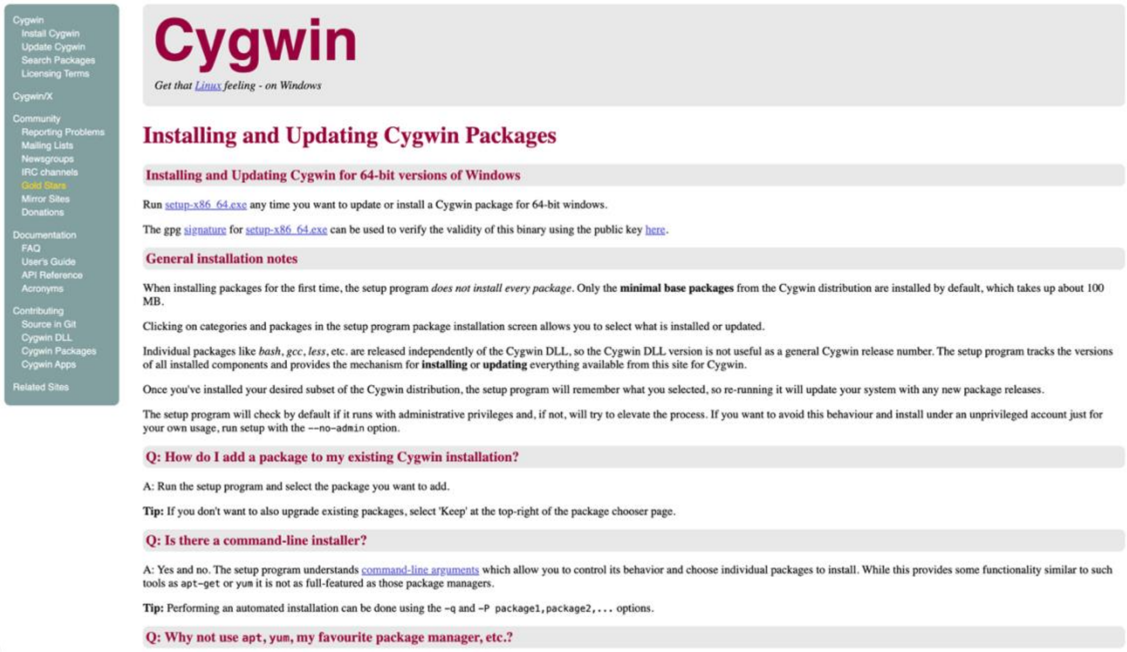
Windows Visual Studio Code Installation Guide (VS Code)

Part 1: Setting a C++ compiler and ensuring VS Code Compatibility

Step 1: Visit this link to download the latest installer from the Cygwin website at: https://www.cygwin.com/install.html

The website should look like the following:



Installing and Updating Cygwin Packages

Installing and Updating Cygwin for 64-bit versions of Windows

Run setup-x86_64.exe any time you want to update or install a Cygwin package for 64-bit windows.

The gpg signature for setup-x86_64.exe can be used to verify the validity of this binary using the public key here.

General installation notes

When installing packages for the first time, the setup program *does not install every package*. Only the **minimal base packages** from the Cygwin distribution are installed by default, which takes up about 100 MB.

Clicking on categories and packages in the setup program package installation screen allows you to select what is installed or updated.

Individual packages like *bash*, *gcc*, *less*, etc. are released independently of the Cygwin DLL, so the Cygwin DLL version is not useful as a general Cygwin release number. The setup program tracks the versions of all installed components and provides the mechanism for **installing** or **updating** everything available from this site for Cygwin.

Once you've installed your desired subset of the Cygwin distribution, the setup program will remember what you selected, so re-running it will update your system with any new package releases.

The setup program will check by default if it runs with administrative privileges and, if not, will try to elevate the process. If you want to avoid this behaviour and install under an unprivileged account just for your own usage, run setup with the `--no-admin` option.

Q: How do I add a package to my existing Cygwin installation?

A: Run the setup program and select the package you want to add.

Tip: If you don't want to also upgrade existing packages, select 'Keep' at the top-right of the package chooser page.

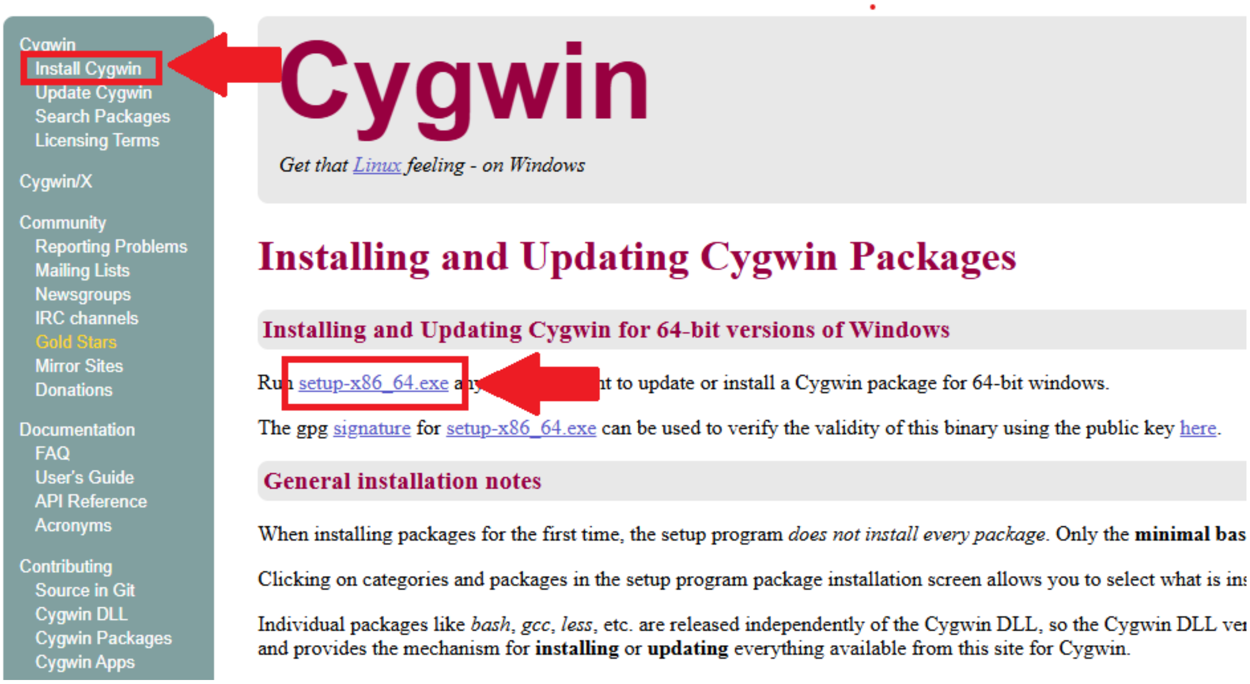
Q: Is there a command-line installer?

A: Yes and no. The setup program understands command-line arguments which allow you to control its behavior and choose individual packages to install. While this provides some functionality similar to such tools as `apt-get` or `yum` it is not as full-featured as those package managers.

Tip: Performing an automated installation can be done using the `-q` and `-P package1,package2,...` options.

Q: Why not use `apt`, `yum`, my favourite package manager, etc.?

Step 2: Click on **Install Cygwin** on the top left of the webpage, then click on the blue text that says **setupx86_64.exe** to install Cygwin.



Get that Linux feeling - on Windows

Installing and Updating Cygwin Packages

Installing and Updating Cygwin for 64-bit versions of Windows

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The gpg signature for setup-x86_64.exe can be used to verify the validity of this binary using the public key here.

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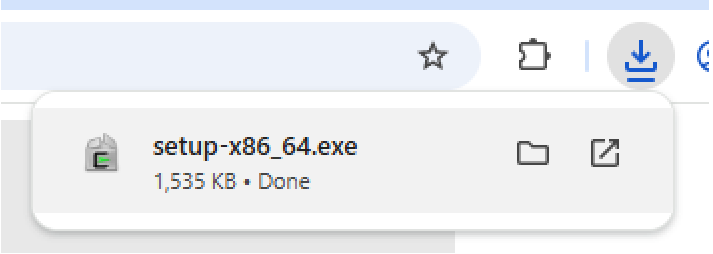
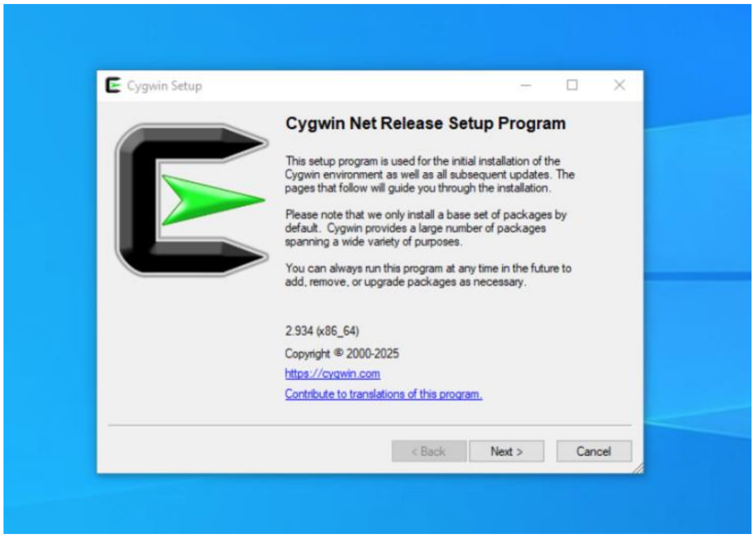
Individual packages like *bash*, *gcc*, *less*, etc. are released independently of the Cygwin DLL, so the Cygwin DLL ver and provides the mechanism for **installing** or **updating** everything available from this site for Cygwin.

Navigate to the downloads button at the top right and open the Cygwin installer file named **setupx86_64.exe** to run the installation of the program.



setup-x86_64.exe
1,535 KB • Done

Step 3: Continue with the installation and click next through these series of windows:



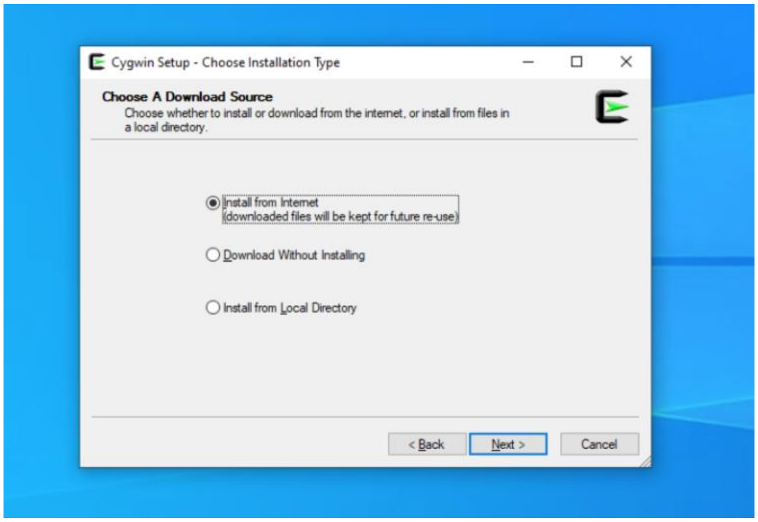
Cygwin Net Release Setup Program

This setup program is used for the initial installation of the Cygwin environment as well as all subsequent updates. The pages that follow will guide you through the installation.

Please note that we only install a base set of packages by default. Cygwin provides a large number of packages spanning a wide variety of purposes.

You can always run this program at any time in the future to add, remove, or upgrade packages as necessary.

2.934 (x86_64)
Copyright © 2000-2025
https://cygwin.com
Contribute to translations of this program.



Choose A Download Source

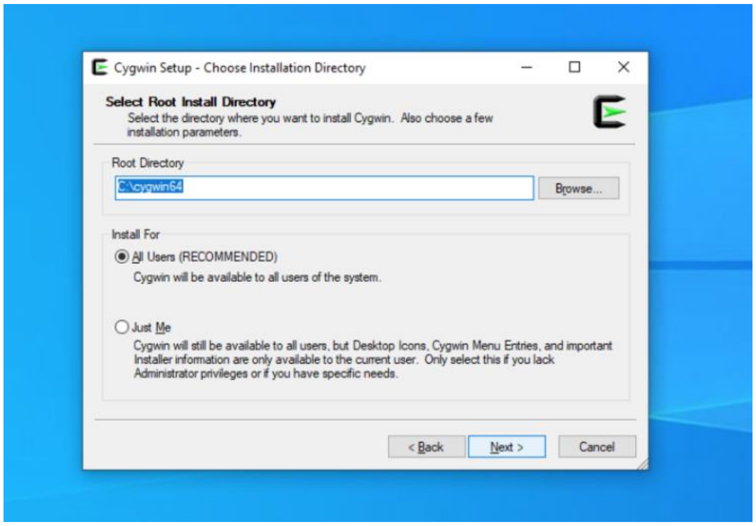
Choose whether to install or download from the internet, or install from files in a local directory.

● Install from Internet
(downloaded files will be kept for future re-use)

○ Download Without Installing

○ Install from Local Directory

You can choose a custom directory to have Cygwin downloaded, but it's recommended to have it on your C: root drive as is usually defaulted in the installer.



Cygwin Setup - Choose Installation Directory

Select Root Install Directory

Select the directory where you want to install Cygwin. Also choose a few installation parameters.

Root Directory

C:\cygwin64

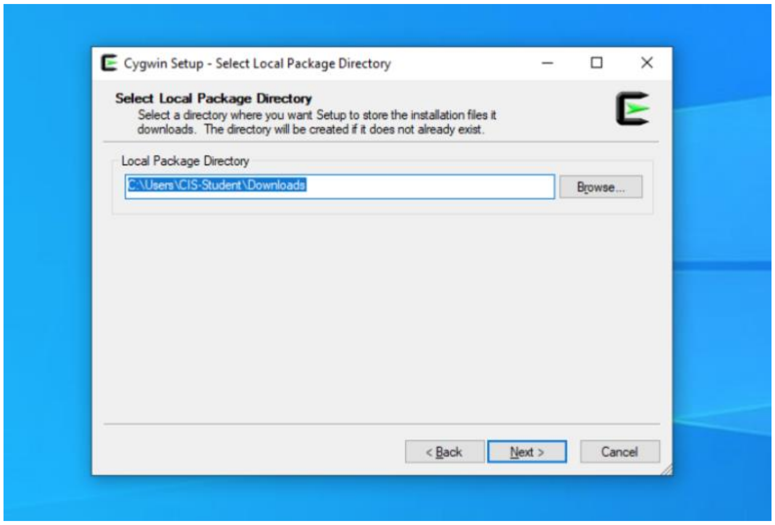
Install For

● All Users (RECOMMENDED)

Cygwin will be available to all users of the system.

○ Just Me

Cygwin will still be available to all users, but Desktop Icons, Cygwin Menu Entries, and important Installer information are only available to the current user. Only select this if you lack Administrator privileges or if you have specific needs.



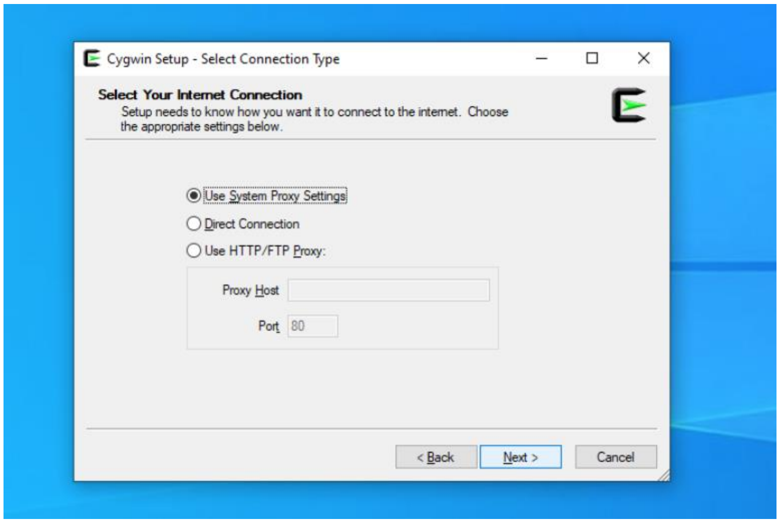
Cygwin Setup - Select Local Package Directory

Select Local Package Directory

Select a directory where you want Setup to store the installation files it downloads. The directory will be created if it does not already exist.

Local Package Directory

C:\Users\CIS-Student\Downloads



Cygwin Setup - Select Connection Type

Select Your Internet Connection

Setup needs to know how you want it to connect to the internet. Choose the appropriate settings below.

● Use System Proxy Settings

○ Direct Connection

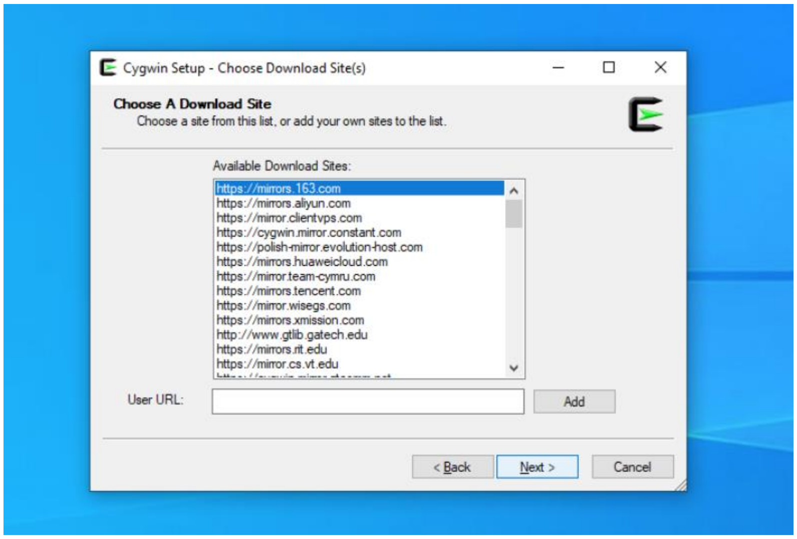
○ Use HTTP/FTP Proxy:

Proxy Host

Port 80

Step 4: On the step that says: Choose a Download Site, select any of the sites and continue.

*It's recommended to download from a .edu site, **but note** that if the download takes too long, it may be worth it to choose an alternative.*



Cygwin Setup - Choose Download Site(s)

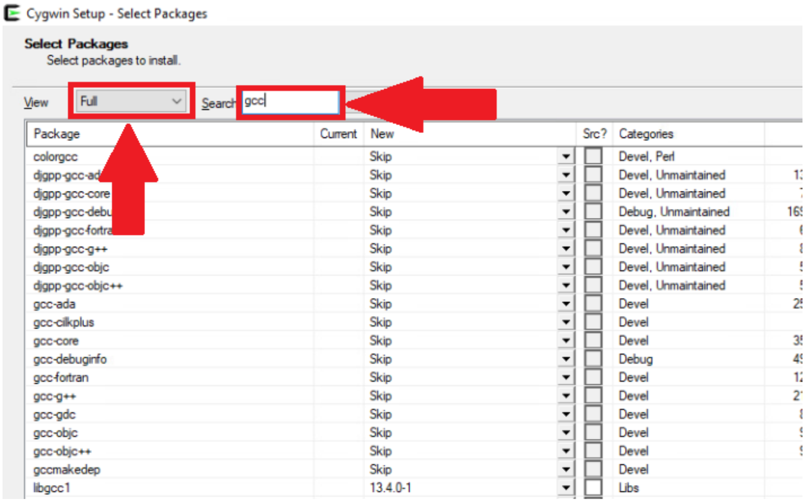
Choose A Download Site
Choose a site from this list, or add your own sites to the list.

Available Download Sites:

https://mirrors.163.com
https://mirrors.aliyun.com
https://mirror.clientvps.com
https://cygwin.mirror.constant.com
https://polish-mirror.evolution-host.com
https://mirrors.huaweicloud.com
https://mirror.team-cymru.com
https://mirrors.tencent.com
https://mirror.wisegs.com
https://mirrors.xmission.com
http://www.gtlib.gatech.edu
https://mirrors.rit.edu
https://mirror.cs.vt.edu

User URL:

Step 5: On the *View* filters at the top of the window, select **full** and type in **gcc.**



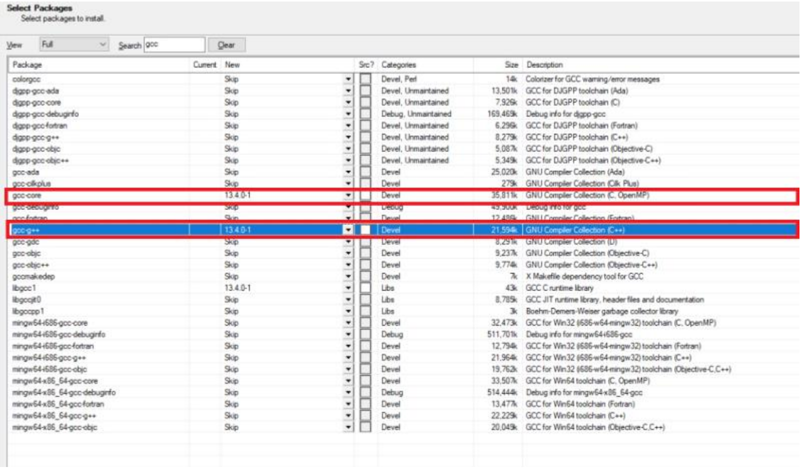
Cygwin Setup - Select Packages

Select Packages
Select packages to install.

View: Full Search: gcc

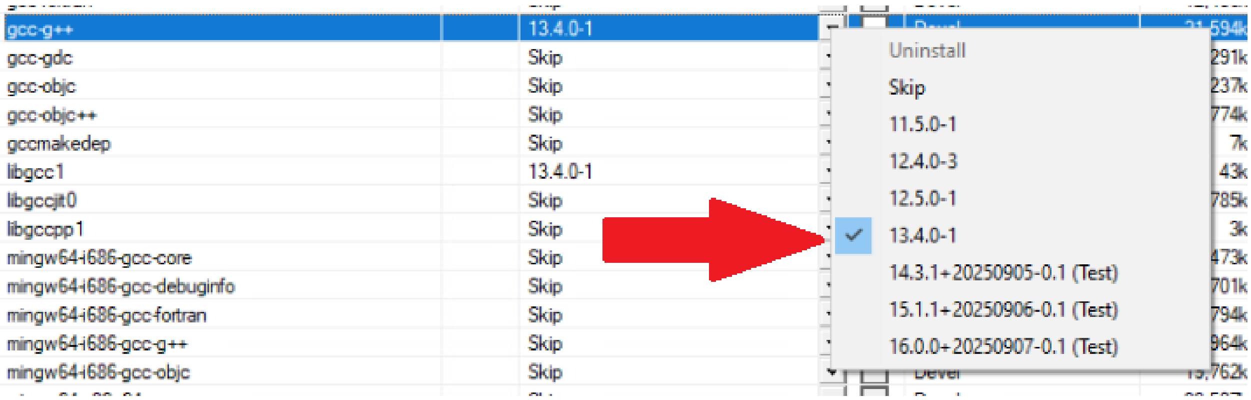
Package	Current	New	Src?	Categories	
colorgcc		Skip	□	Devel, Perl	
djgpp-gcc-ad		Skip	□	Devel, Unmaintained	1
djgpp-gcc-core		Skip	□	Devel, Unmaintained	
djgpp-gcc-debu		Skip	□	Debug, Unmaintained	16
djgpp-gcc-fortra		Skip	□	Devel, Unmaintained	
djgpp-gcc-g++		Skip	□	Devel, Unmaintained	
djgpp-gcc-objc		Skip	□	Devel, Unmaintained	
djgpp-gcc-objc++		Skip	□	Devel, Unmaintained	
gcc-ada		Skip	□	Devel	2
gcc-cilkplus		Skip	□	Devel	
gcc-core		Skip	□	Devel	3
gcc-debuginfo		Skip	□	Debug	4
gcc-fortran		Skip	□	Devel	1
gcc-g++		Skip	□	Devel	2
gcc-gdc		Skip	□	Devel	
gcc-objc		Skip	□	Devel	
gcc-objc++		Skip	□	Devel	
gccmakedep		Skip	□	Devel	
libgcc1		13.4.0-1	□	Libs	

Step 6: Look for **gcc-core** and **gcc-g++**.



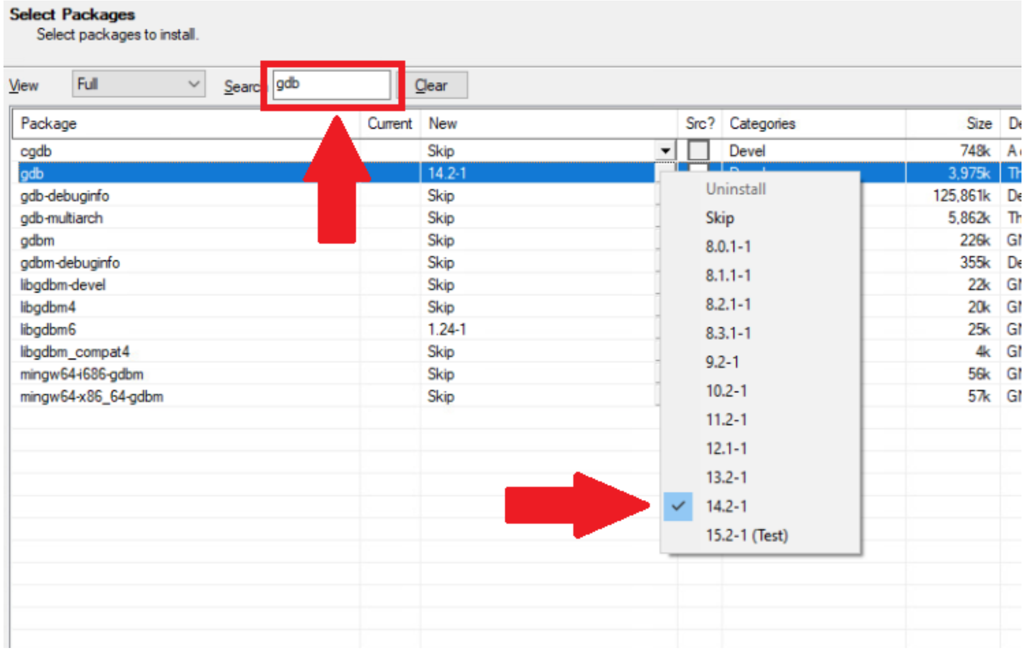
Package	Current	New	Src?	Categories	Size	Description
colorgcc		Skip	□	Devel, Perl	14k	Colorizer for GCC warning/error messages
djgpp-gcc-ada		Skip	□	Devel, Unmaintained	13,501k	GCC for DJGPP toolchain (Ada)
djgpp-gcc-core		Skip	□	Devel, Unmaintained	7,926k	GCC for DJGPP toolchain (C)
djgpp-gcc-debuginfo		Skip	□	Debug, Unmaintained	169,469k	Debug info for djgpp-gcc
djgpp-gcc-fortran		Skip	□	Devel, Unmaintained	6,296k	GCC for DJGPP toolchain (Fortran)
djgpp-gcc-g++		Skip	□	Devel, Unmaintained	8,279k	GCC for DJGPP toolchain (C++)
djgpp-gcc-objc		Skip	□	Devel, Unmaintained	5,087k	GCC for DJGPP toolchain (Objective-C)
djgpp-gcc-objc++		Skip	□	Devel, Unmaintained	5,349k	GCC for DJGPP toolchain (Objective-C++)
gcc-ada		Skip	□	Devel	25,020k	GNU Compiler Collection (Ada)
gcc-cilkplus		Skip	□	Devel	279k	GNU Compiler Collection (Cilk Plus)
gcc-core		13.4.0-1	□	Devel	35,811k	GNU Compiler Collection (C, OpenMP)
gcc-debuginfo		Skip	□	Debug	45,900k	Debug info for gcc
gcc-fortran		Skip	□	Devel	12,489k	GNU Compiler Collection (Fortran)
gcc-g++		13.4.0-1	□	Devel	21,594k	GNU Compiler Collection (C++)
gcc-gdc		Skip	□	Devel	8,291k	GNU Compiler Collection (D)
gcc-objc		Skip	□	Devel	9,237k	GNU Compiler Collection (Objective-C)
gcc-objc++		Skip	□	Devel	9,774k	GNU Compiler Collection (Objective-C++)
gccmakedep		Skip	□	Devel	7k	X Makefile dependency tool for GCC
libgcc1		13.4.0-1	□	Libs	43k	GCC C runtime library
libgccjit0		Skip	□	Libs	8,785k	GCC JIT runtime library, header files and documentation
libgccpp1		Skip	□	Libs	3k	Boehm-Demers-Weiser garbage collector library
mingw64-i686-gcc-core		Skip	□	Devel	32,473k	GCC for Win32 (i686-w64-mingw32) toolchain (C, OpenMP)
mingw64-i686-gcc-debuginfo		Skip	□	Debug	511,701k	Debug info for mingw64-i686-gcc
mingw64-i686-gcc-fortran		Skip	□	Devel	12,794k	GCC for Win32 (i686-w64-mingw32) toolchain (Fortran)
mingw64-i686-gcc-g++		Skip	□	Devel	21,964k	GCC for Win32 (i686-w64-mingw32) toolchain (C++)
mingw64-i686-gcc-objc		Skip	□	Devel	19,762k	GCC for Win32 (i686-w64-mingw32) toolchain (Objective-C,C++)
mingw64-x86_64-gcc-core		Skip	□	Devel	33,507k	GCC for Win64 toolchain (C, OpenMP)
mingw64-x86_64-gcc-debuginfo		Skip	□	Debug	514,444k	Debug info for mingw64-x86_64-gcc
mingw64-x86_64-gcc-fortran		Skip	□	Devel	13,477k	GCC for Win64 toolchain (Fortran)
mingw64-x86_64-gcc-g++		Skip	□	Devel	22,229k	GCC for Win64 toolchain (C++)
mingw64-x86_64-gcc-objc		Skip	□	Devel	20,049k	GCC for Win64 toolchain (Objective-C,C++)

Click on the dropdown menu and select the highest version number that is not a test version. You will be doing this for both **gcc-core** and **gcc-g++**.


Uninstall
Skip
11.5.0-1
12.4.0-3
12.5.0-1
✓ 13.4.0-1
14.3.1+20250905-0.1 (Test)
15.1.1+20250906-0.1 (Test)
16.0.0+20250907-0.1 (Test)

gcc-g++	13.4.0-1	Devel	21,594k
gcc-gdc	Skip		291k
gcc-objc	Skip		237k
gcc-objc++	Skip		774k
gccmakedep	Skip		7k
libgcc1	13.4.0-1		43k
libgccjit0	Skip		785k
libgccpp1	Skip		3k
mingw64-i686-gcc-core	Skip		473k
mingw64-i686-gcc-debuginfo	Skip		701k
mingw64-i686-gcc-fortran	Skip		794k
mingw64-i686-gcc-g++	Skip		964k
mingw64-i686-gcc-objc	Skip	Devel	19,762k

Step 7: Next, type **gdb** in the search bar and select the highest non-test version for **gdb.**

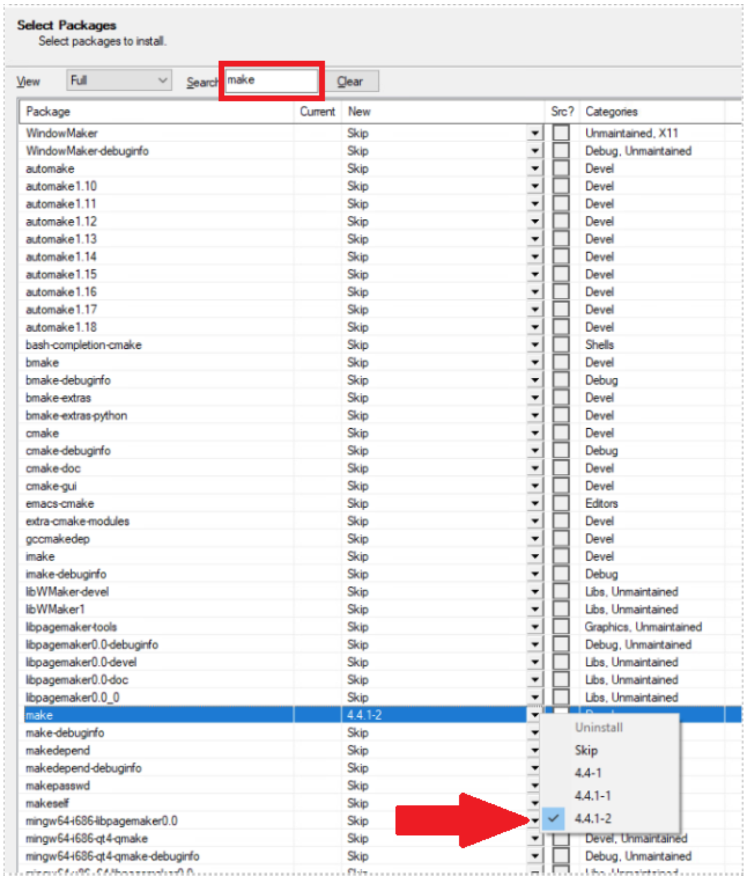


Select Packages
Select packages to install.

View: Full — Search: gdb — Clear

Package	Current	New	Src?	Categories	Size	De
cgdb		Skip	□	Devel	748k	A
gdb		14.2-1			3,975k	Th
gdb-debuginfo		Skip			125,861k	De
gdb-multiarch		Skip			5,862k	Th
gdbm		Skip			226k	Gl
gdbm-debuginfo		Skip			355k	De
libgdbm-devel		Skip			22k	Gl
libgdbm4		Skip			20k	Gl
libgdbm6		1.24-1			25k	Gl
libgdbm_compat4		Skip			4k	Gl
mingw64-i686-gdbm		Skip			56k	Gl
mingw64-x86_64-gdbm		Skip			57k	Gl

Step 8: Then type **make** in the search bar and select the highest non-test version for **make**.

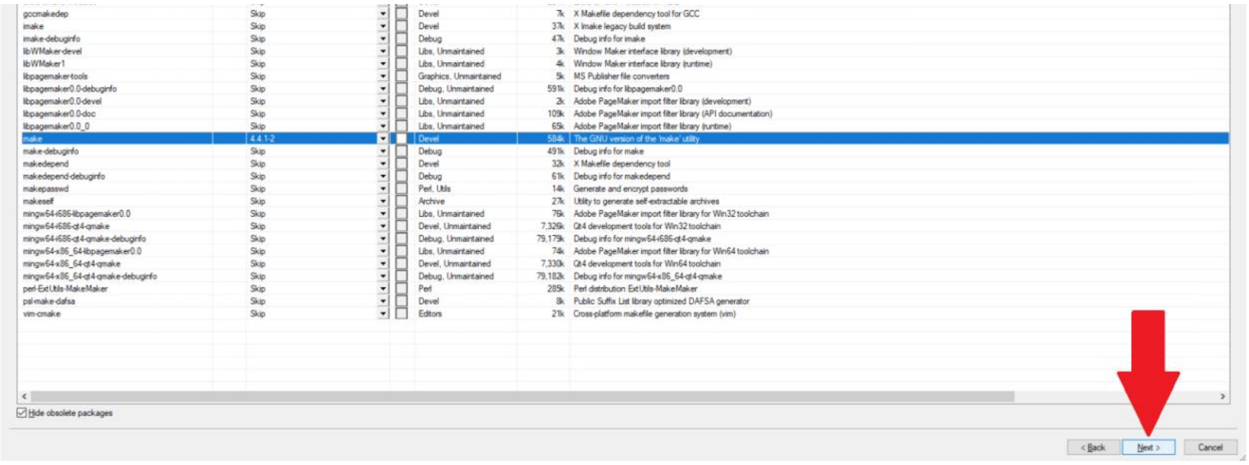


Select Packages
Select packages to install.

View: Full — Search: make — Clear

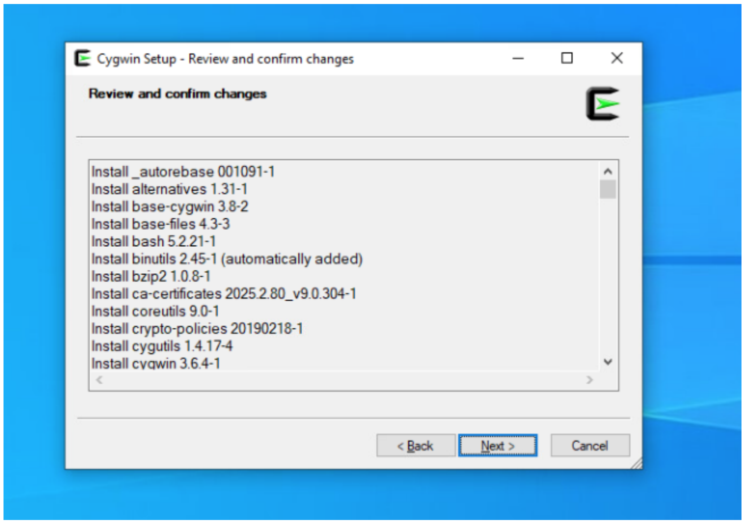
Package	Current	New	Src?	Categories
WindowMaker		Skip	□	Unmaintained, X11
WindowMaker-debuginfo		Skip	□	Debug, Unmaintained
automake		Skip	□	Devel
automake1.10		Skip	□	Devel
automake1.11		Skip	□	Devel
automake1.12		Skip	□	Devel
automake1.13		Skip	□	Devel
automake1.14		Skip	□	Devel
automake1.15		Skip	□	Devel
automake1.16		Skip	□	Devel
automake1.17		Skip	□	Devel
automake1.18		Skip	□	Devel
bash-completion-cmake		Skip	□	Shells
bmake		Skip	□	Devel
bmake-debuginfo		Skip	□	Debug
bmake-extras		Skip	□	Devel
bmake-extras-python		Skip	□	Devel
cmake		Skip	□	Devel
cmake-debuginfo		Skip	□	Debug
cmake-doc		Skip	□	Devel
cmake-gui		Skip	□	Devel
emacs-cmake		Skip	□	Editors
extra-cmake-modules		Skip	□	Devel
gccmakedep		Skip	□	Devel
imake		Skip	□	Devel
imake-debuginfo		Skip	□	Debug
libWMaker-devel		Skip	□	Libs, Unmaintained
libWMaker1		Skip	□	Libs, Unmaintained
libpagemaker-tools		Skip	□	Graphics, Unmaintained
libpagemaker0.0-debuginfo		Skip	□	Debug, Unmaintained
libpagemaker0.0-devel		Skip	□	Libs, Unmaintained
libpagemaker0.0-doc		Skip	□	Libs, Unmaintained
libpagemaker0.0_0		Skip	□	Libs, Unmaintained
make		4.4.1-2		
make-debuginfo		Skip		
makedepend		Skip		
makedepend-debuginfo		Skip		
makepasswd		Skip		
makeself		Skip		
mingw64-i686-libpagemaker0.0		Skip		
mingw64-i686-qt4-qmake		Skip	□	Devel, Unmaintained
mingw64-i686-qt4-qmake-debuginfo		Skip	□	Debug, Unmaintained

Step 9: Click next once you've selected all of the above, and then click next once again to review and confirm changes and finish the installation.



gccmakedep	Skip	□	Devel	7k	X Makefile dependency tool for GCC
imake	Skip	□	Devel	37k	X Imake legacy build system
imake-debuginfo	Skip	□	Debug	47k	Debug info for imake
libWMaker-devel	Skip	□	Libs, Unmaintained	3k	Window Maker interface library (development)
libWMaker1	Skip	□	Libs, Unmaintained	4k	Window Maker interface library (runtime)
libpagemaker-tools	Skip	□	Graphics, Unmaintained	5k	MS Publisher file converters
libpagemaker0.0-debuginfo	Skip	□	Debug, Unmaintained	591k	Debug info for libpagemaker0.0
libpagemaker0.0-devel	Skip	□	Libs, Unmaintained	2k	Adobe PageMaker import filter library (development)
libpagemaker0.0-doc	Skip	□	Libs, Unmaintained	109k	Adobe PageMaker import filter library (API documentation)
libpagemaker0.0_0	Skip	□	Libs, Unmaintained	65k	Adobe PageMaker import filter library (runtime)
make	4.4.1-2	□	Devel	584k	The GNU version of the 'make' utility
make-debuginfo	Skip	□	Debug	491k	Debug info for make
makedepend	Skip	□	Devel	32k	X Makefile dependency tool
makedepend-debuginfo	Skip	□	Debug	61k	Debug info for makedepend
makepasswd	Skip	□	Perl, Utils	14k	Generate and encrypt passwords
makeself	Skip	□	Archive	27k	Utility to generate self-extractable archives
mingw64-i686-libpagemaker0.0	Skip	□	Libs, Unmaintained	76k	Adobe PageMaker import filter library for Win32 toolchain
mingw64-i686-qt4-qmake	Skip	□	Devel, Unmaintained	7,326k	Qt4 development tools for Win32 toolchain
mingw64-i686-qt4-qmake-debuginfo	Skip	□	Debug, Unmaintained	79,179k	Debug info for mingw64-i686-qt4-qmake
mingw64-x86_64-libpagemaker0.0	Skip	□	Libs, Unmaintained	74k	Adobe PageMaker import filter library for Win64 toolchain
mingw64-x86_64-qt4-qmake	Skip	□	Devel, Unmaintained	7,330k	Qt4 development tools for Win64 toolchain
mingw64-x86_64-qt4-qmake-debuginfo	Skip	□	Debug, Unmaintained	79,182k	Debug info for mingw64-x86_64-qt4-qmake
perl-ExtUtils-MakeMaker	Skip	□	Perl	285k	Perl distribution ExtUtils-MakeMaker
psl-make-dafsa	Skip	□	Devel	8k	Public Suffix List library optimized DAFSA generator
vim-cmake	Skip	□	Editors	21k	Cross-platform makefile generation system (vim)

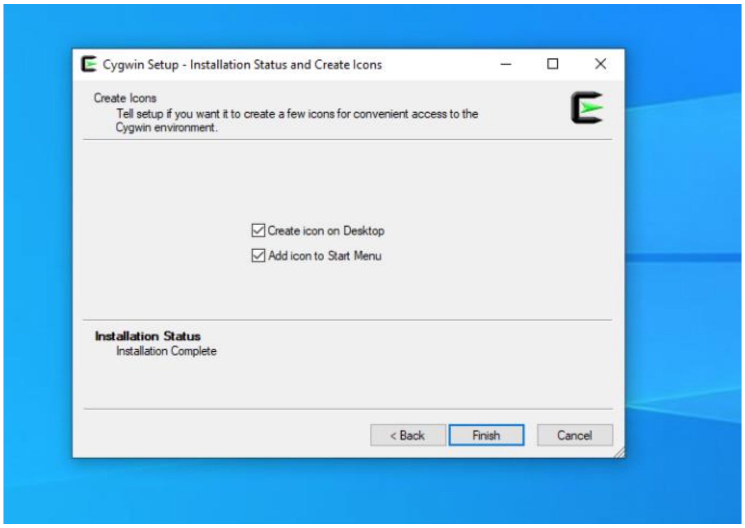
☑ Hide obsolete packages



Cygwin Setup - Review and confirm changes

Review and confirm changes

```
Install _autorebase 001091-1
Install alternatives 1.31-1
Install base-cygwin 3.8-2
Install base-files 4.3-3
Install bash 5.2.21-1
Install binutils 2.45-1 (automatically added)
Install bzip2 1.0.8-1
Install ca-certificates 2025.2.80_v9.0.304-1
Install coreutils 9.0-1
Install crypto-policies 20190218-1
Install cygutils 1.4.17-4
Install cygwin 3.6.4-1
```



Cygwin Setup - Installation Status and Create Icons

Create Icons

Tell setup if you want it to create a few icons for convenient access to the Cygwin environment.

☑ Create icon on Desktop

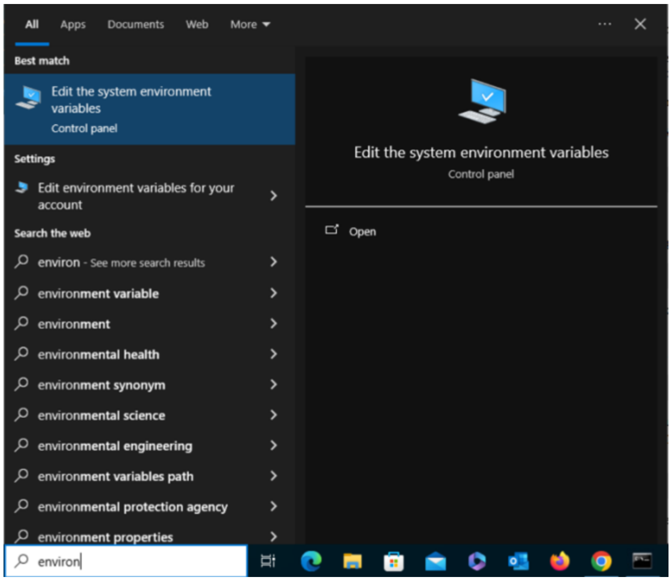
☑ Add icon to Start Menu

Installation Status

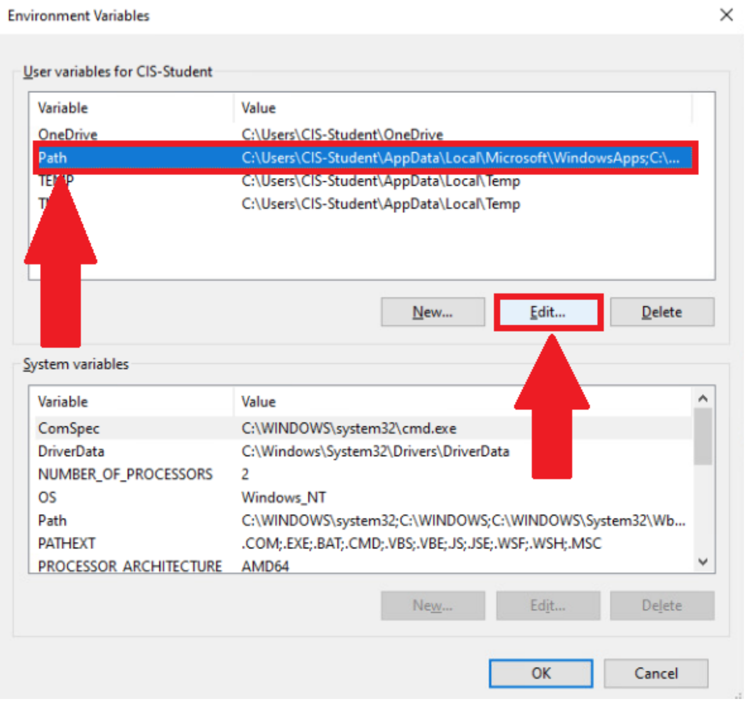
Installation Complete

Part 2: Setting up environment variables and confirming installation is complete.

Step 1: In your windows search bar – bottom center if on windows 11, and bottom left on windows 10, search for **Edit the system environment variables.**


All
Apps
Documents
Web
More
Best match
Edit the system environment variables
Control panel
Settings
Edit environment variables for your account
Search the web
environ - See more search results
environment variable
environment
environmental health
environment synonym
environmental science
environmental engineering
environment variables path
environmental protection agency
environment properties
environ
Edit the system environment variables
Control panel
Open

Step 2: Select **Path** then click on **Edit**.



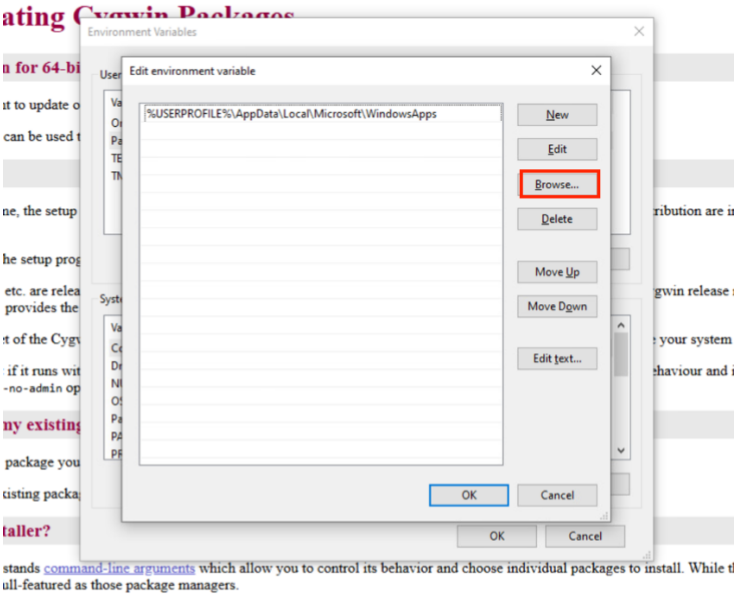
User variables for CIS-Student

Variable	Value
OneDrive	C:\Users\CIS-Student\OneDrive
Path	C:\Users\CIS-Student\AppData\Local\Microsoft\WindowsApps;C:\...
TE P	C:\Users\CIS-Student\AppData\Local\Temp
T	C:\Users\CIS-Student\AppData\Local\Temp

System variables

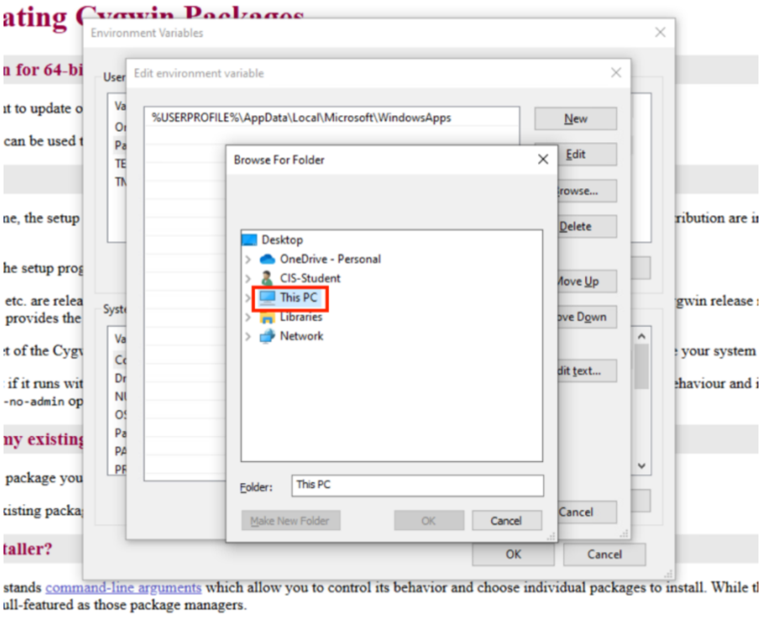
Variable	Value
ComSpec	C:\WINDOWS\system32\cmd.exe
DriverData	C:\Windows\System32\Drivers\DriverData
NUMBER_OF_PROCESSORS	2
OS	Windows_NT
Path	C:\WINDOWS\system32;C:\WINDOWS;C:\WINDOWS\System32\Wb...
PATHEXT	.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC
PROCESSOR_ARCHITECTURE	AMD64

Step 3: Click on **Browse** and navigate to the **/bin** folder within your newly installed Cygwin by following this sequence:



%USERPROFILE%\AppData\Local\Microsoft\WindowsApps

This PC

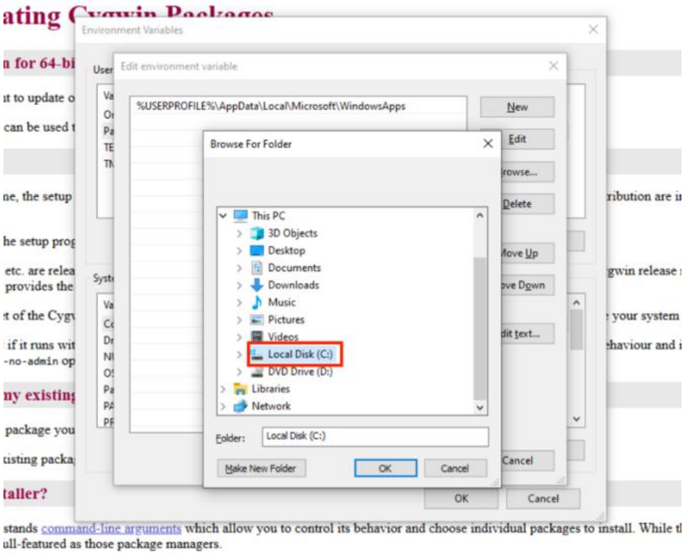


%USERPROFILE%\AppData\Local\Microsoft\WindowsApps

Folder: This PC

Your personal **C:** drive

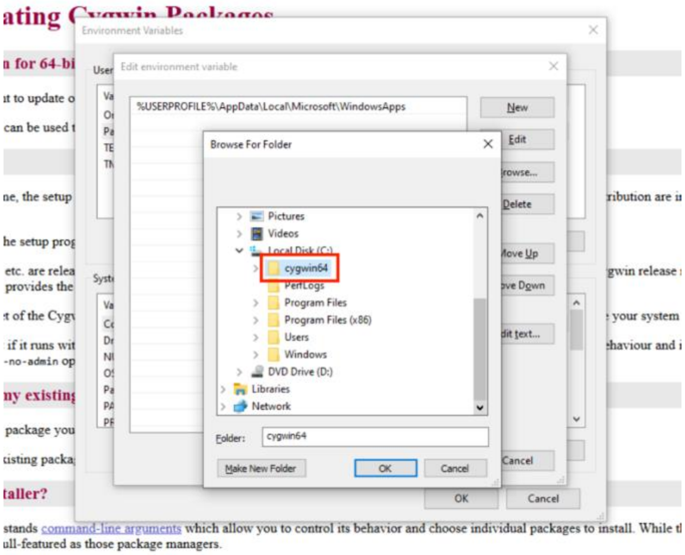
*the name may vary on your local computer but should still have the **C:** label*



%USERPROFILE%\AppData\Local\Microsoft\WindowsApps

Folder: Local Disk (C:)

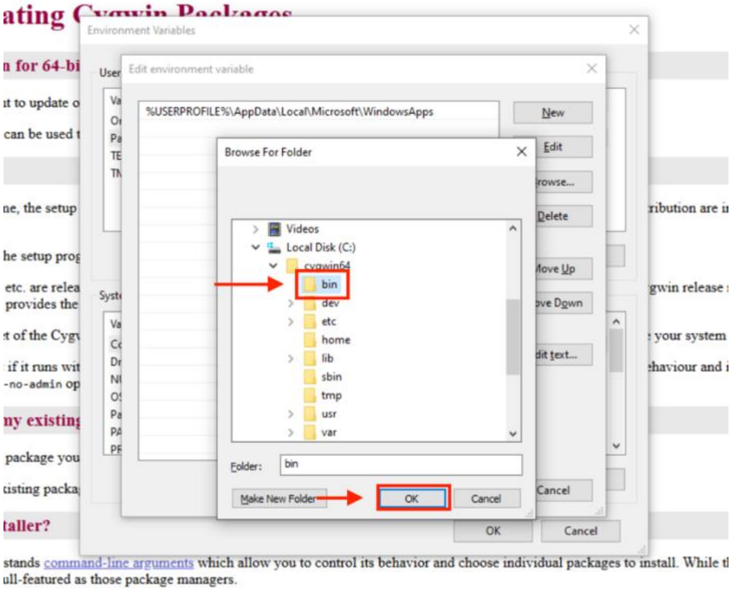
cygwin64



%USERPROFILE%\AppData\Local\Microsoft\WindowsApps

Folder: cygwin64

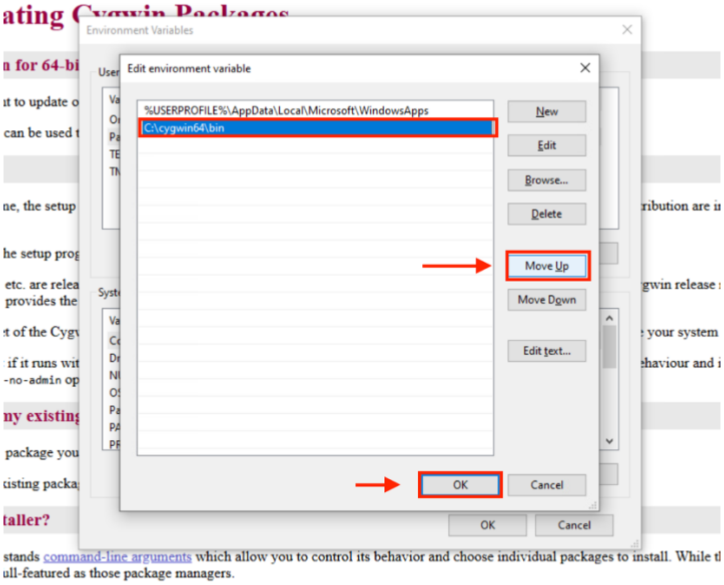
bin, then click **OK**



%USERPROFILE%\AppData\Local\Microsoft\WindowsApps

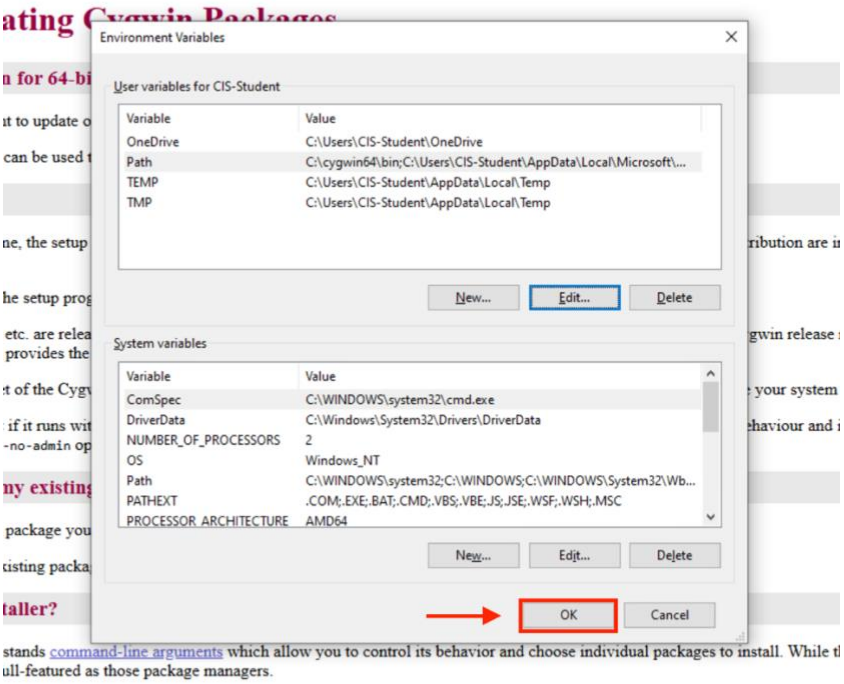
Folder: bin

Step 4: Select the new path then make sure you click **Move Up**. This is important as it prioritizes using this environment variable and ensures your computer uses cygwin as the default C++ compiler. Click **OK**.



%USERPROFILE%\AppData\Local\Microsoft\WindowsApps
C:\cygwin64\bin

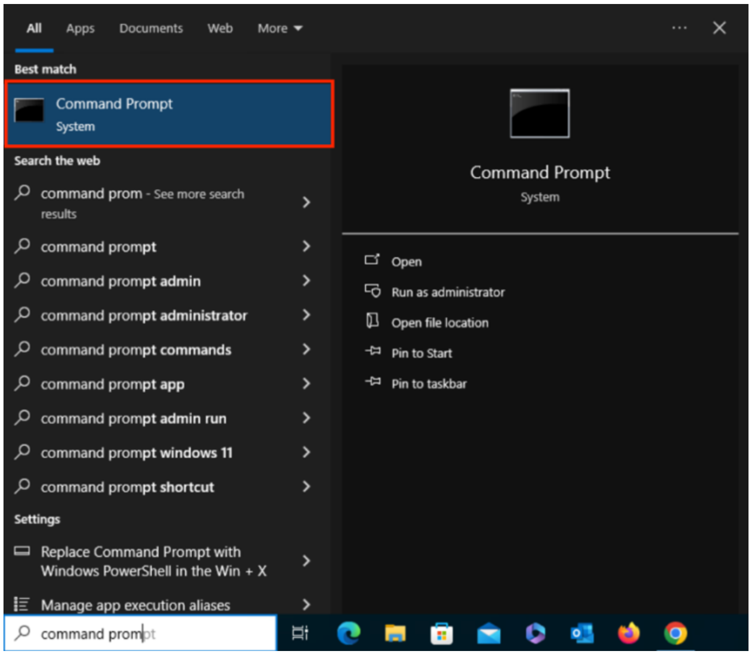
Step 5: Make sure to click ok to confirm and save your new Environment Variable.



Variable	Value
OneDrive	C:\Users\CIS-Student\OneDrive
Path	C:\cygwin64\bin;C:\Users\CIS-Student\AppData\Local\Microsoft\...
TEMP	C:\Users\CIS-Student\AppData\Local\Temp
TMP	C:\Users\CIS-Student\AppData\Local\Temp

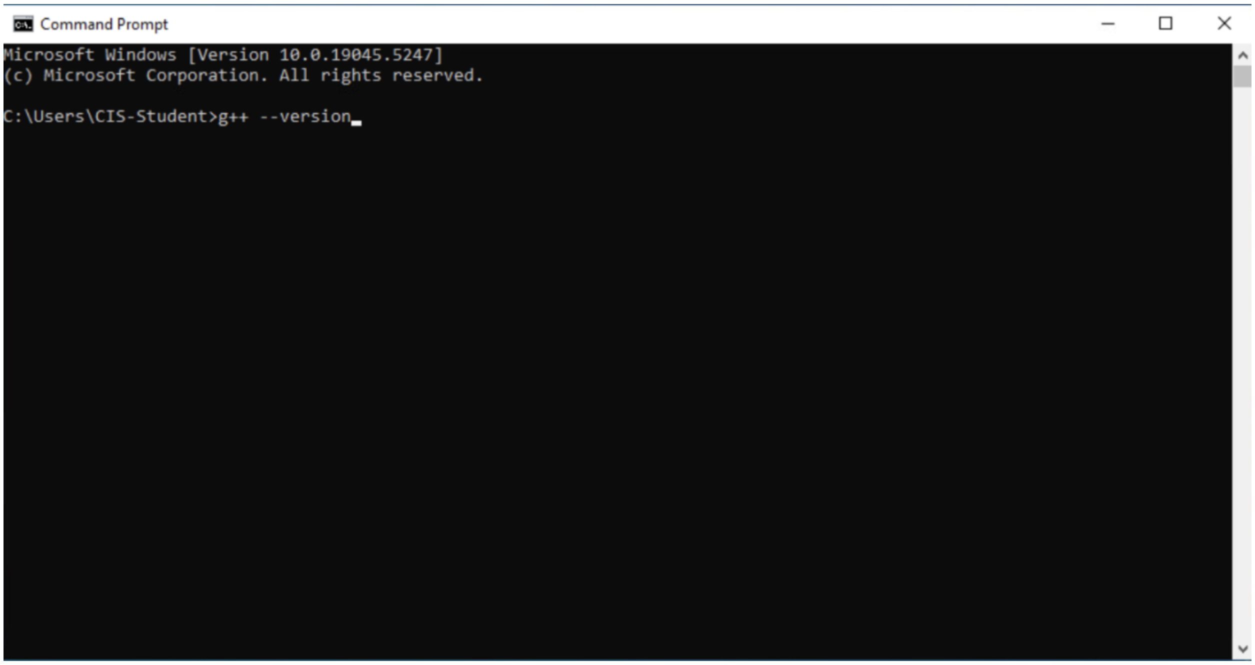
Variable	Value
ComSpec	C:\WINDOWS\system32\cmd.exe
DriverData	C:\Windows\System32\Drivers\DriverData
NUMBER_OF_PROCESSORS	2
OS	Windows_NT
Path	C:\WINDOWS\system32;C:\WINDOWS;C:\WINDOWS\System32\Wb...
PATHEXT	.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC
PROCESSOR_ARCHITECTURE	AMD64

Step 6: In your search bar, type **command prompt** and open the program



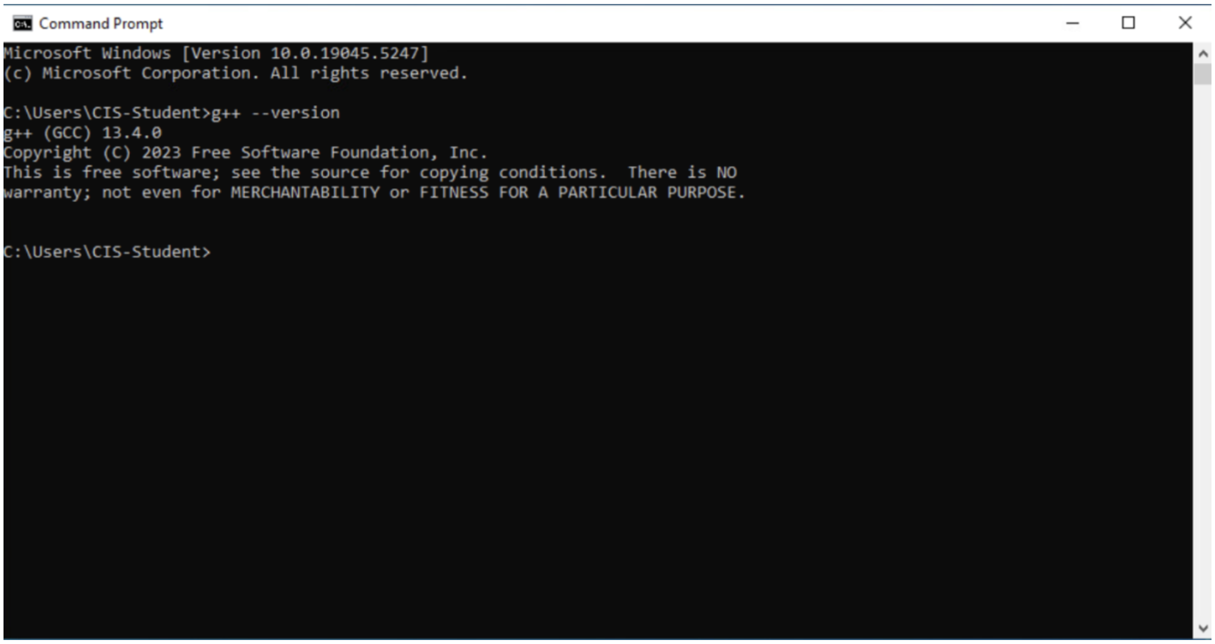
Step 7: Within the command prompt, type:

```
g++ --version
```



```
Microsoft Windows [Version 10.0.19045.5247]
(c) Microsoft Corporation. All rights reserved.

C:\Users\CIS-Student>g++ --version
```

This will then check to see if you have cygwin properly installed. If so, a g++ version should be displayed as follows:

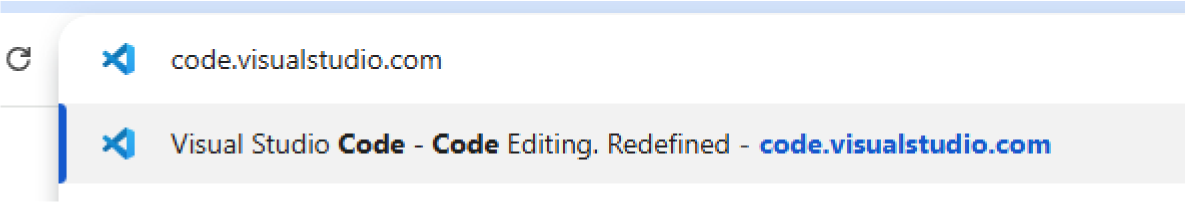


```
Microsoft Windows [Version 10.0.19045.5247]
(c) Microsoft Corporation. All rights reserved.

C:\Users\CIS-Student>g++ --version
g++ (GCC) 13.4.0
Copyright (C) 2023 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\CIS-Student>
```

Part 3: Installing the VS Code software on to your computer

Step 1: Go to the official Visual Studio Code (VS Code) website at:

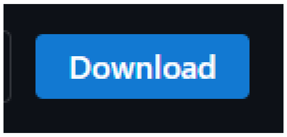
https://code.visualstudio.com/



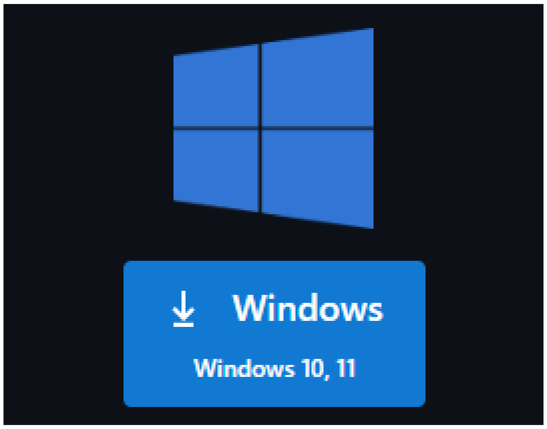
code.visualstudio.com

Visual Studio **Code** - **Code** Editing. Redefined - **code.visualstudio.com**

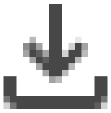
Step 2: Look for a download button to download the software. (As of Fall 2025 it is on the top right corner, but website layout may change over time.)



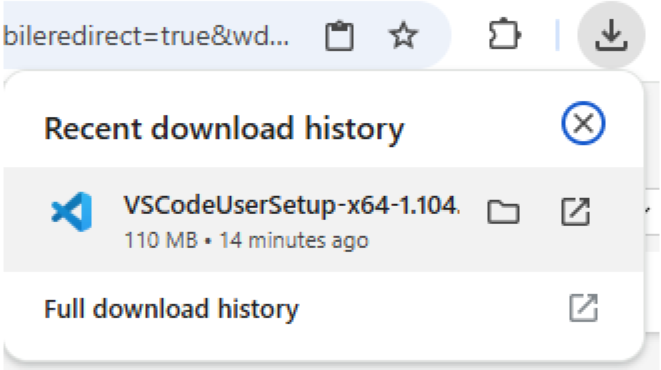
Step 3: Click on the Windows button for Windows 10/11 installation. (If you are on an Apple Computer, otherwise known as Mac, please refer to the Mac installation guide instead.)



Step 4: Then navigate to the top right of your browser, and there should be a button that looks like the following:



Click on this button and the following window should pop up:



bileredirect=true&wd...

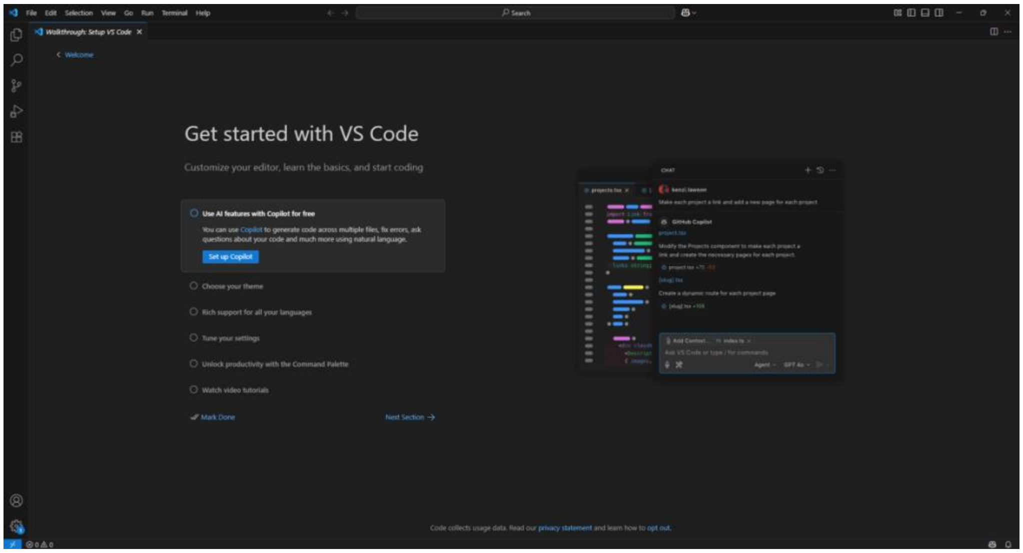
Recent download history

VSCodeUserSetup-x64-1.104.

110 MB • 14 minutes ago

Full download history

Click on the VS Code User Setup and follow the prompts that follow to install VS Code on your computer. Once you finish the installation process, open the application and it should appear like this:



< Welcome

Get started with VS Code

Customize your editor, learn the basics, and start coding

○ Use AI features with Copilot for free

You can use Copilot to generate code across multiple files, fix errors, ask questions about your code and much more using natural language.

Set up Copilot

○ Choose your theme

○ Rich support for all your languages

○ Tune your settings

○ Unlock productivity with the Command Palette

○ Watch video tutorials

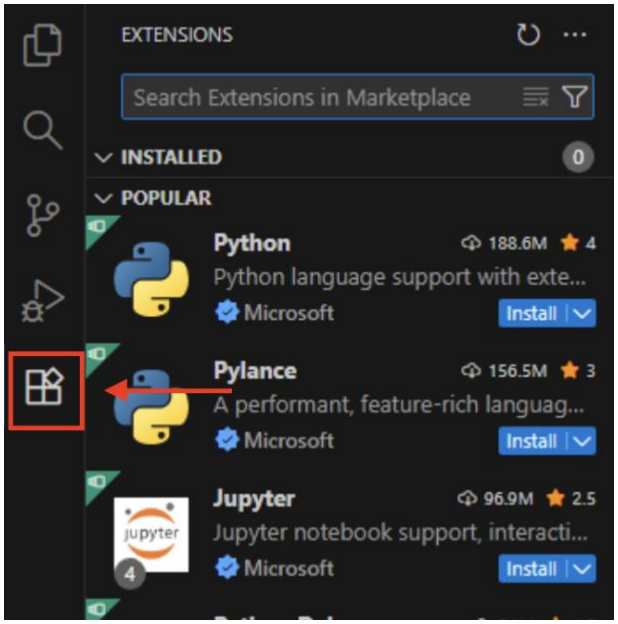
✓ Mark Done

Next Section →

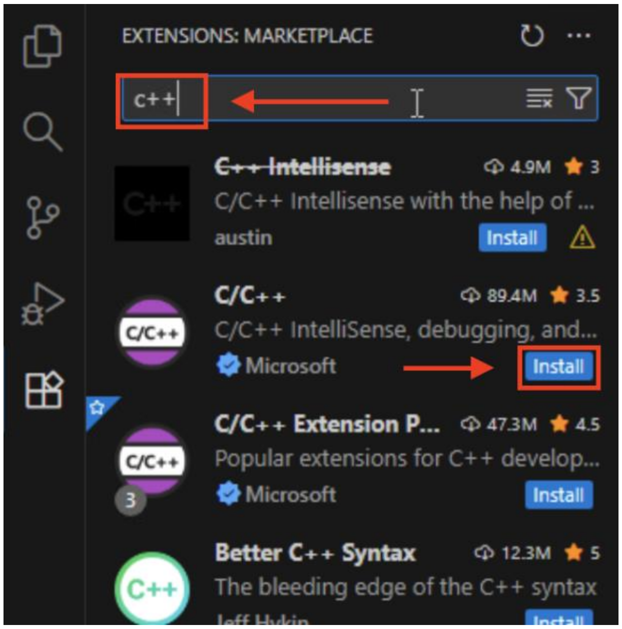
Code collects usage data. Read our privacy statement and learn how to opt out.

Be very careful to perform the following steps concisely, as if you exit out of the C++ extension's compiler configuration, you must restart the process.

Step 5: Navigate to the extensions tab in your VS Code application by looking for the building blocks icon as shown below.

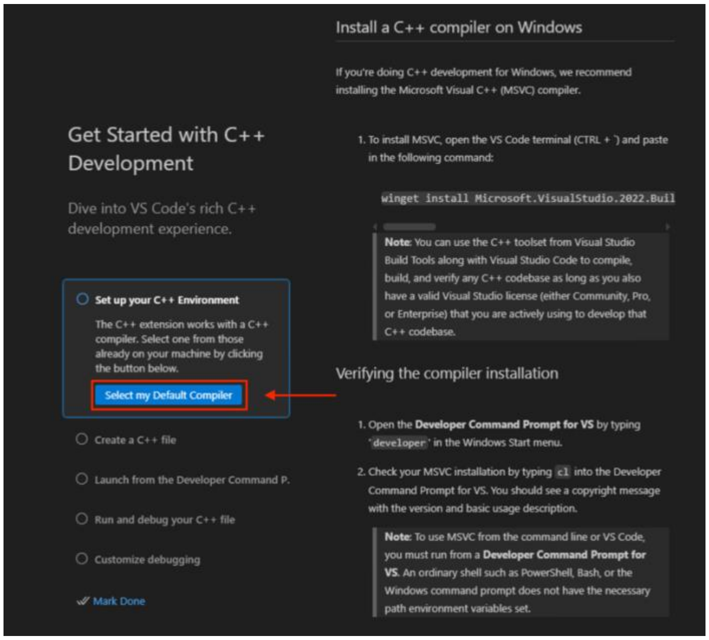

EXTENSIONS
Search Extensions in Marketplace
INSTALLED 0
POPULAR
Python 188.6M 4
Python language support with exte...
Microsoft Install
Pylance 156.5M 3
A performant, feature-rich languag...
Microsoft Install
Jupyter 96.9M 2.5
Jupyter notebook support, interacti...
Microsoft Install

Type C++ in the search box, then install the standard C/C++ extension published by Microsoft.


EXTENSIONS: MARKETPLACE
c++
~~C++ Intellisense~~ 4.9M 3
C/C++ Intellisense with the help of ...
austin Install
C/C++ 89.4M 3.5
C/C++ IntelliSense, debugging, and...
Microsoft Install
C/C++ Extension P... 47.3M 4.5
Popular extensions for C++ develop...
Microsoft Install
Better C++ Syntax 12.3M 5
The bleeding edge of the C++ syntax

Step 6: When you finish installing the C++ extension, this module should pop up. **Be careful not to navigate away from this module as you will have to re-start the VS Code installation.**

Click on "Select my Default Compiler" within the module, and there should be a dropdown menu that opens at the very top of the application.



Get Started with C++ Development

Dive into VS Code's rich C++ development experience.

○ **Set up your C++ Environment**

The C++ extension works with a C++ compiler. Select one from those already on your machine by clicking the button below.

○ Create a C++ file

○ Launch from the Developer Command P.

○ Run and debug your C++ file

○ Customize debugging

✓ Mark Done

Install a C++ compiler on Windows

If you're doing C++ development for Windows, we recommend installing the Microsoft Visual C++ (MSVC) compiler.

1. To install MSVC, open the VS Code terminal (CTRL + `) and paste in the following command:

```
winget install Microsoft.VisualStudio.2022.Buil
```

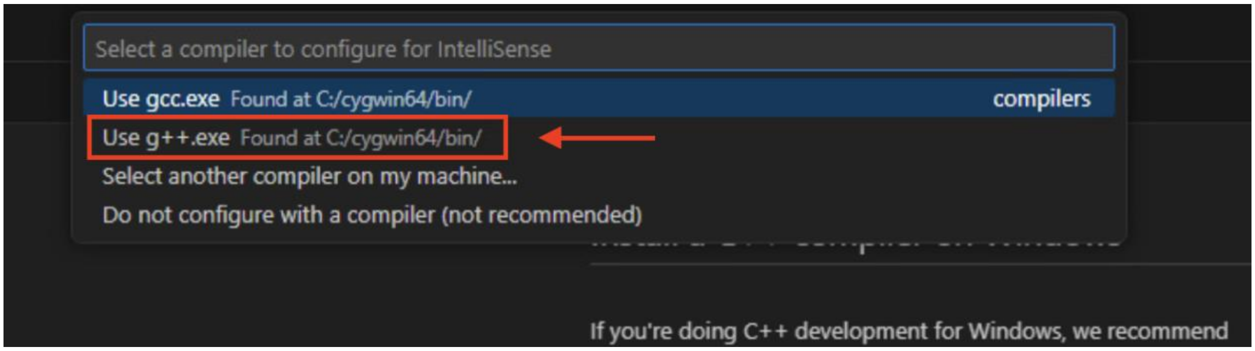
> **Note:** You can use the C++ toolset from Visual Studio Build Tools along with Visual Studio Code to compile, build, and verify any C++ codebase as long as you also have a valid Visual Studio license (either Community, Pro, or Enterprise) that you are actively using to develop that C++ codebase.

Verifying the compiler installation

1. Open the **Developer Command Prompt for VS** by typing '`developer`' in the Windows Start menu.
2. Check your MSVC installation by typing `cl` into the Developer Command Prompt for VS. You should see a copyright message with the version and basic usage description.

> **Note:** To use MSVC from the command line or VS Code, you must run from a **Developer Command Prompt for VS**. An ordinary shell such as PowerShell, Bash, or the Windows command prompt does not have the necessary path environment variables set.

Select "Use g++.exe Found at C:/cygwin64/bin/"



Select a compiler to configure for IntelliSense

Use gcc.exe Found at C:/cygwin64/bin/ compilers

Use g++.exe Found at C:/cygwin64/bin/

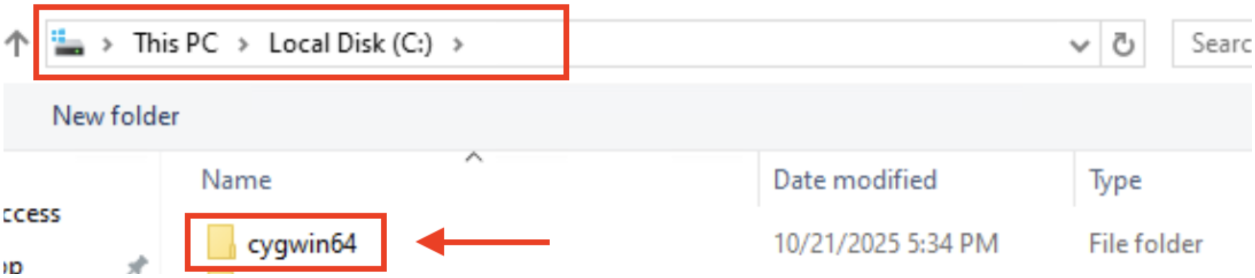
Select another compiler on my machine...

Do not configure with a compiler (not recommended)

If you're doing C++ development for Windows, we recommend

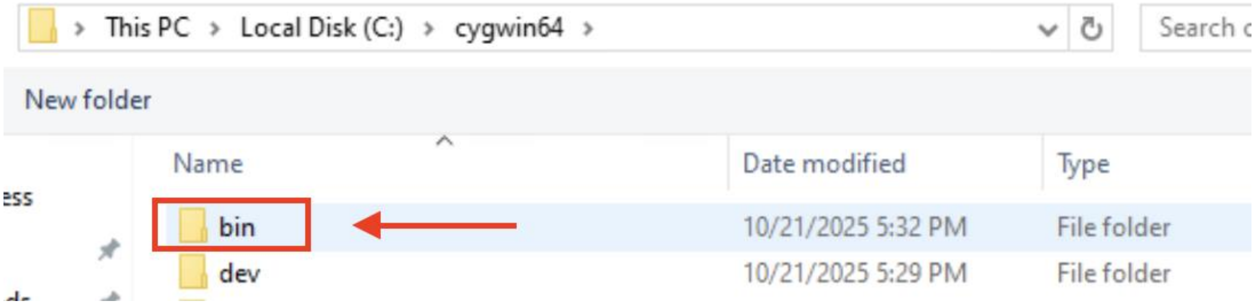
Step 7: A file explorer should then pop up, and you must navigate to the g++ .exe file using the file path listed above and as shown below:

The sequence usually starts at: **This PC, then C:, then cygwin64**



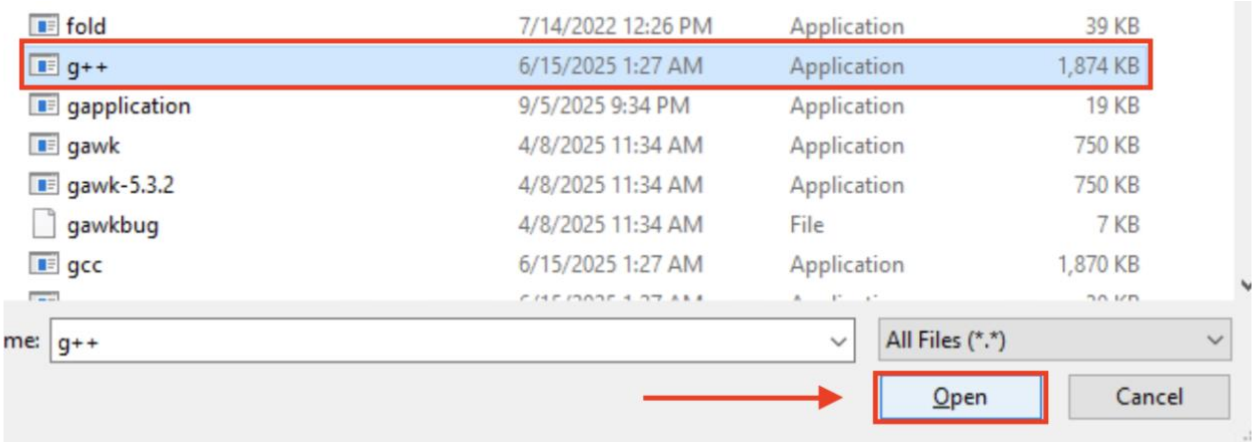
Name	Date modified	Type
cygwin64	10/21/2025 5:34 PM	File folder

Then open **bin.**



Name	Date modified	Type
bin	10/21/2025 5:32 PM	File folder
dev	10/21/2025 5:29 PM	File folder

Finally search for **g++** and double click it or select **g++** and click **Open.**

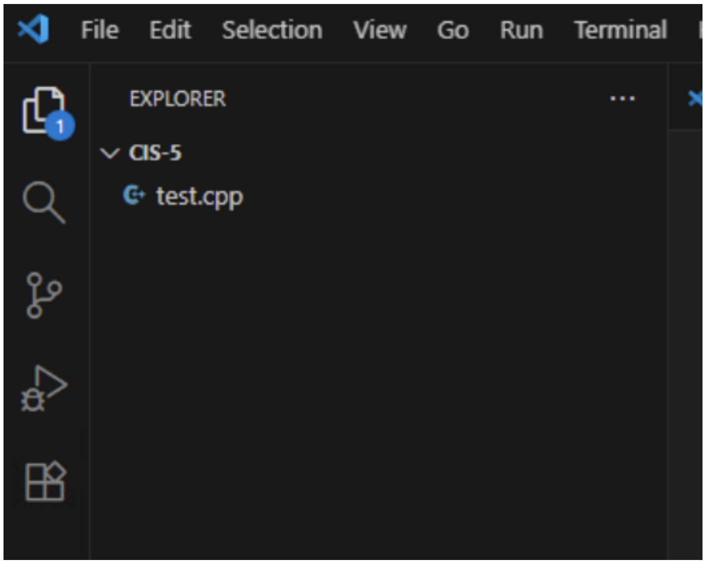


fold	7/14/2022 12:26 PM	Application	39 KB
g++	6/15/2025 1:27 AM	Application	1,874 KB
gapplication	9/5/2025 9:34 PM	Application	19 KB
gawk	4/8/2025 11:34 AM	Application	750 KB
gawk-5.3.2	4/8/2025 11:34 AM	Application	750 KB
gawkbug	4/8/2025 11:34 AM	File	7 KB
gcc	6/15/2025 1:27 AM	Application	1,870 KB

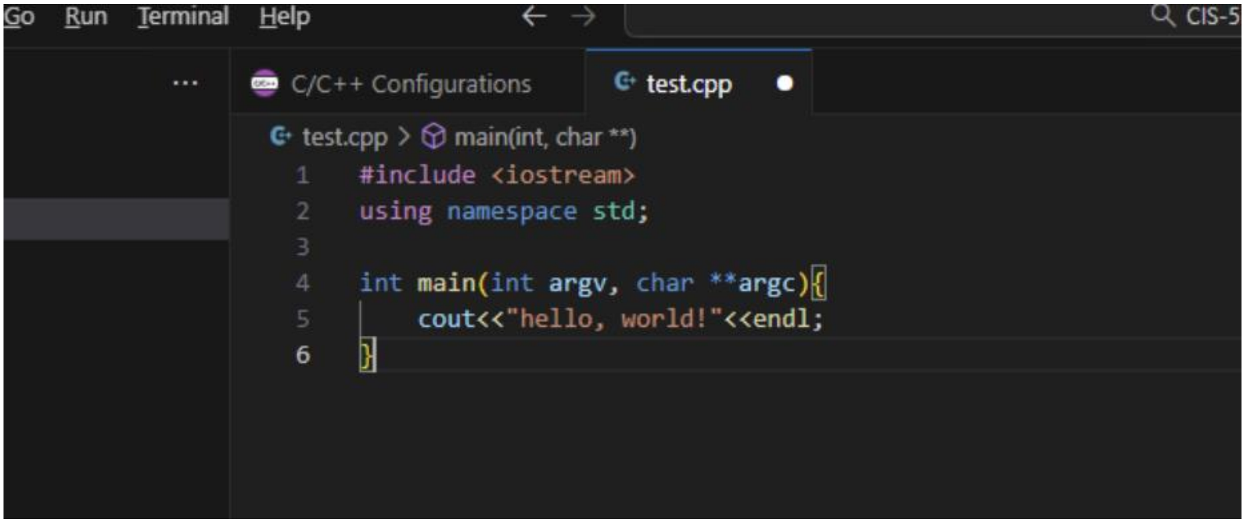
me: g++

Part 4: Testing Your New Environment

Step 1: Create a file called test.cpp in a folder on your computer and open the folder through VS Code. (It's a good idea to create a folder for your class!)

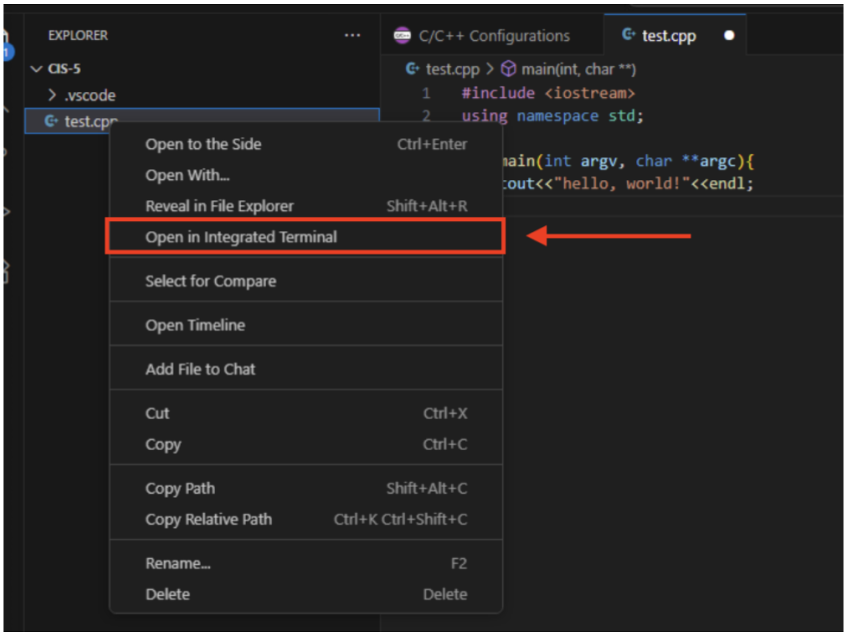


Step 2: Type the following code snippet inside of your test file:



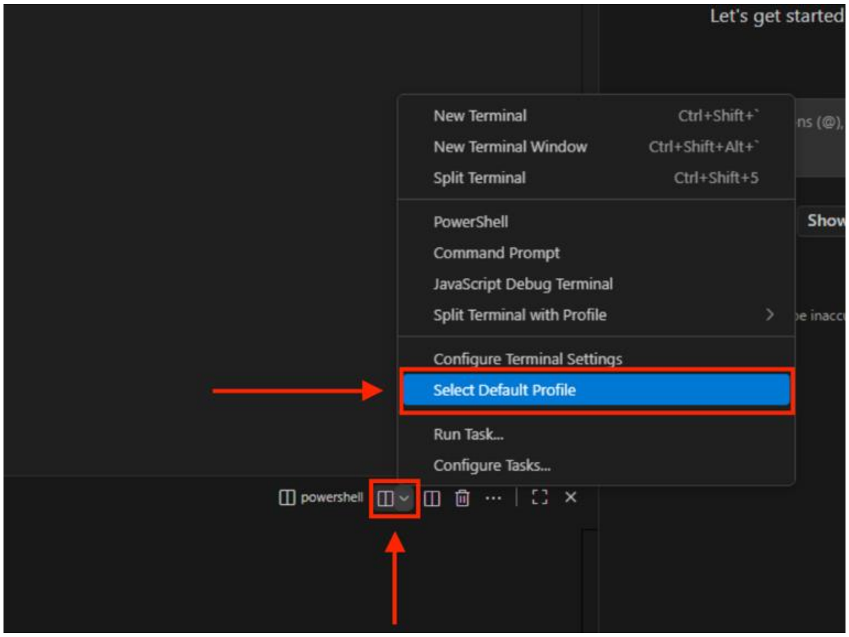
```
#include <iostream>
using namespace std;

int main(int argv, char **argc){
    cout<<"hello, world!"<<endl;
}
```

Step 3: Make sure to save your file, then within the file explorer segment to the left of the VS Code application, right click the **test.cpp** file and click on **Open in Integrated Terminal.** This should open a terminal window at the bottom of your VS Code application.



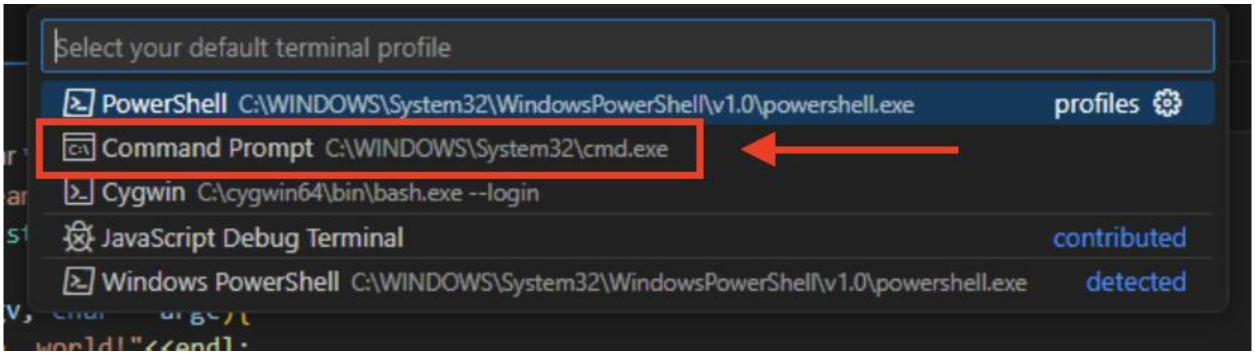
```
#include <iostream>
using namespace std;

ain(int argv, char **argc){
out<<"hello, world!"<<endl;
```

Step 4: Navigate to the terminal dropdown menu, then click on **Select Default Profile.**



Let's get started
New Terminal Ctrl+Shift+`
New Terminal Window Ctrl+Shift+Alt+`
Split Terminal Ctrl+Shift+5
PowerShell
Command Prompt
JavaScript Debug Terminal
Split Terminal with Profile
Configure Terminal Settings
Select Default Profile
Run Task...
Configure Tasks...
powershell
ns (@),
Show
e inacc

Step 5: A dropdown window should open at the very top asking which terminal profile you would like to use. Select **Command Prompt** as the default profile.



Select your default terminal profile

PowerShell C:\WINDOWS\System32\WindowsPowerShell\v1.0\powershell.exe profiles

Command Prompt C:\WINDOWS\System32\cmd.exe

Cygwin C:\cygwin64\bin\bash.exe --login

JavaScript Debug Terminal contributed

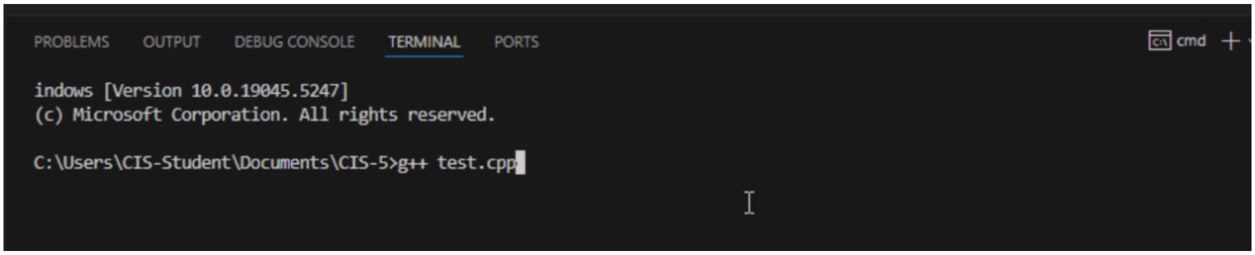
Windows PowerShell C:\WINDOWS\System32\WindowsPowerShell\v1.0\powershell.exe detected

Step 6: Restart VS Code.

Step 7: Open another integrated terminal using the steps listed above, then type:

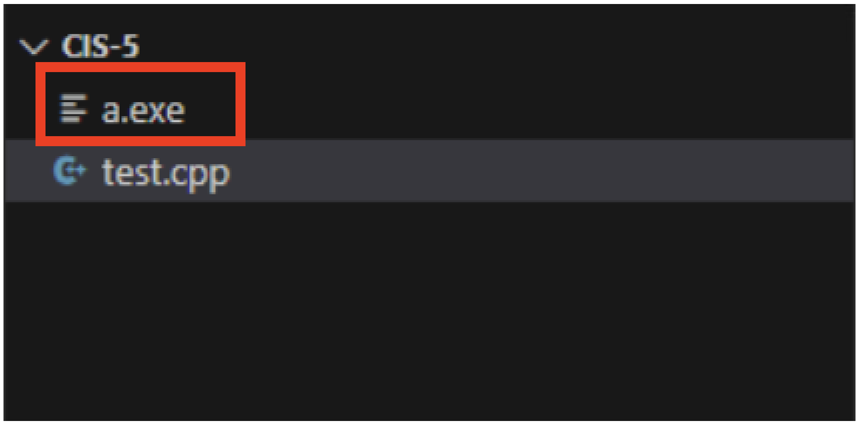
```
g++ test.cpp
```

Note: This process is how you will be compiling and running your programs.

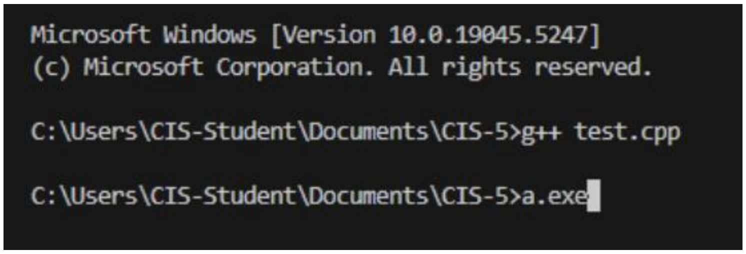


```
indows [Version 10.0.19045.5247]
(c) Microsoft Corporation. All rights reserved.

C:\Users\CIS-Student\Documents\CIS-5>g++ test.cpp
```

This should create a file in your folder titled a.exe, which is the default named .exe file which you can rename if you would like.

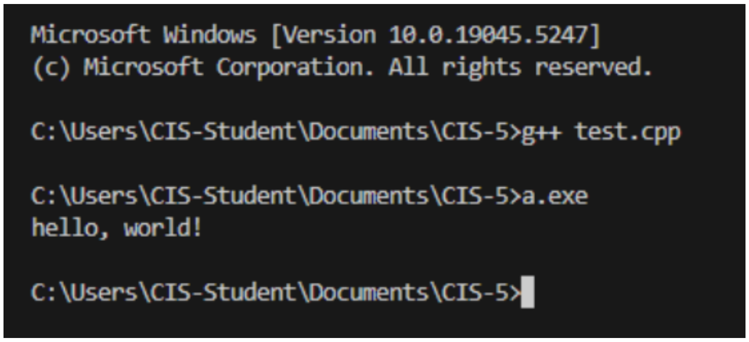


Step 8: Within your terminal, type **a.exe**.
(Or whatever name you've renamed your program to)



```
Microsoft Windows [Version 10.0.19045.5247]
(c) Microsoft Corporation. All rights reserved.

C:\Users\CIS-Student\Documents\CIS-5>g++ test.cpp

C:\Users\CIS-Student\Documents\CIS-5>a.exe
```

Step 9: If you've properly followed all the steps, your terminal should say **"hello, world!"**



```
Microsoft Windows [Version 10.0.19045.5247]
(c) Microsoft Corporation. All rights reserved.

C:\Users\CIS-Student\Documents\CIS-5>g++ test.cpp

C:\Users\CIS-Student\Documents\CIS-5>a.exe
hello, world!

C:\Users\CIS-Student\Documents\CIS-5>
```