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Sponsor: Liam Quinn / Texas State University

## Project Overview

Build an autonomous robot that will utilize wall detection and orientation sensors with a routing algorithm to solve a known maze without touching walls.

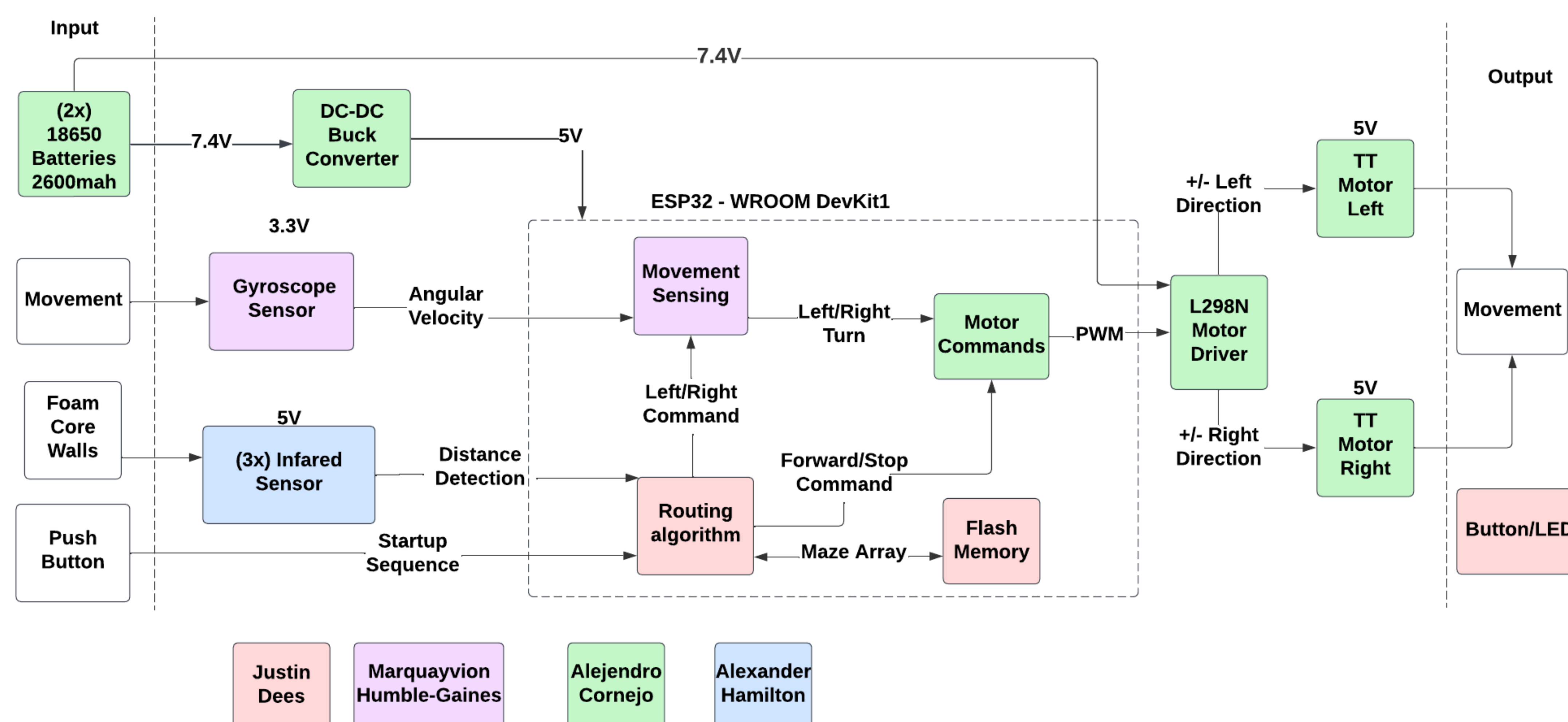
## Design 1 Requirements

- Traverse a 3ft x 3ft x 0.5 ft maze with a travel space width of 6 inches
- The objective is to complete the maze and, using equipped sensors and routing algorithm, avoid collisions
- Design a Printed Circuit Board (PCB) Chassis schematic
- Functional subsystem integrated to complete a known maze within 3 minutes
- Maintain a \$40 budget, not including provided metal chassis

## Design 2 Plan

- Design a second bot and integrate both bots onto PCB Chassis
- Integrate a second routing algorithm
- Ability to solve a larger, unknown maze.
- Complete memory storage ability

## Top Level Diagram

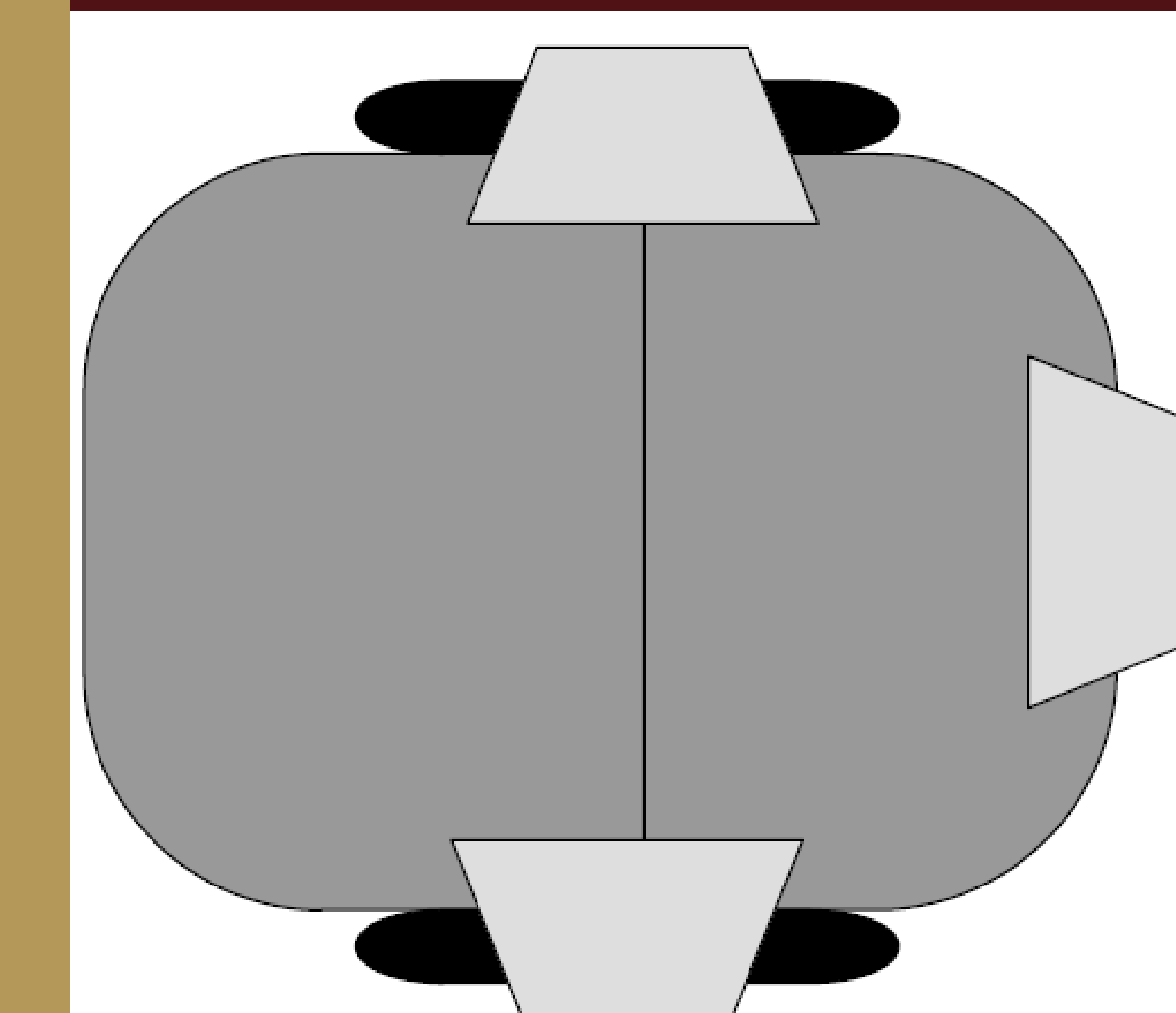


## Team

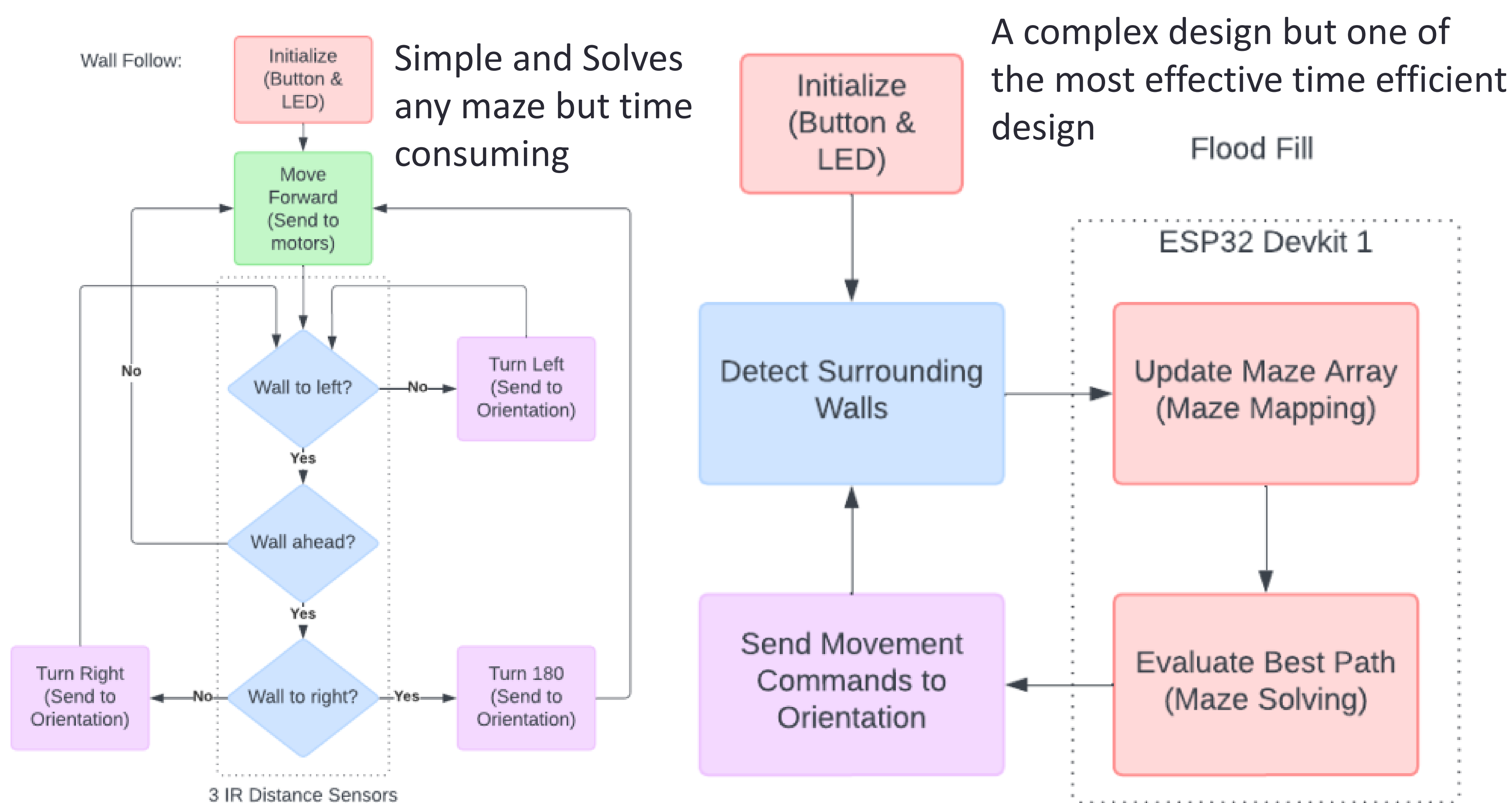


**Justin** - Navigation  
**Alejandro** - Motor Control, Power, PCB Chassis  
**Marquayvin** - Orientation / Movement Sensing  
**Alexander** - Wall Detection

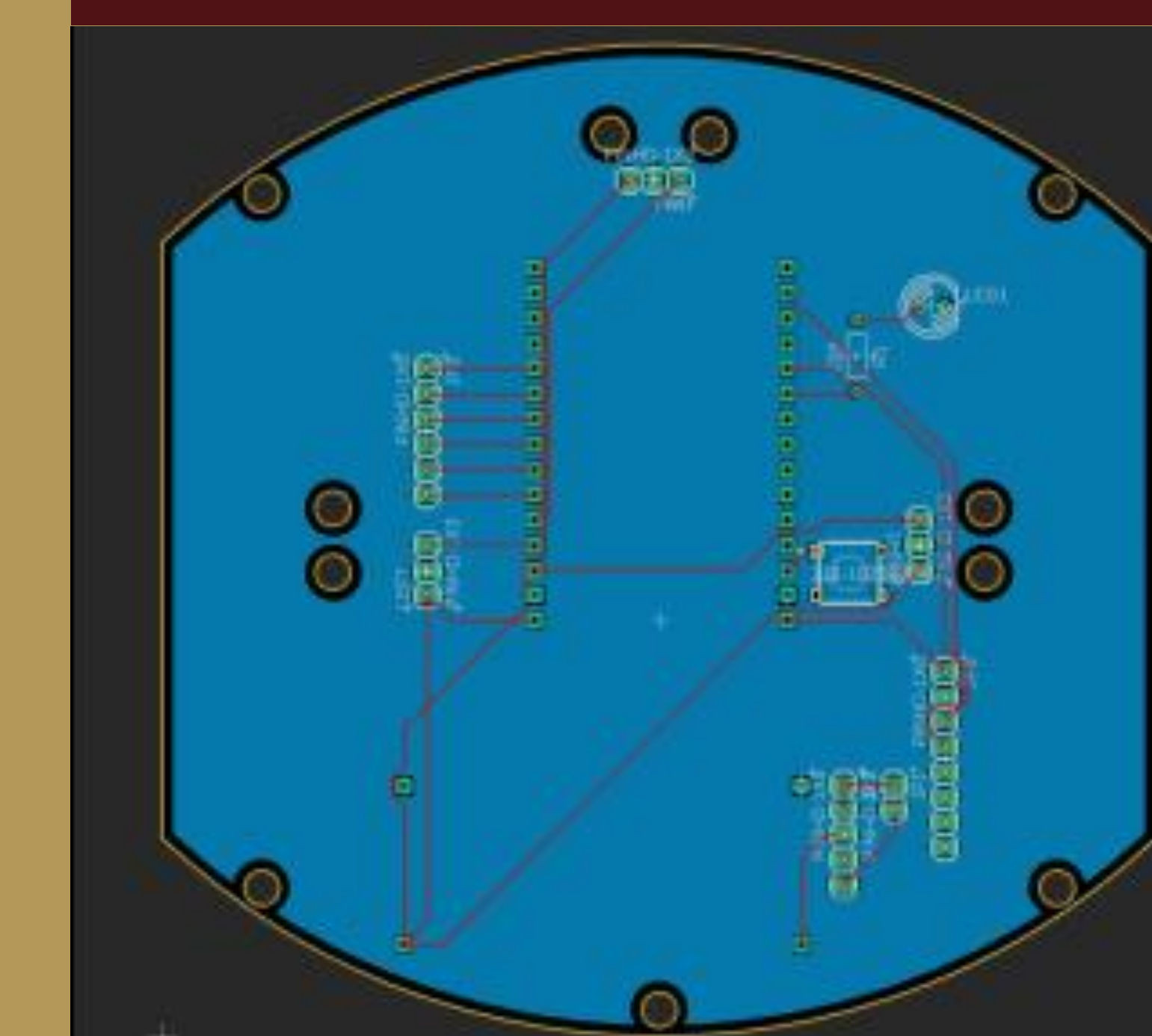
## Sensor Layout



## Navigation Routing Algorithm



## PCB Chassis Schematic



## Acknowledgements

Sponsor: Mr. Liam Quinn  
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D2 Mentor: E2.07 – Eggsplorer  
D2 Mentor: E2.09 – The Eggquisitors