

Go Baby Go-D

Sponsor/Client: Dr. Sarah Oman



Presented by: Hussien Alajmy, Saleh Almasari, Shahah Eshkanani, Yousef Alraqem, Yousef Alenezi

Go baby Go

What is Go baby GO?

Who is the sponsor?

Why is it important?



Go Baby Go

- Aims in helping Disabled children.
- Make children feel normal.
- Help build a better prototype for the child in need.

Sponsor

- Sponsor:

Dr. Sarah Oman

Mechanical Engineering

sarah.oman@nau.edu



Why Go baby Go is important?

- Children of special needs are a part of this community.
- Kids with special needs need to feel normal.
- Children need to explore what's around them.

Existing Design

- Most Idea and similarities
- Difficulties of design
- High price
- Best selections systems
 1. Scoot
 2. Current GBG retrofit
 3. Scooter

Scoot

- 3 different ways in using the device:

1. Crawling

- Helps the child in exploring new things.
- Strengthens the upper body muscles.

2. Scooting

- Sitting up straight.
- Move using legs.

3. Riding

- Add tires on each side.
- Acts like a wheel chair.

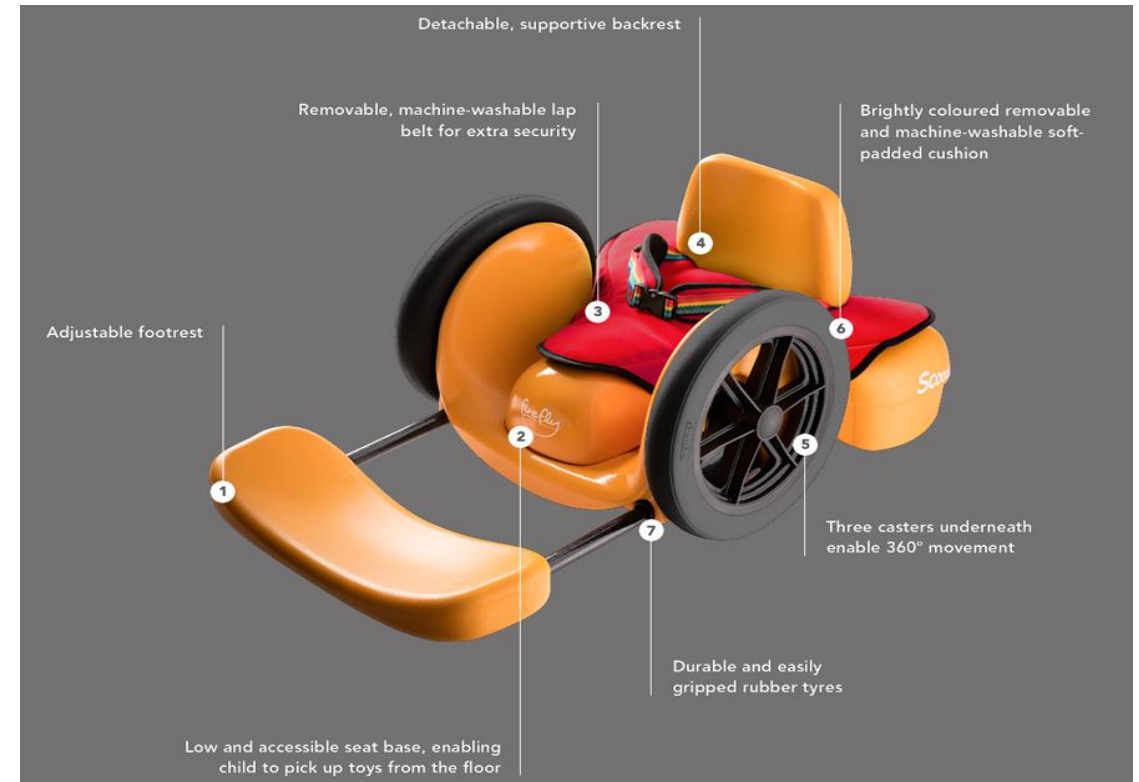


Figure 1: Scoot [4]

Current Go Baby Go Retrofit

- Socialize & Transport Freely
- Based on electric toy cars
- Modified based on each client's situation
- Cost effective compared to other medical solutions
- No acceleration control



Figure 2: Current GBG retrofit [3]

Scooter

- 3 wheels
- Depends on human power to move
- Parents can control the child movement using the attached stick
- Won't meet the requirements of most disabled children



Figure 3: Scooter [5]

Subsystem Level

3 main subsystem levels for the existing design:

1. Human power: Arms and Legs



Figure 4: Scoot wheel [4]



Figure 5: Scooter pedal [5]

Subsystem Level

2. Electrical power: Battery and Electric motor



Figure 6: Batteries

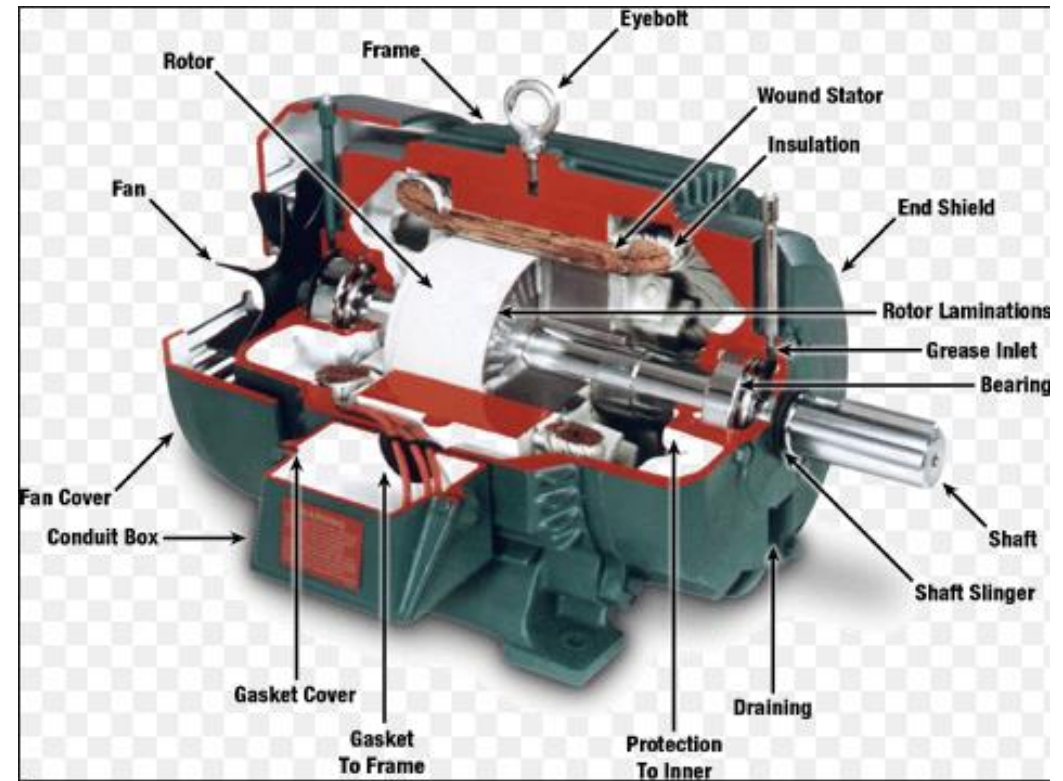


Figure 7: Electric motor

Subsystem Level

3. Main control system:

Steering and Pressure pads



Figure 8: Steering wheel



Figure 9: Pressure pads

Design requirements

- Low cost (Budget \$1,500)
- Obtainable parts
- No jerking motion
- New design

Customer Requirements & HoQ

1. Power system
 - a. Control acceleration
 - b. cruise controller
 - c. Breaks
2. Physical
 - a. comfortable seats
 - b. trunk mobility
 - c. legs support
3. Operating system
 - a. easy to operate
4. Financial
5. Safety
 - a. seatbelt harness
 - b. bars

Table 1: HoQ

| Customer Requirement | Weight | Engineering Requirement |
|----------------------------|--------|-------------------------|
| 1. Power system | | |
| a. Control acceleration | 5 | |
| b. cruise controller | 3 | |
| c. Breaks | 5 | |
| 2. Physical | | |
| a. comfortable seats | 5 | |
| b. trunk mobility | 4 | |
| c. legs support | 3 | |
| 3. Operating system | | |
| a. easy to operate | 5 | |
| 3. Financial | 5 | |
| 4. Safety | | |
| a. seatbelt harness | 5 | |
| b. bars | 3 | |

Gantt Chart

| Name | Begin date | End date |
|-----------------------------------|------------|----------|
| Team Meeting 1 | 9/7/16 | 9/7/16 |
| • HW0 | 9/7/16 | 9/7/16 |
| • Project Team Charter | 9/7/16 | 9/12/16 |
| • Staff Meeting 1 | 9/19/16 | 9/19/16 |
| • Presentation 1: Customer ne... | 9/26/16 | 9/26/16 |
| ▣ Background Report + Peer e... | 9/19/16 | 9/30/16 |
| • Introduction + Backgrou... | 9/19/16 | 9/20/16 |
| • Existing Design | 9/20/16 | 9/21/16 |
| • Customer requirements | 9/21/16 | 9/23/16 |
| • System | 9/23/16 | 9/27/16 |
| • Sub-System | 9/27/16 | 9/29/16 |
| • Editing | 9/29/16 | 9/30/16 |
| • Staff Meeting 2 | 10/17/16 | 10/17/16 |
| • Presentation 2: Concept Gen... | 10/24/16 | 10/24/16 |
| • Preliminary Report and Peer ... | 10/28/16 | 10/28/16 |
| • Staff Meeting 3 | 11/14/16 | 11/14/16 |
| • Individual Analytical Analsi... | 11/18/16 | 11/18/16 |
| • Presentation 3: Final | 11/21/16 | 11/21/16 |
| • Final Project Proposal Report | 11/28/16 | 11/28/16 |
| • Peer eval 3 | 12/2/16 | 12/2/16 |
| • Staff Meeting 4 | 12/5/16 | 12/5/16 |
| • Final Prototype | 12/9/16 | 12/9/16 |

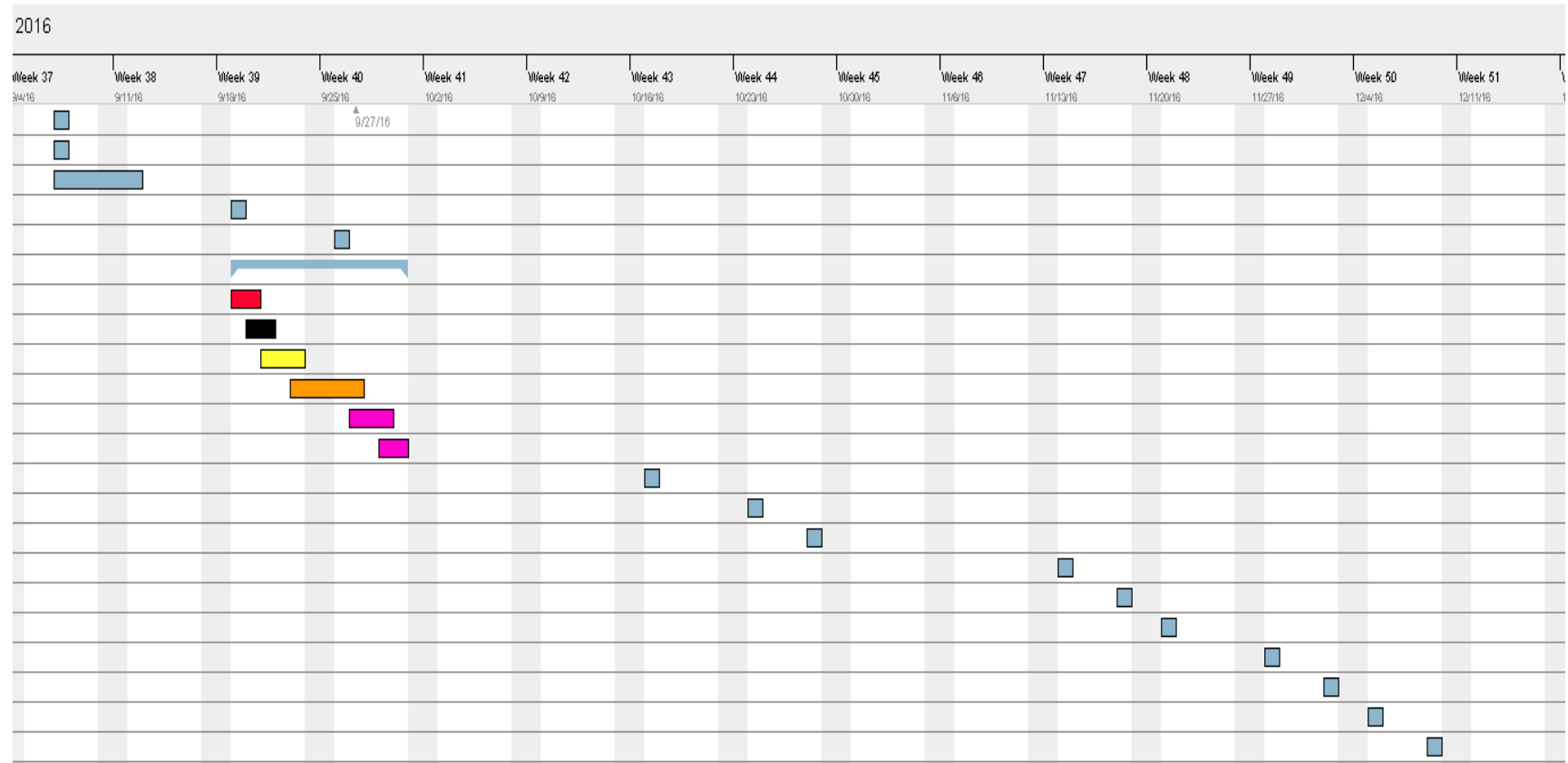


Figure 10: Gantt Chart

References:

[1]"Human Power", *AENews*, 2016. [Online]. Available: <http://www.alternative-energy-news.info/technology/human-powered/>. [Accessed: 26- Sep- 2016].

[2]2016. [Online]. Available: <http://www1.udel.edu/V2G/docs/Kempton-Letendre-97.pdf>. [Accessed: 26- Sep- 2016].

[3]"Go Baby Go' mobility program for children with disabilities expands to OSU | News and Research Communications | Oregon State University", *Oregonstate.edu*, 2016. [Online]. Available: <http://oregonstate.edu/ua/ncs/archives/2014/nov/%E2%80%98go-baby-go%E2%80%99-mobility-program-children-disabilities-expands-osu>. [Accessed: 21- Sep- 2016].

[4]F. 3-in-1, "Scoot 3-in-1 Mobility Rider", *www.mobilitydirect.com*, 2016. [Online]. Available: <http://www.mobilitydirect.com/Scoot-3-in-1-p/414t144-30002.htm>. [Accessed: 21- Sep- 2016].

[5]"Tricycoo Tricycle", *Joovy Online Store*, 2016. [Online]. Available: <http://joovy.com/tricycoo-tricycle/>. [Accessed: 21- Sep- 2016].

Thank You

