

“Closing the GAPS between
YOU and the FUTURE”

G.A.P.S. Garage Assisted Parking System

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Background

• Why?

- People are looking to find new ways to modernize their homes and assist themselves in simple tasks such as parking their vehicles in the garage

Overview

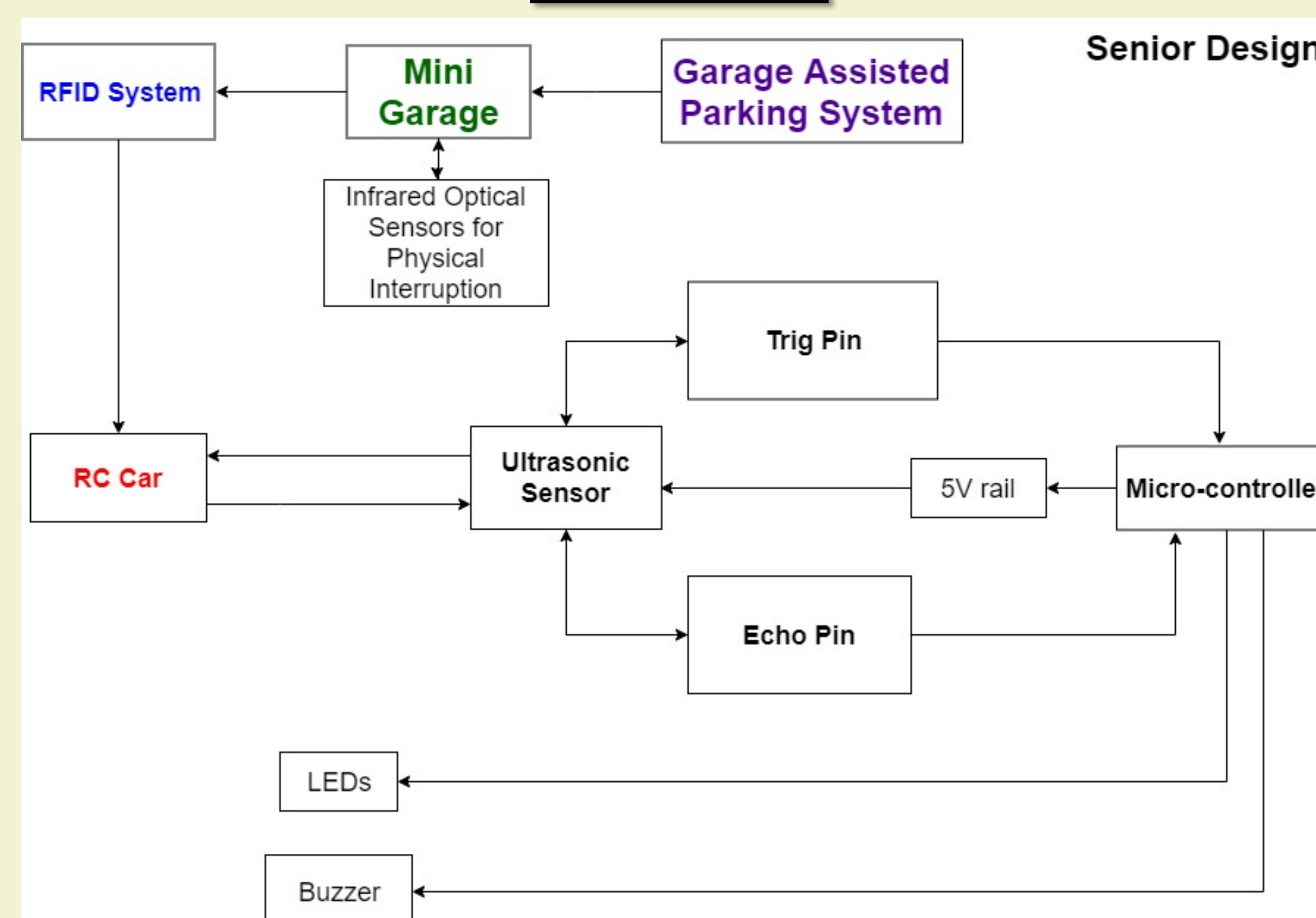
• Problem

- Damage caused by vehicle bumpers by accidentally hitting objects/walls
- Carbon-monoxide poisoning

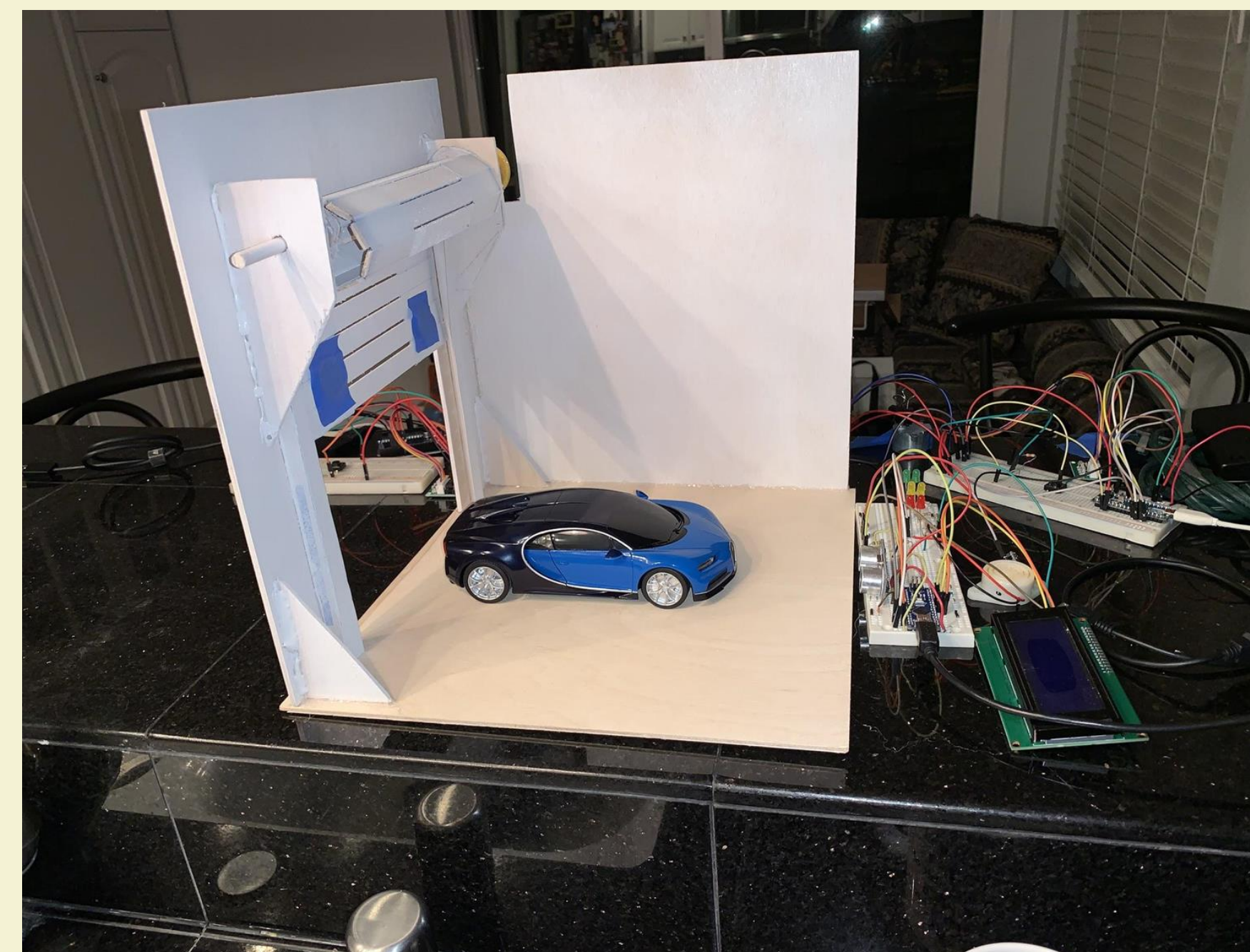
• Solution

- Assisted parking system
- Active vehicle motor (sound) detection

System Block Diagram or Design Specs



Overview / G.A.P.S.



• System

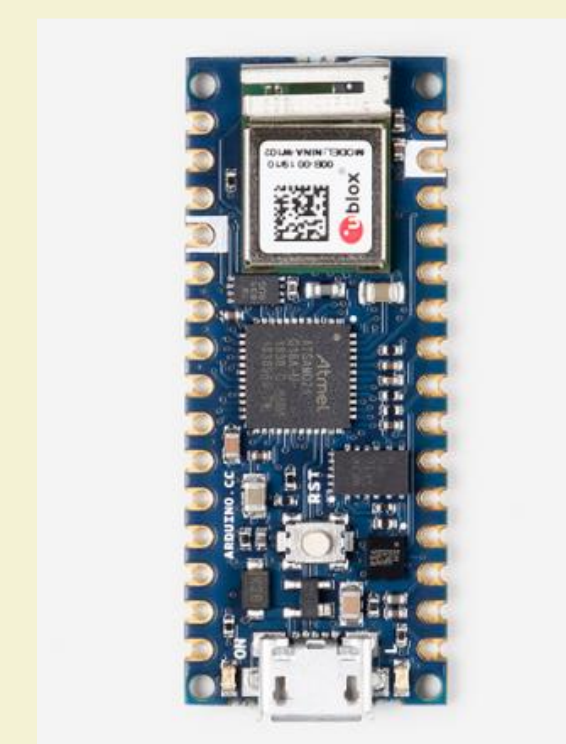
- Garage Model: Ultrasonic Sensor, Mechanical Door, Sound Detection, WiFi, RFID
- RC Car: Receiver and Transmitter

Hardware / Key Components



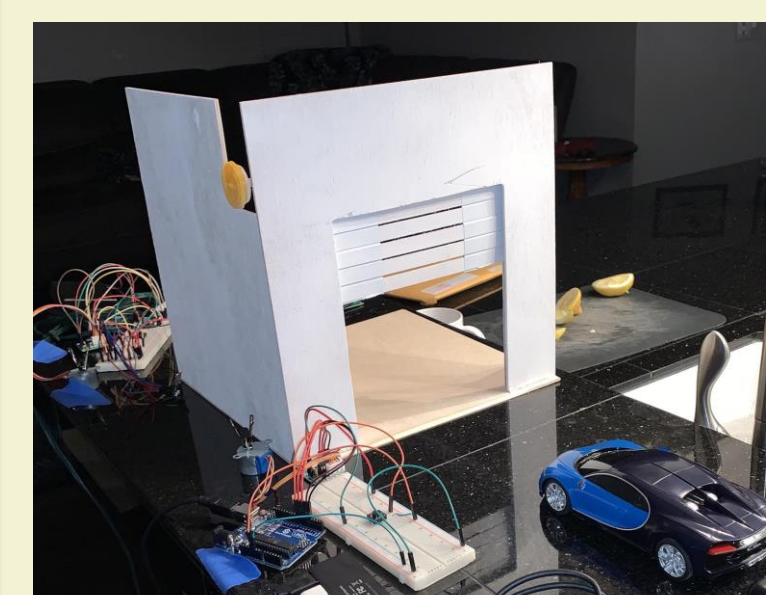
Ultrasonic Sensor

Measures the distance to the target by measuring the times between the emission and reception.



Nano 33 IoT

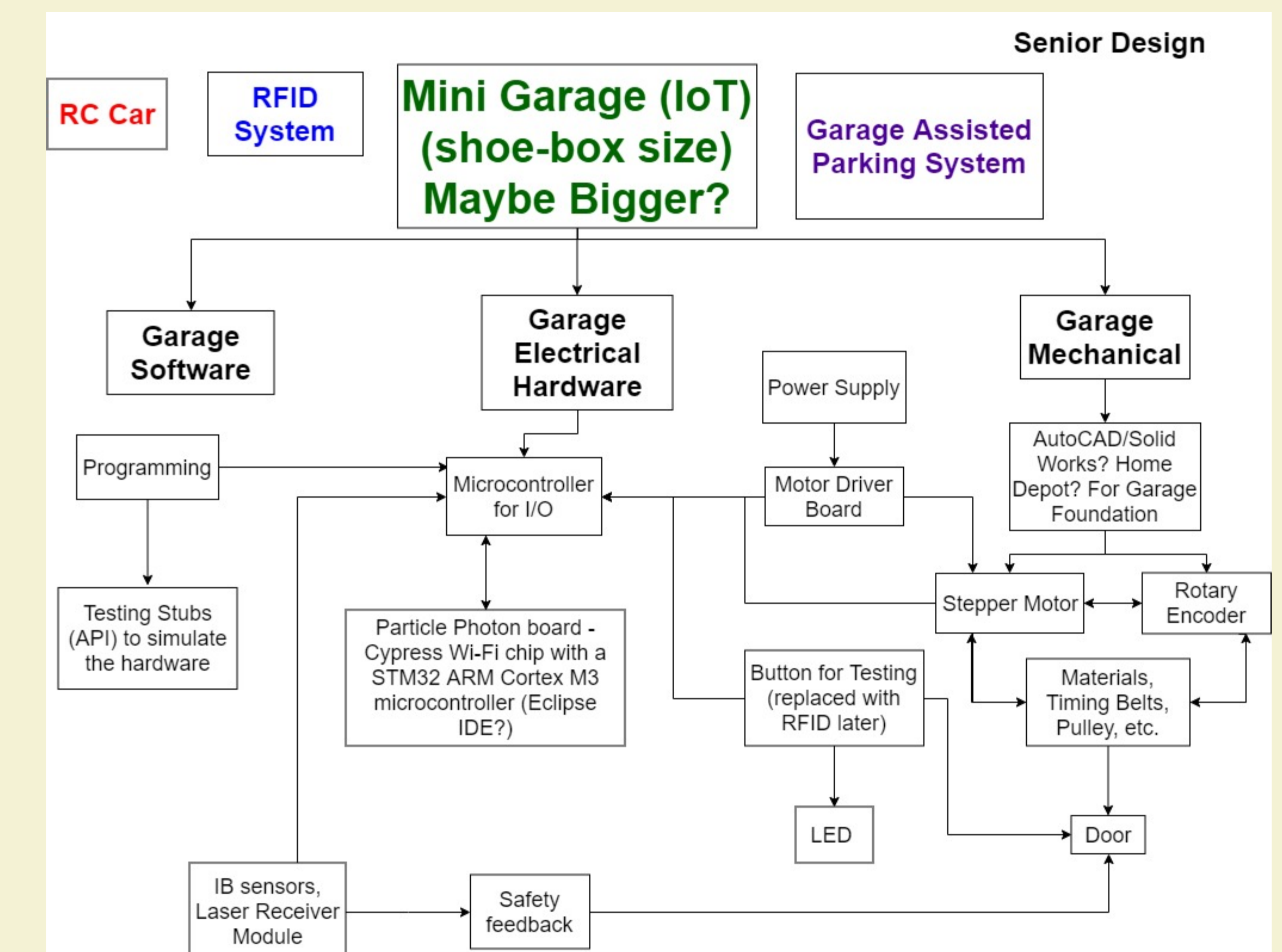
Low Power Arm Cortex-M0 32-bit SAMD21, with WiFi and Bluetooth connectivity operating in 2.4GHz range. Operating voltage at 3.3V with 11 PWM Pins.



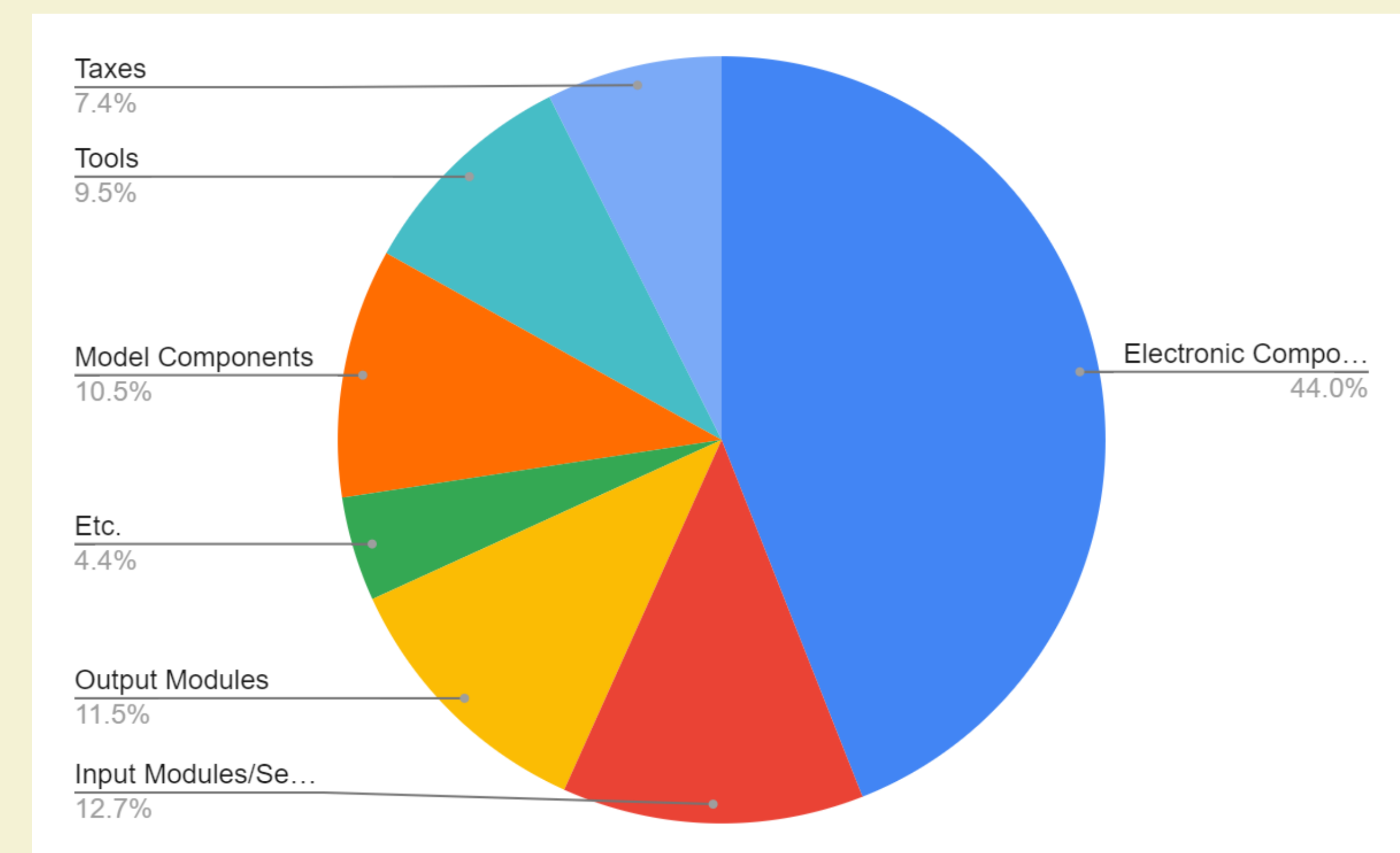
Garage Model

- Unipolar 5V stepper motor: 513 steps per revolution
- RC522 RFID Module 13.56MHz
- Micro-controller

Garage Block Diagram



Budget



Total Spent: \$359.37

Website: http://bit.ly/Team_49_Senior_Design

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