

## Install Visual Studio on your own computer

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### Visual Studio Operating System environments

Visual Studio **IDE** runs only in a **Windows environment** and runs best on a mid-level machine [computer] with lots of RAM. Gamers will have no problems. Those with older or modestly spec'd machines may find Visual Studio IDE *walks* instead of runs.

The latter Windows users, and **macOS** or **Linux** users, should use **Visual Studio Code**. Although the cross-platform [Visual Studio Code](https://code.visualstudio.com/) is not officially supported or used in our school, it is becoming a viable alternative to Visual Studio IDE for many who use macOS or Linux, or even Windows running on older or lower powered machines. ("machine" is geek speak for any computer.)

See these videos on installing Visual Studio Code:

[https://www.youtube.com/results?search\\_query=install+visual+studio+code+macOS](https://www.youtube.com/results?search_query=install+visual+studio+code+macOS)

[https://www.youtube.com/results?search\\_query=install+visual+studio+code+windows](https://www.youtube.com/results?search_query=install+visual+studio+code+windows)

**Students are no longer licensed for the Windows OS** to upgrade their own PCs or to run Windows as a second OS with macOS or Linux. *Complain to your student council.*

### Visual Studio IDE Installation (Windows only)

We recommend you install **Visual Studio IDE**, Community Edition, on your Windows computer for programming in the C language. An IDE is an Integrated Development Environment which is far more than a coding editor. Visual Studio is a “fully-featured, extensible, free IDE for creating modern applications for Android, iOS, Windows, as well as web applications and cloud

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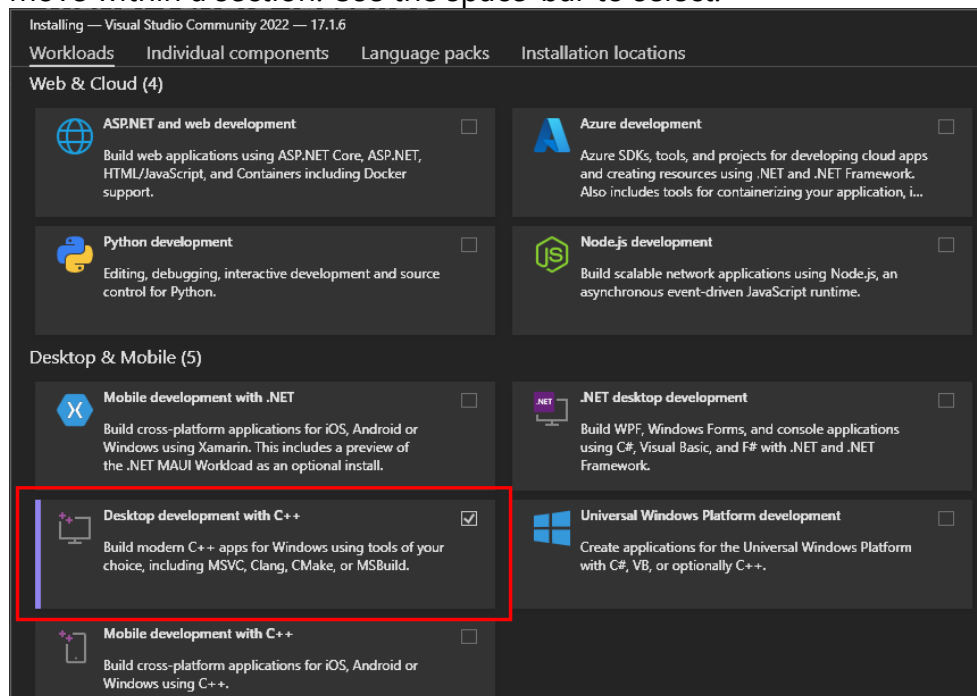
services.” We use it in all our programming courses because it is one of the world's most highly rated and most used software development tools popular among both professionals and students. The C programming course lectures, workshops, and how-to instructions all assume the use of Visual Studio IDE.

Microsoft has notes for [Getting Started with Visual Studio for C and C++ Development](#) which you can explore.

### Visual Studio IDE Installation

Start your installation of Visual Studio Community or Visual Studio Code from <https://visualstudio.microsoft.com/>. *Installing "Visual Studio for macOS" will waste your time – despite the name, it is not the same thing as VS IDE or VS Code.*

- Select the Workload, Desktop & Mobile, "**Desktop development with C++**"
  - Use the [ TAB ] key to move to a section of the dialog and the arrow keys to move within a section. Use the space-bar to select.

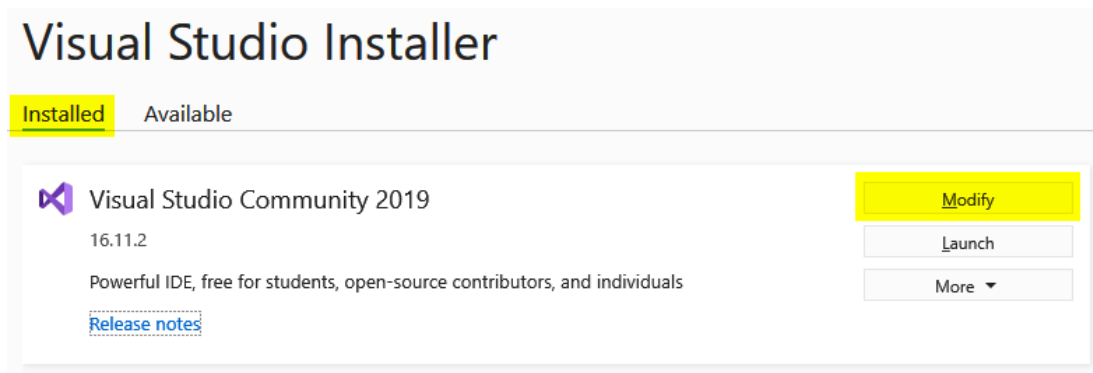


- Check these "Optional" components needed for C programming
  - MSVC v### [the most current version of build tools] for your processor
  - Windows 10 SDK [the most current version]
  - Just-In-Time debugger
  - C++ profiling tools

## Install Visual Studio on your own computer

<ul style="list-style-type: none"><li>○ IntelliCode</li><li>○ C++ AddressSanitizer</li></ul>	<b>Installation details</b> <ul style="list-style-type: none"><li>▸ Visual Studio core editor</li><li>▾ Desktop development with C++<ul style="list-style-type: none"><li>▾ Included<ul style="list-style-type: none"><li>✓ C++ core desktop features</li></ul></li><li>▾ Optional<ul style="list-style-type: none"><li><input checked="" type="checkbox"/> MSVC v142 - VS 2019 C++ x64/x86 build t...</li><li><input checked="" type="checkbox"/> Windows 10 SDK (10.0.19041.0)</li><li><input checked="" type="checkbox"/> Just-In-Time debugger</li><li><input checked="" type="checkbox"/> C++ profiling tools</li><li><input type="checkbox"/> C++ CMake tools for Windows</li><li><input type="checkbox"/> C++ ATL for latest v142 build tools (x86 &amp;...</li><li><input type="checkbox"/> Test Adapter for Boost.Test</li><li><input type="checkbox"/> Test Adapter for Google Test</li><li><input type="checkbox"/> Live Share</li><li><input checked="" type="checkbox"/> IntelliCode</li><li><input checked="" type="checkbox"/> C++ AddressSanitizer</li></ul></li></ul></li></ul>
<ul style="list-style-type: none"><li>• Uncheck the following to save ~832MB of storage and reduce the background load on your system.<ul style="list-style-type: none"><li>○ C++ CMake tools for Windows</li><li>○ C++ ATL for latest v000 build tools</li><li>○ Test Adapter for Boost Test</li><li>○ Test Adapter for Google Test</li><li>○ Live Share</li></ul></li></ul>	

If the above was missed on the initial install,  
run "Visual Studio Installer" > Modify to change Visual Studio components.



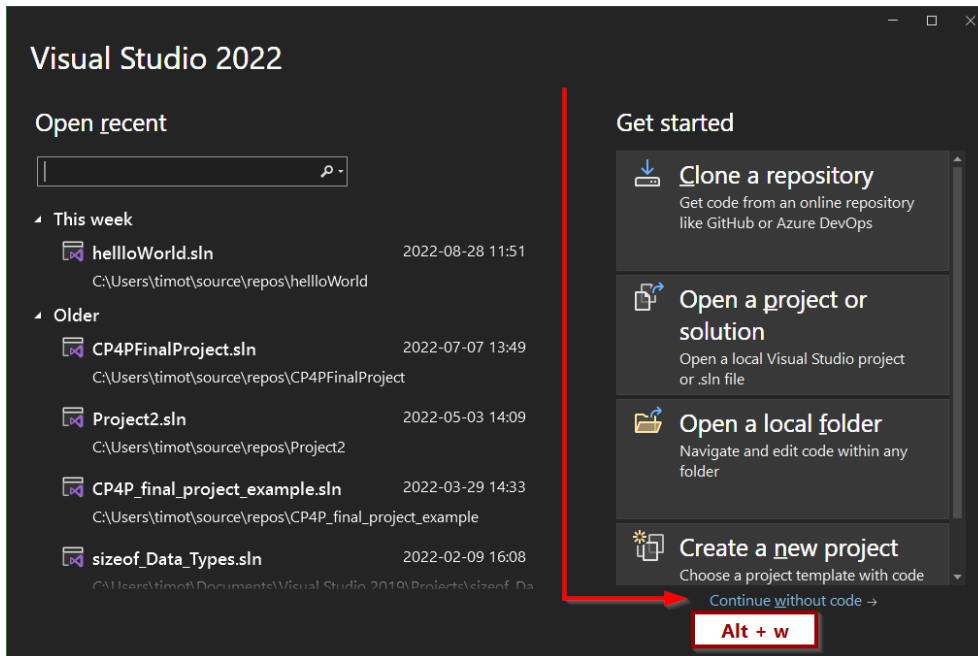
[Windows Security / Microsoft Defender](#) or other anti-malware anti-virus utilities

Security utilities sometimes prevent new executable files, like you create from C programming, from running on your system. Add an Exclusion for the Visual Studio projects folder.

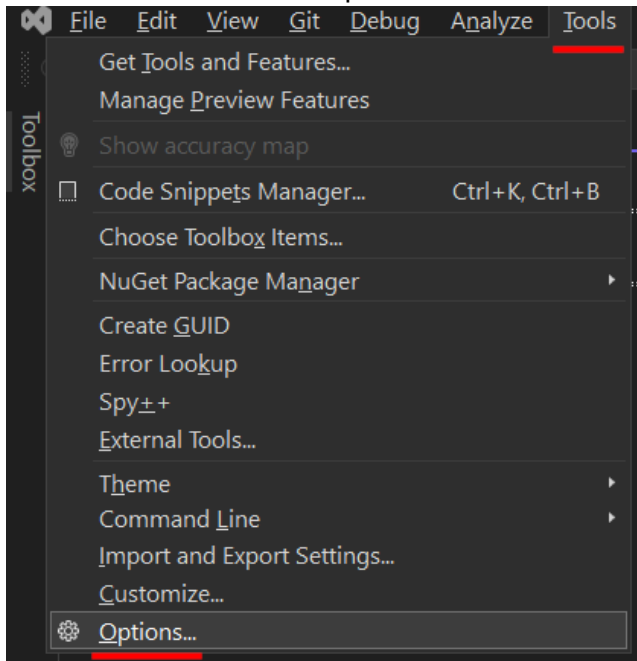
Install Visual Studio on your own computer

## Configure Visual Studio

continue without code →



use VS menu: Tools > Options [ Alt + T O ]

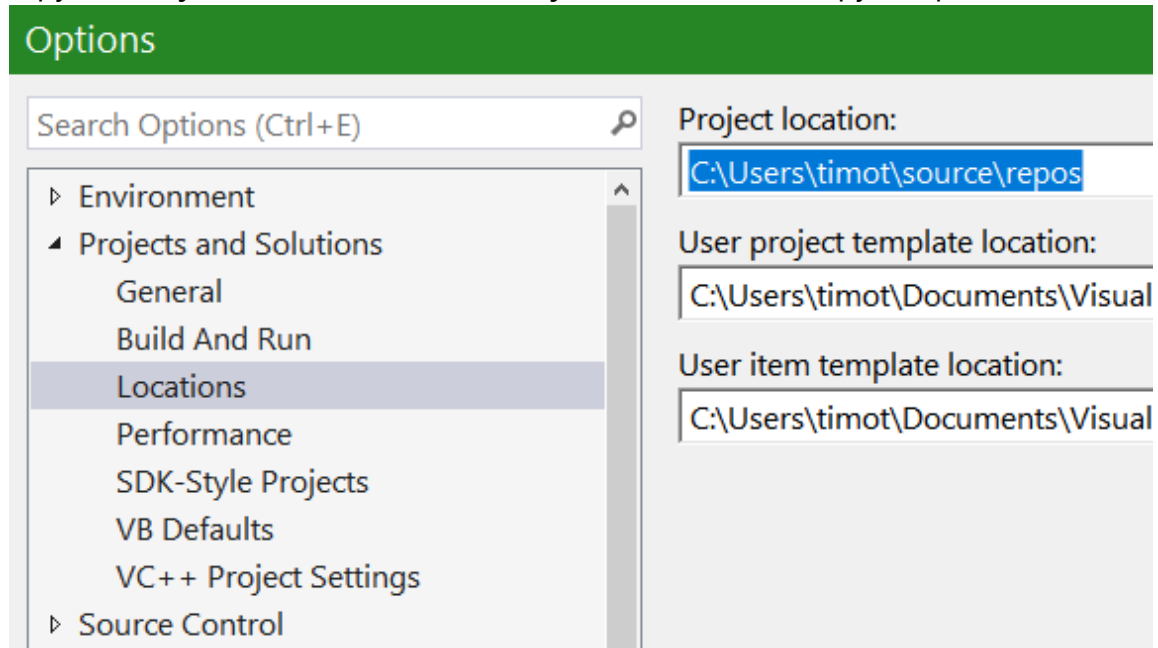


## Install Visual Studio on your own computer

> Projects and Solutions > Locations

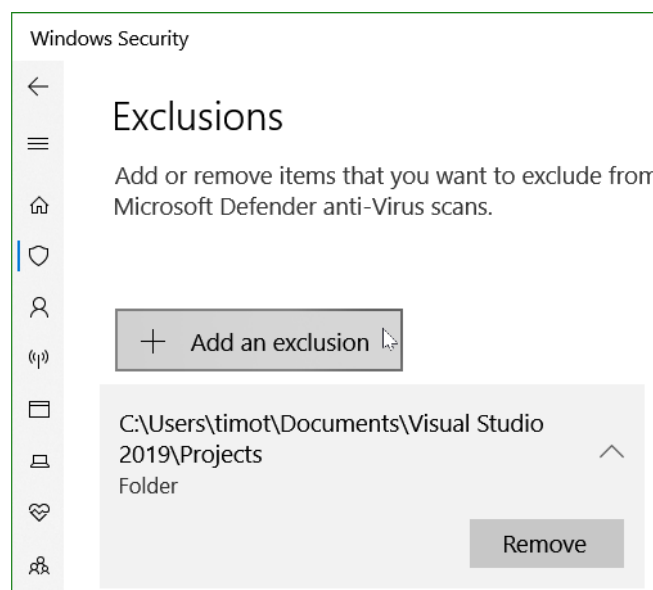
[ left arrow to collapse Environment, down to Projects and Solutions, right to expand ]

Copy the Projects location [ TAB to Project Location and copy the path Ctrl + AC ]



Add an [exclusion to your PC's security app](#) for the Project location:

- Search the start menu for Windows Security
- Select Virus & threat protection
- Select Manage settings
- Under Exclusions, select Add or remove exclusions
- Add your Visual Studio Project location



## Install Visual Studio on your own computer

### Visual Studio customization

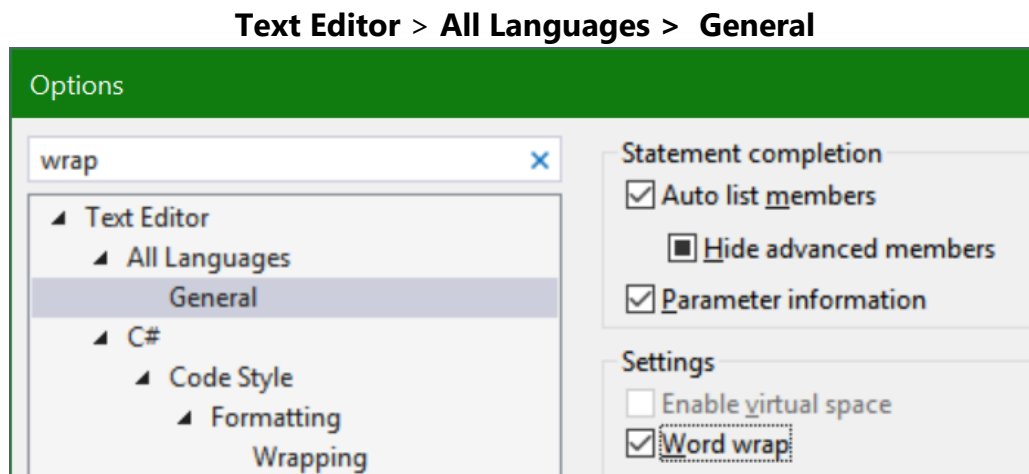
Start Visual Studio and Customize the editor.

A simple way to make it easy for others to see your code is to zoom in. Use Ctrl with the mouse wheel (up to zoom in, down to zoom out). There is also a zoom control in the bottom-left of the code editor.

**Alt + T** for the Tools menu. **O** for Options

Use TAB key to move between sections of the following dialogues. Use Up/Down arrows to move within a section of the dialogue. Use the spacebar to select items.

Text Editor – default to [Word wrapping in all cases](#).



We use the following style for blocks of code where each brace is on its own line:

```
#include <stdio.h>    // Input/Output
int main(void)
{
    printf("Hello, World!\n");
}
```

---

instead of the traditional K&R style

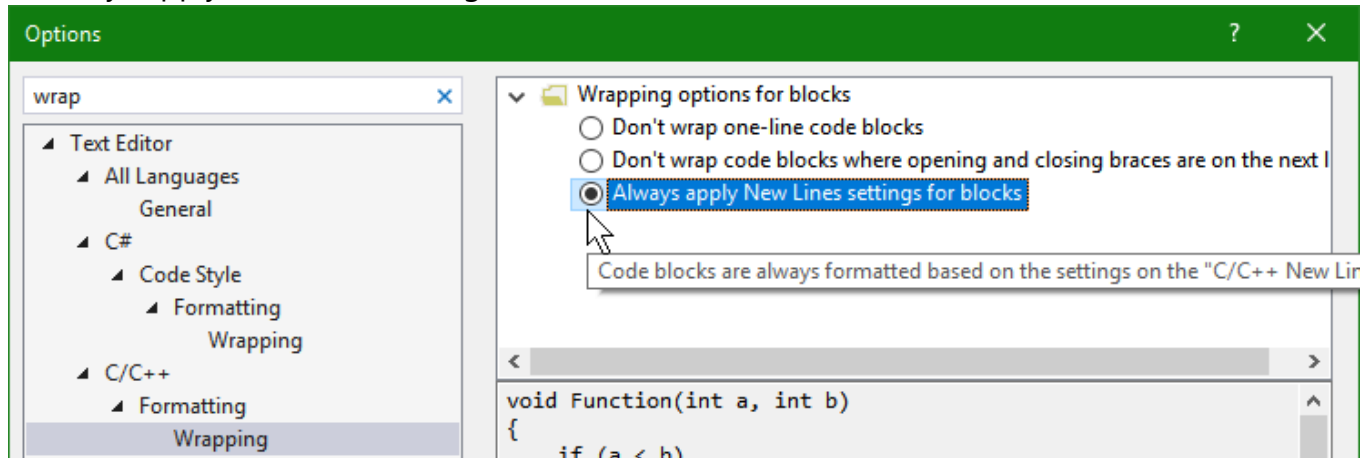
```
#include <stdio.h>    // Input/Output
int main(void) {
    printf("Hello, World!\n");
}
```

## Install Visual Studio on your own computer

Override the default VS option to control blocks' braces formatting behaviour.

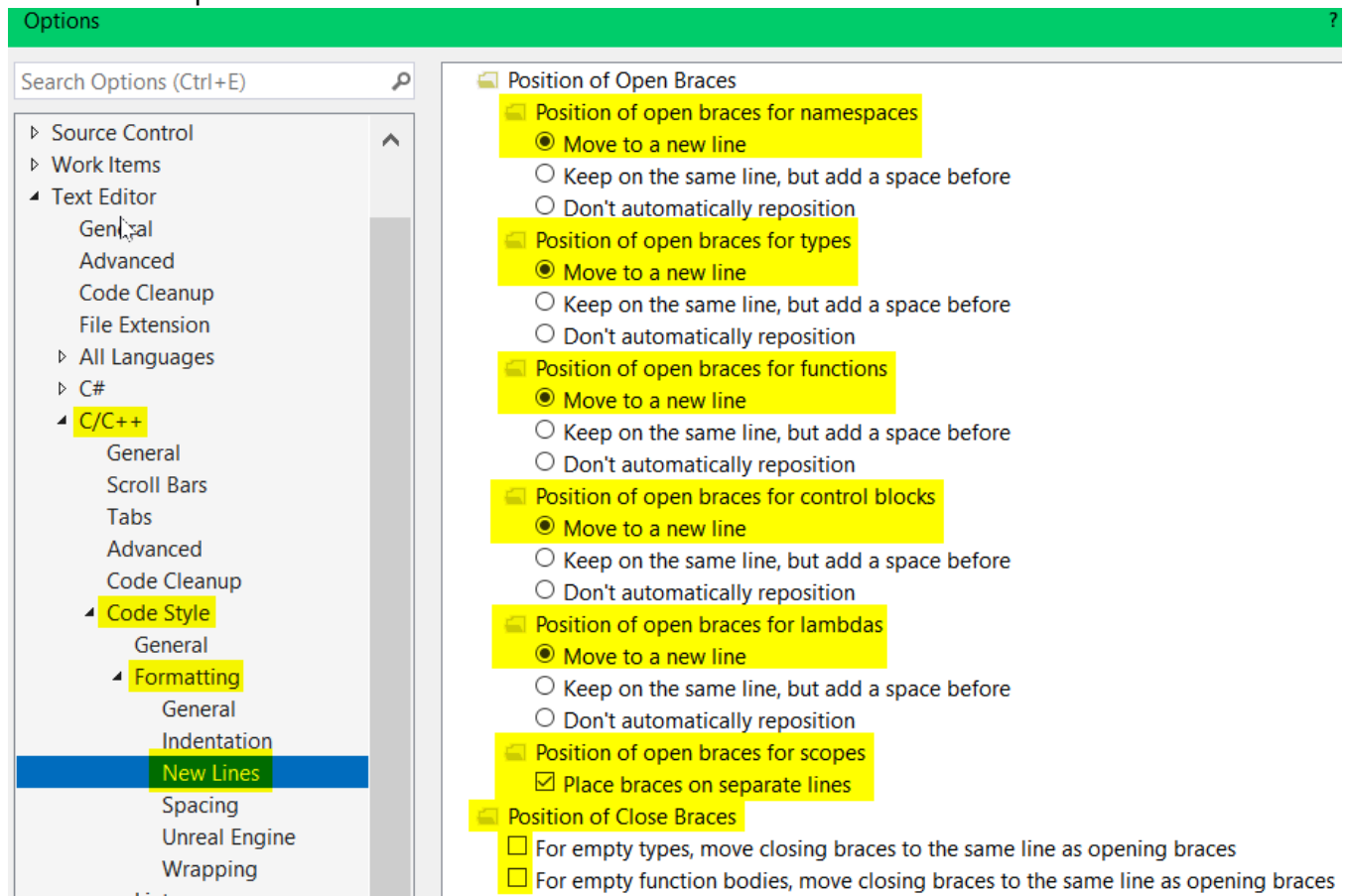
**Text Editor > C/C++ > Code Style > Formatting > Wrapping ...** options for blocks

> Always apply New Lines Setting for blocks



**Text Editor > C/C++ > Code Style > Formatting > New Lines ...**

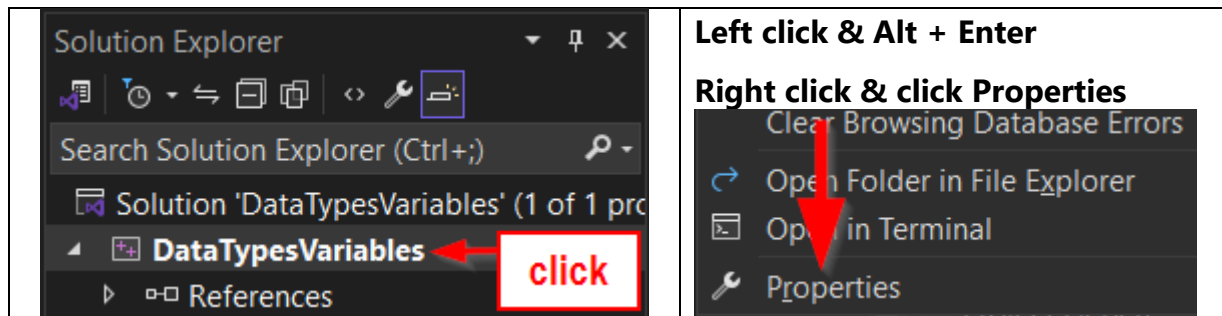
Position of open braces for functions > Move to a new line



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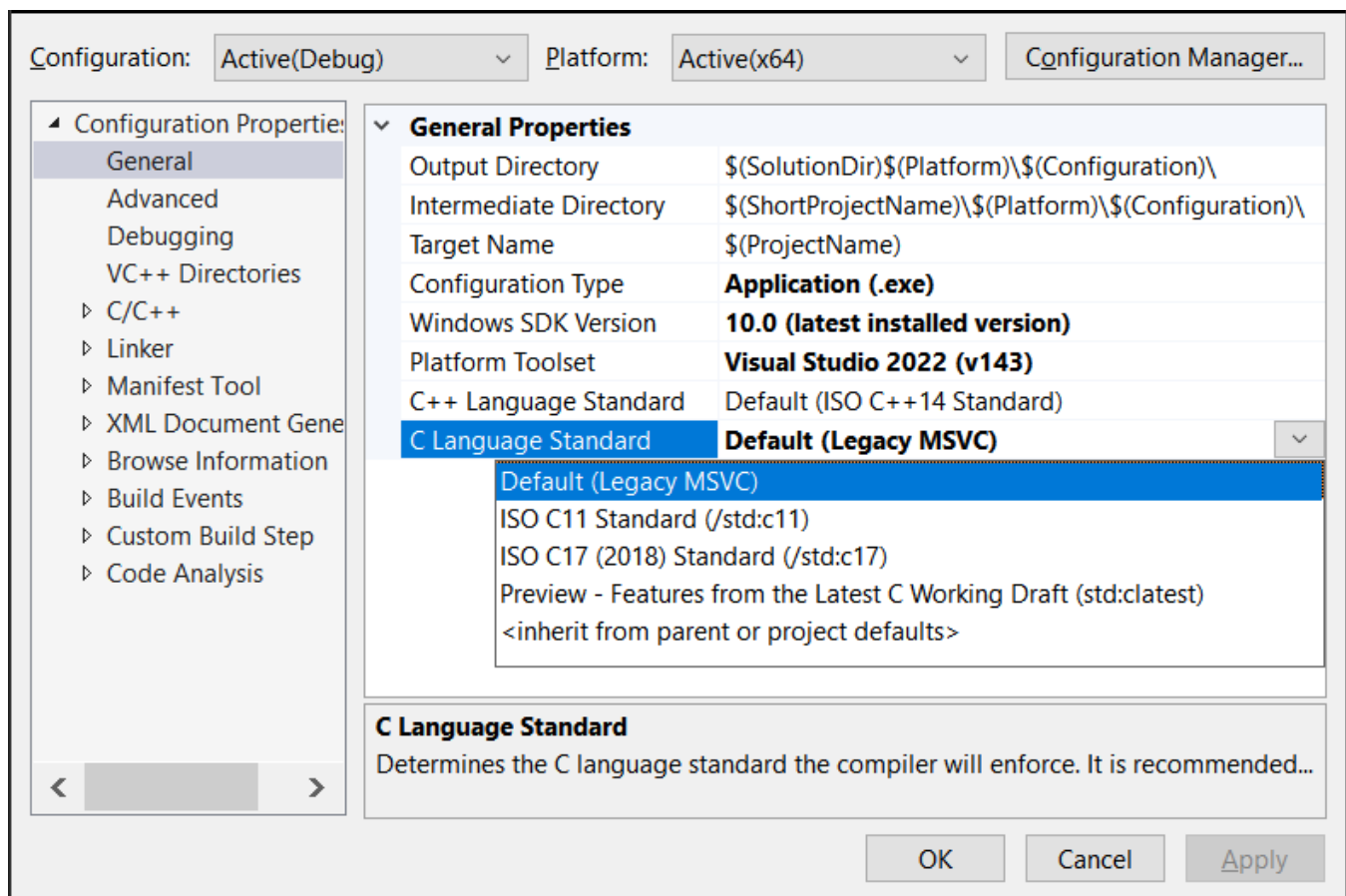
Change the C Language Standard in the project's Property Pages dialog.

Select the project name in the Solution Explorer



### Configuration Properties > General > C Language Standard

- [Default \(Legacy MSVC\)](#) is the most generic and will do for IPC144. "The default C compiler (that is, the compiler when /std:c11 or /std:c17 isn't specified) implements ANSI C89, but includes several Microsoft extensions, some of which are part of ISO C99."
- More sophisticated, but less portable, programming will need a more current standard.





## Install Visual Studio on your own computer

Visual Studio can also edit HTML in Design and/or Source mode.

Use Solution Explorer to open a Folder View to .html files.

R-click on any .html file and select Open With...

select HTML (Web Forms) Editor, click Set as Default.

