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/
- <u>http://wiki.libsdl.org/Tutorials</u>

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

- <u>https://www.libsdl.org/projects/SDL_ttf/</u>
- <u>http://www.ferzkopp.net/Software/SDL2_gfx/Docs/ht</u> <u>ml/index.html</u>
- <u>https://www.libsdl.org/projects/SDL_mixer/</u>
- <u>https://www.libsdl.org/projects/SDL_image/</u> Spring 2017 CS250 - Intro to CS II

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

lelloChadd Property Pages				?
Configuration: Active(Debug)		▼ Platform: Active(Win32)	•	Configuration Manager.
Common Properties	Additional Dependencies SI)L2.lib;SDL2main.lib;SDL2_gfx.lib;SDL2_	ttf.lib;%(AdditionalDependenci	es)
Configuration Properties	Ignore All Default Librari			
General	Ignore Specific Default L			
Debugging	Module Definition File			
VC++ Directories	Add Module to Assembly			
▷ C/C++	Embed Managed Resource			
▲ Linker	Force Symbol References			
General	Delay Loaded Dlls			
Input	Assembly Link Resource			
Manifest File				
Debugging				
System				
Optimization				
Embedded IDL				
Windows Metadata				
Advanced				
All Options				
Command Line				
Manifest Tool				
XML Document Generator				
Browse Information				
Build Events				
Custom Build Step				
Code Analysis				

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.
- Comple & 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