

SD MAY 25-43

GRID AI: BUILDING A USER-FRIENDLY GRID VISUALIZATION AND WEB-INTERACTIVE INTERFACES FOR THE GRIDAI ELECTRIC POWER GRID MANAGEMENT SOFTWARE

DR. GELLI RAVIKUMAR – PROJECT CLIENT

JESUS SOTO – WIDGETS DASHBOARD DEVELOPER

RANGSIMUN BARGMANN – WIDGETS DASHBOARD DEVELOPER

SKYLER KUTSCH – SVG DIAGRAMS DEVELOPER

FRANCK NDOUTOUME – CODE EDITOR DEVELOPER

HANG KIM THANG – MAP BOX DEVELOPER

JUSTIN SOBERANO – MARKET DASHBOARD DEVELOPER

Weekly Summary

This week, the group focused on reestablishing momentum after the break by advancing the integration of Firebase into the project to enable storage persistence for key components: the Code Editor, Widgets Dashboard, and SVG Diagrams. We also met with the client as a group to set out the roadmap for what should be the expected deliverables for this semester.

Past week accomplishments

- **Jesus Soto:** *I reviewed the Firebase documentation to better understand how to effectively utilize collections and optimize our project's data schema. We aim to ensure the schema is efficient and scalable, aligning with the project's requirements and frontend components. We plan to present the completed data schema to the client during our weekly meeting next Monday.*
- **Rangsimun Bargmann:** *I familiarized myself with how to model data in firebase and created the first draft of the schema for storing dashboard information in the backend. Additionally, I started to look into how to modify the frontend code to properly retrieve data from a firebase backend.*
- **Skyler Kutsch:** Finalized Docker to start up the React app when it is merged with the main code. Organized and perfected the Mongo database to present the best schema for when we merge databases to Firebase.
- **Franck Ndoutoume:** Designed the Firestore database schema for storing Code Editor data. Learned firebase fundamentals, gained a solid understanding of Firebase, including collections, documents, and real-time data handling.

- **Hang Kim Thang:** Worked on timeline component, user be able to select specific date and time to see what happened during that date.
- **Justin Soberano:** *I met with our client to get back on track on what we were going to go on the markets dashboard. The current plan is to do research on DSOs and implement the designs from Figma into the environment.*

Pending issues

- **Justin Soberano:** *I am waiting on ETG to receive an OpenAI API access key for our team.*
- **Rangsimun Bargmann:** *I am waiting on confirmation on whether or not a new backend collection can be created, so I can start testing with the actual database.*
- **Jesus Soto:** Finalize the data schema and start the integration between Firebase and the current frontend application.
- **Skyler Kutsch:** Waiting to merge databases into Firebase, working on user functions and graph design/layout.

Individual contributions

<u>NAME</u>	<u>Individual Contributions</u> <i>(Quick list of contributions. This should be short.)</i>	<u>Hours this week</u>	<u>HOURS cumulative</u>
Jesus S.	Reviewed Firebase documentation and collaborated in the creation of the new projects data schema.	6	6
Rangsimun B.	Designed schema for dashboard data and familiarized myself with how to model data in firebase.	6	6
Skyler K.	Finalized Docker and created high-level schema of my current Mongo database	6	6
Franck N.	Designed the Firestore database schema for storing Code Editor data. Learned firebase fundamentals, gained a solid understanding of Firebase, including collections, documents, and real-time data handling.	6	0

Hang Kim T.	Implemented on timeline component.	5	5
Justin S.	Met with the client and started going through the figma designs to be implemented in the code environment.	6	6

○ **Comments and extended discussion** (Optional)

Feel free to discuss non-technical issues related to your project.

○ **Plans for the upcoming week**

- **Jesus Soto:** Present the completed 1st version of the data schema to the client and start integrating the data into the application.
- **Rangsimun Bargmann:** *I plan on creating a collection in firebase to store the proper configuration of the dashboards. Once this is completed, I can begin modifying the frontend code to start retrieving and storing dashboard data to the backend.*
- **Skyler Kutsch:** I will add functions that correspond to the database organizational improvements that were made.
- **Franck Ndoutoume:** Create a new Firestore collection to store all Code Editor data, ensuring proper structure for files, comments, user interactions, and chat. Bug Fixes: Identify and resolve all frontend issues, including message persistence, role-based UI adjustments, and visibility in dark mode. Data Integration: connect between the frontend and Firebase, ensuring real-time synchronization and smooth data flow.
- **Hang Kim Thang:** To have a timeline component done by the week.
- **Justin Soberano:** *I plan on looking for ways to quickly implement the designs using the OpenAI access keys to reduce the time to implement them. I am also going to do a bit more research on how the market works.*

Summary of weekly advisor meeting

The client confirmed transitioning from MongoDB to Firebase for Widgets and Code Editor to improve scalability, with Peeyush assisting the migration and a schema diagram due next week; Code Editor updates will persist user comments, fix dark mode icons, and ensure message history visibility. The Single Line Diagram's React integration will be added as a GridAI component, while the Map requires a time-band timeline with API updates. Markets demand Figma wireframes, themed webpages per stakeholder, and a codebase target by April. A shared Firebase account (sd-may43-25@gmail.com) was approved, with feature-based branching (merged pre-meeting).

Grading criteria

Each weekly report is worth 10 points. Scores will be awarded as follows:

- **8 – 10:** Progress for your project seems to be suitable. Documentation and hours reported by team members are adequate.
- **6 – 8:** There is scope of improvement both in your report and your project progress. Can consult with instructor/TA after class for further inputs.
- **< 6:** Please talk to instructors/TA after class hours about any difficulties that you/your team is facing.

Each weekly report should be unique in that they have a unique set of supporting details for your contributions. So please do not just copy your reports from the previous week. In addition, please avoid any personal pronouns (he, she, I, you). Try to keep your reports as neat as possible.