

# The Dungeon Crawler

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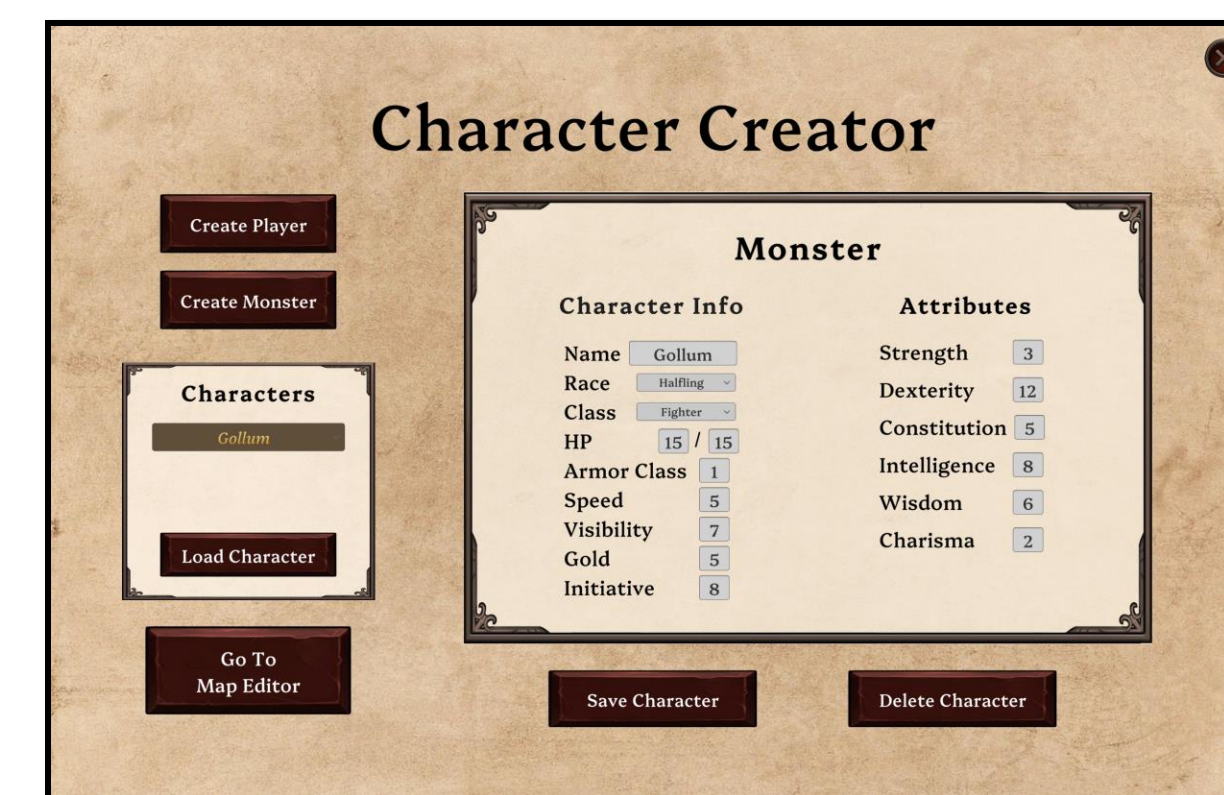


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## Project Overview

The Dungeon Crawler is an electronic game board that visualizes and simulates the dungeon crawler experience commonly seen in role-playing games such as Dungeons and Dragons. Our goal is to provide an interactive game board that modernizes the role-playing game experience while maintaining the classic feel of in-person tabletop gaming.

The 16x16 hex map houses Hall Effect sensors and pixels to detect magnetic tokens as they move across the board and light up the map in response to player movements and actions. The LCD and keypad are used to display and respond to action and dice roll prompts during gameplay. In the companion app, users design original maps and characters to keep every game fresh, and the Dungeon Master can lead the game with ease as the board performs movement and visibility calculations. We hope our project can be enjoyed by role-playing newcomers and veterans alike.

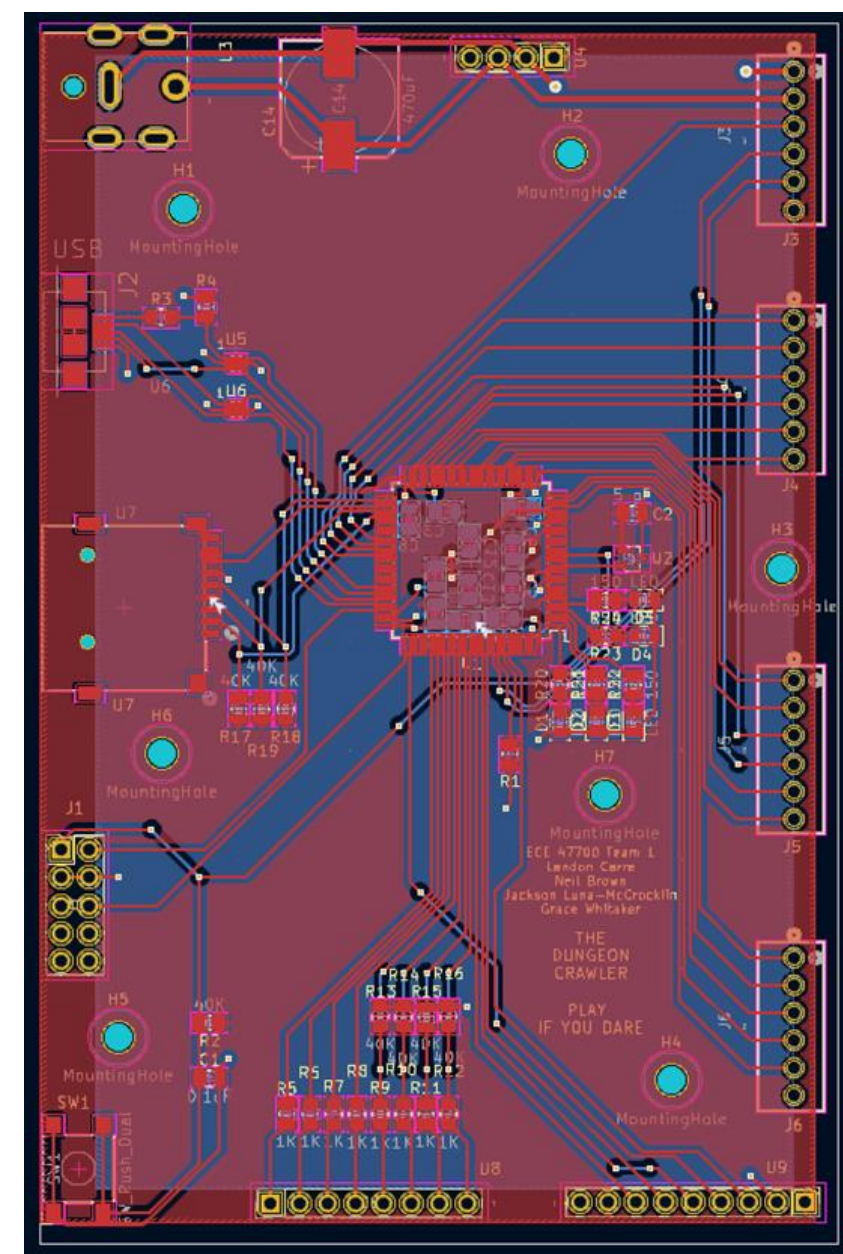


## Dungeon Crawler App

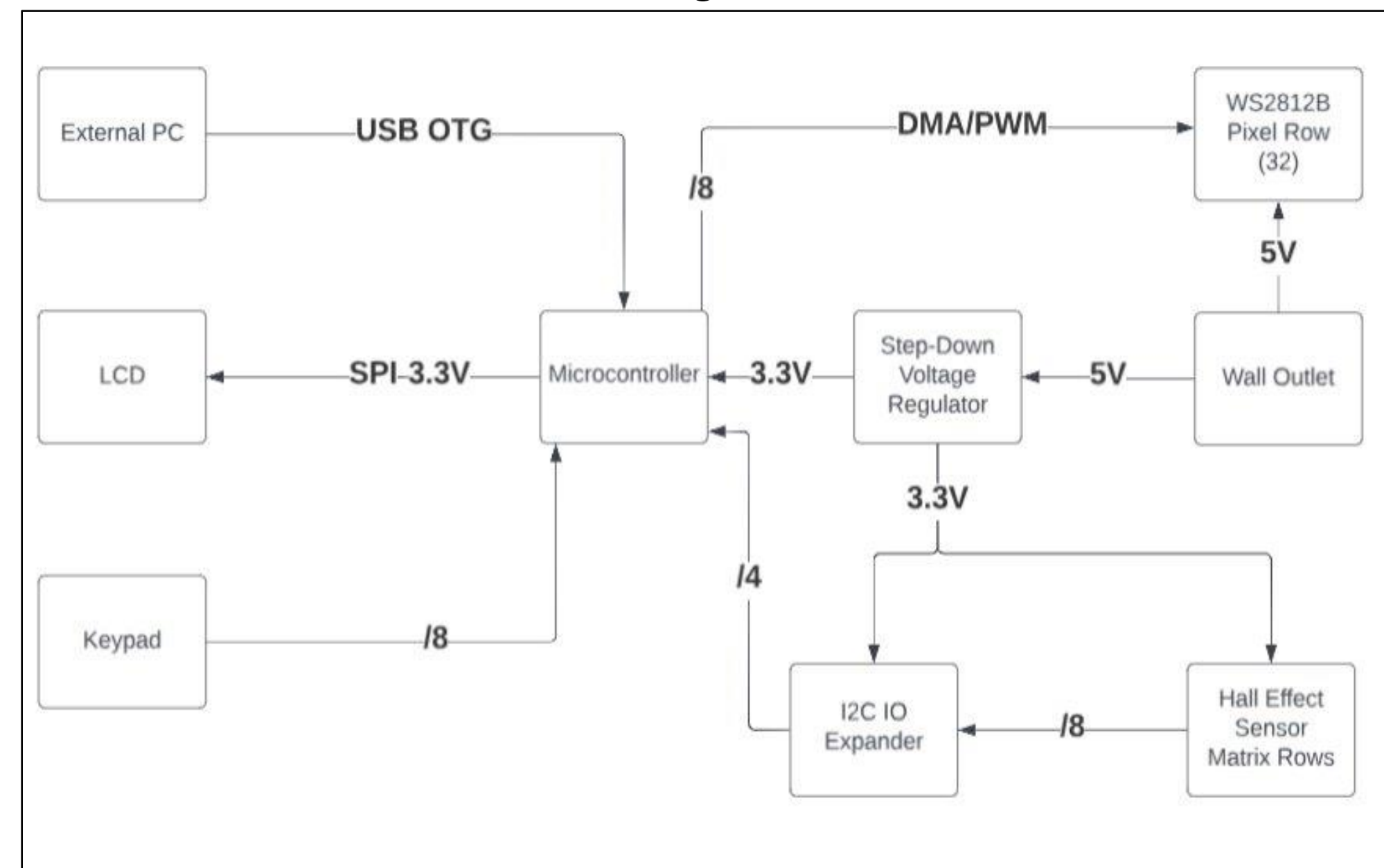
The Dungeon Crawler App is a desktop program that works in tandem with the Dungeon Crawler Board. The app was built in Unity using the C# language and features a Map Editor page and Character Editor page for customizing the dungeon crawling experience.

In the app, users can edit a 16x16 hex map that mirrors the map on our board. They can select between wall, floor, and chest hexes and place them as they see fit. On the character page, users can create players and monsters and edit their name, class, and stats. Once created, they can be added to the virtual map and sent over to the board via USB.

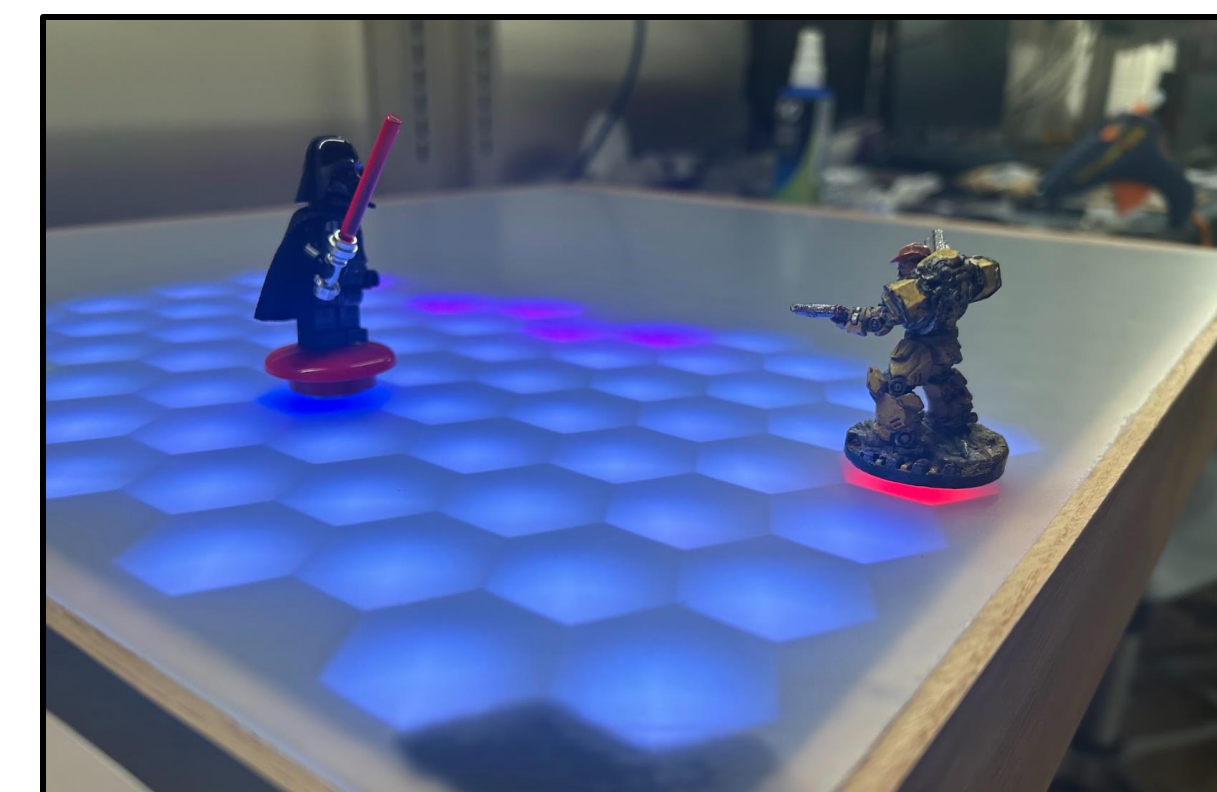
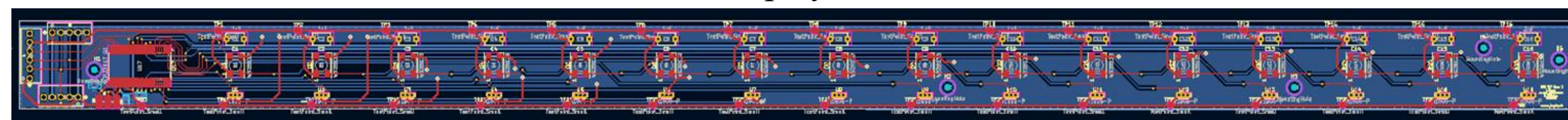
Main PCB



Block Diagram



Gameplay PCB



## Special Thanks

To Schatz Wood and Iron for building our box and  
ECE 477 Team 4 for their figurines!