**📘 User Manual: Installation of VS Code for C++ on Windows**

**1. Prerequisites**

* A computer running **Windows 10/11**.
* Administrative privileges to install software.
* Internet connection.

**2. Install Visual Studio Code**

1. Open a browser and go to https://code.visualstudio.com/.
2. Download the **Windows User Installer (64-bit)**.
3. Run the installer (VSCodeSetup.exe).
4. In the setup wizard:
   * Accept the license agreement.
   * Choose an installation location (default is fine).
   * On the **Additional Tasks** page, check:
     + ✅ *Add to PATH (so you can run code from Command Prompt)*
     + ✅ *Register Code as an editor for supported file types*
     + ✅ *Add "Open with Code" action to Windows Explorer context menu*
   * Click **Install**.
5. Launch **VS Code** after installation.

**3. Install a C++ Compiler (MinGW-w64)**

To run C++ code, you need a compiler. We’ll use **MinGW-w64 (GCC for Windows)**.

1. Download MinGW-w64 from: https://winlibs.com/ (look for the latest mingw-w64 build).
2. Extract the downloaded ZIP file (e.g., to C:\mingw64).
3. Add MinGW to the system PATH:
   * Press **Win + S**, type **Environment Variables**, and open **Edit the system environment variables**.
   * In the System Properties window, click **Environment Variables**.
   * Under **System variables**, select **Path**, then click **Edit**.
   * Click **New** and add the path to MinGW’s bin folder, e.g.:
   * C:\mingw64\bin
   * Click **OK** to save changes.
4. Verify installation:
   * Open **Command Prompt** (Win + R, type cmd).
   * Run:
   * g++ --version
   * If installed correctly, it will show the GCC version.

**4. Install C++ Extension in VS Code**

1. Open **VS Code**.
2. Go to the **Extensions Marketplace** (Ctrl+Shift+X).
3. Search for **C/C++** (by Microsoft).
4. Click **Install**.
5. Also Search for Code Runner and then Install.

**5. Create and Run a C++ Program**

1. Create a folder for your project (e.g., C:\cpp\_projects\hello).
2. Open this folder in VS Code (**File → Open Folder**).
3. Create a new file main.cpp with the following code:
4. #include <iostream>
5. using namespace std;
6. int main() {
7. cout << "Hello, World!" << endl;
8. return 0;
9. }
10. Open the terminal in VS Code (**Ctrl+`**).
11. Compile your program:
12. g++ main.cpp -o main.exe
13. Run your program:
14. main.exe

You should see:

Hello, World!

**✅ Verification Checklist**

* g++ --version works in Command Prompt.
* C++ IntelliSense (auto-suggestions) works inside VS Code.
* You can compile and run main.cpp successfully.