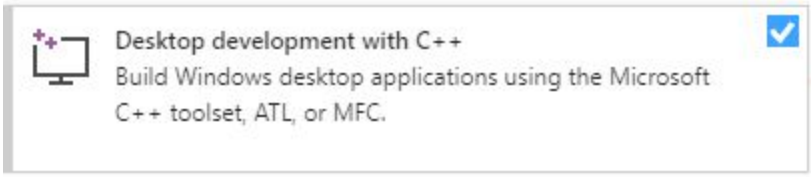
Visual Studio

Install **Visual Studio IDE** if you have not already done so.
https://visualstudio.microsoft.com/

The **Community** edition will work fine for this course.

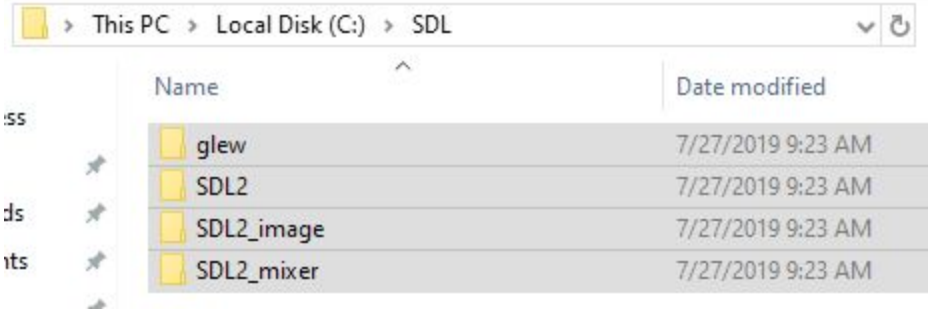
Be sure to **Install Desktop development with C++**
(you may need to scroll down to find it)



Don't create a project just yet, let's do the next step first.

Install Libraries

Download the **WindowsLibraries.zip** from the NYU Classes Resource folder.
Create a directory on your computer **C:\SDL** (use this **exact name** please)
Unzip the contents of WindowsLibraries.zip into the SDL folder:



Create a New project

Open Visual Studio, Select "Create a new project" then choose "Empty Project"
Name your project: `P0`

Setup Your Project

Right-Click on “Source Files” -> Add -> New Item -> C++ Fie (.cpp) Name the file: **main.cpp**
Right-Click on the project in the solution explorer and select: **Properties**
Expand the C/C++ area and select: General
Double click in the **Additional Include Directories** area and paste the following:

```
C:\SDL\glew\include;C:\SDL\SDL2\include;C:\SDL\SDL2_image\include;C:\SDL\SDL2_mixer\include;%(AdditionalIncludeDirectories)
```

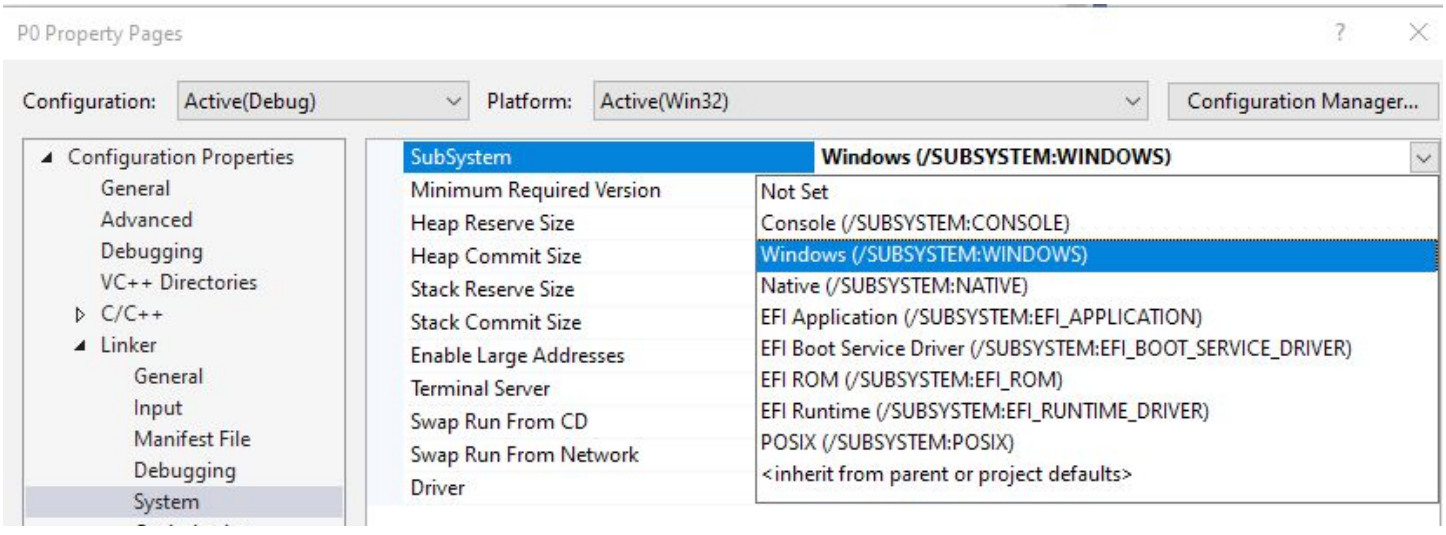
Expand the Linker area on the left and select: General
Double click in the **Additional Library Directories** area and paste the following:

```
C:\SDL\glew\lib\Release\Win32;C:\SDL\SDL2\lib\x86;C:\SDL\SDL2_image\lib\x86;C:\SDL\SDL2_mixer\lib\x86;%(AdditionalLibraryDirectories)
```

Under the Linker area on the left, select: Input
Next to **Additional Dependencies** you can click a downward arrow and then <Edit…>
Past the following into the top box and click OK

```
opengl32.lib;glew32.lib;SDL2.lib;SDL2main.lib;SDL2_image.lib;SDL2_mixer.lib
```

Under the Linker area on the left, select: System
hit the downward arrow next to **SubSystem** and change from Console to Windows



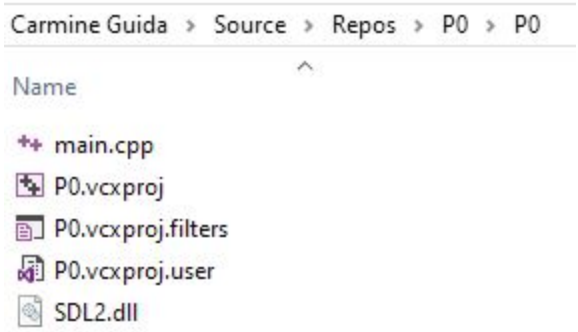
Hit OK. You’re done editing the properties.

Add DLLs

Using the File Explorer (yes, File Explorer, do not do this from inside Visual Studio), navigate to C:\SDL\SDL2\lib\x86\

Right-click on **SDL2.dll** and select **Copy**

In Visual Studio, you can Right-Click on your project and choose: Open Folder in File Explorer
Right-Click inside that folder (do this is File Explorer, not in Visual Studio), and select: Paste
It should look something like this:



Do the same for the following DLL:
C:\SDL\glew\bin\Release\Win32**glew32.dll**

Let's Code!

In Visual Studio, in the Source FIles folder, open your **main.cpp** file.

Type the following. Do not copy and paste! **You will learn more typing it out.**

The program should open up a window in the top left corner. It will stay open until you close the window.

```
#define GL_SILENCE_DEPRECATION

#include <SDL.h>
#include <SDL_opengl.h>

SDL_Window* displayWindow;
bool gameIsRunning = true;

void Initialize() {
    SDL_Init(SDL_INIT_VIDEO);
    displayWindow = SDL_CreateWindow("Hello, World!", SDL_WINDOWPOS_CENTERED,
SDL_WINDOWPOS_CENTERED, 640, 480, SDL_WINDOW_OPENGL);
    SDL_GLContext context = SDL_GL_CreateContext(displayWindow);
    SDL_GL_MakeCurrent(displayWindow, context);
}

void ProcessInput() {
    SDL_Event event;
    while (SDL_PollEvent(&event)) {
        if (event.type == SDL_QUIT || event.type == SDL_WINDOWEVENT_CLOSE) {
            gameIsRunning = false;
        }
    }
}

void Update() { }

void Render() {
    glClear(GL_COLOR_BUFFER_BIT);
    SDL_GL_SwapWindow(displayWindow);
}

void Shutdown() {
    SDL_Quit();
}

int main(int argc, char* argv[]) {
    Initialize();

    while (gameIsRunning) {
        ProcessInput();
        Update();
        Render();
    }

    Shutdown();
    return 0;
}
```

That was ridiculous! Let’s make a template!

Inside Visual Studio, highlight your project.
From the Visual Studio menu (on top), select Project -> Export Template
The current project should already be selected, click [Next >]

Name the template CS3113
Be sure “Automatically import the template into Visual Studio” is checked.
Click [Finish]

Here is all you need to do next time you start a project:

- Create New Project
- Select “CS3113” (might need to scroll to the bottom)
- Name your project something such as: P1
- Copy the glew32.dll and SDL2.dll using File Explorer (you can copy from a previous project).
- Happy Coding!