

EGN 3000L.004  
Foundatiuons of  
Engineering Lab

# Team Killer Whale (16)

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## Overview

The overview of our presentation is:

- Motivation slides, Promise, and Price
- Our design process
- The code used to make the robot follow a line
- Our testing results



# Motivation

This project is being done in order to design a robot that can fulfill the customers needs.

Some of these needs are:

- How easily can it be reproduced? Easily
- How much does it cost? Less than 30\$ per unit
- Is it hard to operate? No, it is very simple



## Promise, Credibility, differentiator● ● ●

- We promise that our robot will satisfy the academic creativity of children interested in the S.T.E.M. field.
- Our credibility comes from our past experience and knowledge
- Our design is unique and innovative while also practical, which sets us apart.

## Price, Risk, Effort



- Our robot is low priced because it is completely 3d printed from recycled PLA plastic.
- Our product is 100% safe with unexposed electrical components
- Our robots effort is to ensure durability and safety to its users

## Marketing AD

***The robot that follows  
you even from the  
great blue world***

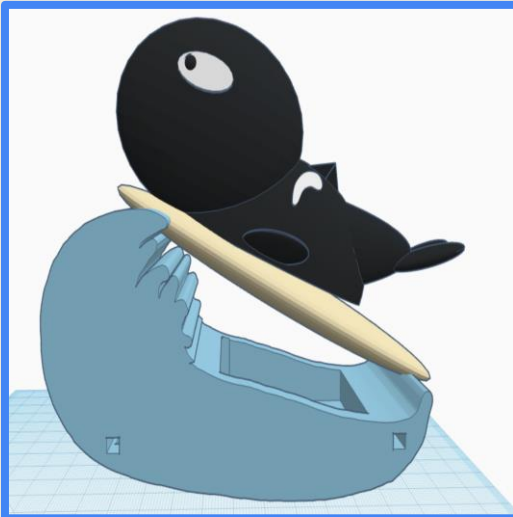


# Groups design process/optimization

- Brainstormed designs
- Narrowed down designs.
- Chose final designs based on engineering specifications.
- Modified final design
- Manufactured design into real world.
- Fixed issues as needed.



## Final Candidate Design



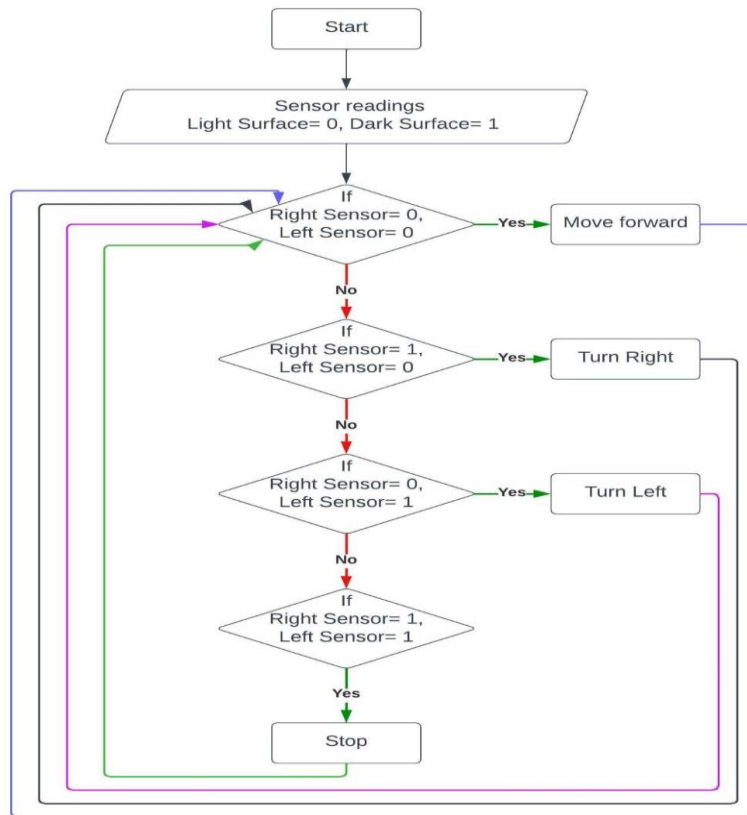




## Fabrication and manufacturing process

- Created design
- Used decision matrices and pick design
- Built design (Prototype)
- Created final design
- Optimized as needed

# Coding flowchart





## Video Link

<https://usf.box.com/s/ihvxgigczxxzdpjtth5hwggw11a3kos9>



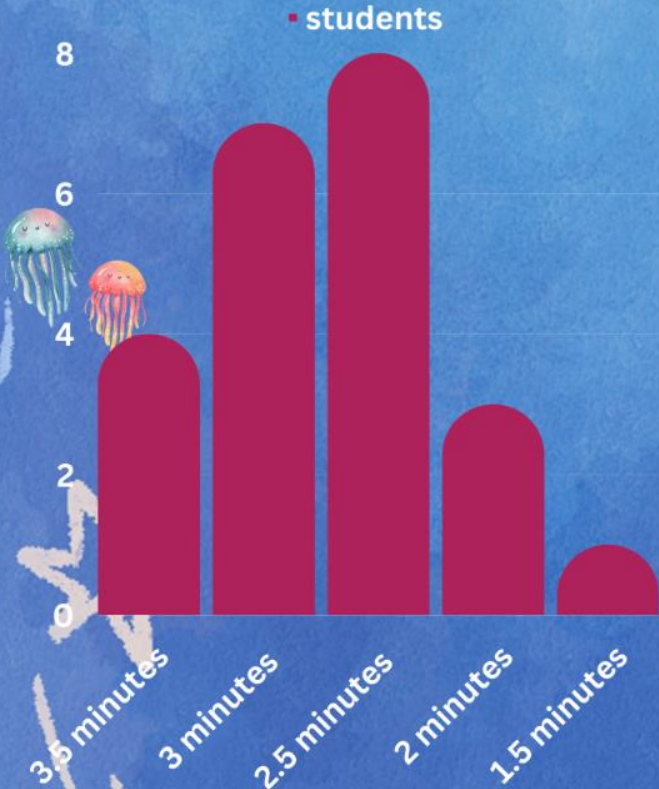
# Product Specification



Components:	Target Value:
Sizing in inches	Length x width: 5x5
Speed	max 1.5/s
Power Supply	One 9V battery and a backup battery pack
Materials used	Recycled Filament and components in the kit
Assembly Time	Average of 4.6 minutes
Type of Sensors Used	2 IR sensors
amount of wheels used	2 motorized wheels, one universal
Turn Angle	Adjustable through the sensors

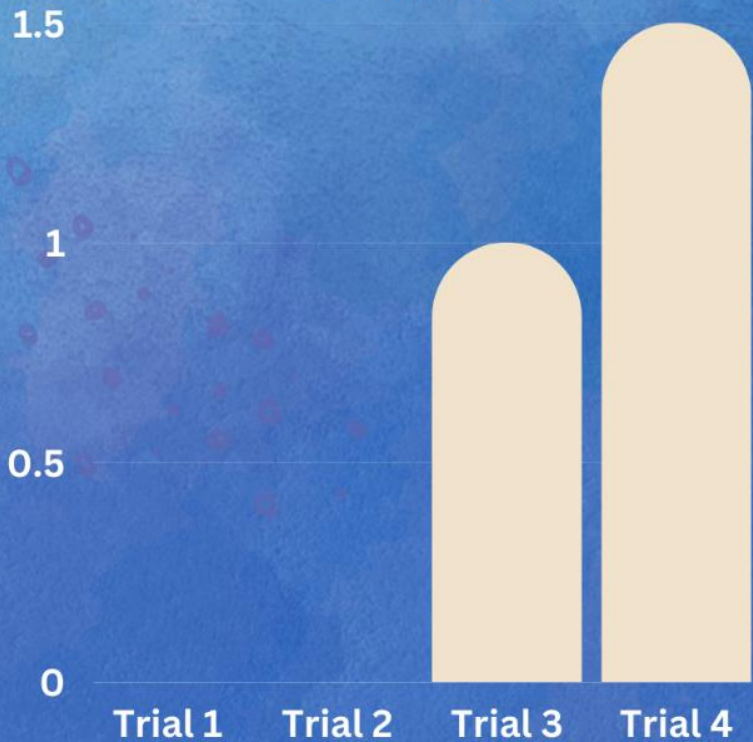
# Testing data

Assembly time out of 23 students



speed

time in ft/s



# Conclusion



- Our intention was to build a robot for students in STEM
- Even through the multiple issues our team encountered, we worked through them together
- We have all grown through this process in many different fields.



## Recommendations



- If given more time, our team would have made many cosmetic changes.
- The wires would not be as exposed
- Going forward, the team will aim to improve in all leads, even if it's not their own.

The background is a deep blue gradient representing the ocean. At the top, there are stylized, wavy lines in shades of teal and light blue. Various jellyfish are scattered throughout: a large pink one in the upper left, a small green one and a small orange one on the left, a small pink one on the right, and a large pink one near the bottom right. The bottom of the image features colorful coral reefs in shades of purple, orange, and green, along with some white star-like patterns. In the center, the words "Thank You" are written in a white, cursive font.

*Thank You*