ECEN 361 Project Status Report

mapping robot   
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# Project Scope

Develop a robot capable of autonomously navigating within a maze using ultrasonic and infrared sensors to avoid obstacles and reach the designated goal.

# Schedule and Meeting Attendance

This week, Adam and Trevor met to discuss the navigation algorithm and decided on a final idea.

# Derived Requirements

## General Requirements

* Program a robot to autonomously navigate a maze using ultrasonic wave technology
* The device shall demonstrate reliable and accurate navigation through the maze, successfully navigating the maze each time
* The device shall be compact and lightweight

## Interface Requirements

* The user will press a button on the front of the vehicle to start the navigation process. The vehicle will detect when the maze has been finished automatically.
* The device may use communication interfaces such as Bluetooth for data exchange with external devices

## Functional Requirements

* The device should be able to detect obstacles in its path using ultrasonic sensors.
* It should autonomously navigate around obstacles to reach its destination
* The device should create a map of the maze as it navigates
* It shall be able to determine its current position within the maze
* It shall adjust its speed and direction based on input from the ultrasonic sensors
* It shall handle unexpected situations such as sensor noise and dead ends
* It shall allow the user to start and stop the navigation process easily

# Hardware Block Diagram

# A diagram of a machine Description automatically generated

# Software Block Diagram

# A diagram of a company Description automatically generated

# Challenges and Victories

* Created an idea for a navigation algorithm
* Established plan to meet in the future to construct maze and test navigation algorithm
* Elizabeth hasn’t attended meetings lately and we haven’t heard from her for a bit