# Instructions for Creating a C Project

*Integrated development environments* (IDEs) allow the editing, compilation, and execution of a 'program' from within the application. You can use any C programming IDE you wish, e.g. xCode for Apple MacOS (https://apps.apple.com/us/app/xcode/id497799835?ls=1&mt=12), gcc for linux/Ubuntu (https://gcc.gnu.org/gcc-9/), or a range of options for Microsoft Windows 10 (https://thegeekpage.com/13-best-ide-for-c-on-windows/).

Microsoft Corporation's Visual Studio is an IDE for programming in many programming languages. C programming can be done within Visual Studio's C++ environment since C is a subset of C++. Visual Studio is installed in our computer labs. You can download and install the Community version free on your own Windows-based computer from (https://visualstudio.microsoft.com/downloads/).

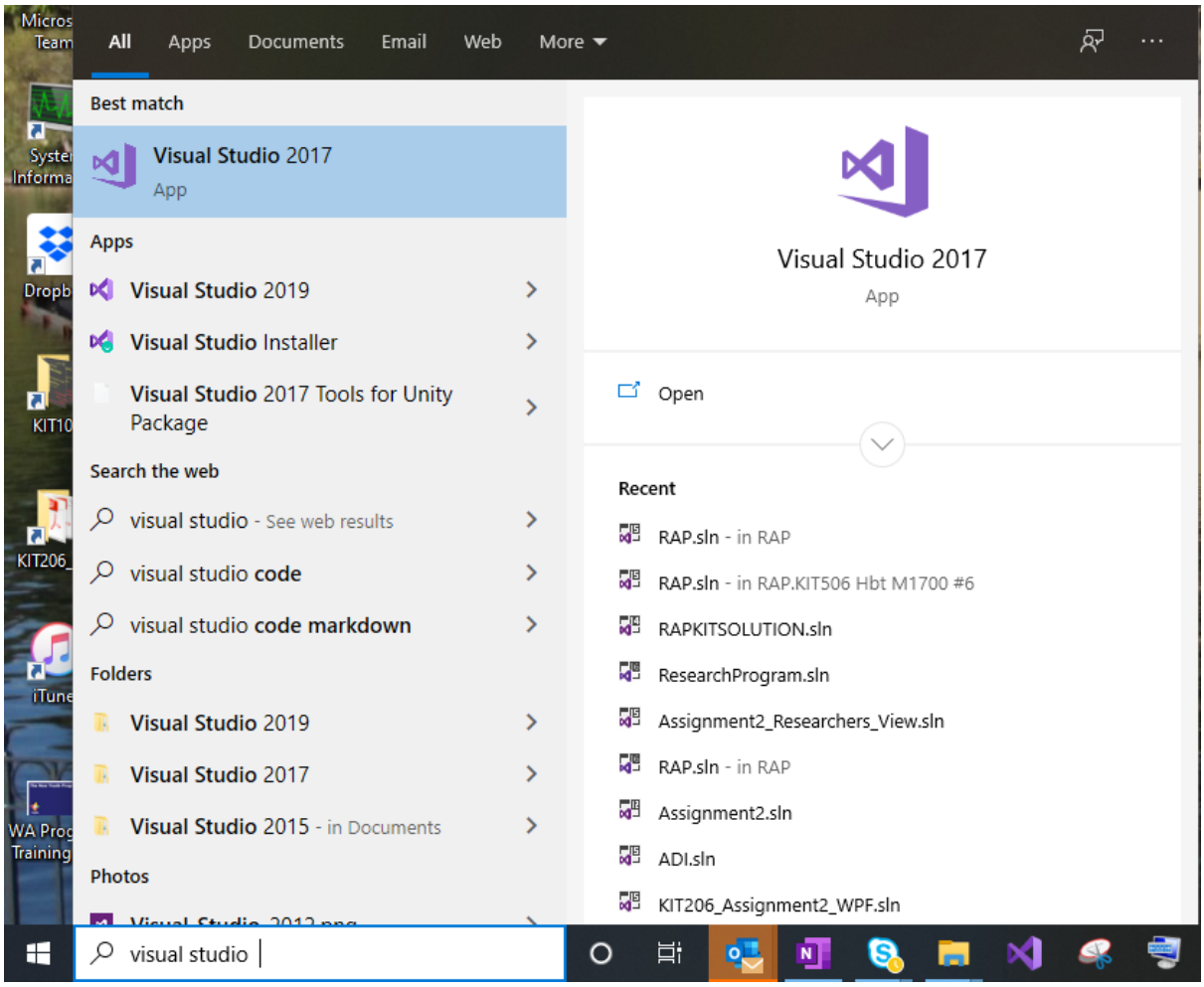
Visual Studio doesn't just interact with programs. Instead, programs are gathered together into software packages called *projects*. Whenever you want to write a C program using Visual Studio you must first create a project.

This document outlines the steps you must follow when you wish to do that.

## 1. Configuring Visual Studio for the first use

The first time you use Visual Studio you must configure it. *This step only needs to be done once.*

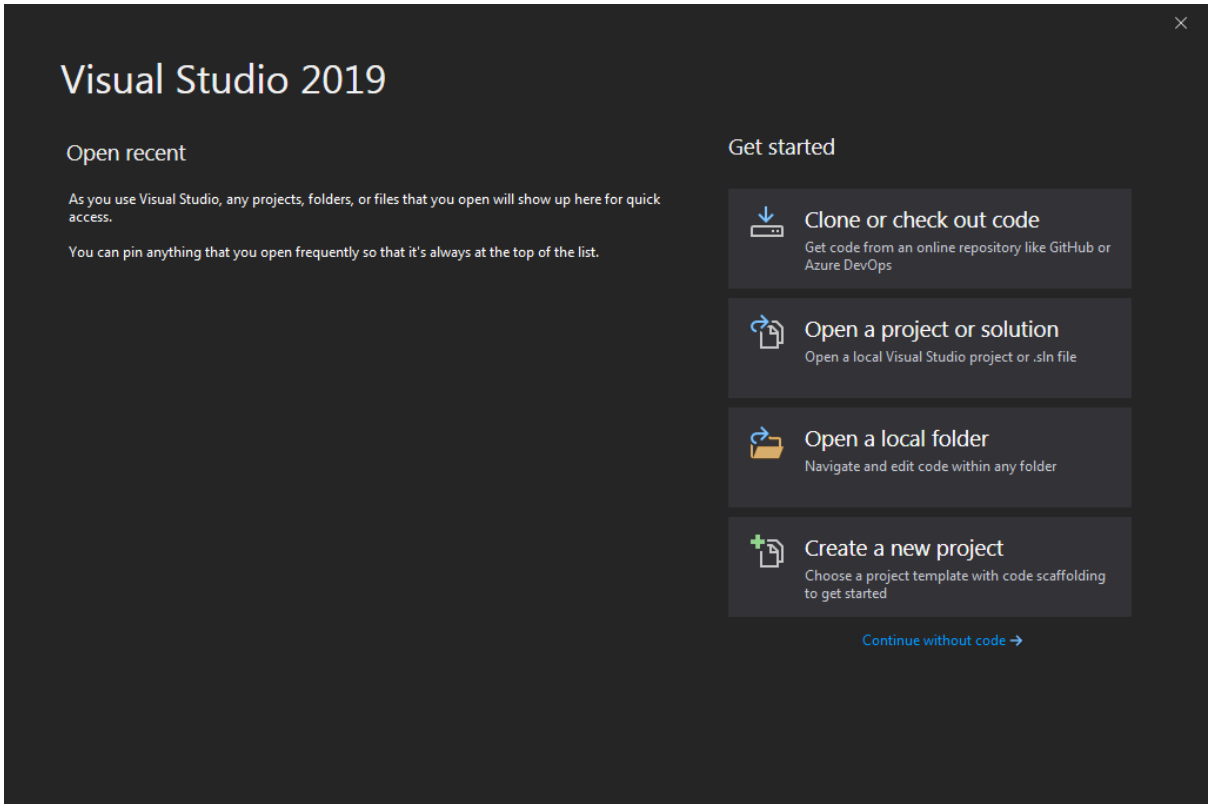
Click on the search bar in the bottom left-hand corner of the screen and start to type "Visual Studio". The bottom left of your screen should look a little like the one below.




When the application name appears in a list (as illustrated above), click on it. (I have both Visual Studio 17 and Visual Studio 19 installed on my computer. You should select whichever you have.)

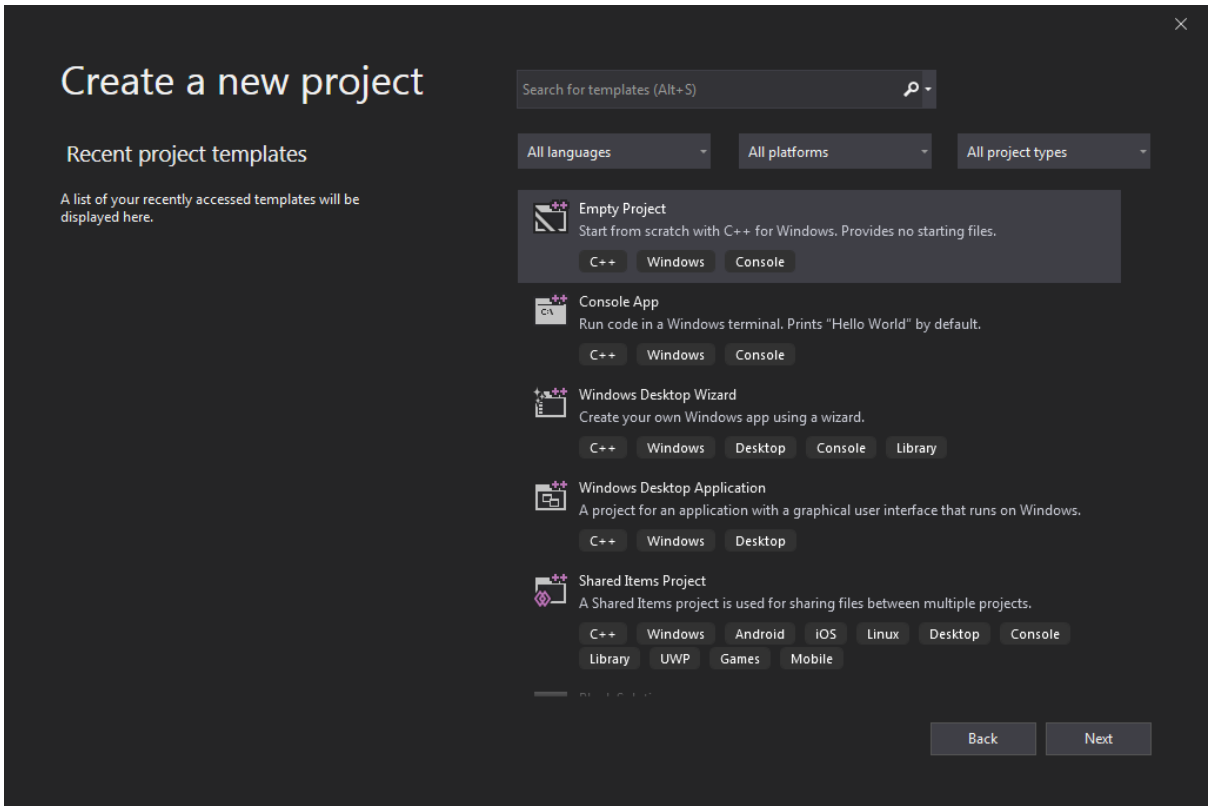
Please wait while the application is installed for your use. *This will take a few minutes.*

You may be asked some questions. If you are asked to log in, don't bother; you may select whichever colour scheme you like (I've chosen dark!) and then you should see:

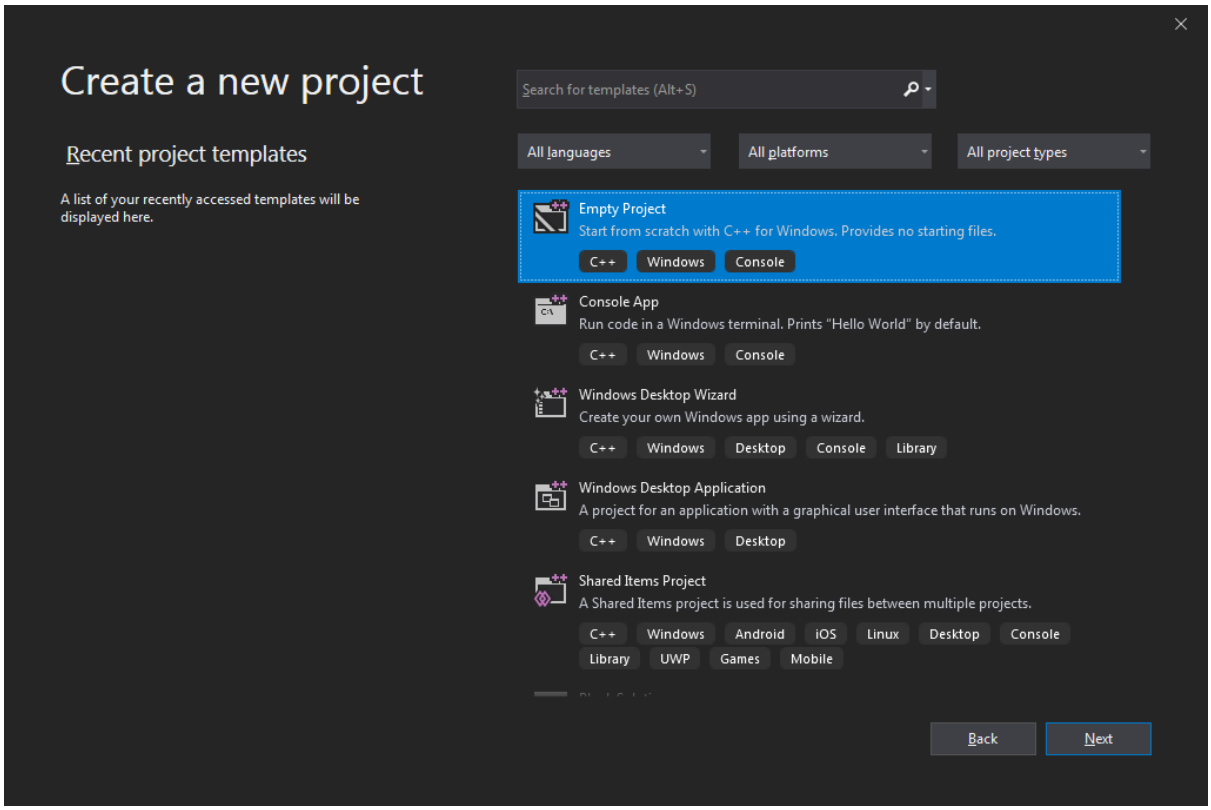



## 2. Creating a Visual Studio project for C programming

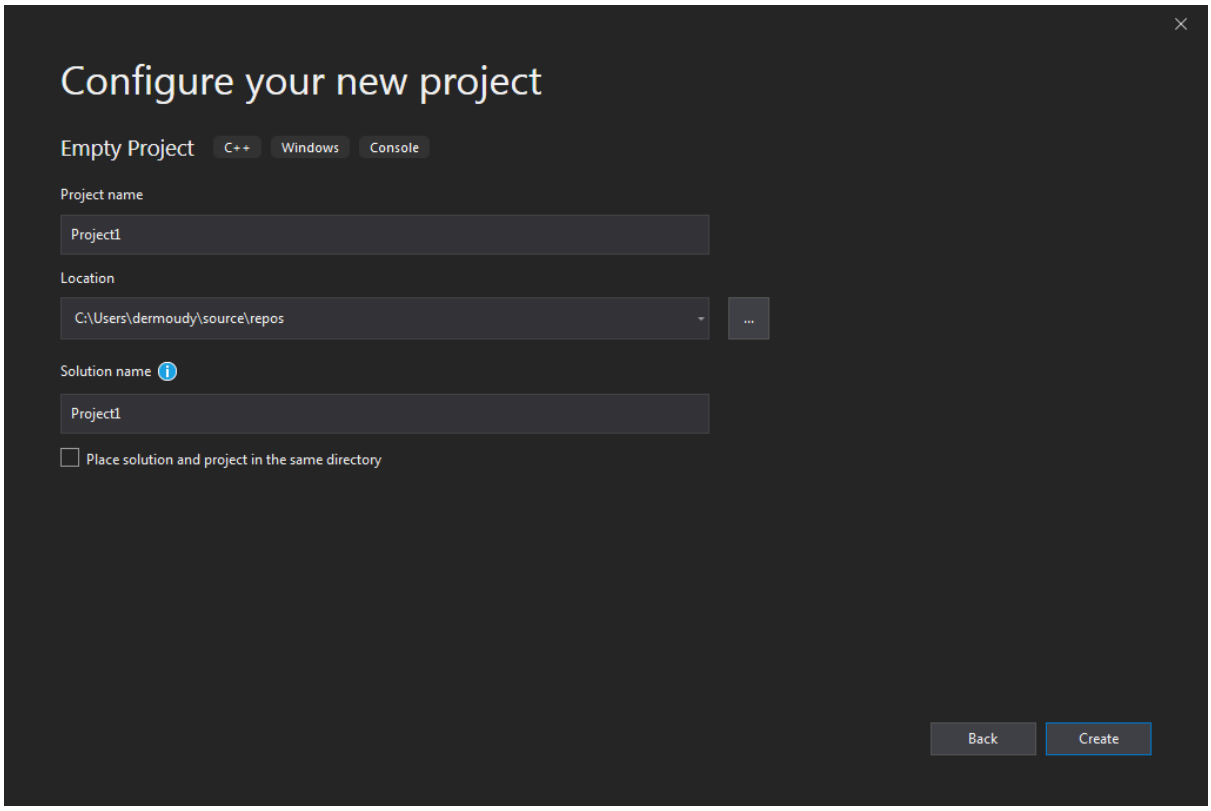
From there choose, **Create a new project**, or, if you chose **Continue without code** choose **New Project** from the **File** menu. The dialog box shown below should appear:



Choose **Empty Project** (as highlighted in the image below):



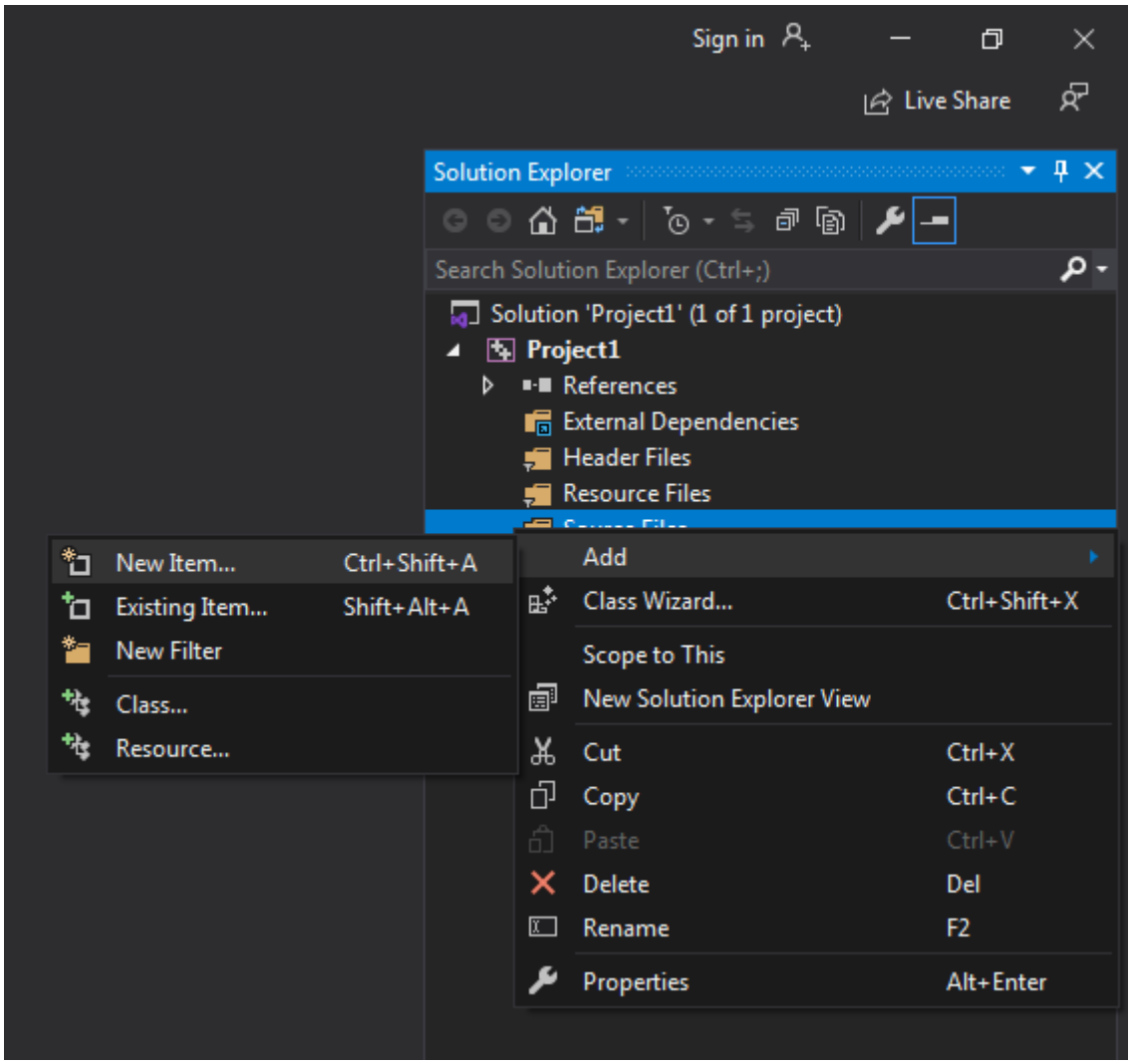

Click on **Next**. You should see:



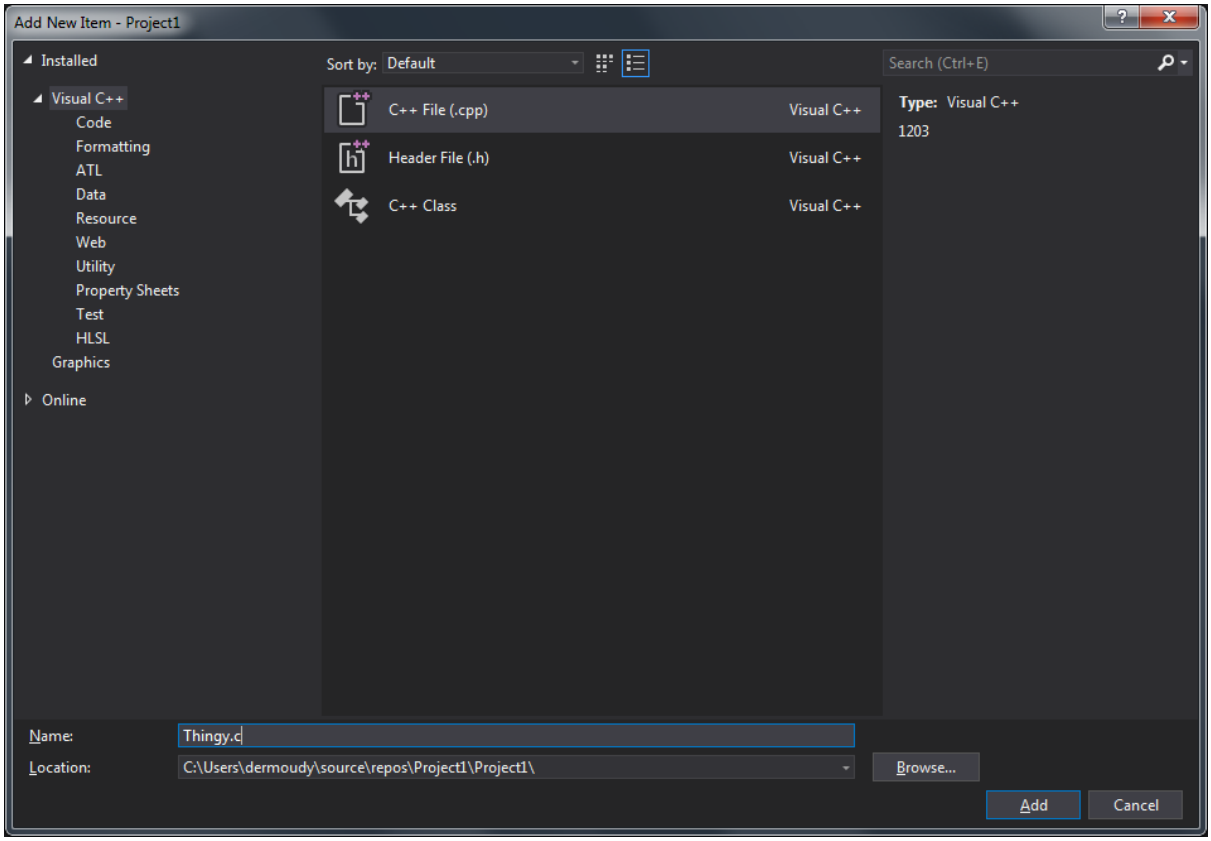
You may call the project (Project name) anything you like and may place it (Location) in any folder. Then click **OK**.

This has created a project (which it assumes will be used for C++). But it is currently empty and does not contain any code.

The next step is to create a file. In the "Solution Explorer" window, right-click on the Source Files folder and choose **Add New Item** in the top right of your screen as shown below:

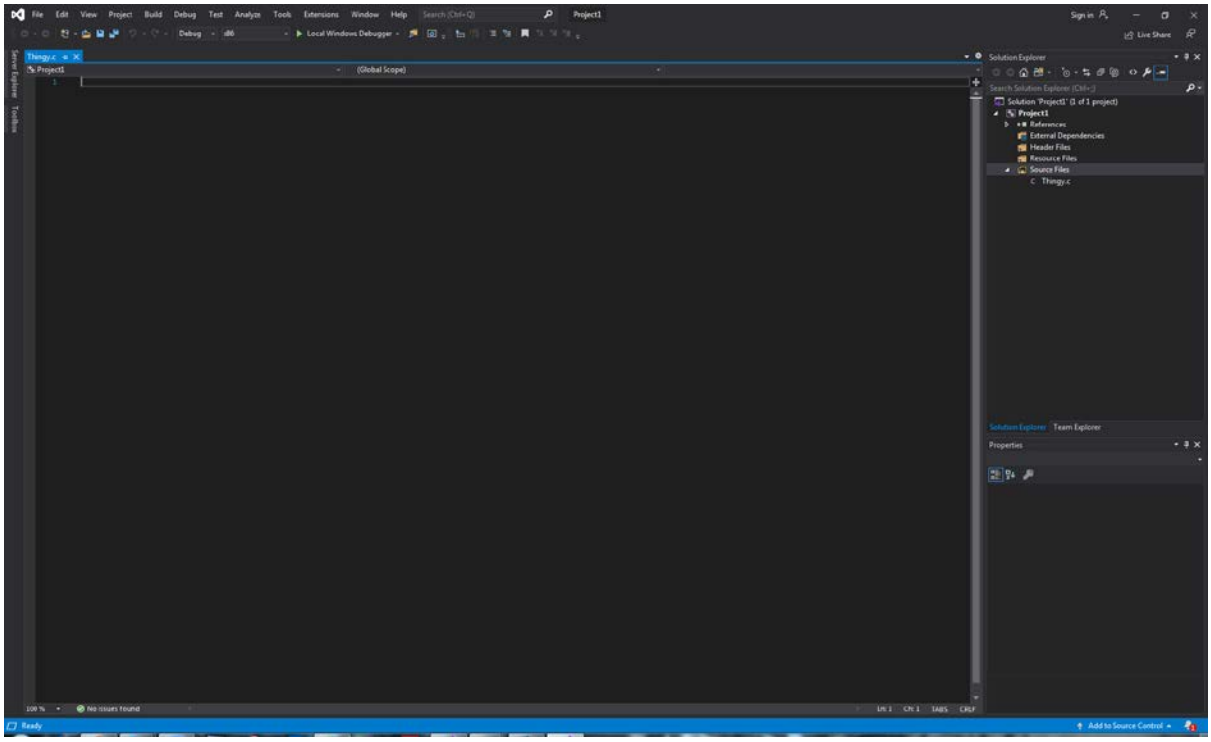



The dialog window shown below will appear. Give the program file any name you like, but ensure that it ends "`.c`" and not "`.cpp`".



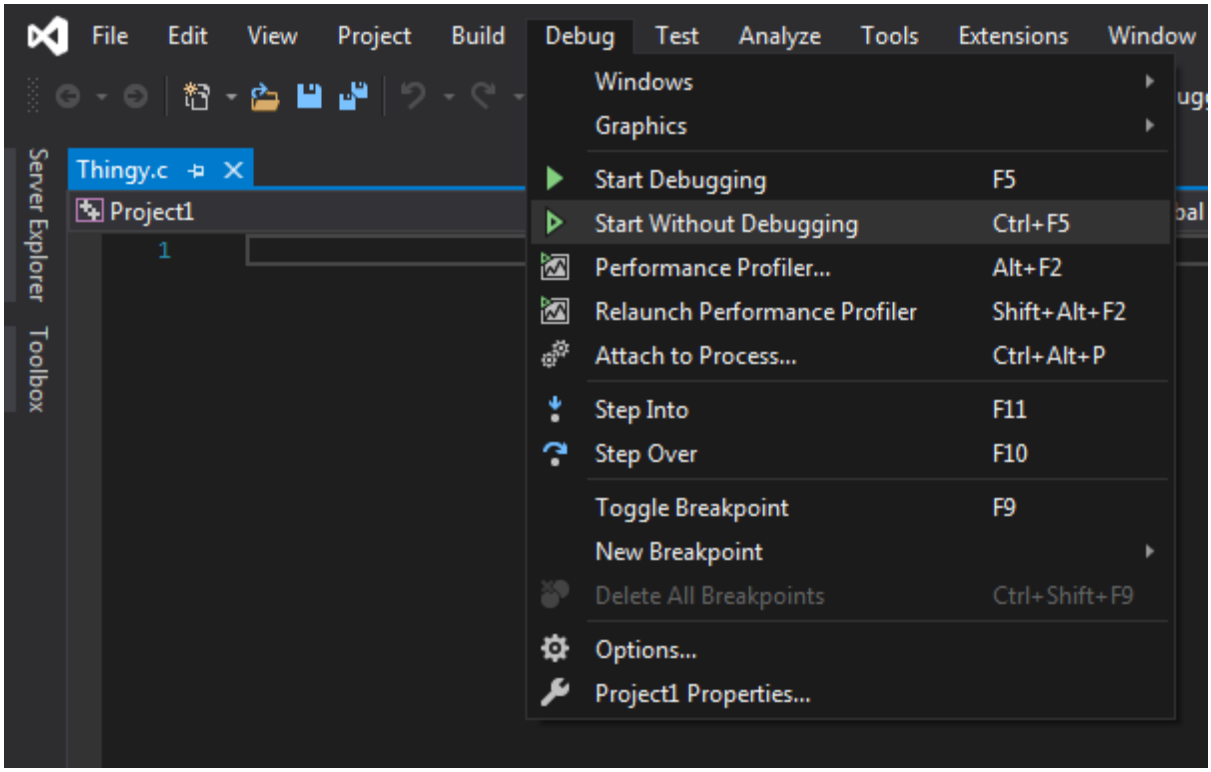

Click **Add**.

The window should now look like the one below and you can enter your program in the editor window shown on the left. Be sure you save your progress from time to time.



### 3. Compiling and Running the Program

There are many ways in Visual Studio to compile and execute your C program. The simplest is to choose **Start without Debugging** from the **Debug** menu. The image below shows what you should see in the top left of your screen.



Visual Studio will tell you if you have build errors and will ask you if you want to execute the previous version:


If this happens you should always click **No** and fix the errors.