sdmay19-21: Distributed mesh network for data collection and predictive analytics

Report 7
October 22th - October 27th
Client: Danfoss/ Radek Kornicki
Advisor: Craig Rupp

Team Members

Ryker Tharp — *Database Design* - Backend
Collin Vincent — *System Engineer* - Networking
Colton Smith — *Project Manager* - Backend
Gage Tenold — *Engagement Lead* - Frontend
Cody Lakin — *Software Developer* - Hardware Interfacing
Will Paul — *Lead Architect* - Hardware and Frontend

Summary of Progress this Report

Established that SQLite will be the database technology we use moving forward. Progressed to a stage where CAN bus message can be read for certain values. Did more work with Electron, ready to start on creating the Electron version of the UI.

Pending Issues

- Have SQLite databases be able to transfer information to different machines, which will translate to the network nodes.

Plans for Upcoming Reporting Period

- Have SQLite databases be able to transfer information to different machines, which will translate to the network nodes.
- Work more on interpreting units and specific values from CAN bus. Possibly put the values into JSON.
- Be able to grab most recent data from tables to send to other devices.
- Start working on implementing our front-end in electron. (Gage)

Gitlab Activity Summary

Past Week Accomplishments (Week 7)

- Sat up SQLite
- Made a python script to read from a CAN bus
- Learned to use notifications with Electron

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Ryker Tharp	● Set up SQLite on personal machine, started scripting the SQL needed to create our database on each of the devices. ● Started working on methods to distribute the information across the network.	9	45
Collin Vincent	● Installed oslr on one pi then copied the image over to the other sd cards. ● Test using olsr to create meshing in our network.	6	49
Colton Smith	● Started NodeJS scripts to grab database data ● Setting up SQLite Enviroments in Linux ● Implementing ORM for NodeJS	8	49
Gage Tenold	● Went through a very large amount of Electron tutorials and learned how to handle Push Notifications and Inter Process Communications ● Worked with Photon to figure out styling for our frontend	40	48
Cody Lakin	● Created a python script to open a CAN bus socket, read a message, output it, interpret the relevant group, and output the values	8	42
Will Paul	● Explore options for interfacing with the Raspberry Pis, test python scripts on Collin's Arch linux Image ● Install and test Cody's work, and continue development with him on the CAN bus parser script	7	39