Senior Design - Weekly Report

March 24th - April 7th

Team Number: sdmay23-37
Project Title: Microgrid Data Platform Enhancements
Advisor/Client: Mathew Wymore
Team Members/Roles:
 Alexander Haack - Software
 Carson Love - Cybersecurity
 David Harmon - Software
 Harvey Forchu - Computer
 Kenyon Fergen - Software & Cybersecurity

Summary

These two weeks saw decent progress across the board. On the frontend/backend sides, we've made significant progress on running the app on the server. We can now access the website on the server and make calls to our backend API, and can interact between different users at the same time. We have fully set up the system for showing all publicly listed microgrid sites as well as a form of bookmarking for users to save microgrid sites for easier viewing later. We are working through adding more specific permission roles to limit access and capability to microgrid site information so that we can support private microgrid sites. On the cybersecurity side, we brought out findings and recommendations to the client, and got approval for a couple items. We are still waiting on hardware access and a couple more approvals for some recommendations however. The scripts were moved over from separate folders for each sensor to a single folder containing all the sensors. After putting together the data, ports and connections on the tesla gateway, we found out it is connected to and shares the data with the tesla powerwall. We are looking into what other sensors are active on the microgrid as some of them have been moved to other platforms.

Accomplishments

- Alexander
  - Worked on features in the frontend and adjusted backend support
- Carson
  - Present cyber Findings & Recommendations report
    - Approval for R01.1; Further approvals needed for other recommendations
  - Sanitized both git repos of secrets
  - Created ignored config file for sensor scripts per R01.2
- David
  - Added list of all public sites, and added backend support for linking users and sites together with specific permission roles.
  - Added bookmarking feature for users to bookmark public sites.
  - Added "Add" frontend feature for users to add other users to a site.
- Harvey
  - Implemented gateway api and finalized its config file
- Kenyon
  - Enabled SSL certificate on server.
  - Continued work on Plotly API handlers.

Individual Contributions

Name	Individual Contributions	Hours this period	Hours Cumulative
Alexander Haack	Finished some frontend features	6	21
Carson Love	Present cyber findings; start implementation of recommendations	6	28
David Harmon	Created backend support for linking sites, users, and permission roles.	15	36
Harvey Forchu	Implemented gateway api and finalized its config file	5	20
Kenyon Fergen	Enabled SSl certificate, worked on Plotly handlers.	10	23

Plans for Upcoming Weeks

Alexander Haack - Continue work on features
Carson Love - Create detailed walkthrough for recommendations R02 and R03
David Harmon - Use the new linking functionality to have public and private sites, where private sites can only be accessed by members, and only admins of the site can add members to the site.
Harvey Forchu - Get a list of sensors still active on the microgrid and work on implementation
Kenyon Fergen - Continue working on Plotly handlers and ensure Plotly configuration makes sense for use case with real data.

Meeting with Advisor

We met with Mat on April 30th. During that meeting we discussed progress over the last several weeks. We presented progress on the Front End. We also presented cyber security findings and recommendations, and received approval to move forward with some of those recommendations. Mat also recommended we set up https with a self-signed certificate, and later a legitimate certificate. Finally, we had a number of design choice questions which Mat was able to answer.