sdmay19-30: EE 448 Stroboscope

Week 10 Report
April 1 - April 7

Team Members

Katrina Choong — *Chief Hardware Engineer/Timeline Manager*
Meghna Chandrasekaran — *Meeting Facilitator/Chief Software Engineer*
Seth Noel — *Chief Hardware Engineer*
Kyle Zelnio — *Project Manager*
Jessica Bader — *Scribe/Communication Manager/Chief Software Engineer*

Summary of Progress this Report

The hardware team (Katrina and Kyle) worked on printing the sensor mounts to be used in the lab to be more stable than the previous version. They found the design did not have enough space for the sensor and redid the design. The software team (Jessica, Seth, and Meghna) modified the software to allow the user to modify the com port. Seth also researched sensors which would not use electromagnetism. He looked at the prices for these sensors but could not find any within our price range.

Pending Issues

Because the sensors not requiring EM are out of our price range, we need to find a solution to block the EM from our sensor. At the moment, we still do not have a solution for the AC machine and need to test in lab in two weeks. This new solution may also require changes to the software which we cannot start until we have a new idea of what to use. Furthermore, our Arduino mount is still loose and now does not face the correct direction.

Plans for Upcoming Reporting Period

The hardware team (Katrina and Kyle) is going to continue working on a more secure Arduino mount. They are also going to research ways to stop the EM from making the sensor's readings inaccurate. The software team (Meghna and Jessica) are going to create an executable file to run the GUI so it can be put on the lab machines and run by the students easily.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Katrina Choong	Kyle and I went to design to print out four sensor mounts for the DC motors for the lab. We also printed out a "fork" mount design that helps the sensor mount receive a more reliable and steady reading; however, we didn't take into account the sensor, so we are currently reprinting a new version to fix that. We revisited and are continuing to work on the arduino mount design to be	7	64.5

	implemented upright so it's more secure when the motor is running.		
Meghna Chandrasekaran	Worked with Jessica and Seth to figure out how to change the com port into a user input form on the GUI. We made a dialogue box for the users to input what their com port is named, and added some features that check whether or not the port exists or not. After making all the changes, we tested it to make sure it worked.	6	64
Seth Noel	Work with Meghna and Jessica to figure out how to change the COM port from the GUI. We tested it to check that it still worked. I looked into different ways to measure rotation speed that doesn't require magnetism. I was only able to find a few encoders that were far out of the price range that our client was willing to pay. I then looked into other ways to take care of the EMI that was being emitted by the AC motor.	10	73
Kyle Zelnio	Finished fork mount design to stablize the sensor mount and went to design to get all the mounts printed for the lab stations. When the fork mount was printed we found it was too short for the sensor to fit under so we are looking to give the sensor more room in version 2	7	68
Jessica Bader	Worked with Meghna and Seth to allow the user to modify the com port with the GUI. We reasearched the updates, made the code changes, and tested the code. Also talked with Seth to identify potential solutions to our AC motor problem, because we were not able to find a non-EM solution for a sensor that is within our price range. Solutions we came up with included a Faraday cage, finding a material to sheild the sensor from the motor's EM, or moving the sensor away from the motor	6	66

Gitlab Activity Summary

8 push to branch Software from Meghna and Jessica

- Moving to a permanent file
- Update to the GUI
- Closing the old com port and opening a new one
- Compilation fixes