2D GAME ENGINE

By Moiz Yousufi

WHAT DID I BUILD

- A simple game engine for making 2D games

- Has a tile system, movement, music, and a save system

- It's quite basic – no real game functionality

- Meant to be a template for developers, not an actual game

STRUGGLES WITH STARTING

- Wanted an SDL project

- SDL compatible with Windows, Mac, Linux

- Wanted to develop on Windows

- Windows bad

ENTER: WINDOWS SUBSYSTEM FOR LINUX (WSL)

- Subsystem that is more efficient than virtual machines

- Latest version supports graphics implementations

- No dll files, no weird installation issues

- Sudo apt-get install

SDL: A QUICK RUN-THROUGH

- A simple graphics library for C

- Based on OpenGL and Direct3D

- Much more simple than OpenGL and Vulkan

- Good for 2D creation

NOTES ABOUT THE GAME ENGINE

- Weird SDL-related issue; segfaults upon close

- Segfaults after main function

- Appears to be down to a system level

DEMO!

DEMO, BUT DIFFERENT ASSETS

HOW DOES IT WORK

- Two threads: game and music

- Both threads run in infinite loops until window closes

- Game thread handles all user input and makes logical decisions

- Game thread also renders everything into the window

- Game thread also handles save system

TECHNIQUES FROM THIS CLASS

- Threads – Music and game threads running in parallel

- Thread Synchronization – Game thread communicates to music when entering a new room (and when exiting the program)

- File Systems – read and write from a save file

Q&A