

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

Week 2 Report

September 17 - September 21

Team MembersRyker Tharp — *Database Design*Collin Vincent — *System Engineer*Colton Smith — *Project Manager*Gabe Tenold — *Engagement Lead*Cody Lakin — *General Software Development*Will Paul — *Lead Architect*

Summary of Progress this Report

Continued researching possible technologies for the project.

As a group, created a basic design document to be discussed with the client.

Met with our advisor and client to hammer out actual deliverables and discuss where to start.

Looked into possible hardware to use and asked for some initial hardware from the client.

Pending Issues

Waiting for client to deliver some starting hardware.

Plans for Upcoming Reporting Period

Continue building architecture diagram now that the scope is more accurately defined. (Cody and Ryker)

Further research and experimentation with Python CAN bus libraries (Cody)

Start a draft of the Design Document for submission in class. (Ryker and Gage)

Look into feasibility and pros/cons of Zigbee, Bluetooth, and Wi-fi.(Colton)

Once the hardware is received, begin checking for out compatibility with rqlite and CAN bus. (Will and Collin)

Make an initial decision for json vs protobuf. (Gage and Will)

Gitlab Activity Summary

Added files for project website to repo.

Past Week Accomplishments (from Week 1)

Made first contact with the client and defined out scope.

Conducted primary research on networking solutions.

Brainstormed to figure out a base idea for the project architecture.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Ryker Tharp	<ul style="list-style-type: none"> ● Researched potential database designs using RQLite. ● Discussed data transfer and clean-up methods with the team. ● Researched front-end technologies for displaying information to users. (Web vs. Browser) 	5	13
Collin Vincent	<ul style="list-style-type: none"> ● Discussed potential solutions to the networking protocols and data storage problems ● Began research on various existing technologies we can use (rqlite) 	4	12
Colton Smith	<ul style="list-style-type: none"> ● Organized the team research topics ● Researched potential network protocols (Zigbee mainly) ● Discussed clarifications with client to define scope and deliverables 	5	13
Gage Tenold	<ul style="list-style-type: none"> ● Researched benefits/boons of working with Bluetooth/Wi-fi ● Looked into JSON vs Protobuf 	5	13
Cody Lakin	<ul style="list-style-type: none"> ● Researched CAN bus message structure ● Looked at CAN bus APIs for various languages (C++, Python) 	4	11
Will Paul	<ul style="list-style-type: none"> ● Researched possible Linux Distributions for Raspberry Pi / zero etc ● began testing & setup of distros in virtual machines 	6	12

- Hours jumped due to us not including the first week of meeting with only our advisor on previous report.