sdmay19-30: EE 448 Stroboscope

Week 8 Report
October 25 - November 2

Team Members

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

Summary of Progress this Report

We (our entire team) met with our client and Dr. Bigelow (professor whose lab the stroboscope will be used in) and decided to take a new direction for our project. From there, we defined what direction our project will go in from this point on -- we will use a tachometer to automatically calculate the speed of the circuit and use the stroboscope as an optional visual for students. Then, we evaluated which tasks will need to be completed to do this and updated our prototypes for the rest of the semester to fit this new direction. We also worked on connecting the Tiva board to the current circuit we have, to see how they will work together. The software team (Meghna and Jessie) updated the GUI to fit with the new tachometer needs. The hardware team (Kyle, Seth, and Katrina) started researching tachometer approaches.

Pending Issues

Dr. Bigelow has suggested we had a tachometer to track the speed versus just the stroboscope and has taken away user interaction. Our documentations have been based only on building a working stroboscope for our final project, but this changes our original design and documentation. We will need to update our documentation and prototypes before the end of the semester. Furthermore, the hardware team (Kyle, Seth, and Katrina) needs to decide how we will implement the hardware of the tachometer before the software team (Meghna and Jessie) can accomplish any updates, meaning our updating process will be fairly linear in some places. Furthermore, the software team (Meghna and Jessie) have not yet been successful in determining how to communicate between the GUI and C code. We need to use a pipe, but online explanations are not clear. We need to find a way to test without using the methods themselves, because we do not currently have all the required software on a single computer (Tiva software is too large to download onto our personal computers, but we do not have admin privileges to download Python onto the lab computers).

Plans for Upcoming Reporting Period

In the upcoming period, the hardware team (Seth, Katrina, and Kyle) are going to research and choose a tachometer method which we will use moving forward. As soon as possible once this is decided, the entire team will need to update our documentation and the software team (Meghna and Jessie) will need to determine what the hardware will need from the software and how we can make that happen. The software team (Meghna and Jessie) will work on communicating between the GUI and Tiva board in the meantime.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours

Katrina Choong	We met with Dr. Bigelow to discuss and present our project. He suggested to add a tachometer in a feedback loop to our existing stroboscope to track the motor's speed for the labs and also taking away user interaction and rely more on the hardware and software. This has heavily changed our approach to our overall project on both ends. Previously, I had looked up stroboscope circuits online to draw our circuit and perform circuit analysis to find values where the hardware team could test against. The hardware team has moved on with prototype 2 and has a PCB board being made.	8	56.5
Meghna Chandrasekaran	Met with Dr. Bigelow to discuss his view on our project. After this meeting, we decided to add another component to our project. Instead of having just the stroboscope, we plan to add on a tachometer to the project, making the device have less user interaction. As a team, we re-evaluated our plans for the future with the added consideration of the tachometer. On the software side, I worked on figuring out how to connect the GUI to the Tiva board with Jessie. We also changed the original look of the GUI slightly to fit the needs of the tachometer. Lastly, we also discussed as a team how we plan to make additions to our documents (project plan and design doc) for the tachometer and discussed our reflections for the week.	8	59
Seth Noel	Had a meeting with Dr. Bigelow to get his input on the project. By the end it was decided to add a tachometer to the project. The first PCB prototype has been turned in to be cut and printed. The hardware team was to do research on different ways to implement the tachometer in a non-contact way, so I did that as well.	8	60
Kyle Zelnio	Met with Bigelow and discussed how to incorperate more of a complex design as a 491 project. Then looked into different types of tachometers to add to our stroboscope	8	54
Jessica Bader	Had meeting with Dr. Bigelow to discuss his opinions on the project. Decided to widen the scope of the project from this meeting.	9	62

	Re-evaluated our plan moving forward by changing the prototype 2 plan for software, discussing what we would like to do for our project based on Dr. Bigelow's input. We will be using a tachometer to automate the process of determining the speed. Also worked on researching how to communicate to the Tiva board from the GUI. Also worked with the team to evaluate how our documentation will need to be updated and to discuss the newest reflection. Finally, worked with the team on the group parts of the reflection assignment.		

Gitlab Activity Summary

Nothing to report.