Team: Go Baby Go

From: Ali Mohammad, Abdulla Almutairi, Ali Albaloushi, Hakem Almutairi

Date: 02/15/2019

Subject: Final Schedule Documentation / Client Contract

Overview:

- Introduction.

- Client.

- Challenges.

- Project Schedule. (Gantt Chart & Gantt Chart Discussion).

- Team Communication strategies.

- Client Contract.

- Conclusion.

Introduction:

Our project which is GOBabyGO is a car that allows children with mobility issues to socialize and play games with other kids such games like team tag, kickball and soccer. In addition, our main goal is to improve the posture of the child that is using the car thus gaining strength as he/she gets used to the car and socializing with children at their age range thus they don't feel left out because it's mentioned in the project description that children with mobility issues are not exposed to much needed socialization thus they might suffer depression and anxiety problems.while safety and health is our main concern we took in advanced to add supporting bars and cushions to improve posture. Furthermore, we are tasked to work with one of the families that live in Flagstaff which we met and discussed with them ideas about the project. Finally, the team members of this project are Ali Mohammad, Hakem Almutairi, Abdulla Almutairi and Ali Albaloushi our aim is to combine our expertise thus finishing the project on a good note.

Clients:

Dr. James "Cole" Galloway

- Professor, Dept. of Physical Therapy.

- University of Delaware.

- Founder of the project.

Dr. Kyle Winfree

- Assistant Professor

- PhD,Biomechanics and Movement Science, University of Delaware.

- MSE,Robotics, University of Pennsylvania.

- BS,Physics, Northern Arizona University.

Challenges:

- Different motors to consider.

- Controllers.

- Motor speed.

- Parts that allow the connection between the motor and the car.

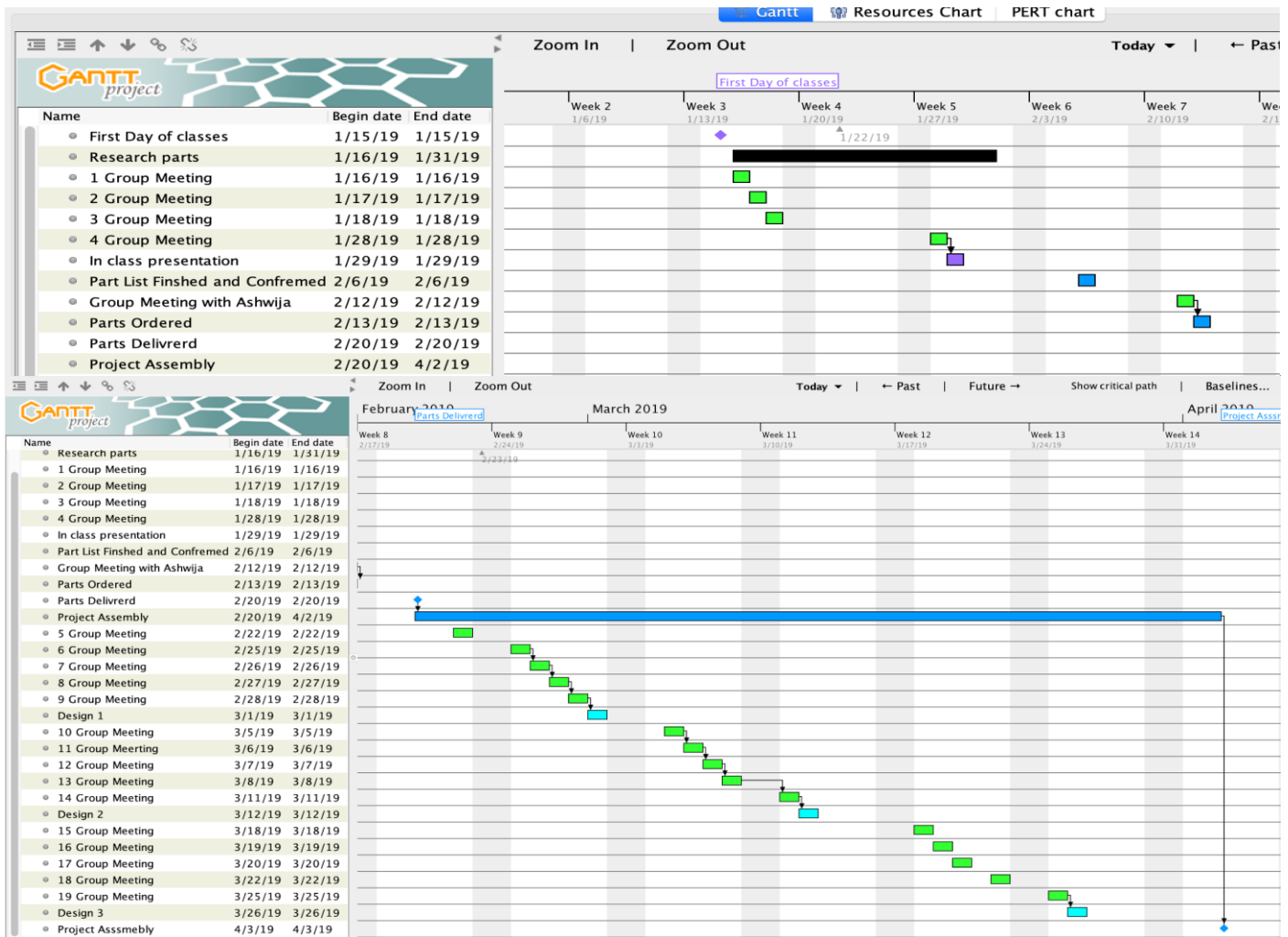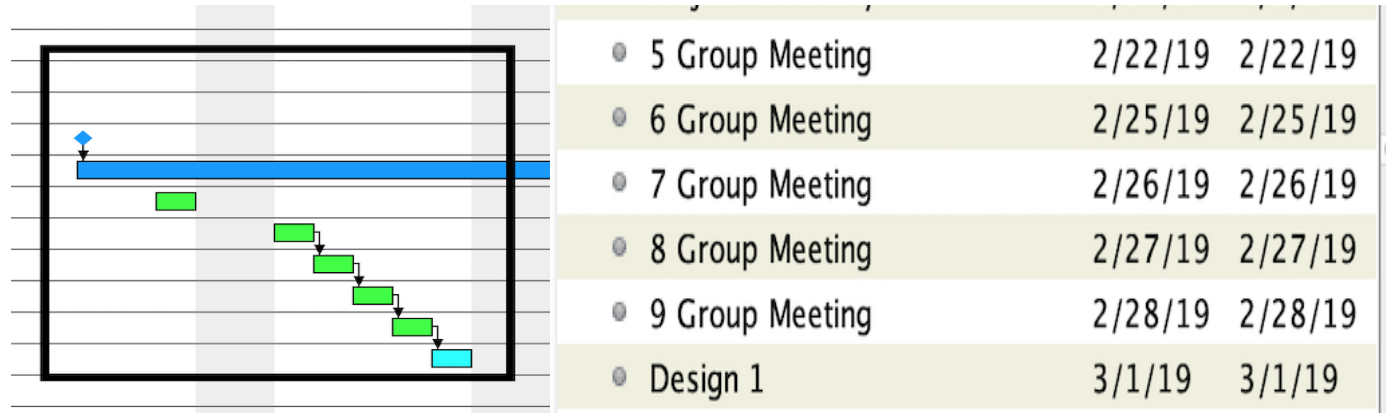**Project Schedule:**

Gantt Chart:

Figure 1: Gantt chart – project schedule.

In figure 1 we have an overview of how we expect our project schedule would be, the black task is our research phase for the parts that would end on the 31 of january. As for the green parts on the Gantt chart these are our group meetings as we move forward with the project the more group meetings we have because they are essential for the completion of the project. As for the blue part it is related to the materials of the project. In addition, the first blue task is the part list being finished. As for the second blue task it's for the part list being ordered on the 13 of February and we expect them to arrive on the 20th or 24th of February. As for the third blue task it is for implementing the materials and we expect to finish the assembly of the project on the 5th of April. On the other side, we have kept in mind that the schedule might change due to delays that might occur. For example, materials not arriving on time, damaged materials, a team mate getting sick, not showing up for a meeting, code language error and conflict

between team members. These delays will affect the project timeline thus instead of finishing the assembly on the 5th of April we expect to finish it in the beginning of May.

○	5 Group Meeting	2/22/19	2/22/19
○	6 Group Meeting	2/25/19	2/25/19
○	7 Group Meeting	2/26/19	2/26/19
○	8 Group Meeting	2/27/19	2/27/19
○	9 Group Meeting	2/28/19	2/28/19
○	Design 1	3/1/19	3/1/19

Gantt Chart Discussion:

Figure 2: First design

we have the schedule for the first design that we expect to start on as soon as the martials arrive and finish it on 1st of March. In addition, the first design will have a force pull type solenoid electromagnet with a spring return attached to a piece of wood. Furthermore, the force pull type solenoid will allow the wood to go back and forward with force and speed thus hitting the ball hard.
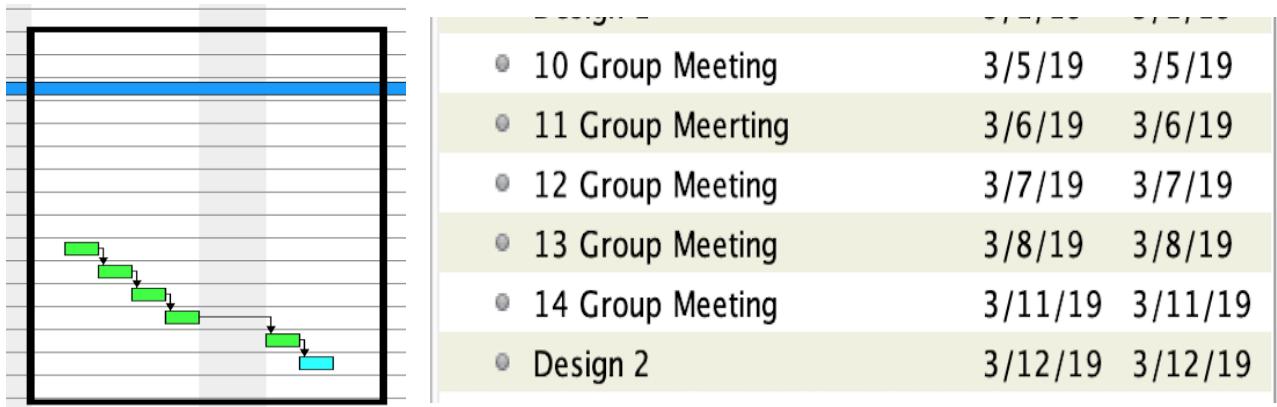
○	10 Group Meeting	3/5/19	3/5/19
○	11 Group Meerting	3/6/19	3/6/19
○	12 Group Meeting	3/7/19	3/7/19
○	13 Group Meeting	3/8/19	3/8/19
○	14 Group Meeting	3/11/19	3/11/19
○	Design 2	3/12/19	3/12/19

Figure 3: Second Design

As for the second design it's the same concept of the first design but instead of using the force pull type solenoid electromagnet with spring return we would use the linear actuator or the linear servos in place of the force pull type solenoid electromagnet with spring return. We expect to start on it on 5th of March and finish it by the 12th of March.
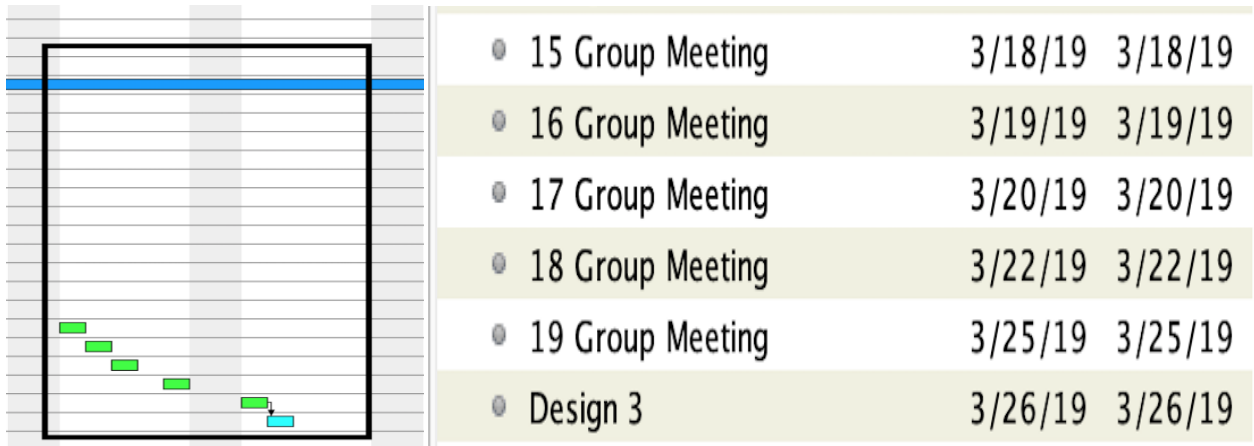
15 Group Meeting	3/18/19	3/18/19
16 Group Meeting	3/19/19	3/19/19
17 Group Meeting	3/20/19	3/20/19
18 Group Meeting	3/22/19	3/22/19
19 Group Meeting	3/25/19	3/25/19
Design 3	3/26/19	3/26/19

Figure 4 : Third Design

As for the third design we believe that it will be as a back up plan incase the first design and the second design are not efficient or not implementable. In addition, for the back up plan we will use the linear actuator to form a net that catches the kick ball also using the force pull type solenoid electromagnet with spring return to create a force to kick the ball. Finally, we expect to start on it on the 18th of march and finish it on the 26 of March.

Team Communication strategies:

Communication is important between team members because without communication the project can't be implemented or completed. As mentioned earlier, as we move forward with the project the more group meetings we expect to have. As for how we can communicate we can use many applications that are free and can be used for both Apple software and Android software. For example, Facebook messenger, Snapchat, WhatsApp, Slack, E-mail, Instagram and text message. These are considered very effective because the message can be sent within an instant and for text messaging, we don't need to connect to a WIFI to send messages. As for the family we will communicate with them by using text

messages and inform them with our progress as we move with the project; as a result, keeping them updated on our project.

Client Contract:

Our group has been looked over our clients "Dr. Kyle Winfree" and "Dr. Cole Galloway". The principle reason of this task as we were asked is to enhance the social side for the inabilities with mobility. Furthermore, to achieve this side we need to think of new plans to execute it in wild thing, which is the vehicle in a specific spending that we requested. Last semester we considered that we are going to execute in the wild thing, which is the idea of the pinball. For this thought we needed to work with different parts. Such as, Potentiometer, Analog Joystick, Step-Motor. However, the most priority design requirements includes, simplicity, compact and reliability. One of the reasons of the simplicity importance the wild thing car should be easy to understand its functions and how to use it for both the parents the the kids. The quality of the wild thing car is one of the high priority part as it will grant the use of the functions that will be implemented in our design.Our team focuses on deliver the final design neatly and all the part packed together to satisfy the users of the wild thing car. Furthermore, to reassure our progression with the project we met with the family that we are supposed to coordinate with and discussed what needs to be improved on the wild thing for example:

- How to balance the child on the wild thing since the child's weight is really small compared to the wilds thing.
- Seat belts.
- Cushioned seat cover

As for the materials that we are planning to use for the flipper or pusher are:

- PVC pipes.
- Duct tape.
- PVC pipes connections.
- PVC male adaptor.
- PVC snap tree.

Finally, As for the materials that we are planning to use for catching the ball:

- PVC pipes.

- Linear actuator.
- Catching nets.
- Wood scoop.

Conclusion:

In conclusion, our main goal of the project is to allow children with mobility issues to socialize and play games with other children at their age rang. We plan to follow the schedule in the Gantt chart but it's subject to change if delays occur as mentioned above. As for communications strategies we plan to use the applications that are mentioned above, and I believe that texting is the best way to get and receive notifications efficiently from each team member and the family. Finally, I believe that finishing the project is one of the of our top priorities because as we move forward with the project I expect to have more group meeting because without group meetings the project can't be implemented.