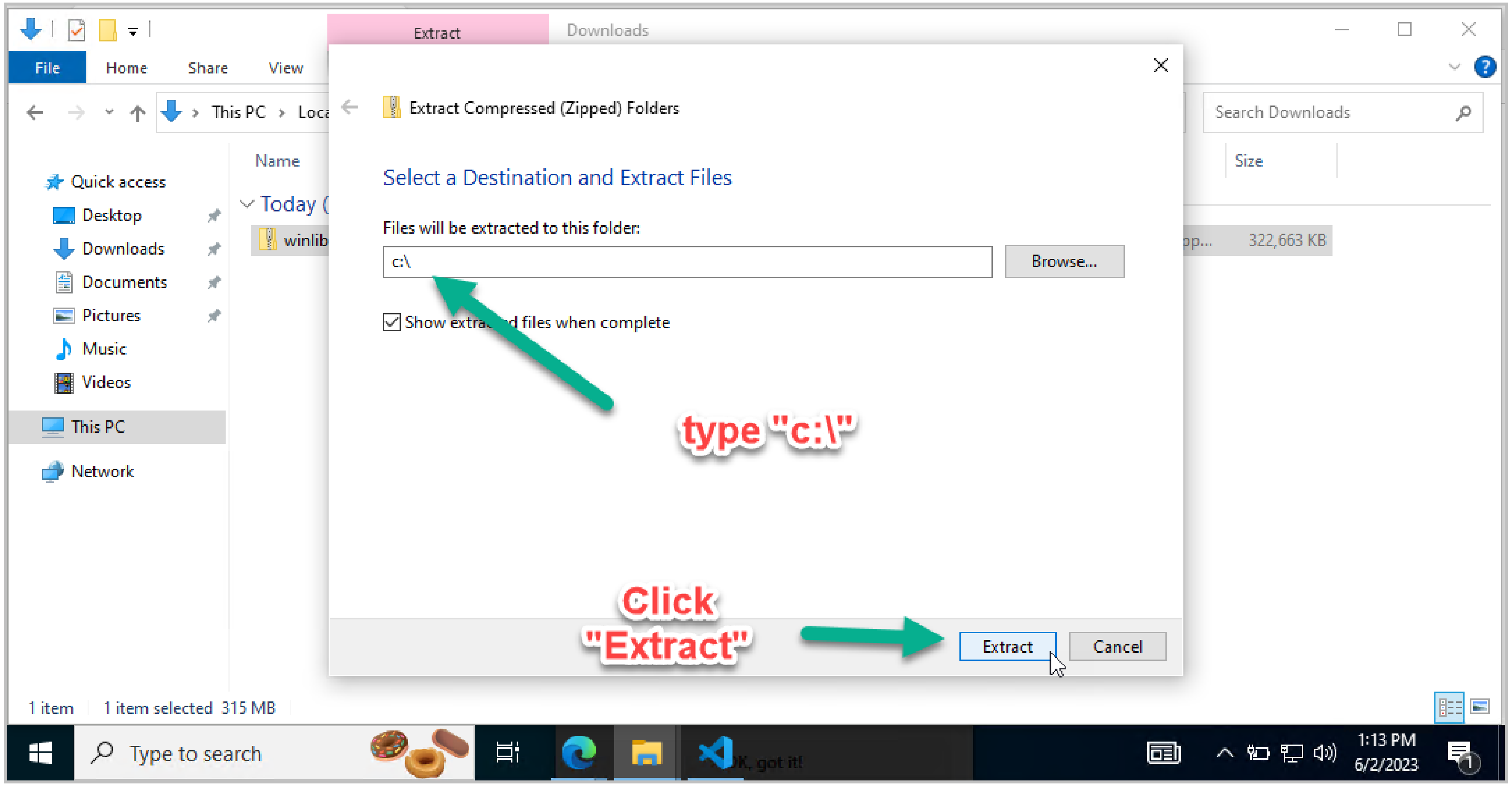
https://github.com/brechtsanders/winlibs_mingw/releases/download/10.2.1-snapshot20210403-r1/winlibs-x86_64-posix-seh-gcc-10.2.1-snapshot20210403-mingw-w64-8.0.0-r1.zip

To Install

- Step 1: Extract the zip file.



Enter the path where you want the zip file to be extracted to.



Extract Compressed (Zipped) Folders

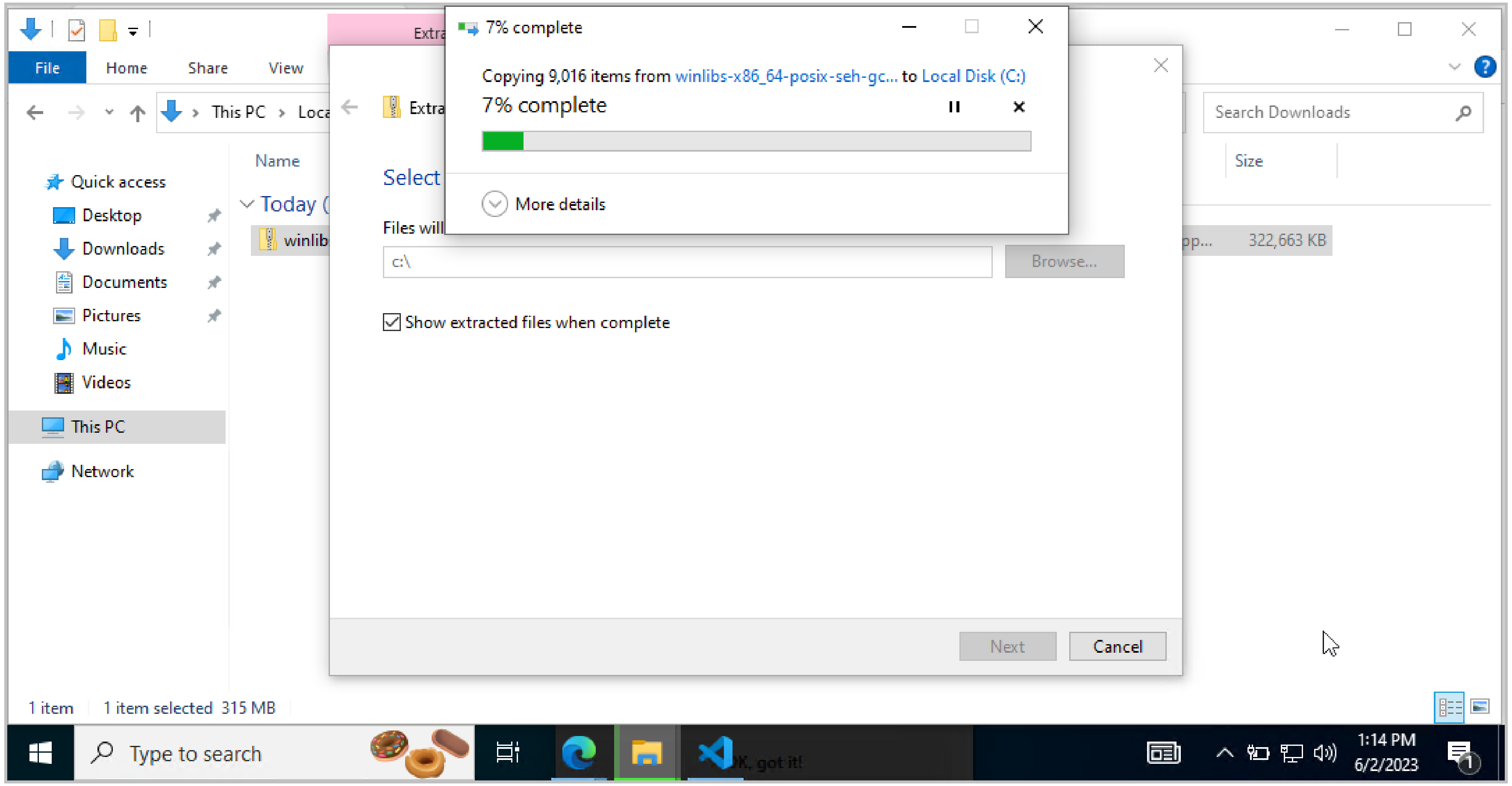
Select a Destination and Extract Files

Files will be extracted to this folder:

c:\

☑ Show extracted files when complete

Extracting the zip file



7% complete

Copying 9,016 items from winlibs-x86_64-posix-seh-gc... to Local Disk (C:)

7% complete

More details

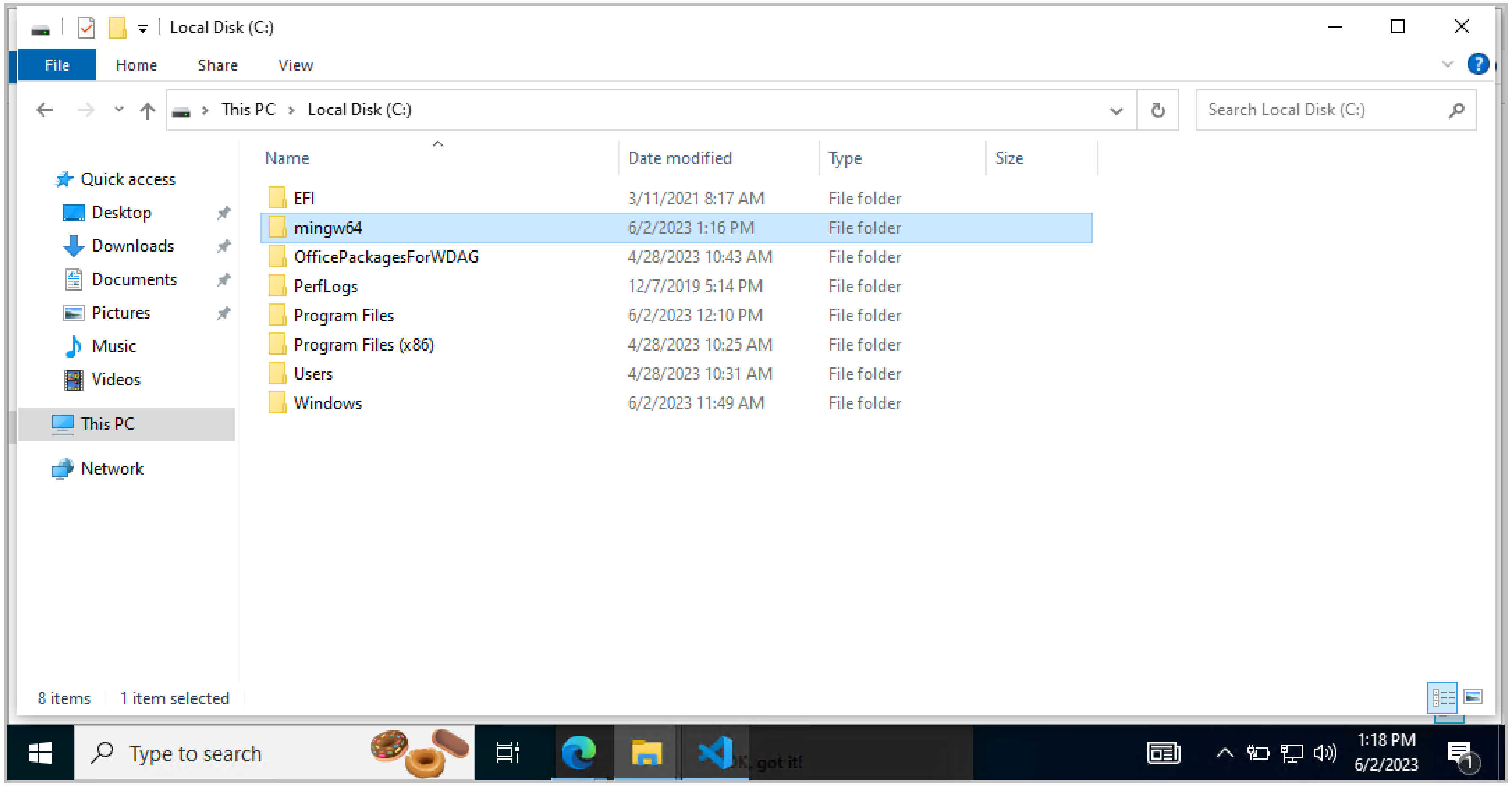
Files will

c:\

☑ Show extracted files when complete

1 item 1 item selected 315 MB

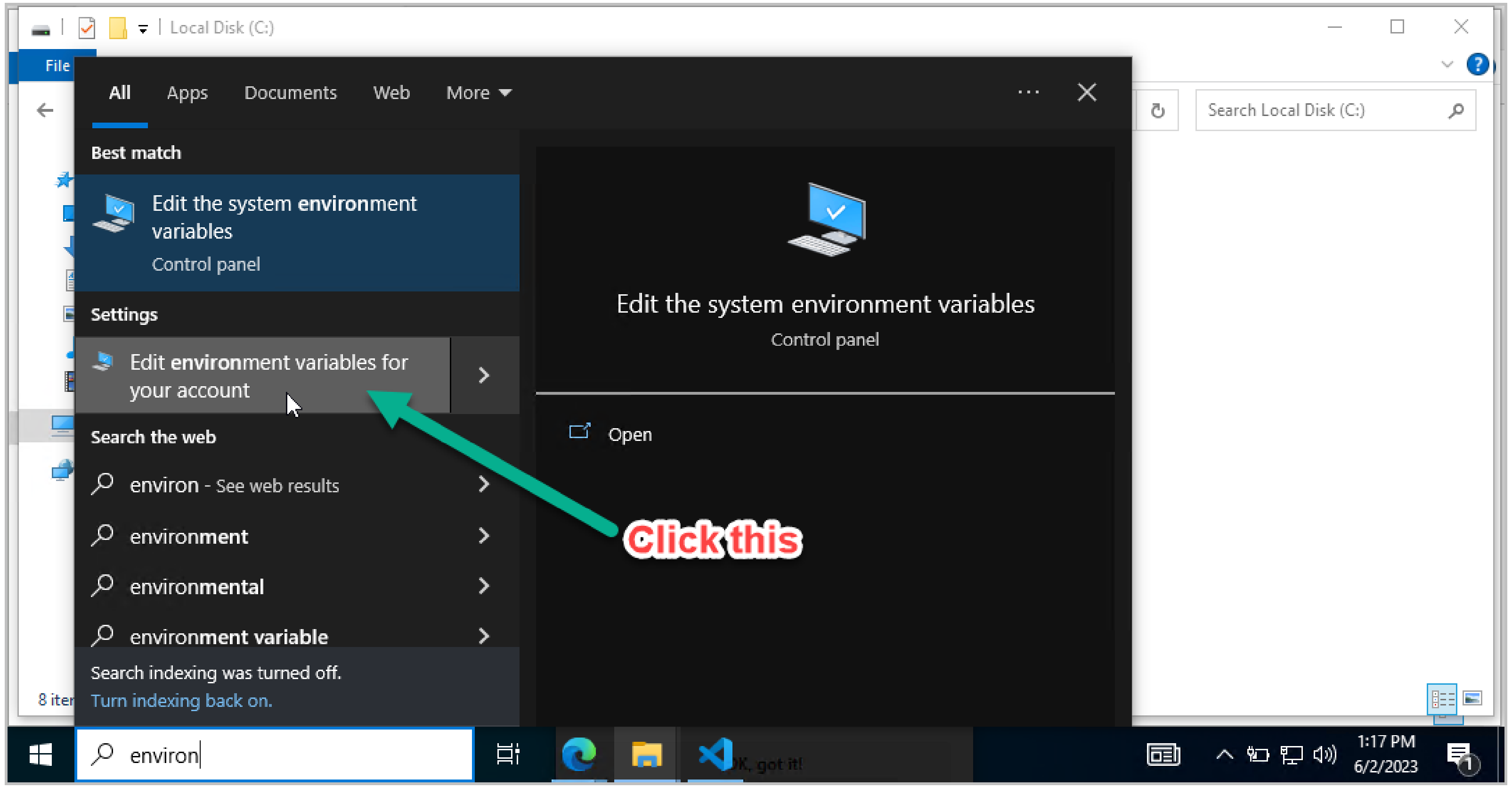
The extracted folder “mingw64” is in “c” drive



Name	Date modified	Type	Size
EFI	3/11/2021 8:17 AM	File folder	
mingw64	6/2/2023 1:16 PM	File folder	
OfficePackagesForWDAG	4/28/2023 10:43 AM	File folder	
PerfLogs	12/7/2019 5:14 PM	File folder	
Program Files	6/2/2023 12:10 PM	File folder	
Program Files (x86)	4/28/2023 10:25 AM	File folder	
Users	4/28/2023 10:31 AM	File folder	
Windows	6/2/2023 11:49 AM	File folder	

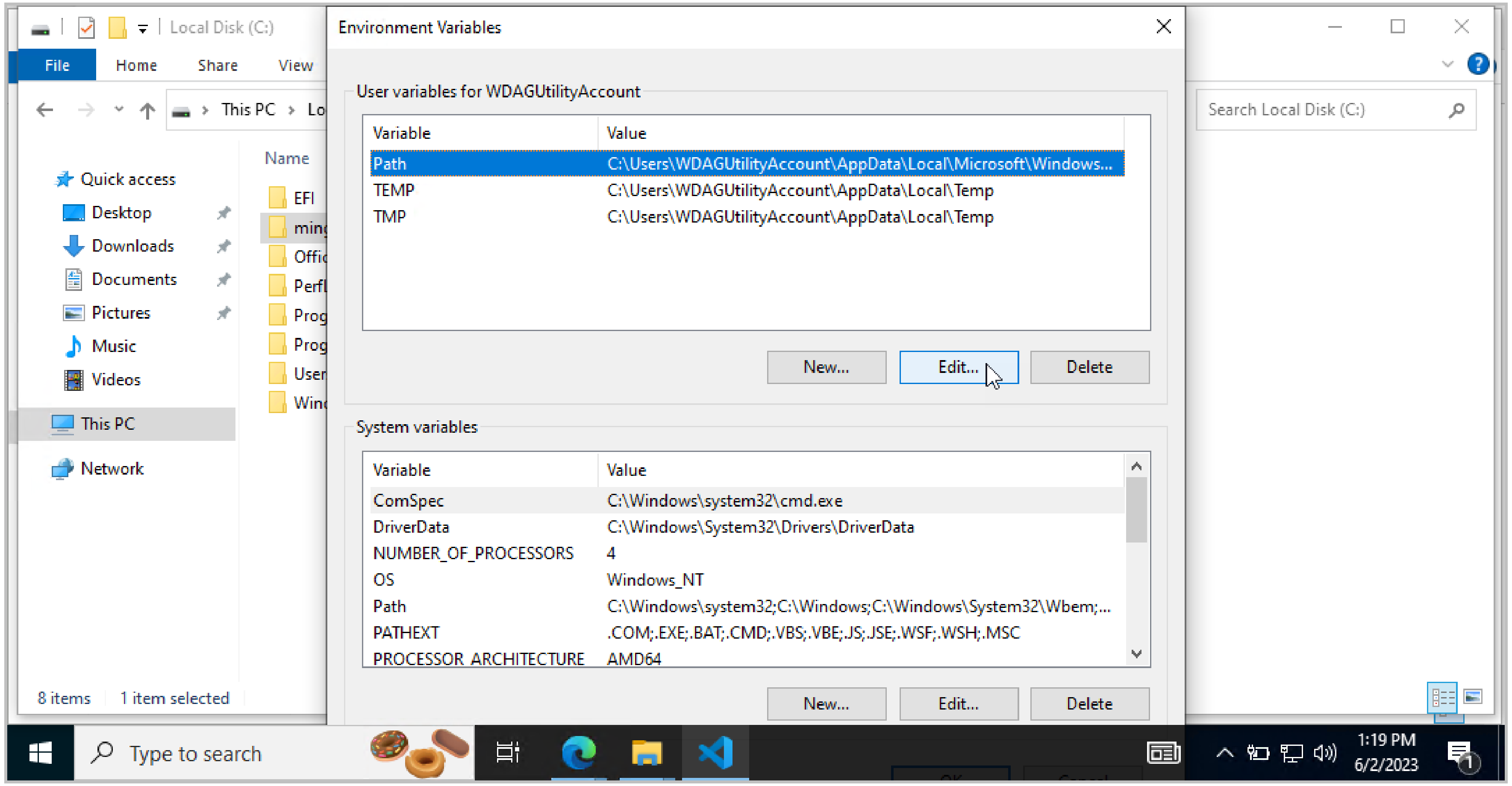
8 items 1 item selected

Add the GCC compiler to your path (Type "environment" in the search bar)



Click this

Choose the Path variable in your User variables and then select Edit



Environment Variables

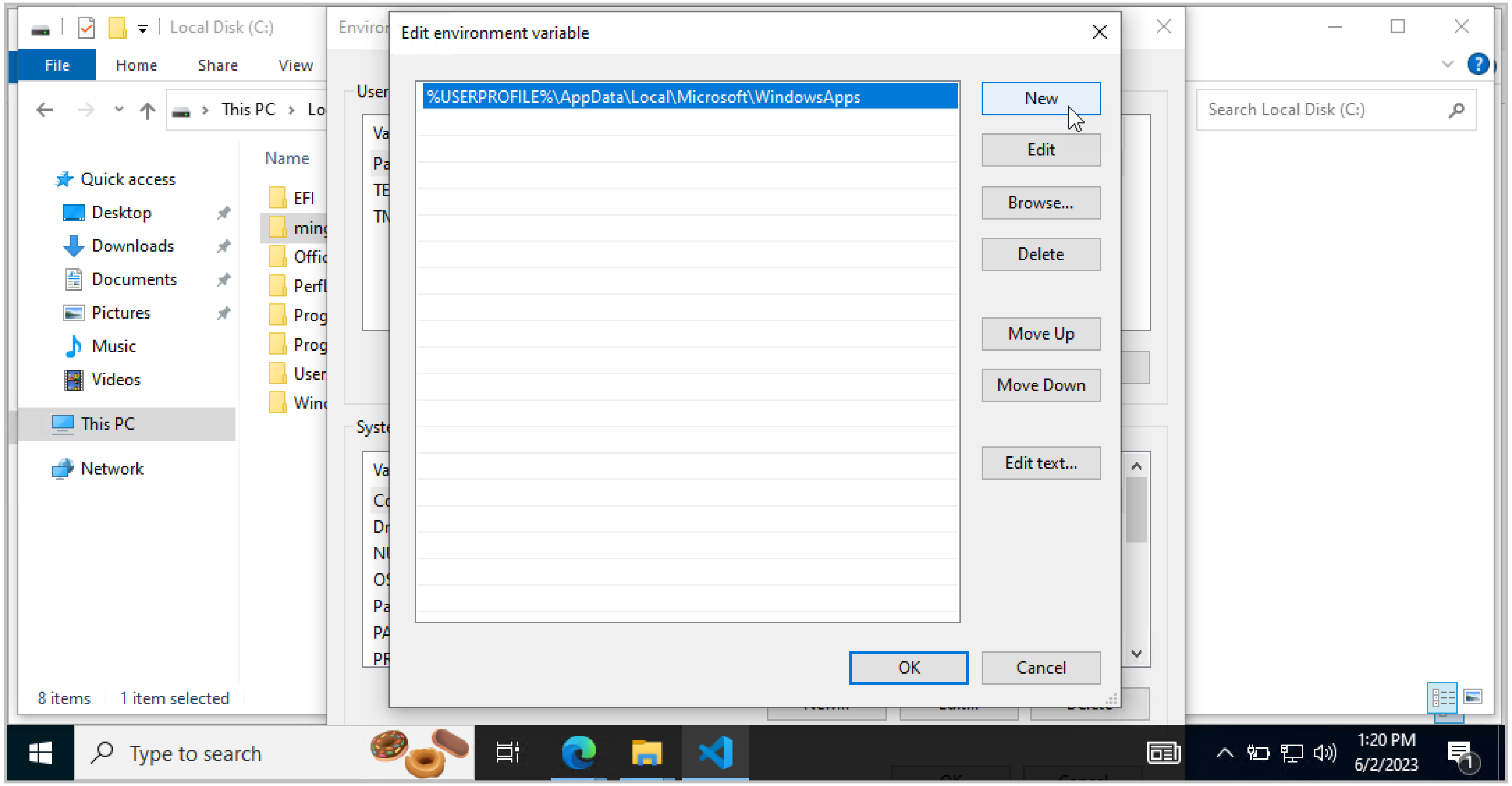
User variables for WDAGUtilityAccount

Variable	Value
Path	C:\Users\WDAGUtilityAccount\AppData\Local\Microsoft\Windows...
TEMP	C:\Users\WDAGUtilityAccount\AppData\Local\Temp
TMP	C:\Users\WDAGUtilityAccount\AppData\Local\Temp

System variables

Variable	Value
ComSpec	C:\Windows\system32\cmd.exe
DriverData	C:\Windows\System32\Drivers\DriverData
NUMBER_OF_PROCESSORS	4
OS	Windows_NT
Path	C:\Windows\system32;C:\Windows;C:\Windows\System32\Wbem;...
PATHEXT	.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC
PROCESSOR_ARCHITECTURE	AMD64

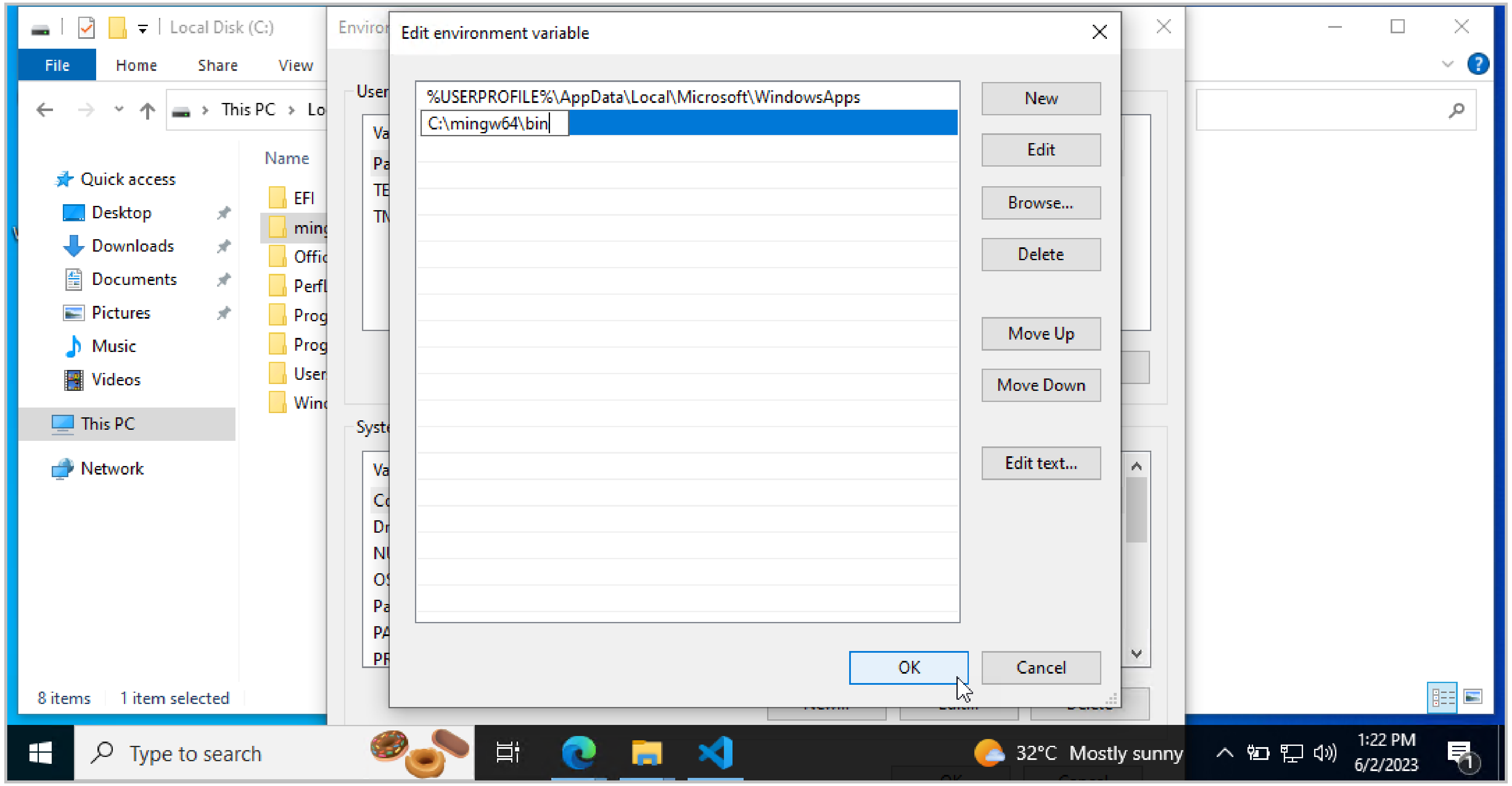
Select New to add the Mingw64\bin destination folder path



Edit environment variable

%USERPROFILE%\AppData\Local\Microsoft\WindowsApps

Type “C:\mingw64\bin” and click “OK”

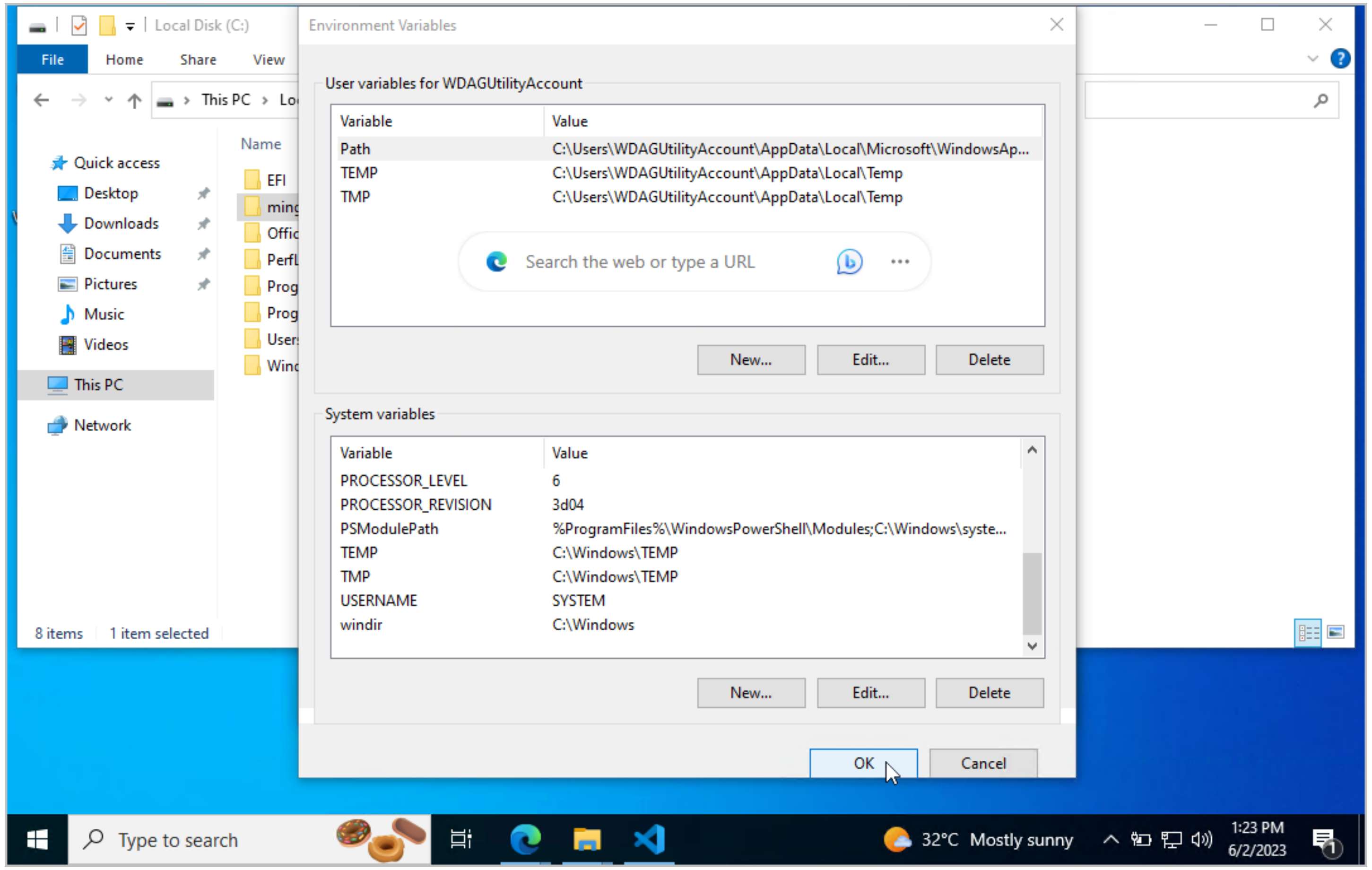


Edit environment variable

%USERPROFILE%\AppData\Local\Microsoft\WindowsApps

C:\mingw64\bin

Select OK to save the updated PATH. You will need to reopen any console windows for the new PATH location to be available.



Environment Variables

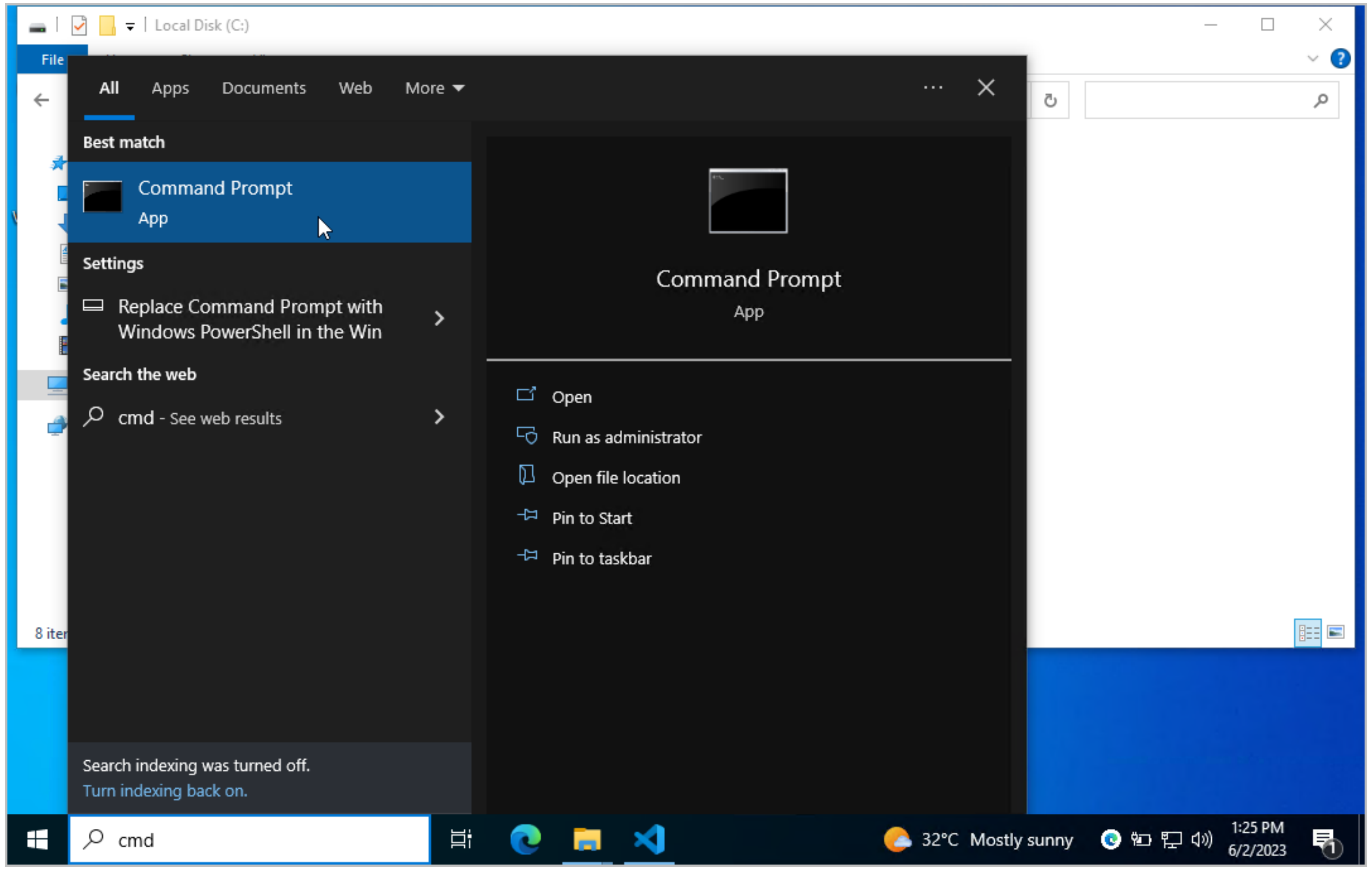
User variables for WDAGUtilityAccount

Variable	Value
Path	C:\Users\WDAGUtilityAccount\AppData\Local\Microsoft\WindowsAp...
TEMP	C:\Users\WDAGUtilityAccount\AppData\Local\Temp
TMP	C:\Users\WDAGUtilityAccount\AppData\Local\Temp

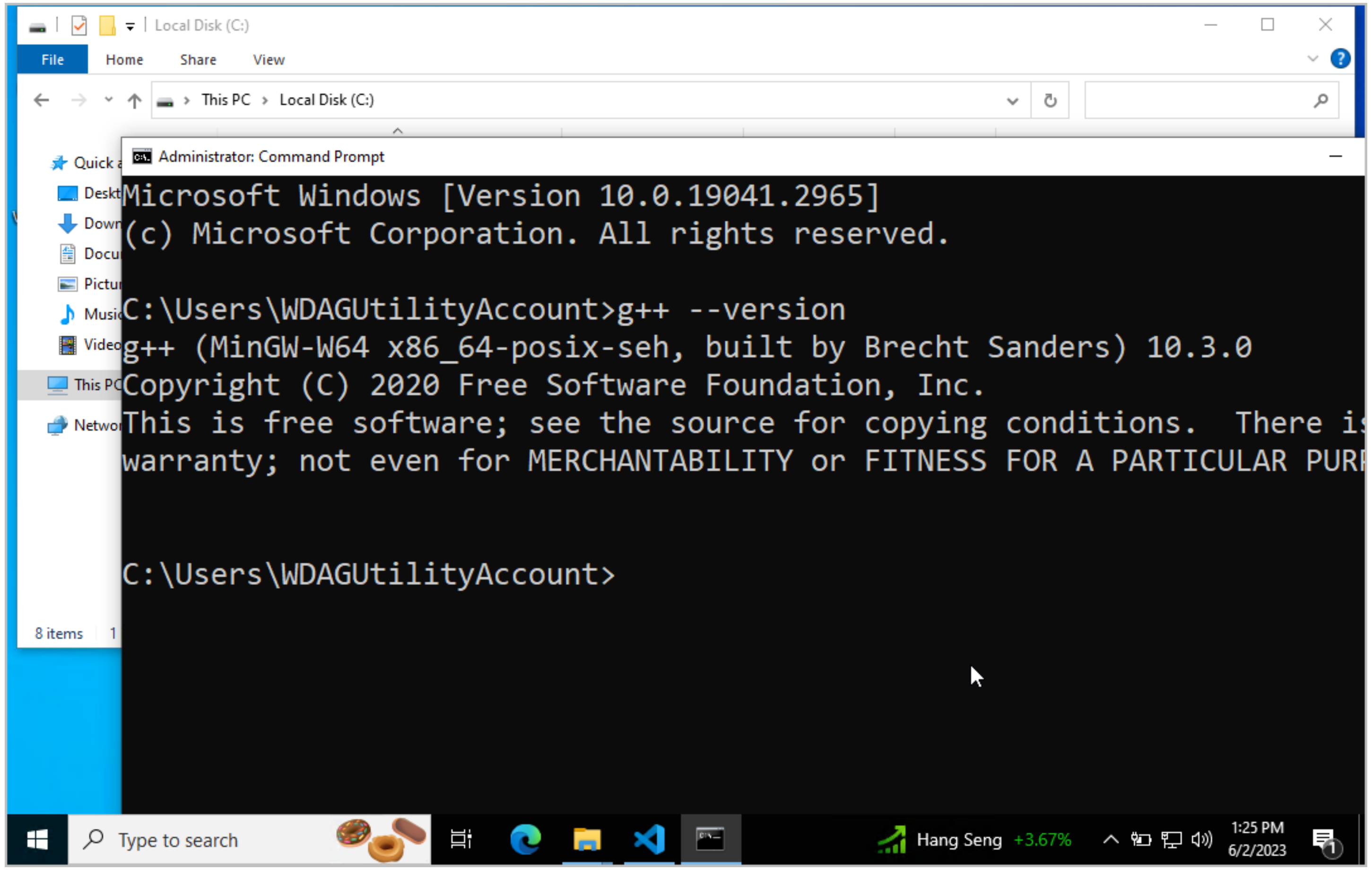
System variables

Variable	Value
PROCESSOR_LEVEL	6
PROCESSOR_REVISION	3d04
PSModulePath	%ProgramFiles%\WindowsPowerShell\Modules;C:\Windows\syste...
TEMP	C:\Windows\TEMP
TMP	C:\Windows\TEMP
USERNAME	SYSTEM
windir	C:\Windows

Open the command prompt

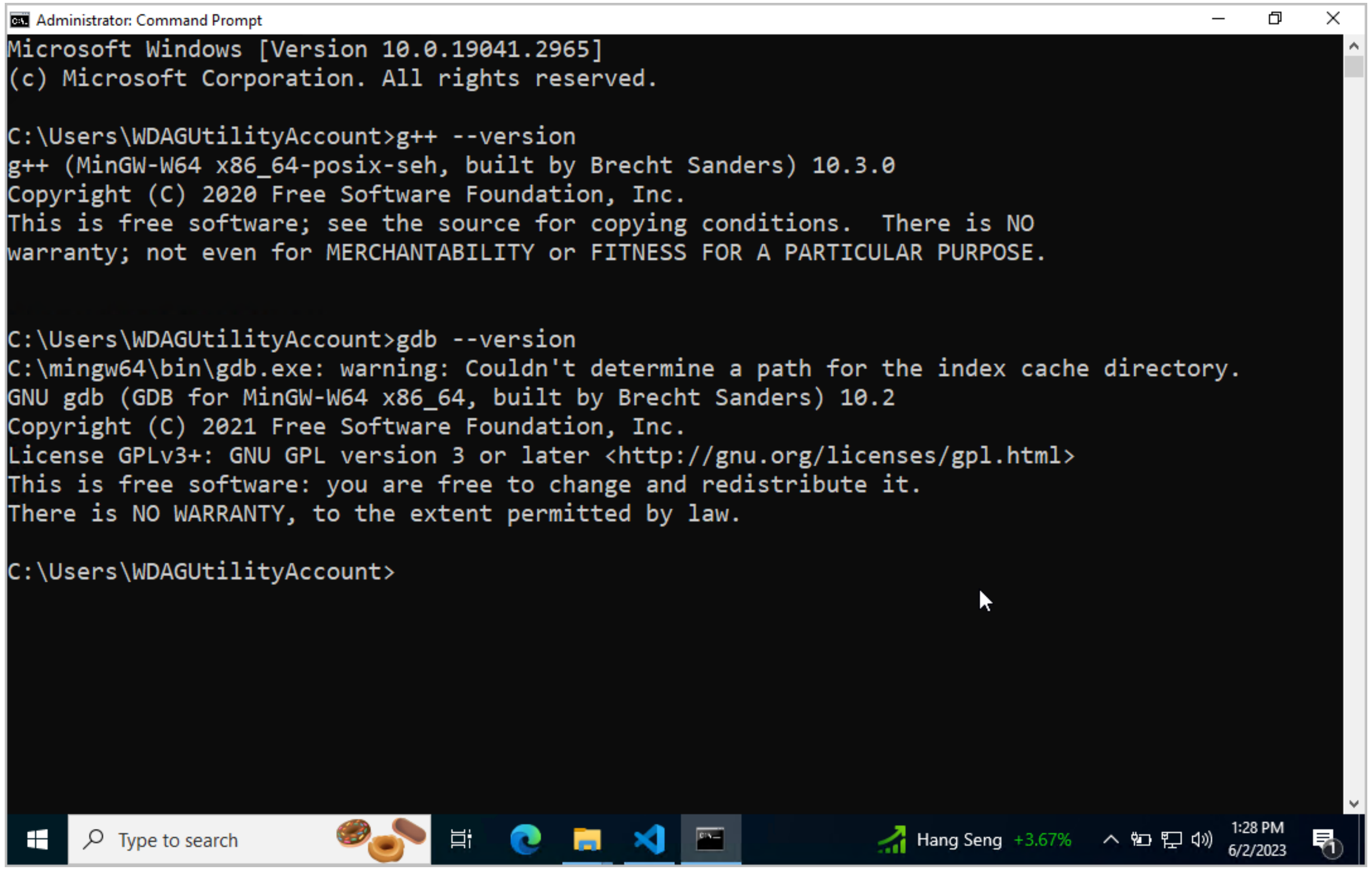


Check the “g++” version



```
Microsoft Windows [Version 10.0.19041.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\WDAGUtilityAccount>g++ --version
g++ (MinGW-W64 x86_64-posix-seh, built by Brecht Sanders) 10.3.0
Copyright (C) 2020 Free Software Foundation, Inc.
This is free software; see the source for copying conditions.  There is
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURI


C:\Users\WDAGUtilityAccount>
```

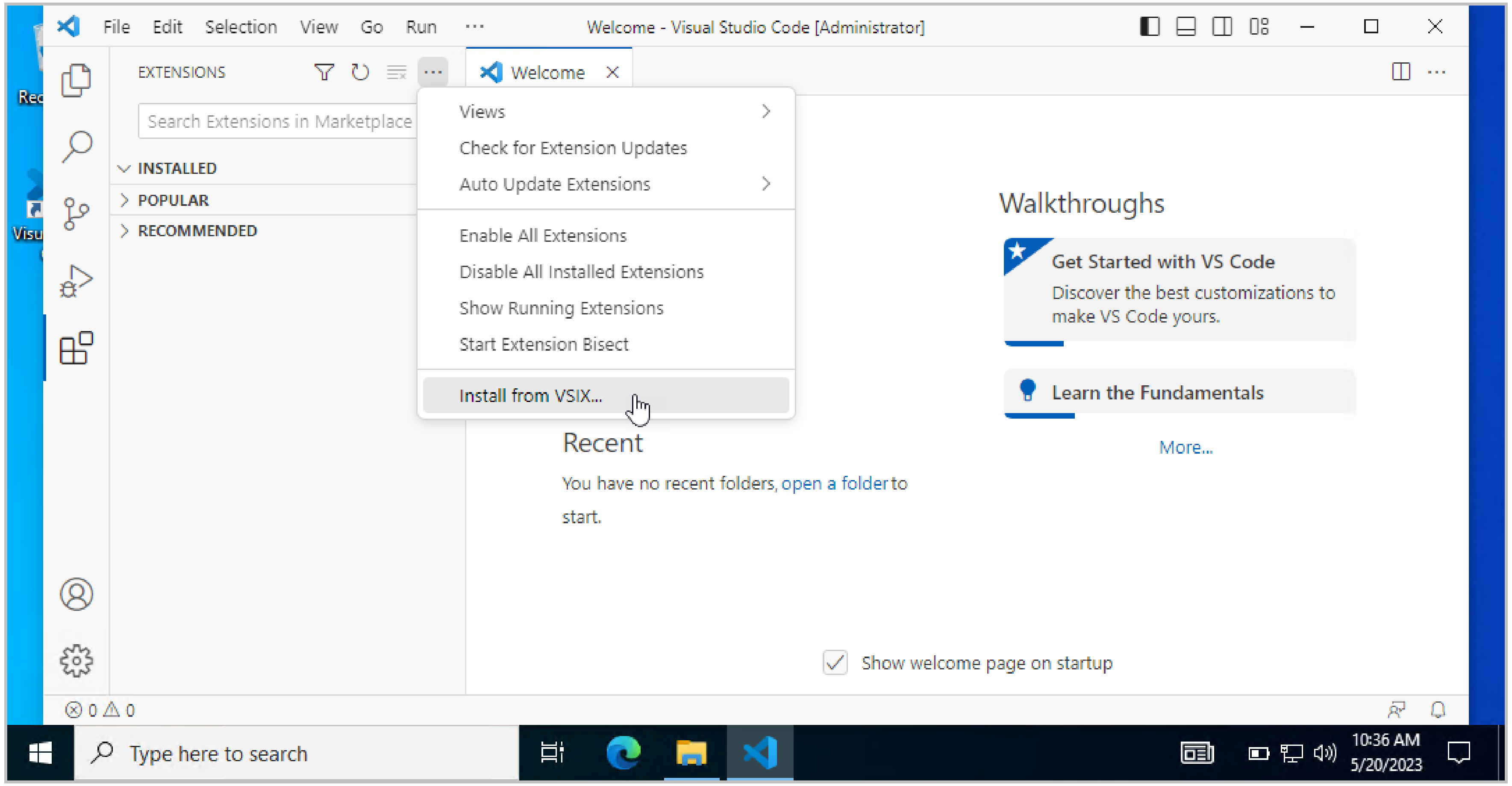
Check the “gdb” version



```
Microsoft Windows [Version 10.0.19041.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\WDAGUtilityAccount>g++ --version
g++ (MinGW-W64 x86_64-posix-seh, built by Brecht Sanders) 10.3.0
Copyright (C) 2020 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\WDAGUtilityAccount>gdb --version
C:\mingw64\bin\gdb.exe: warning: Couldn't determine a path for the index cache directory.
GNU gdb (GDB for MinGW-W64 x86_64, built by Brecht Sanders) 10.2
Copyright (C) 2021 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.

C:\Users\WDAGUtilityAccount>
```

Installing C++ Tools for Visual Studio Code

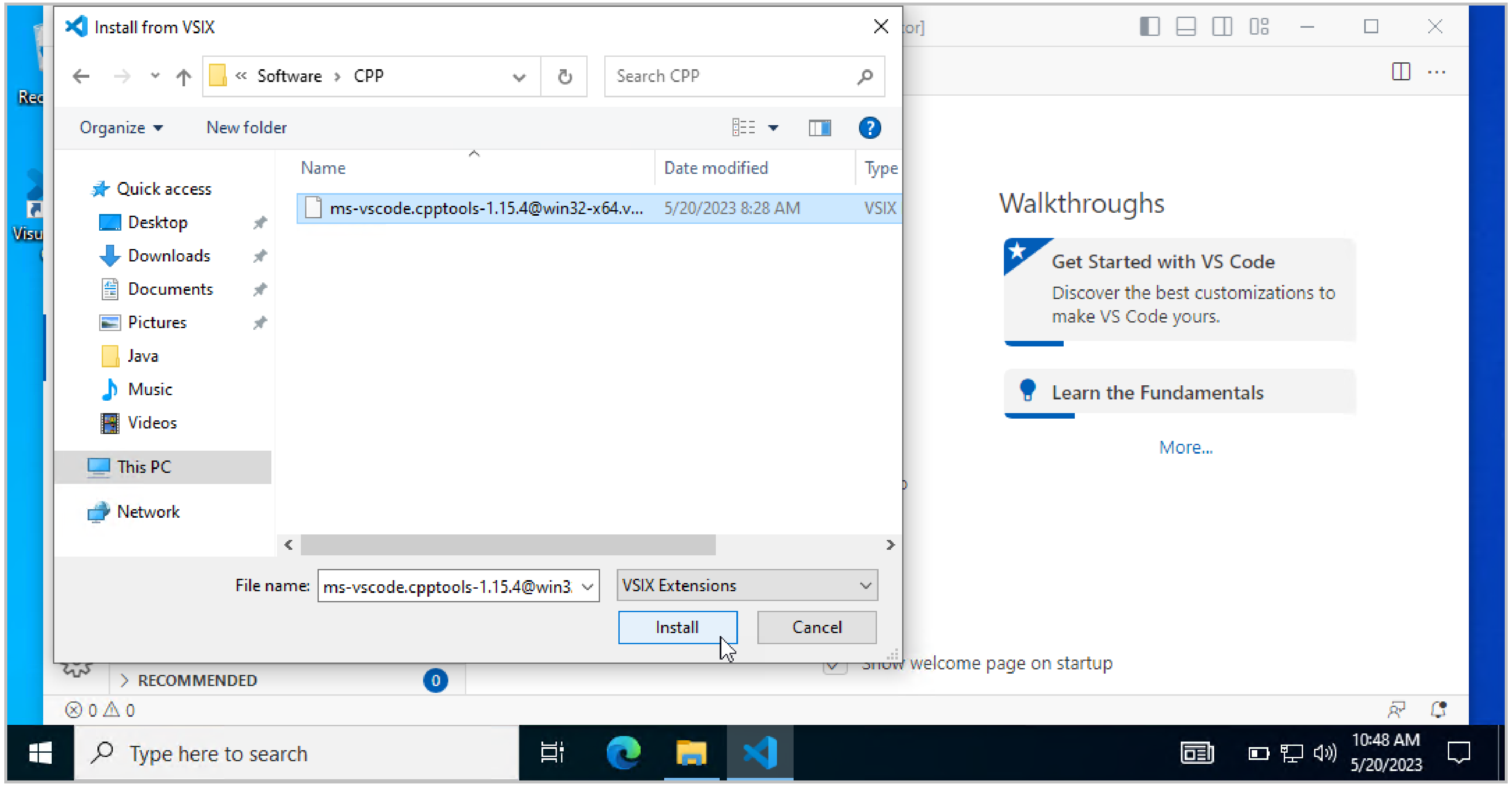
Install the C/C++ extension from VSIX



Discover the best customizations to make VS Code yours.

You have no recent folders, open a folder to start.

Click the “Install” button to install the extension.

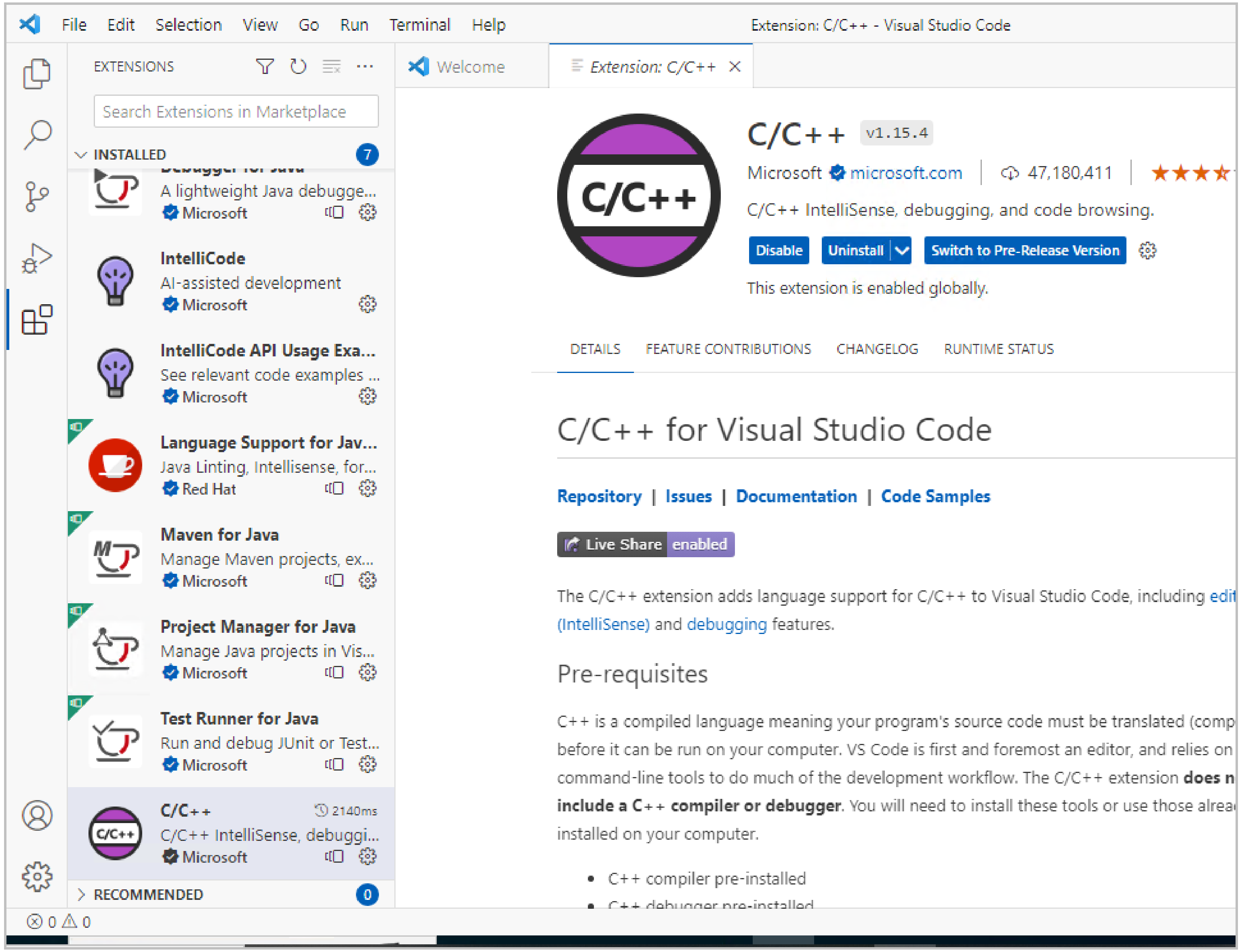


Name	Date modified	Type
ms-vscode.cpptools-1.15.4@win32-x64.v...	5/20/2023 8:28 AM	VSIX

File name: ms-vscode.cpptools-1.15.4@win3

VSIX Extensions

C/C++ extension installed



Debugger for Java
A lightweight Java debugge...
Microsoft

IntelliCode
AI-assisted development
Microsoft

IntelliCode API Usage Exa...
See relevant code examples ...
Microsoft

Language Support for Jav...
Java Linting, Intellisense, for...
Red Hat

Maven for Java
Manage Maven projects, ex...
Microsoft

Project Manager for Java
Manage Java projects in Vis...
Microsoft

Test Runner for Java
Run and debug JUnit or Test...
Microsoft

C/C++ 2140ms
C/C++ IntelliSense, debuggi...
Microsoft

C/C++ v1.15.4

Microsoft microsoft.com | 47,180,411 | ★★★★

C/C++ IntelliSense, debugging, and code browsing.

This extension is enabled globally.

C/C++ for Visual Studio Code

Repository | Issues | Documentation | Code Samples

Live Share enabled

The C/C++ extension adds language support for C/C++ to Visual Studio Code, including edit (IntelliSense) and debugging features.

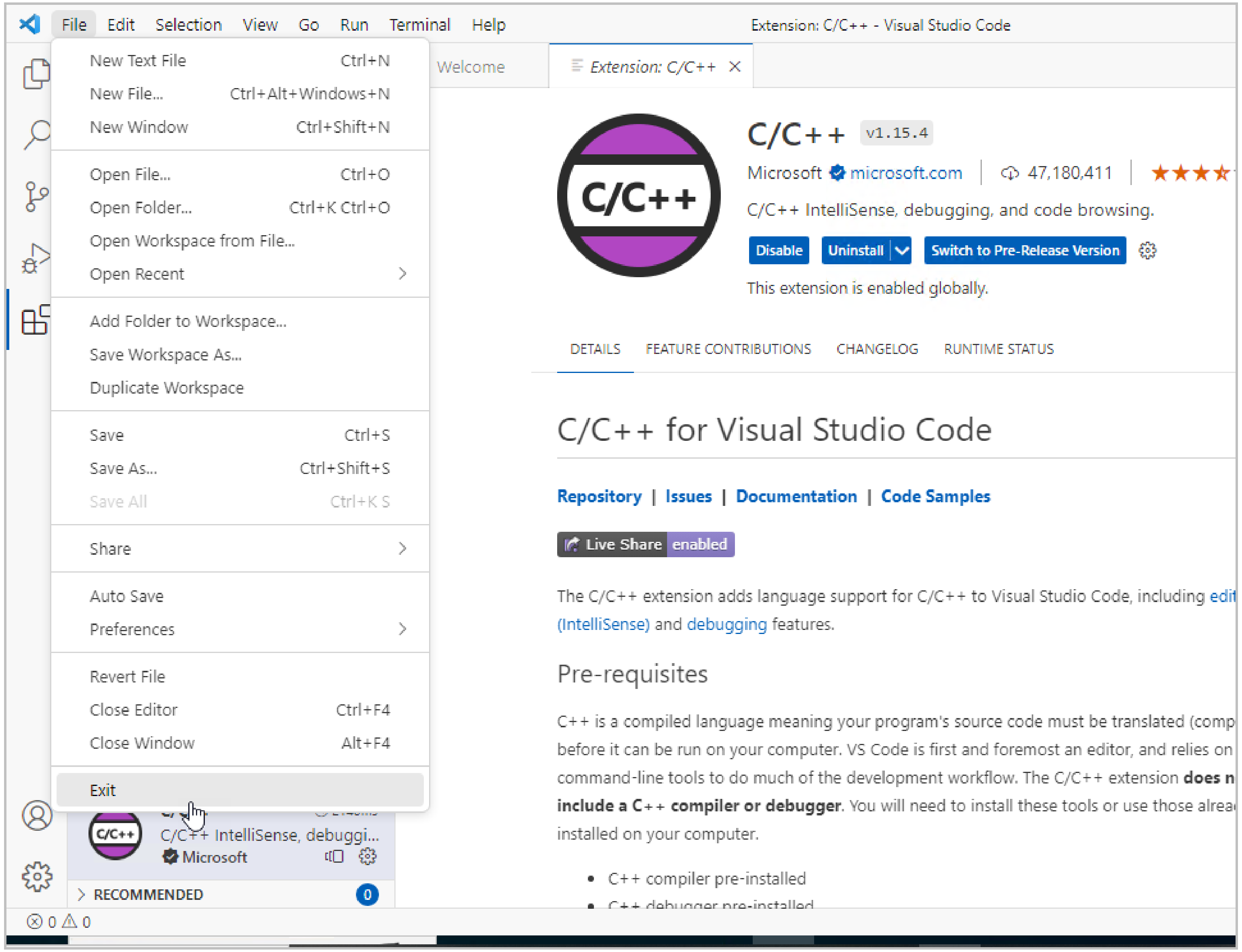
Pre-requisites

C++ is a compiled language meaning your program's source code must be translated (comp before it can be run on your computer. VS Code is first and foremost an editor, and relies on command-line tools to do much of the development workflow. The C/C++ extension **does n include a C++ compiler or debugger**. You will need to install these tools or use those alrea installed on your computer.

- C++ compiler pre-installed
- C++ debugger pre-installed

After you install the C/C++ extension, when you open or create a *.cpp file, you will have syntax highlighting (colorization), smart completions and hovers (IntelliSense), and error checking.

Close Your Visual Studio Code



C/C++ IntelliSense, debugging, and code browsing.

This extension is enabled globally.

C/C++ for Visual Studio Code

The C/C++ extension adds language support for C/C++ to Visual Studio Code, including edit (IntelliSense) and debugging features.

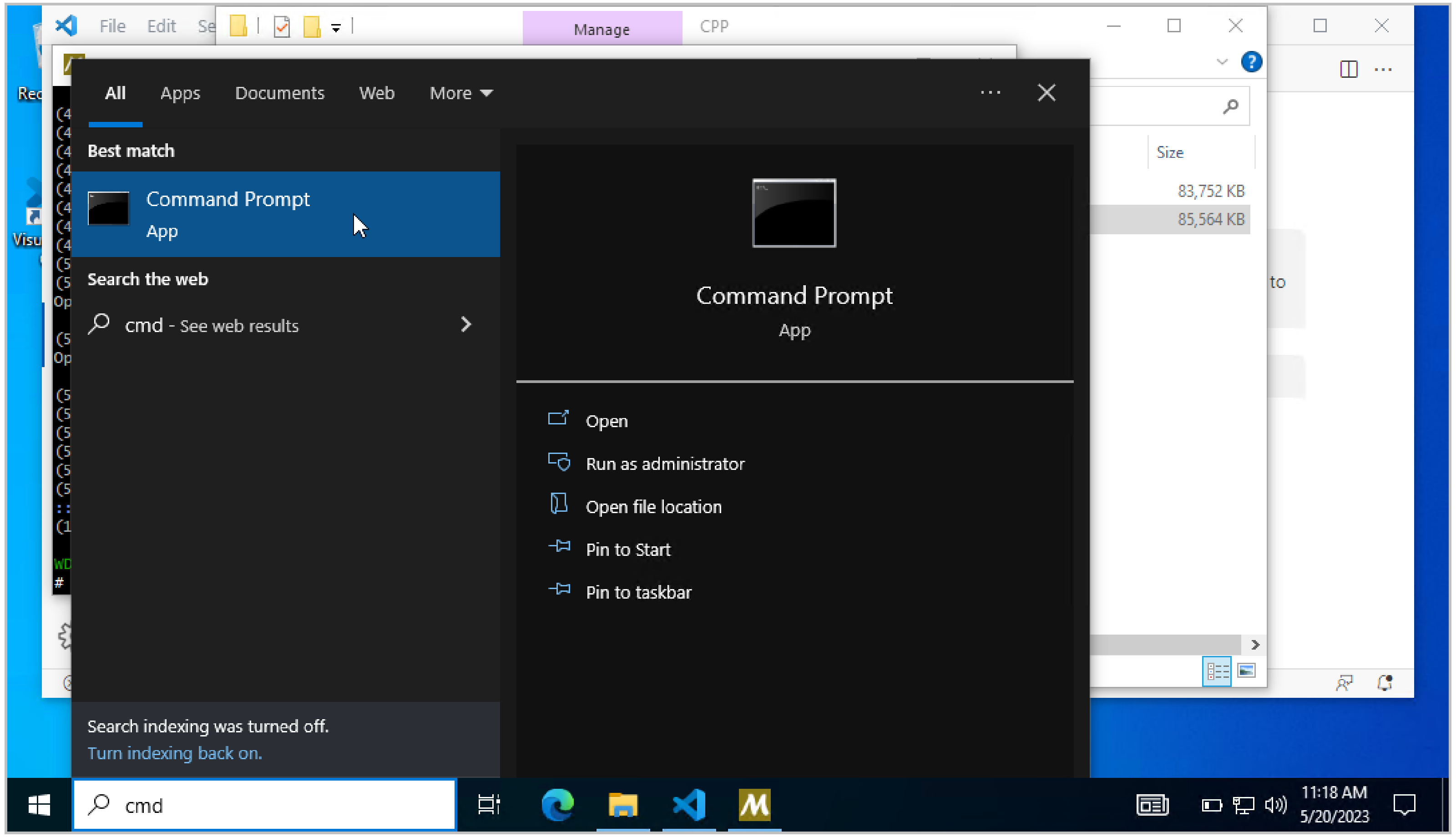
Pre-requisites

C++ is a compiled language meaning your program's source code must be translated (comp before it can be run on your computer. VS Code is first and foremost an editor, and relies on command-line tools to do much of the development workflow. The C/C++ extension **does n include a C++ compiler or debugger**. You will need to install these tools or use those alread installed on your computer.

- C++ compiler pre-installed
- C++ debugger pre-installed

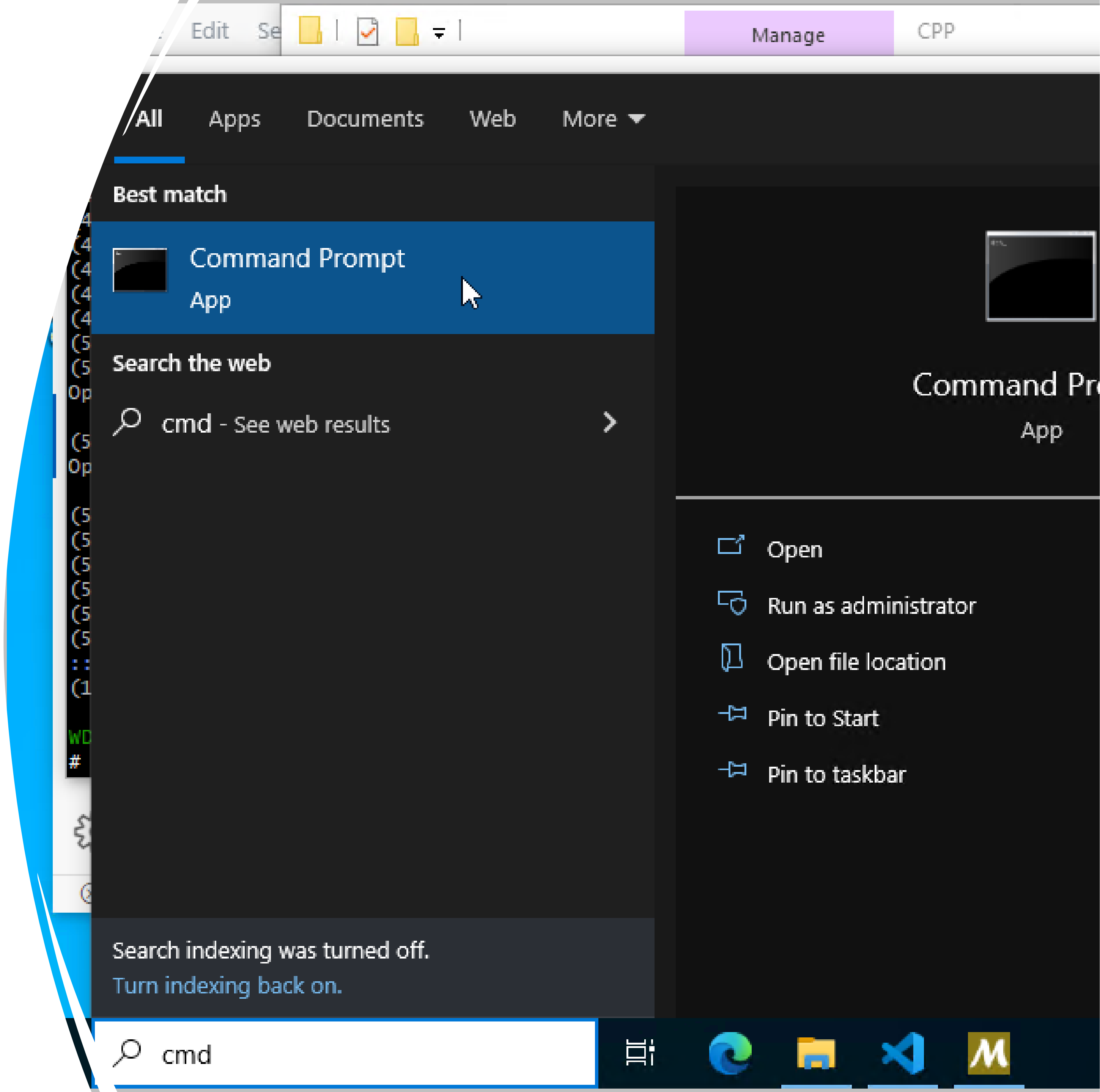
Creating your first C++ Program

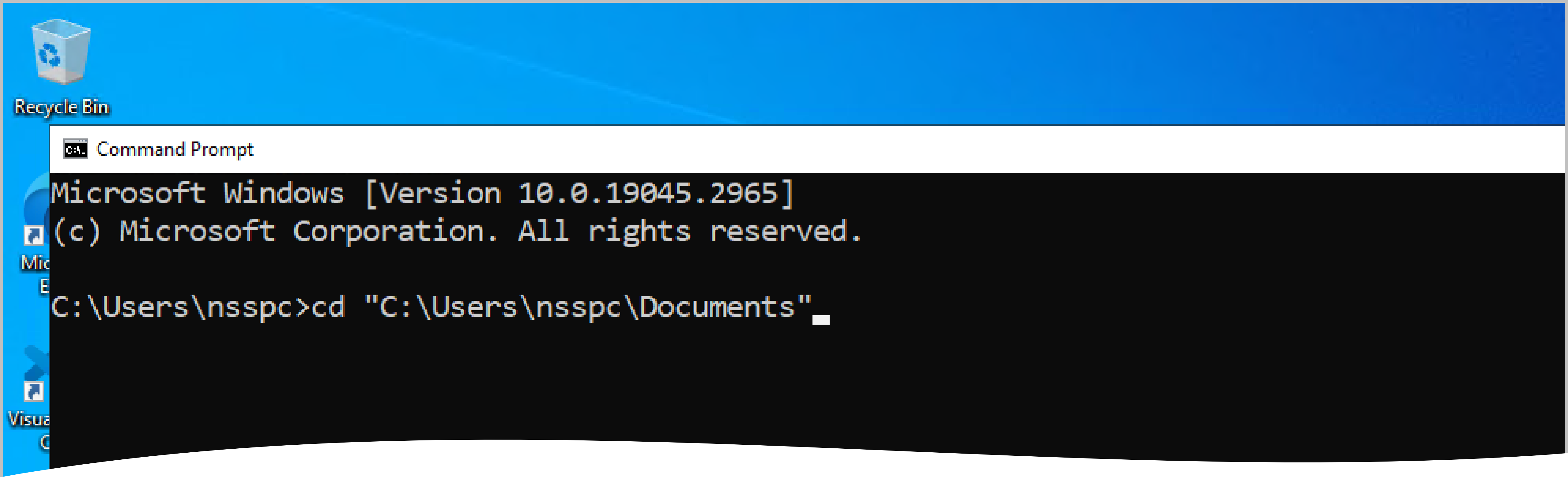
Open the “Command Prompt” window



Let’s create our very first program.

- Open the command prompt





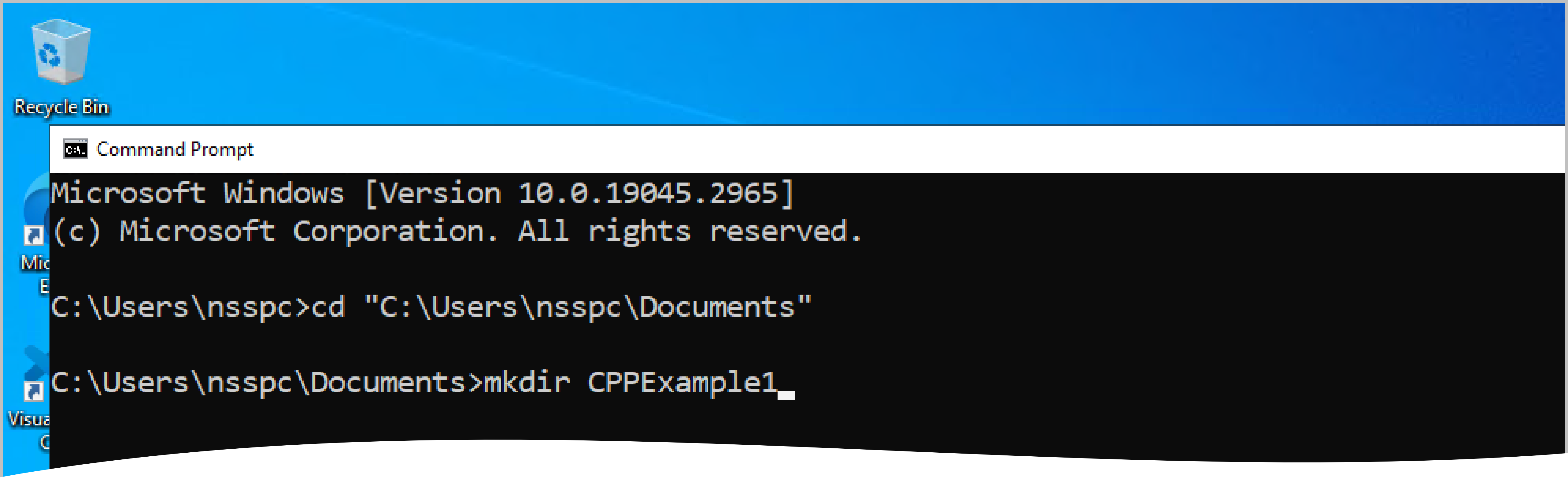
```
Microsoft Windows [Version 10.0.19045.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\nsspc>cd "C:\Users\nsspc\Documents"
```

Change the directory to the “Documents” folder

Type the following command:

cd "C:\Users\nsspc\Documents "

then press the “Enter” key.



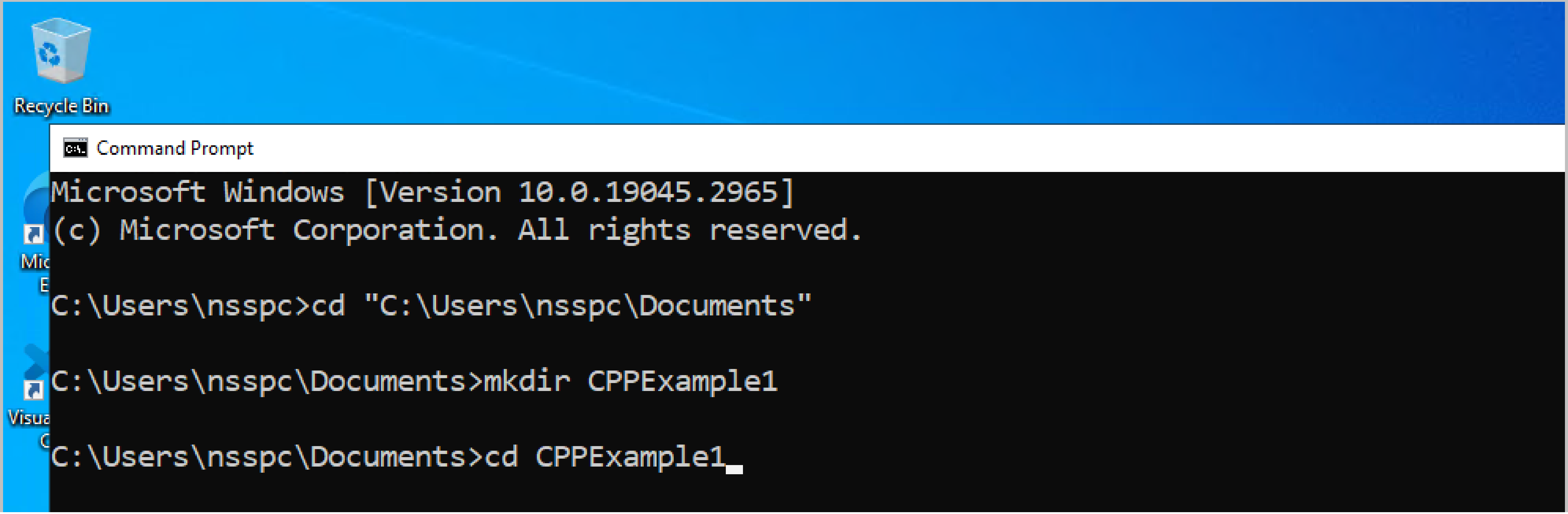
```
Microsoft Windows [Version 10.0.19045.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\nsspc>cd "C:\Users\nsspc\Documents"

C:\Users\nsspc\Documents>mkdir CPPExample1_
```

Create a new folder and name the folder as “CPPExample1”

Type the following command:

mkdir CPPExample1

then press the “Enter” key.



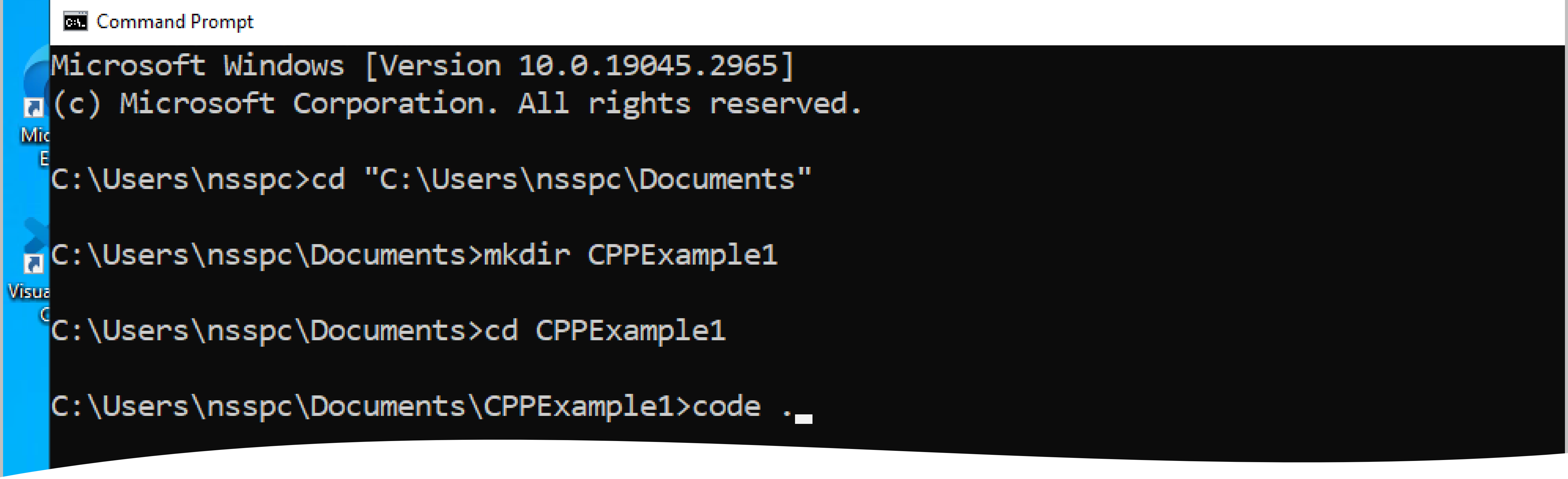
```
Microsoft Windows [Version 10.0.19045.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\nsspc>cd "C:\Users\nsspc\Documents"

C:\Users\nsspc\Documents>mkdir CPPExample1

C:\Users\nsspc\Documents>cd CPPExample1
```

Change the directory to “CPPExample1” folder

Type the following command:

cd CPPExample1

then press the “Enter” key.



```
Microsoft Windows [Version 10.0.19045.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\nsspc>cd "C:\Users\nsspc\Documents"

C:\Users\nsspc\Documents>mkdir CPPExample1

C:\Users\nsspc\Documents>cd CPPExample1

C:\Users\nsspc\Documents\CPPExample1>code .
```

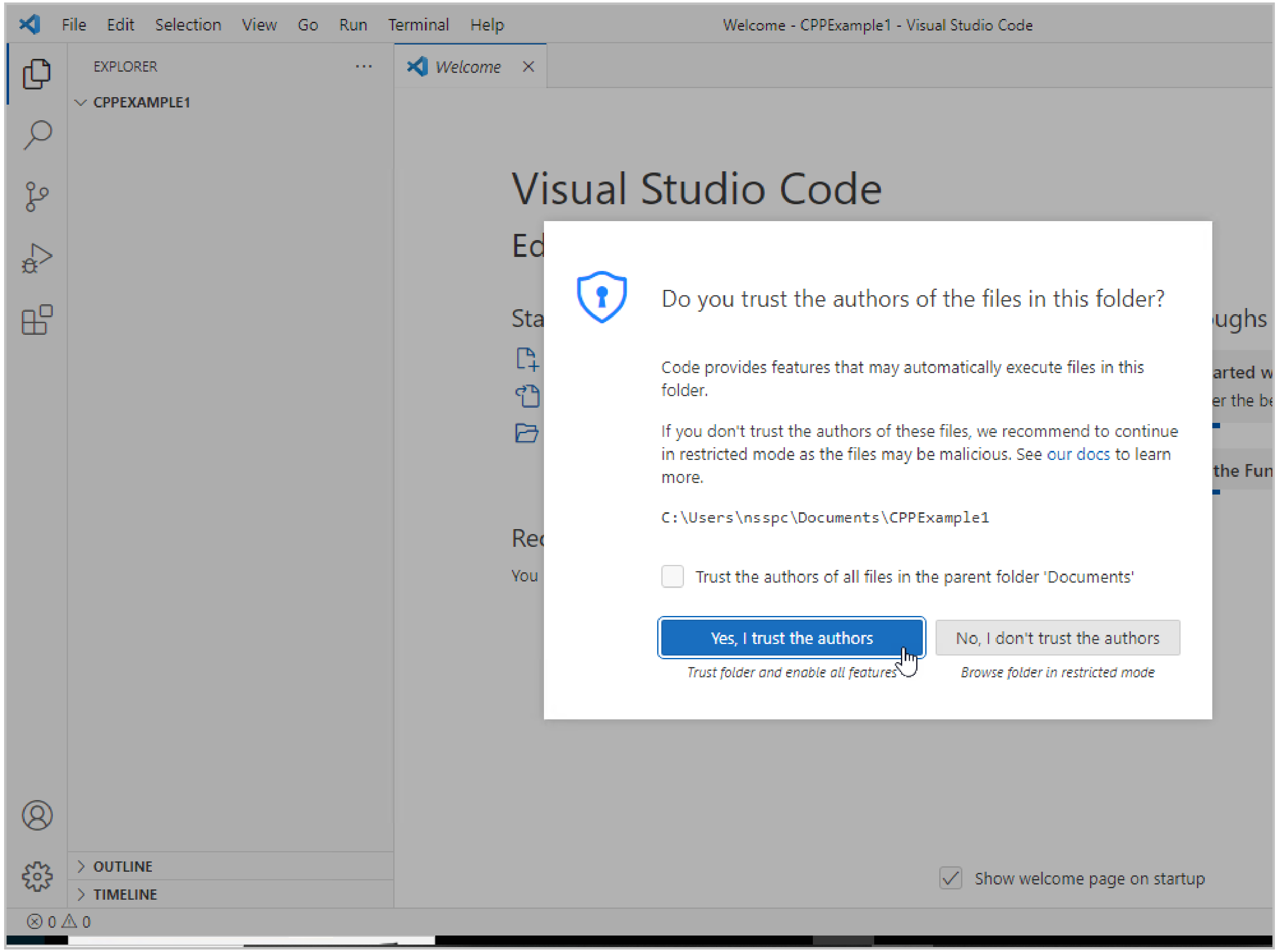
Open the folder “CPPExample1” in Visual Studio Code

Type the following command:

code .

then press the “Enter” key.

Click “Yes, I trust the authors”



Do you trust the authors of the files in this folder?

Code provides features that may automatically execute files in this folder.

If you don't trust the authors of these files, we recommend to continue in restricted mode as the files may be malicious. See our docs to learn more.

```
C:\Users\nsspc\Documents\CPPExample1
```

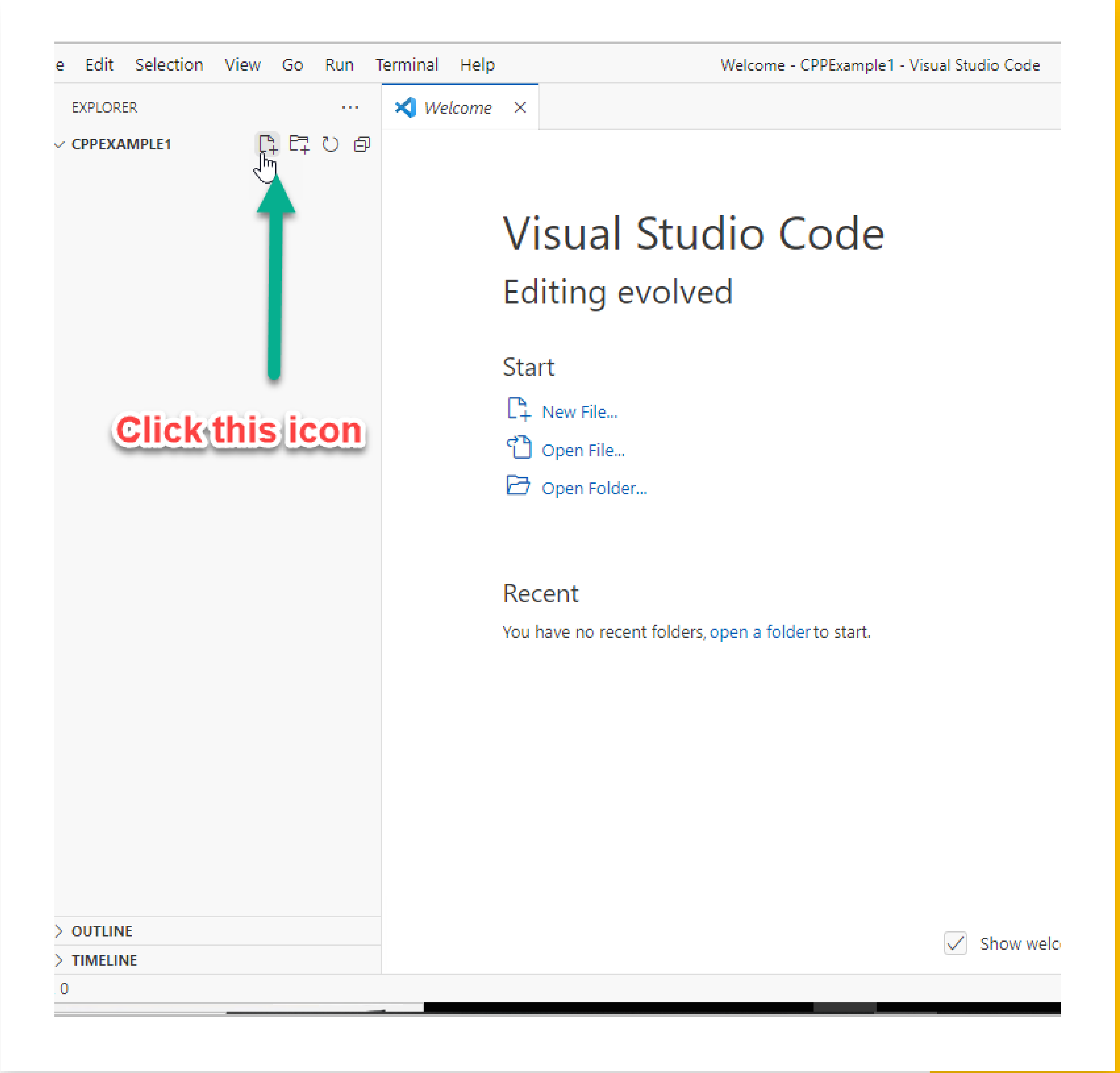
□ Trust the authors of all files in the parent folder 'Documents'

Yes, I trust the authors — *Trust folder and enable all features*

No, I don't trust the authors — *Browse folder in restricted mode*

Create a CPP program that will output the sentence “Hello World!”

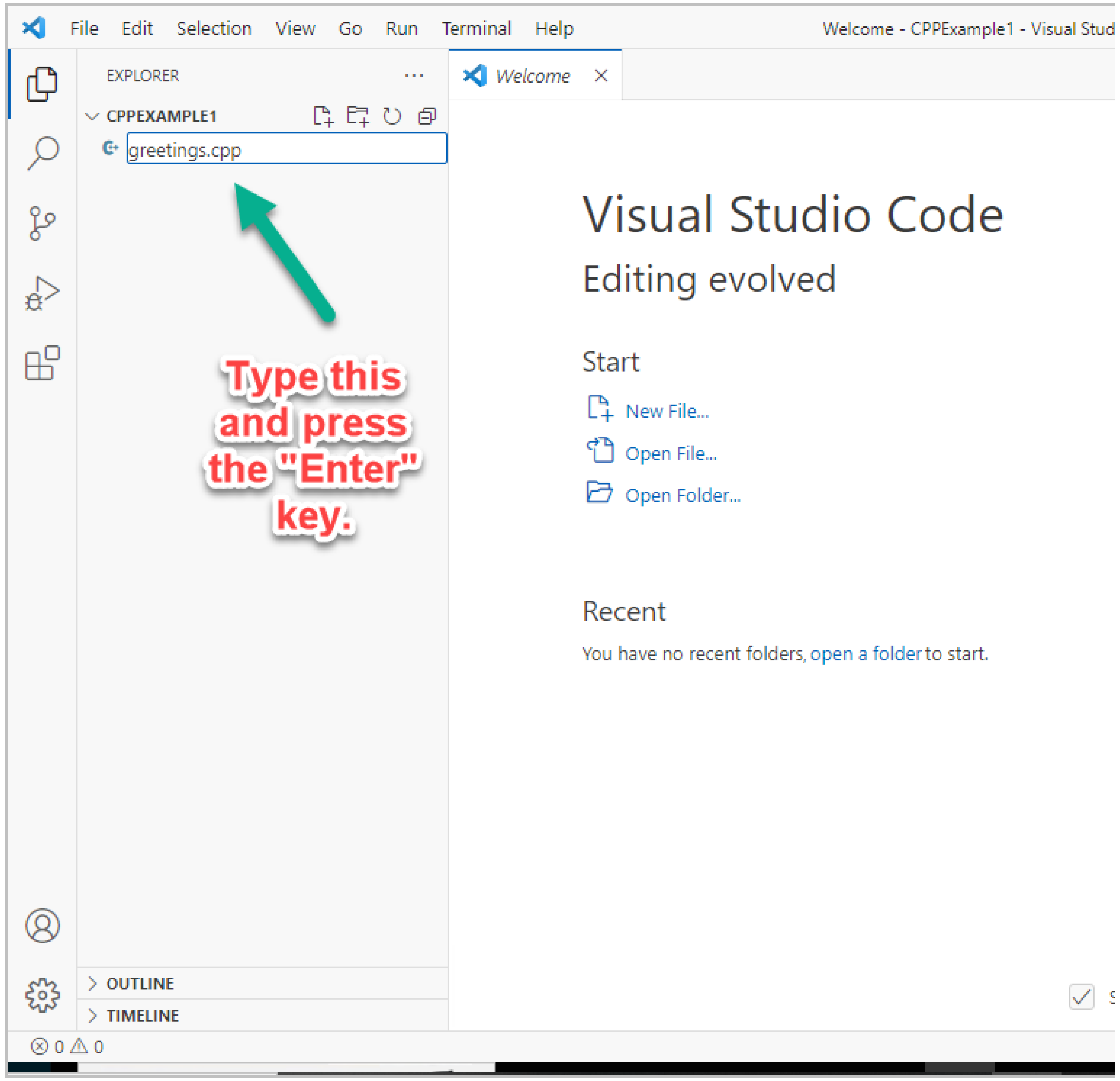
Name the CPP file as “greetings.cpp”


e Edit Selection View Go Run Terminal Help
Welcome - CPPExample1 - Visual Studio Code
EXPLORER
CPPEXAMPLE1
Welcome
Visual Studio Code
Editing evolved
Start
New File...
Open File...
Open Folder...
Recent
You have no recent folders, open a folder to start.
Show welc
OUTLINE
TIMELINE
0

Click this icon

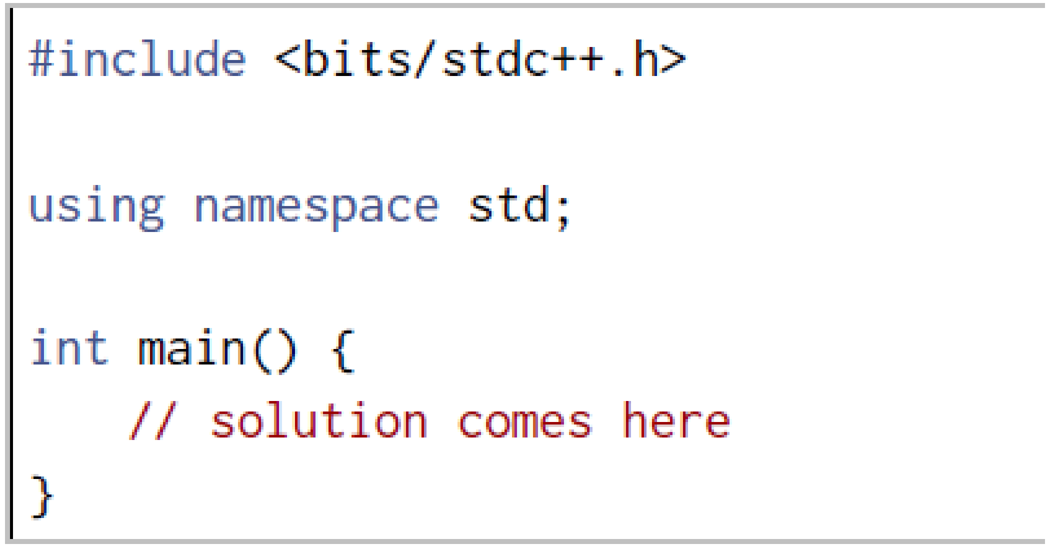
Create a CPP program that will output the sentence “Hello World!”

Name the CPP file as “greetings.cpp”

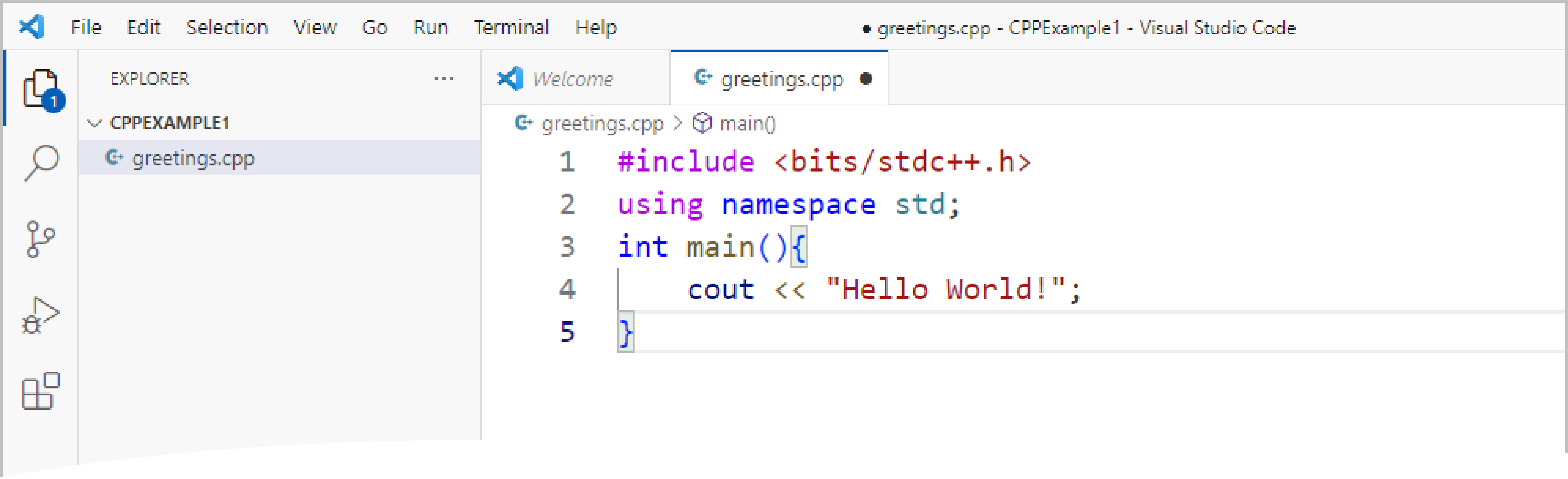


Type this and press the "Enter" key.

A typical C++ code template for competitive programming looks like this.



```
#include <bits/stdc++.h>

using namespace std;

int main() {
    // solution comes here
}
```

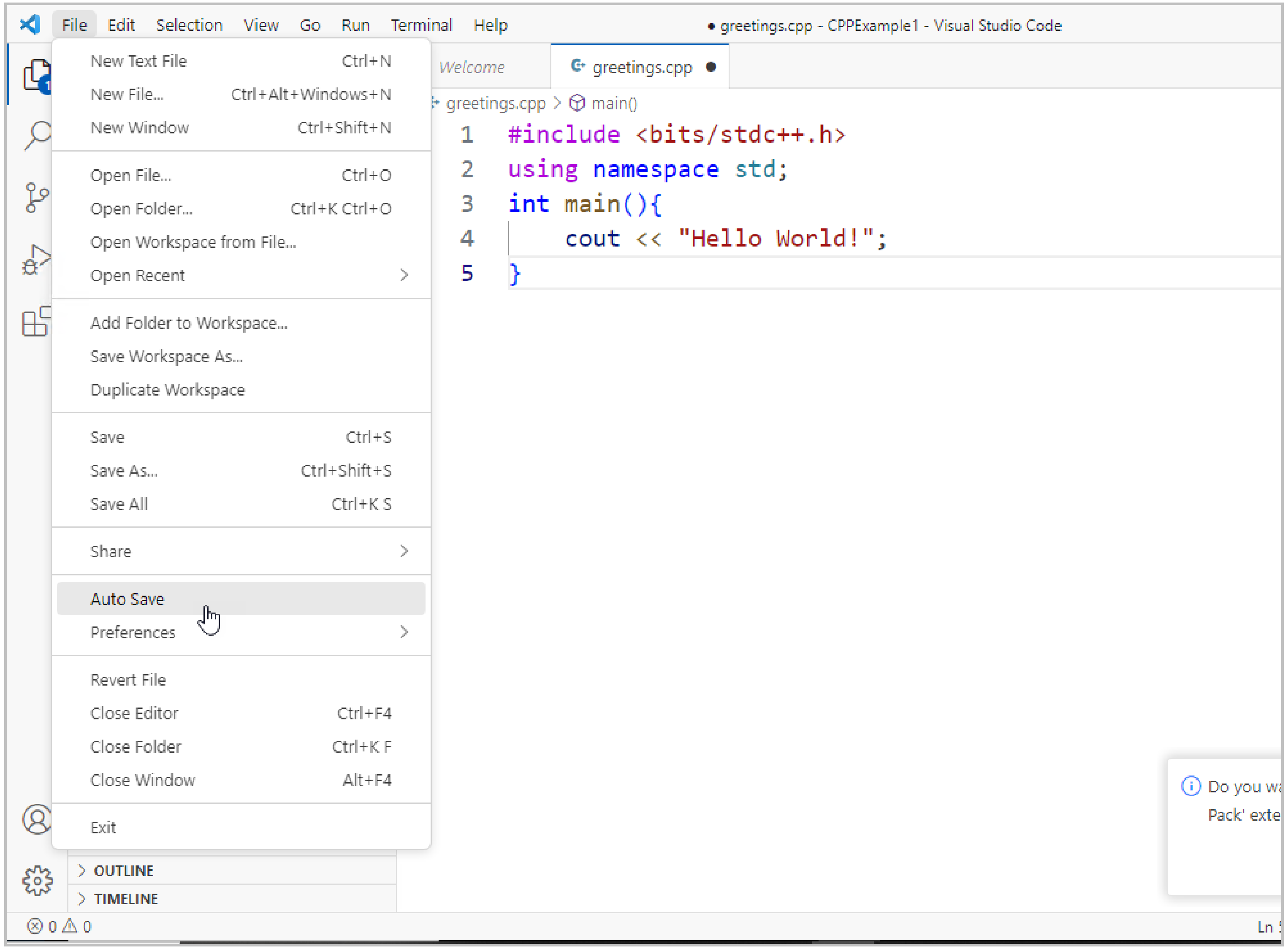


```cpp
#include <bits/stdc++.h>
using namespace std;
int main(){
    cout << "Hello World!";
}
```

A C++ program that will output the sentence “Hello World!”

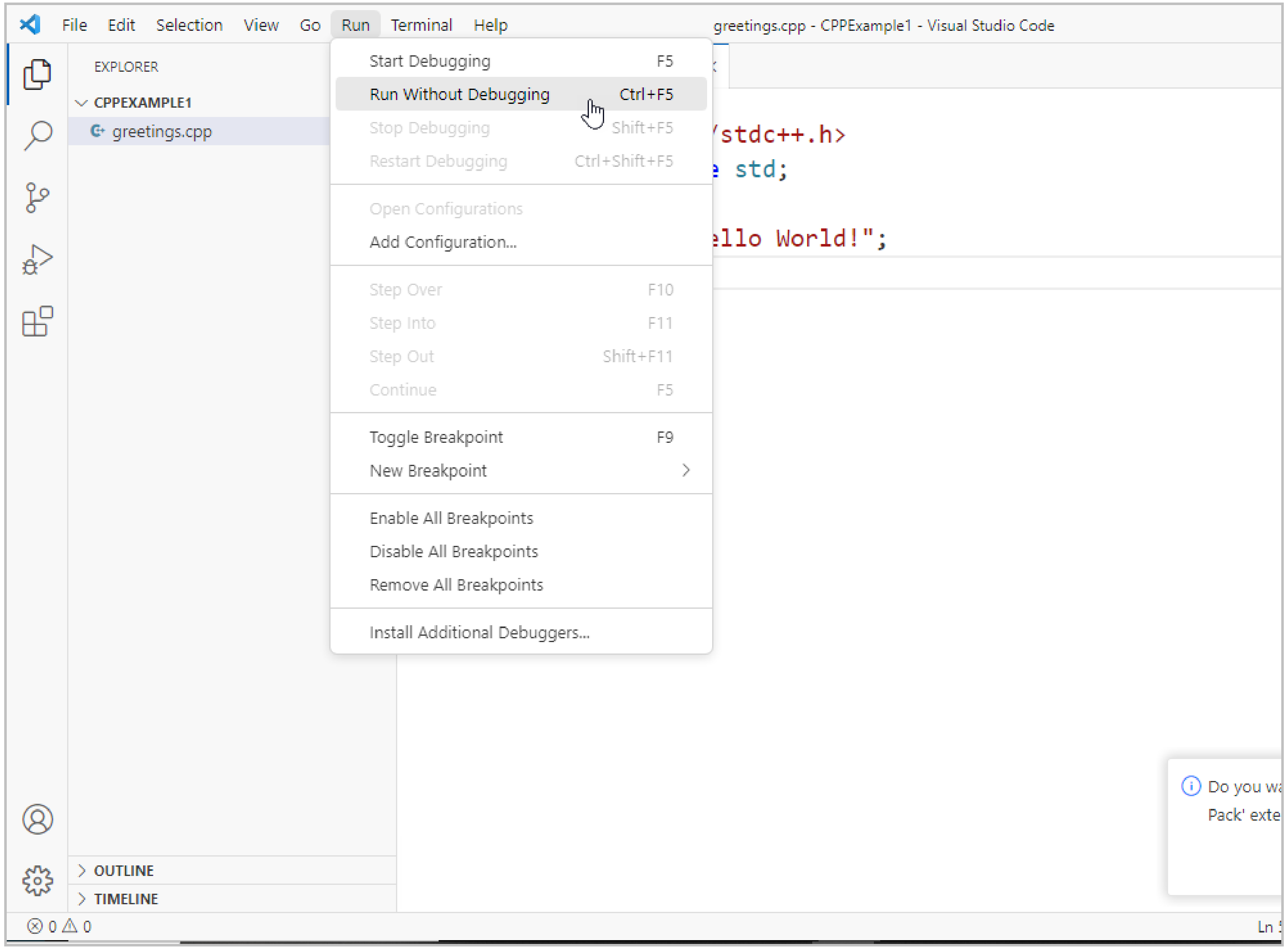
- In most contests, standard streams are used for reading input and writing output.
- In C++, the standard streams are cin for input and cout for output. In addition, the C functions scanf and printf can be used.
- Notice that the document is not yet saved because there is a black dot beside the filename. We will set for “Auto Save”

Set for “Auto Save”



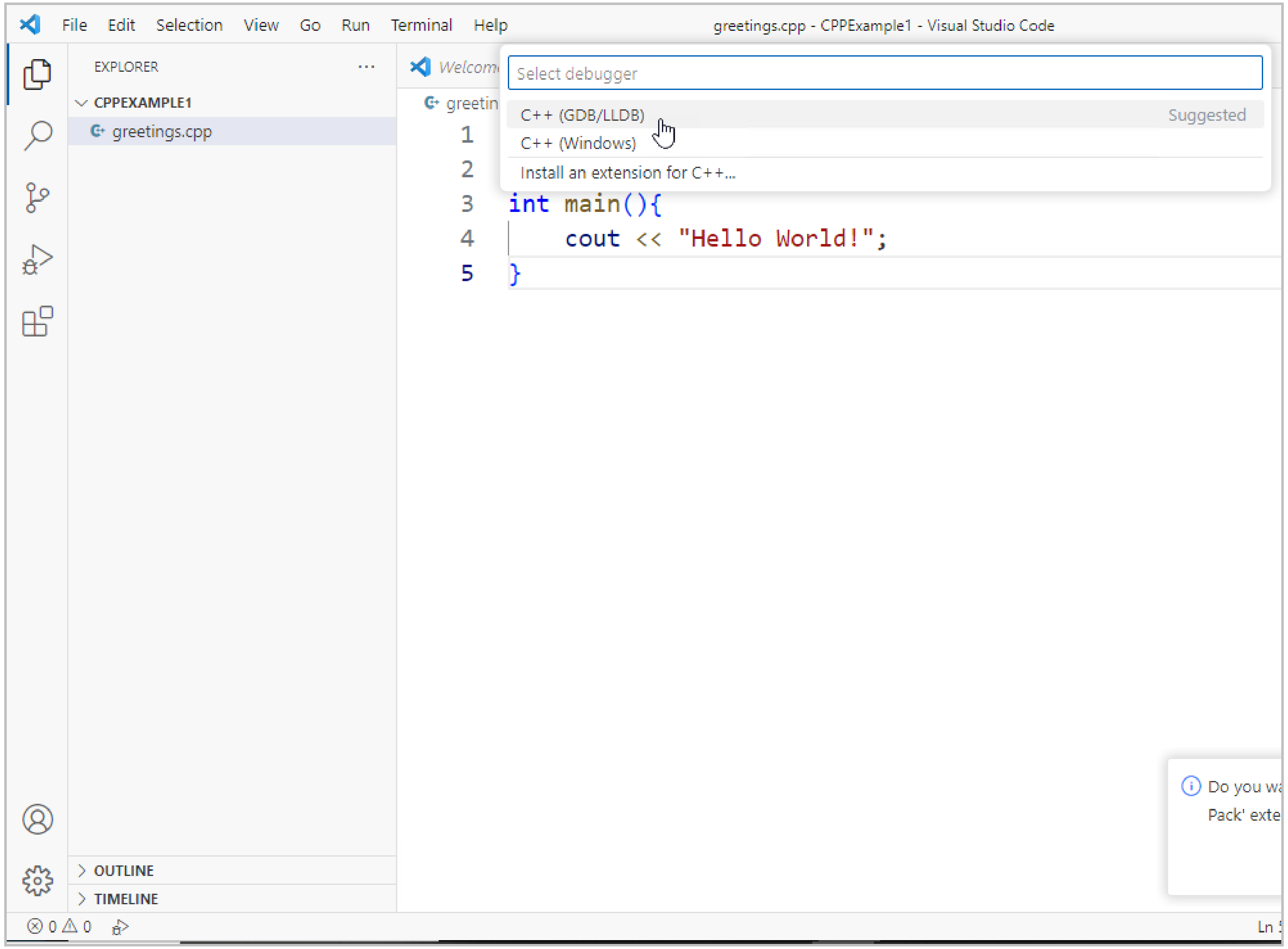
```cpp
#include <bits/stdc++.h>
using namespace std;
int main(){
    cout << "Hello World!";
}
```

Run the program without debugging



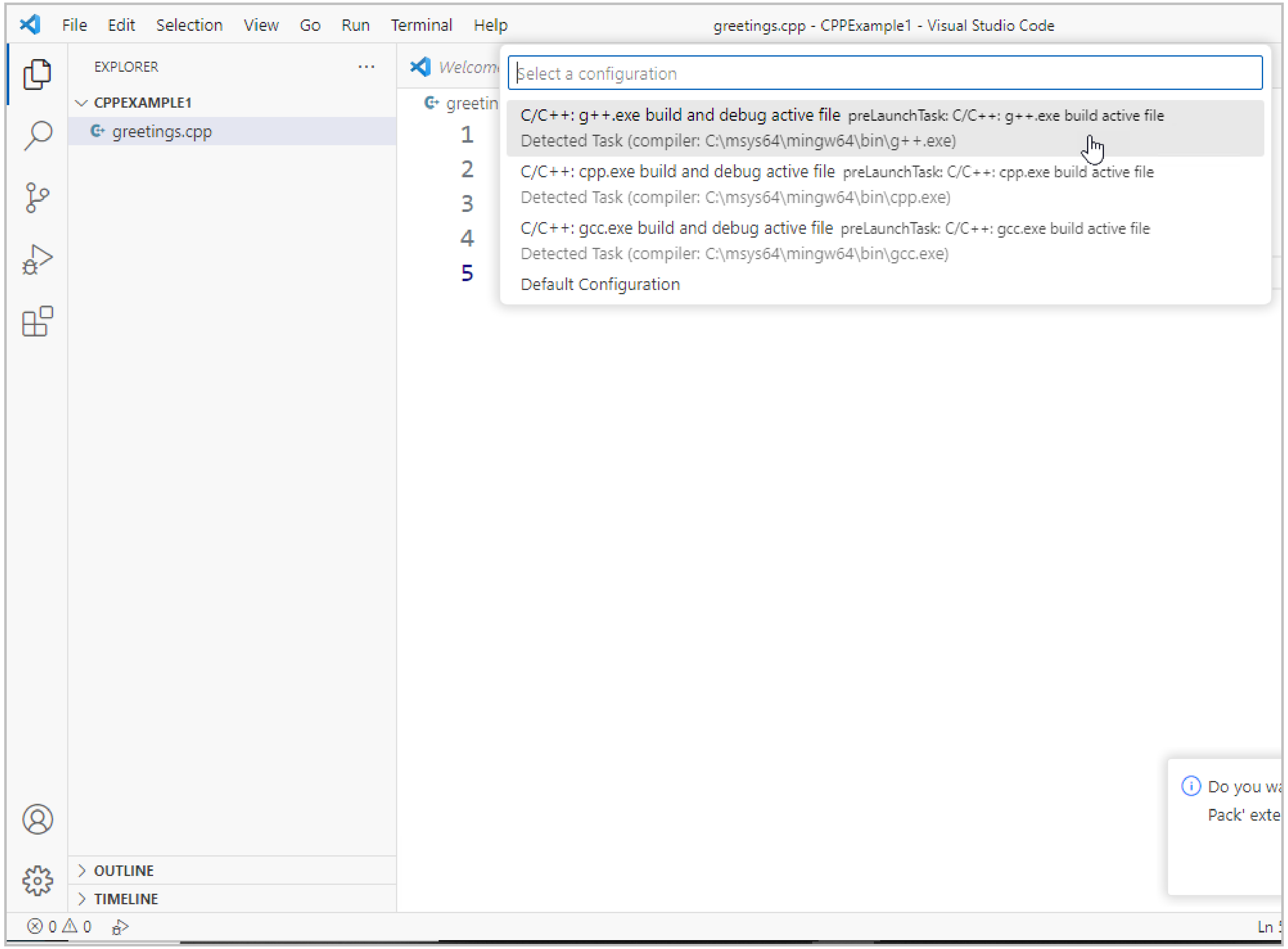
```
/stdc++.h>
e std;

ello World!";
```

Select “C++ (GDB/LLDB)”



```
int main(){
    cout << "Hello World!";
}
```

Select the first option that is "C/C++: g++.exe build …



Select a configuration

C/C++: g++.exe build and debug active file preLaunchTask: C/C++: g++.exe build active file
Detected Task (compiler: C:\msys64\mingw64\bin\g++.exe)

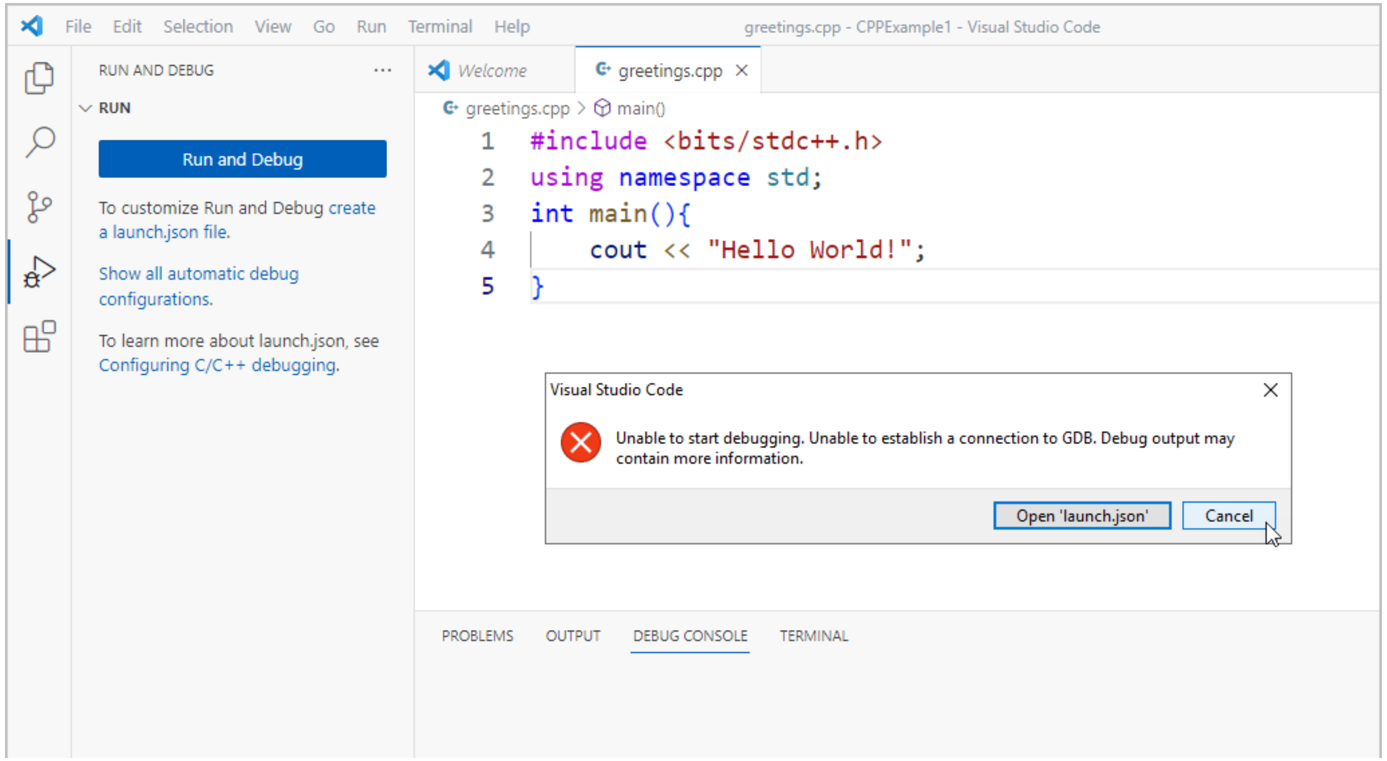
C/C++: cpp.exe build and debug active file preLaunchTask: C/C++: cpp.exe build active file
Detected Task (compiler: C:\msys64\mingw64\bin\cpp.exe)

C/C++: gcc.exe build and debug active file preLaunchTask: C/C++: gcc.exe build active file
Detected Task (compiler: C:\msys64\mingw64\bin\gcc.exe)

Default Configuration

Do you wa
Pack' exte

If it doesn’t show anything or shows the error then click the “Cancel” button and run the program without debugging again.


File
Edit
Selection
View
Go
Run
Terminal
Help
greetings.cpp - CPPExample1 - Visual Studio Code
RUN AND DEBUG
RUN
Run and Debug
To customize Run and Debug create a launch.json file.
Show all automatic debug configurations.
To learn more about launch.json, see Configuring C/C++ debugging.
Welcome
greetings.cpp
greetings.cpp > main()
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL

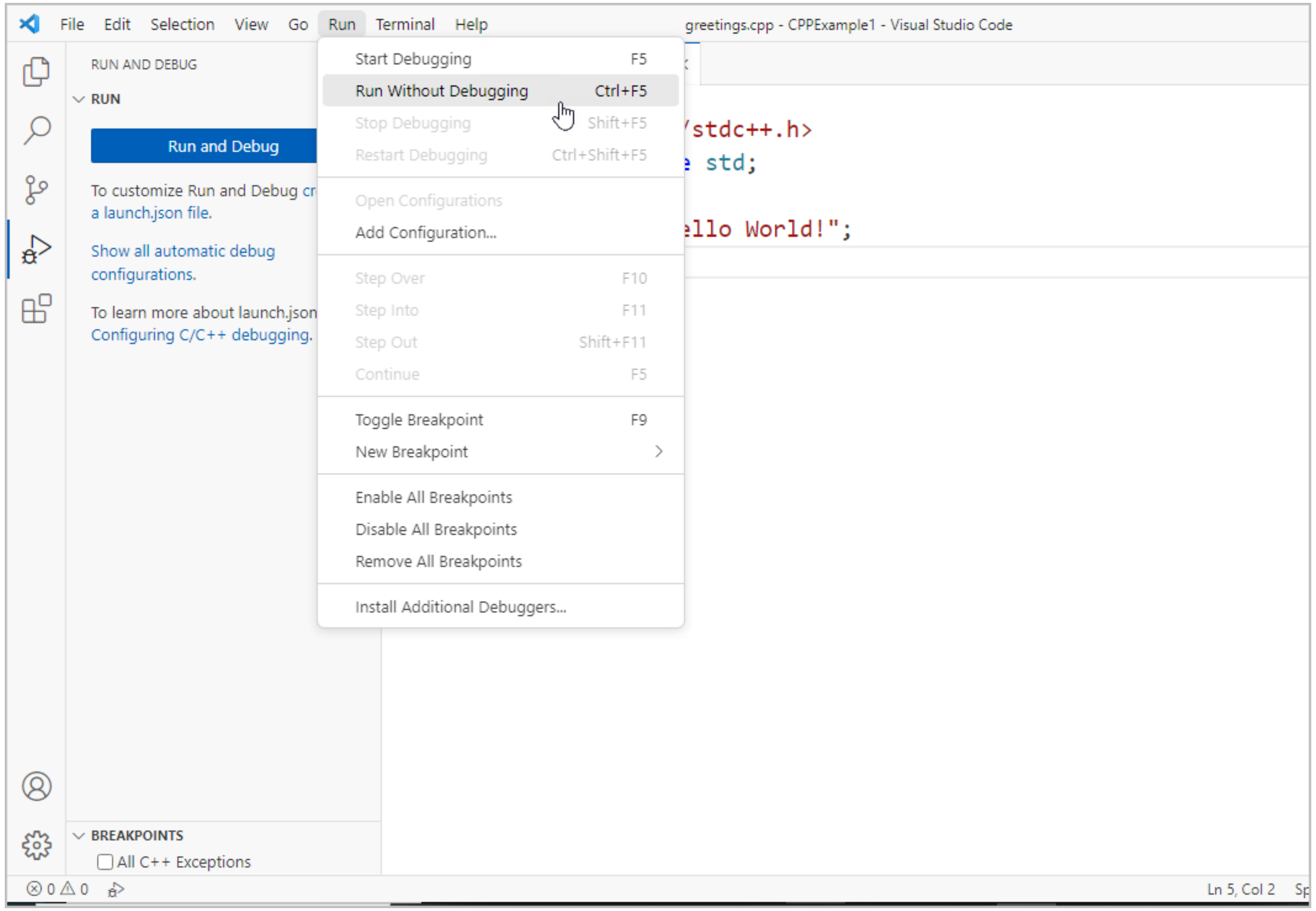
```cpp
#include <bits/stdc++.h>
using namespace std;
int main(){
    cout << "Hello World!";
}
```

Visual Studio Code

Unable to start debugging. Unable to establish a connection to GDB. Debug output may contain more information.

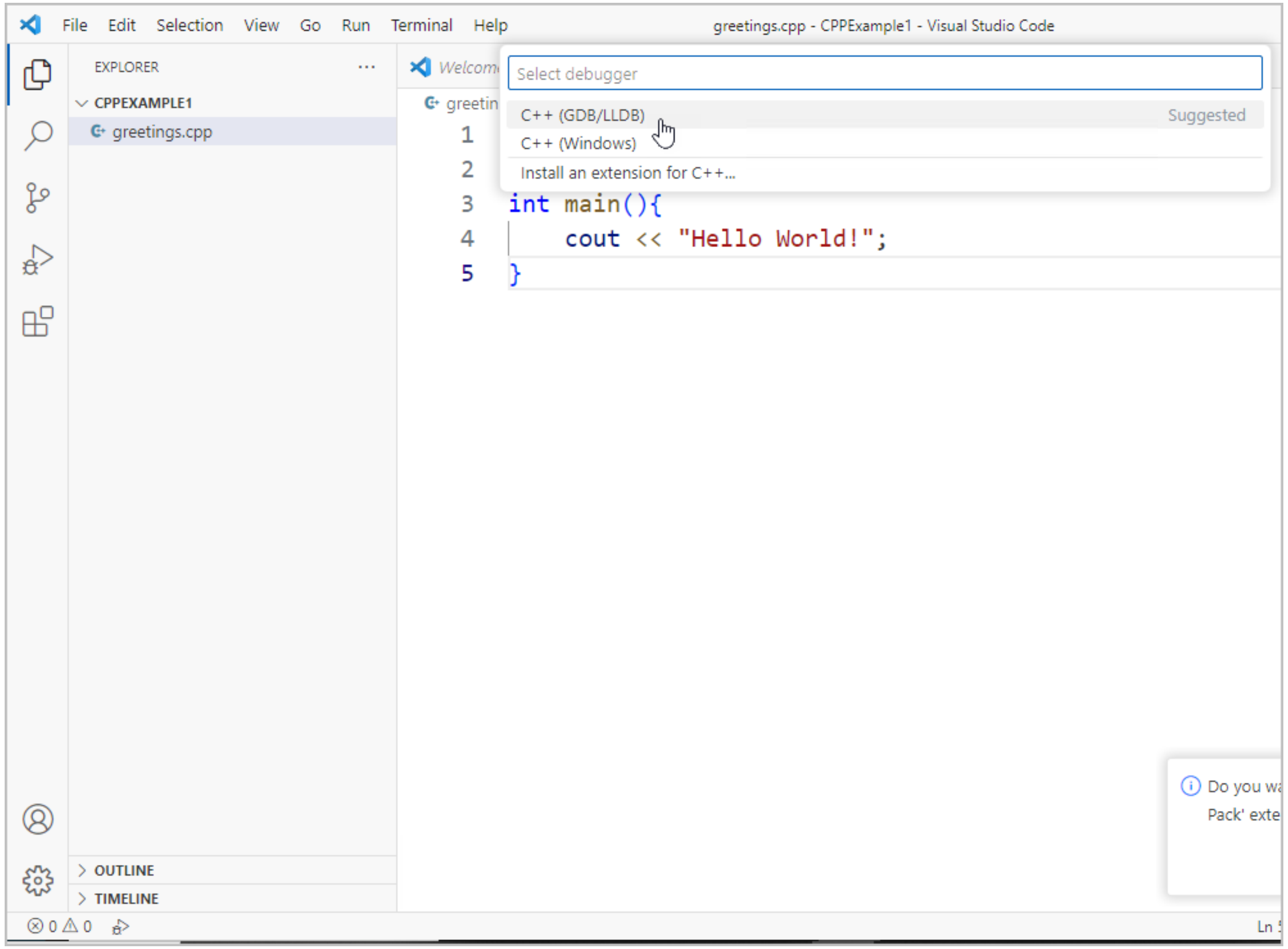
Open 'launch.json'
Cancel

Run Without Debugging



```
/stdc++.h>
e std;

ello World!";
```

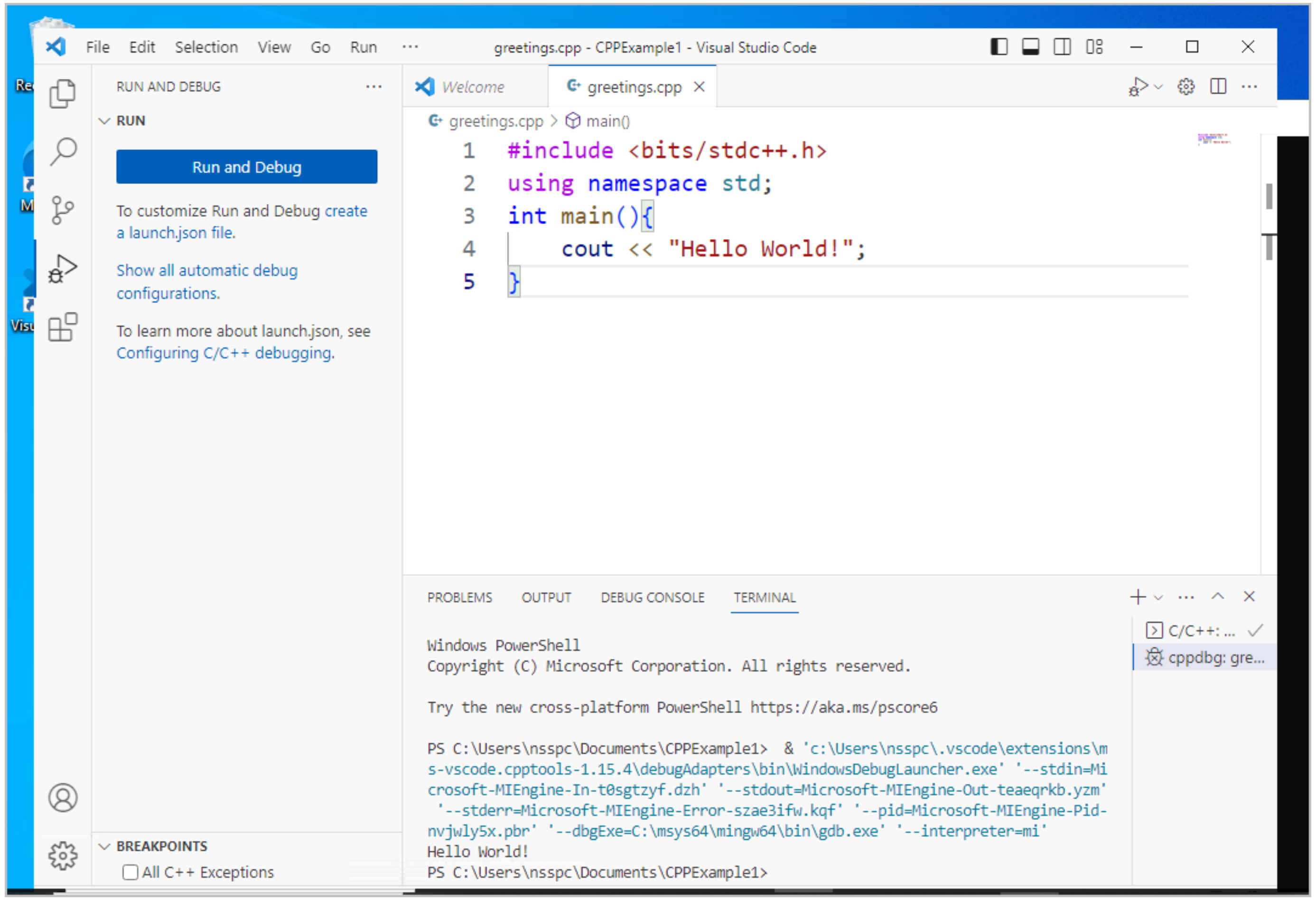
Select “C++ (GDB/LDB)”



greetings.cpp - CPPExample1 - Visual Studio Code

```
int main(){
    cout << "Hello World!";
}
```

“Hello World!” is displayed in the “Terminal”



To customize Run and Debug create a launch.json file.

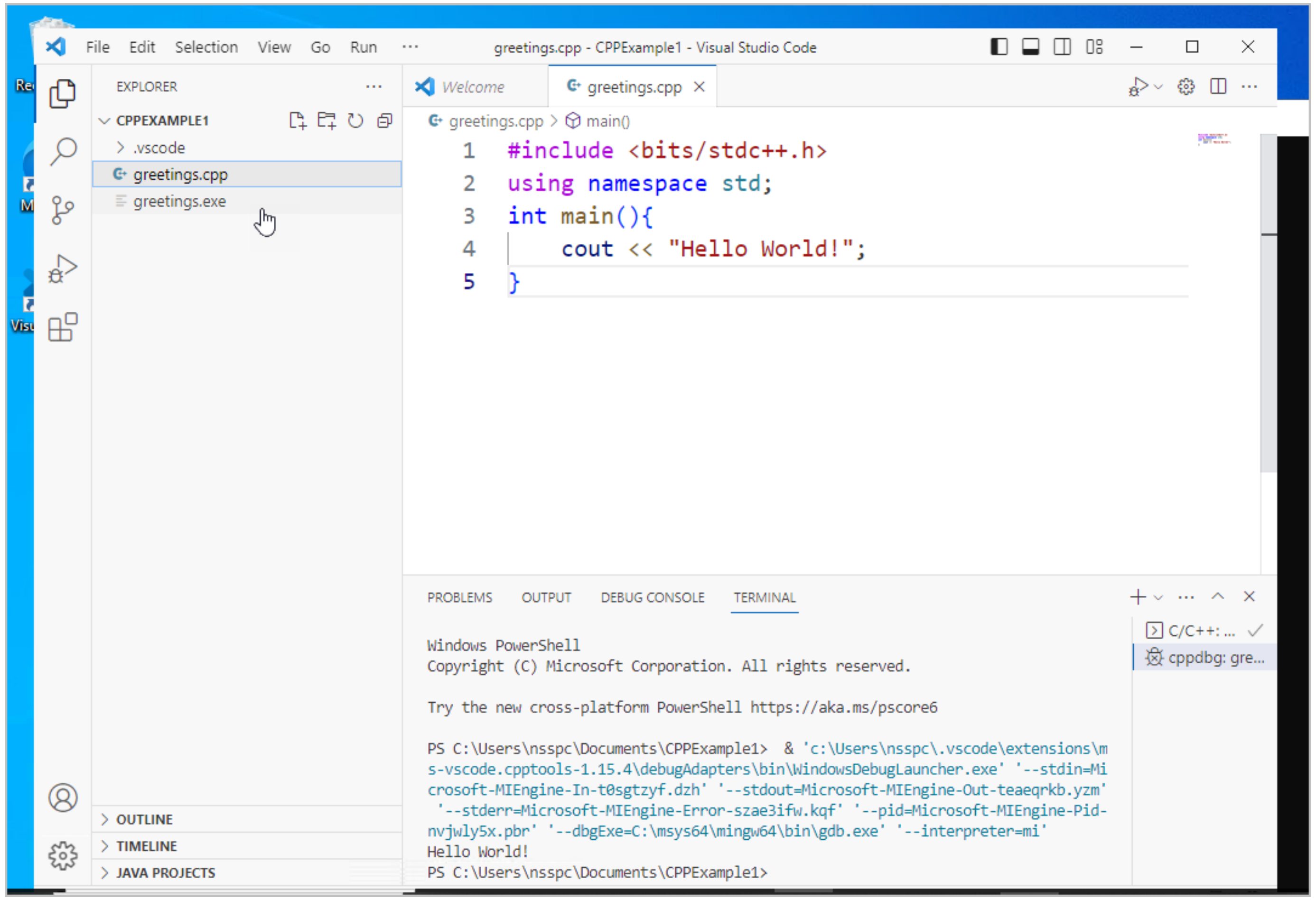
Show all automatic debug configurations.

To learn more about launch.json, see Configuring C/C++ debugging.

```cpp
#include <bits/stdc++.h>
using namespace std;
int main(){
    cout << "Hello World!";
}
```

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

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

PS C:\Users\nsspc\Documents\CPPExample1>  & 'c:\Users\nsspc\.vscode\extensions\m
s-vscode.cpptools-1.15.4\debugAdapters\bin\WindowsDebugLauncher.exe' '--stdin=Mi
crosoft-MIEngine-In-t0sgtzyf.dzh' '--stdout=Microsoft-MIEngine-Out-teaeqrkb.yzm'
 '--stderr=Microsoft-MIEngine-Error-szae3ifw.kqf' '--pid=Microsoft-MIEngine-Pid-
nvjwly5x.pbr' '--dbgExe=C:\msys64\mingw64\bin\gdb.exe' '--interpreter=mi'
Hello World!
PS C:\Users\nsspc\Documents\CPPExample1>
```

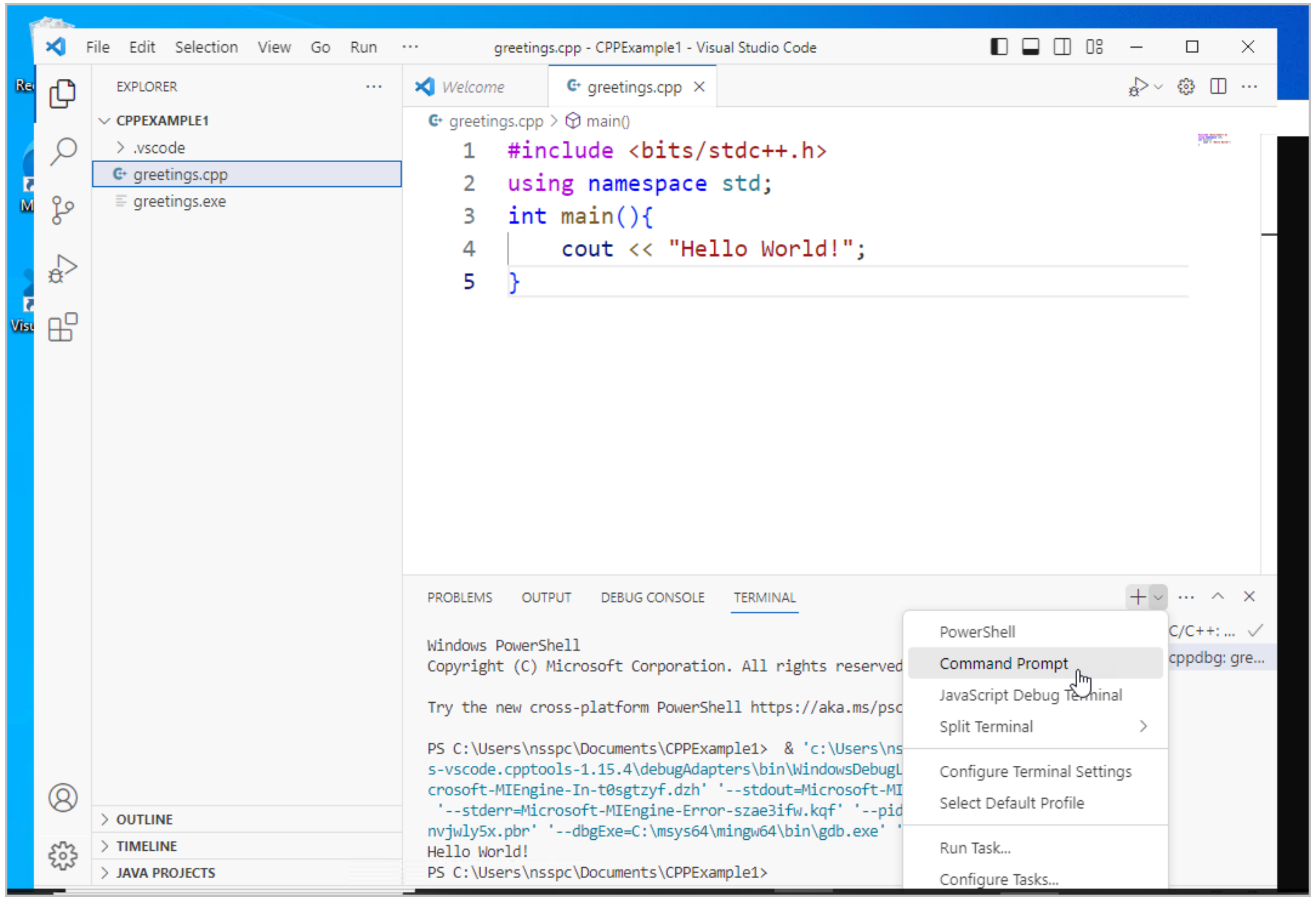
The executable file greetings.exe has been created successfully and and be run from the command prompt.



```cpp
#include <bits/stdc++.h>
using namespace std;
int main(){
    cout << "Hello World!";
}
```

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

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

PS C:\Users\nsspc\Documents\CPPExample1>  & 'c:\Users\nsspc\.vscode\extensions\m
s-vscode.cpptools-1.15.4\debugAdapters\bin\WindowsDebugLauncher.exe' '--stdin=Mi
crosoft-MIEngine-In-t0sgtzyf.dzh' '--stdout=Microsoft-MIEngine-Out-teaeqrkb.yzm'
 '--stderr=Microsoft-MIEngine-Error-szae3ifw.kqf' '--pid=Microsoft-MIEngine-Pid-
nvjwly5x.pbr' '--dbgExe=C:\msys64\mingw64\bin\gdb.exe' '--interpreter=mi'
Hello World!
PS C:\Users\nsspc\Documents\CPPExample1>
```

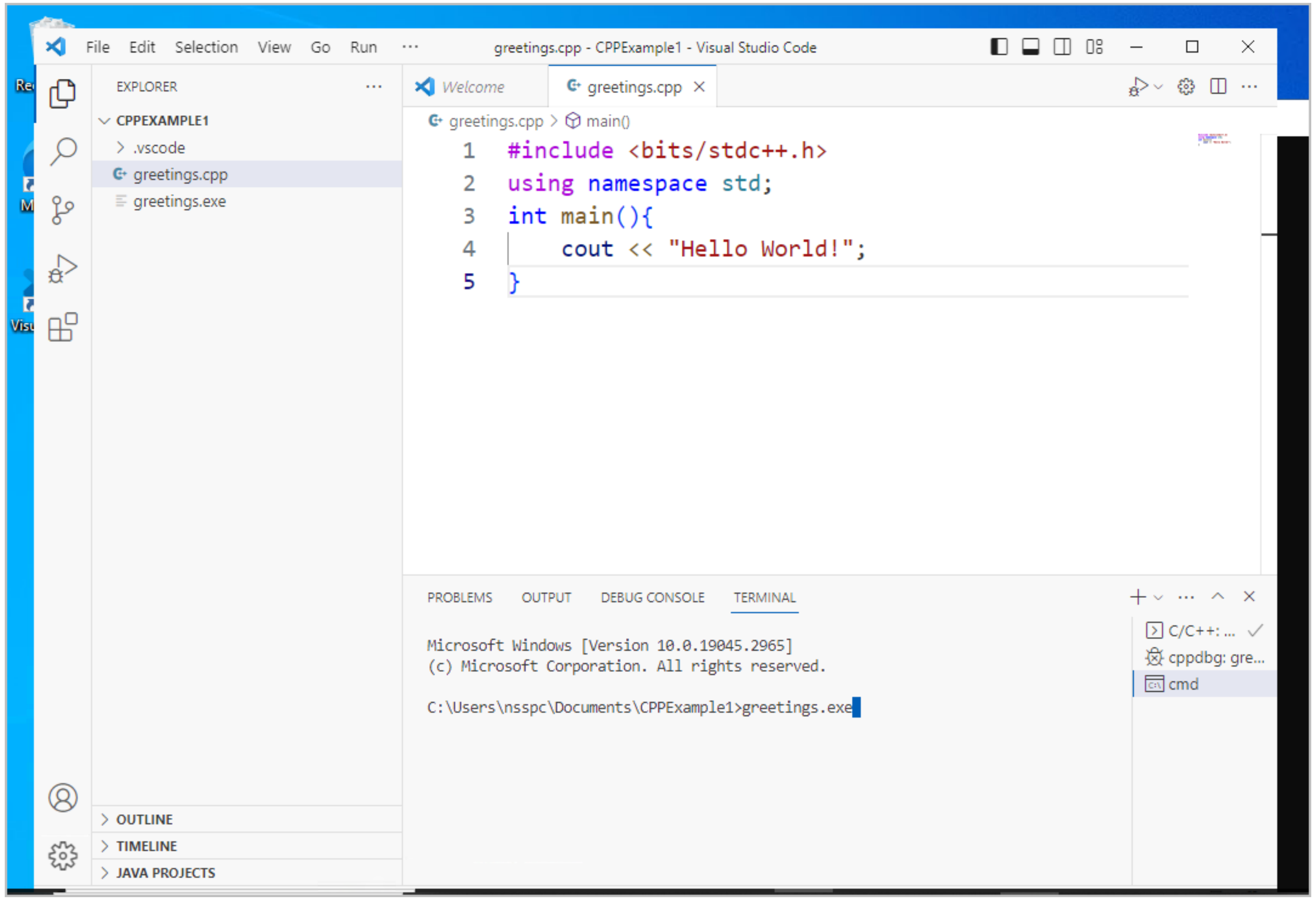
Open a new "Command Prompt"



```cpp
#include <bits/stdc++.h>
using namespace std;
int main(){
    cout << "Hello World!";
}
```

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved

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

PS C:\Users\nsspc\Documents\CPPExample1>  & 'c:\Users\ns
s-vscode.cpptools-1.15.4\debugAdapters\bin\WindowsDebugL
crosoft-MIEngine-In-t0sgtzyf.dzh' '--stdout=Microsoft-MI
 '--stderr=Microsoft-MIEngine-Error-szae3ifw.kqf' '--pid
nvjwly5x.pbr' '--dbgExe=C:\msys64\mingw64\bin\gdb.exe' '
Hello World!
PS C:\Users\nsspc\Documents\CPPExample1>
```

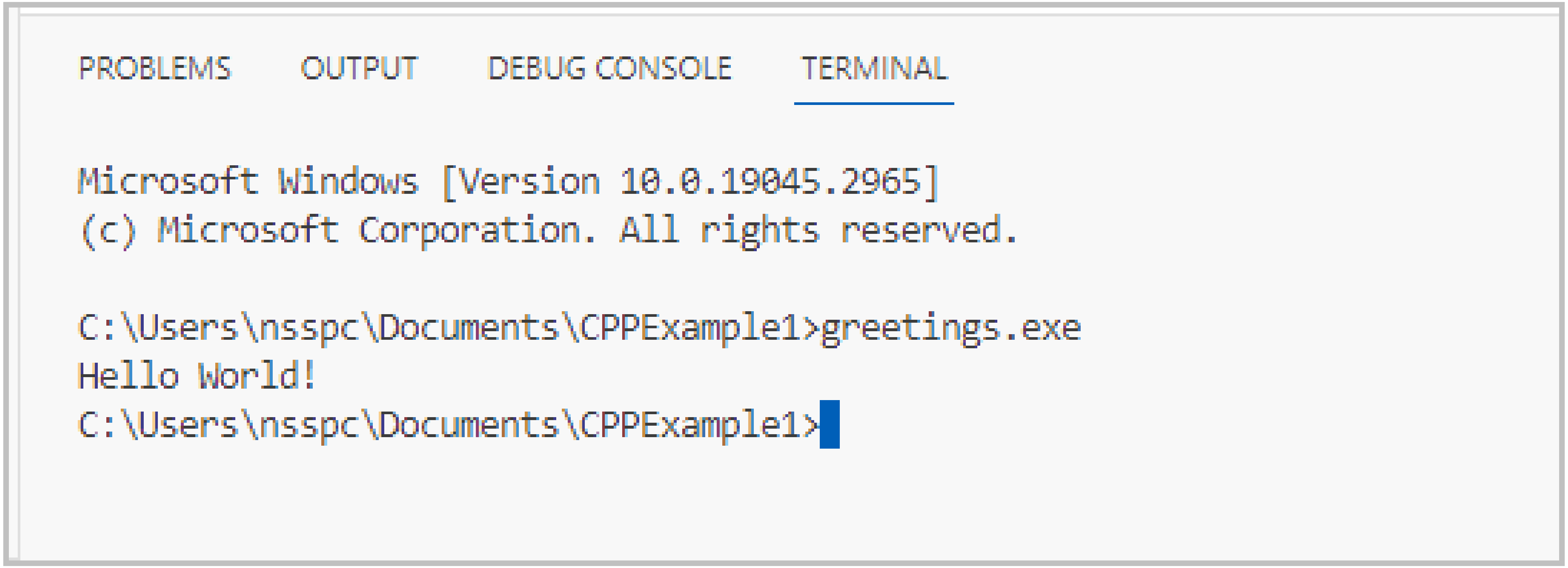
Enter “greetings.exe” and press the “Enter” key.



```cpp
#include <bits/stdc++.h>
using namespace std;
int main(){
    cout << "Hello World!";
}
```

```
Microsoft Windows [Version 10.0.19045.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\nsspc\Documents\CPPExample1>greetings.exe
```

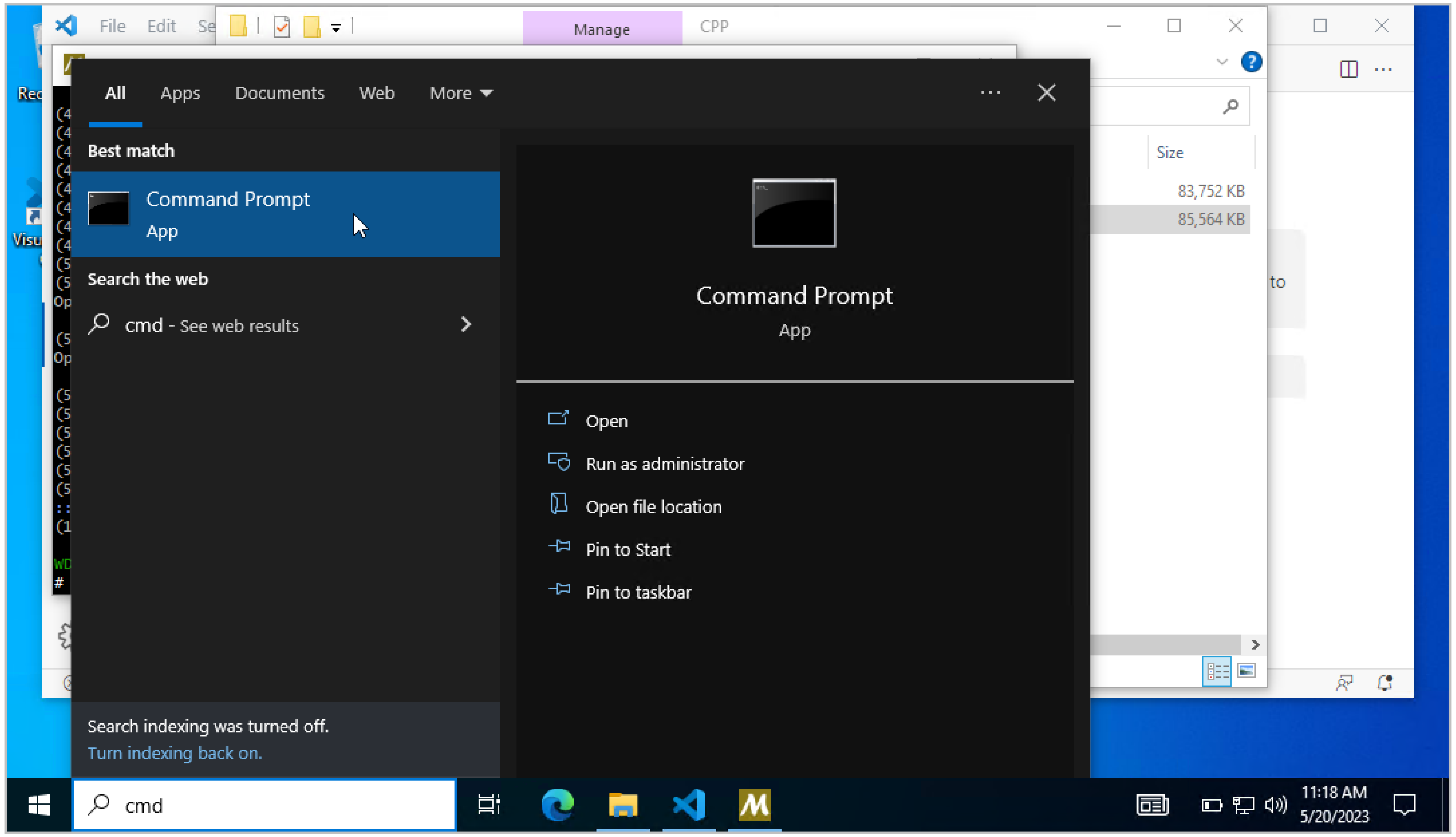
Observe the ouput



```
Microsoft Windows [Version 10.0.19045.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\nsspc\Documents\CPPExample1>greetings.exe
Hello World!
C:\Users\nsspc\Documents\CPPExample1>
```

Creating your first Java Program

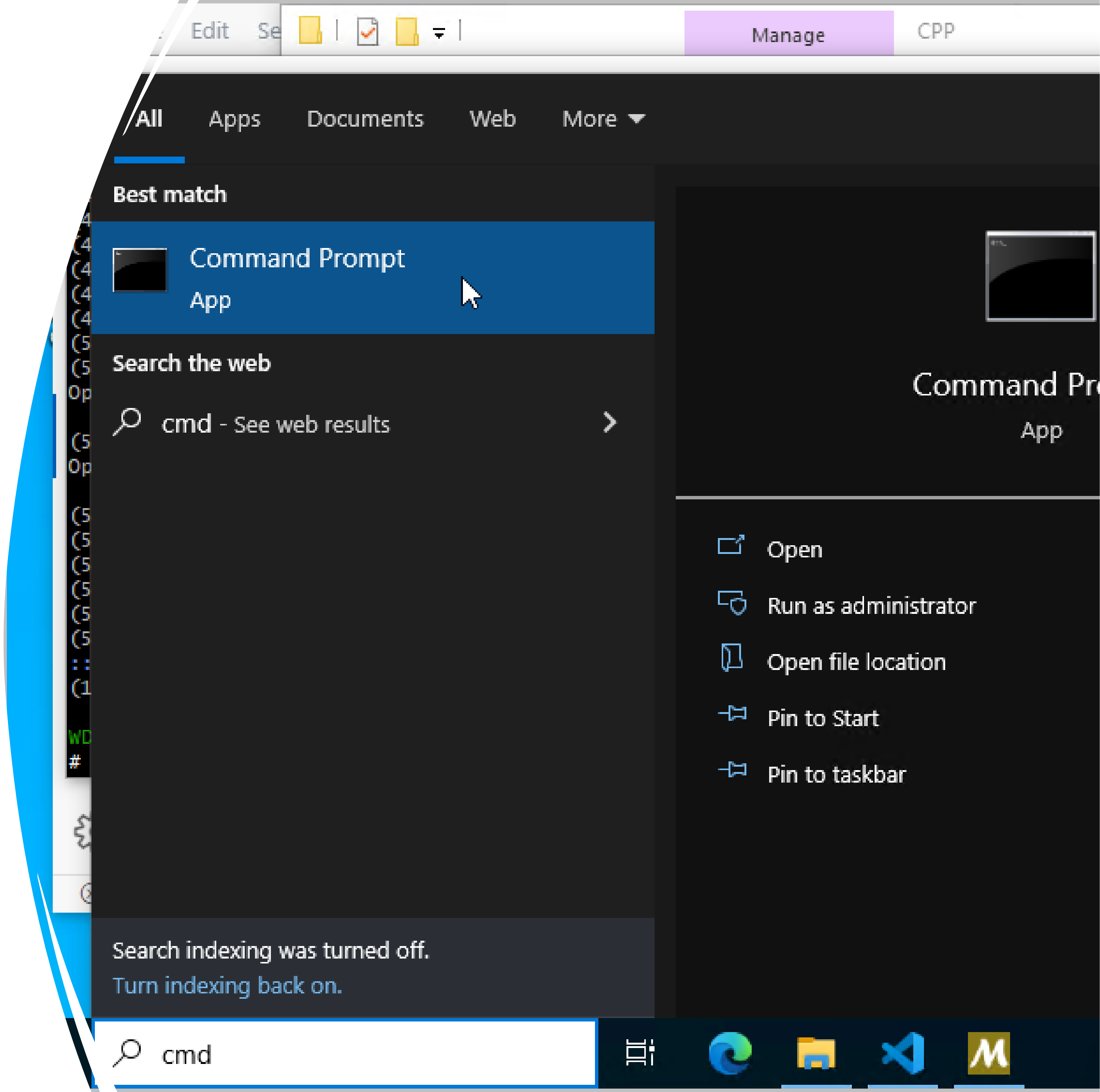
Open the “Command Prompt” window

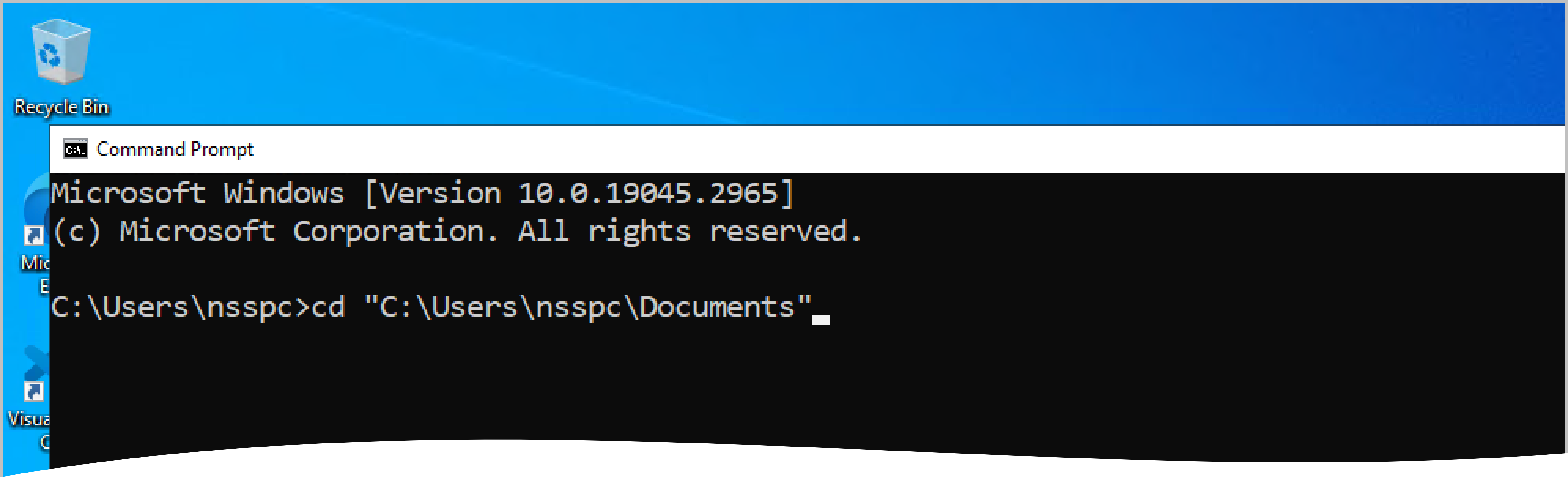


Search indexing was turned off.
Turn indexing back on.

Let’s create our very first program.

- Open the command prompt





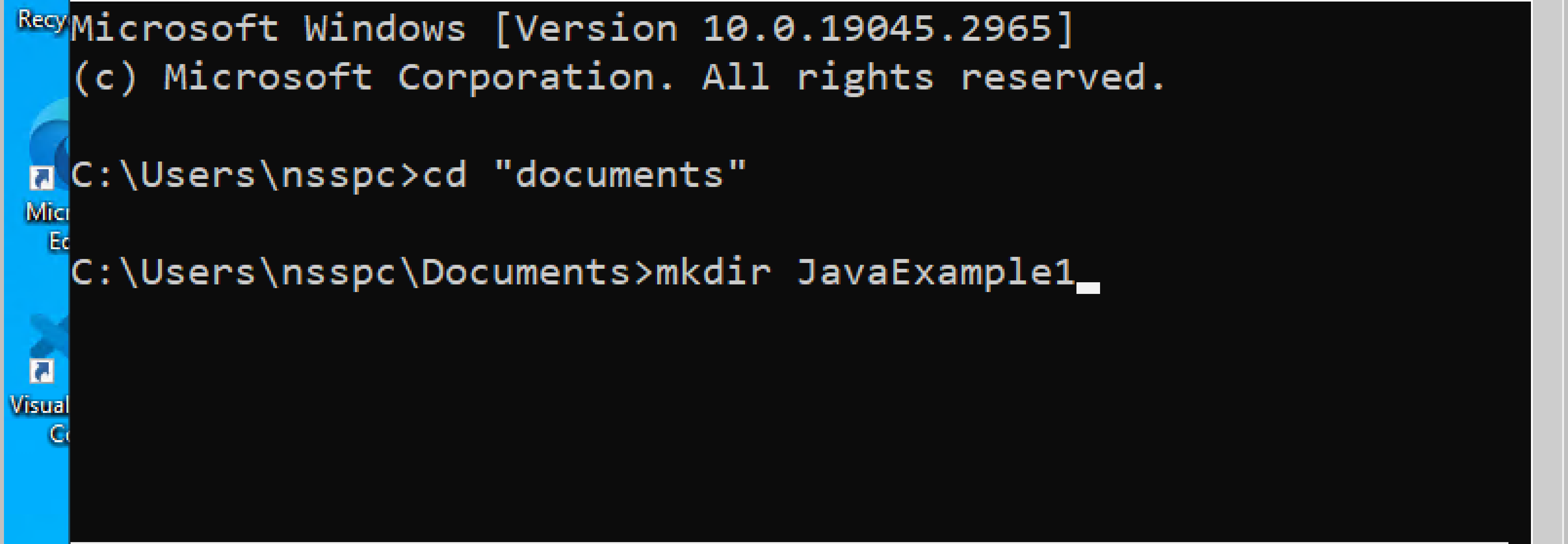
```
Microsoft Windows [Version 10.0.19045.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\nsspc>cd "C:\Users\nsspc\Documents"_
```

Change the directory to the “Documents” folder

Type the following command:

cd "C:\Users\nsspc\Documents "

then press the “Enter” key.



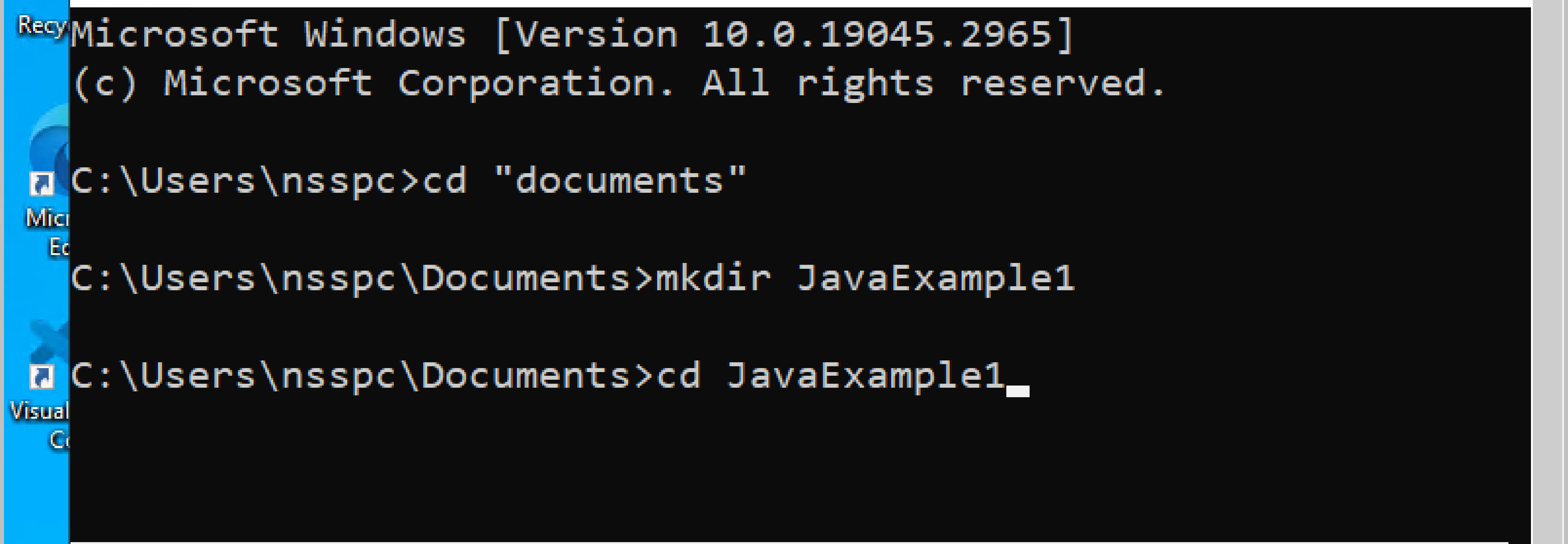
```
Microsoft Windows [Version 10.0.19045.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\nsspc>cd "documents"

C:\Users\nsspc\Documents>mkdir JavaExample1_
```

Create a new folder and name the folder as “JavaExample1”

Type the following command:

mkdir JavaExample1

then press the “Enter” key.



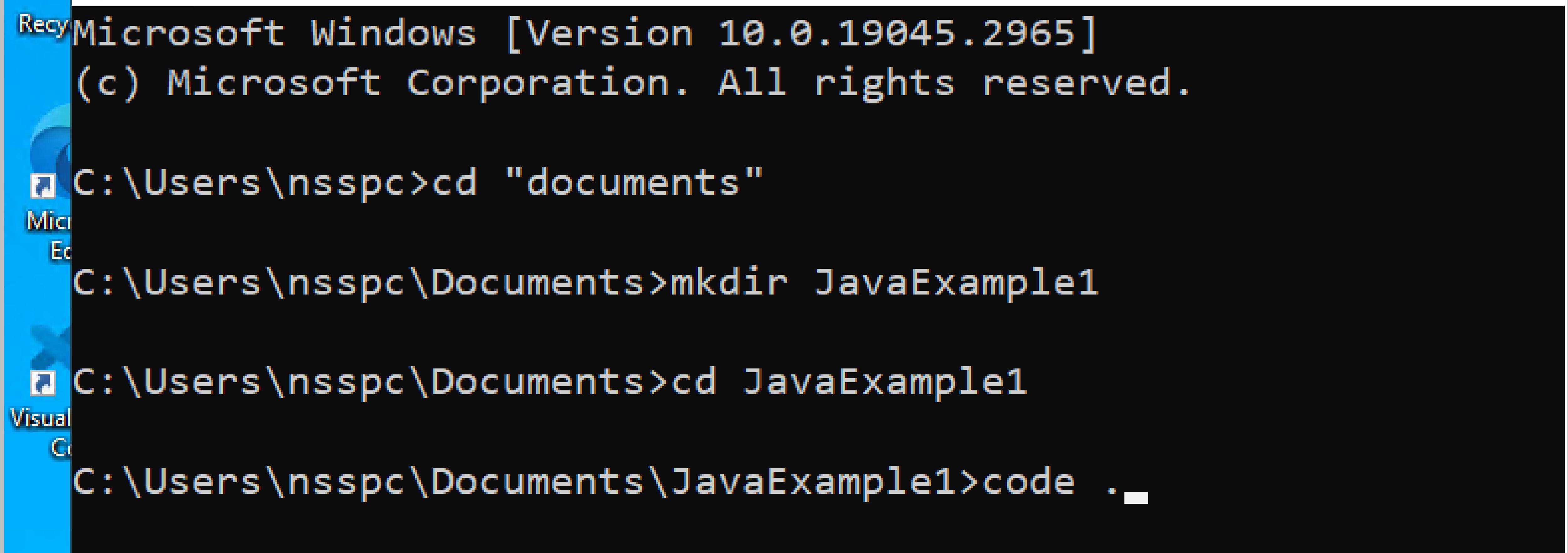
```
Microsoft Windows [Version 10.0.19045.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\nsspc>cd "documents"

C:\Users\nsspc\Documents>mkdir JavaExample1

C:\Users\nsspc\Documents>cd JavaExample1
```

Change the directory to “JavaExample1” folder

- Type the following command:

  cd JavaExample1

- then press the “Enter” key.



```
Microsoft Windows [Version 10.0.19045.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\nsspc>cd "documents"

C:\Users\nsspc\Documents>mkdir JavaExample1

C:\Users\nsspc\Documents>cd JavaExample1

C:\Users\nsspc\Documents\JavaExample1>code .
```

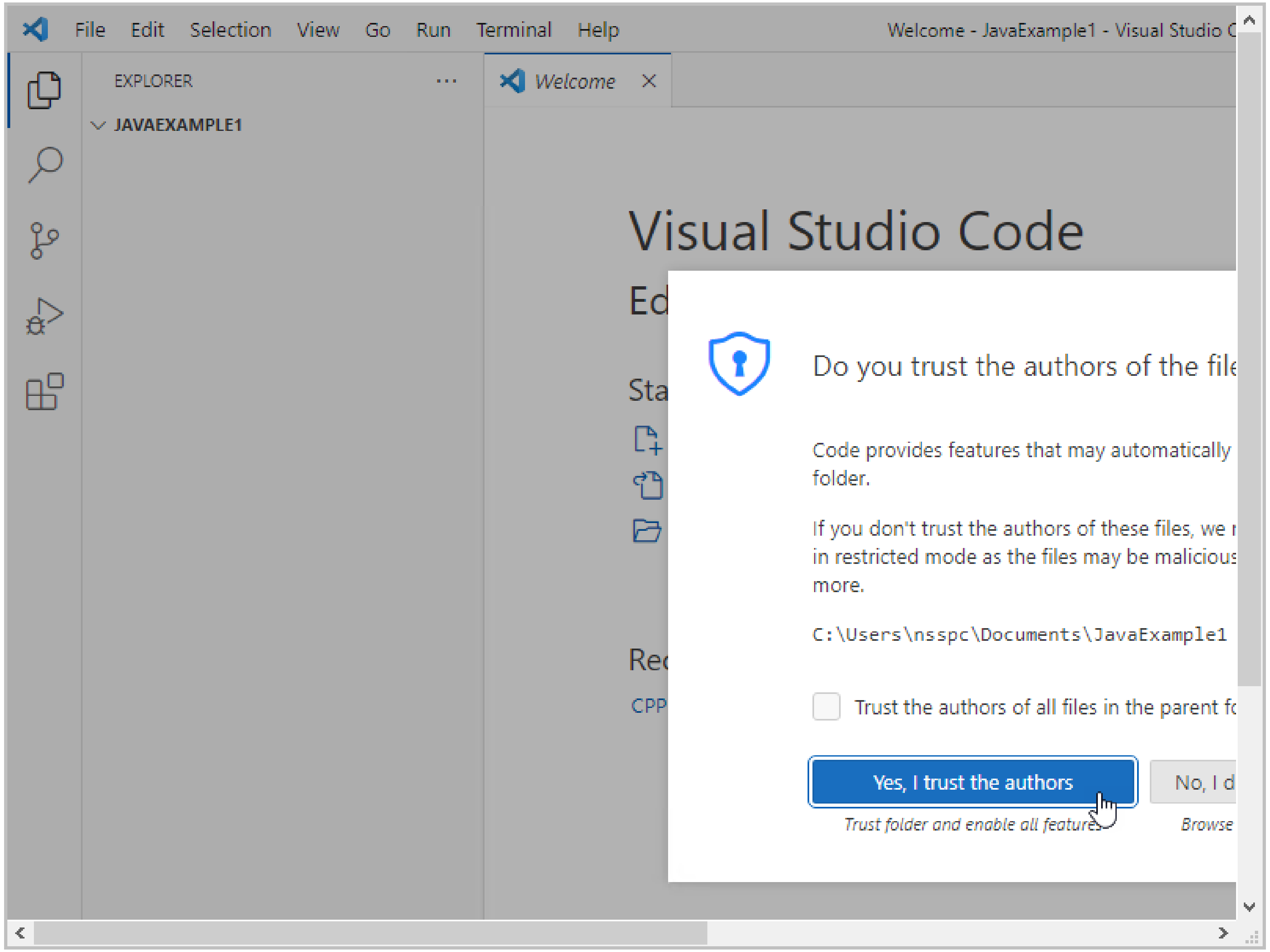
Open the folder “JavaExample1” in Visual Studio Code

- Type the following command:

  code .

- then press the “Enter” key.

Click “Yes, I trust the authors”



File Edit Selection View Go Run Terminal Help
Welcome - JavaExample1 - Visual Studio C

Do you trust the authors of the file

Code provides features that may automatically folder.

If you don't trust the authors of these files, we r in restricted mode as the files may be malicious more.

`C:\Users\nsspc\Documents\JavaExample1`

□ Trust the authors of all files in the parent fo

Yes, I trust the authors

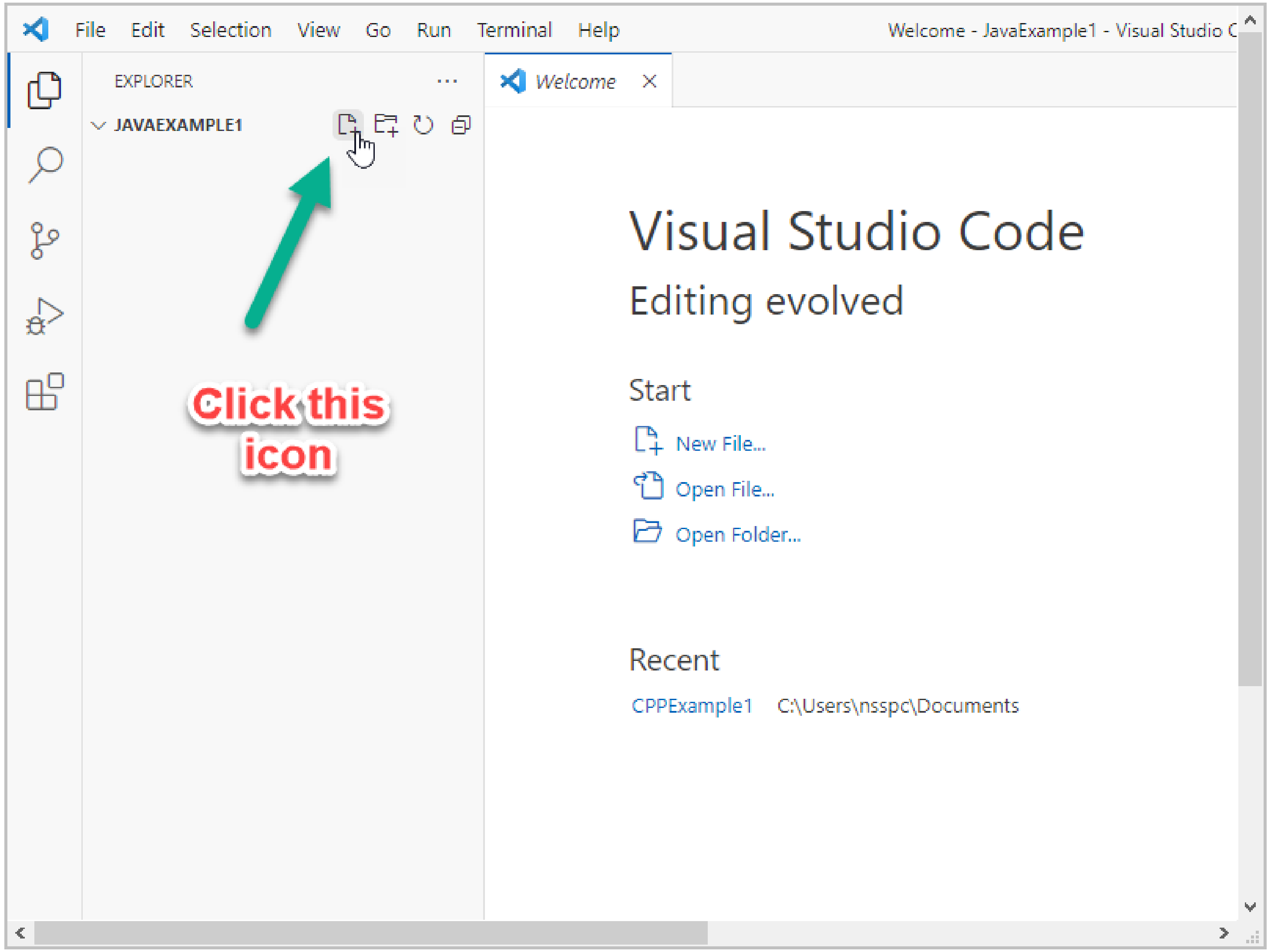
Trust folder and enable all features

No, I d

Browse

Create a Java program that will output the sentence “Hello World!”

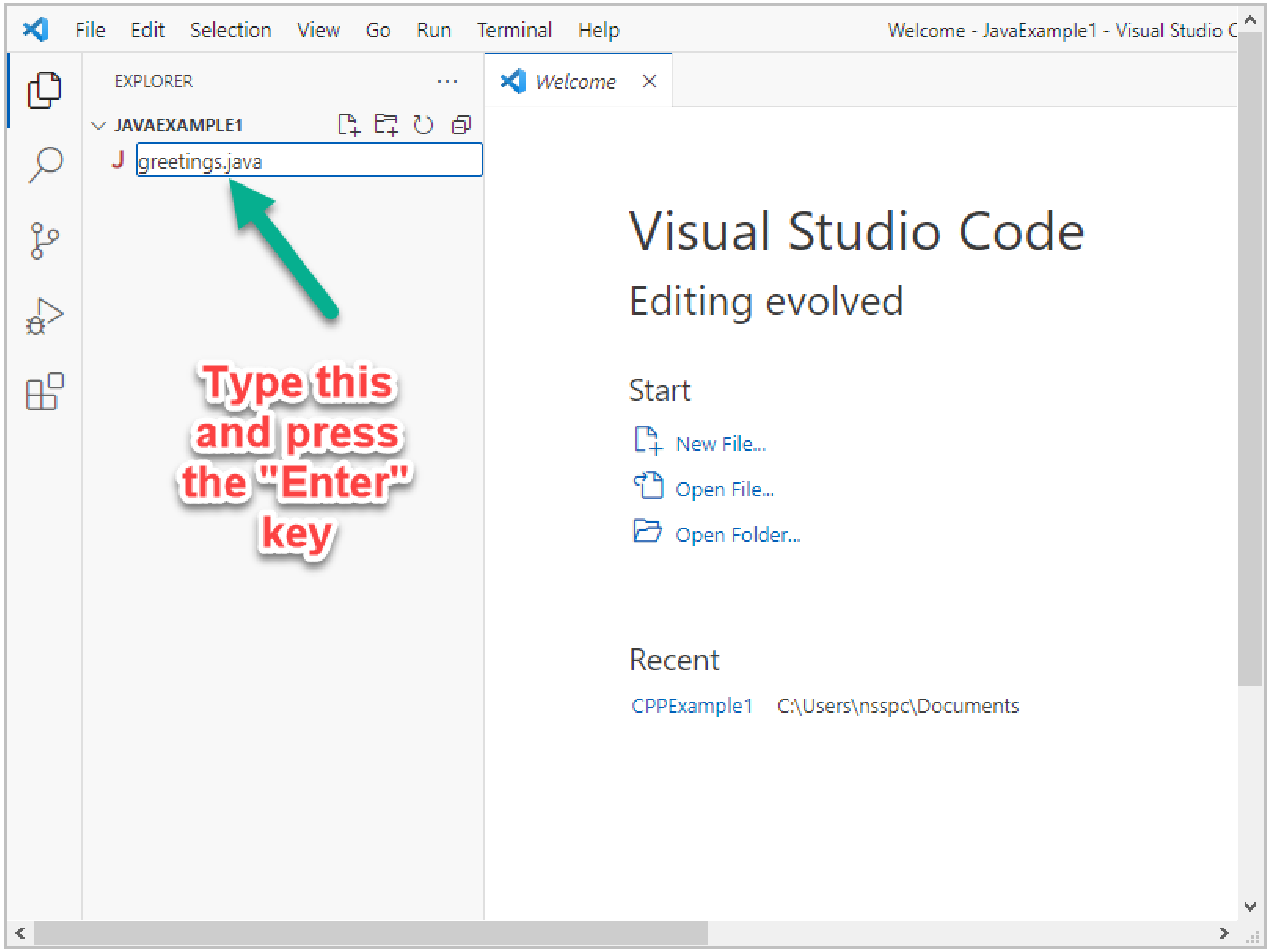
Name the Java file as “greetings.java”



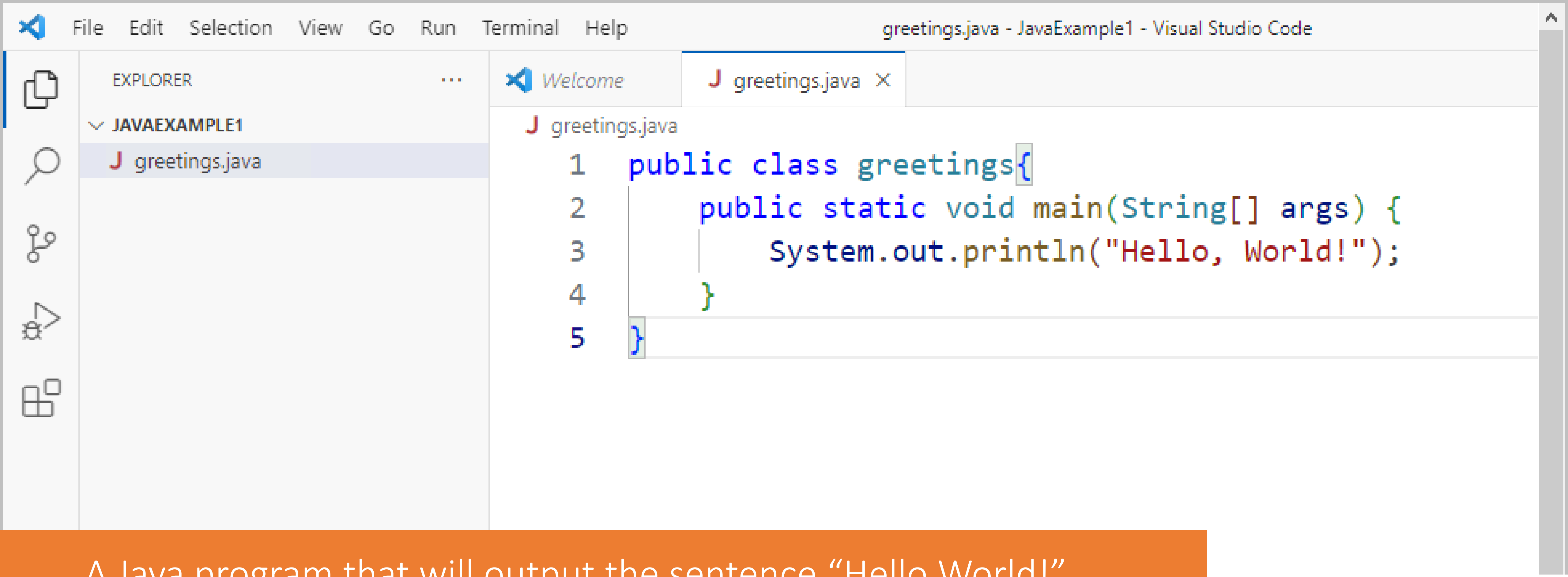
Click this icon

Create a Java program that will output the sentence “Hello World!”

Name the Java file as “greetings.java”



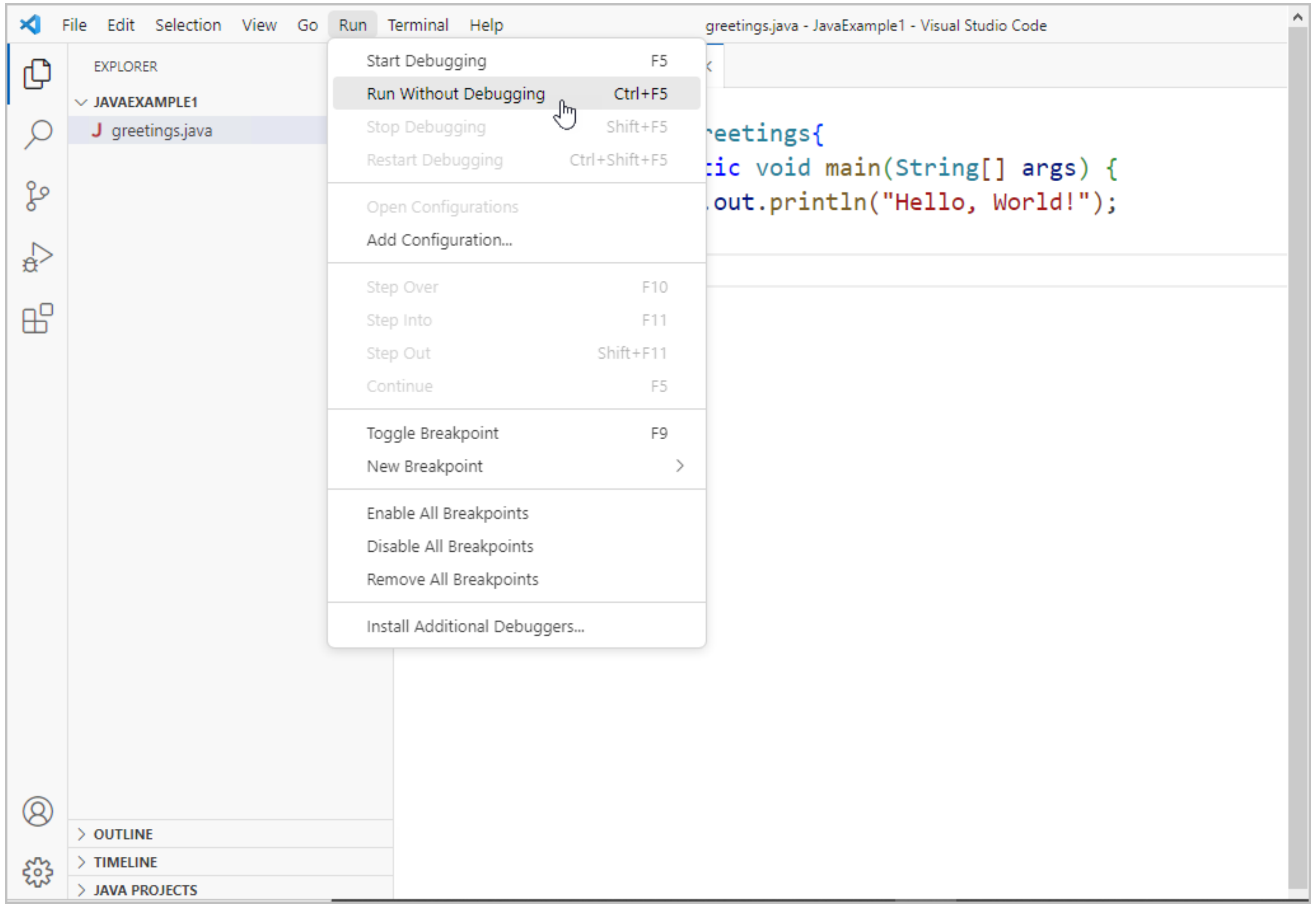
Type this and press the "Enter" key



```java
public class greetings{
    public static void main(String[] args) {
        System.out.println("Hello, World!");
    }
}
```

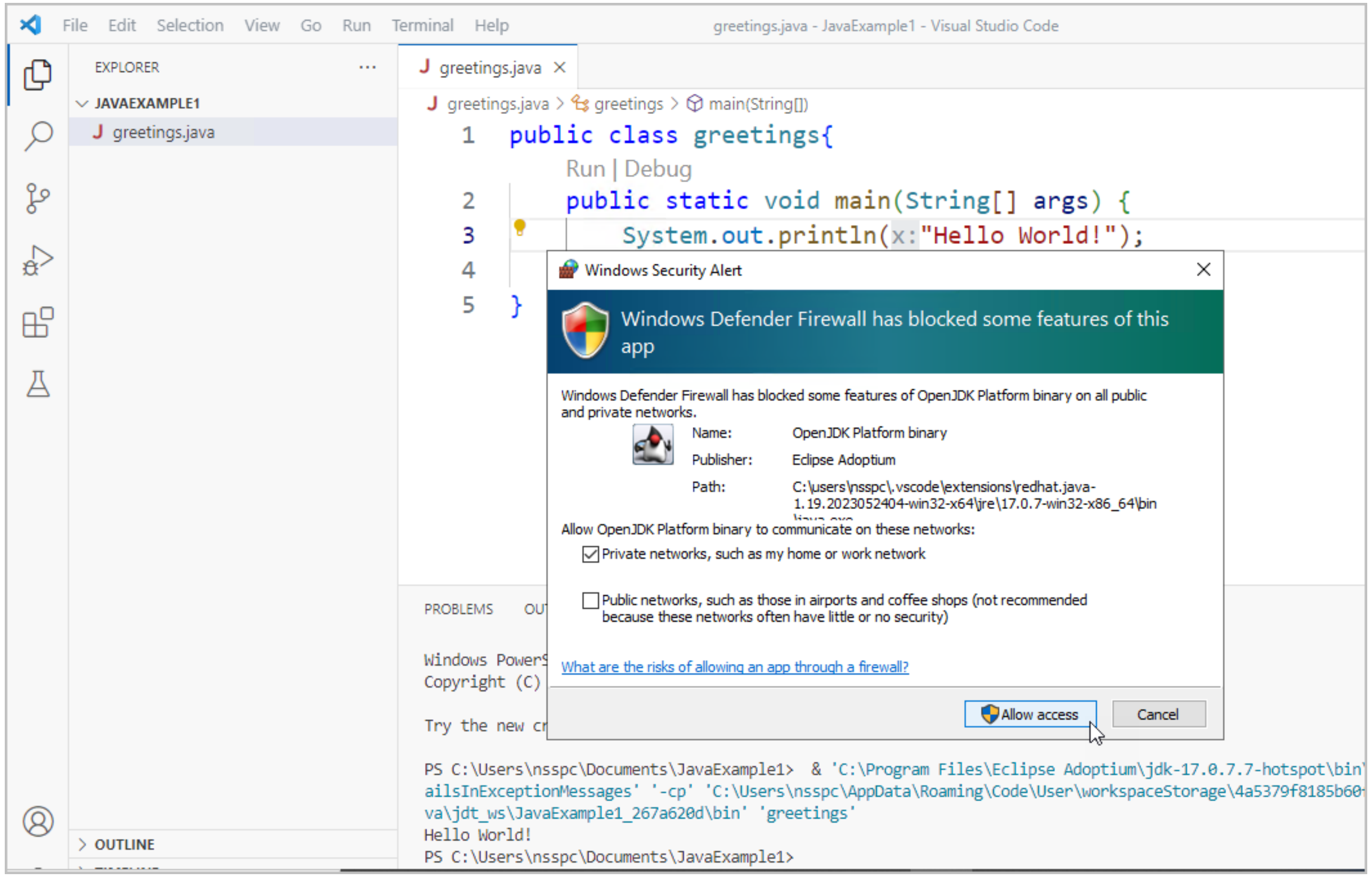
A Java program that will output the sentence “Hello World!”

Run the program without debugging



```
reetings{
tic void main(String[] args) {
.out.println("Hello, World!");
```

Allow communication for Private Network but not Public Network



```java
public class greetings{
    public static void main(String[] args) {
        System.out.println(x:"Hello World!");

}
```

Windows Security Alert

Windows Defender Firewall has blocked some features of this app

Windows Defender Firewall has blocked some features of OpenJDK Platform binary on all public and private networks.

Name: OpenJDK Platform binary

Publisher: Eclipse Adoptium

Path: C:\users\nsspc\.vscode\extensions\redhat.java-1.19.2023052404-win32-x64\jre\17.0.7-win32-x86_64\bin

Allow OpenJDK Platform binary to communicate on these networks:

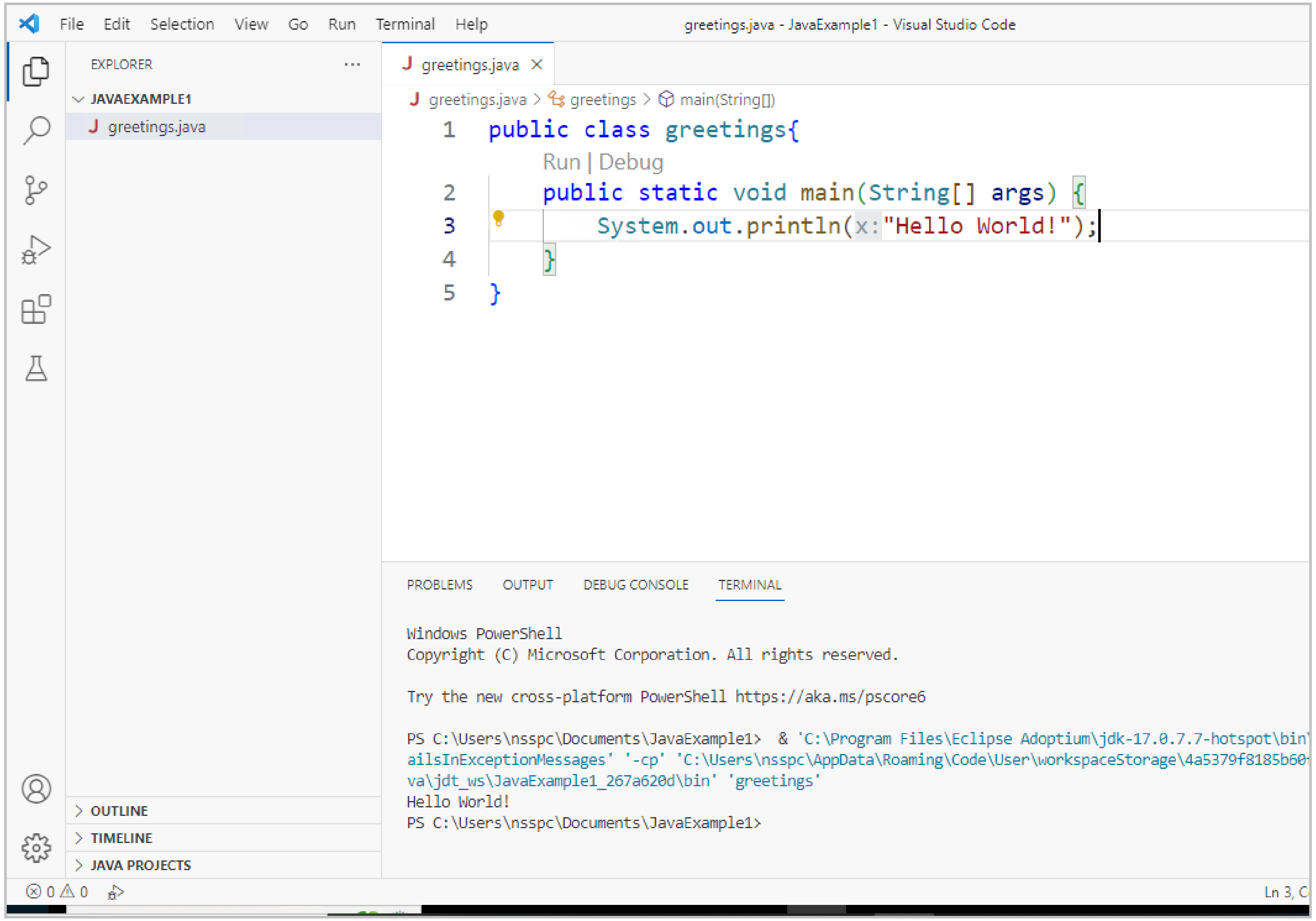
☑ Private networks, such as my home or work network

□ Public networks, such as those in airports and coffee shops (not recommended because these networks often have little or no security)

What are the risks of allowing an app through a firewall?

```
Windows PowerS
Copyright (C)

Try the new cr

PS C:\Users\nsspc\Documents\JavaExample1>  & 'C:\Program Files\Eclipse Adoptium\jdk-17.0.7.7-hotspot\bin
ailsInExceptionMessages' '-cp' 'C:\Users\nsspc\AppData\Roaming\Code\User\workspaceStorage\4a5379f8185b60
va\jdt_ws\JavaExample1_267a620d\bin' 'greetings'
Hello World!
PS C:\Users\nsspc\Documents\JavaExample1>
```

Observe the output



```java
public class greetings{
    public static void main(String[] args) {
        System.out.println(x:"Hello World!");
    }
}
```

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

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

PS C:\Users\nsspc\Documents\JavaExample1>  & 'C:\Program Files\Eclipse Adoptium\jdk-17.0.7.7-hotspot\bin
ailsInExceptionMessages' '-cp' 'C:\Users\nsspc\AppData\Roaming\Code\User\workspaceStorage\4a5379f8185b60
va\jdt_ws\JavaExample1_267a620d\bin' 'greetings'
Hello World!
PS C:\Users\nsspc\Documents\JavaExample1>
```

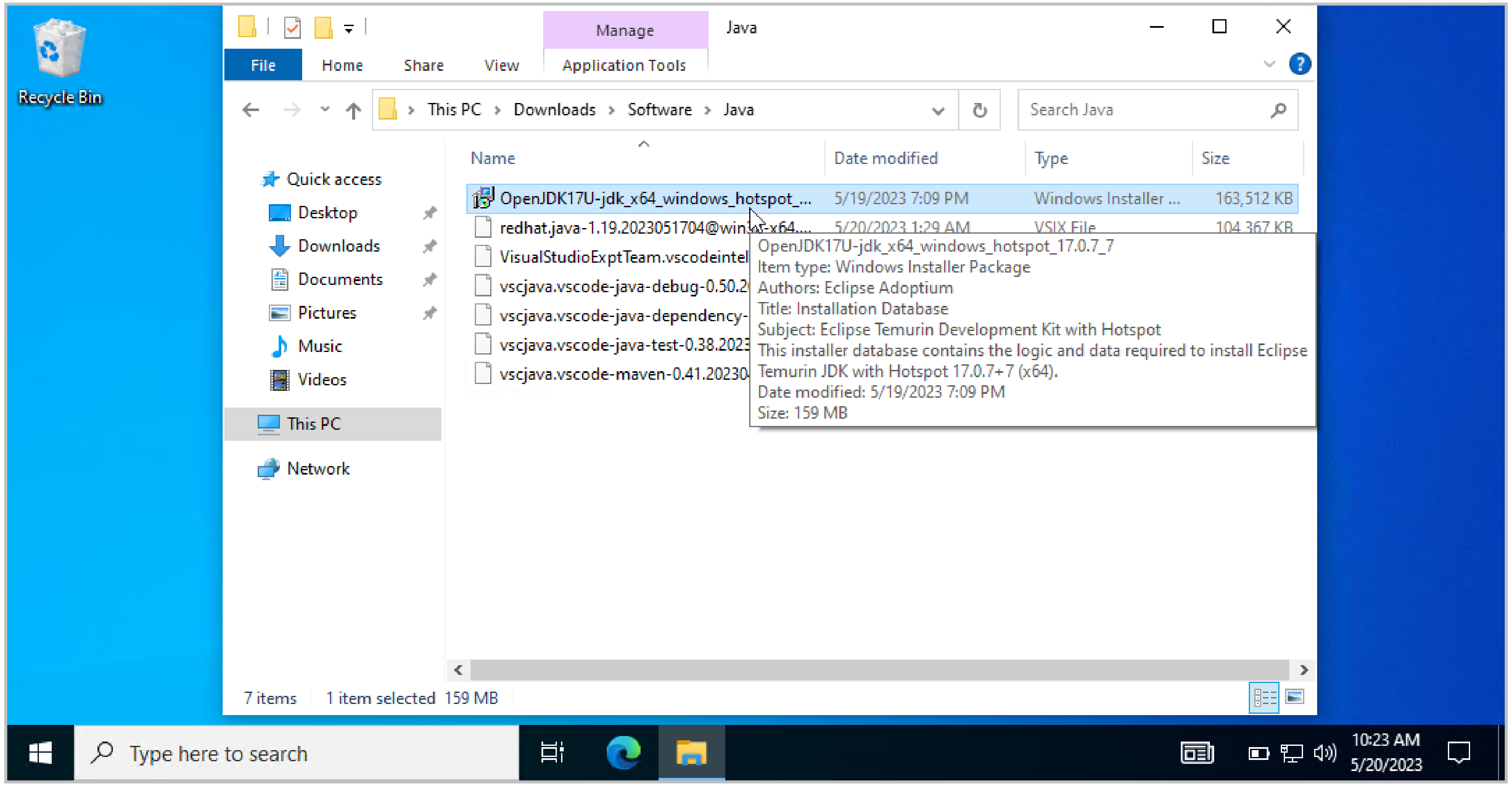
Thank You!

Q&A

Installing JDK from Adoption

Install OpenJDK from Adoption

https://adoptium.net/

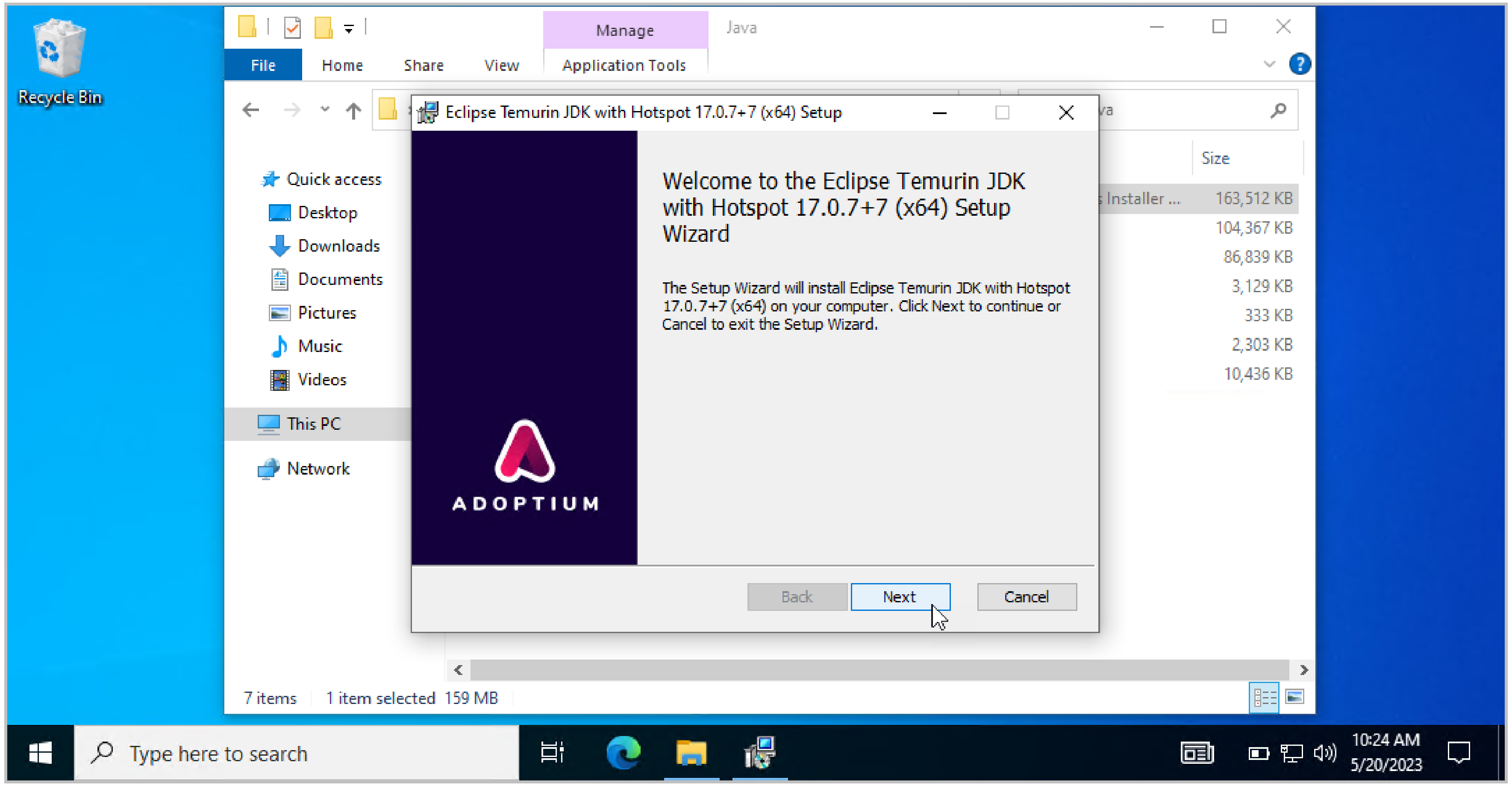


Name	Date modified	Type	Size
OpenJDK17U-jdk_x64_windows_hotspot_...	5/19/2023 7:09 PM	Windows Installer ...	163,512 KB
redhat.java-1.19.2023051704@win...x64....	5/20/2023 1:29 AM	VSIX File	104,367 KB
VisualStudioExptTeam.vscodeintel			
vscjava.vscode-java-debug-0.50.2			
vscjava.vscode-java-dependency-			
vscjava.vscode-java-test-0.38.2023			
vscjava.vscode-maven-0.41.20230			

OpenJDK17U-jdk_x64_windows_hotspot_17.0.7_7
Item type: Windows Installer Package
Authors: Eclipse Adoptium
Title: Installation Database
Subject: Eclipse Temurin Development Kit with Hotspot
This installer database contains the logic and data required to install Eclipse Temurin JDK with Hotspot 17.0.7+7 (x64).
Date modified: 5/19/2023 7:09 PM
Size: 159 MB

7 items 1 item selected 159 MB

Click “Next” to continue

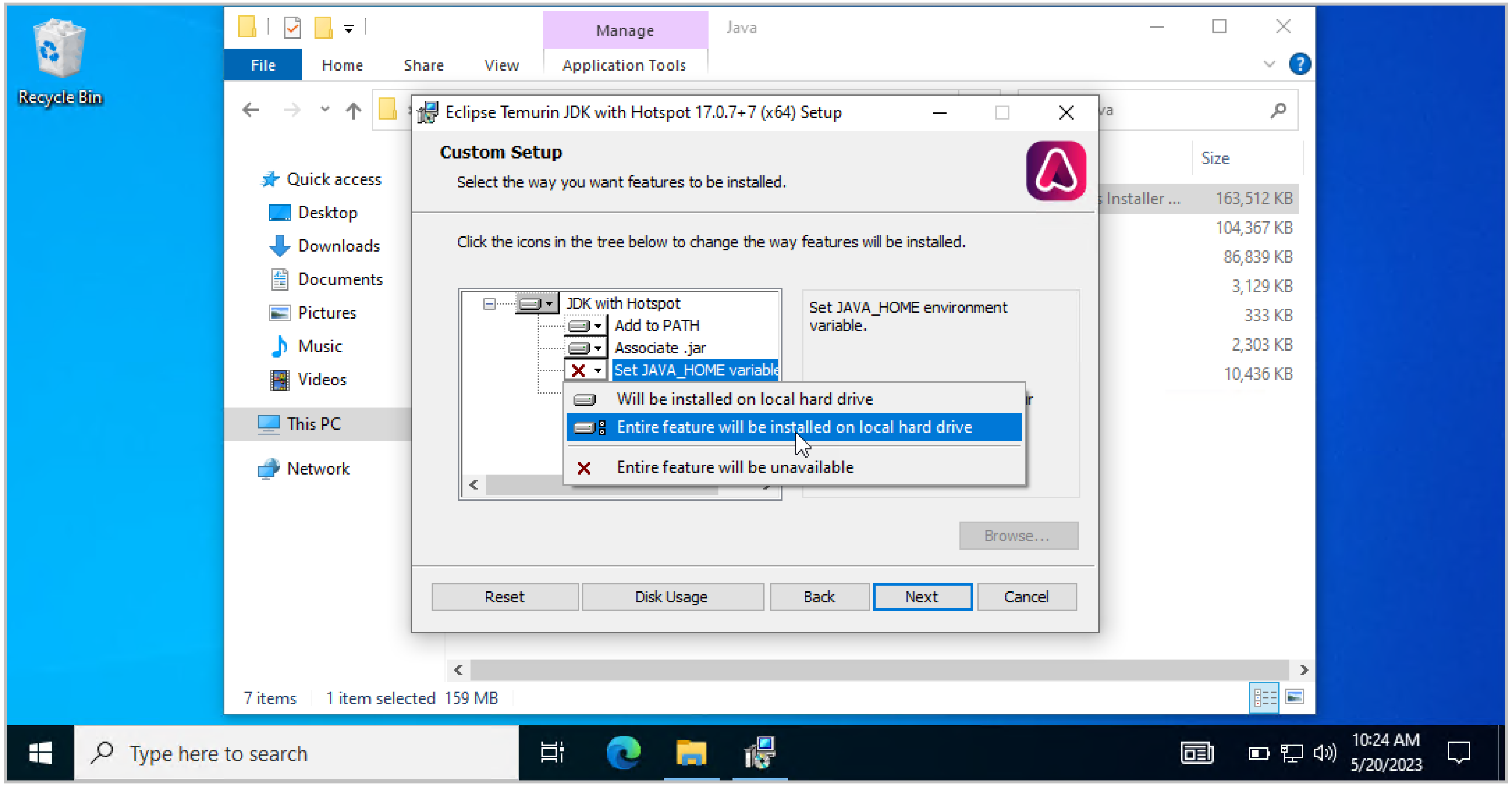


Eclipse Temurin JDK with Hotspot 17.0.7+7 (x64) Setup

Welcome to the Eclipse Temurin JDK with Hotspot 17.0.7+7 (x64) Setup Wizard

The Setup Wizard will install Eclipse Temurin JDK with Hotspot 17.0.7+7 (x64) on your computer. Click Next to continue or Cancel to exit the Setup Wizard.

Select “Entire feature will be installed on local hard drive”



Eclipse Temurin JDK with Hotspot 17.0.7+7 (x64) Setup

Custom Setup

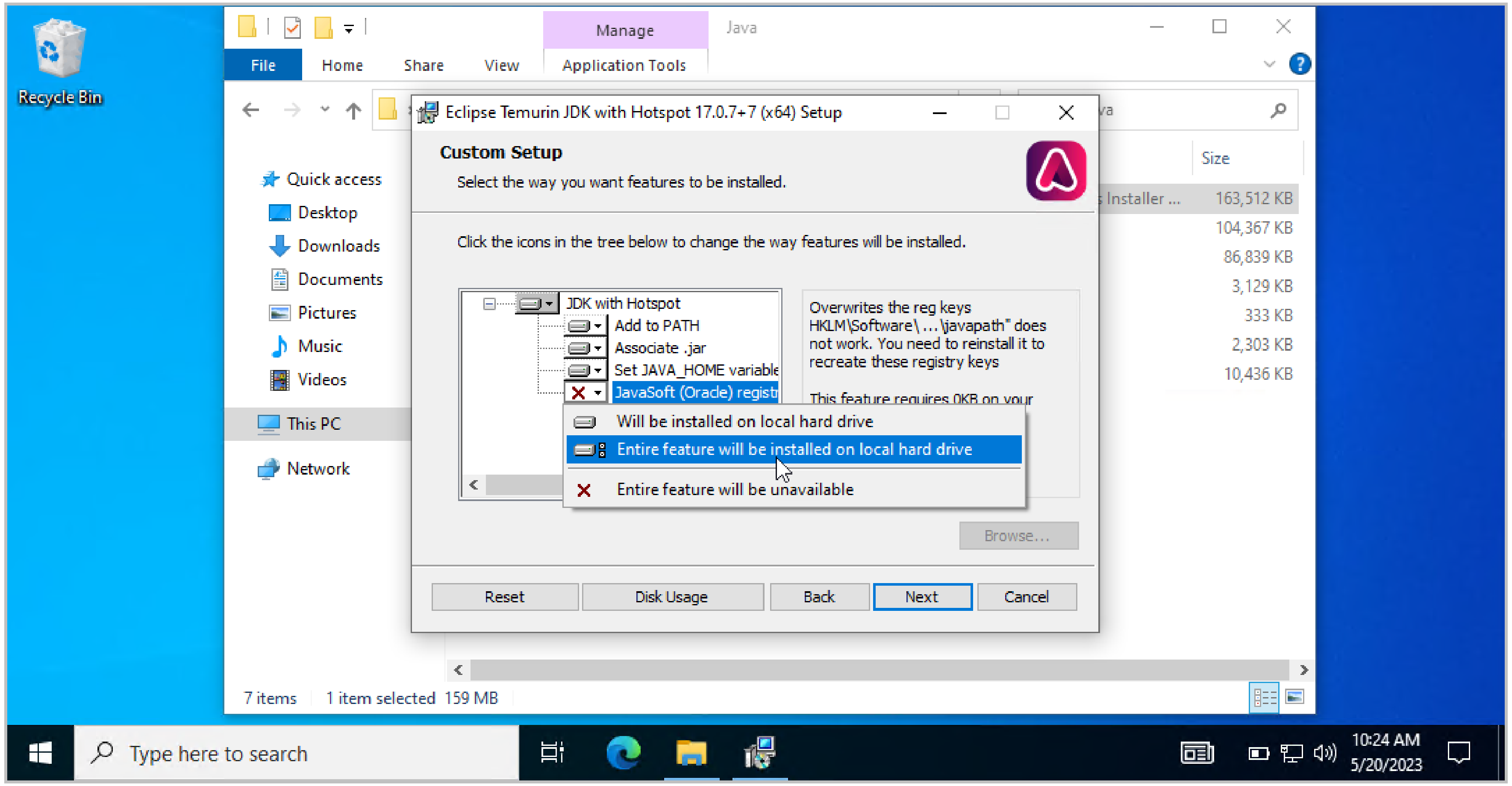
Select the way you want features to be installed.

Click the icons in the tree below to change the way features will be installed.

- JDK with Hotspot
  - Add to PATH
  - Associate .jar
  - Set JAVA_HOME variable

Set JAVA_HOME environment variable.

Select “Entire feature will be installed on local hard drive”



Eclipse Temurin JDK with Hotspot 17.0.7+7 (x64) Setup

Custom Setup

Select the way you want features to be installed.

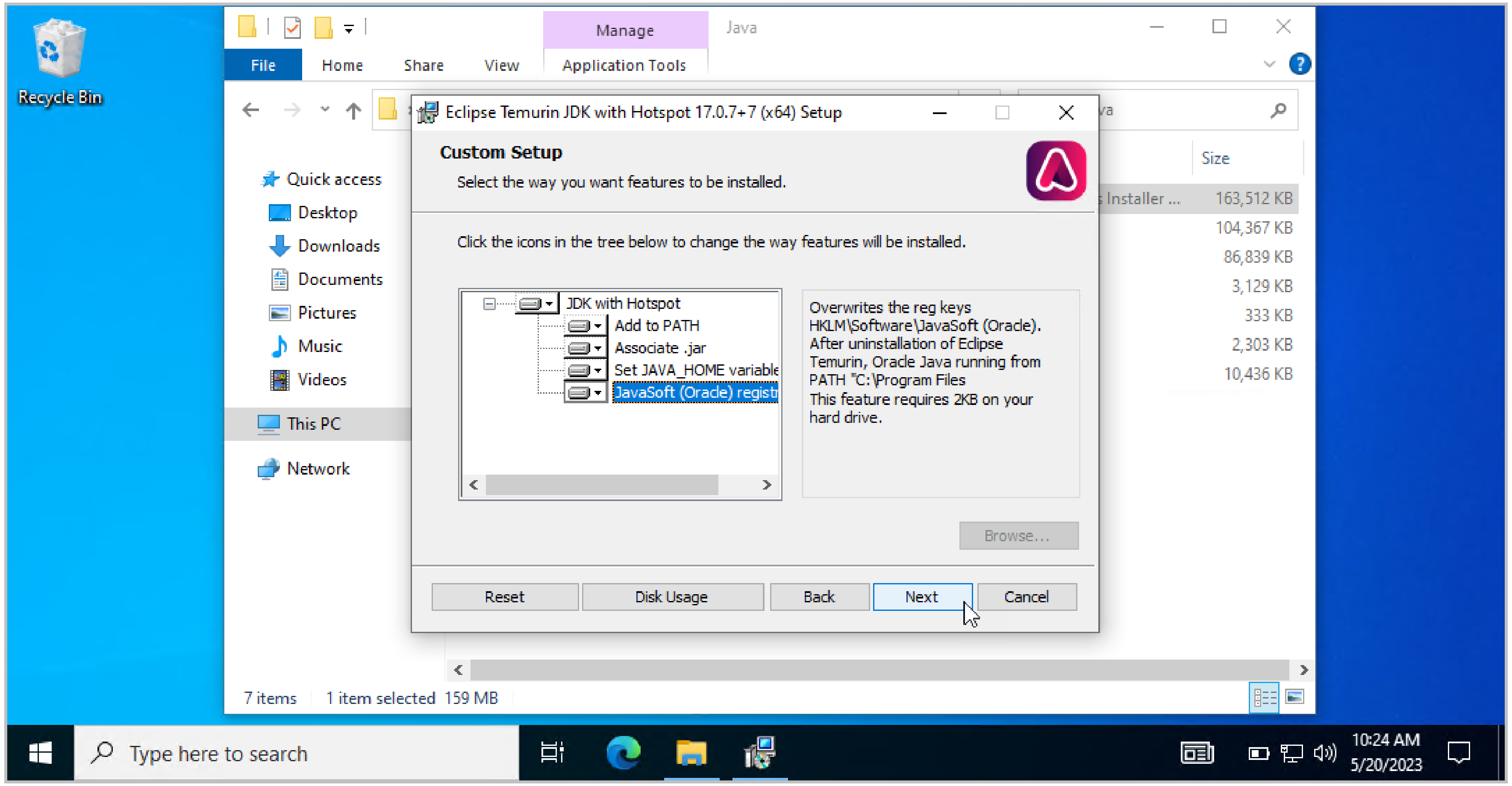
Click the icons in the tree below to change the way features will be installed.

- JDK with Hotspot
  - Add to PATH
  - Associate .jar
  - Set JAVA_HOME variable
  - JavaSoft (Oracle) registr

Overwrites the reg keys HKLM\Software\ ... \javapath" does not work. You need to reinstall it to recreate these registry keys

This feature requires 0KB on your

Click “Next” to continue



Eclipse Temurin JDK with Hotspot 17.0.7+7 (x64) Setup

Custom Setup

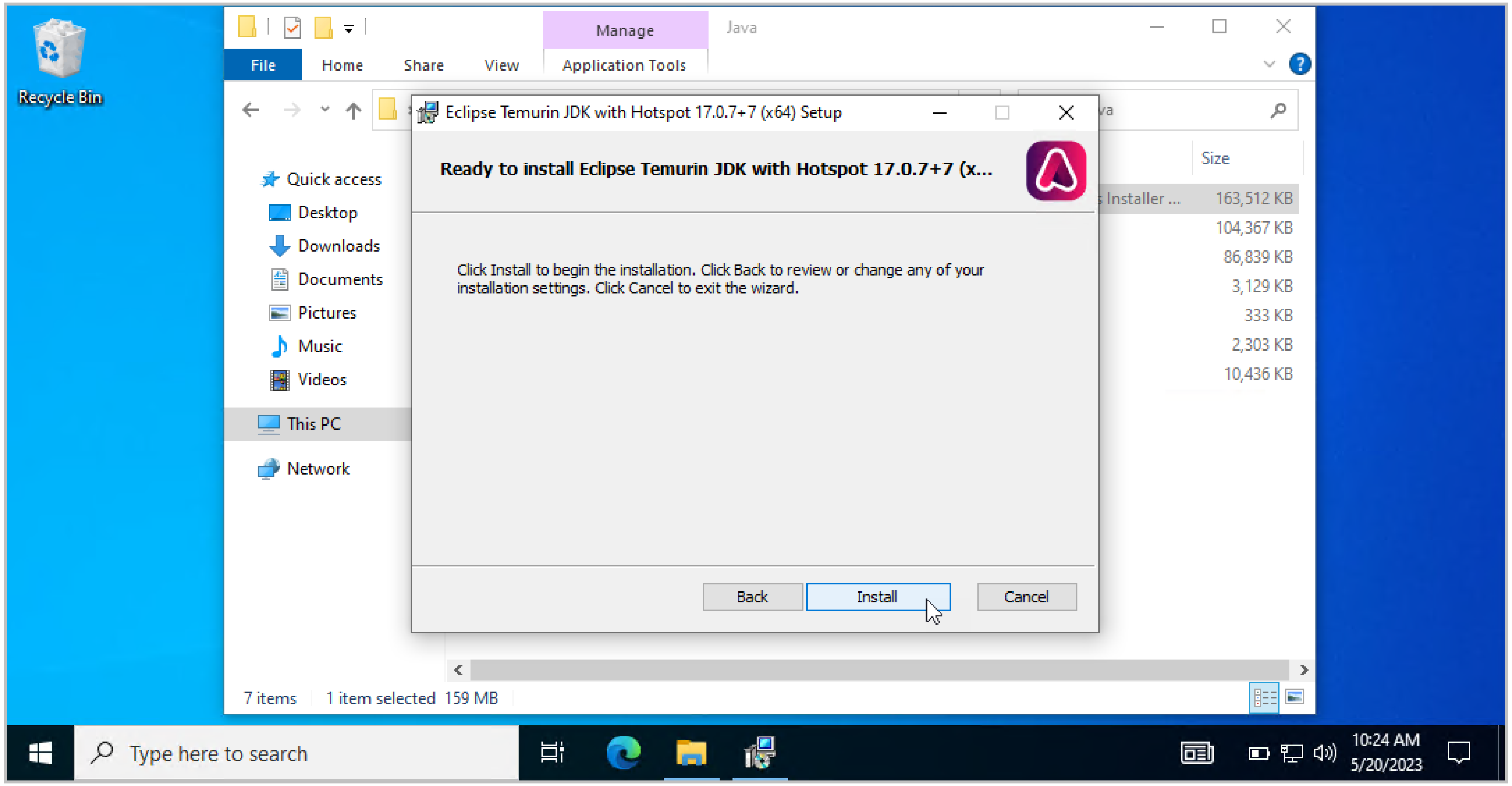
Select the way you want features to be installed.

Click the icons in the tree below to change the way features will be installed.

- JDK with Hotspot
  - Add to PATH
  - Associate .jar
  - Set JAVA_HOME variable
  - JavaSoft (Oracle) registr

Overwrites the reg keys HKLM\Software\JavaSoft (Oracle). After uninstallation of Eclipse Temurin, Oracle Java running from PATH "C:\Program Files
This feature requires 2KB on your hard drive.

Click “Install”

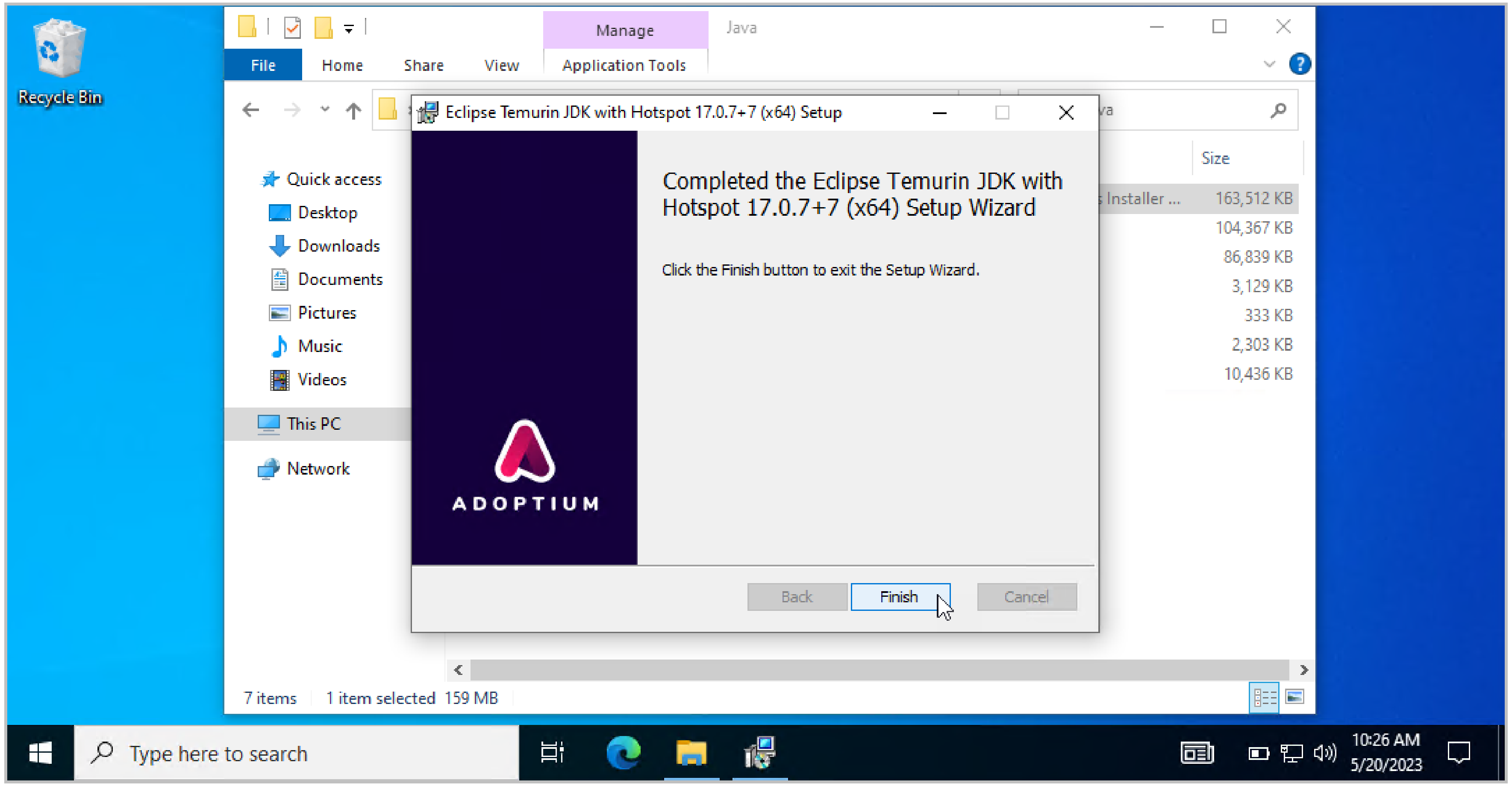


Eclipse Temurin JDK with Hotspot 17.0.7+7 (x64) Setup

Ready to install Eclipse Temurin JDK with Hotspot 17.0.7+7 (x...

Click Install to begin the installation. Click Back to review or change any of your installation settings. Click Cancel to exit the wizard.

Click “Finish”

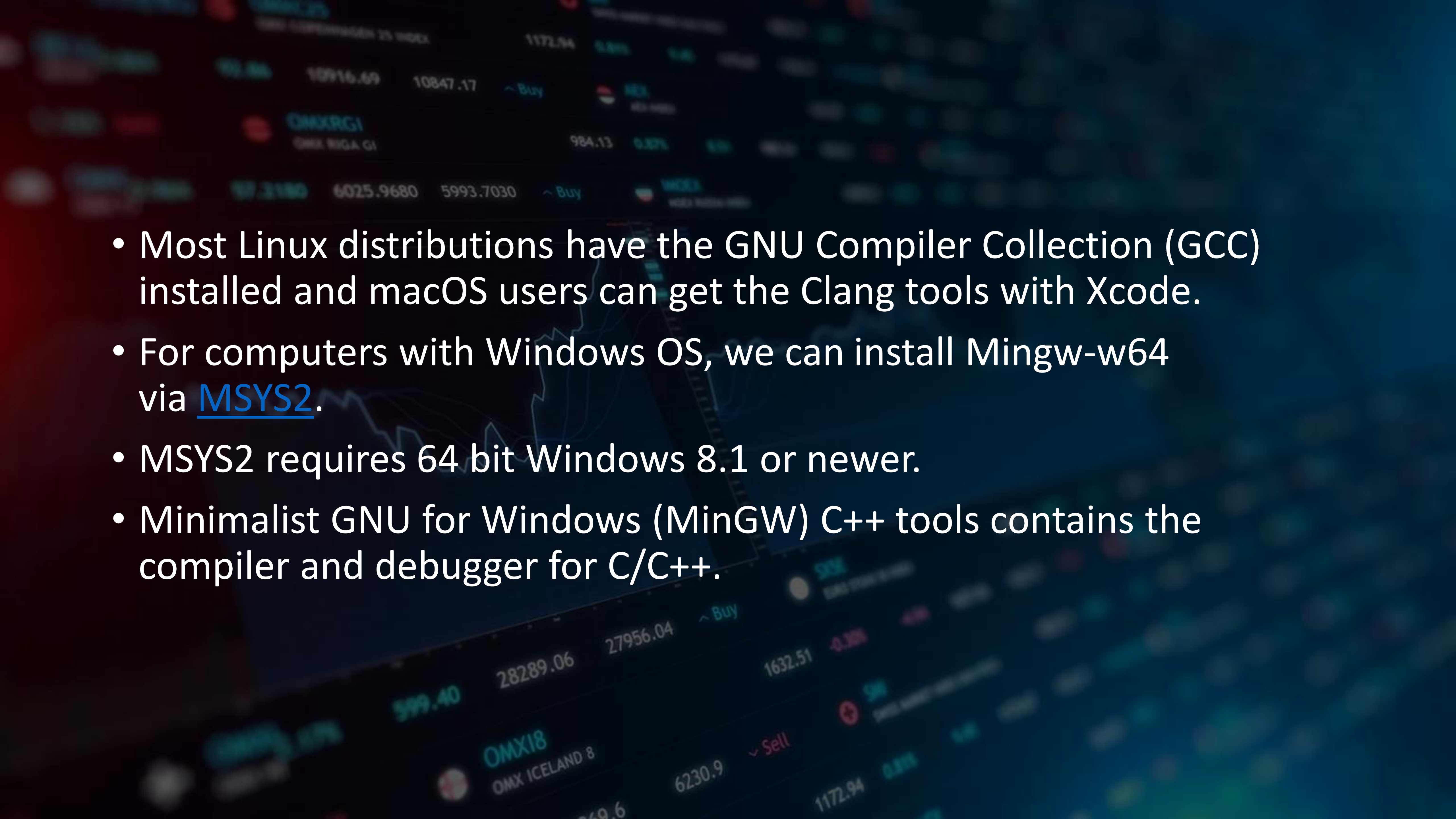


Eclipse Temurin JDK with Hotspot 17.0.7+7 (x64) Setup

Completed the Eclipse Temurin JDK with Hotspot 17.0.7+7 (x64) Setup Wizard

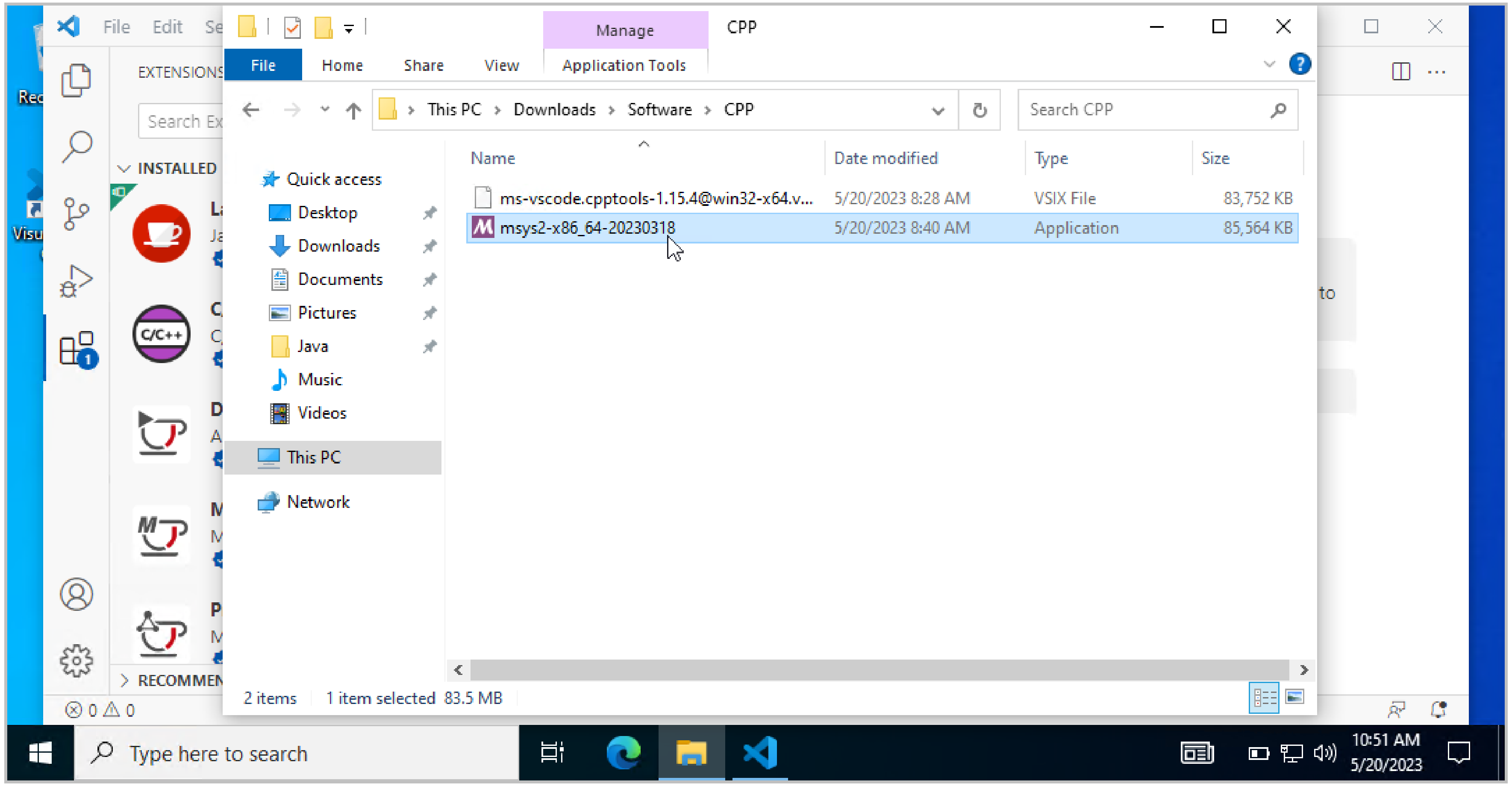
Click the Finish button to exit the Setup Wizard.

Mingw-w64 via MSYS2



- Most Linux distributions have the GNU Compiler Collection (GCC) installed and macOS users can get the Clang tools with Xcode.
- For computers with Windows OS, we can install Mingw-w64 via MSYS2.
- MSYS2 requires 64 bit Windows 8.1 or newer.
- Minimalist GNU for Windows (MinGW) C++ tools contains the compiler and debugger for C/C++.

Install MSYS2

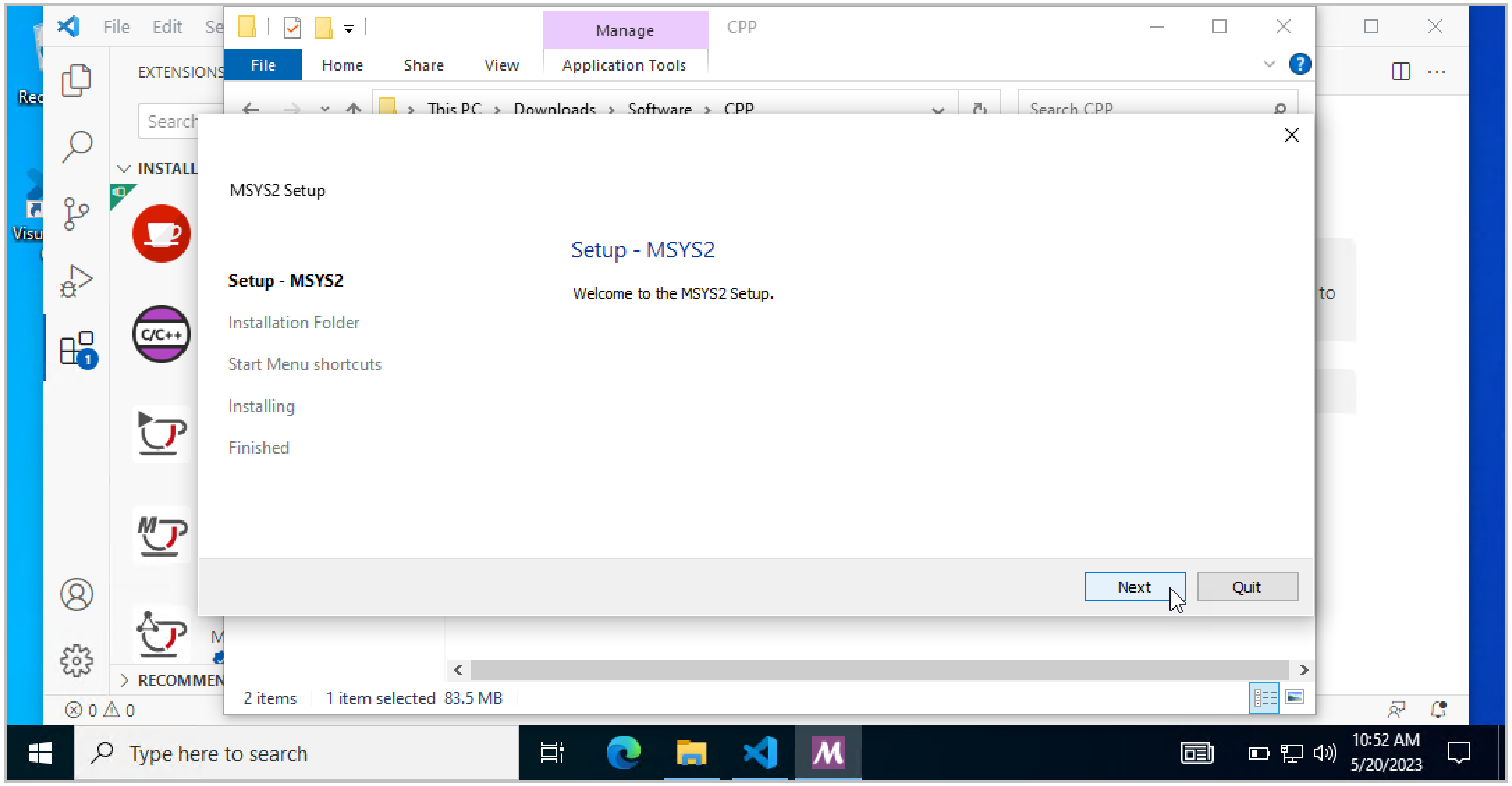


This PC › Downloads › Software › CPP

Name	Date modified	Type	Size
ms-vscode.cpptools-1.15.4@win32-x64.v...	5/20/2023 8:28 AM	VSIX File	83,752 KB
msys2-x86_64-20230318	5/20/2023 8:40 AM	Application	85,564 KB

2 items 1 item selected 83.5 MB

Setup MSYS2



MSYS2 Setup

Setup - MSYS2

Installation Folder

Start Menu shortcuts

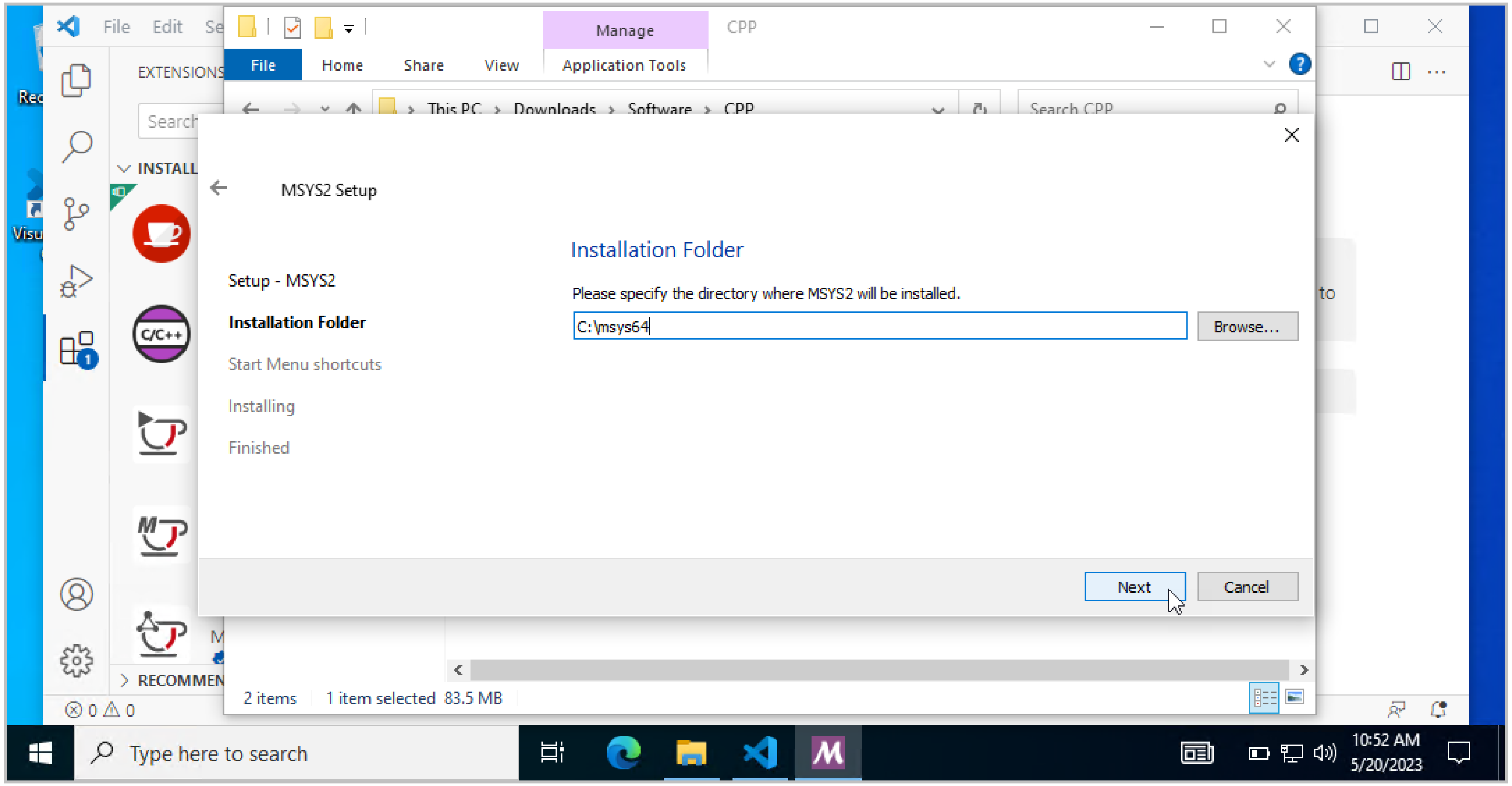
Installing

Finished

Setup - MSYS2

Welcome to the MSYS2 Setup.

Enter the installation folder (short ASCII-only path on a NTFS volume, no accents, no spaces, no symlinks, no subst or network drives, no FAT)



MSYS2 Setup

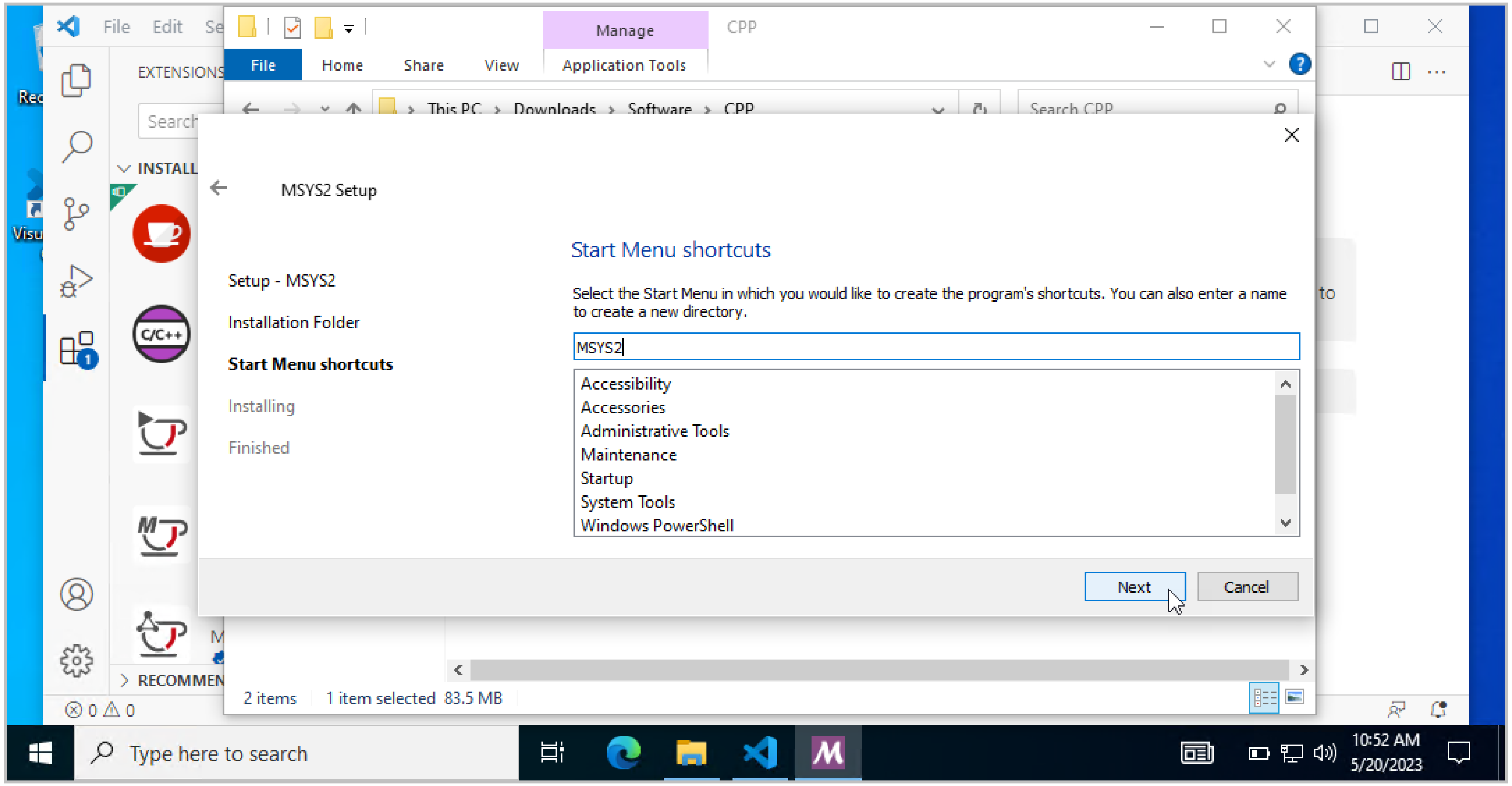
- Setup - MSYS2
- **Installation Folder**
- Start Menu shortcuts
- Installing
- Finished

Installation Folder

Please specify the directory where MSYS2 will be installed.

C:\msys64

Create the Start Menu shortcut for MSYS2



MSYS2 Setup

Setup - MSYS2

Installation Folder

Start Menu shortcuts

Installing

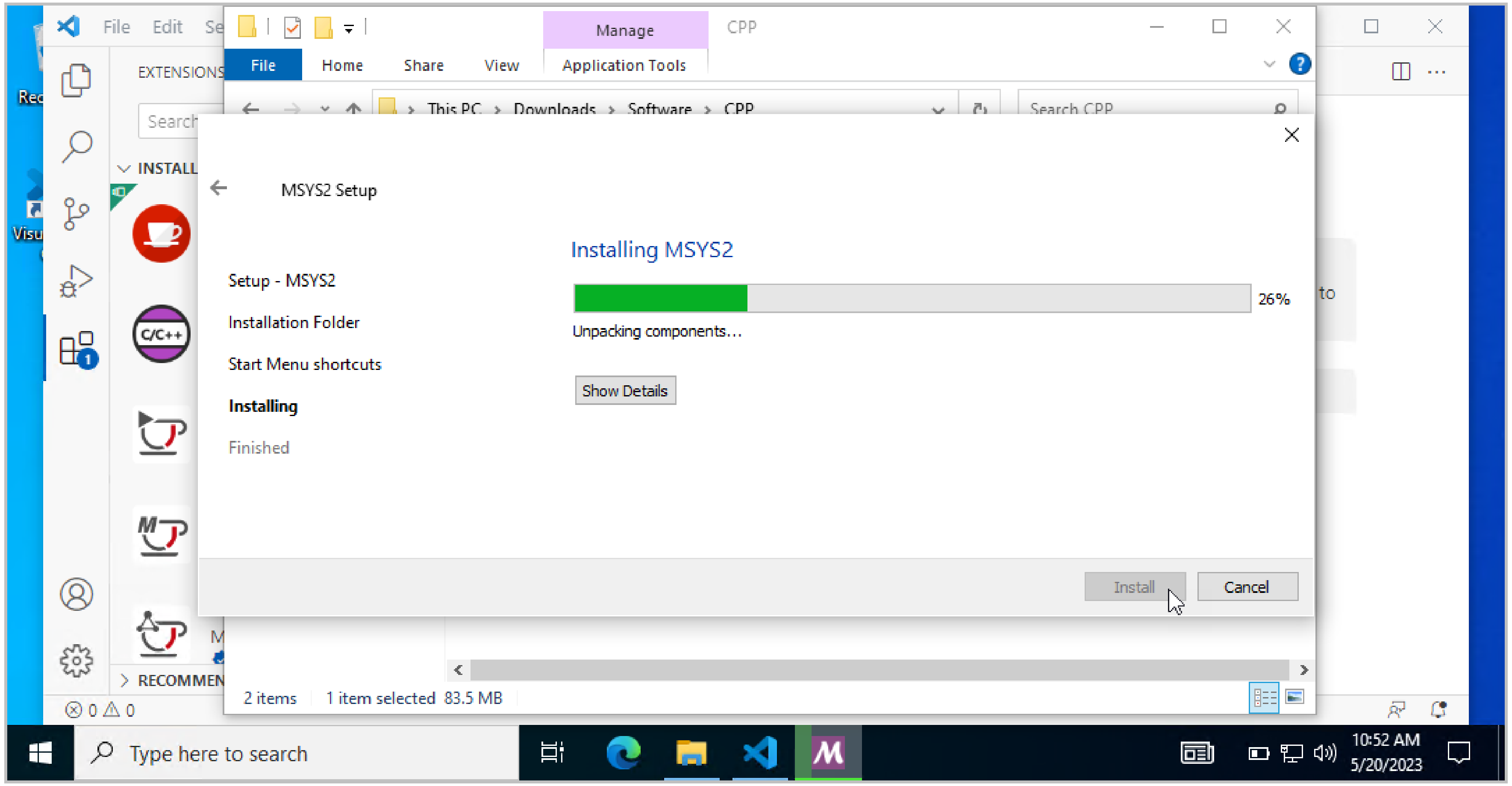
Finished

Start Menu shortcuts

Select the Start Menu in which you would like to create the program's shortcuts. You can also enter a name to create a new directory.

MSYS2

Installation of MSYS2 in progress



MSYS2 Setup

Setup - MSYS2

Installation Folder

Start Menu shortcuts

Installing

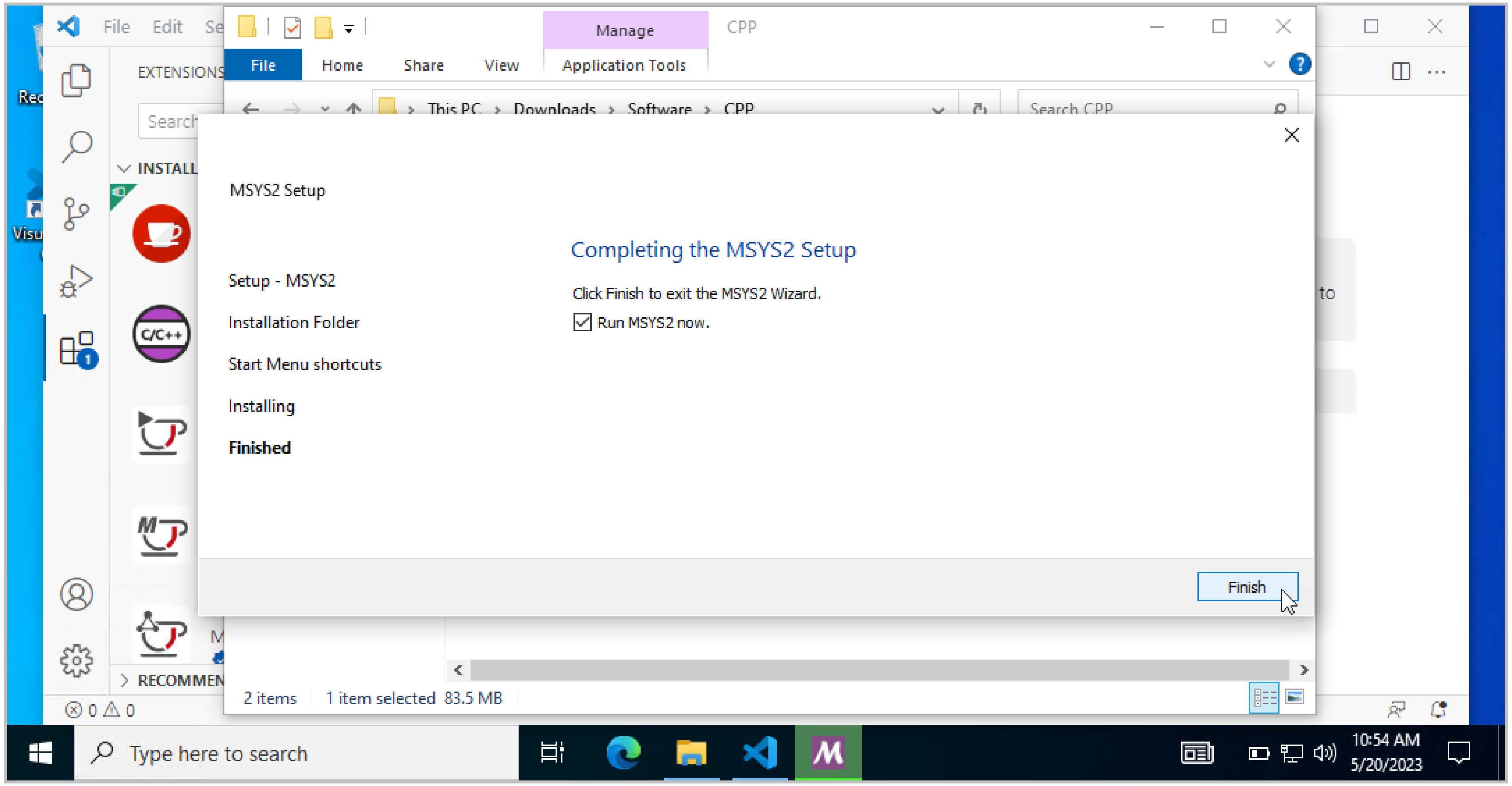
Finished

Installing MSYS2

26%

Unpacking components...

Select “Run MSYS2 now” and click “Finish”



MSYS2 Setup

Setup - MSYS2

Installation Folder

Start Menu shortcuts

Installing

Finished

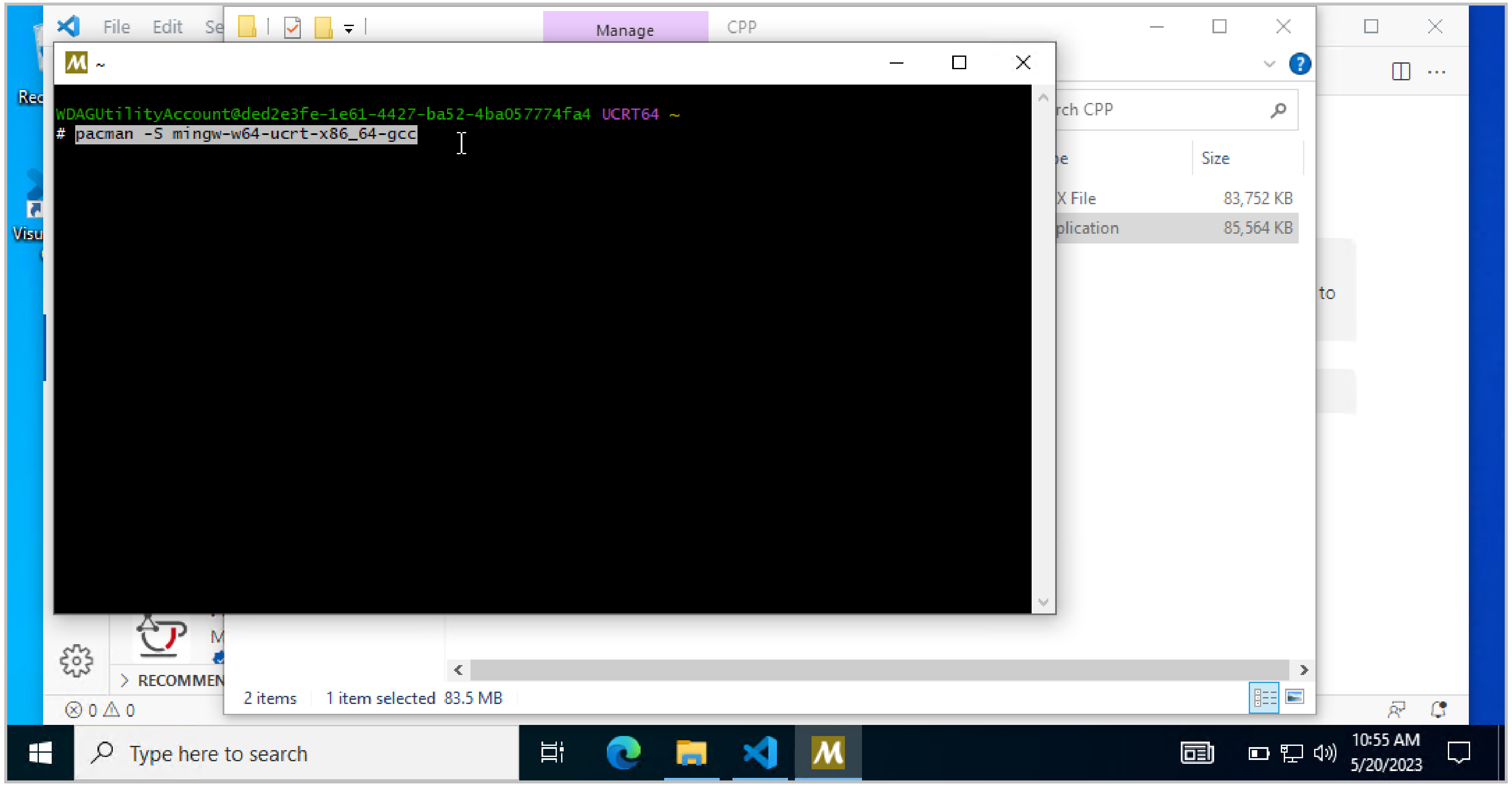
Completing the MSYS2 Setup

Click Finish to exit the MSYS2 Wizard.

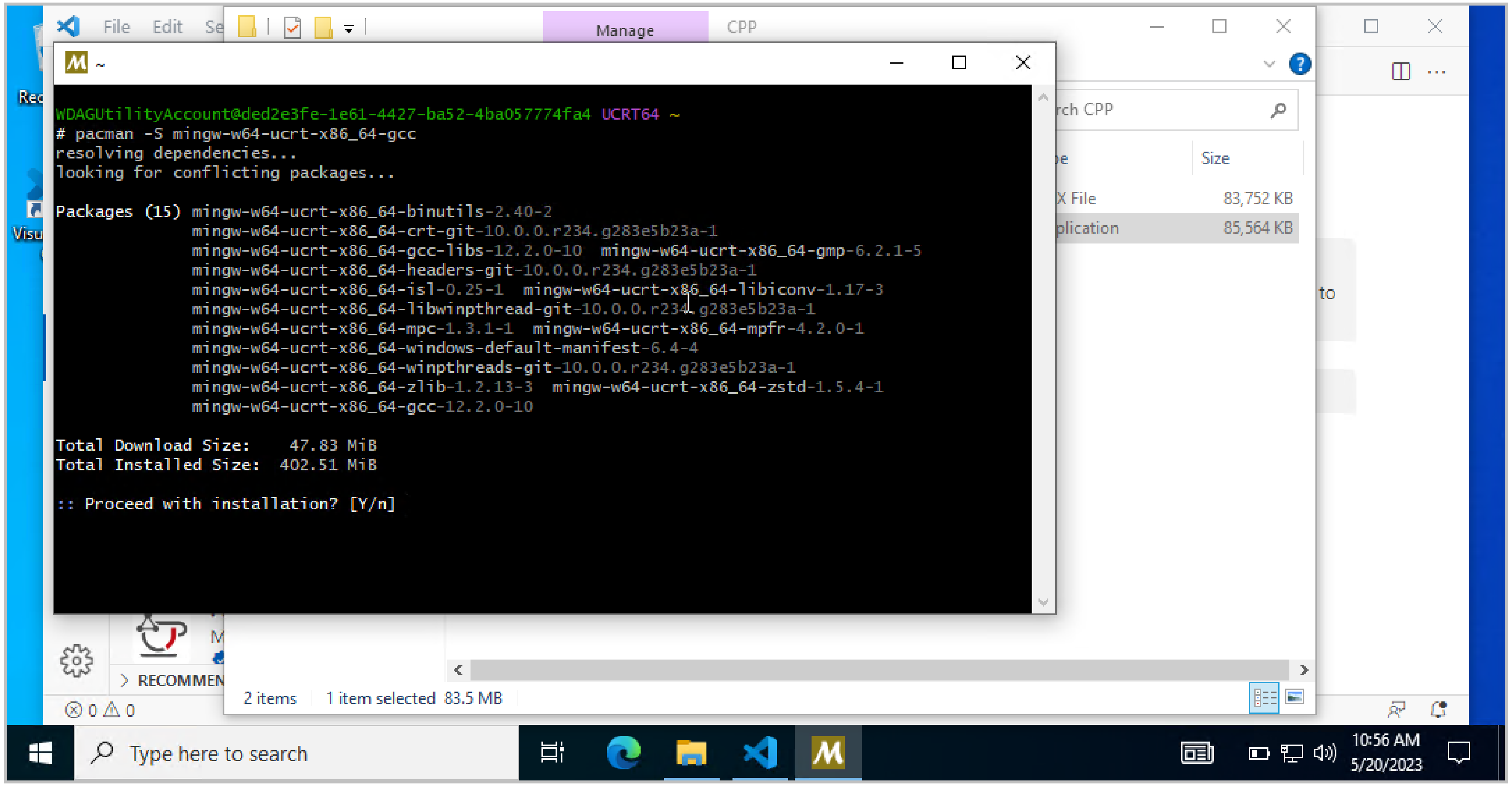
☑ Run MSYS2 now.

Install mingw-w64 GCC

Type “pacman -S mingw-w64-ucrt-x86_64-gcc” and press the “Enter” key.

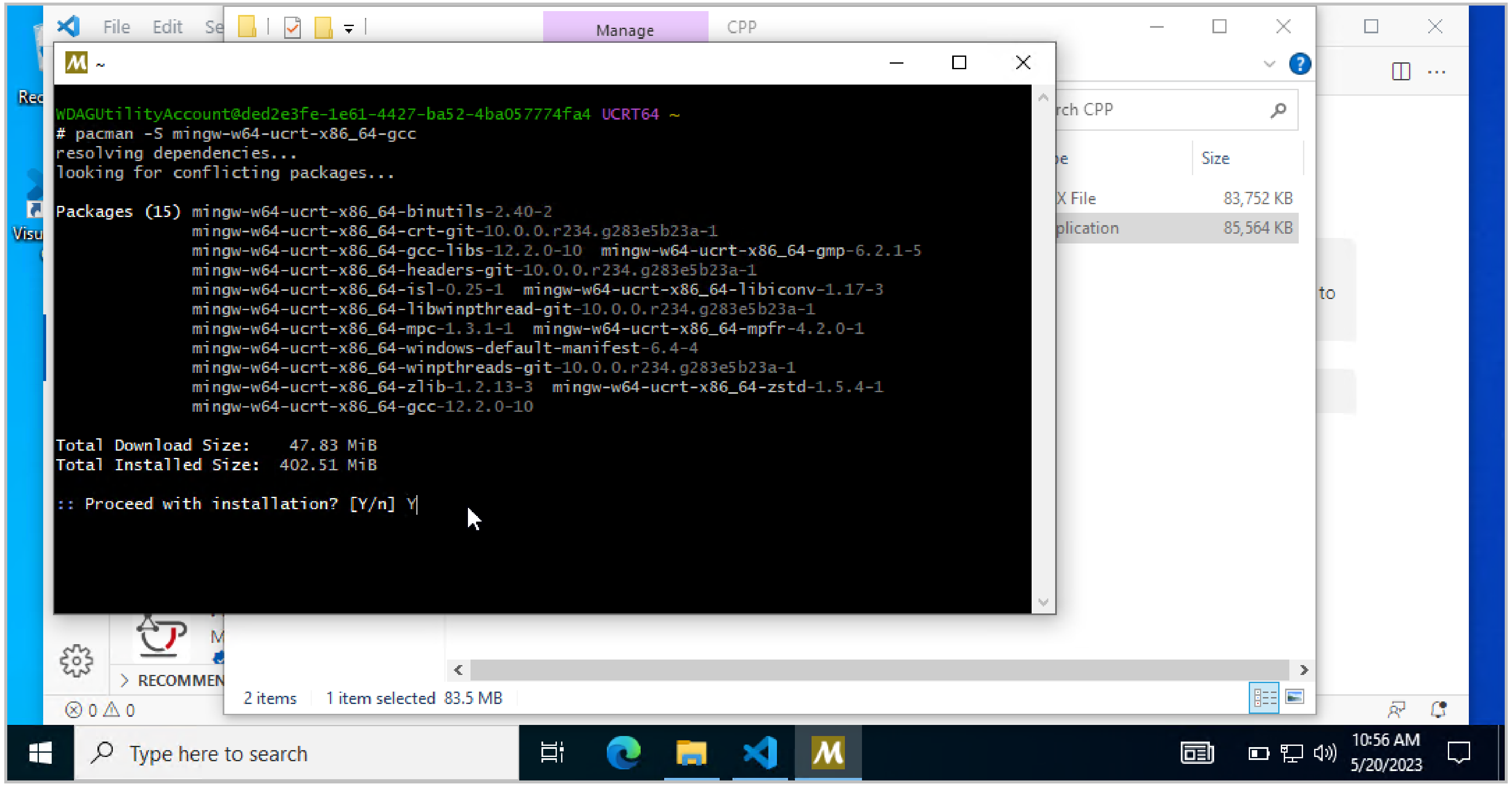


```
WDAGUtilityAccount@ded2e3fe-1e61-4427-ba52-4ba057774fa4 UCRT64 ~
# pacman -S mingw-w64-ucrt-x86_64-gcc
```

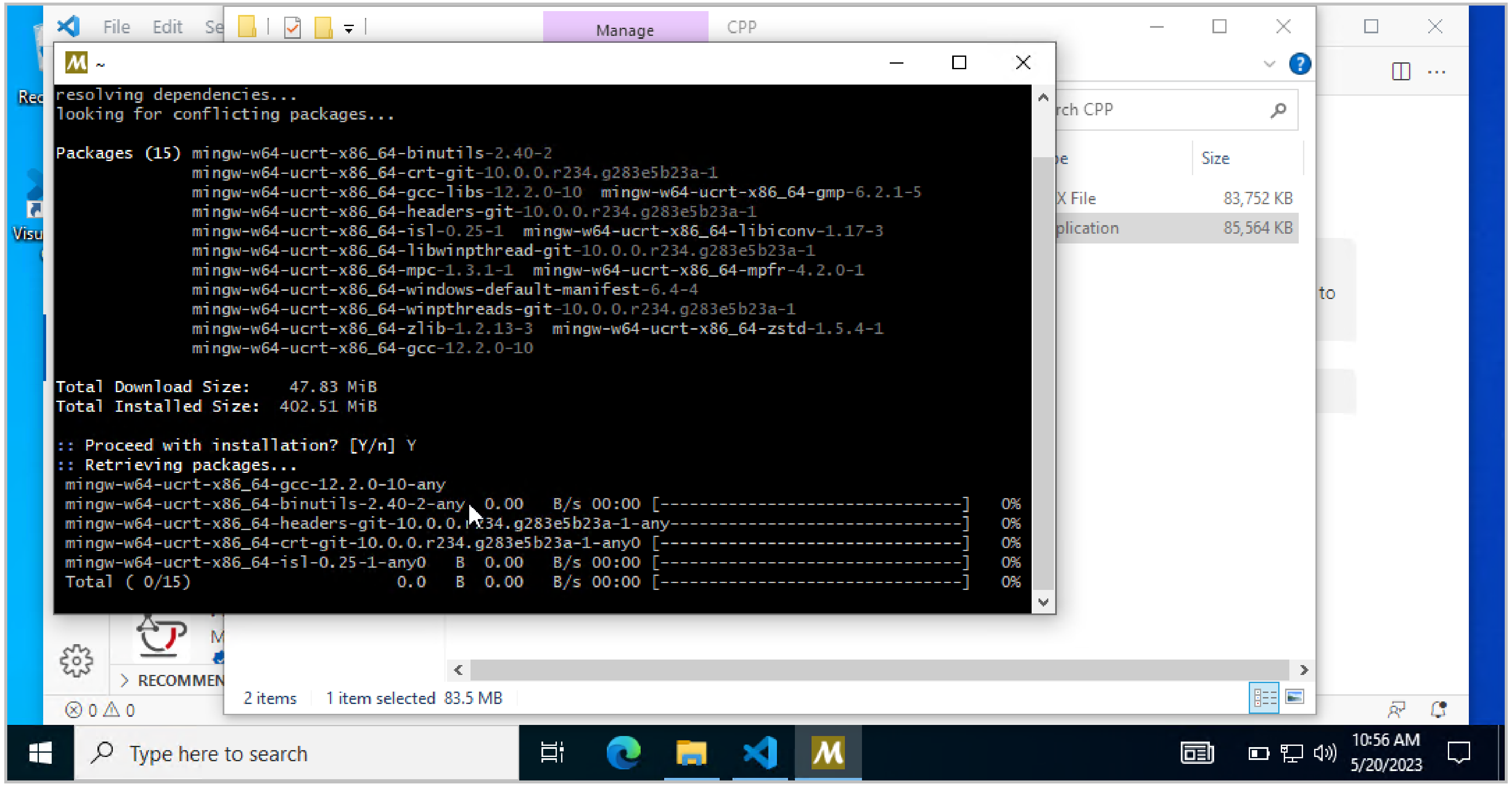


```
WDAGUtilityAccount@ded2e3fe-1e61-4427-ba52-4ba057774fa4 UCRT64 ~
# pacman -S mingw-w64-ucrt-x86_64-gcc
resolving dependencies...
looking for conflicting packages...

Packages (15) mingw-w64-ucrt-x86_64-binutils-2.40-2
              mingw-w64-ucrt-x86_64-crt-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-ucrt-x86_64-gcc-libs-12.2.0-10  mingw-w64-ucrt-x86_64-gmp-6.2.1-5
              mingw-w64-ucrt-x86_64-headers-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-ucrt-x86_64-isl-0.25-1  mingw-w64-ucrt-x86_64-libiconv-1.17-3
              mingw-w64-ucrt-x86_64-libwinpthread-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-ucrt-x86_64-mpc-1.3.1-1  mingw-w64-ucrt-x86_64-mpfr-4.2.0-1
              mingw-w64-ucrt-x86_64-windows-default-manifest-6.4-4
              mingw-w64-ucrt-x86_64-winpthreads-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-ucrt-x86_64-zlib-1.2.13-3  mingw-w64-ucrt-x86_64-zstd-1.5.4-1
              mingw-w64-ucrt-x86_64-gcc-12.2.0-10

Total Download Size:    47.83 MiB
Total Installed Size:  402.51 MiB

:: Proceed with installation? [Y/n]
```

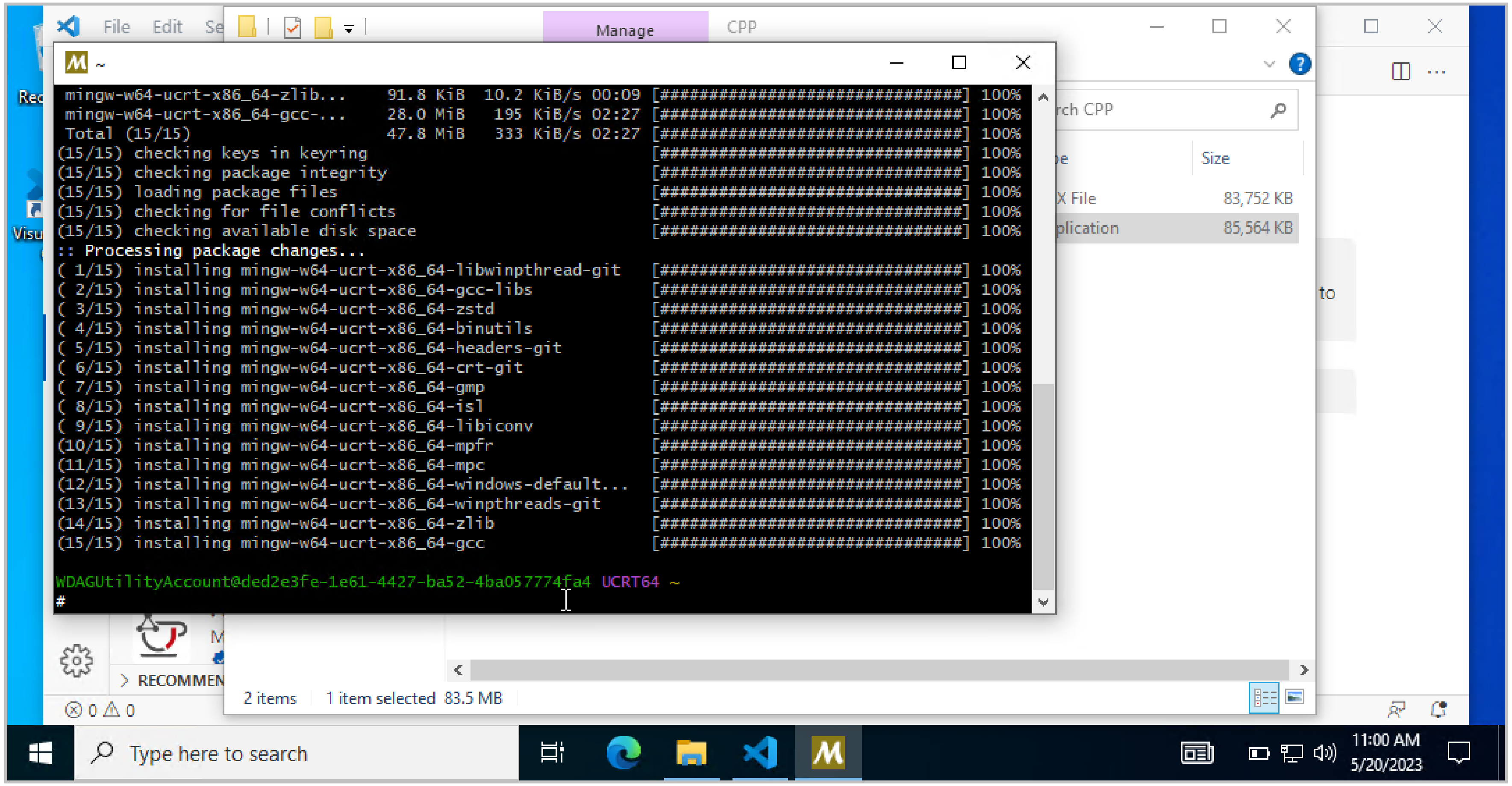
Type “Y” and Press “Enter” to continue



```
WDAGUtilityAccount@ded2e3fe-1e61-4427-ba52-4ba057774fa4 UCRT64 ~
# pacman -S mingw-w64-ucrt-x86_64-gcc
resolving dependencies...
looking for conflicting packages...

Packages (15) mingw-w64-ucrt-x86_64-binutils-2.40-2
              mingw-w64-ucrt-x86_64-crt-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-ucrt-x86_64-gcc-libs-12.2.0-10  mingw-w64-ucrt-x86_64-gmp-6.2.1-5
              mingw-w64-ucrt-x86_64-headers-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-ucrt-x86_64-isl-0.25-1  mingw-w64-ucrt-x86_64-libiconv-1.17-3
              mingw-w64-ucrt-x86_64-libwinpthread-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-ucrt-x86_64-mpc-1.3.1-1  mingw-w64-ucrt-x86_64-mpfr-4.2.0-1
              mingw-w64-ucrt-x86_64-windows-default-manifest-6.4-4
              mingw-w64-ucrt-x86_64-winpthreads-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-ucrt-x86_64-zlib-1.2.13-3  mingw-w64-ucrt-x86_64-zstd-1.5.4-1
              mingw-w64-ucrt-x86_64-gcc-12.2.0-10

Total Download Size:    47.83 MiB
Total Installed Size:  402.51 MiB

:: Proceed with installation? [Y/n] Y
```



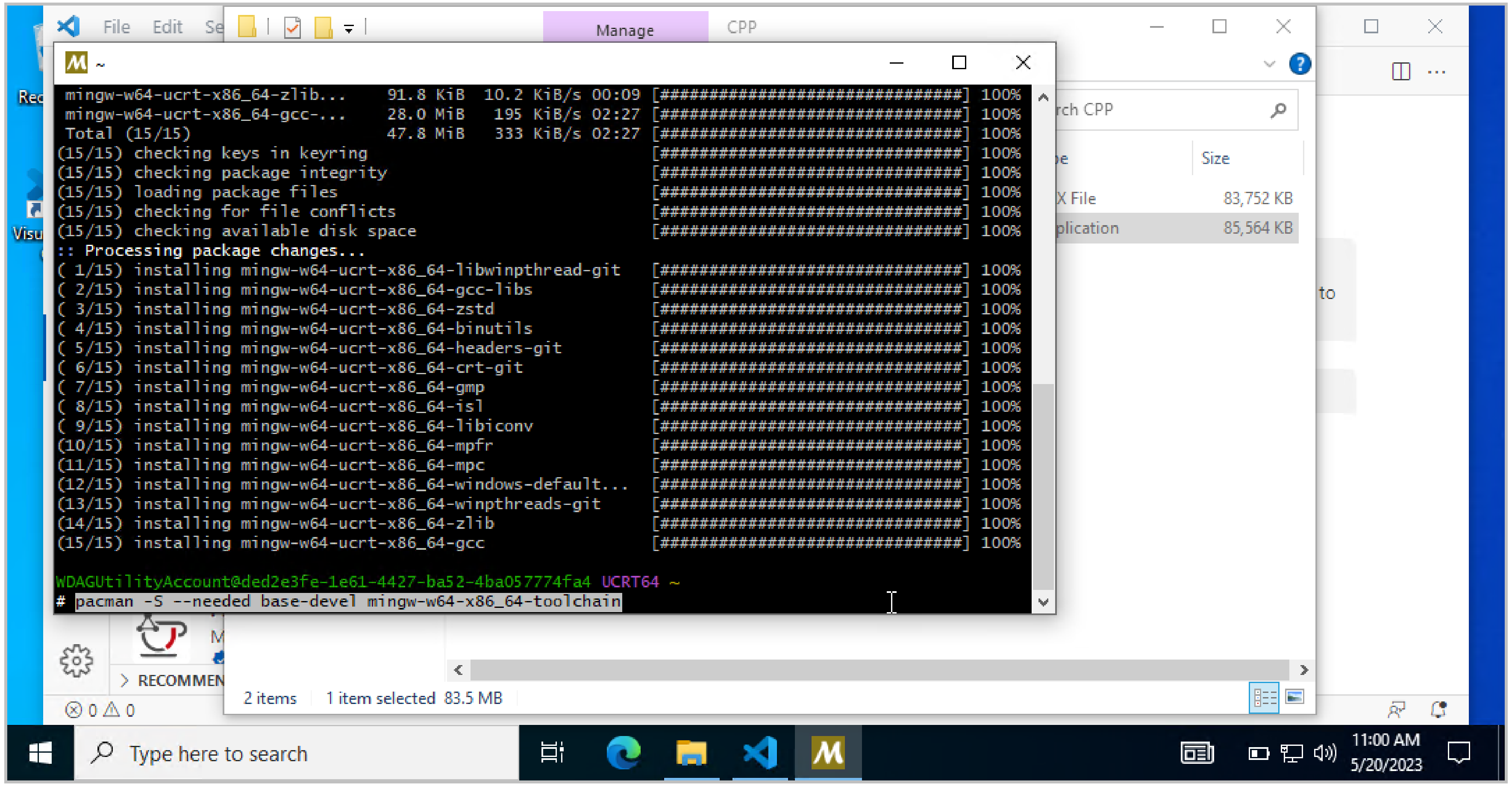
```
resolving dependencies...
looking for conflicting packages...

Packages (15) mingw-w64-ucrt-x86_64-binutils-2.40-2
              mingw-w64-ucrt-x86_64-crt-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-ucrt-x86_64-gcc-libs-12.2.0-10  mingw-w64-ucrt-x86_64-gmp-6.2.1-5
              mingw-w64-ucrt-x86_64-headers-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-ucrt-x86_64-isl-0.25-1  mingw-w64-ucrt-x86_64-libiconv-1.17-3
              mingw-w64-ucrt-x86_64-libwinpthread-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-ucrt-x86_64-mpc-1.3.1-1  mingw-w64-ucrt-x86_64-mpfr-4.2.0-1
              mingw-w64-ucrt-x86_64-windows-default-manifest-6.4-4
              mingw-w64-ucrt-x86_64-winpthreads-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-ucrt-x86_64-zlib-1.2.13-3  mingw-w64-ucrt-x86_64-zstd-1.5.4-1
              mingw-w64-ucrt-x86_64-gcc-12.2.0-10

Total Download Size:    47.83 MiB
Total Installed Size:  402.51 MiB

:: Proceed with installation? [Y/n] Y
:: Retrieving packages...
 mingw-w64-ucrt-x86_64-gcc-12.2.0-10-any
 mingw-w64-ucrt-x86_64-binutils-2.40-2-any  0.00   B/s 00:00 [------------------------------]   0%
 mingw-w64-ucrt-x86_64-headers-git-10.0.0.r234.g283e5b23a-1-any------------------------------]   0%
 mingw-w64-ucrt-x86_64-crt-git-10.0.0.r234.g283e5b23a-1-any0 [------------------------------]   0%
 mingw-w64-ucrt-x86_64-isl-0.25-1-any0   B  0.00   B/s 00:00 [------------------------------]   0%
 Total ( 0/15)                 0.0   B  0.00   B/s 00:00 [------------------------------]   0%
```



```
 mingw-w64-ucrt-x86_64-zlib...     91.8 KiB  10.2 KiB/s 00:09 [##############################] 100%
 mingw-w64-ucrt-x86_64-gcc-...     28.0 MiB   195 KiB/s 02:27 [##############################] 100%
 Total (15/15)                     47.8 MiB   333 KiB/s 02:27 [##############################] 100%
(15/15) checking keys in keyring                              [##############################] 100%
(15/15) checking package integrity                            [##############################] 100%
(15/15) loading package files                                 [##############################] 100%
(15/15) checking for file conflicts                           [##############################] 100%
(15/15) checking available disk space                         [##############################] 100%
:: Processing package changes...
( 1/15) installing mingw-w64-ucrt-x86_64-libwinpthread-git    [##############################] 100%
( 2/15) installing mingw-w64-ucrt-x86_64-gcc-libs             [##############################] 100%
( 3/15) installing mingw-w64-ucrt-x86_64-zstd                 [##############################] 100%
( 4/15) installing mingw-w64-ucrt-x86_64-binutils             [##############################] 100%
( 5/15) installing mingw-w64-ucrt-x86_64-headers-git          [##############################] 100%
( 6/15) installing mingw-w64-ucrt-x86_64-crt-git              [##############################] 100%
( 7/15) installing mingw-w64-ucrt-x86_64-gmp                  [##############################] 100%
( 8/15) installing mingw-w64-ucrt-x86_64-isl                  [##############################] 100%
( 9/15) installing mingw-w64-ucrt-x86_64-libiconv             [##############################] 100%
(10/15) installing mingw-w64-ucrt-x86_64-mpfr                 [##############################] 100%
(11/15) installing mingw-w64-ucrt-x86_64-mpc                  [##############################] 100%
(12/15) installing mingw-w64-ucrt-x86_64-windows-default...   [##############################] 100%
(13/15) installing mingw-w64-ucrt-x86_64-winpthreads-git      [##############################] 100%
(14/15) installing mingw-w64-ucrt-x86_64-zlib                 [##############################] 100%
(15/15) installing mingw-w64-ucrt-x86_64-gcc                  [##############################] 100%

WDAGUtilityAccount@ded2e3fe-1e61-4427-ba52-4ba057774fa4 UCRT64 ~
#
```

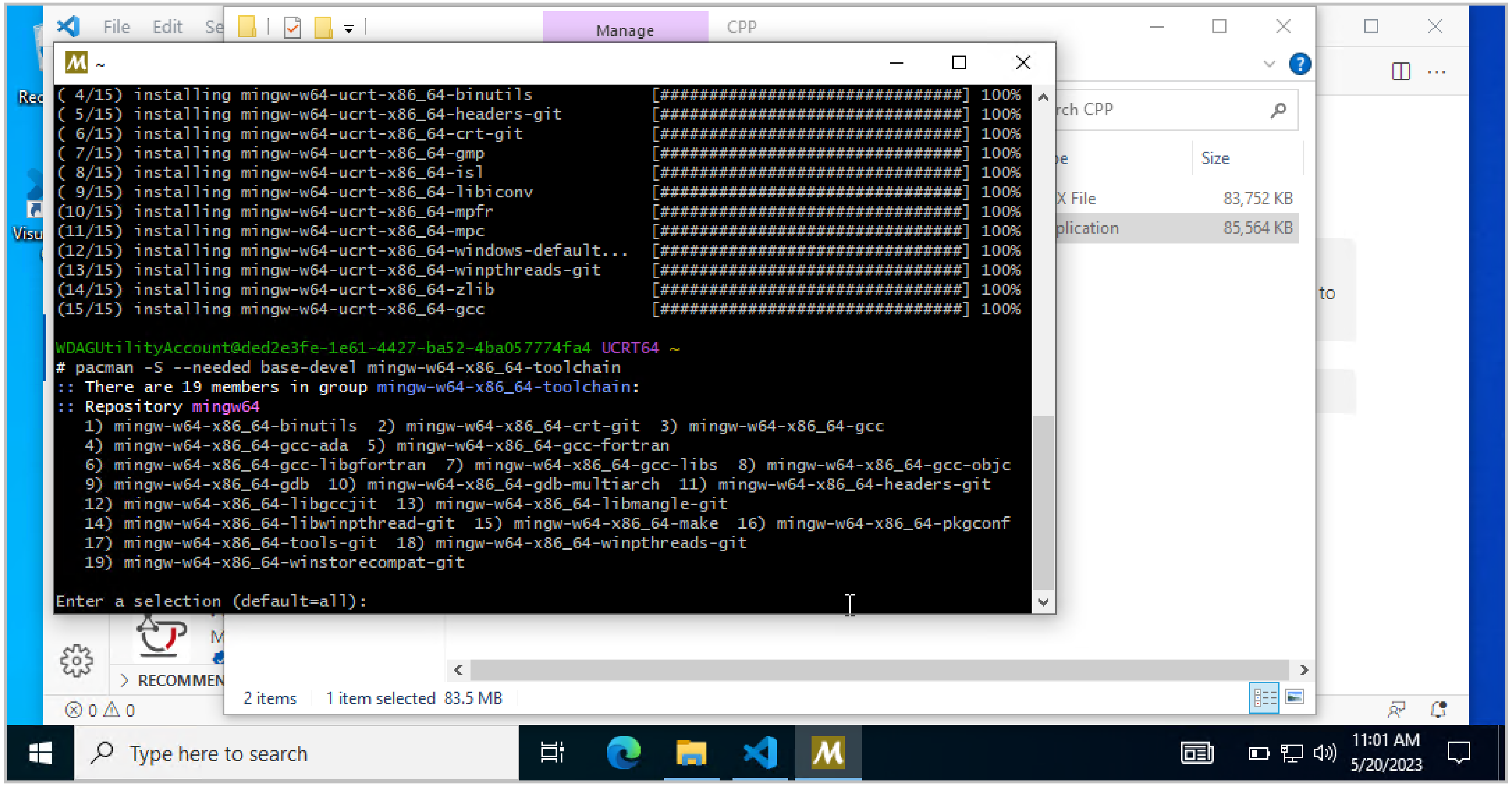
Install the full Mingw-w64 toolchain to get the gdb debugger

Type “pacman -S --needed base-devel mingw-w64-x86_64-toolchain” and press the “Enter” key.

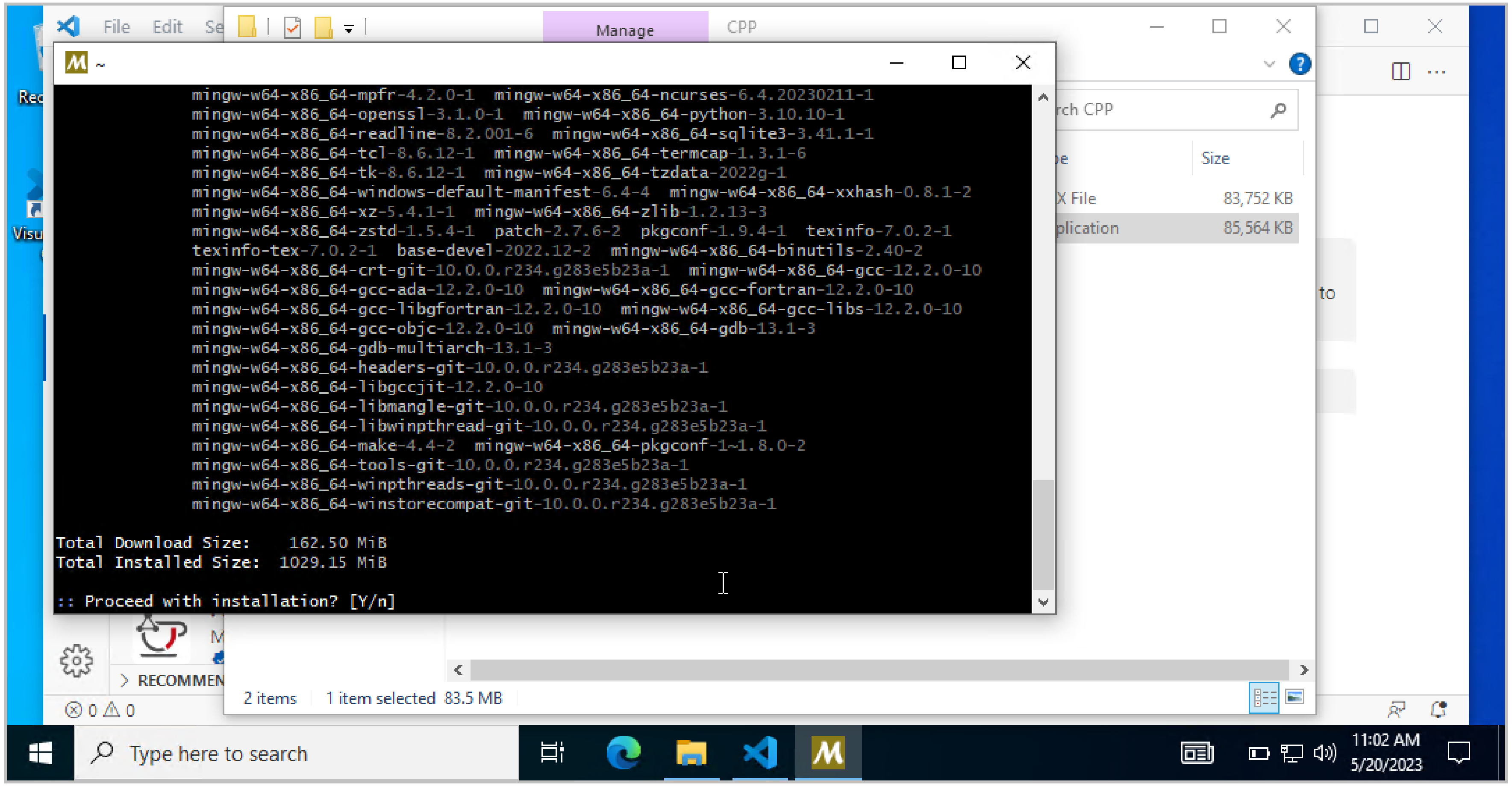


```
 mingw-w64-ucrt-x86_64-zlib...    91.8 KiB  10.2 KiB/s 00:09 [################################] 100%
 mingw-w64-ucrt-x86_64-gcc-...    28.0 MiB   195 KiB/s 02:27 [################################] 100%
 Total (15/15)                    47.8 MiB   333 KiB/s 02:27 [################################] 100%
(15/15) checking keys in keyring                             [################################] 100%
(15/15) checking package integrity                           [################################] 100%
(15/15) loading package files                                [################################] 100%
(15/15) checking for file conflicts                          [################################] 100%
(15/15) checking available disk space                        [################################] 100%
:: Processing package changes...
( 1/15) installing mingw-w64-ucrt-x86_64-libwinpthread-git   [################################] 100%
( 2/15) installing mingw-w64-ucrt-x86_64-gcc-libs            [################################] 100%
( 3/15) installing mingw-w64-ucrt-x86_64-zstd                [################################] 100%
( 4/15) installing mingw-w64-ucrt-x86_64-binutils            [################################] 100%
( 5/15) installing mingw-w64-ucrt-x86_64-headers-git         [################################] 100%
( 6/15) installing mingw-w64-ucrt-x86_64-crt-git             [################################] 100%
( 7/15) installing mingw-w64-ucrt-x86_64-gmp                 [################################] 100%
( 8/15) installing mingw-w64-ucrt-x86_64-isl                 [################################] 100%
( 9/15) installing mingw-w64-ucrt-x86_64-libiconv            [################################] 100%
(10/15) installing mingw-w64-ucrt-x86_64-mpfr                [################################] 100%
(11/15) installing mingw-w64-ucrt-x86_64-mpc                 [################################] 100%
(12/15) installing mingw-w64-ucrt-x86_64-windows-default...  [################################] 100%
(13/15) installing mingw-w64-ucrt-x86_64-winpthreads-git     [################################] 100%
(14/15) installing mingw-w64-ucrt-x86_64-zlib                [################################] 100%
(15/15) installing mingw-w64-ucrt-x86_64-gcc                 [################################] 100%

WDAGUtilityAccount@ded2e3fe-1e61-4427-ba52-4ba057774fa4 UCRT64 ~
# pacman -S --needed base-devel mingw-w64-x86_64-toolchain
```

Press the “Enter” key to continue

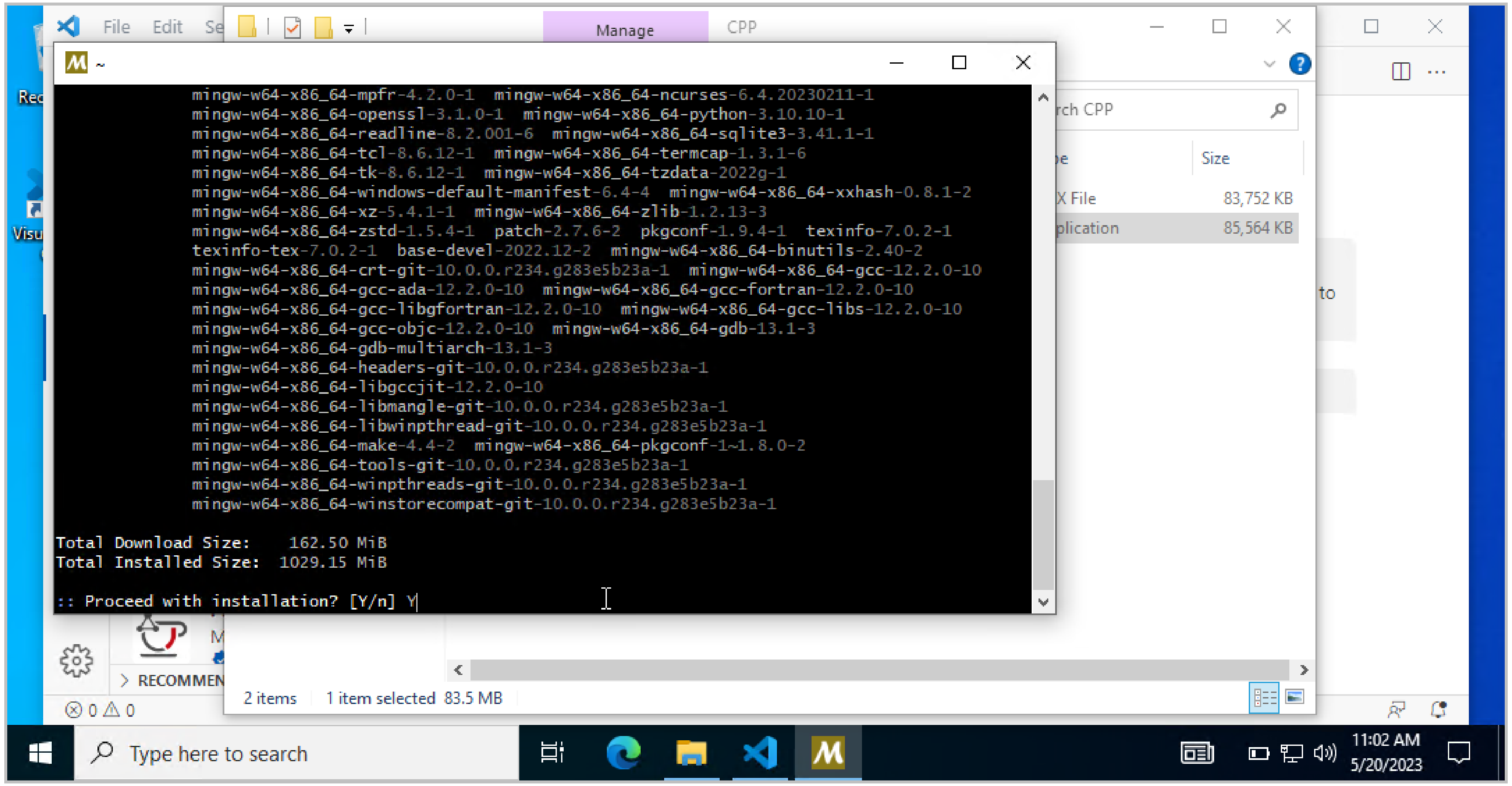


```
( 4/15) installing mingw-w64-ucrt-x86_64-binutils              [###############################] 100%
( 5/15) installing mingw-w64-ucrt-x86_64-headers-git           [###############################] 100%
( 6/15) installing mingw-w64-ucrt-x86_64-crt-git               [###############################] 100%
( 7/15) installing mingw-w64-ucrt-x86_64-gmp                   [###############################] 100%
( 8/15) installing mingw-w64-ucrt-x86_64-isl                   [###############################] 100%
( 9/15) installing mingw-w64-ucrt-x86_64-libiconv              [###############################] 100%
(10/15) installing mingw-w64-ucrt-x86_64-mpfr                  [###############################] 100%
(11/15) installing mingw-w64-ucrt-x86_64-mpc                   [###############################] 100%
(12/15) installing mingw-w64-ucrt-x86_64-windows-default...    [###############################] 100%
(13/15) installing mingw-w64-ucrt-x86_64-winpthreads-git       [###############################] 100%
(14/15) installing mingw-w64-ucrt-x86_64-zlib                  [###############################] 100%
(15/15) installing mingw-w64-ucrt-x86_64-gcc                   [###############################] 100%

WDAGUtilityAccount@ded2e3fe-1e61-4427-ba52-4ba057774fa4 UCRT64 ~
# pacman -S --needed base-devel mingw-w64-x86_64-toolchain
:: There are 19 members in group mingw-w64-x86_64-toolchain:
:: Repository mingw64
   1) mingw-w64-x86_64-binutils  2) mingw-w64-x86_64-crt-git  3) mingw-w64-x86_64-gcc
   4) mingw-w64-x86_64-gcc-ada  5) mingw-w64-x86_64-gcc-fortran
   6) mingw-w64-x86_64-gcc-libgfortran  7) mingw-w64-x86_64-gcc-libs  8) mingw-w64-x86_64-gcc-objc
   9) mingw-w64-x86_64-gdb  10) mingw-w64-x86_64-gdb-multiarch  11) mingw-w64-x86_64-headers-git
   12) mingw-w64-x86_64-libgccjit  13) mingw-w64-x86_64-libmangle-git
   14) mingw-w64-x86_64-libwinpthread-git  15) mingw-w64-x86_64-make  16) mingw-w64-x86_64-pkgconf
   17) mingw-w64-x86_64-tools-git  18) mingw-w64-x86_64-winpthreads-git
   19) mingw-w64-x86_64-winstorecompat-git

Enter a selection (default=all):
```

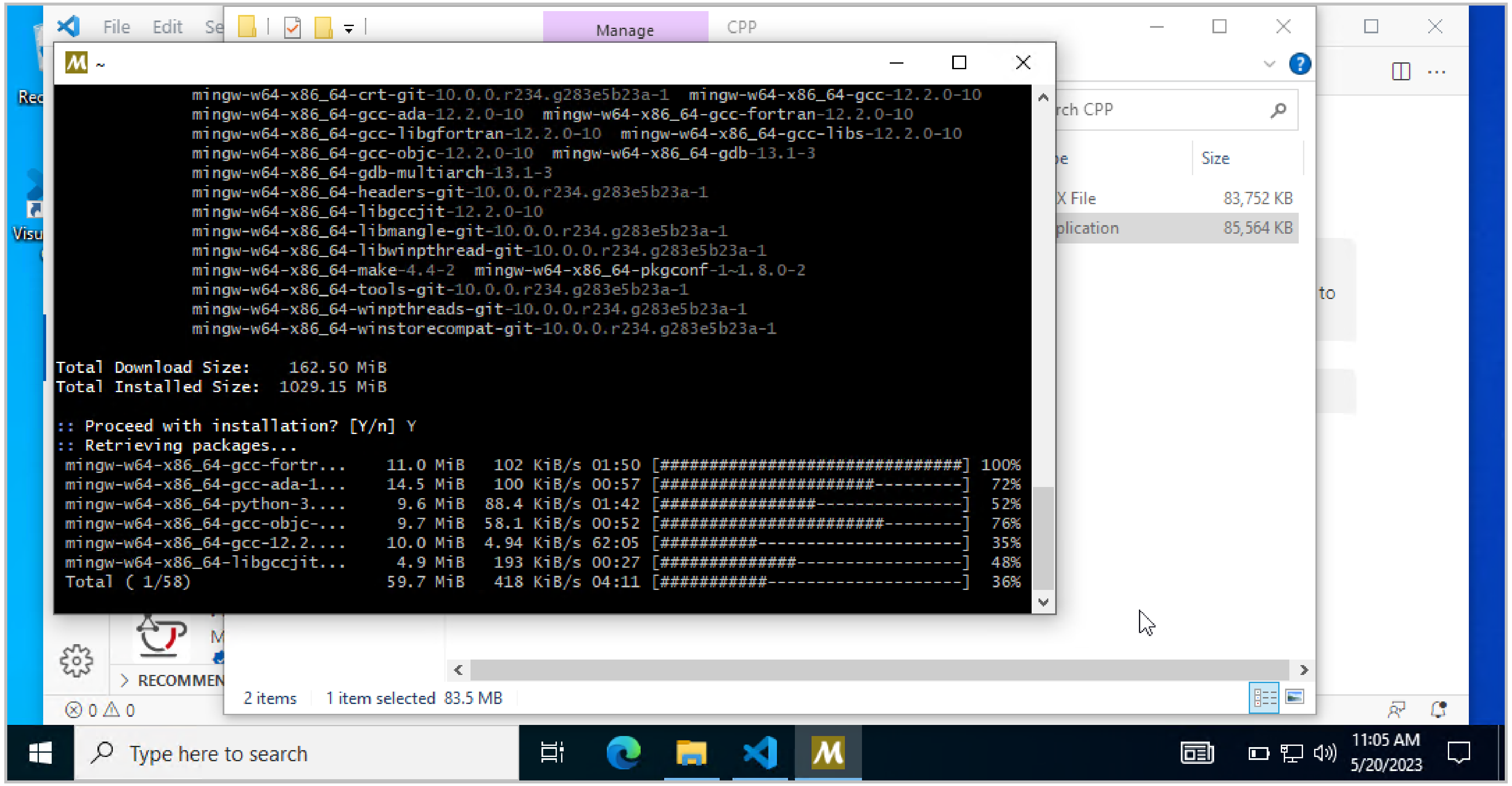


```
              mingw-w64-x86_64-mpfr-4.2.0-1  mingw-w64-x86_64-ncurses-6.4.20230211-1
              mingw-w64-x86_64-openssl-3.1.0-1  mingw-w64-x86_64-python-3.10.10-1
              mingw-w64-x86_64-readline-8.2.001-6  mingw-w64-x86_64-sqlite3-3.41.1-1
              mingw-w64-x86_64-tcl-8.6.12-1  mingw-w64-x86_64-termcap-1.3.1-6
              mingw-w64-x86_64-tk-8.6.12-1  mingw-w64-x86_64-tzdata-2022g-1
              mingw-w64-x86_64-windows-default-manifest-6.4-4  mingw-w64-x86_64-xxhash-0.8.1-2
              mingw-w64-x86_64-xz-5.4.1-1  mingw-w64-x86_64-zlib-1.2.13-3
              mingw-w64-x86_64-zstd-1.5.4-1  patch-2.7.6-2  pkgconf-1.9.4-1  texinfo-7.0.2-1
              texinfo-tex-7.0.2-1  base-devel-2022.12-2  mingw-w64-x86_64-binutils-2.40-2
              mingw-w64-x86_64-crt-git-10.0.0.r234.g283e5b23a-1  mingw-w64-x86_64-gcc-12.2.0-10
              mingw-w64-x86_64-gcc-ada-12.2.0-10  mingw-w64-x86_64-gcc-fortran-12.2.0-10
              mingw-w64-x86_64-gcc-libgfortran-12.2.0-10  mingw-w64-x86_64-gcc-libs-12.2.0-10
              mingw-w64-x86_64-gcc-objc-12.2.0-10  mingw-w64-x86_64-gdb-13.1-3
              mingw-w64-x86_64-gdb-multiarch-13.1-3
              mingw-w64-x86_64-headers-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-x86_64-libgccjit-12.2.0-10
              mingw-w64-x86_64-libmangle-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-x86_64-libwinpthread-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-x86_64-make-4.4-2  mingw-w64-x86_64-pkgconf-1~1.8.0-2
              mingw-w64-x86_64-tools-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-x86_64-winpthreads-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-x86_64-winstorecompat-git-10.0.0.r234.g283e5b23a-1

Total Download Size:    162.50 MiB
Total Installed Size:  1029.15 MiB

:: Proceed with installation? [Y/n]
```

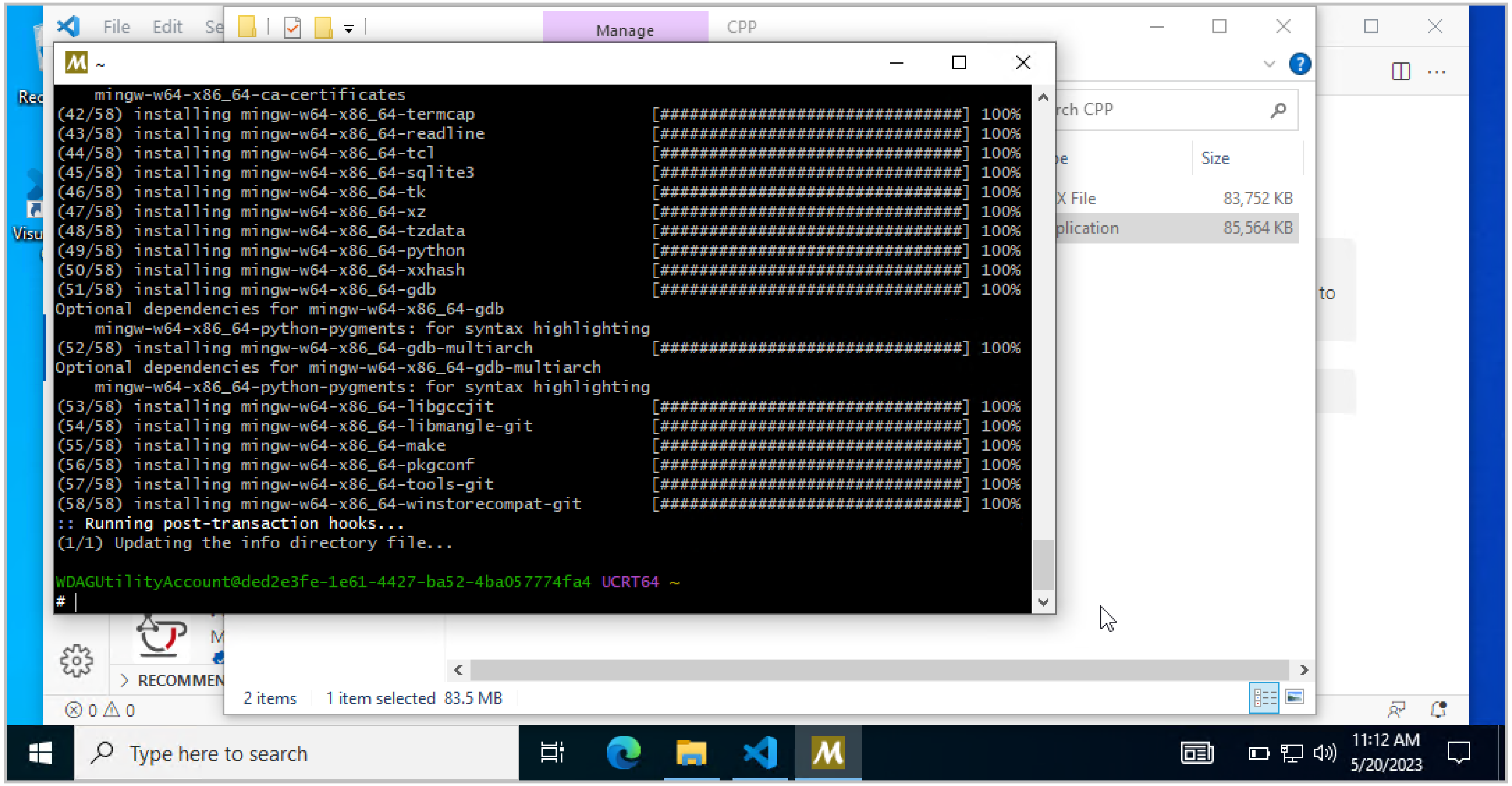
Type “Y” and press the “Enter” key



```
              mingw-w64-x86_64-mpfr-4.2.0-1  mingw-w64-x86_64-ncurses-6.4.20230211-1
              mingw-w64-x86_64-openssl-3.1.0-1  mingw-w64-x86_64-python-3.10.10-1
              mingw-w64-x86_64-readline-8.2.001-6  mingw-w64-x86_64-sqlite3-3.41.1-1
              mingw-w64-x86_64-tcl-8.6.12-1  mingw-w64-x86_64-termcap-1.3.1-6
              mingw-w64-x86_64-tk-8.6.12-1  mingw-w64-x86_64-tzdata-2022g-1
              mingw-w64-x86_64-windows-default-manifest-6.4-4  mingw-w64-x86_64-xxhash-0.8.1-2
              mingw-w64-x86_64-xz-5.4.1-1  mingw-w64-x86_64-zlib-1.2.13-3
              mingw-w64-x86_64-zstd-1.5.4-1  patch-2.7.6-2  pkgconf-1.9.4-1  texinfo-7.0.2-1
              texinfo-tex-7.0.2-1  base-devel-2022.12-2  mingw-w64-x86_64-binutils-2.40-2
              mingw-w64-x86_64-crt-git-10.0.0.r234.g283e5b23a-1  mingw-w64-x86_64-gcc-12.2.0-10
              mingw-w64-x86_64-gcc-ada-12.2.0-10  mingw-w64-x86_64-gcc-fortran-12.2.0-10
              mingw-w64-x86_64-gcc-libgfortran-12.2.0-10  mingw-w64-x86_64-gcc-libs-12.2.0-10
              mingw-w64-x86_64-gcc-objc-12.2.0-10  mingw-w64-x86_64-gdb-13.1-3
              mingw-w64-x86_64-gdb-multiarch-13.1-3
              mingw-w64-x86_64-headers-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-x86_64-libgccjit-12.2.0-10
              mingw-w64-x86_64-libmangle-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-x86_64-libwinpthread-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-x86_64-make-4.4-2  mingw-w64-x86_64-pkgconf-1~1.8.0-2
              mingw-w64-x86_64-tools-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-x86_64-winpthreads-git-10.0.0.r234.g283e5b23a-1
              mingw-w64-x86_64-winstorecompat-git-10.0.0.r234.g283e5b23a-1

Total Download Size:    162.50 MiB
Total Installed Size:  1029.15 MiB

:: Proceed with installation? [Y/n] Y
```



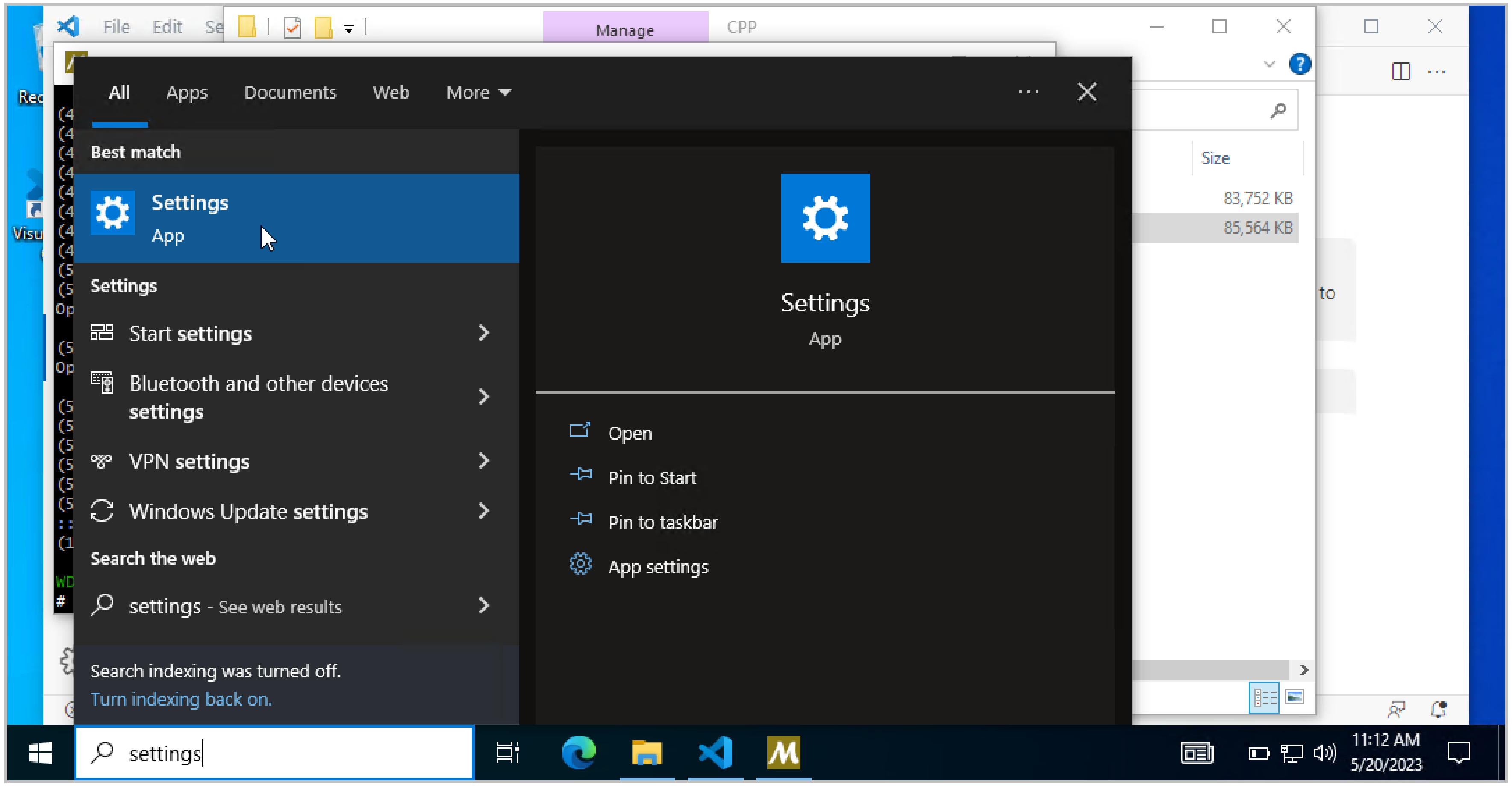
```
            mingw-w64-x86_64-crt-git-10.0.0.r234.g283e5b23a-1  mingw-w64-x86_64-gcc-12.2.0-10
            mingw-w64-x86_64-gcc-ada-12.2.0-10  mingw-w64-x86_64-gcc-fortran-12.2.0-10
            mingw-w64-x86_64-gcc-libgfortran-12.2.0-10  mingw-w64-x86_64-gcc-libs-12.2.0-10
            mingw-w64-x86_64-gcc-objc-12.2.0-10  mingw-w64-x86_64-gdb-13.1-3
            mingw-w64-x86_64-gdb-multiarch-13.1-3
            mingw-w64-x86_64-headers-git-10.0.0.r234.g283e5b23a-1
            mingw-w64-x86_64-libgccjit-12.2.0-10
            mingw-w64-x86_64-libmangle-git-10.0.0.r234.g283e5b23a-1
            mingw-w64-x86_64-libwinpthread-git-10.0.0.r234.g283e5b23a-1
            mingw-w64-x86_64-make-4.4-2  mingw-w64-x86_64-pkgconf-1~1.8.0-2
            mingw-w64-x86_64-tools-git-10.0.0.r234.g283e5b23a-1
            mingw-w64-x86_64-winpthreads-git-10.0.0.r234.g283e5b23a-1
            mingw-w64-x86_64-winstorecompat-git-10.0.0.r234.g283e5b23a-1

Total Download Size:    162.50 MiB
Total Installed Size:  1029.15 MiB

:: Proceed with installation? [Y/n] Y
:: Retrieving packages...
 mingw-w64-x86_64-gcc-fortr...    11.0 MiB   102 KiB/s 01:50 [###############################] 100%
 mingw-w64-x86_64-gcc-ada-1...    14.5 MiB   100 KiB/s 00:57 [######################---------]  72%
 mingw-w64-x86_64-python-3....     9.6 MiB  88.4 KiB/s 01:42 [################---------------]  52%
 mingw-w64-x86_64-gcc-objc-...     9.7 MiB  58.1 KiB/s 00:52 [#######################--------]  76%
 mingw-w64-x86_64-gcc-12.2....    10.0 MiB  4.94 KiB/s 62:05 [##########---------------------]  35%
 mingw-w64-x86_64-libgccjit...     4.9 MiB   193 KiB/s 00:27 [##############-----------------]  48%
 Total ( 1/58)                    59.7 MiB   418 KiB/s 04:11 [###########--------------------]  36%
```



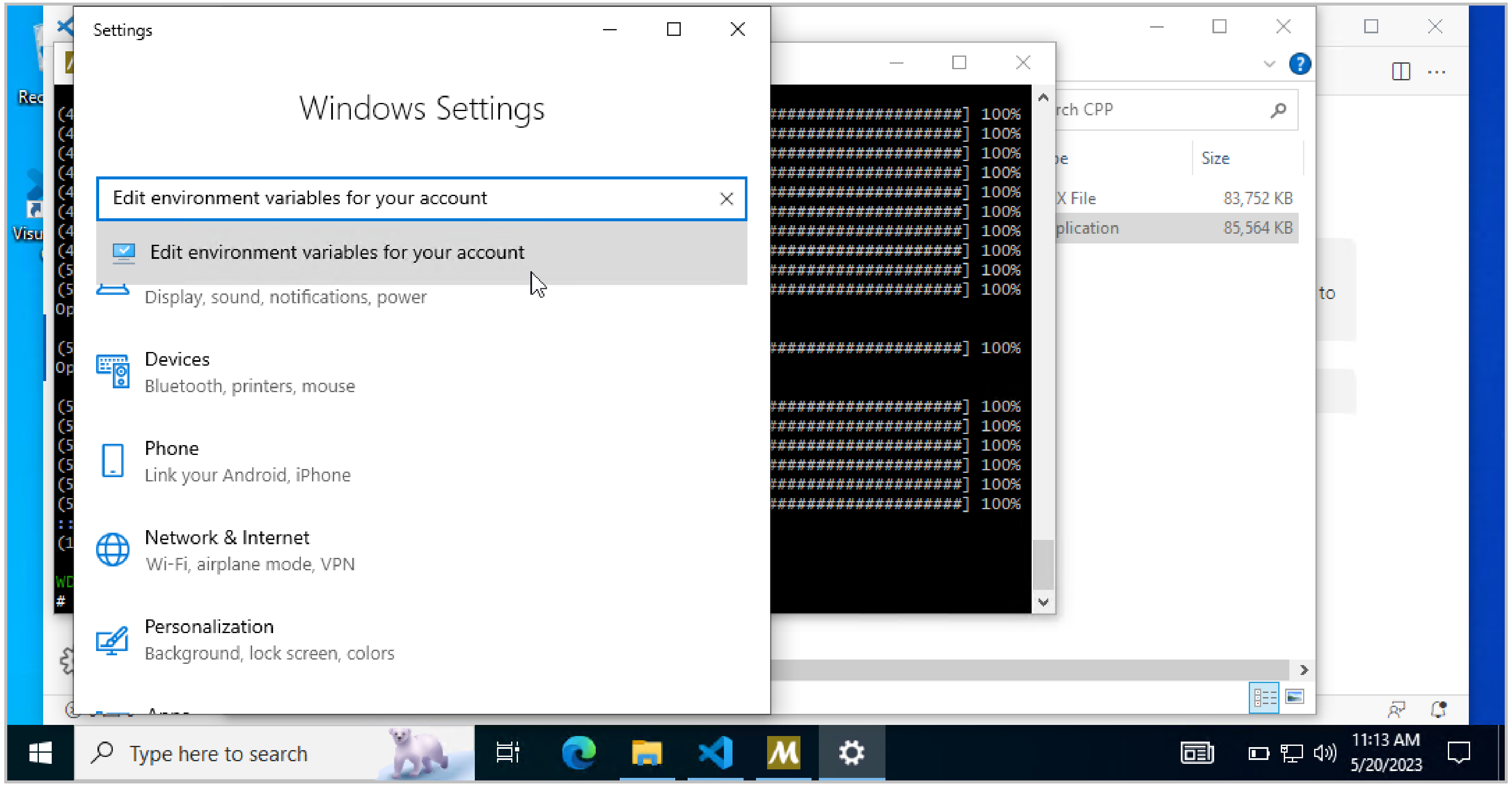
```
    mingw-w64-x86_64-ca-certificates
(42/58) installing mingw-w64-x86_64-termcap                  [###############################] 100%
(43/58) installing mingw-w64-x86_64-readline                 [###############################] 100%
(44/58) installing mingw-w64-x86_64-tcl                      [###############################] 100%
(45/58) installing mingw-w64-x86_64-sqlite3                  [###############################] 100%
(46/58) installing mingw-w64-x86_64-tk                       [###############################] 100%
(47/58) installing mingw-w64-x86_64-xz                       [###############################] 100%
(48/58) installing mingw-w64-x86_64-tzdata                   [###############################] 100%
(49/58) installing mingw-w64-x86_64-python                   [###############################] 100%
(50/58) installing mingw-w64-x86_64-xxhash                   [###############################] 100%
(51/58) installing mingw-w64-x86_64-gdb                      [###############################] 100%
Optional dependencies for mingw-w64-x86_64-gdb
    mingw-w64-x86_64-python-pygments: for syntax highlighting
(52/58) installing mingw-w64-x86_64-gdb-multiarch            [###############################] 100%
Optional dependencies for mingw-w64-x86_64-gdb-multiarch
    mingw-w64-x86_64-python-pygments: for syntax highlighting
(53/58) installing mingw-w64-x86_64-libgccjit                [###############################] 100%
(54/58) installing mingw-w64-x86_64-libmangle-git            [###############################] 100%
(55/58) installing mingw-w64-x86_64-make                     [###############################] 100%
(56/58) installing mingw-w64-x86_64-pkgconf                  [###############################] 100%
(57/58) installing mingw-w64-x86_64-tools-git                [###############################] 100%
(58/58) installing mingw-w64-x86_64-winstorecompat-git       [###############################] 100%
:: Running post-transaction hooks...
(1/1) Updating the info directory file...

WDAGUtilityAccount@ded2e3fe-1e61-4427-ba52-4ba057774fa4 UCRT64 ~
# |
```

Add the MinGW compiler to your path

In the Windows search bar, type 'settings' to open your Windows Settings



Search for Edit environment variables for your account



Settings

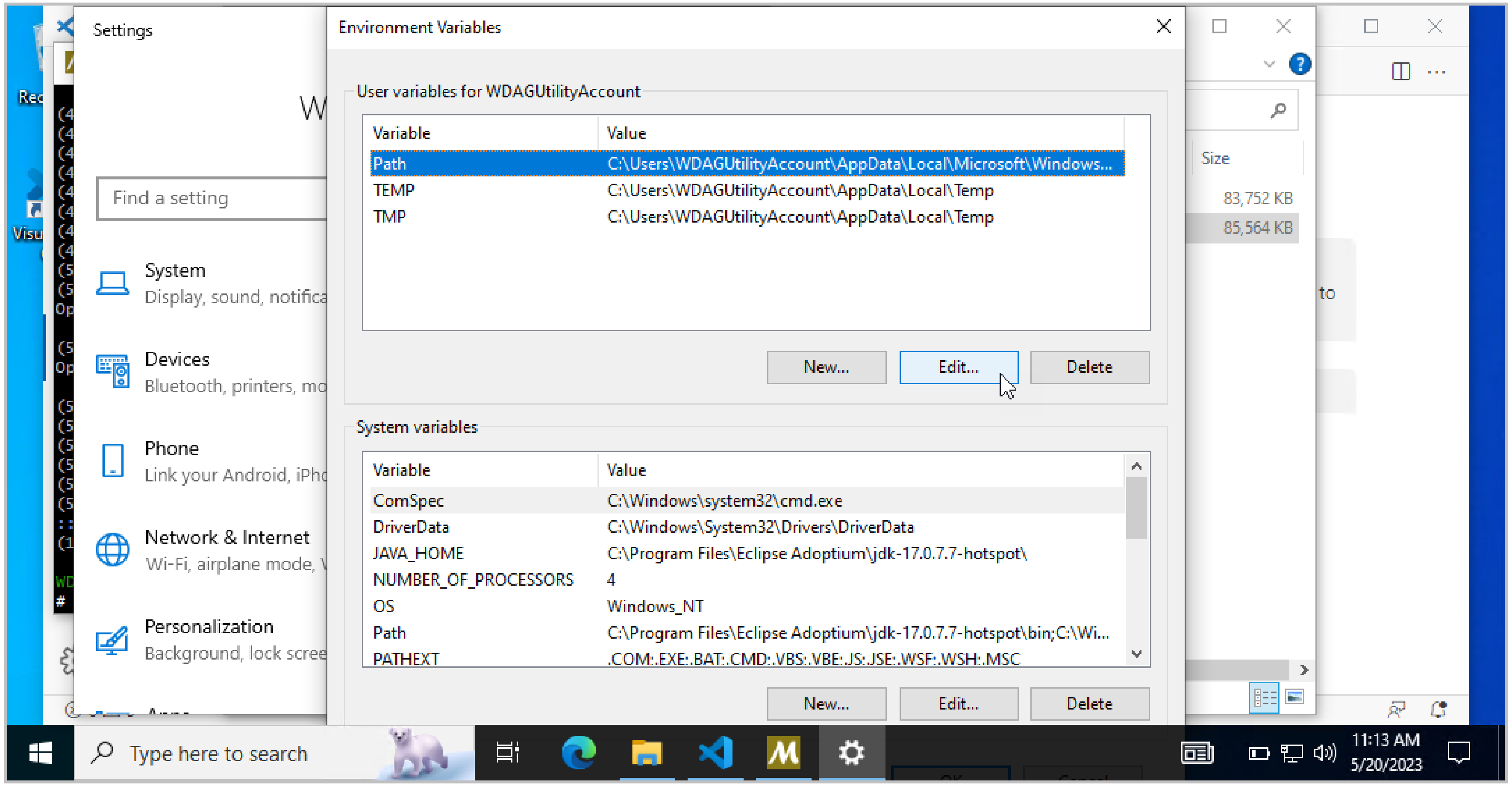
Windows Settings

Edit environment variables for your account

Edit environment variables for your account

Display, sound, notifications, power
Devices
Bluetooth, printers, mouse
Phone
Link your Android, iPhone
Network & Internet
Wi-Fi, airplane mode, VPN
Personalization
Background, lock screen, colors
Type here to search
11:13 AM
5/20/2023

Choose the Path variable in your User variables and then select Edit



Environment Variables

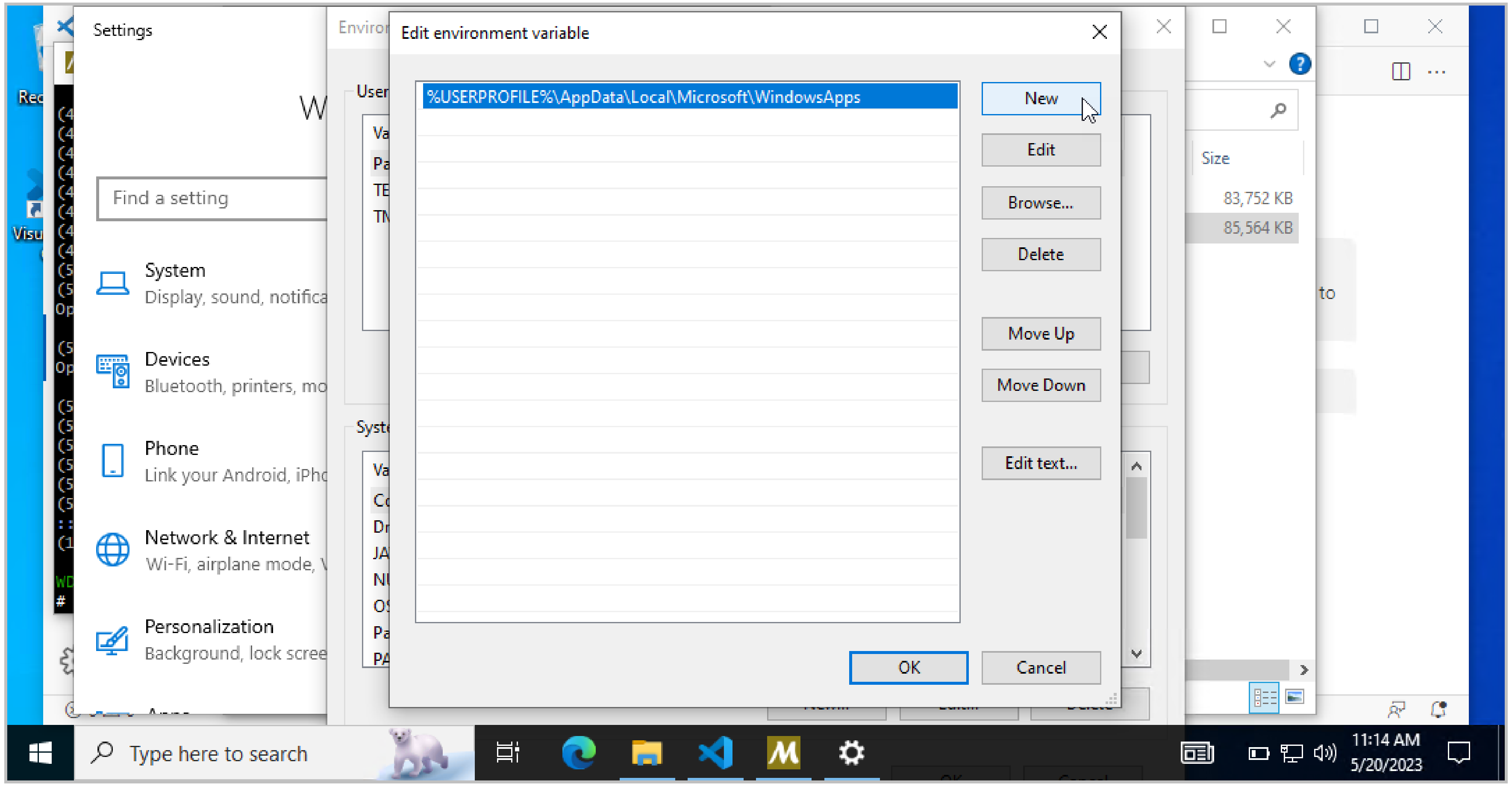
User variables for WDAGUtilityAccount

Variable	Value
Path	C:\Users\WDAGUtilityAccount\AppData\Local\Microsoft\Windows...
TEMP	C:\Users\WDAGUtilityAccount\AppData\Local\Temp
TMP	C:\Users\WDAGUtilityAccount\AppData\Local\Temp

System variables

Variable	Value
ComSpec	C:\Windows\system32\cmd.exe
DriverData	C:\Windows\System32\Drivers\DriverData
JAVA_HOME	C:\Program Files\Eclipse Adoptium\jdk-17.0.7.7-hotspot\
NUMBER_OF_PROCESSORS	4
OS	Windows_NT
Path	C:\Program Files\Eclipse Adoptium\jdk-17.0.7.7-hotspot\bin;C:\Wi...
PATHEXT	.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC

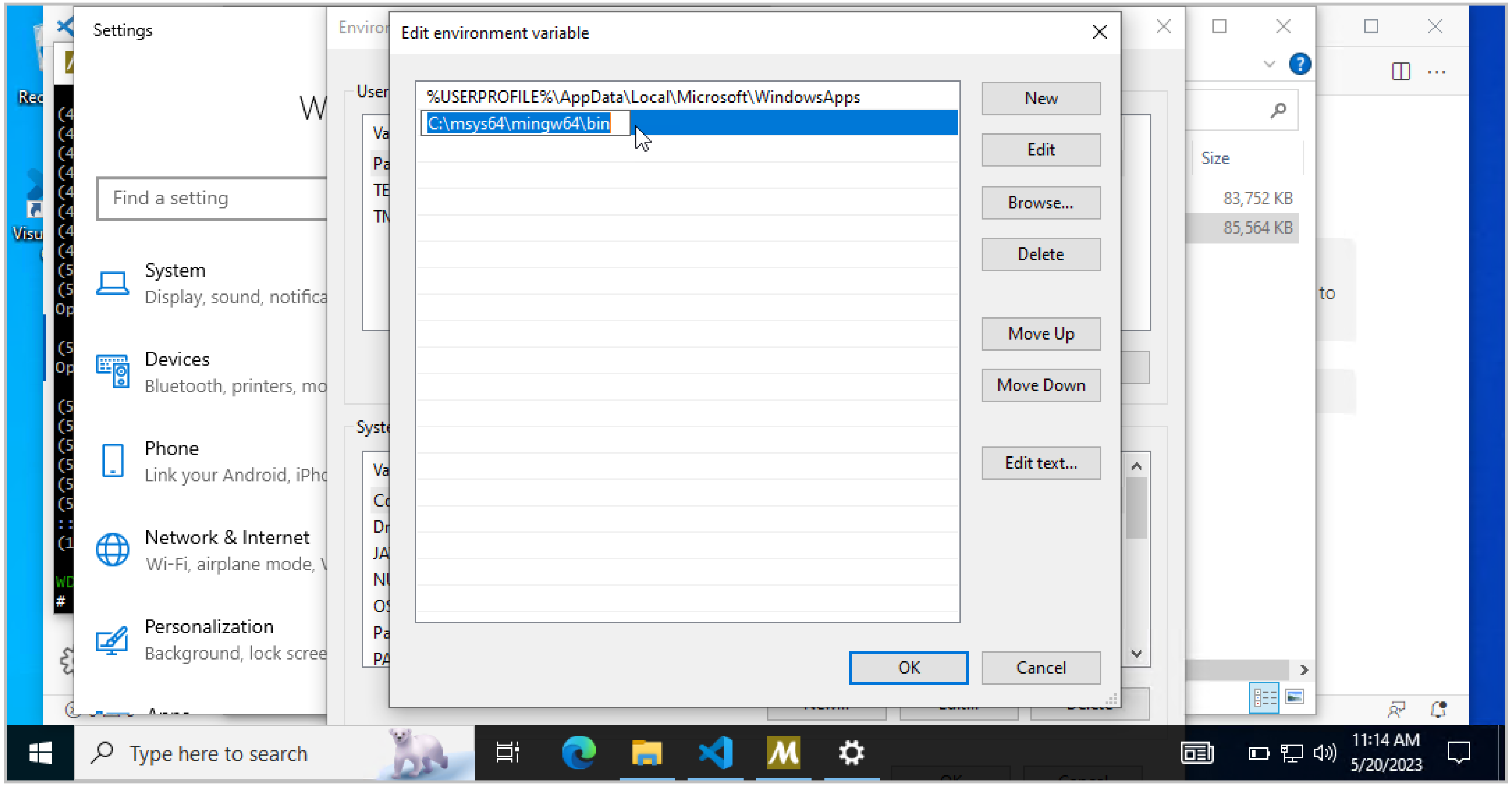
Select New to add the Mingw-w64 destination folder path



Edit environment variable

%USERPROFILE%\AppData\Local\Microsoft\WindowsApps

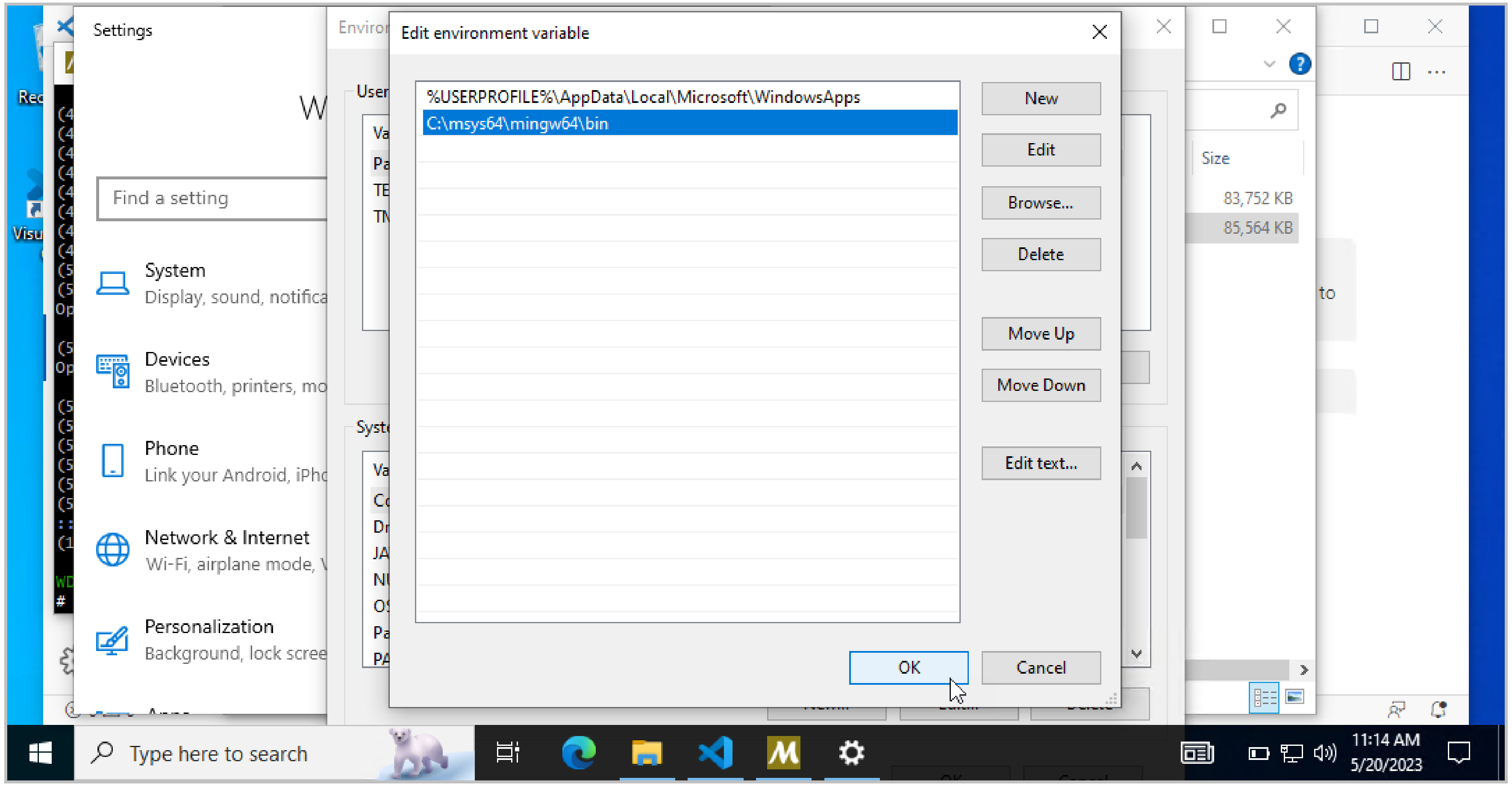
Type “C:\msys64\mingw64\bin” and click “OK”



Edit environment variable

%USERPROFILE%\AppData\Local\Microsoft\WindowsApps

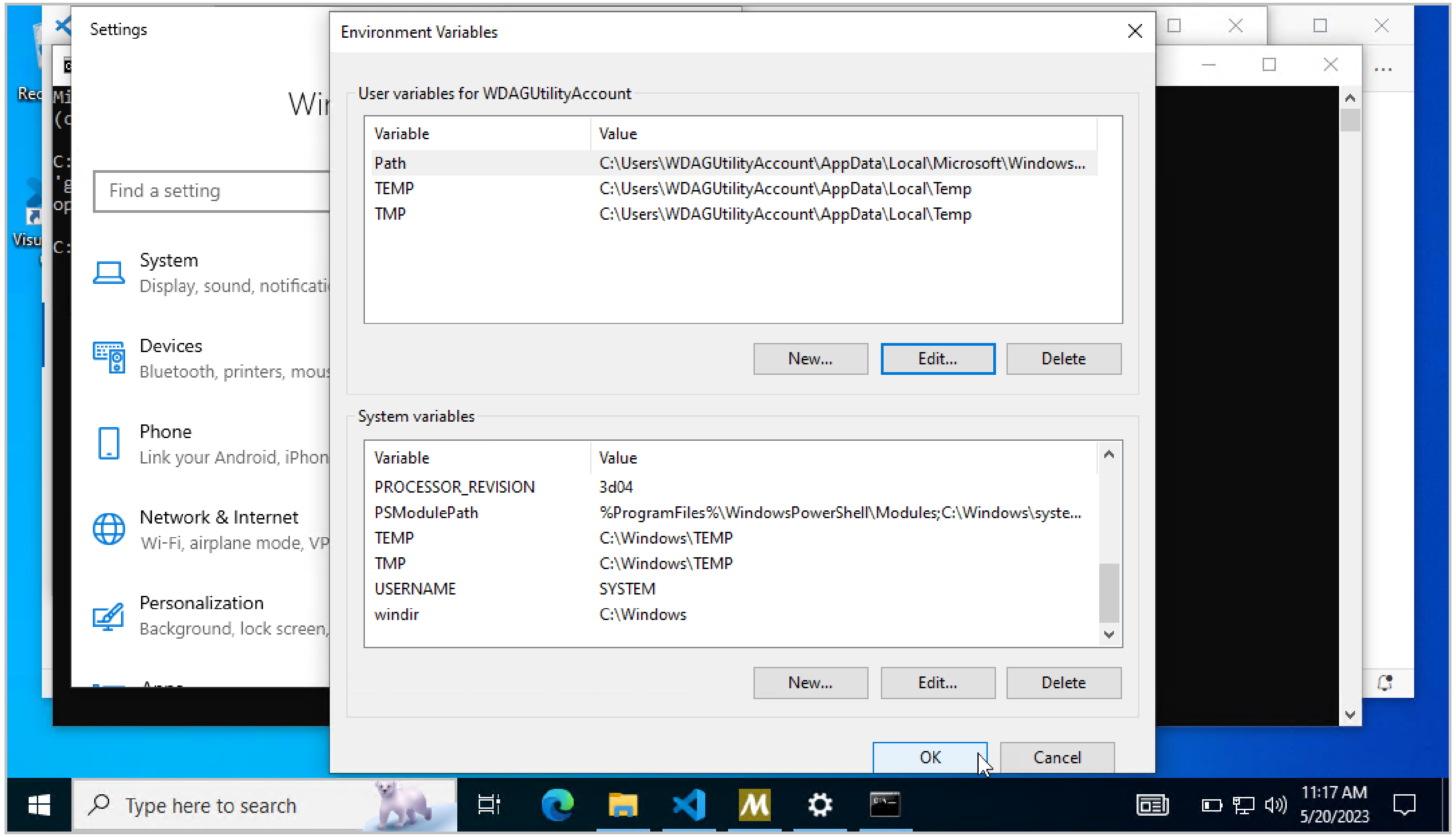
C:\msys64\mingw64\bin



Edit environment variable

%USERPROFILE%\AppData\Local\Microsoft\WindowsApps
C:\msys64\mingw64\bin

Select OK to save the updated PATH. You will need to reopen any console windows for the new PATH location to be available.



Environment Variables

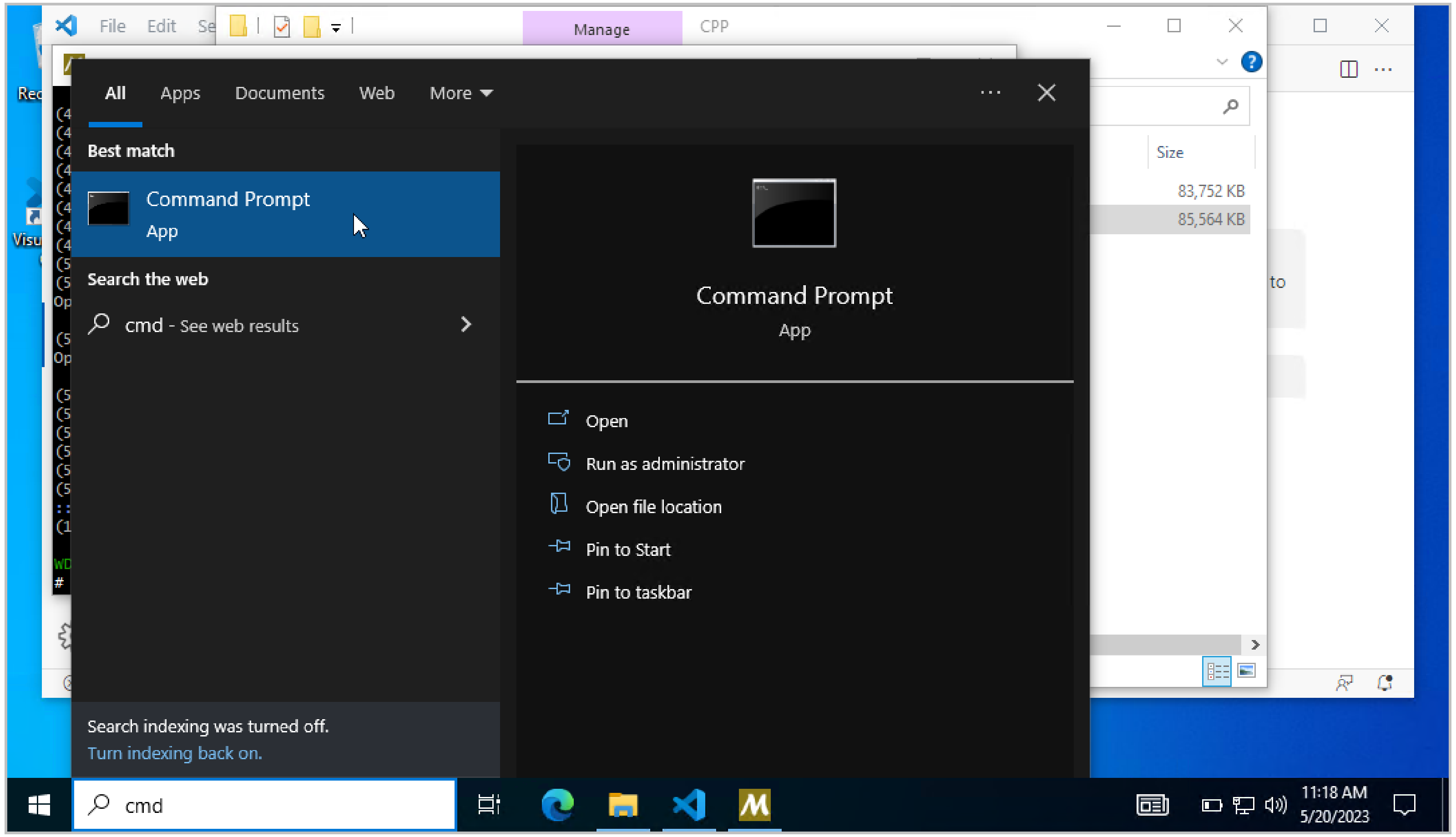
User variables for WDAGUtilityAccount

Variable	Value
Path	C:\Users\WDAGUtilityAccount\AppData\Local\Microsoft\Windows...
TEMP	C:\Users\WDAGUtilityAccount\AppData\Local\Temp
TMP	C:\Users\WDAGUtilityAccount\AppData\Local\Temp

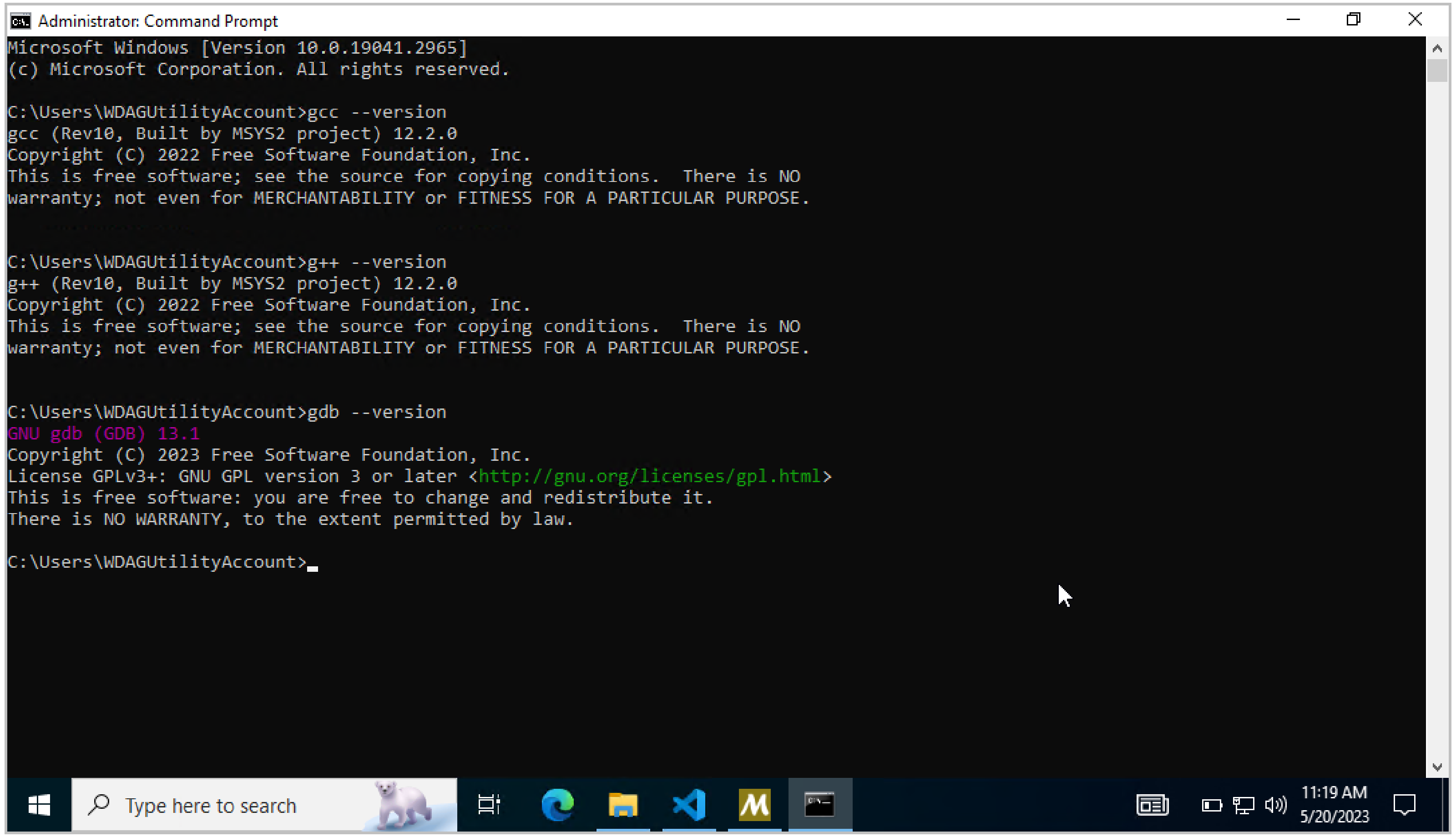
System variables

Variable	Value
PROCESSOR_REVISION	3d04
PSModulePath	%ProgramFiles%\WindowsPowerShell\Modules;C:\Windows\syste...
TEMP	C:\Windows\TEMP
TMP	C:\Windows\TEMP
USERNAME	SYSTEM
windir	C:\Windows

Open the “Command Prompt” window



Check your MinGW installation



```
Microsoft Windows [Version 10.0.19041.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\WDAGUtilityAccount>gcc --version
gcc (Rev10, Built by MSYS2 project) 12.2.0
Copyright (C) 2022 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\WDAGUtilityAccount>g++ --version
g++ (Rev10, Built by MSYS2 project) 12.2.0
Copyright (C) 2022 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\WDAGUtilityAccount>gdb --version
GNU gdb (GDB) 13.1
Copyright (C) 2023 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.

C:\Users\WDAGUtilityAccount>_
```