

Intro to Game Programming with SDL

Spring 2019

<https://www.libsdl.org/>

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\SDL.zip
- README Instructions exist in the folder
- SDL machines exist in the CS Lab, Marsh Labs, Scott Classroom, and 24-hour library lab
- SDL runs on VirtualBox as well

SDLManagerV1.2

- Grab solution SDLManagerV1.2 from CS250 Public and place this solution on your Desktop
- Open the solution
- Rebuild the solution
- Start Without Debugging

SDLManagerV1.2 Output



Files

- `SDLDriver.cpp` – example driver
- `SDLManager.h` – interface to SDL
- `Color.h` – interface for Color

Open SDLDriver.cpp

- Initialize App
- Game Loop
 - update
 - render
 - handle event

Take notes on printed SDLDriver.cpp

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:
 - Add C:\SDL2\include
 - Library Directories
 - Add C:\SDL2\lib\x86
 - Linker | Input
 - Additional Dependencies:
 - Add
SDL2.lib;SDL2main.lib;SDL2_gfx.lib;SDL2_ttf.lib;SDL2_Mixer.lib;SDL2_image.lib
 - Debugging
 - Add to Environment
 - PATH=C:\SDL2\lib\x86;%PATH%

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