

Marauder Cart

TASK

Preliminary Design Initial Designs of Car

Choose Car Final Design

Check Car Final Design

Design Static Structure

Finalize Car Design

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Wed, 11/9/2022 Project Start: Nov 21, 2022 Nov 28, 2022 Dec 12, 2022 Nov 7, 2022 Nov 14, 2022 Dec 5, 2022 Dec 19, 2022 Dec 26, 2022 Jan 2, 2023 Jan 9, 2023 Jan 16, 2023 Jan 23, 2023 Jan 30, 2023 Feb 6, 2023 Feb 13, 2023 Feb 20, 2023 Feb 27, 2023 Display Week: ASSIGNED TO START END AII 11/9/22 11/25/22 Initial Designs of Dynamic Structi AII 11/16/22 11/30/22 11/30/22 12/6/22 AII 11/30/22 12/6/22 Aidan 12/6/22 12/16/22 ΔΠ Check Dynamic Structure Design 11/30/22 12/6/22 Finalize Dynamic Structure Desig AII 12/6/22 12/16/22 AII 1/10/23 2/9/23 AII 12/6/22 12/16/22 Matthew 12/6/22 12/16/22 AII 1/10/23 4/1/23



WORK BREAKDOWN STRUCTURE

Dynamic

Structure

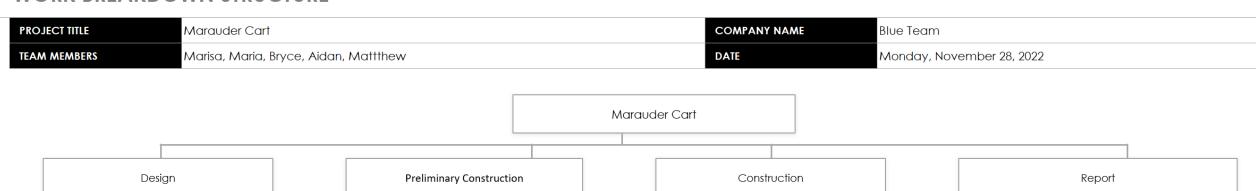
desings thought

Discuss/compar

3. Choose final

1. Multiple

e designs



1. Multiple desings thought out Discuss/compare

Car

designs 3. Choose final car design 4. Review desgn

chosen 5. Finalize design

car design 4. Review desgn chosen 5. Finalize design

1. Multiple desings thought out 2. Discuss/compare designs 3. Choose final car design

Static

Structure

4. Review desgn chosen 5. Finalize design

1. Build running car 2. Note what is working and what does not

Car

out how each component works 2. Wrtie code for car

Figure

Programming

3. Write code for rough terrain 4. Alter and debug

1. Print and gather all parts 2. Put

together

Dynamic

Structure

parts 2. Attach tires and body rough terrain 3. Attach 3. Attach to mechanical mechanical

Car

1. Print and

gather all

components system 4. Attach net

Initial Information

Static

Structure

1. Gather

materials

2. Place

material in

accordance

with plan

 Design and problem objectives 2. Literature review/back

ground

1. Design conceptualization 2. Lab testing and results 3. Bill of Materials

Documents and Data

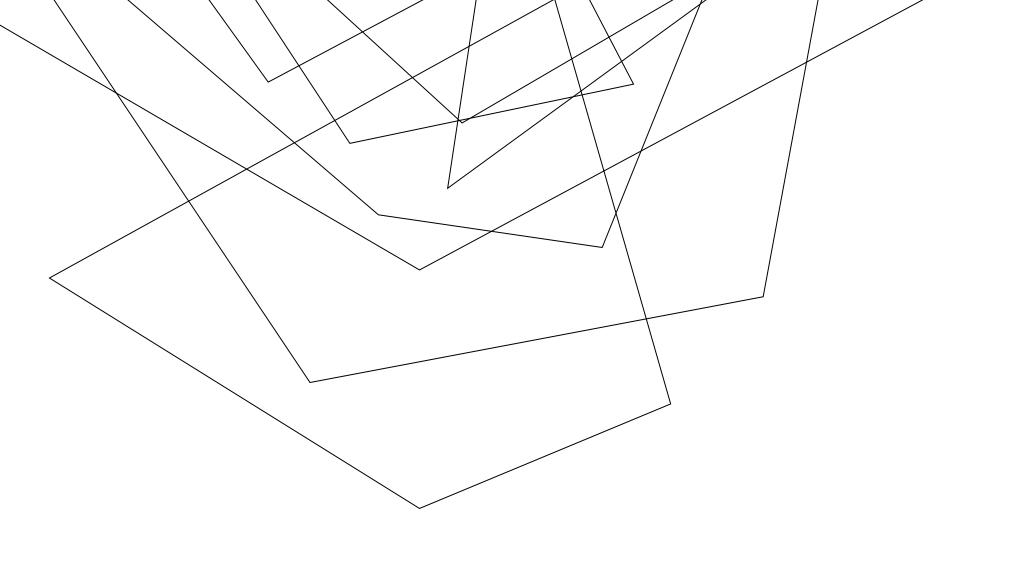
2. Executive Summary 2. References

1. Title Page

Conclusions

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Specifications

RC CAR

- Camera
- Rough terrain expertise
- Maintain average speed rather than have a jaw dropping max speed
- Zero point turning

DYNAMIC STRUCTURE

- Rough Terrain
- Alternative Route for failure
- Dump vehicles that cannot make it over the terrain.

BACKGROUND INFORMATION

RC Car

- 1. High ground clearance
- Body won't hit tall rocks
- Apply underbody protection for rough terrain

2. Tank Tracks

- More traction than standard wheels; instead of traction in 4 smaller places tank treads provide traction along the entirety of its track
- More surface area for the tracks to grip
- Distribute the weight of the vehicle over a larger contact area, decreasing ground pressure
- Much more torque to the ground without slipping

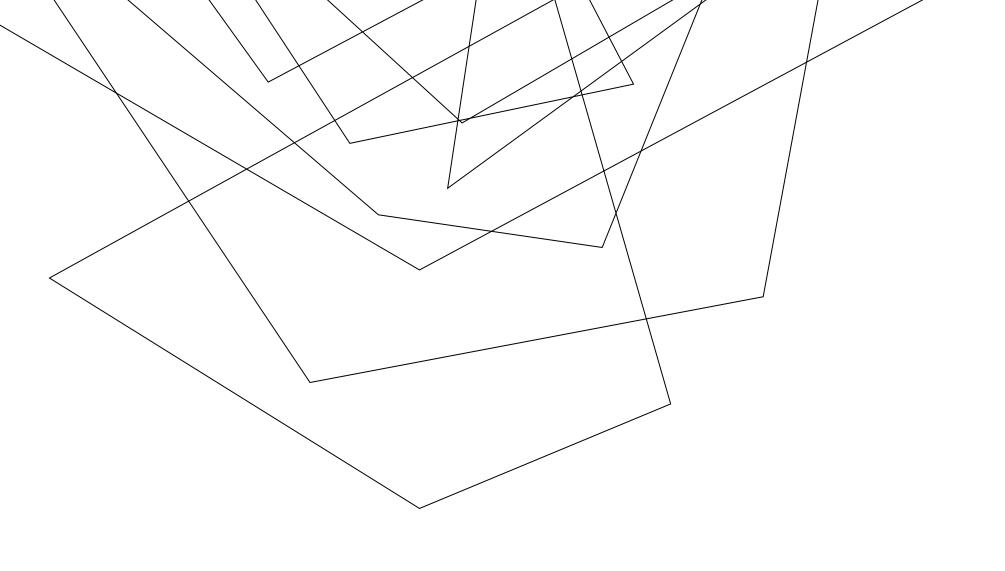


Software Progress

Communication between HC-12 modules established.

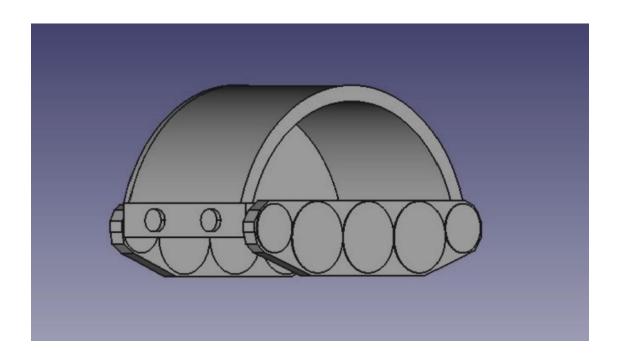
Serial monitor data conversion: in progress.

Initial motor controller software functioning.



INITIAL DESIGNS

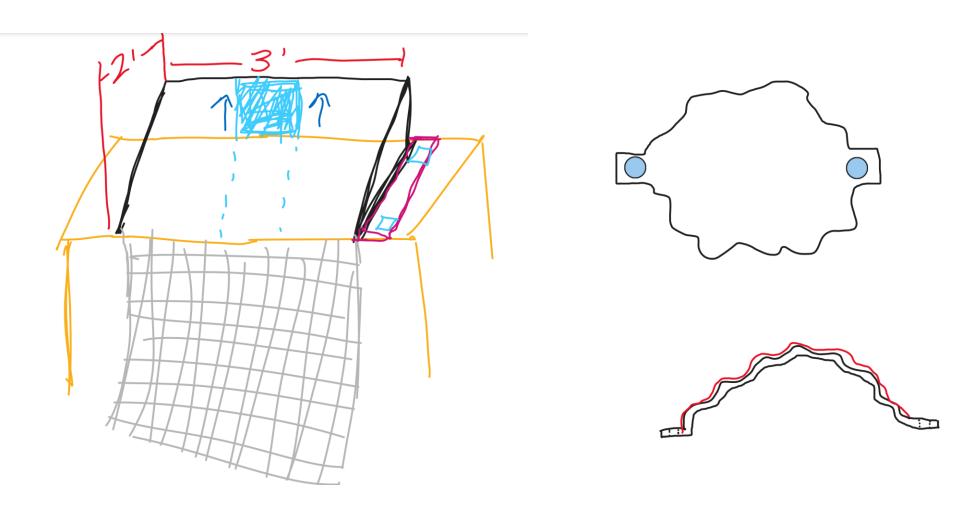
RC CAR INITIAL DESIGNS



Alternatives:

1. 4 wheels instead of tank tracks

ROUGH TERRAIN INITIAL DESIGN



REPORT PROGESS

- Design Problems and Objectives
- Design Specifications
- Literature Review