

Senior Design - Weekly Report

April 8th - April 21st

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

This week marked the end of most of the implementation. On the frontend side, we are utilizing user roles to limit permissions of users, and polishing the related workflows for managing access to public and private sites. The cybersecurity assessment is finished, and recommendations have been either implemented or documented. The backend has been finishing up the services for user roles and permissions to be usable by the frontend workflows, as well as enabling endpoint security that require a validated user to be calling the endpoint. At this point the team is working on finishing touches and putting together presentation materials.

Accomplishments

- Alexander
 - Made frontend changes for user roles and permissions
- Carson
 - Wrote up walkthrough for R02 and R03
 - Organized deliverables work
 - Framework for Design Doc & Slidedeck
 - Draft Poster
- David
 - Added backend member role distinctions for varying levels of access to managing/viewing a given private site.
 - Added public/private distinction for sites for private/public viewing access.
 - Added endpoint validation for security.
- Harvey
 - Wrapped up the sensors API pulling data from the microgrid to the backend
- Kenyon
 - Finished graph data handlers.
 - Added data and display options to the graph page and integrated with Plotly.
 - Configured React to work with HTTPS and our certificates on the VM.

Individual Contributions

Name	Individual Contributions	Hours this period	Hours Cumulative
Alexander Haack	Worked on user roles	9	30
Carson Love	Finished Cyber documents; Began work on Deliverables	8	36
David Harmon	Implemented access control with roles, endpoint validation, and private/public site distinction.	10	46
Harvey Forchu	Wrapped up the sensors API pulling data from the microgrid to the backend	10	30
Kenyon Fergen	Finished graph data handlers, VM setup, Plotly and graph page.	10	33

Plans for Upcoming Weeks

Alexander Haack - Finish up features and start working on final Deliverables

Carson Love - Continue work on Deliverables; Google Auth change ownership instructions

David Harmon - Polish existing features; find and fix any hidden bugs or minor visual defects that may remain.

Harvey Forchu - Working on my presentation slides of our project

Kenyon Fergen - Polishing and bug fixes on existing features as needed. Potential database performance tuning.

Meeting with Advisor

We met with Mat on April 13th. Front end demonstrated new features such as using cookies for authentication and microgrid site management. We also discussed what privilege levels were necessary for microgrid sites. It was decided to maintain the 3 tiers (Owner, Administrator, and Member). Back end shared findings on what sensors were available and relevant. Cybersecurity shared progress on implementing recommendations. Finally we discussed scheduling a practice run of the industry presentation.

We also had a short touch-base with Mat on April 20th. Frontend demonstrated new functionality surrounding access control and roles. Progress on the poster and other deliverables was shown. Finally Mat answered a couple detail questions regarding what would be best to have first on the website for demonstration purposes.