A picture containing graphical user interface

Description automatically generated

ECE 425

Microprocessor Systems

Final Project

Maze game

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Objective:

The objective of this project is to deepen my understanding of game development by creating a functional game that incorporates various core concepts. My main focus is to design the game with a dynamic maze generator that introduces randomization in the maze structure, making each gameplay experience unique through diverse maze configurations.

Background and Methodology:

The embedded systems concepts will be applied to my project will be UART, GPIO, Debouncing for the buttons edge triggers. My overall plan to accomplish my objective is to learn UART programming to get the microcontroller to work with my computer to start making this maze game. I will also look for make patterns that work for randomization to use. The algorithms that I will be using code to match with player current strategy and make sure when he hits a wall it is game over. It also will include coordinates of the player up to date constantly. I will using the UART to display the game on the computer which will build a option menu and then from there it will build a maze once started.

Block Diagram:

TBD

Pinout Plan:

I will be using different pins for GPIO buttons, and UART for the screen, so to To Be Determined. Components Used:

|  |  |
| --- | --- |
| TM4C123GH6PM microcontroller |  |
| Laptop |  |
| To Be Determined |  |

Analysis and Result:  
TBD

Conclusion:

TBD