Bi-Weekly Status Report 1

Dates: 8/26/2018 - 9/8/2018
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

These first 3 weeks have been spent getting back into the project and finding where we left off last semester. We discovered that we should have inventoried and documented where we were at, as well as what was left to do, at the end of last semester. We have also re-planned this semester based on what we expect to get done and where we left off at the end of last semester, so that this semester's schedule is more in line with our current status and expected progress.

The software team has re-established connections between the RCU (remote control unit) and the MCU (motor control unit) in code. This subteam has also completed the RCU code (temperature control, display, and on/off times) to the point that the circuit has been finalized.

The web team has begun designing the website and database schema. The web project has been created and initial backend software has been created. The subteam is also in communication with ETG about hosting and authentication.

The hardware team has finalized the MCU circuit by wiring up the circuit on a breadboard and running the code to the Raspberry Pi Liz wrote. We have now begun designing the final PCB for this circuit.

Pending Issues

The design, printing, and adjustment period on creating the PCBs for each circuit might be tough. We are expecting that we will need to make it a priority to finish these as quickly as possible. Our efforts have been focused on reducing this, and we are sufficiently within our planned schedule so far. Another potential issue is our lack of experience with creating a database from scratch, but we are working with ETG to mitigate this.

Going Forward

The software team is handing off the circuit design to the hardware team so that PCBs can be printed. The software team will now continue finalizing the interaction code between the RCU/MCU and figuring out the packaging for the RCU based on the PCB.

The web team will continue creating the website, mainly focusing on the front-end code, while we figure out the database hosting and create the schema to interact with the backend. Once the DB is established, we can focus on the backend.

The hardware team will continue to work on the PCB layout for the MCU and start the PCB for the RCU. We also plan to solder a protoboard with the circuit to use as backup and troubleshooting.

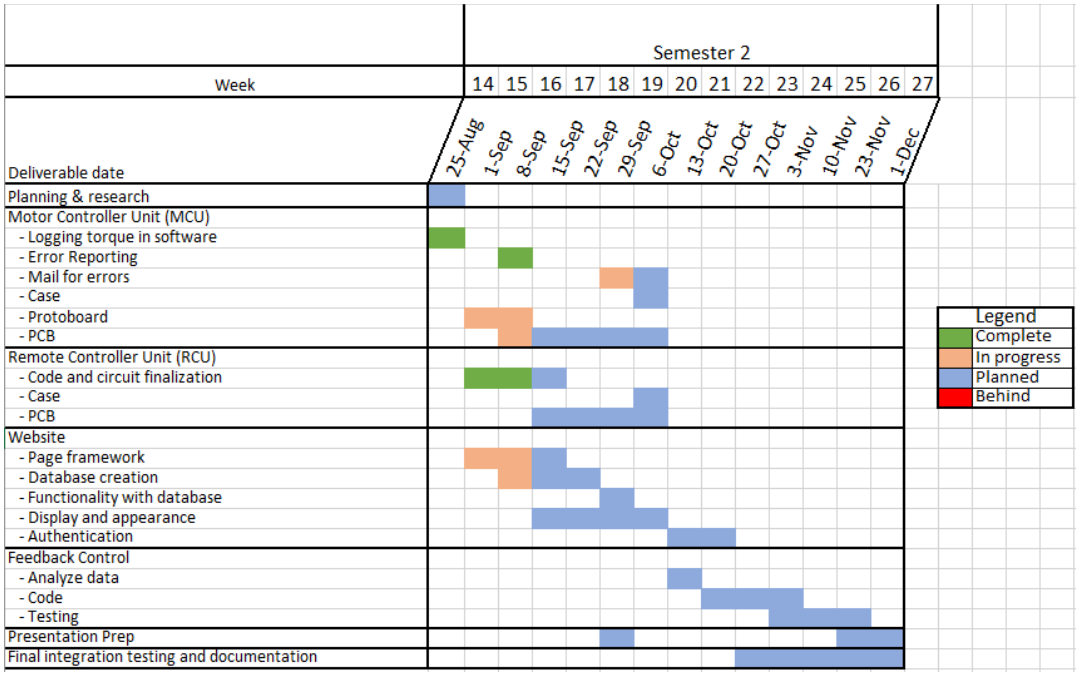
Individual Contributions

Name	Contribution	Hours Worked	Total Hours
Sarah	Setup the website framework in Spring and began creating the homepage. Assisted team members with debugging the RCU code and setting up the Wifi code between the RCU and MCU.	15	15
Ken	Finalized MCU circuit by testing the h-bridge, encoder, and temperature sensor all together and has begun to design the PCB for that circuit.	6.5	6.5
Liz	Worked on motor control, implemented stuck-detection on MCU, updated software on pis and assisted with WiFi on RCU and MCU, helped finalize motor-control circuit diagram.	11	11
Jevay	Got the basic functions of the thermostat implemented in the RCU and got one way communication integrated into the the RCU and MCU.	10	10
Joe	Worked on motor control and temperature sensor. Started working in multisim to make temp sensor/ H bridge Raspberry Pi Hat	10	10
Thomas	Worked with Sarah to get the schema for the DB set up and started the process to set up the website/DB hosting through ECE.	5	5

Meeting with Client/Advisor

Not applicable at this time.

Schedule


Semester 2
Week
14 15 16 17 18 19 20 21 22 23 24 25 26 27
Deliverable date
25-Aug 1-Sep 8-Sep 15-Sep 22-Sep 29-Sep 6-Oct 13-Oct 20-Oct 27-Oct 3-Nov 10-Nov 23-Nov 1-Dec
Planning & research
Motor Controller Unit (MCU)
- Logging torque in software
- Error Reporting
- Mail for errors
- Case
- Protoboard
- PCB
Remote Controller Unit (RCU)
- Code and circuit finalization
- Case
- PCB
Website
- Page framework
- Database creation
- Functionality with database
- Display and appearance
- Authentication
Feedback Control
- Analyze data
- Code
- Testing
Presentation Prep
Final integration testing and documentation
Legend
Complete
In progress
Planned
Behind