

Configuration of Visual Studio Code for C programming on Windows.

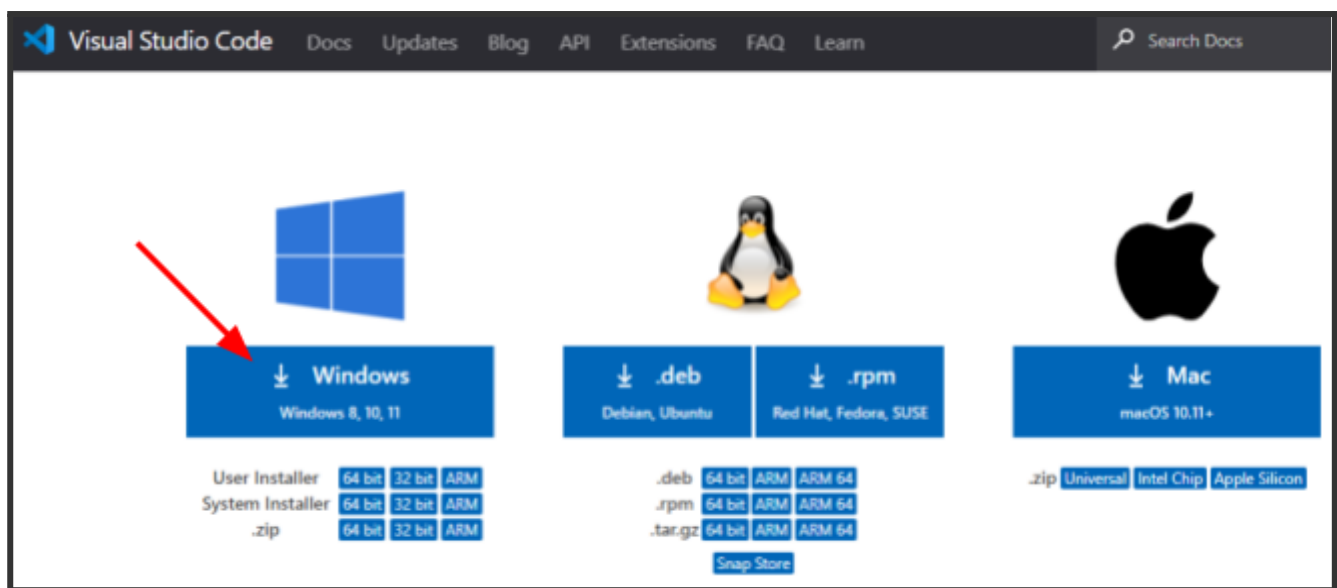
Visual Studio Code:

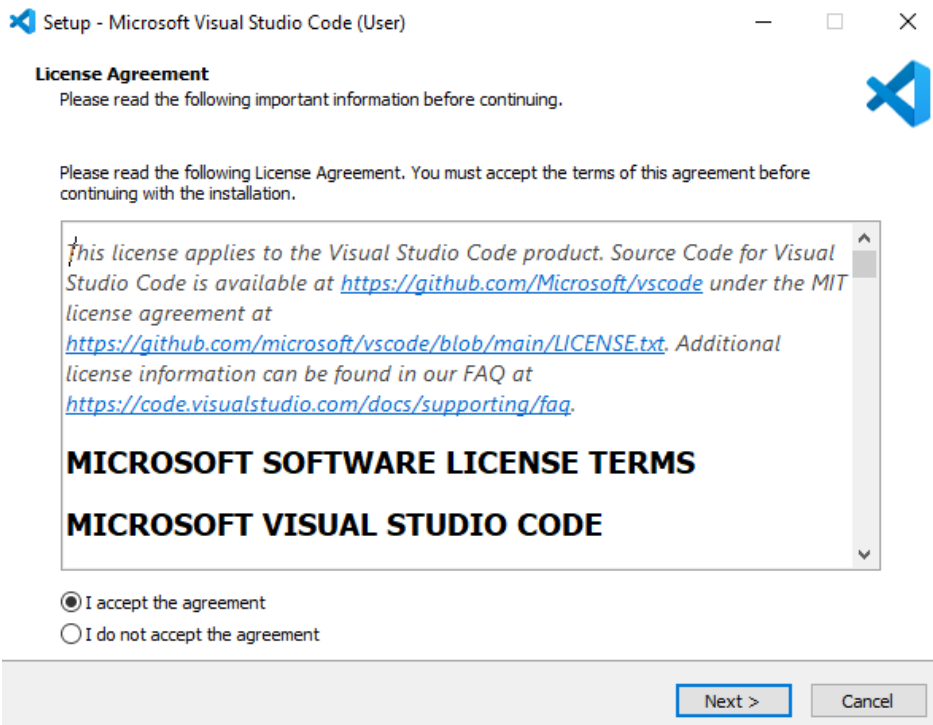
A visual studio code is a lightweight software application with a powerful source code editor that runs on the desktop. It is a free source code editor developed by Microsoft for Windows, Mac OS and Linux. It is a software editor that has a rich extension of various languages like C++, C+, C, Java, Python, PHP, Go, etc. It is easy to edit, build, syntax highlighting, snippets, code refactoring and debugging. In visual studio code, we can change the application's background theme, keyboard shortcuts set on our preferences, install an extension and add additional functionality.

Step 1:

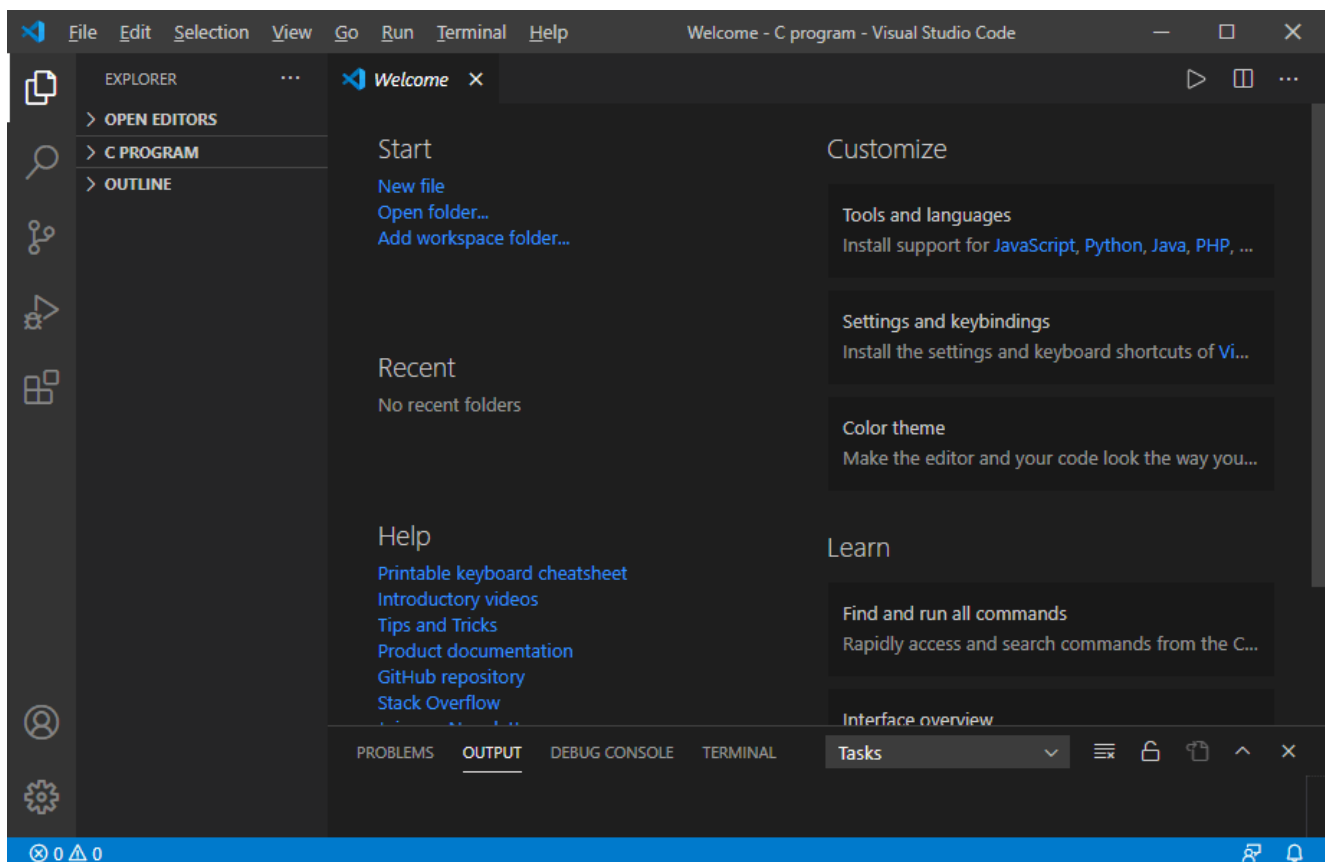
Download and Install Visual Studio Code Editor from the following link.

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





We have already installed the Visual Studio Code in our system. The user interface of VS code look like the following:

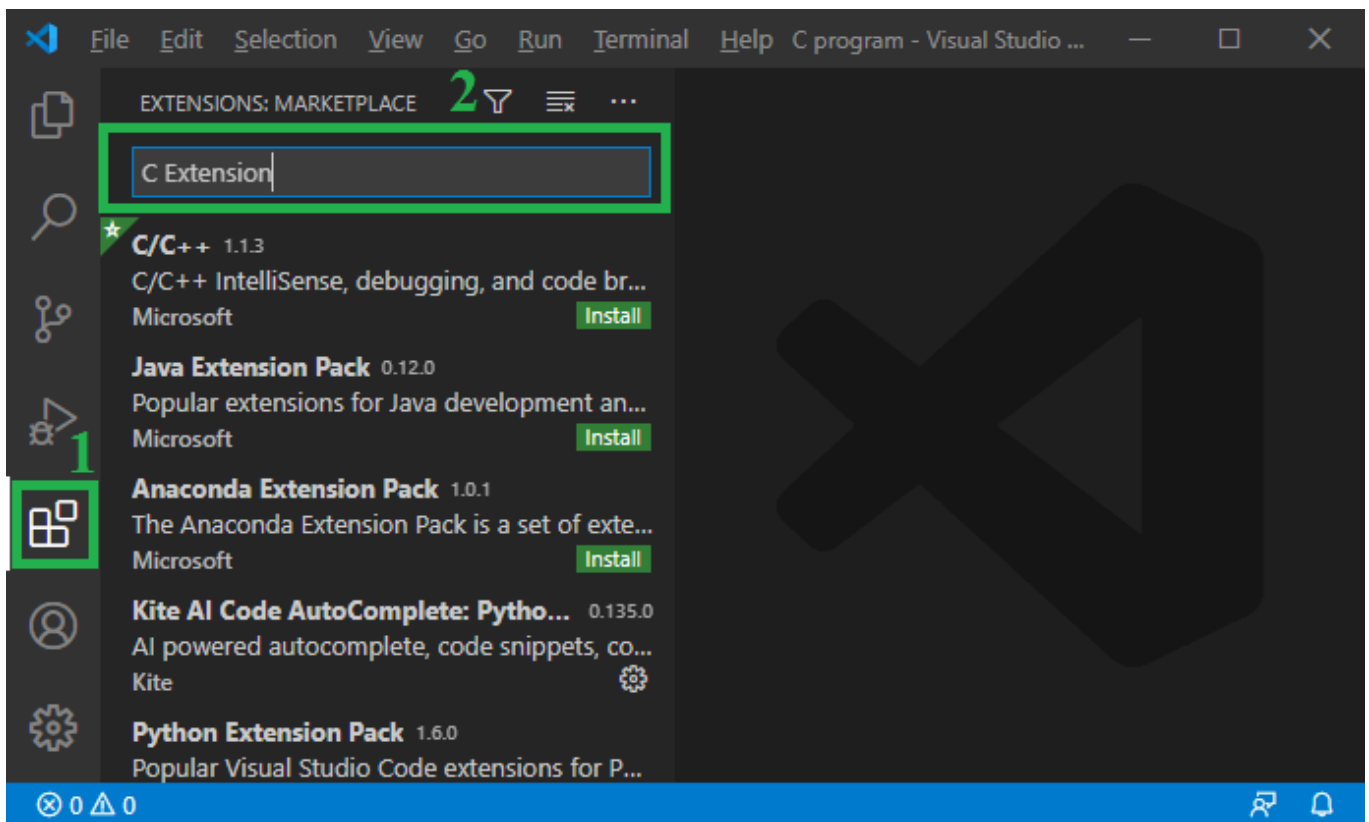


Step 2:

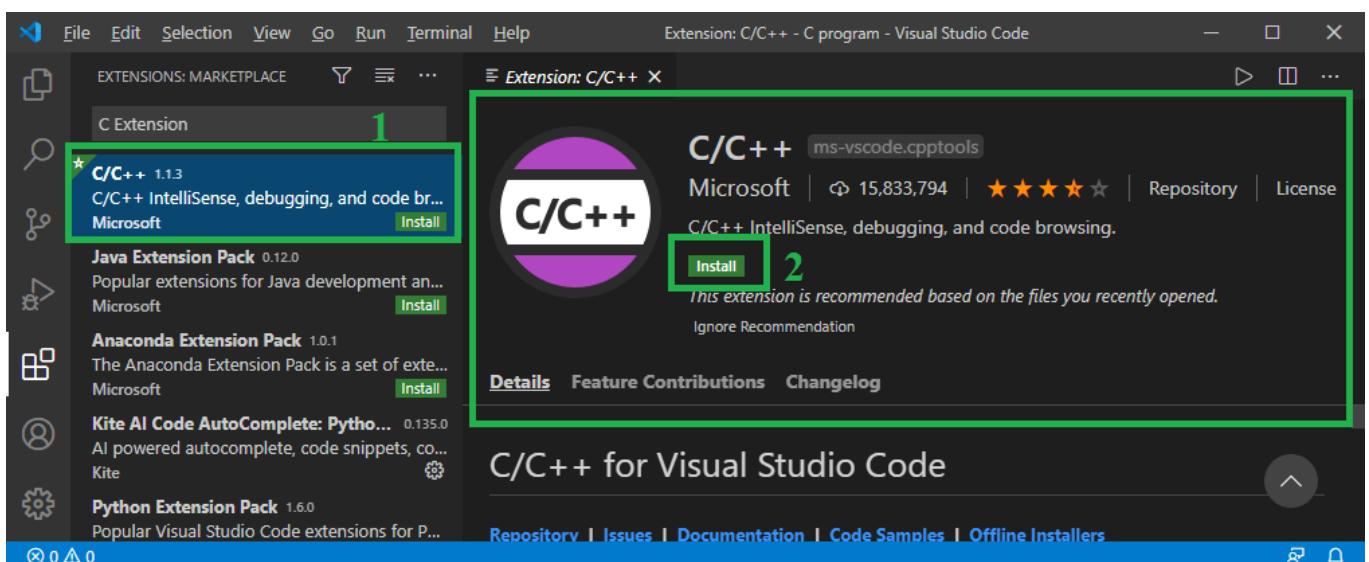
Download & Install the C/C++ Extension

1. Download the C/C++ Extension. It is an extension provided by Microsoft that support visual studio code. It helps in IntelliSense, debugging and code browsing of the programming code in the visual studio.

We need to click on the extension button that displays a sidebar for downloading and installing the C/C++ extension in the visual studio code. In the sidebar, type C Extension.

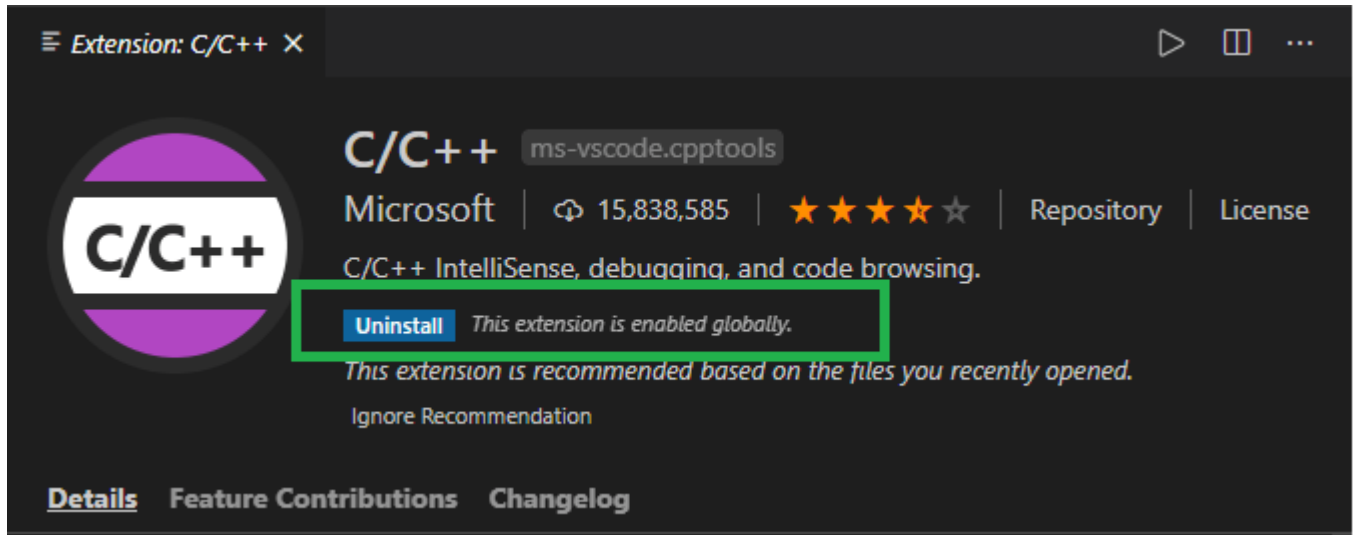


2. After that, click on the C/C++



In this image, click on the Install button to install the C/C++ extension.

3. After clicking the Install button, it shows the below image.



In this image, we can see it shows the Uninstall button that means the C/C++ extension has been successfully downloaded in the visual studio code.

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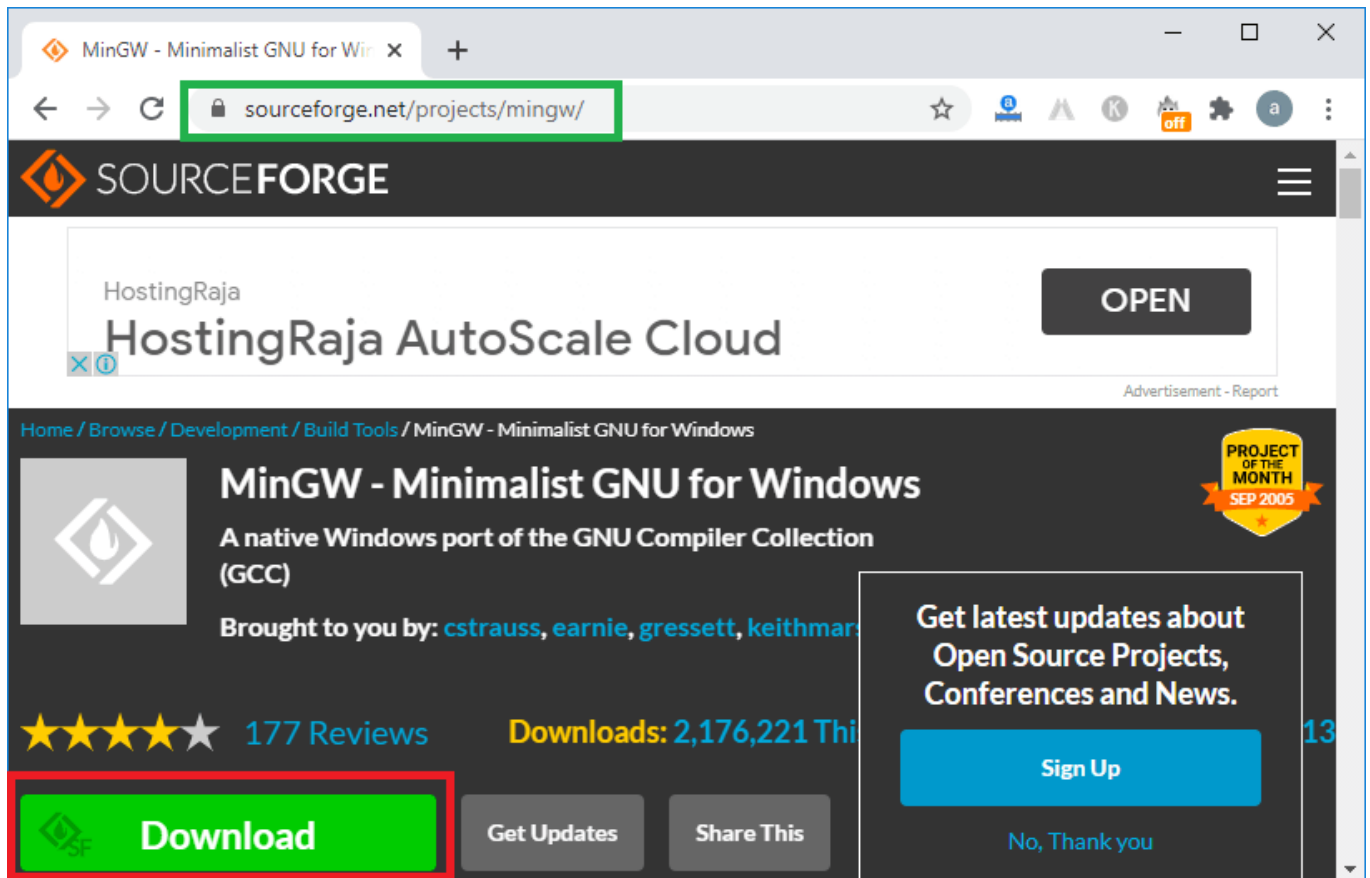
Step 3:

Download and Install Compiler Extension

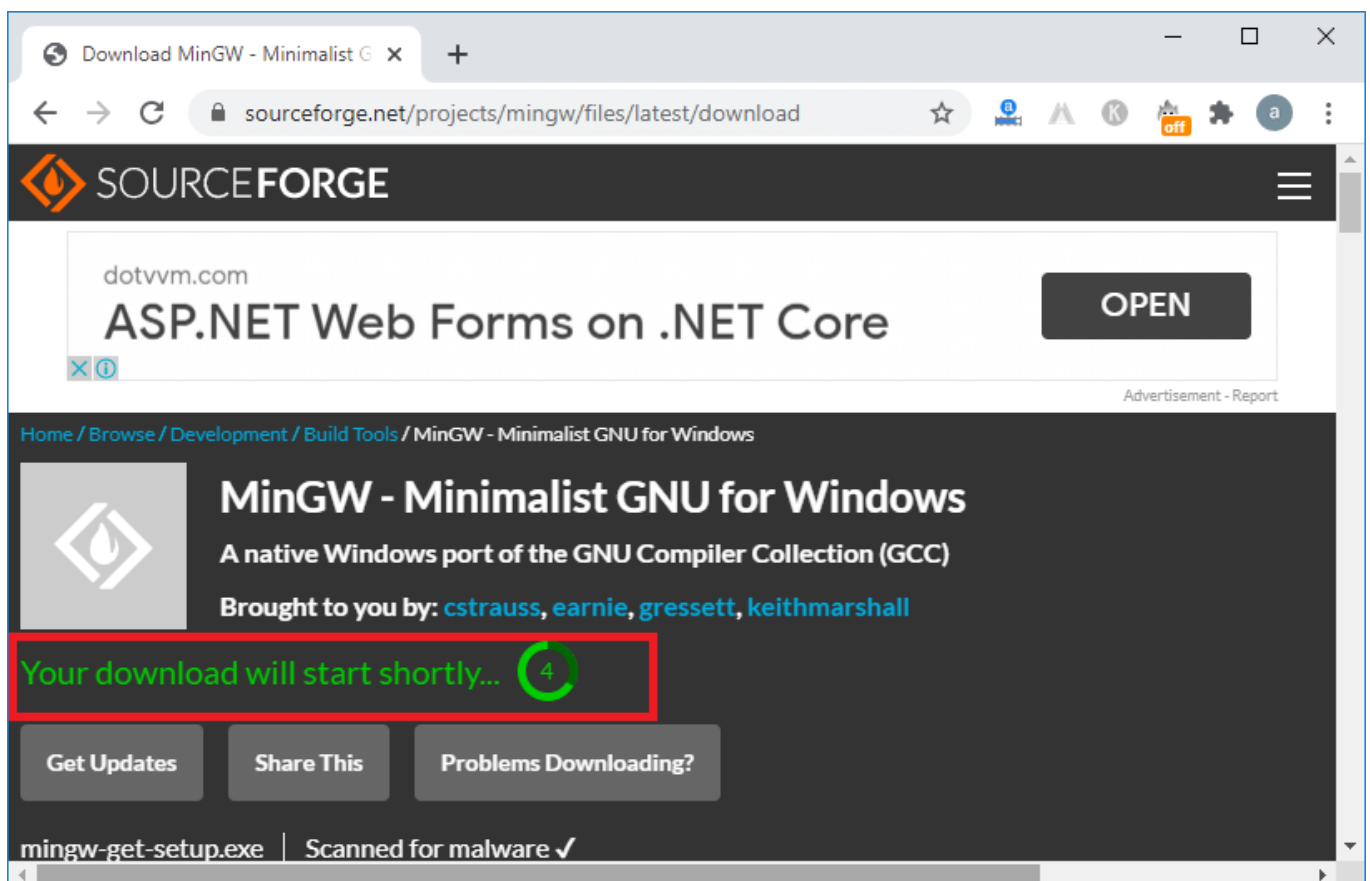
A MinGW is an advanced GCC compiler software used to compile and execute code. It is software that supports only the window operating system.

Download the MinGW-w64 Compiler

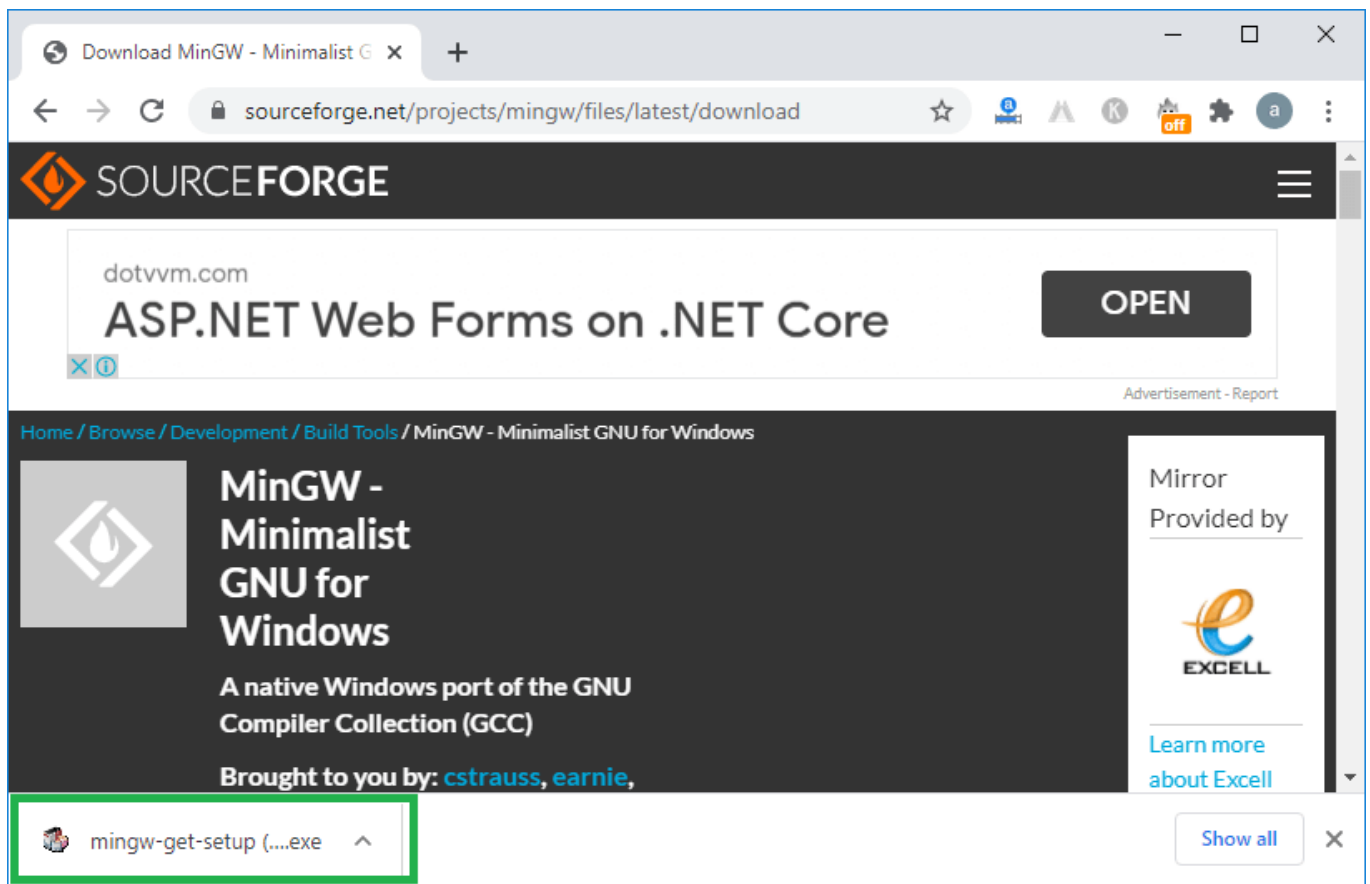
1. Go to the <https://sourceforge.net/projects/mingw> We land on the following page.



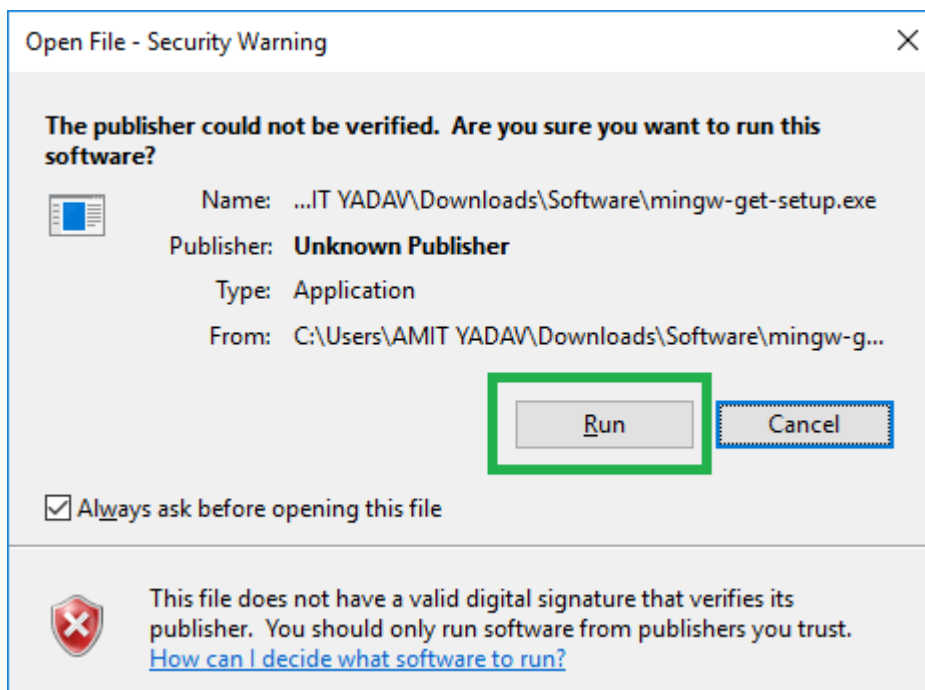
2. After that, click on the **Download** button, then it starts the downloading of the **MinGW GCC compiler**, as we can see in the below image.



3. **MinGW** software has been successfully downloaded into the system.

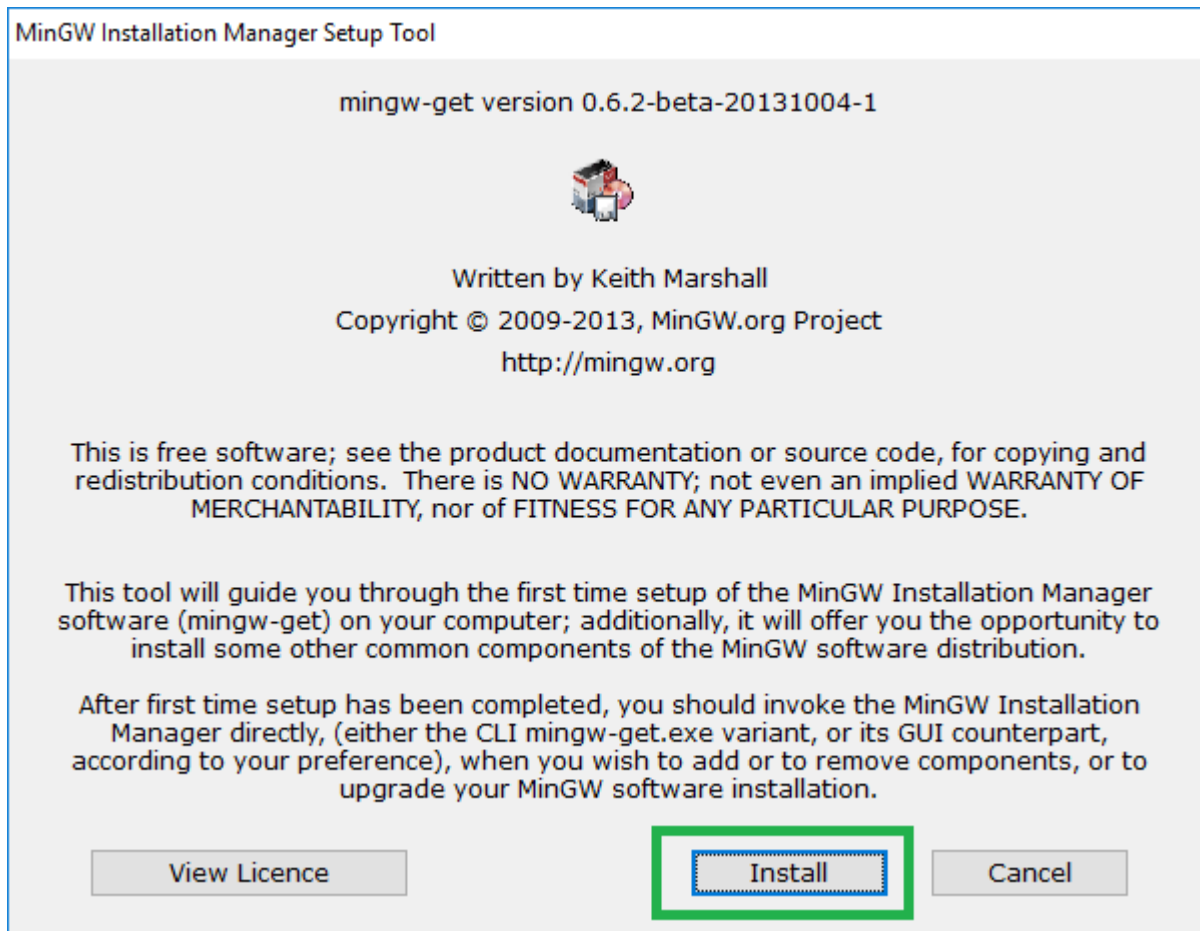


4. Now we double-click on the **MinGW** set up to install the compiler.



As we can see, it shows that it is a harmful file click on the **Run** button to proceed with installing the setup.

5. Click on the **Install**



6. Set it defaults, or we can change the storage location of the setup. After that, click on the **Continue**

mingw-get version 0.6.2-beta-20131004-1



Step 1: Specify Installation Preferences

Installation Directory

C:\MinGW

Change

If you elect to change this, you are advised to avoid any choice of directory which includes white space within the absolute representation of its path name.

User Interface Options

Both command line and graphical options are available. The command line interface is always supported; the alternative only if you choose the following option to ...

☒ ... also install support for the graphical user interface.

Program shortcuts for launching the graphical user interface should be installed ...

☒ ... just for me (the current user), or ... ☐ ... for all users * ...

☒ ... in the start menu, and/or ... ☒ ... on the desktop.

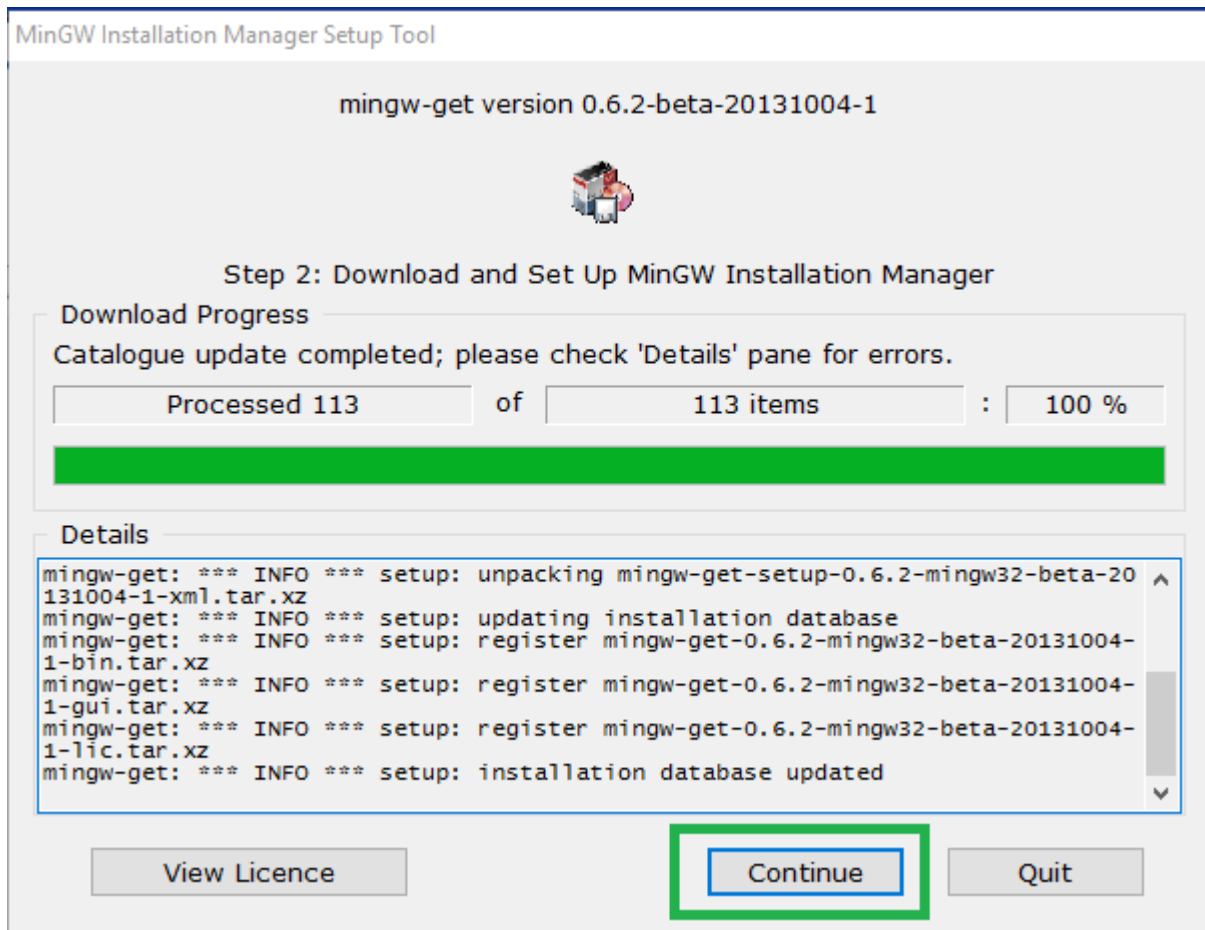
* selection of this option requires administrative privilege.

View Licence

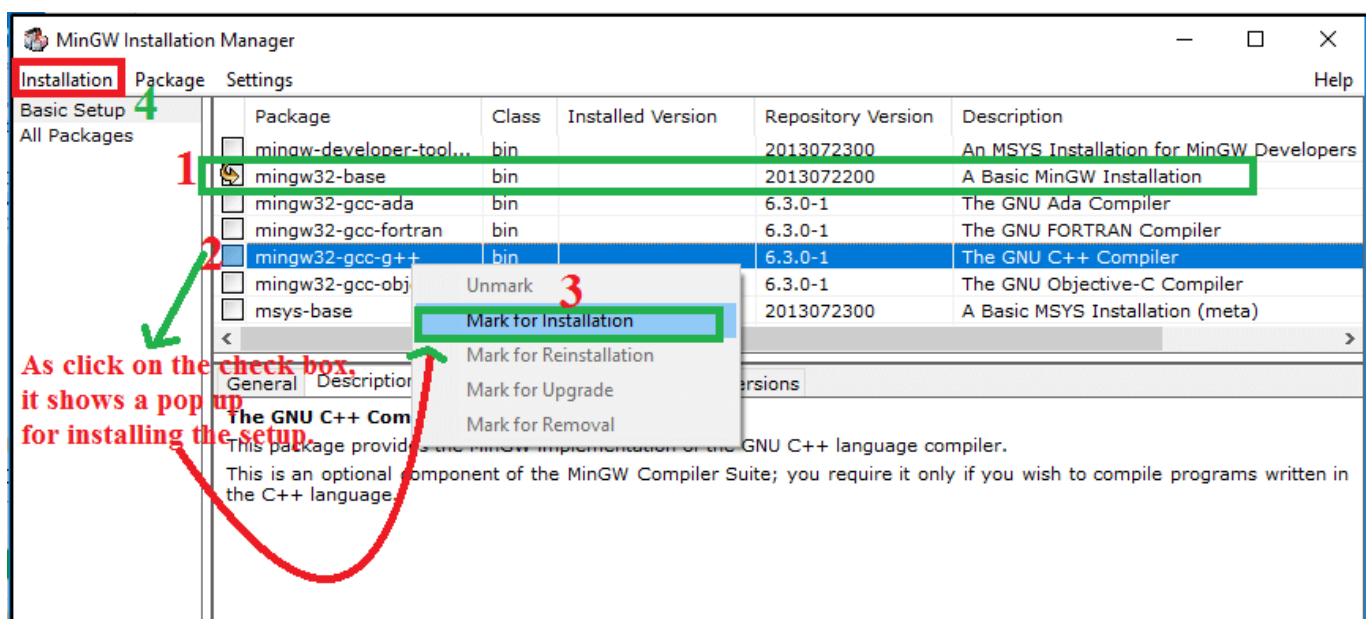
Continue

Cancel

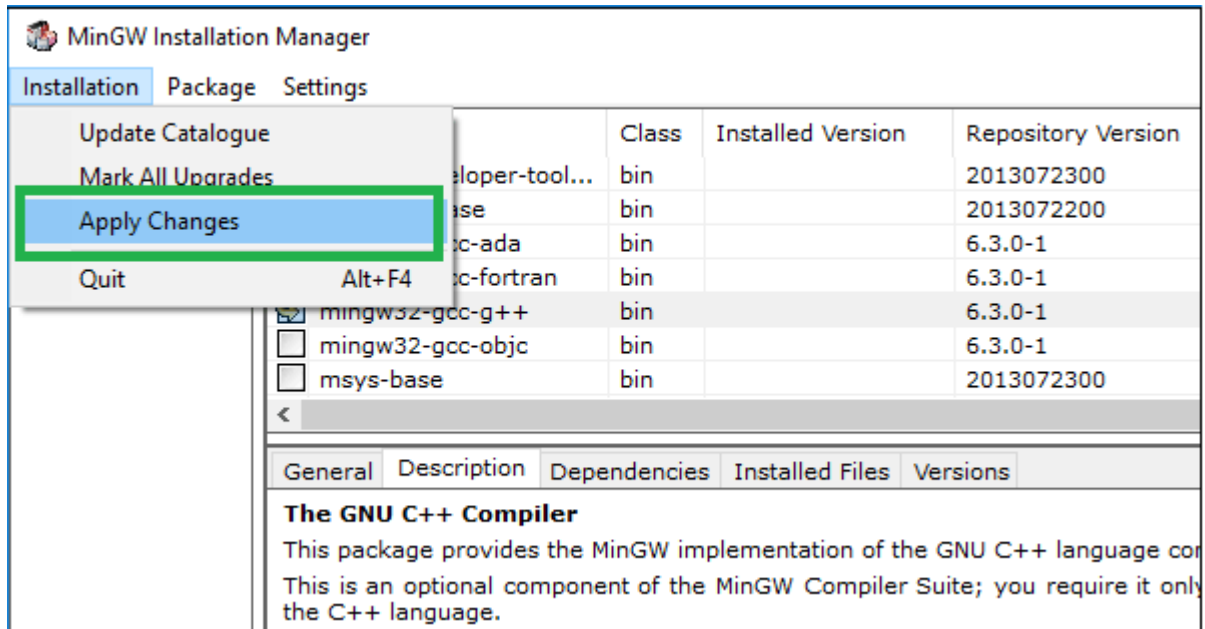
7. After clicking the continue button, it shows step 2 of **MinGW** Installation Manager.



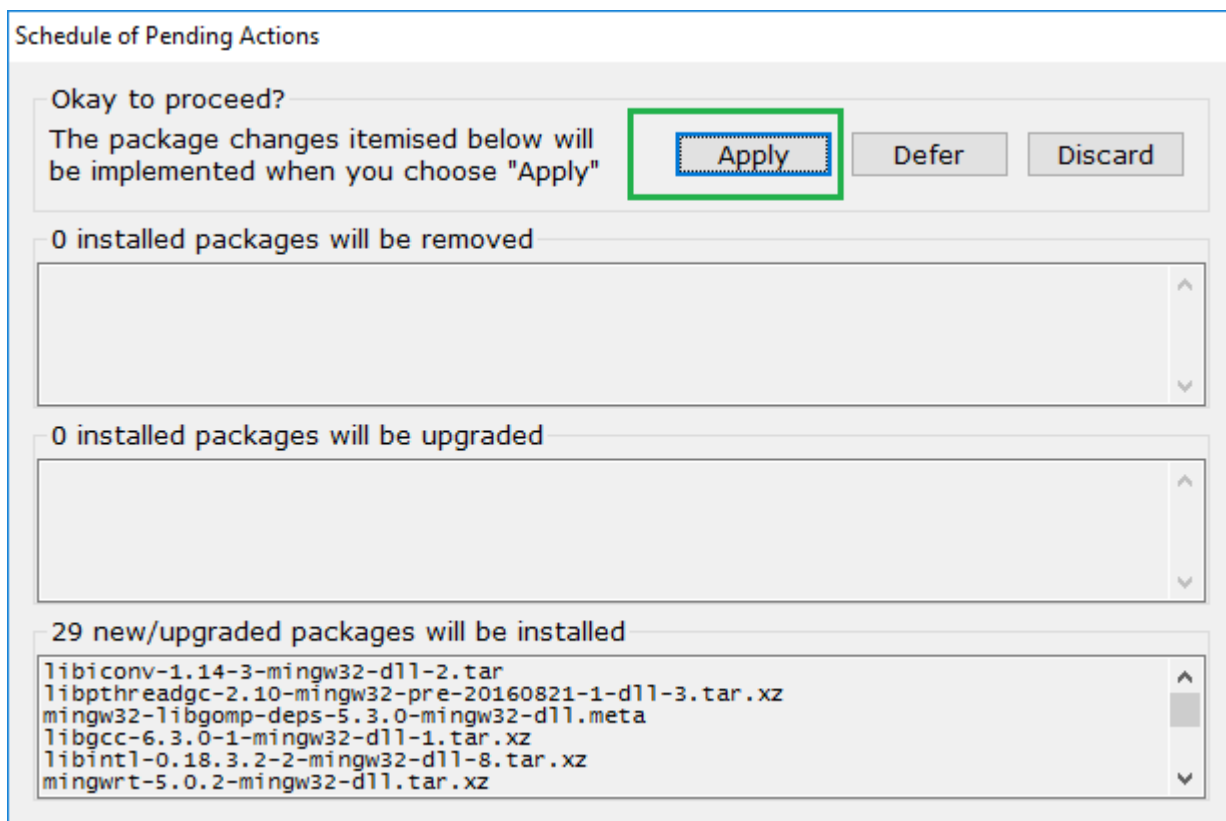
8. As we click on the **Continue**, it shows the below image. In the **MinGW Installation Manager**, we need to check the **Mingw32-base** package and **Ming32-gcc-g++** package to run and compile the C/ C++ program in the visual studio code editor.



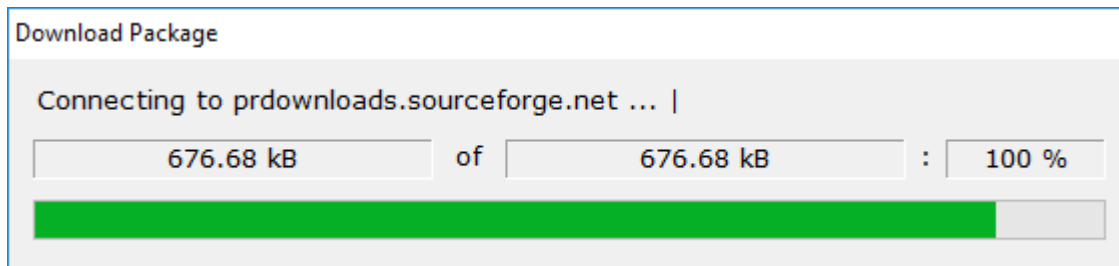
9. After selecting the checkbox, click on the **Installation** tab (at the top left corner of the dialog box).



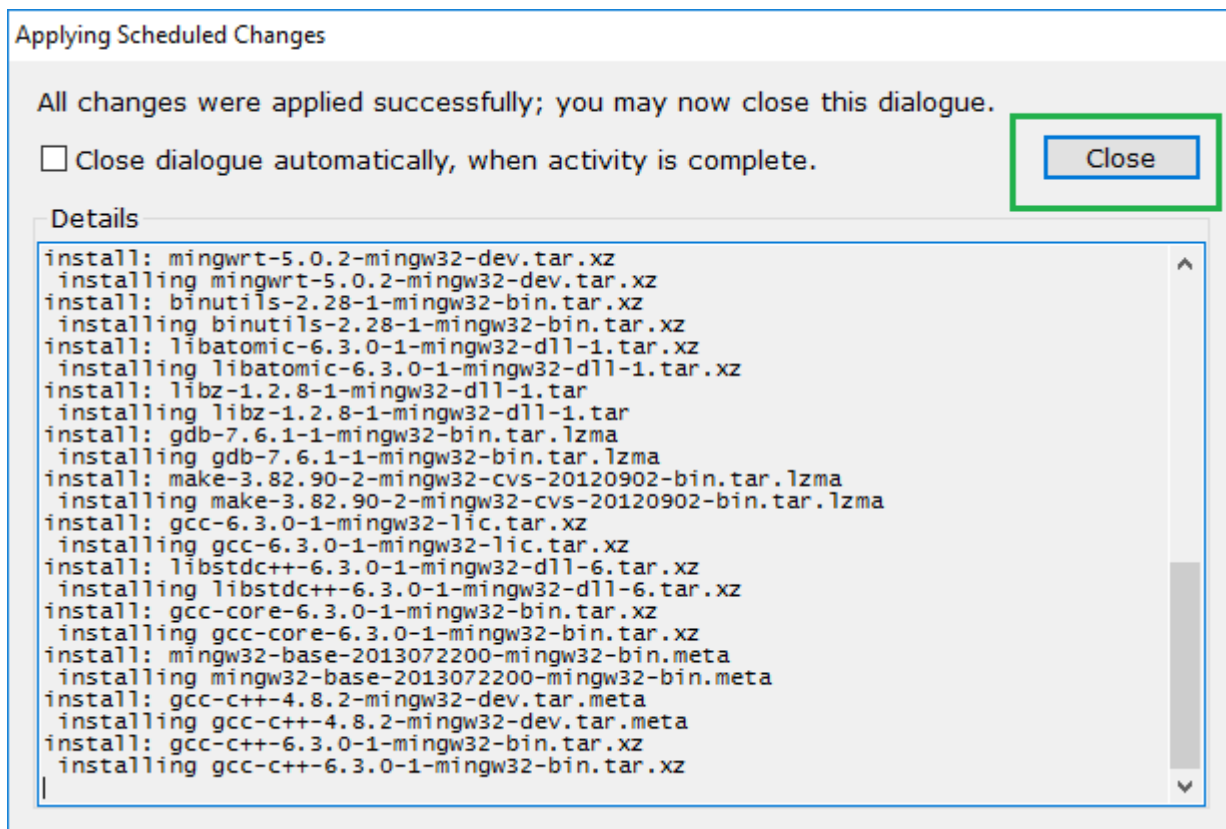
Here we click on **Apply Changes** to set the package's installation in **MinGW**, as given below.



10. After click on the Apply button, it shows the below image.



11. After downloading the packages, it shows the installation process of the package, as shown below.

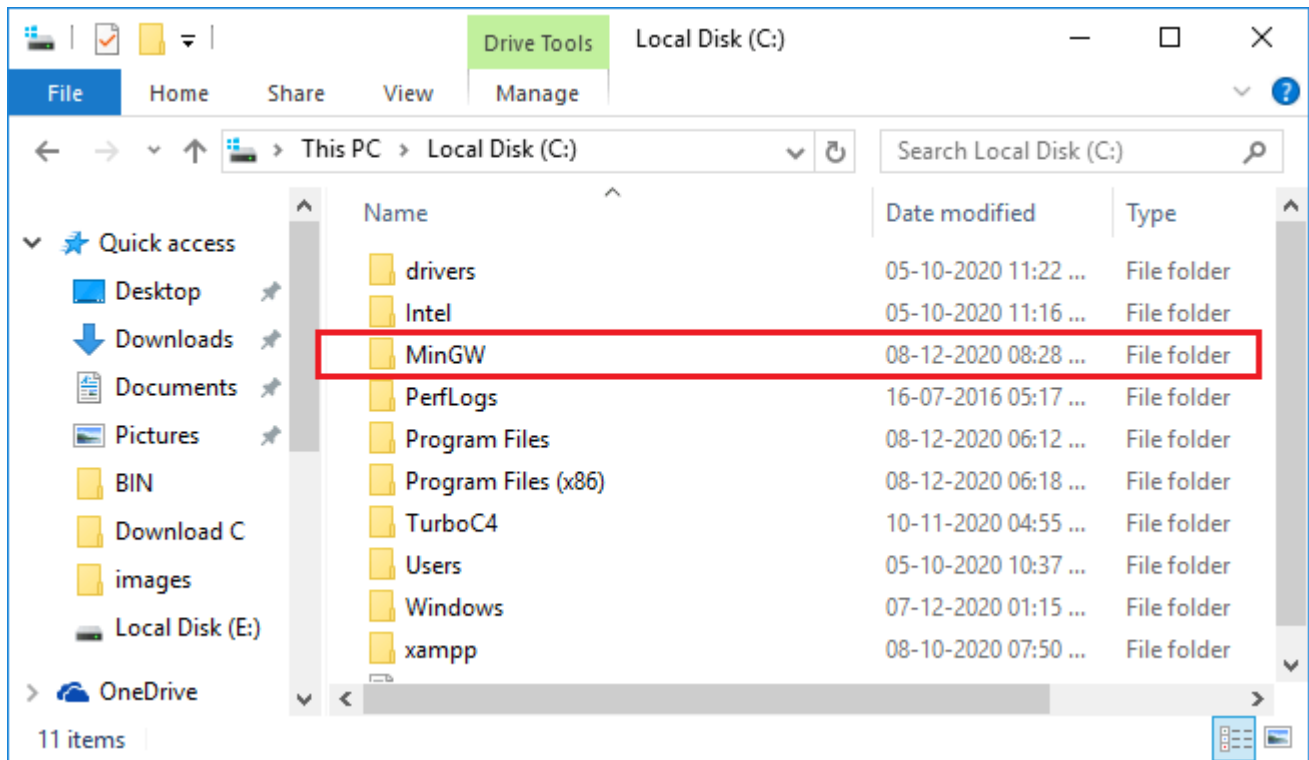


Here we can see all the changes have been successfully applied and then click on the **Close** button.

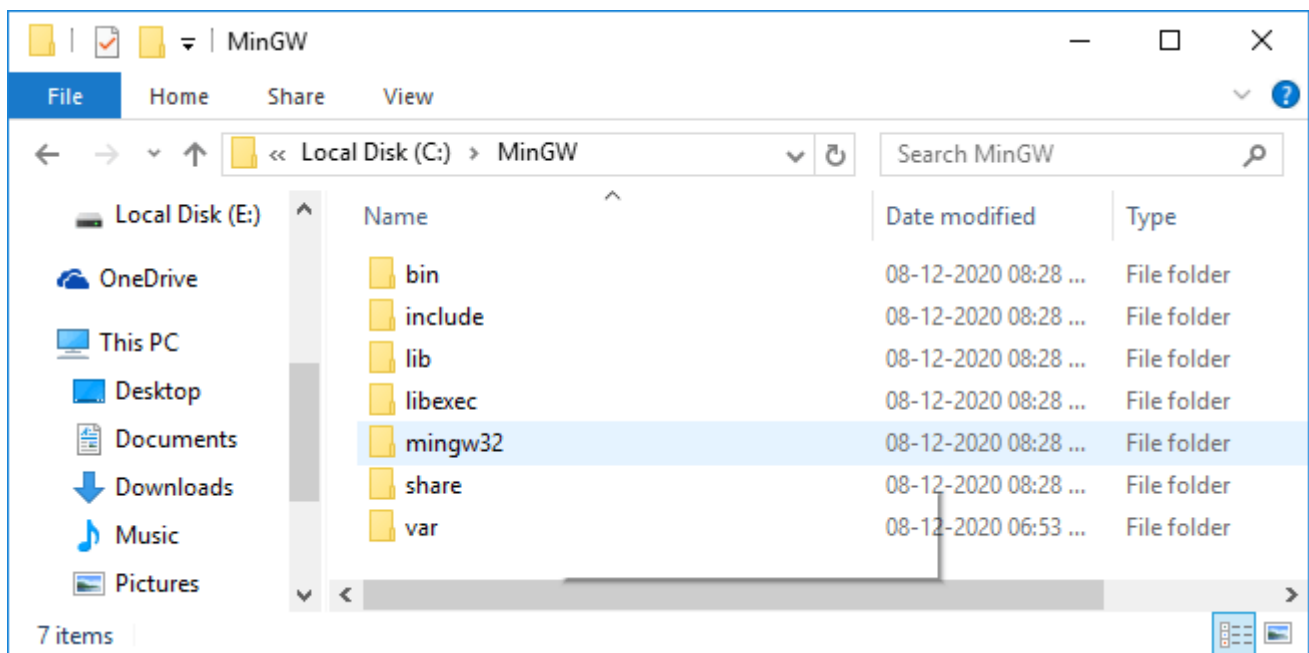
Set the Environment Path for the MinGW Set Up

After downloading and installing the MinGW compiler, we now set the environment path to include the C/C++ compiler directory.

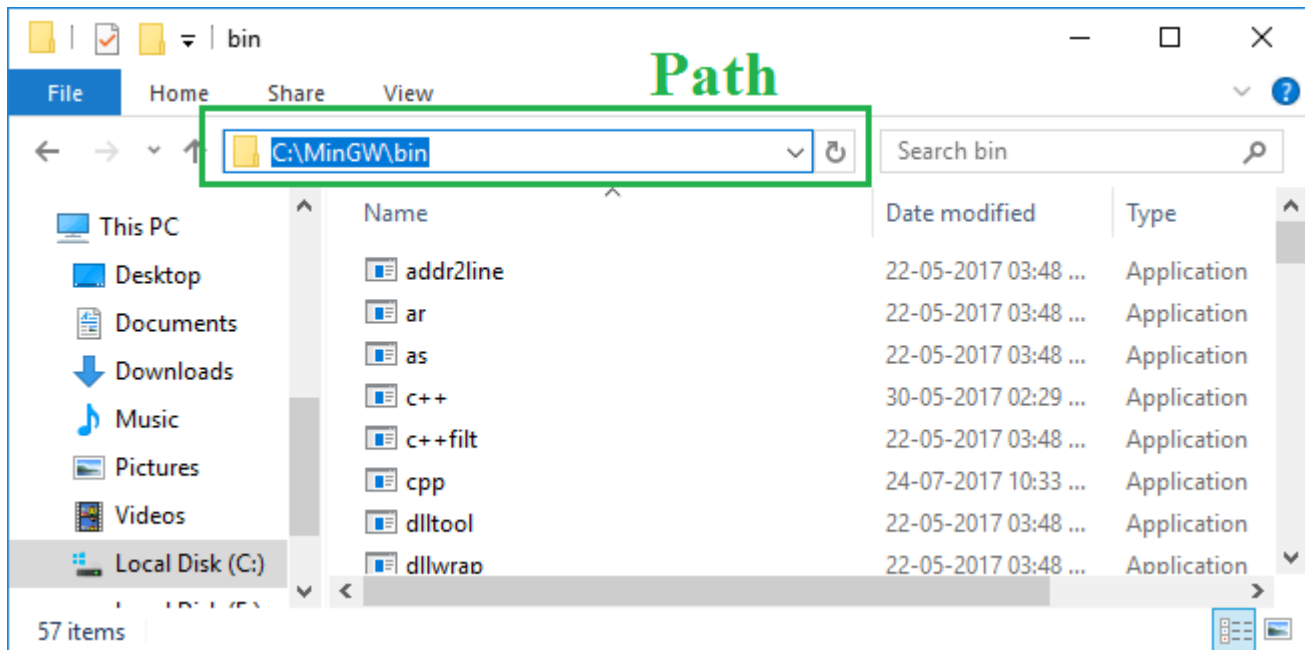
1. Go to the installation directory of the **MinGW** Set Up. Here we installed the setup at the C drive, as shown below.



2. Double click on the MinGW folder. It shows the below image.

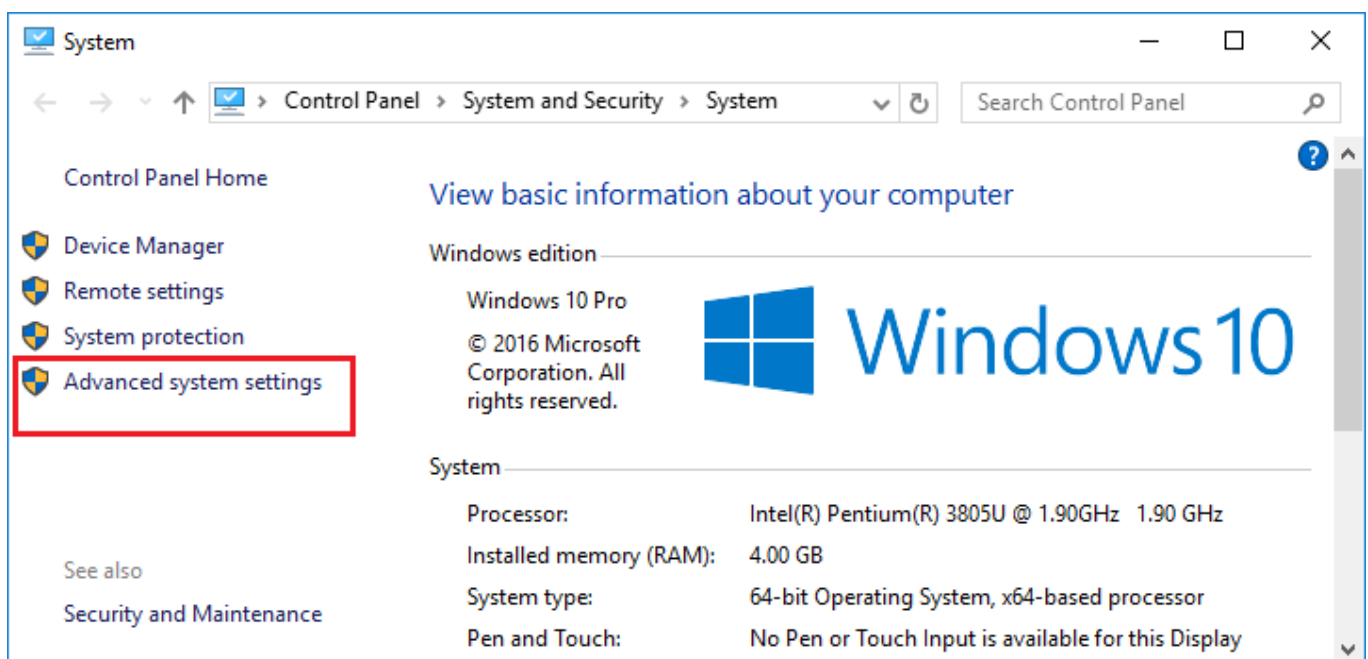


3. After that, click on the **bin** folder and then copy the directory path, as shown below.

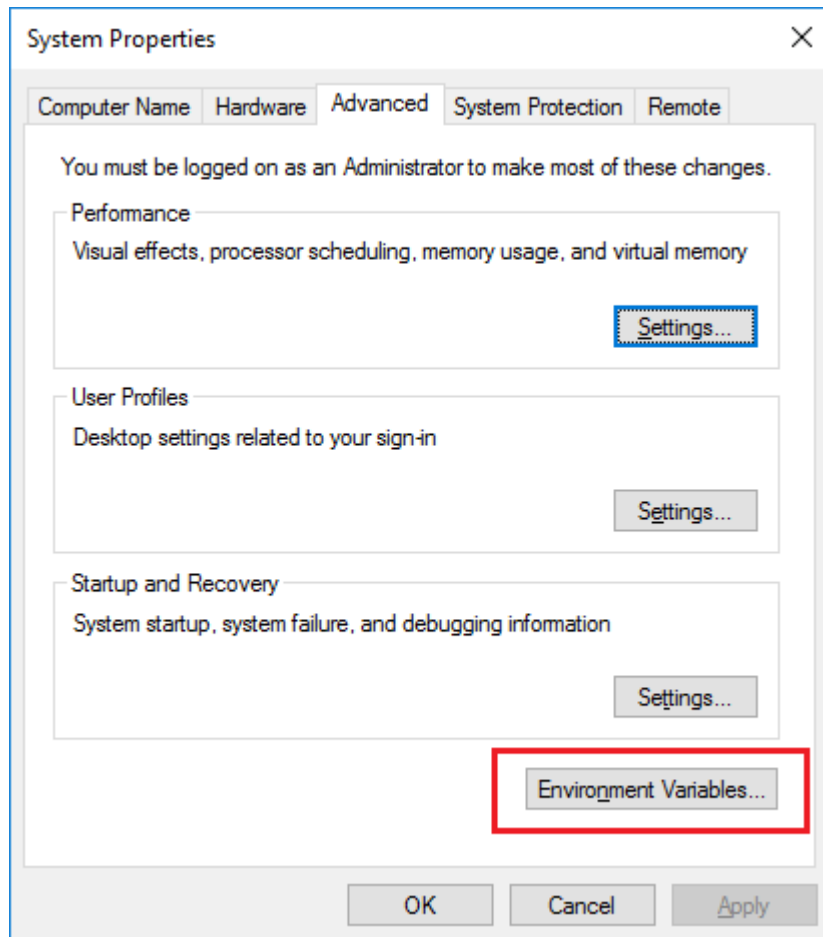


Here is the path of the MinGW folder path: **C:\MinGW\bin**

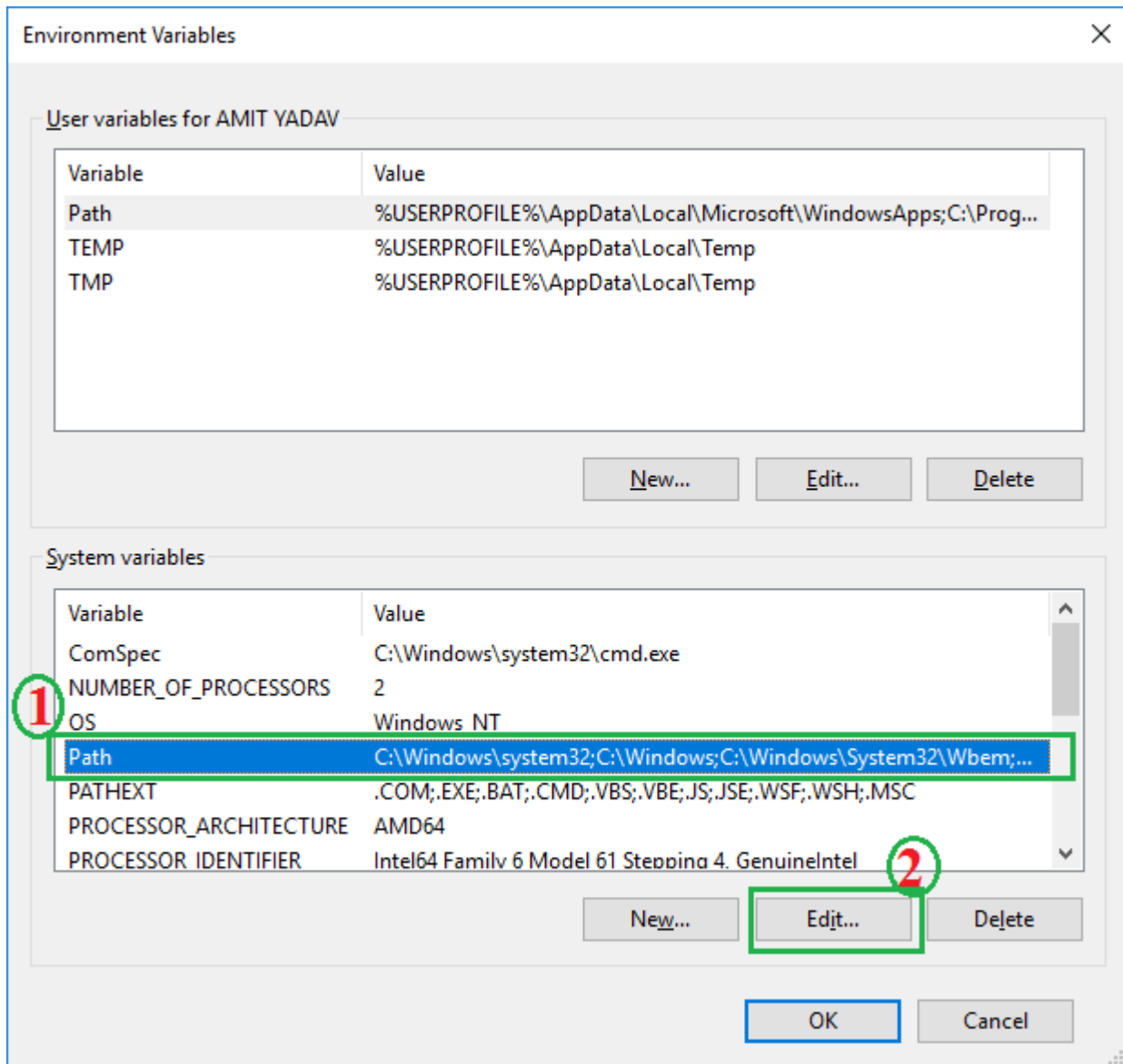
4. After copying the directory path, go to This PC -> Right Click on This PC -> Select/ Click on the **Properties**. It shows the below image.



5. After that, click on the **Advanced system settings** to display a popup box of System Properties, as shown below.



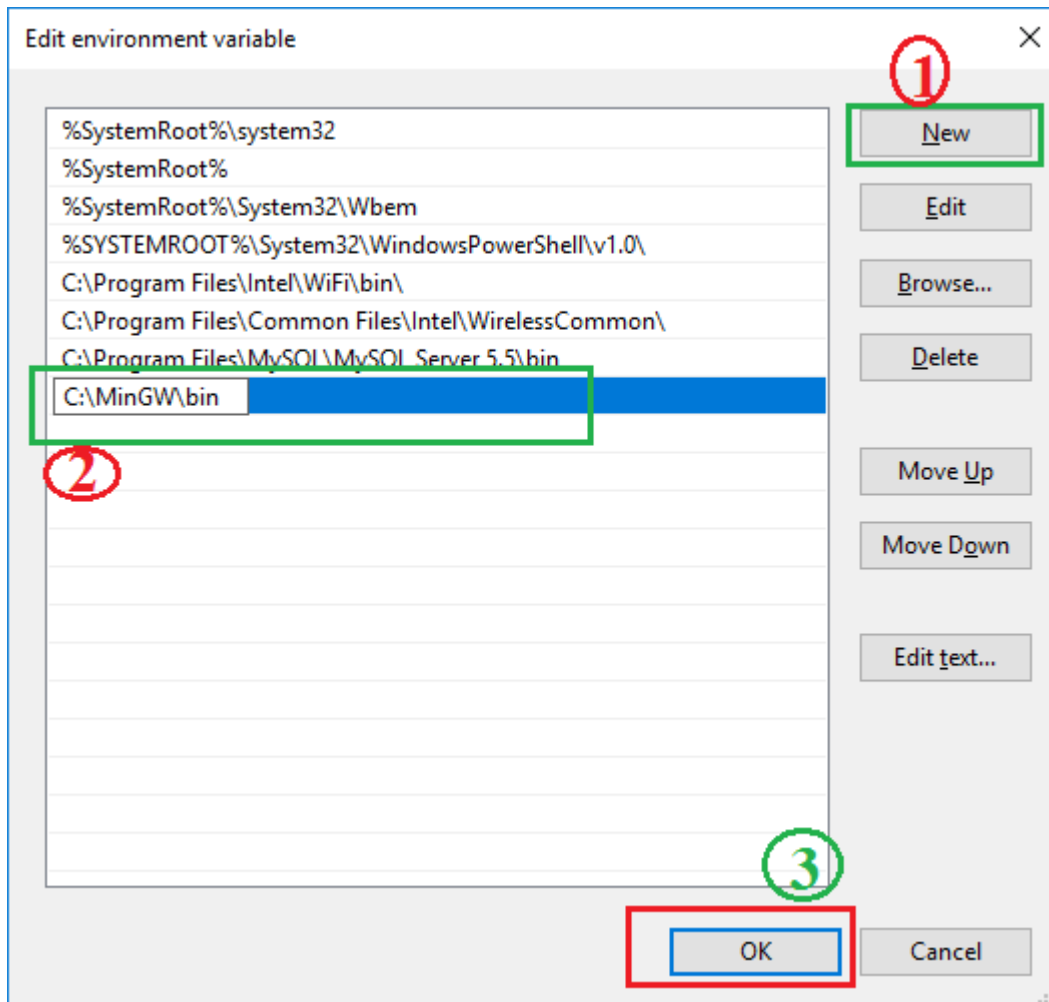
6. Click on the **Environment Variables** to set the directory path, as shown below.



First, we have to click on the **System Variables Path** and then click on the **Edit** button, as shown in the above image.

7. As we click on the Edit button, it shows a popup window to set a new path, as shown below.

In the above image, first, we click on the **New** button and then paste the **C:\MinGW\bin** path; after that, click the **OK** button.



8. Similarly, click the **OK** button to the Environment Variables and System Properties.

9. If we want to check that the **MinGW** has been successfully installed in the system: go to the **Command Prompt** or **cmd**, write the **gcc -version**, and press the **Enter**

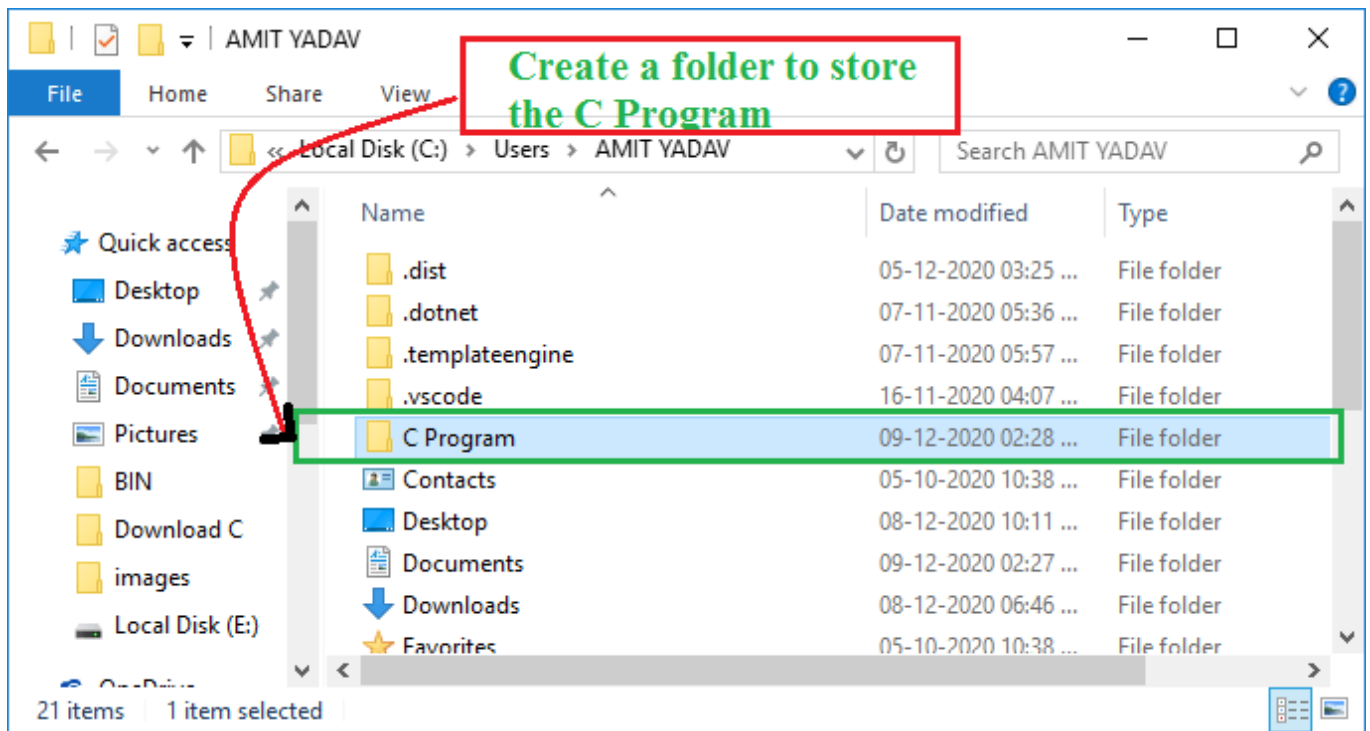
```
Microsoft Windows [Version 10.0.19044.1889]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Usman>gcc --version
gcc (x86_64-posix-seh-rev0, Built by MinGW-W64 project) 8.1.0
Copyright (C) 2018 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.

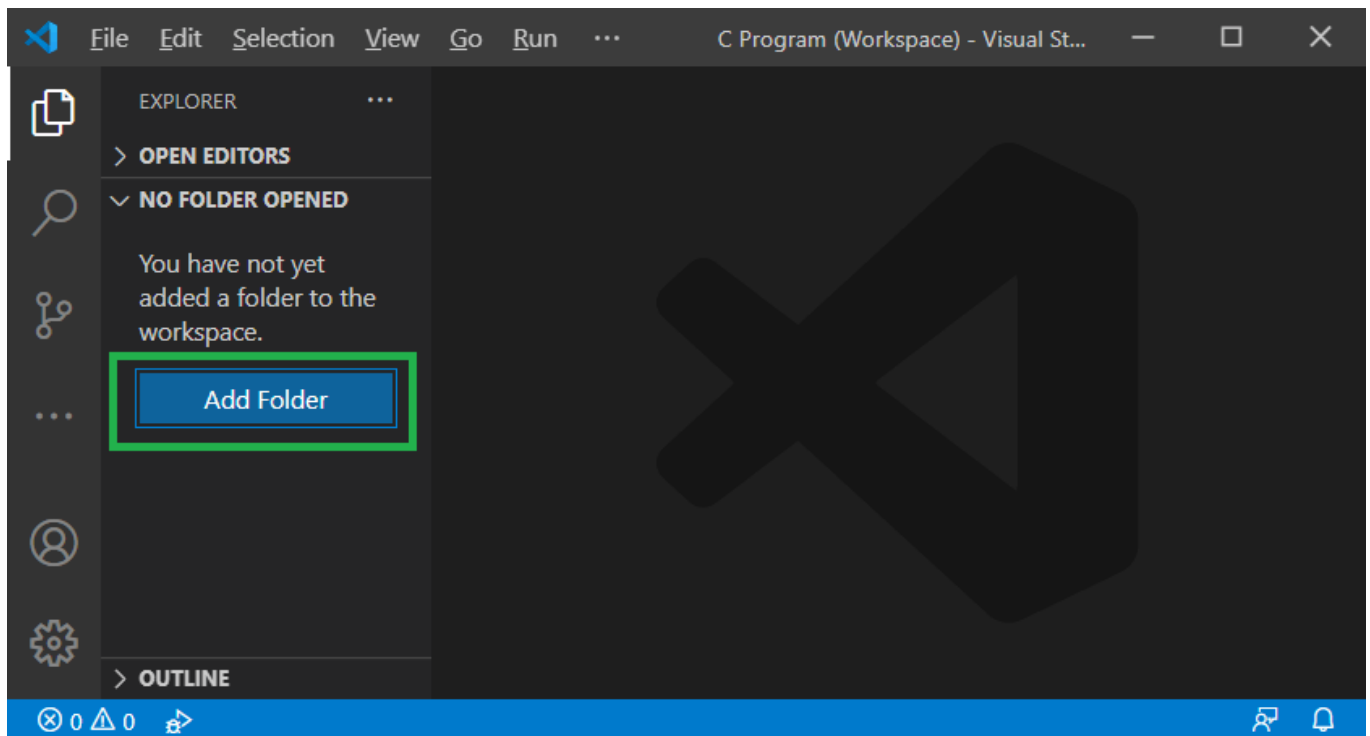
C:\Users\Usman>
```


Start Coding in the Visual Studio Code Editor

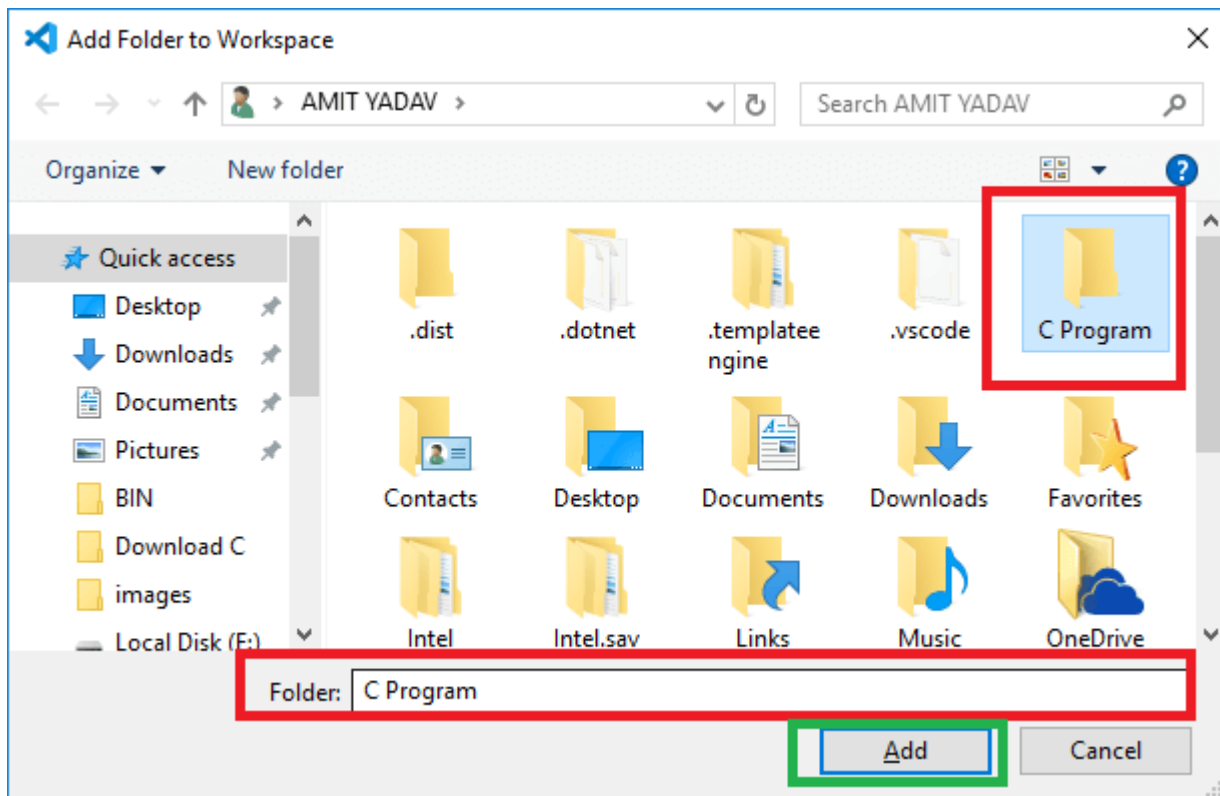
1. Here we created a **C Program** folder to store all program code. We can create a folder with any name in any directory



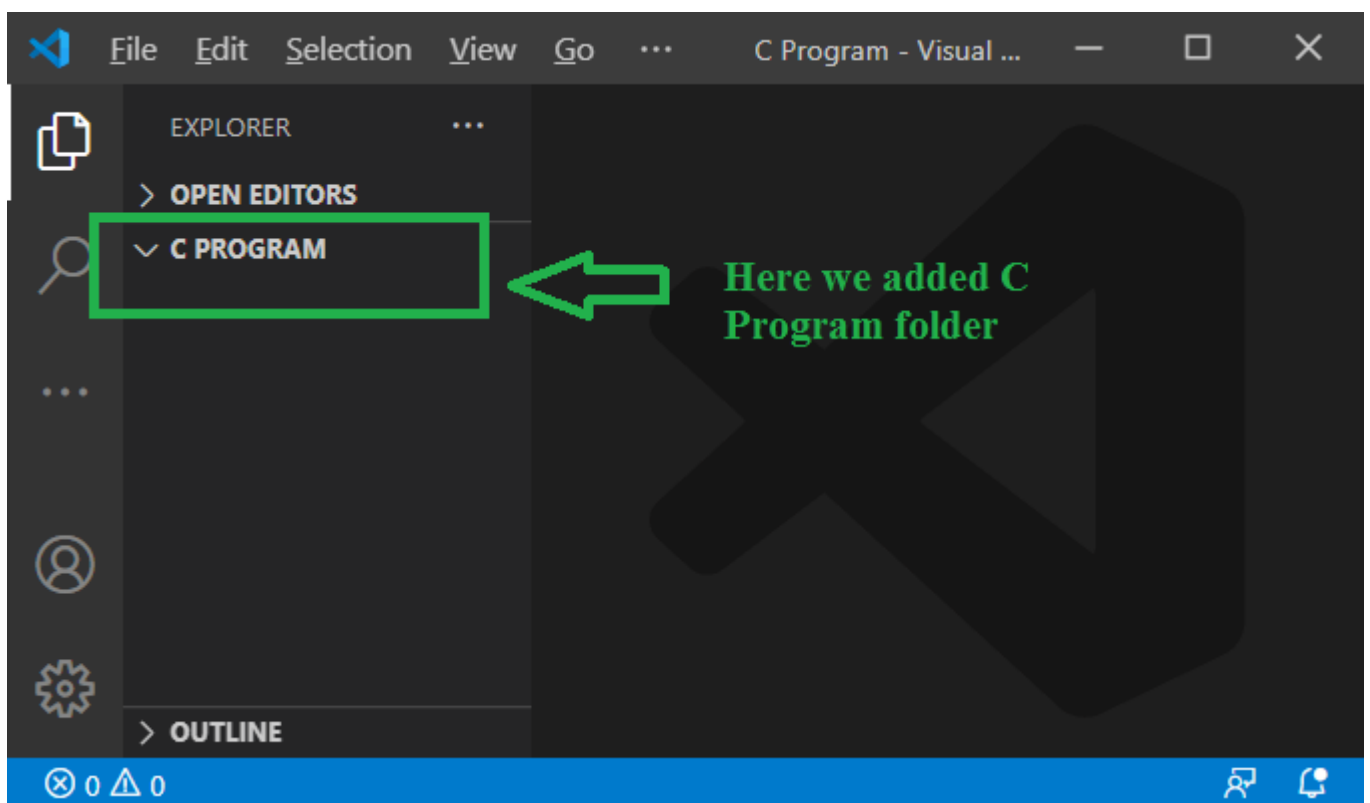
2. Go to the VS Code and click on the **Add Folder**.



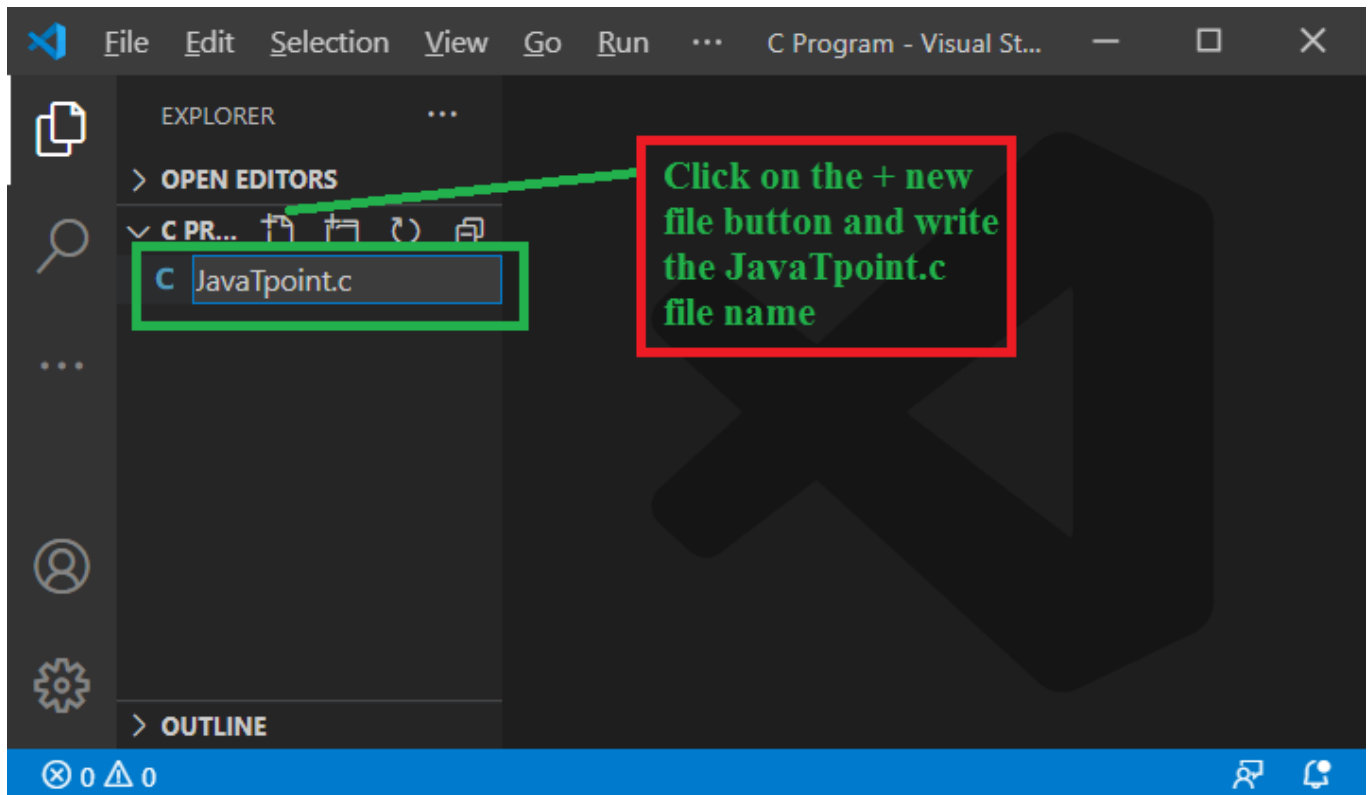
3. As we click on the Add Folder, it shows a popup dialog box to select the folder to store the program.



4. After selecting the folder, click on the **Add**. The selected folder appears in the explorer section, as we have shown below.



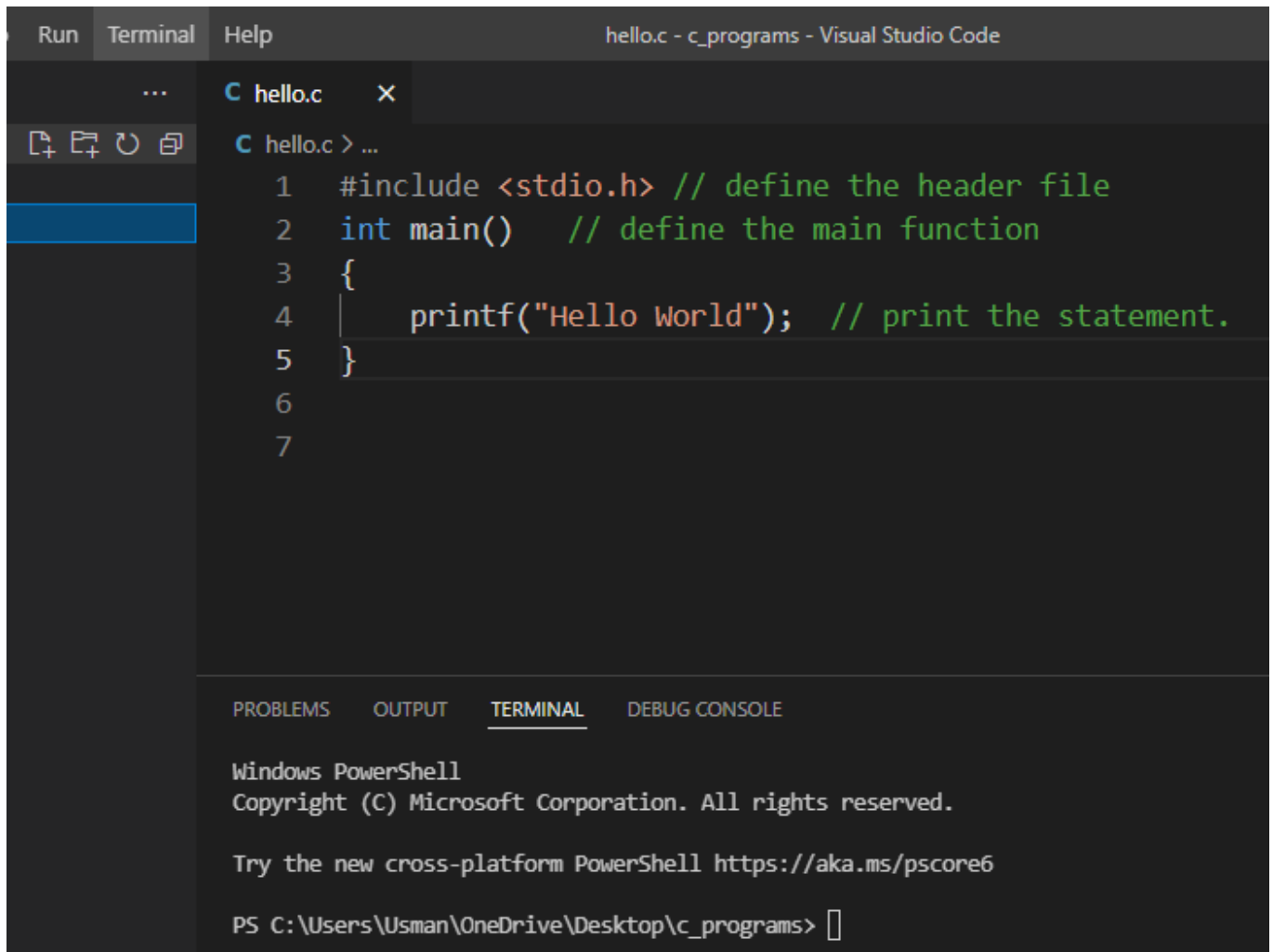
5. Move the mouse over the **CPROGRAM** folder; it shows a **+**. Click on the button and write the file name as **hello.c**, as shown below.



Now write and understand simple C programming in the VS Code editor.

```
C hello.c x
C hello.c > ...
1  #include <stdio.h> // define the header file
2  int main() // define the main function
3  {
4      printf("Hello World"); // print the statement.
5  }
6
7
```

After Writing the Code Click on Terminal Tab to open the Terminal.



The screenshot shows the Visual Studio Code interface. The top bar includes 'Run', 'Terminal', and 'Help' menus. The title bar reads 'hello.c - c_programs - Visual Studio Code'. The editor window displays a C program in 'hello.c' with the following code:

```
1  #include <stdio.h> // define the header file
2  int main() // define the main function
3  {
4      printf("Hello World"); // print the statement.
5  }
6
7
```

Below the editor, the 'TERMINAL' tab is active, showing the Windows PowerShell prompt and the current directory path:

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

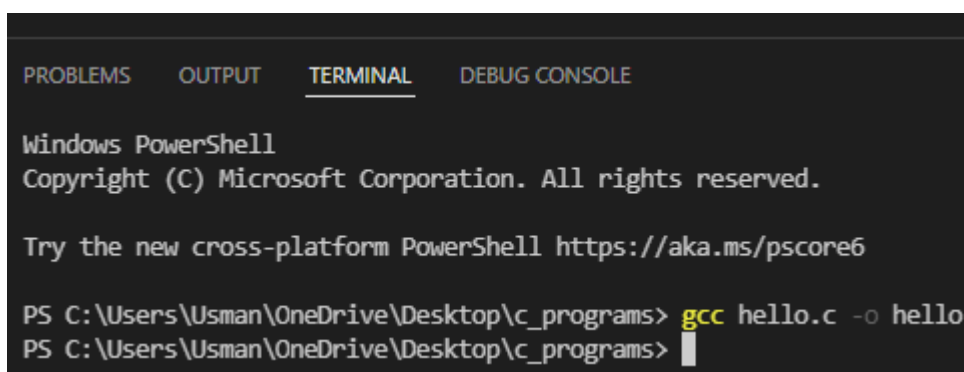
Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Usman\OneDrive\Desktop\c_programs>
```

To Compile the Code type

```
gcc hello.c -o hello
```

As shown below



The screenshot shows the terminal window with the compilation command entered:

```
PS C:\Users\Usman\OneDrive\Desktop\c_programs> gcc hello.c -o hello
PS C:\Users\Usman\OneDrive\Desktop\c_programs>
```

To Execute the Code type

```
.\hello.exe
```

It shows the following output.

Hello World

```
PROBLEMS  OUTPUT  TERMINAL  DEBUG CONSOLE

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

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

PS C:\Users\Usman\OneDrive\Desktop\c_programs> gcc hello.c -o hello
PS C:\Users\Usman\OneDrive\Desktop\c_programs> .\hello.exe
Hello World
PS C:\Users\Usman\OneDrive\Desktop\c_programs> |
```

Reference

<https://www.javatpoint.com/how-to-run-a-c-program-in-visual-studio-code>

