



NORTHERN
ARIZONA
UNIVERSITY



GoBabyGo A (Team 14)

ME 476C

Ernes Distajo

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Project Sponsor: Sarah Oman

Project Description

- Created in 2012 at the University of Delaware.
- Developed a set of DIY cars.
- Enabling young children to move and interact with their peers.

Project Goal:

- ★ Design and build a new version of the GBG retrofits for children that limited mobility of their arms and/or legs.

Designs Considered

- Belly Car
- Laying Down Car
- Grass Hopper Car
- Ostrich Car
- Drag Car
- Snail Car

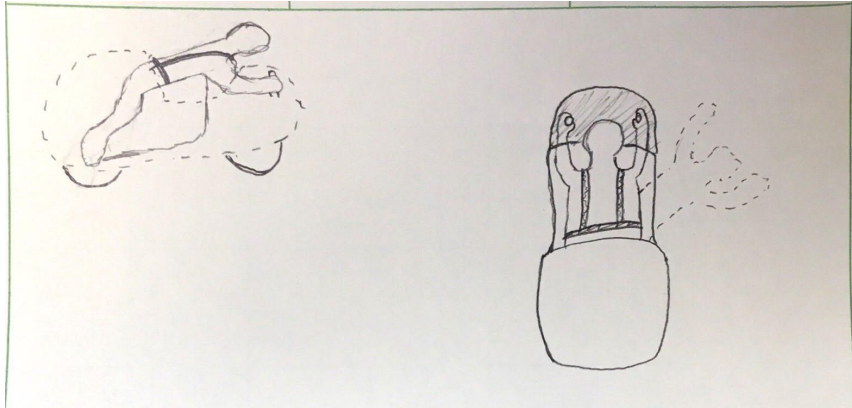


Figure 1 - Belly Car

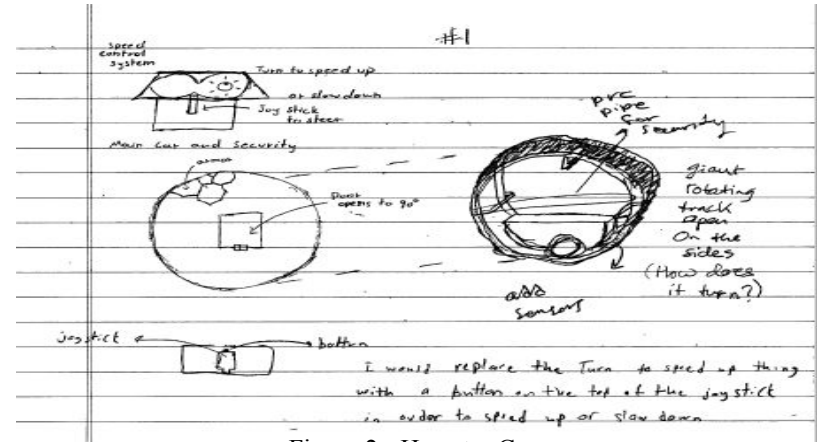
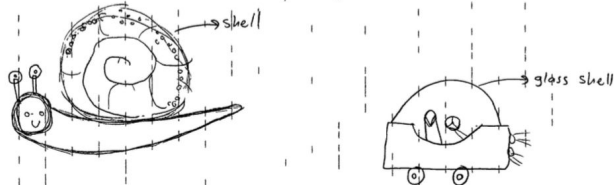


Figure 2 - Hamster Car

- Springs Car
- 2-Button/Armrest Car
- Rounded Seat Car
- G-harness/Sensors Car
- Rounded Base Car
- 4 x 4 Car

Top 4 Designs

Bio-Inspired Design ② a Snail



This design implements the idea of how a snail protects himself. In case of danger, a snail hides in his shell where he feels safe. We could use this concept in our project by having your car covered by some kind of strong glass. This glass will protect the child and will make him/her feel secured.

Figure 3 - Snail Car

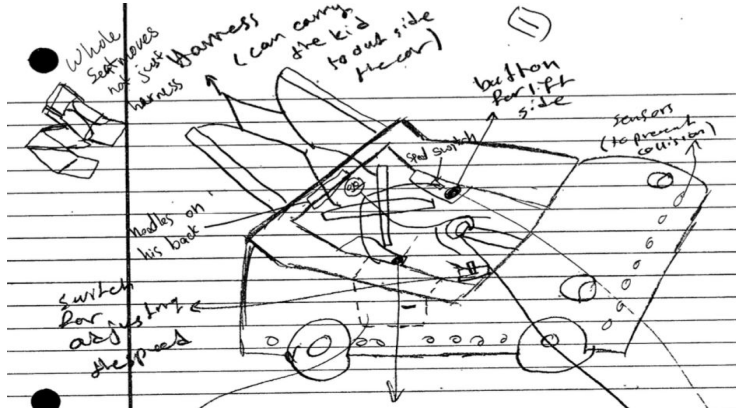


Figure 5 - G-harness/Sensors Car

This design for children who can't sit on their back and they have to lie on their stomachs

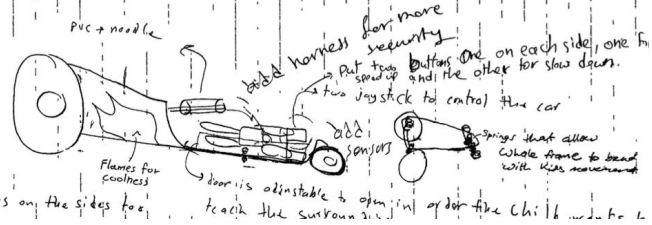


Figure 4 - Drag Car

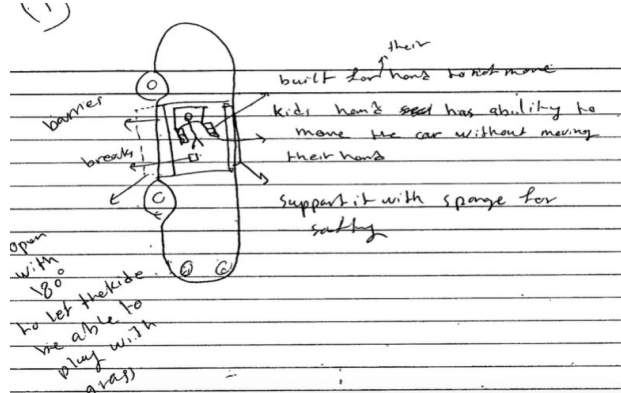


Figure 6 - 2-Button/Armrest Car

Pugh Chart And Decision Matrix

	Weightings	Drag car		Snail Car		2 Button/Edited		G Harness/ Sensors					
	Datum												
	Frozen GBG	Stomach	Laying Down	Grasshopper Car	Ostrich Car	Drag Car	Snail Car	Spring Car	Two Button Car	Rounded Seat Car	G-harness/ Sensors Car	Rounded Base	Basic 4x4
1. Cost	0	-1	-1	-1	s	-1	-1	-1	-1	-1	-1	-1	-1
2. Safety	0	-1	-1	s	-1	1	1	-1	1	s	1	s	s
3. Quality	0	s	s	s	s	s	1	s	s	s	1	s	s
4. Transportable	0	s	s	s	-1	-1	s	s	s	s	-1	s	-1
5. Unique Solution	0	1	1	1	1	1	1	1	1	1	1	1	s
6. Long Life Time	0	s	s	s	s	s	-1	s	s	s	-1	s	s
7. Material Accessibility	0	-1	-1	-1	s	-1	-1	s	-1	-1	-1	s	s
8. Easy to Assemble	0	-1	-1	-1	s	-1	s	-1	-1	-1	-1	-1	s
9. Control System	0	1	s	s	s	1	s	s	1	1	1	s	1
	Negative (-1)	4	4	3	2	4	3	3	3	3	5	2	2
	Same (s)	3	4	5	6	2	3	5	3	4		6	6
	Plus (+1)	2	1	1	1	3	3	1	3	2	4	1	1

Selected design (Two button car)

- Performance
- Suggestions
 - 12v motors
 - umbrella/cover
 - accel governor
 - 180 doors
 - wireless movable buttons
 - rotating armrests
 - belt/seat dependent on kid

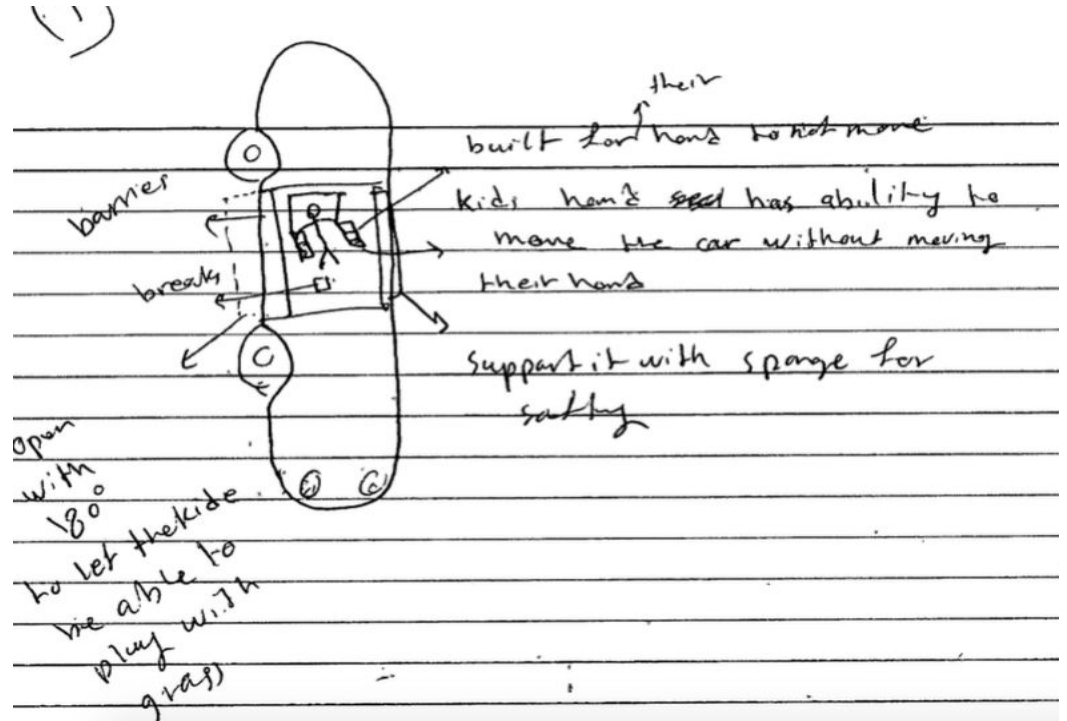


Figure 6 - 2-Button/Armrest Car

Budget

- Car cost \$400
- Two buttons for \$20
- Sensors \$20
- Umbrella for protection \$15
- PVC pipes and swimming noodle \$30

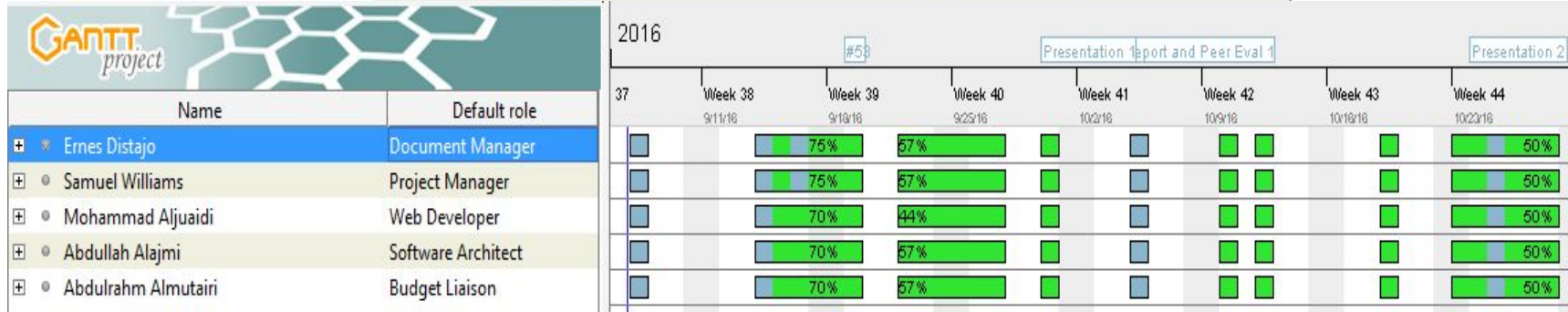


Schedule

Needed:	Preliminary Report	Sam	Abdullah	Mohammad	Abdulrahman	Ernes	
5	Updated Background Report	1	1	1	1	1	Complete
3	ER's		1	1	1		Complete
Needed:	Final Proposal Report	Sam	Abdullah	Mohammad	Abdulrahman	Ernes	
5	Update Report	1	1	1	1	1	Complete
1	Rationale for Design Selection						Not Complete
2	Design Description						Not Complete
2	Proposed Design						Not Complete
5	References	1	1	1	1	1	Complete
5	Appendices	1	1	1	1	1	Complete
20		3	3	3	3	3	Not Complete
1	Project Description						Complete
1	Designs Considered	1					Complete
1	Design Selected			1			Complete
1	Schedule					1	Complete
1	Budget				1		Complete
5		1	1	1	1	1	Complete

Gantt Chart

• Team Meeting 3	10/5/16	10/5/16
• Client Meeting 2	10/10/16	10/10/16
• Team Meeting 4	10/12/16	10/12/16
• Staff Meeting 2	10/19/16	10/19/16
• Team Meeting 5	10/23/16	10/23/16



• Considered Designs	10/24/16	10/28/16
• Design Selected	10/24/16	10/28/16
• Pugh Chart and Functional Model	10/25/16	10/25/16
• Preliminary Report and Peer Eval 2	10/31/16	10/31/16
• Individual Analytical Analysis Report	11/11/16	11/11/16
• Final Proposal Report	11/21/16	11/21/16
• Presentation 3	11/30/16	11/30/16
• Final Prototype	12/9/16	12/9/16
• Peer Eval 3	12/13/16	12/13/16

Questions?