CPRE 491 WEEKLY REPORT 07

Project Molecule

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2   WEEKLY SUMMARY

This week we finished up our project plan. In our team meeting we divided out work to start working on both the networking and UI sides of things. We thought more about fault tolerance and how required uptimes are easier to think about as acceptable downtimes. Along with the project plan we continued brainstorming ideas on what types of things we want to show off in the presentation. Parts order one came in and parts order two is on route. Our machines are set up with Rust installed so we are really getting ready to start on things that will be in our final demo.

3   PAST WEEK ACCOMPLISHMENTS

All Members:
- Finished up Project plan

Ryan Wade:
- Developed Web Components Library

Nathan Volkert:
- Researched Rust and Redux

Daniel Griffen:
- Developed network layer communication prototype

Alex Berns:
- Researched Rust and Redux

4   INDIVIDUAL CONTRIBUTIONS

NAME	Hours this week	Hours cumulative
Ryan Wade	6	29
Nathan Volkert	6	26
Daniel Griffen	6	26
Alex Berns	6	27

5 COMMENTS AND EXTENDED DISCUSSION

5.1 WEB UI COMPONENTS LIBRARY

https://github.com/ryanwade/react-foundation-components

This library was started prior to work on senior design. As such we released it as a separate project on GitHub under the MIT license. This library contains components and styling such as buttons and form elements to be used with our configurable UI. The next steps are to create a markup language to configure the UI and to further test the components.

UI Components:

- Button
- NumberField
- TextField
- TextArea
- Divider
- Title
- Expand
- Loading
- CenterBox
- TextModal

Features:

- Visibility
- Enable/Disable
- Function binding (onClick)

5.2 NETWORK LAYER COMMUNICATION PROTOTYPE

https://gitlab.com/may1739-molecule/molecule-core

The network layer will form the early core of the project. I am working on a prototype version of the networking layer that supports sending and receiving messages from other devices on the network, as well as supporting service discovery, message routing, and device registration. The prototype implementation relies on a dummy database implementation for storing data about services and nodes and does not implement any features to avoid data collisions. The next steps are to finalize the API of the network layer and create an actual data store for network data.

6 PLAN FOR COMING WEEK

- Design Document
- Create Configuration markup language for UI
- Expand Rust program

7 SUMMARY OF WEEKLY ADVISOR MEETING

We discussed the project plan and recommended changes. The recommendations are listed below.

- Longer uptime since 99% in a single year is more than 3 days. We changed it to be more logical.
- Add explanation of what a Raspberry Pi is and an image
- Look into production vs selling cost as a future piece of the document. Need to consider this as part of our final presentation. This can also lead into looking at the benefit to interested parties. These parties might be able to help funding.

Another topic of conversation was formal analysis. We need to track our bugs and make note of how they occurred and how they were fixed. This can be material for the final poster.

Also adding critical and risk factors should be added to the design doc.

Finally, creating a state machine for control. This will help with design and with final presentation. A poster showing the states that each node can be in and maybe a GUI showing what each demo node is currently in could be very showy.