Weekly Status Report 8

Dates: 4/5/2018 - 4/9/2018
Group Number: sddec18-02
Project Title: Steam Heat Controller Retrofit
Client/Advisor: Lee Harker

Team Members - Role
Sarah Coffey - Reporting Lead
Ken Wendt - Webmaster
Liz Wickham-Kolstad - Design Lead
Jevay Aggarwal - Technical Lead
Joe Filbert - Client Lead
Thomas Devens - Planning Lead

Summary

We fulfilled our client's goal for this semester during this time period: members of the hardware and software team wrote code on the Raspberry Pi to successfully drive the motor in a variety of speeds. The team also discovered that driving the motor through code on the Pi resulted in better motor function than when it was controlled from the signal generator. The hardware team also rewired the motor's connections and began planning out the circuitry for the valve controller box. The software team continued researching alternative means to reduce the energy consumption of the thermostat, including through powering off the thermostat when not in use. They also developed code and circuitry to display and update the alphanumeric display based on button presses. Finally, they also began creating the web interface for the server.

Pending Issues

- Communication between the Pi and Feather board over BLE is still not possible.

Going Forward

Hardware team: Configure the Pi to read the output of the encoder on the motor controller. Also work on the circuitry and power supply for this system.

Software team: Continue researching and working on getting the BLE communication up. Once this is complete, test the power-off and on functionality for energy efficiency. Also continue working on the web interface for the server.

Individual Contributions

Name	Contribution	Hours Worked	Total Hours
Sarah	Created the circuitry and code with Jevay for the rough draft implementation of the thermostat (no communication or energy saving measures implemented yet).	5	54.5

Ken	Worked with Liz to get the Raspberry Pi to send PWM signals to the H-bridge to control the motor. This ended up working much better then using the function generator to send square waves last week. Going forward, we need to get the pi to read the output of the encoder.	3	53.5
Liz	Setup Raspberry Pi with SSH, passwords, and other security measures. Setup PWM on Rasberry Pi, and tested it with the motor driver (with help from Ken).	6	60
Jevay	Worked on pi side communication. Got the Feather and Pi to connect but not read and write data.	5	53
Joe	Tested PWM with H-bridge breakout board and motor. Built motor cable to valve controller, repaired motor wiring, started perf board for sensor connections.	6	57
Thomas	Starting setting up simple web page interface for remote control.	3.5	41

Meeting with Client/Advisor

Not applicable.