

Intro to Game Programming with SDL

Spring 2017

Topics

- API
- SDL
- Screen Coordinates
- Game Loop
- Simple Animation

API

- Application Program Interface (API)
- API
 - describes an interface of a software system
 - is a set of commands, functions, and protocols programmers can use when building software
 - allows programmers to use predefined functions when developing software
 - examples include: Standard Template Library in C++, Java API, SDL, Google Maps, Android

SDL

- SDL is an API that can be used with C++, C#, Python, and other languages, to write games
- SDL is available on Windows, Mac, Linux, iOS, and Android
- <https://www.libsdl.org/>
- <http://wiki.libsdl.org/Tutorials>

SDL in Visual Studio

- Visual Studio uses the acronym SDL to mean:
 - Security Development Lifecycle
 - Command line option
/sdl

SDL Setup

- SDL Setup folder is in CS250 Public
- README Instructions exist in the folder
- The setup is for Visual Studio 2015
- I have only tested this setup on Windows 10 systems
- SDL machines exist in the CS Lab, Marsh Labs, Scott Classroom, and 24-hour library lab

SDL HelloWorld

- Grab the Visual Studio 2015 solution SDLManager from CS250 Public and place this solution on your Desktop
- Open the solution
- Rebuild the solution
- Start Without Debugging

SDL Software

- <https://www.libsdl.org/download-2.0.php>

development libraries

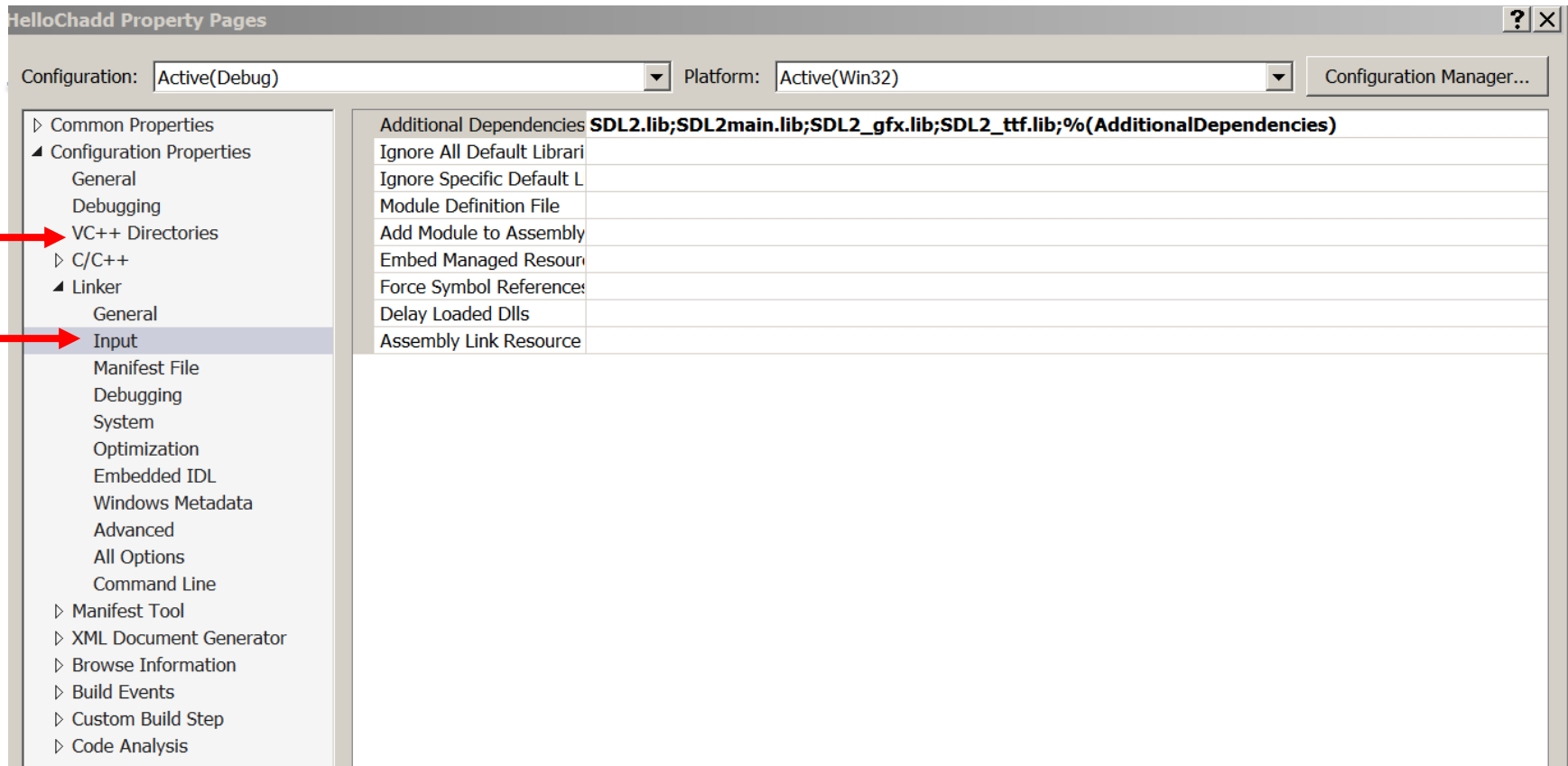
http://wiki.libsdl.org/MigrationGuide#Add-on_libraries

- https://www.libsdl.org/projects/SDL_ttf/
- http://www.ferzkopp.net/Software/SDL2_gfx/Docs/html/index.html
- https://www.libsdl.org/projects/SDL_mixer/
- https://www.libsdl.org/projects/SDL_image/

Setup your project to use SDL

- Project | Properties | Configuration Properties
 - VC++ Directories
 - Include Directories:
 - c:\Program Files (x86)\SDL2-2.0.3\include;\$(IncludePath)
 - Library Directories
 - c:\program files (x86)\SDL2-2.0.3\lib\x86;\$(LibraryPath)
 - Linker | Input
 - Additional Dependencies:
 - SDL2.lib;SDL2main.lib;SDL2_gfx.lib;SDL2_ttf.lib;%(Additional Dependencies)

Setup your project



Setup your project

Include Directories

```
C:\Program Files %28x86%29\SDL2-2.0.3\include  
$(SolutionDir)\SDLManager
```

Library Directories

```
C:\Program Files %28x86%29\SDL2-2.0.3\lib\x86  
$(SolutionDir)\SDLManager\Debug
```

Additional Dependencies

```
SDL2.lib  
SDL2main.lib  
SDL2_gfx.lib  
SDL2_ttf.lib  
SDL2_Mixer.lib  
SDL2_image.lib
```

Simple Hello World

- Copy SDLManager from grace to your desktop, compile and run.
- Compile & Run
- Let's discuss



SDL pieces

- Window
- Renderer
- Texture
- Surface
- SDLManager is a C++ wrapper for SDL
 - I will modify as the course goes along

Screen Info

- Upper left is (0, 0)
- RGBA or a 32-bit value storing the red channel value (8-bits), green (8-bits), blue (8-bits), and alpha channel (8-bits) used for transparency
- Alpha channel values
 - 0 is fully transparent
 - 255 is fully opaque