Week 7

Situation

In Lab 6, the group continued to work on a new design idea that had been developed in the previous lab. Each member had designed a part for the new AEV in a SolidWorks assignment earlier in the week. These parts were collectively examined to determine if they were a good fit for the vehicle and if they would be beneficial to include. Once it was agreed that the part was desired, the group discussed how it could be altered and what improvements could be made to make it as effective as possible. Any changes discussed were applied in the SolidWorks file to accurately represent the part to be used. This work was done so that each group member had a chance to review the parts needed. The more people that look at and analyze the part, the less the chance of a mistake being made or something important not being taken into account.

The group also took time during Lab 6 to correct the project portfolio. It was discovered the day before lab that the information intended to go into the portfolio was being posted onto the wrong website. One member of the group took the time during lab to take all the information and publish it onto the portfolio where it belonged, and it was reviewed by other group members to make sure it was done correctly. A short amount of time was also taken by the group to discuss the PDR presentation due at Lab 7. The group started making a slideshow presentation that would be used and discussed the topics that would be addressed in the presentation. It was determined that the lab time would be most useful for working on the AEV design, so the group decided to spend very little time on the presentation and meet later in the week to do more work on it.

Results & Analysis

The team used Lab 6 to catch up on aspects of the project that were behind the desired completion time. One aspect was the project portfolio. The team was able to correctly format and upload the necessary documents and information to the portfolio. The team also discussed the design of the AEV vehicle and how the vehicle was to be built in the upcoming weeks. The team concluded that a vertical design was the best option for the AEV vehicle and decided to continue with a piece designed on SolidWorks (shaped like an upside T). The motors would be attached on either side, facing opposite directions. Therefore, one motor will have to pull while the other pushes so that the motors will not offset each other. The majority of the weight will be concentrated in the middle of the horizontal part of the T, with the battery on one side of the base in resting an extruded piece (like a pocket) and the Arduino on the other side. The team agreed with these placements and decided the piece would need to be dimensioned correctly within the next two weeks. In addition, an early prototype code needs to be constructed as a reference to see how the code would need to be adjusted in order to complete each part of the mission correctly and efficiently.

Takeaways

The group talked about the final design and some of the steps needed to be taken in the future weeks. It was determined that the team would continue to design the vertical piece created on SolidWorks. The final dimensions need to be determined and finalized so that the final design can be submitted to be printed. Then the design needs to be tested and the AEV vehicle needs to be built. In addition, it was determined that the code was to be created while the piece is dimensioned and printed. Since the

current design incorporates opposing motors such that one pulls while one pushes, the code needs to adhere to this construction attribute in both the forward and backwards trips of the AEV vehicle. In addition, the code needs to be constructed and tested to find the best way to pick up the magnet and stop on both the forward and backward trips.

Week 9

Situation

Lab 8 will be spent comparing two different designs for the Advanced Energy Vehicle. Two designs will be built, and each will be put on the track and tested using a code that will make the vehicle move forward until it reaches the first gate, where it will come to a stop. The data gathered from each run will be used to determine how well the vehicle performed, particularly how efficient it was. Observations will be made as the vehicles run to determine if they are performing the desired tasks as well as staying balanced and consistent throughout the procedure. This will help the group get an idea of what needs improvement and how it can be improved for future test procedures. All data and observations will be made to find what changes need to be made moving forward.

Weekly Goals

1. Complete the lab proficiency quiz in lab
2. Complete design and dimensions for AEV base and submit it to be built

Weekly Schedule

Task	**Teammate(s)**	**Start Date**	**Due Date**	**Time Needed**
Lab 7 Progress Report	All	3/4/17	3/8/17	3 Hours
Lab 8	All	2/22/17	2/22/17	1 Hour 20 Min
Pre-lab reading/quizzes	All(separately)	2/8/17	3/9/17	30 min
Update Portfolio	Adam	3/4/17	3/8/17	30 mins
Construct New Design	Aaron	3/7/17	3/8/17	45 mins

Appendix

Team Meeting Notes

Date: 28-Feb-17
Time: 8:00pm
Members Present: Aaron Mckinley, Adam Boes, Christian Considine and Spencer Lohmeier
Topics Discussed: Week 7 Progress Report & PDR Presentation Preperation

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Objective:
Today's focus was to work on the Week 7 Progress Report and to completely prepare our PDR presentation so that it will run smoothly and all aspects will get discussed.

To do/Action Items:
- Progress Report (AM, CC, SL, AB)
- Meeting Notes (SL)
- Backwards Situation (AB)
- Results & Analysis (CC)
- PDR Presentation Preparation (SL, AB, AM, CC)

Status Summary:

Final preparations are being made on the final design of our AEV. Parts that need to be made in SolidWorks are being assembled and all drawings are being finalized as well as reviewed by all team members. By then end of next week our solidworks parts will be fully dimensioned as well as to complete our Arduino Code.

Reflection:
- Continue working together as a team
- Continue to split up the work
- Roles will continue to be split up accordingly in order to complete all assignments in a timely manner
- We will continue to stick to a strict schedule so that our AEV will be completed on time

Arduino Code:

*No code for this week