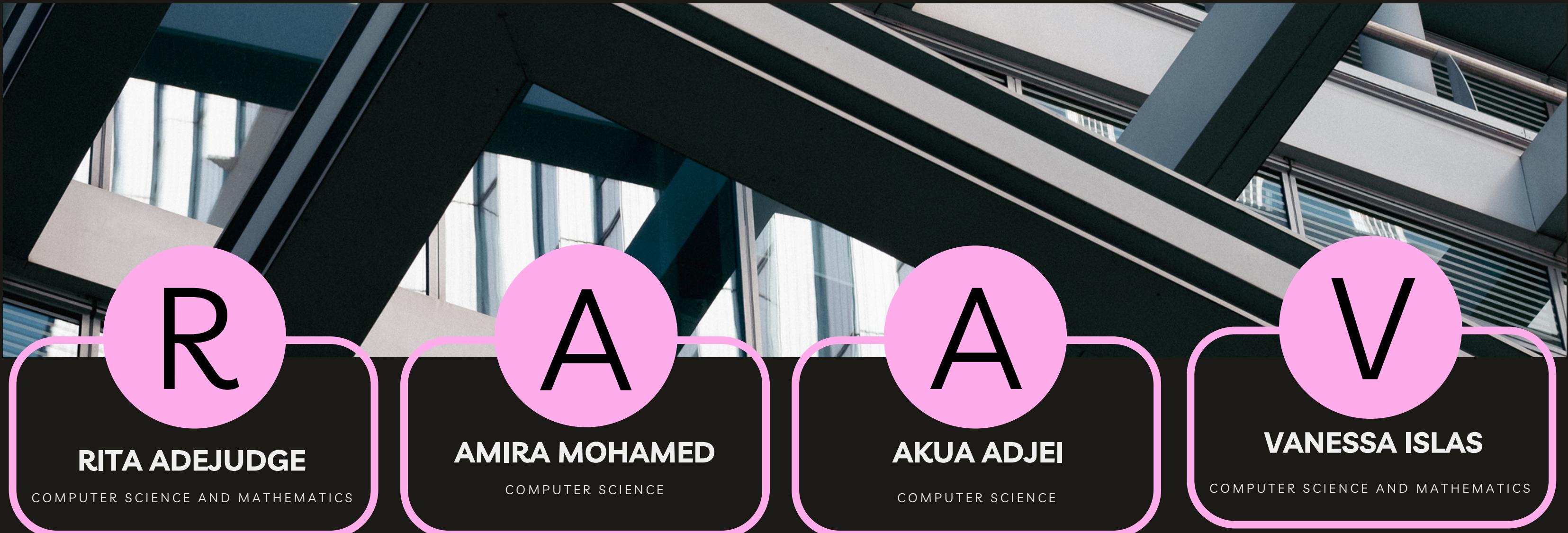
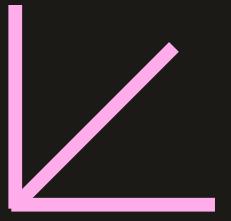


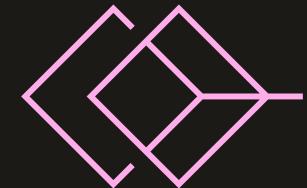
Battle Bots - Independent Study

Obstacle Avoidance Bot

DEVELOP A STRONGER UNDERSTANDING ON ROBOTIC SYSTEMS
BY BUILDING AND PROGRAMMING AN ELEGOO ROBOT

MEET THE TEAM





BATTLE BOTS OBSTACLE AVOIDANCE ROBOT

Introduction

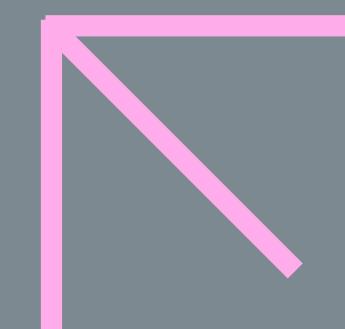
PROJECT OVERVIEW

PROGRESS & CHALLENGES

BUDGET & PLANNING

DIAGRAM

CONCLUSION





WHAT WENT WELL

ELEGOO Robotic Kit

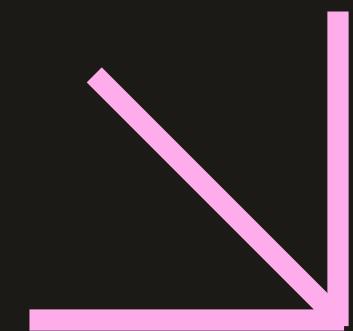
The robotics kit that we have chosen included a surplus of documentation.

OS Upload and Implementation

The operating system for the robotics system was easy to find and upload to the microprocessor

Project Programming

The ELEGOO programming language uses plain-text English statements to program



Team Scheduling

Defining a work schedule that met all team member's needs (and accounted for sickness)

Manufacturing Hurdles

The operating system was corrupted upon receiving the kit. The OS had to be re-uploaded and patched.

Obstacle Avoidance

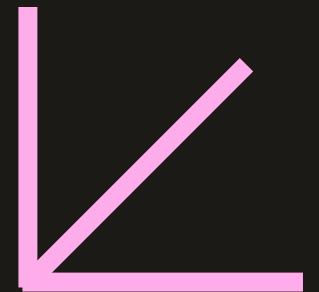
How can we ensure that our robot sees and avoids obstacles (with equipment limitations).



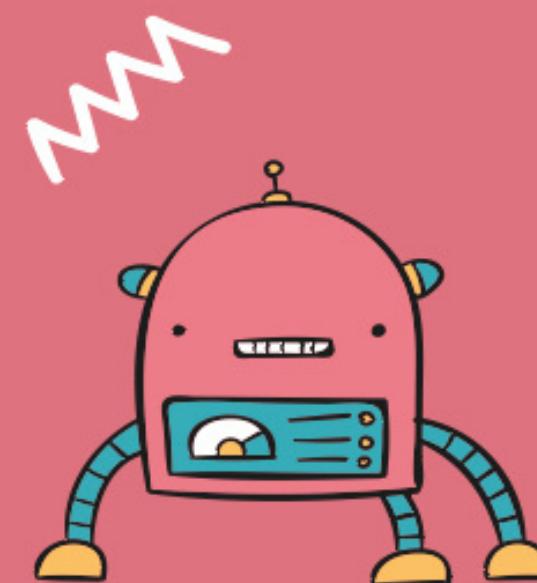
BATTLE BOTS OBSTACLE
AVOIDANCE ROBOT

CHALLENGES FACED

INITIAL BUDGET

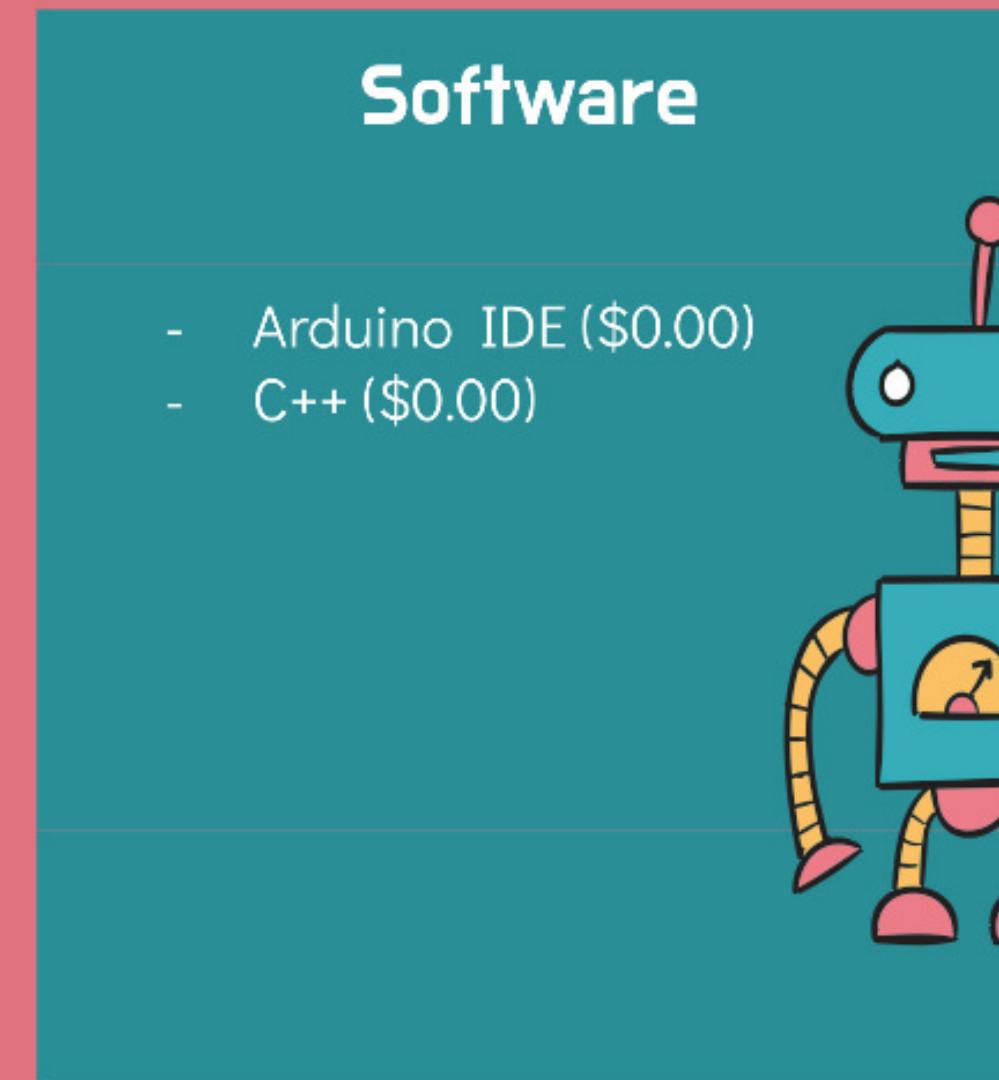


Budget



Hardware

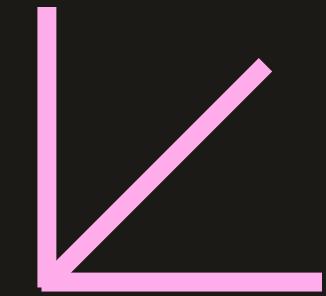
- Arduino Mega 2560 (\$44.81)
- SparkFun Dual H-Bridge motor drivers L298 (\$12.59)
- Geared DC motor (\$139.60)
- Jumper Wires (\$3.95)
- Breadboard (generic) (\$2.96)



Software

- Arduino IDE (\$0.00)
- C++ (\$0.00)

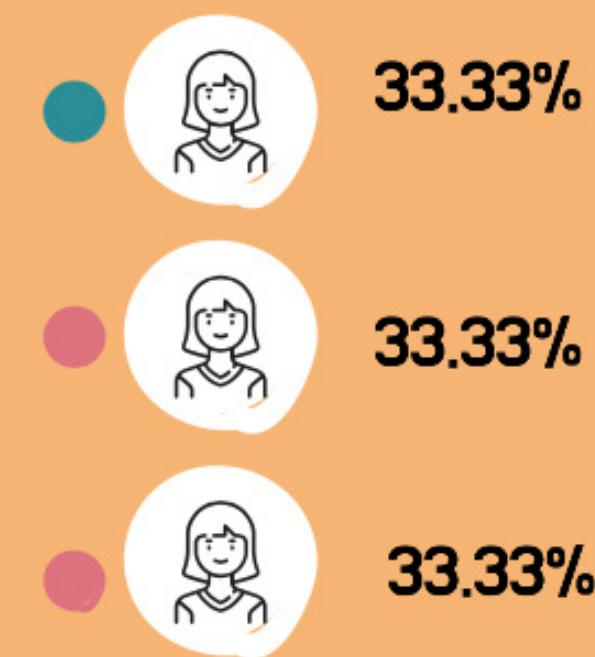
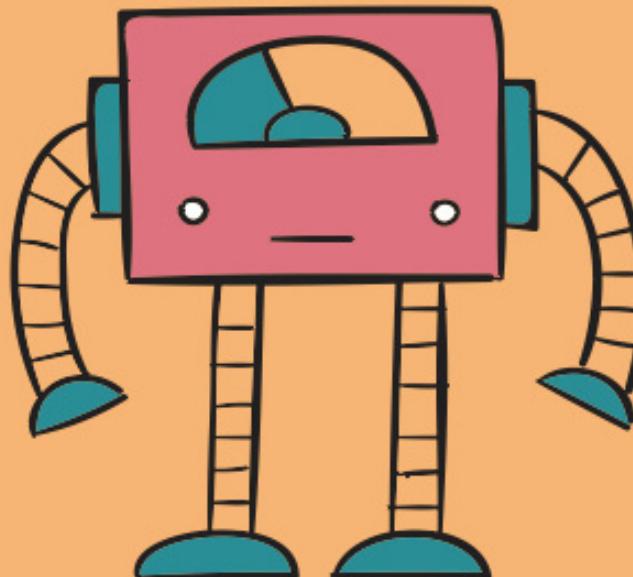
INITIAL BUDGET



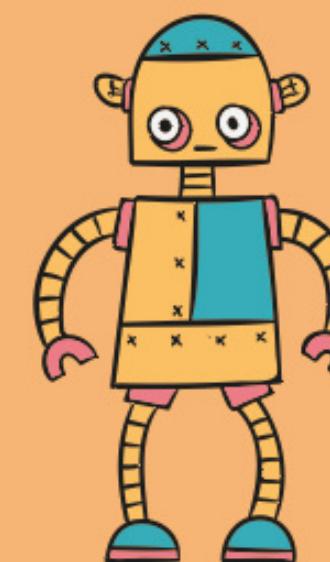
Budget Plan

Estimated Hardware Cost:
\$204.36

Estimated Cost Hand Tools : TBD

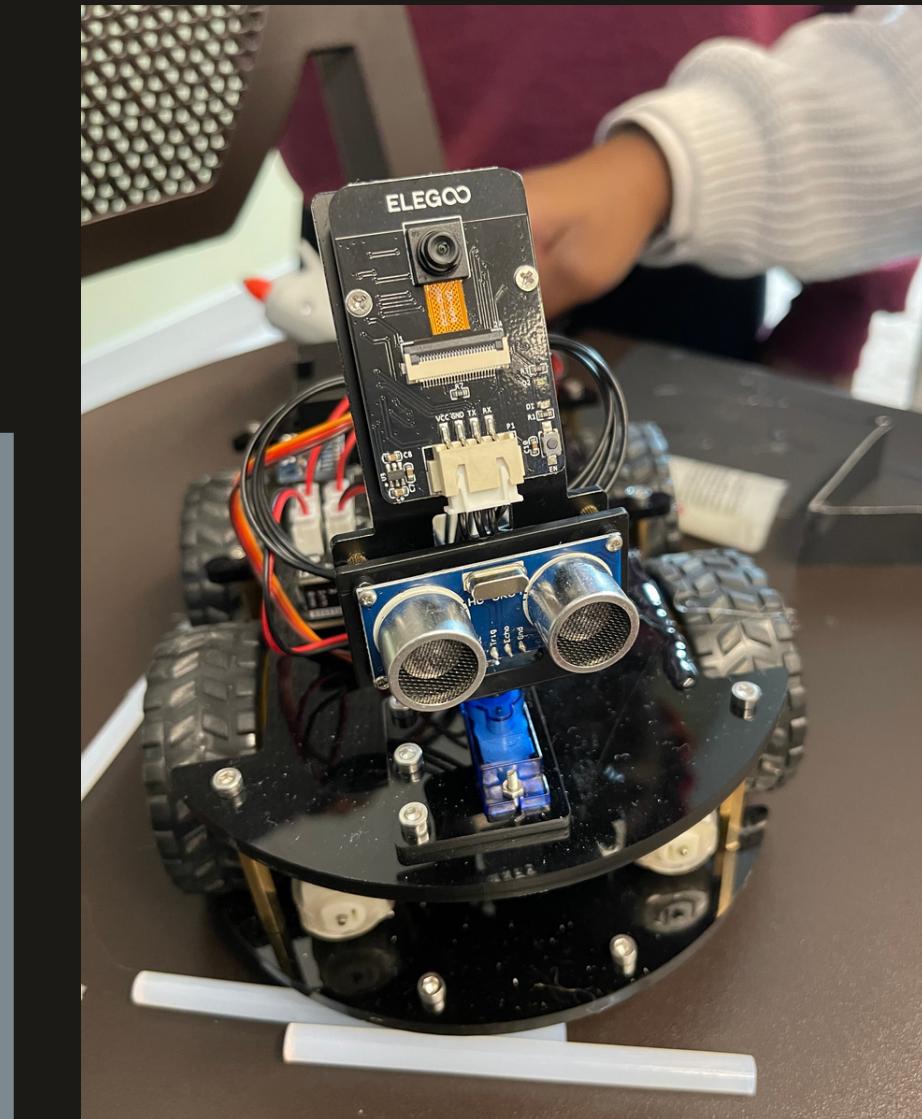
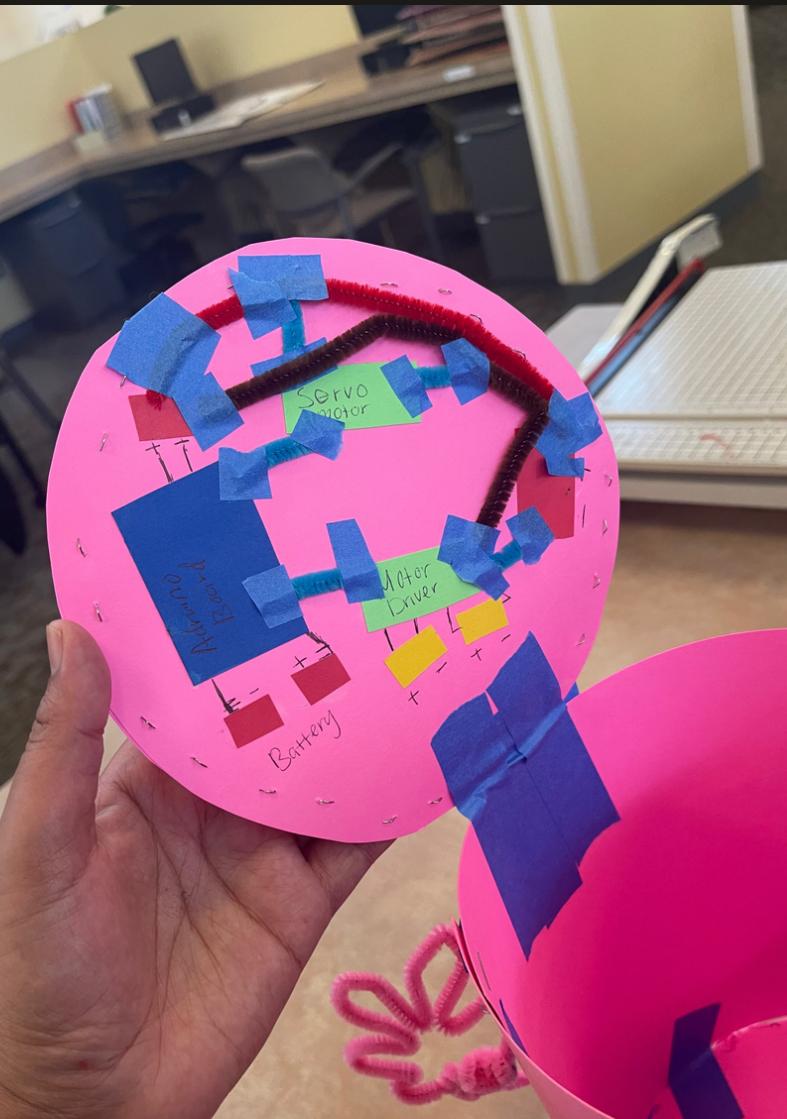
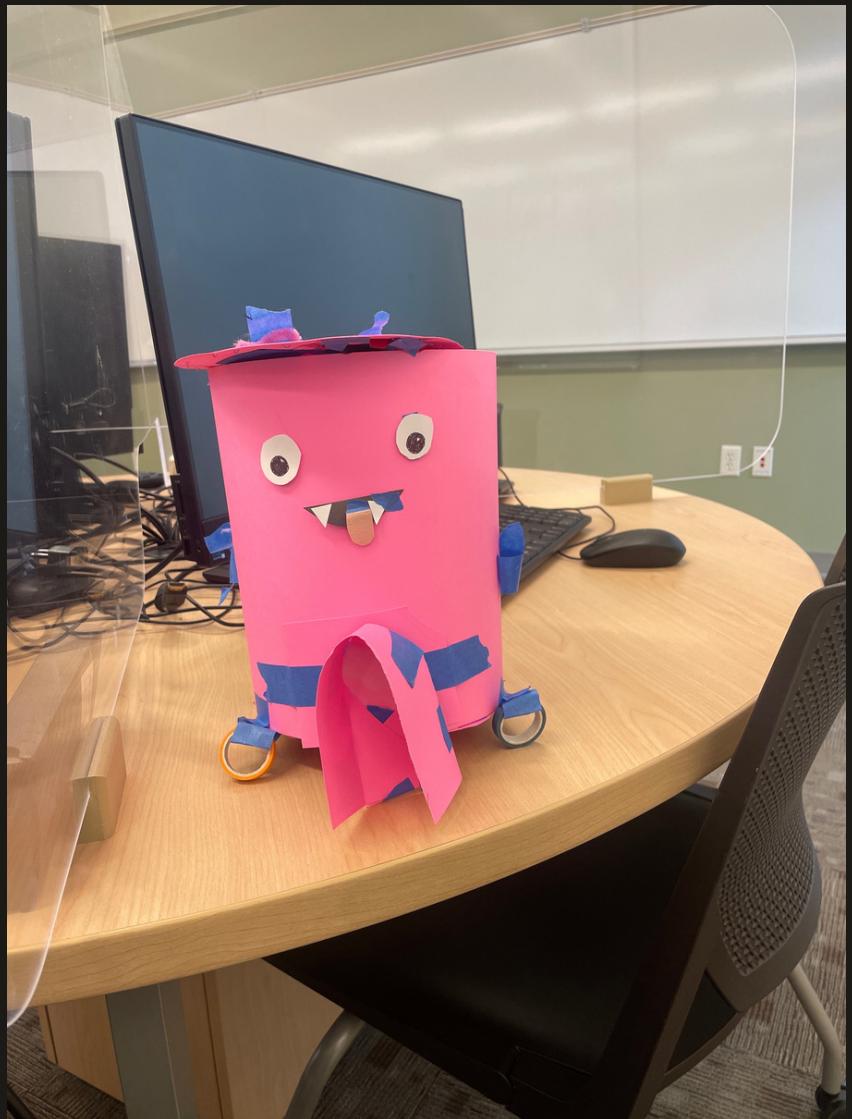
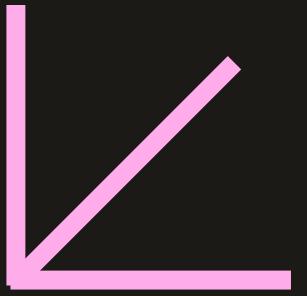


We are considering having a fundraising event to fund our soccer bot

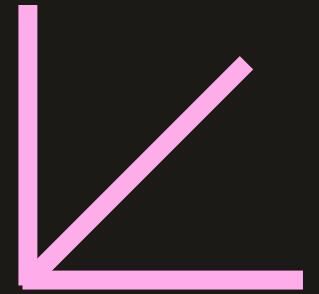


PROJECT DIAGRAM

ROBOT PROTOTYPE FINAL ROBOT



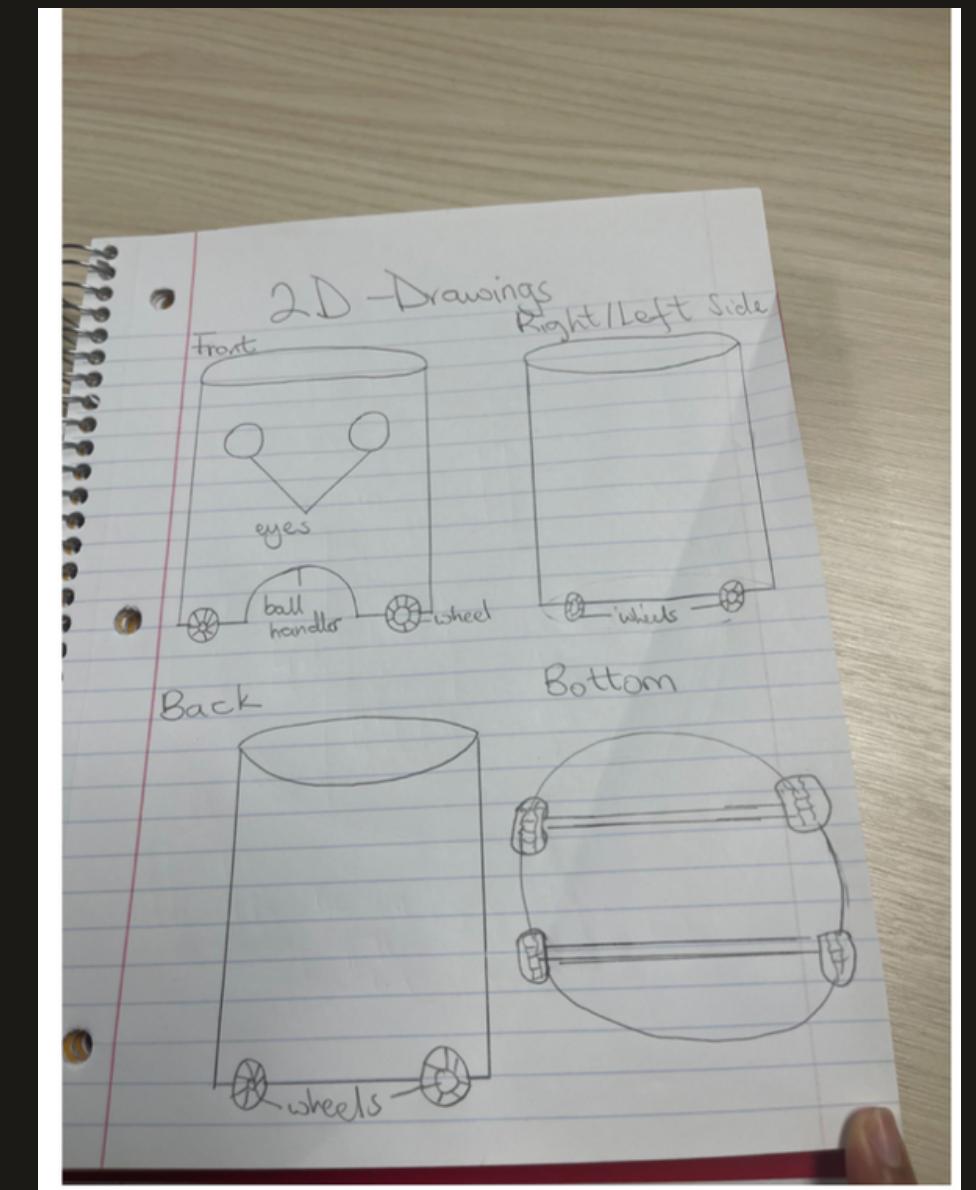
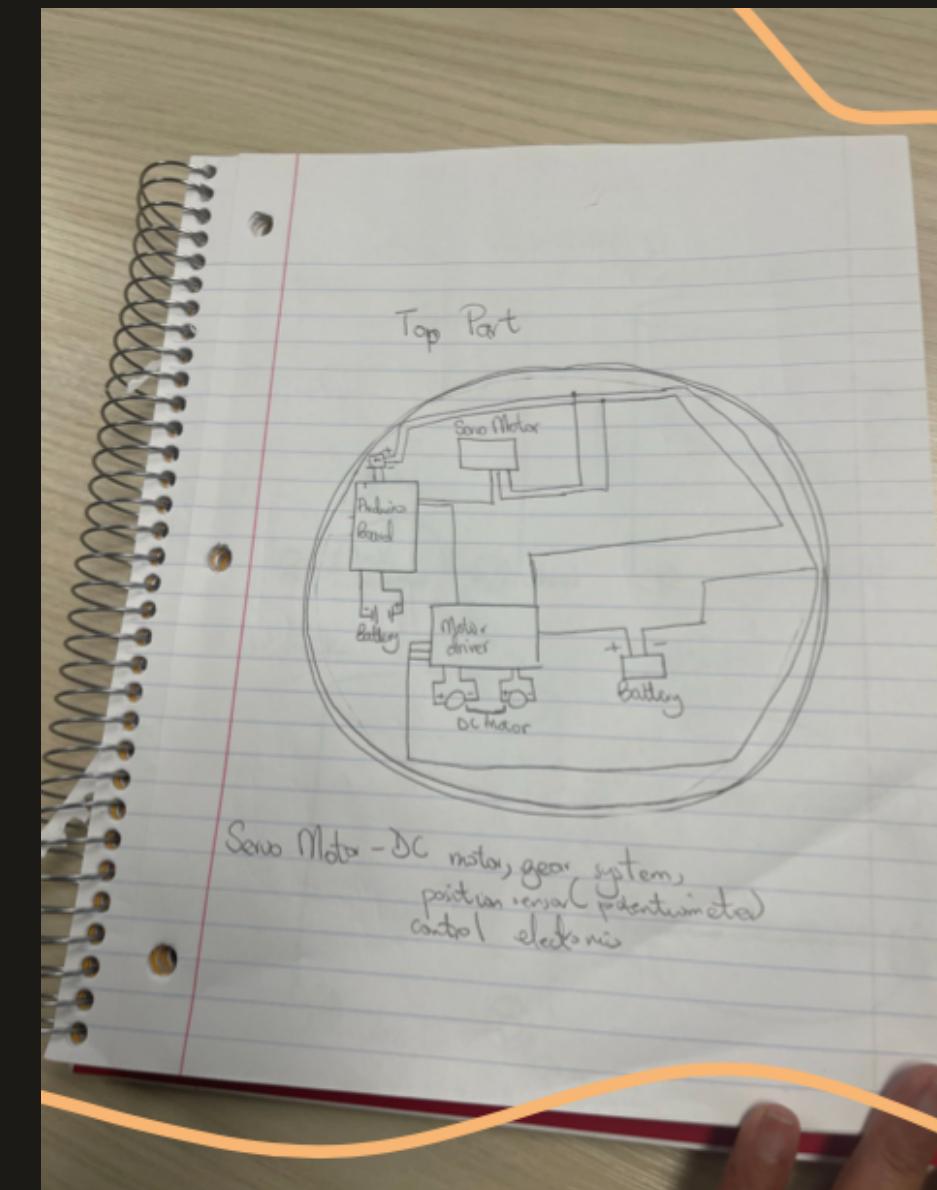
ROBOT PROTOTYPE SKETCH



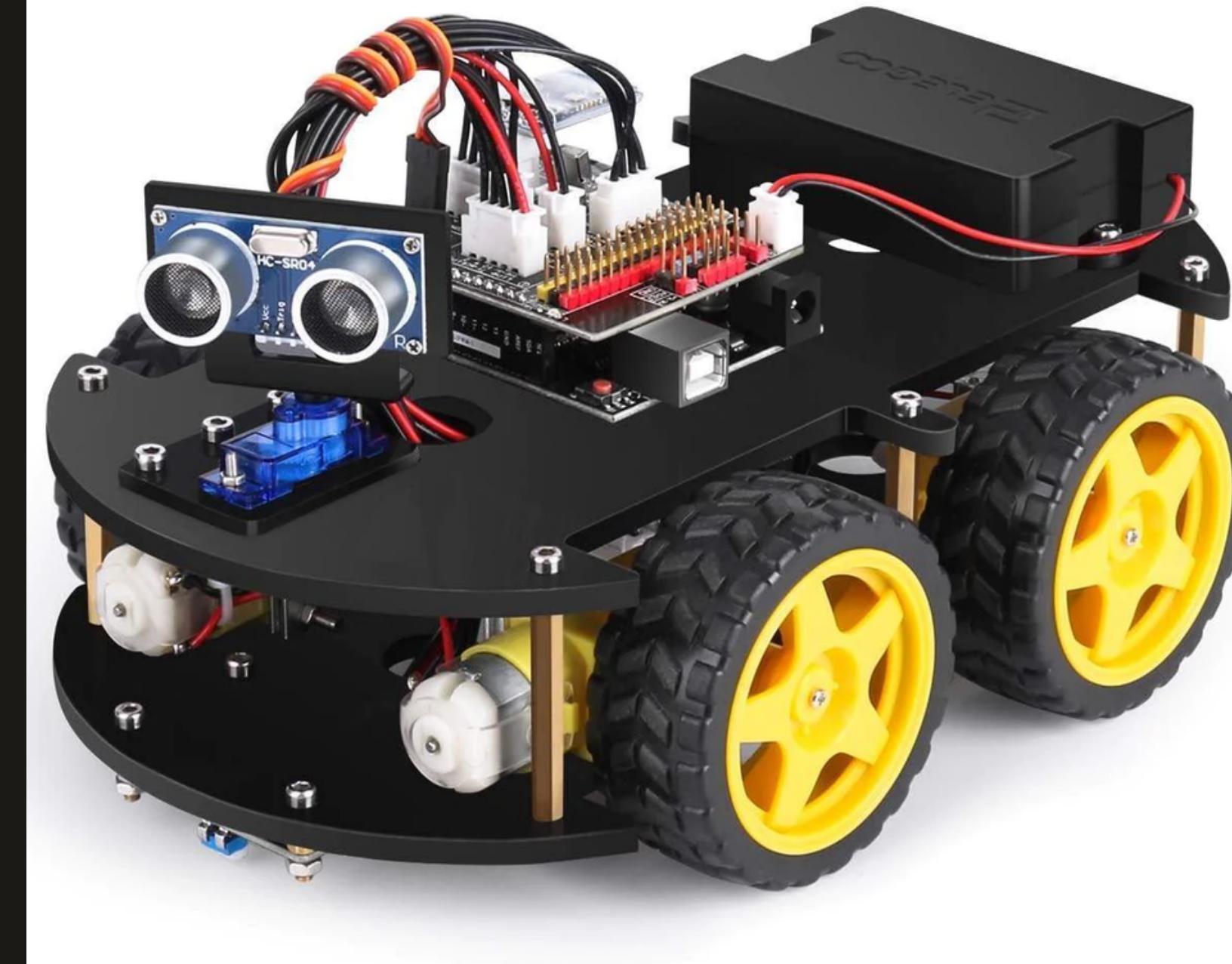
2

Features

- 4 wheels
- Geared DC motor
- Arduino Mega
- DC Motor
- Jumper Wires
- Motherboard
- SparkFun Dual H-Bridge motor drivers L298

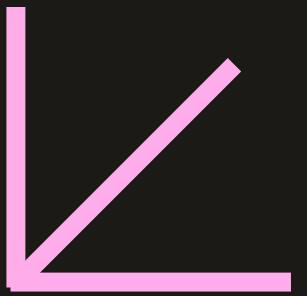


PROJECT DIAGRAM



PHYSICAL MODEL

PROJECT DIAGRAM



OPERATING SYSTEM & PROGRAMMING

2

ELEGOO Smart Robot Car Kit V4.0 (with Camera)

1. Download manual + tutorial + code + App + datasheets all in 1 package:

[ELEGOO Smart Robot Car Kit V4.0 – link 1](#)

[ELEGOO Smart Robot Car Kit V4.0 – link 2-Google Drive](#)

2. Download manual / tutorial / code / App / datasheets separately from different folders:

[ELEGOO Smart Robot Car Kit V4.0](#)

3. Manual Book:

[Multi-Language Manual for V4.0](#)

4. Video Tutorials (Watch on YouTube):

[Assembly Tutorial](#)

[How to Play](#)

Test code

The screenshot shows a Scratch-style programming interface. On the left, there is a vertical stack of colored blocks representing different categories: Motion (orange), Show (red), Controls (blue), Sensing (green), Math (purple), Variables (teal), and Functions (pink). On the right, a script titled "Test code" is displayed. The script begins with a green "when green flag clicked" hat block. It contains two nested blue "if [Obstacle in front? then]" control blocks. Each nested block has an orange "turn left [speed]" and an orange "turn right [speed]" block. Both nested blocks have a blue "move forward [speed]" block at the bottom.

when green flag clicked

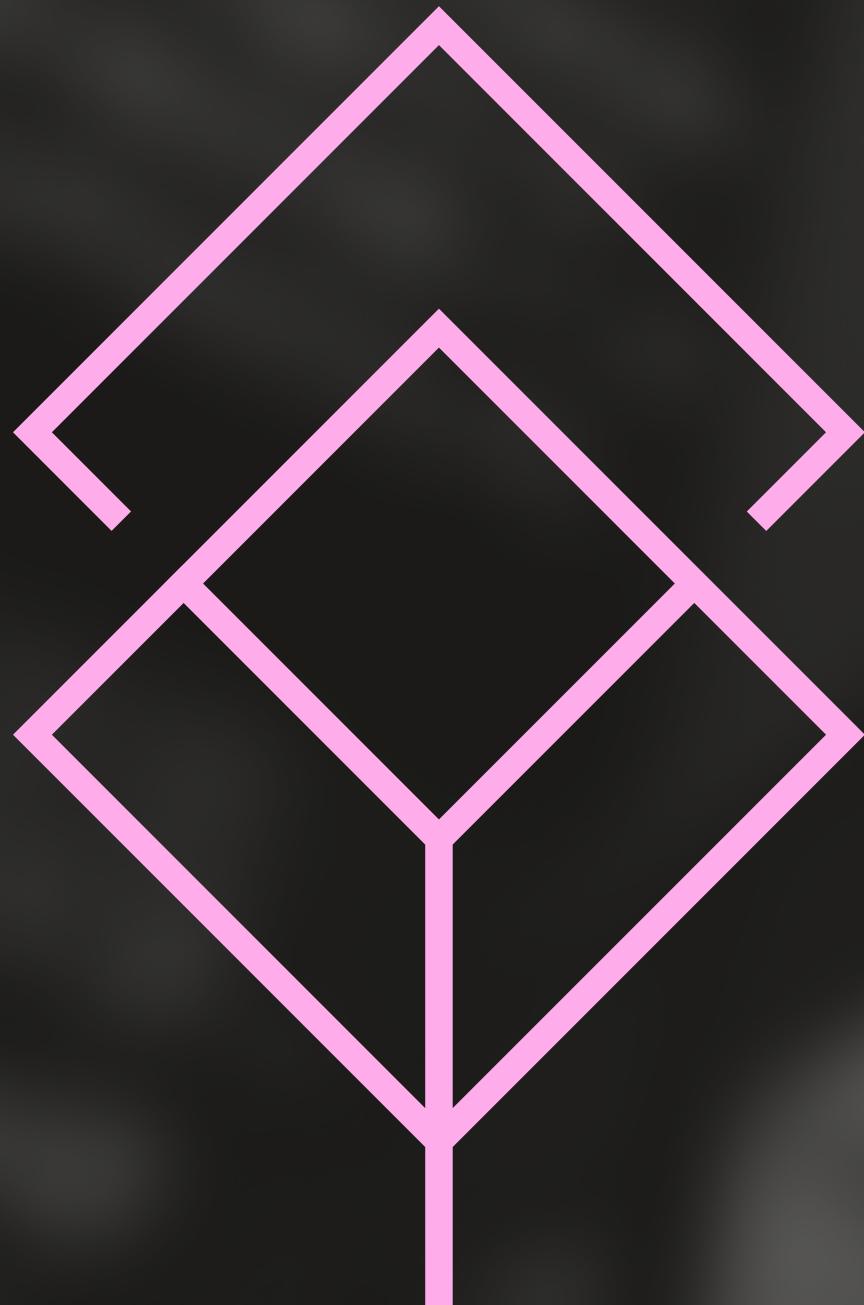
if [Obstacle in front? then]

turn left [speed]

if [Obstacle in front? then]

turn right [speed]

move forward [speed]



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