



E1.08 – Elevator Control System

Kaitlyn Chandler, Nathan Charles, Noah Pham, Sarah Smith

Sercan Iscan

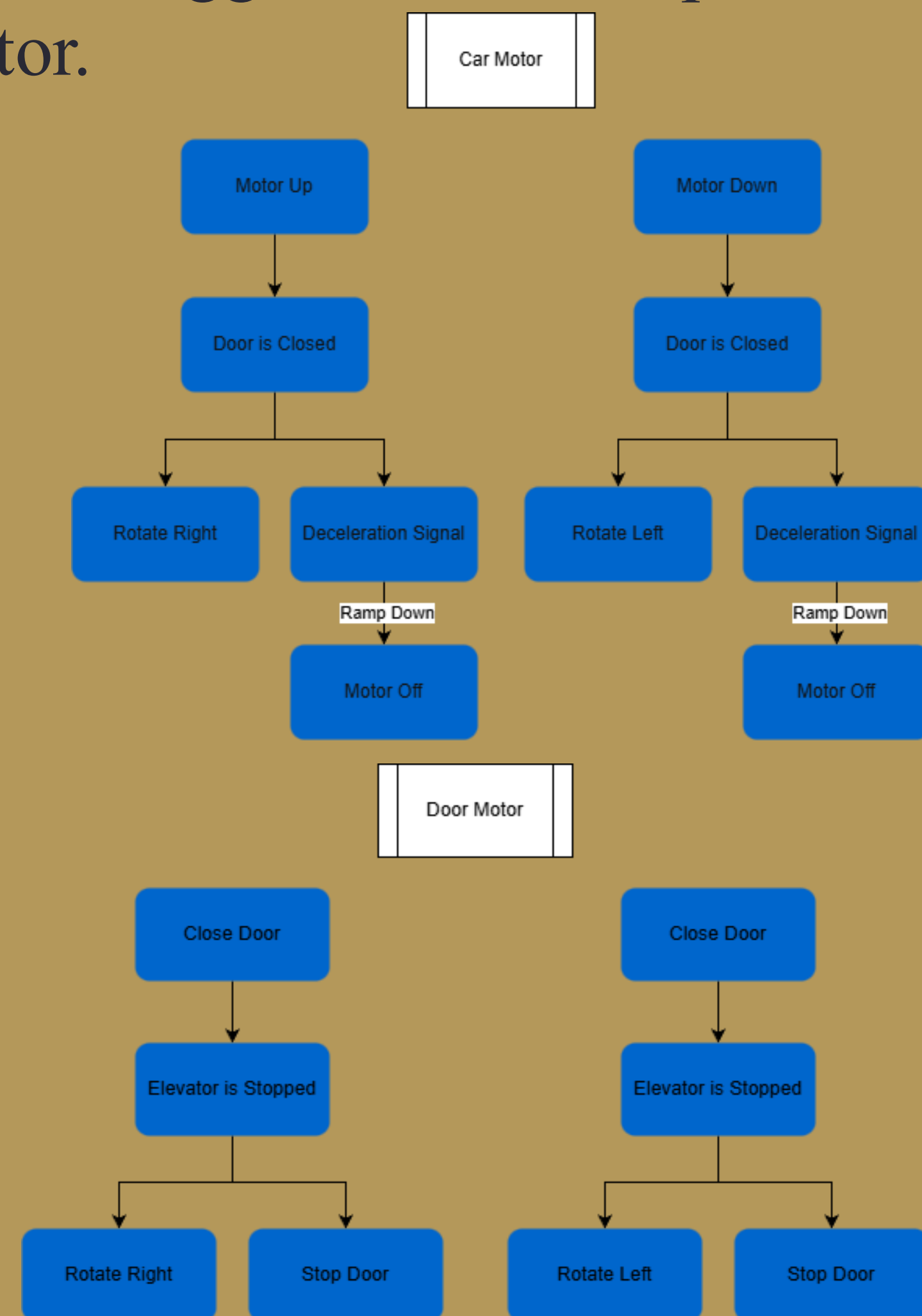


Original Requirements

- Safely manage the floor selection and prioritization between inside and outside elevator buttons
- Control the motor direction and stop at correct floors
- Automatically open and close the doors when arriving at floors
- Implement status feedback through indicators
- Design and simulate using OpenPLC

Motor Control

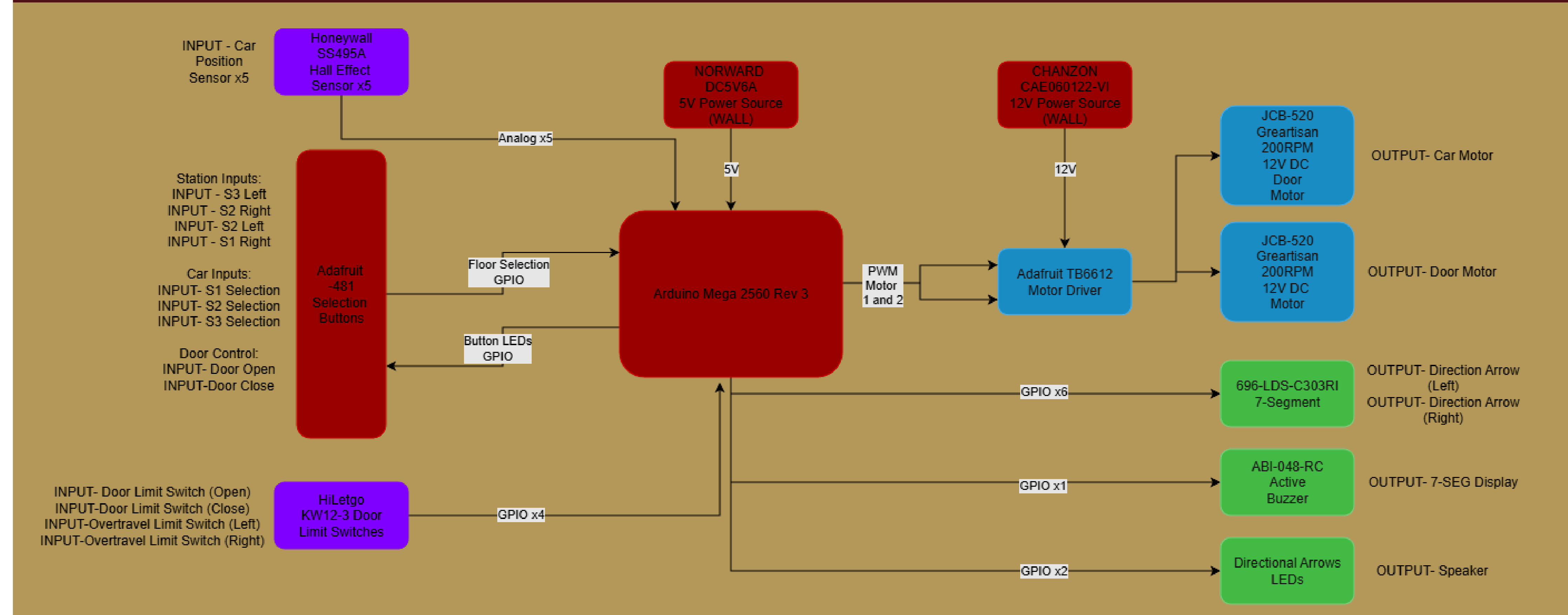
Inputs from Floor Prioritization and Safety/Door Operation. Control the direction movement for both Car and Door Motor. Decelerate signal from sensor subsystem triggers PWM ramp down for car motor.



Acknowledgments

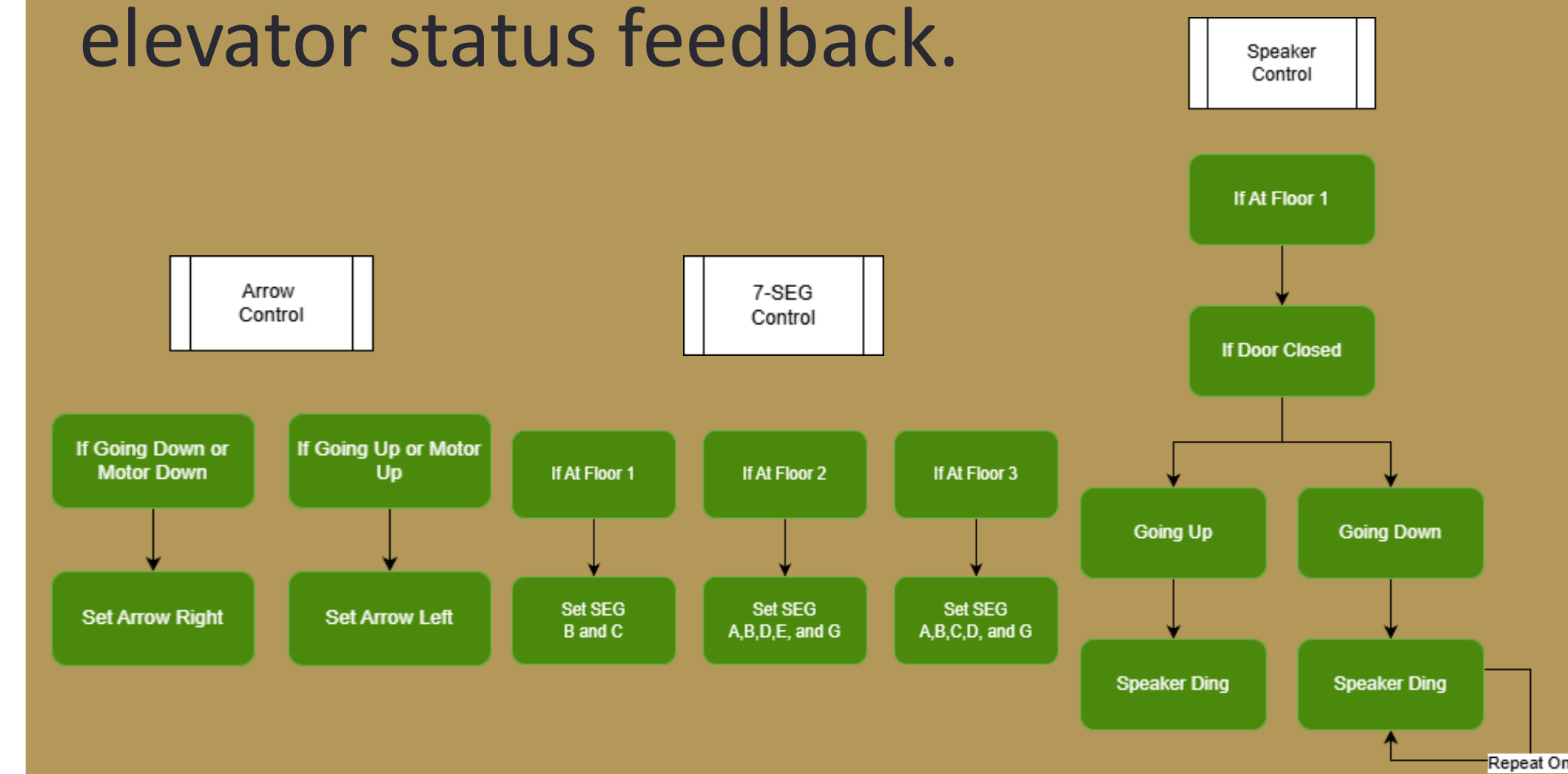
- Sponsor: Sercan Iscan
- Advisor: Jeffrey Stevens
- Faculty Advisor: Mark Welker

Top Level Block Diagram



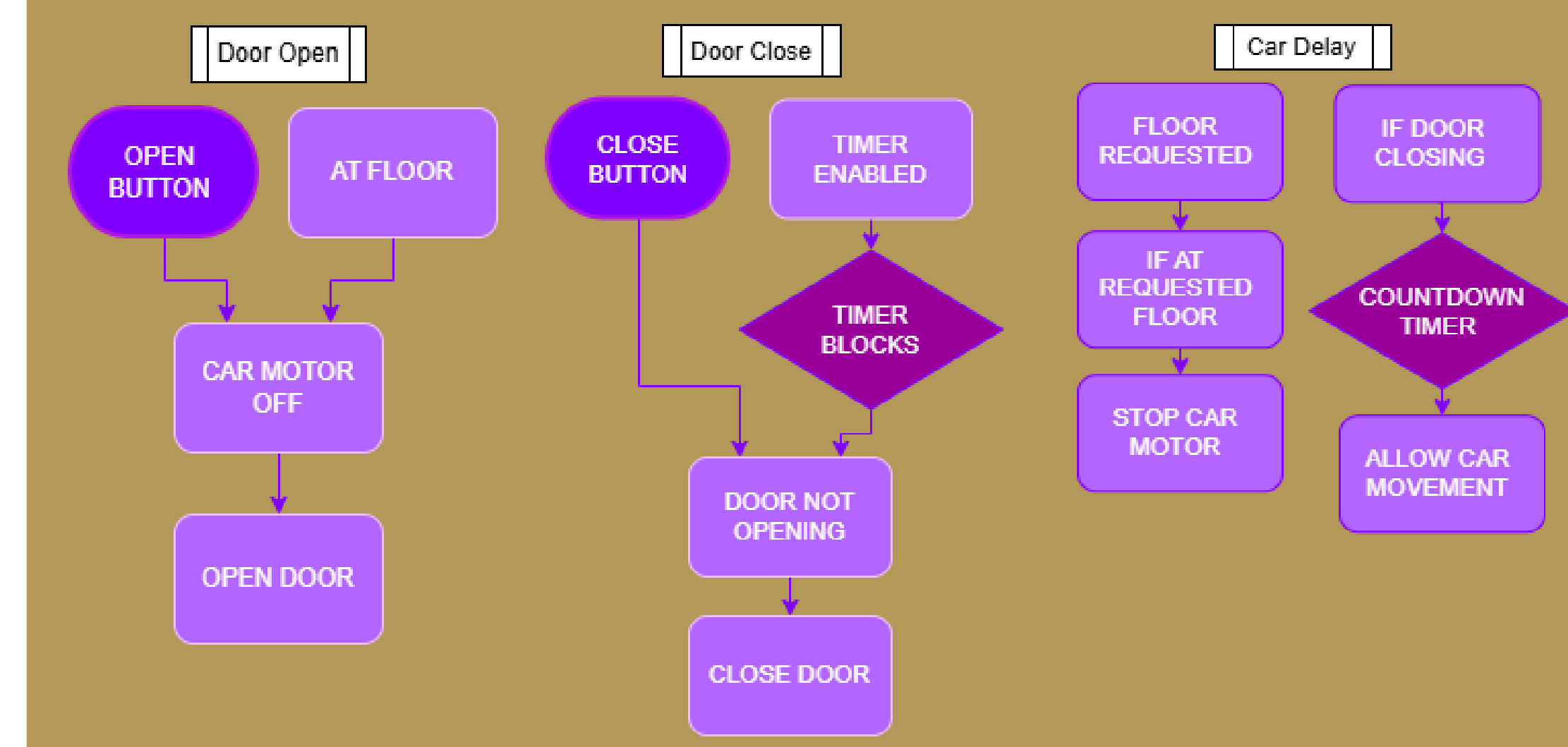
User Interface

Floor display, LED buttons, arrows, and audio tones provide clear, real-time elevator status feedback.

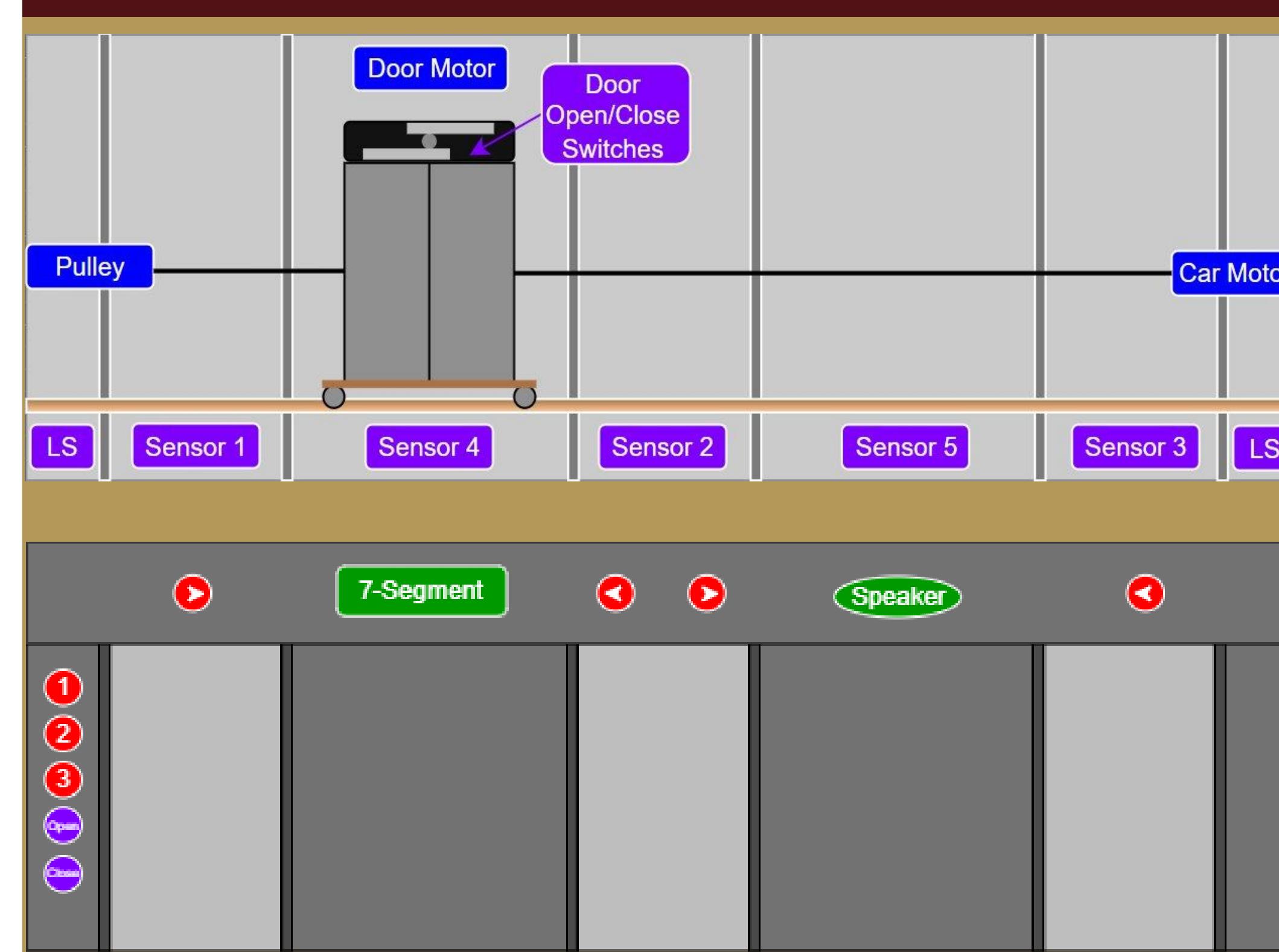


Door Operation

Door Operations sends open/close door signals based on buttons and car/door status.

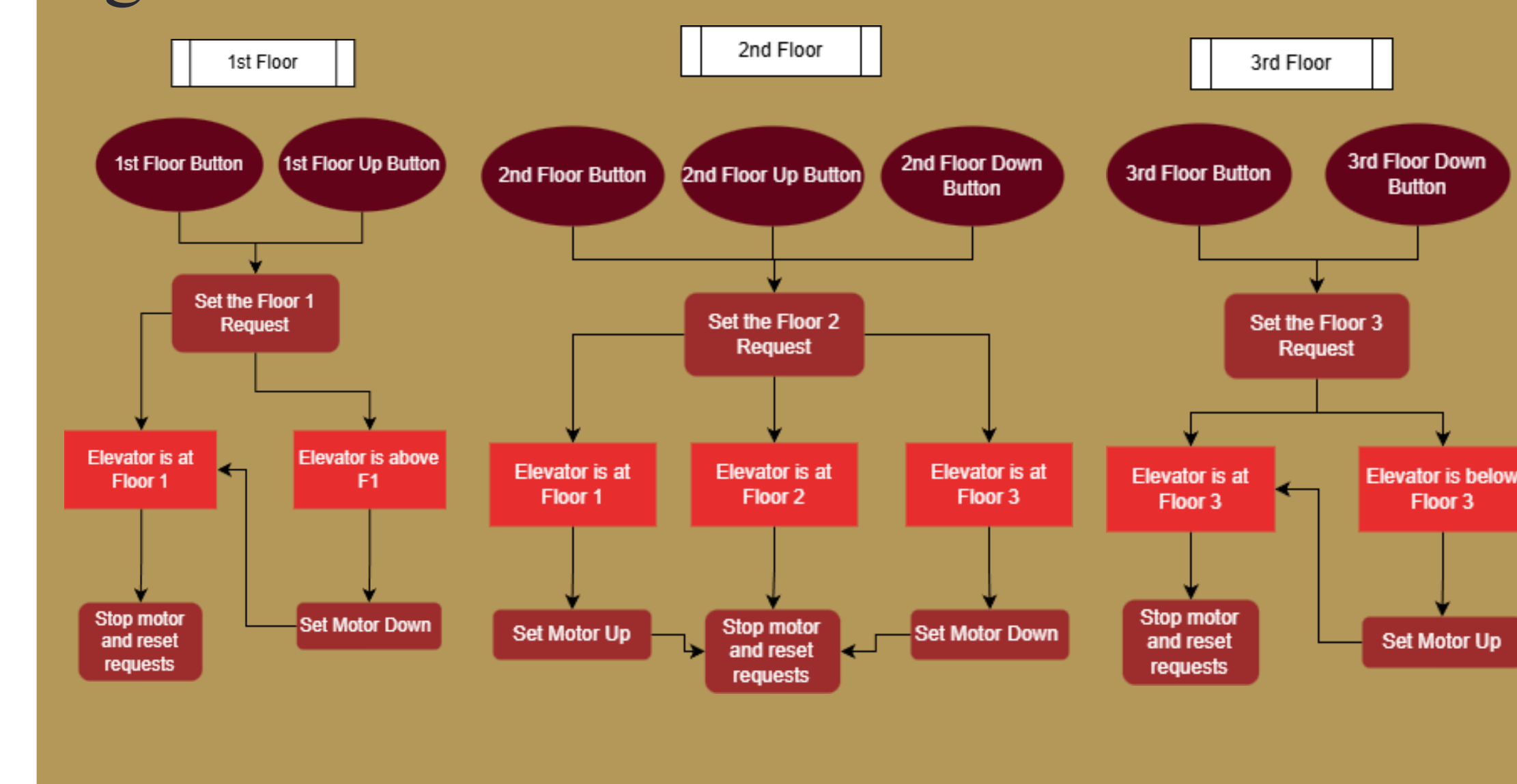


Elevator Model

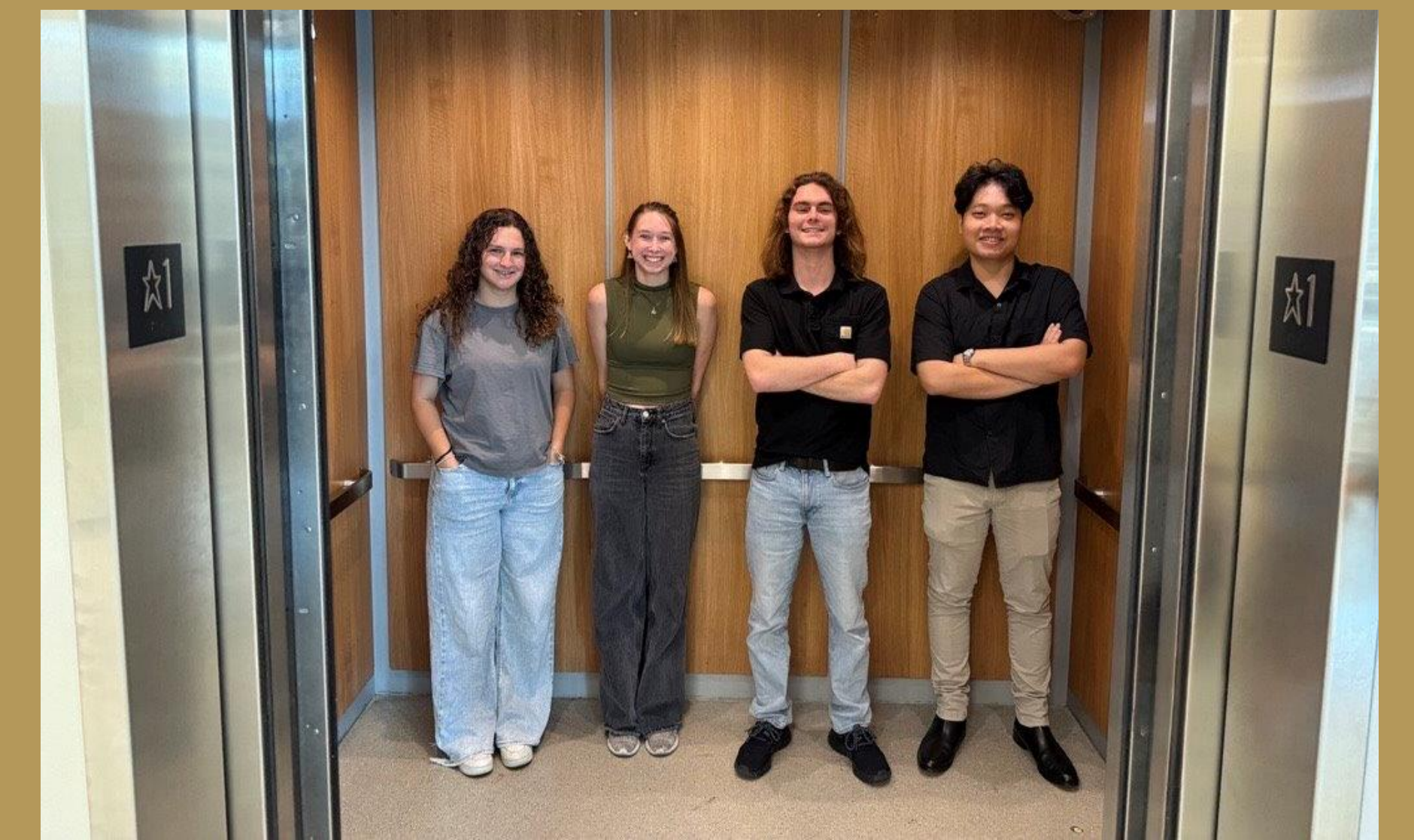


Floor Prioritization

The prioritization logic selects the next floor based on active Up, Down, and Request signals.



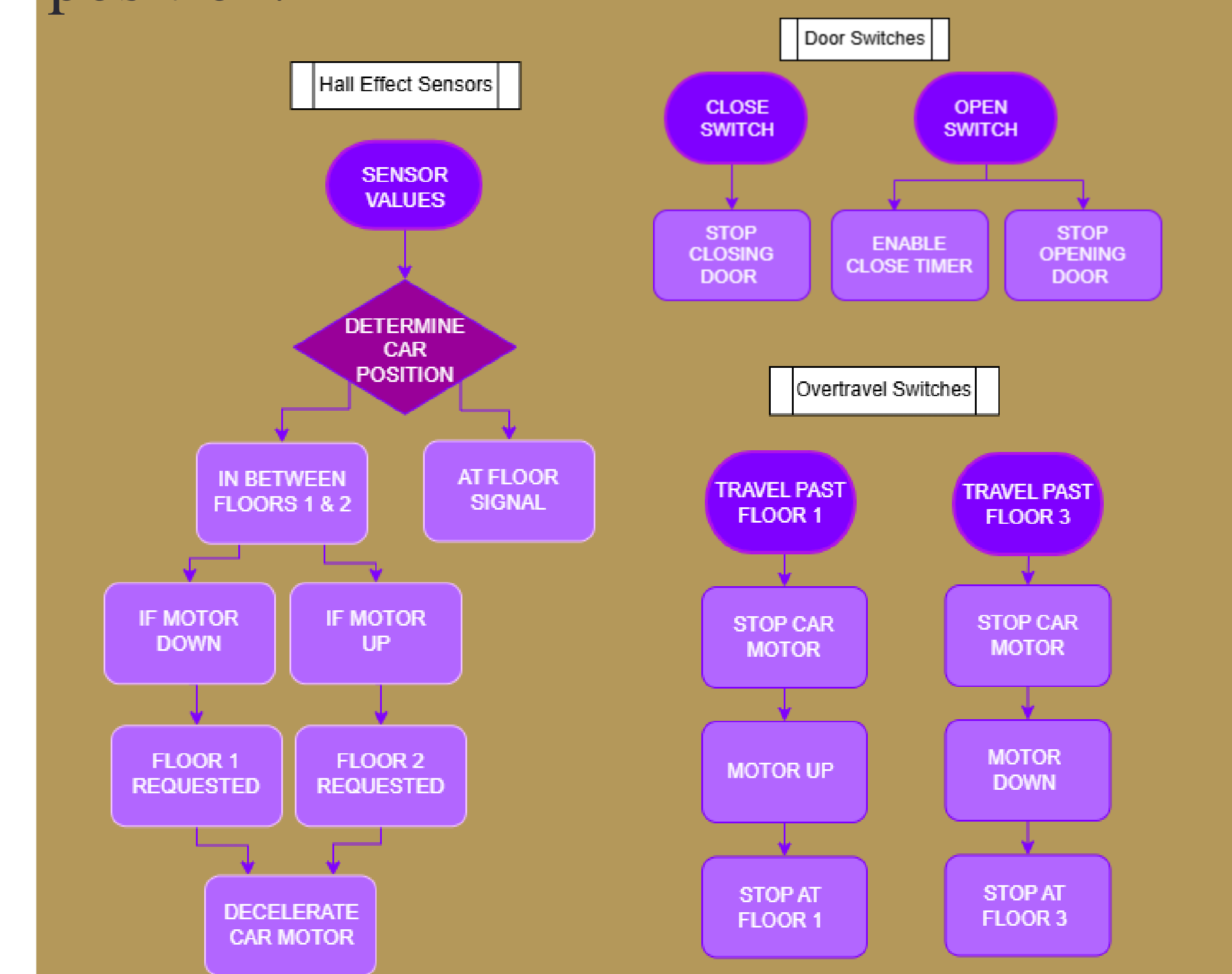
Meet the Team



Kaitlyn Chandler, Sarah Smith, Nathan Charles, Noah Pham

Safety and Emergency

Safety uses limit switches and hall effect sensors to send statuses on door/car position.



D2 Goals

- Integrate all subsystem code with physical elevator model
- Implement motor driver and PWM speed control
- Test hall/car buttons, limit sensors, and LEDs
- Validate the safety function
- Demonstrate full system functionality