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Self taught game programmer deeply interested in algorithms and gameplay constructs. Currently the System Administrator for a national scale business.

Skills

- Solid knowledge of **C, C++, and C#**. Working knowledge of Make, CMake, Python, Rust, and JS.
- Low level programming knowledge including reading **ASM** and an understanding of **operating systems and GPUs** in the context of game development
- Able to efficiently work with data using **Excel and SQL** to improve workflows
- Can reason about the **costs and benefits of abstractions** as related to an overall game design
- Strongly believes in/understands the **interrelationship between game designer and programmer**

Projects

Crumble King Arcade Game | Written in Odin (a C-like language) using SDL 2 and Miniaudio

- Implemented a complete game project without a game engine, including a platform layer, audio synthesis, asset management, and save data.
- Utilized a straightforward, procedural style to identify necessary abstractions iteratively
- Made an arcade cabinet using an Arduino Micro to connect to a physical control panel. Wrote a separate audio backend to output sound instructions to a SN76489 sound chip

Software Path Tracer | Written in C and Win32 without math libraries

- Implemented visual features such as reflectivity, metallicity, and transparency
- Used profiling to identify performance bottlenecks and achieve 3x framerate improvement

Vulkan Renderer | Written in C++ and using SDL 2 for windowing

- Identified industry best practices including modern C++ features and using Khronos validation layer
- Learned GLSL and used semaphores/fences to produce robustly concurrent code

Web Server | Serving simple HTML/CSS written in C

- Practiced networking/socket fundamentals, efficient cstring manipulation, and memory management

Cicero Language (In Progress) | Compiled programming language written in C with NASM backend

- Wrote lexer, LR(1) parser, and translation stage to NASM assembly language as the backend
- Currently limited to unstructured programming with primitive variables and goto for control flow

Work

System Administrator | Barlean's Organic Oils | June 2023 - Present

- Started as the only employee in the IT department for a national scale business, systematically triaging the development of documentation, policy, and process standards from scratch
- Hired, trained, and directly manage a helpdesk specialist, setting goals and priorities as needed
- Programmed
- Regularly used SQL, Excel, and other proprietary software to view and modify business data
- Wrote various software improvements in JS, Python, and the proprietary 4GL language for Sage ERP