



Fundraising App

Team

406 Not Acceptable

Members

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Overview

The purpose of this project is to create a flexible, reactive and easy-to-use management tool for scout troops. The system is designed to replace a lot of the tedious paperwork that many troops leaders need to do in order to properly track and manage their troops, such as inventory management, sales tracking, and the organization of events.

Features

Troop Leaders Can

- Create groups for their troops
- Add scout members to their troops
- Add scout members in bulk by uploading a .csv file
- Add their troop's sales to the database
- View their troop sales
- View scout's information (name, group, email, revenue)
- Update a scout's information
- View chart to represent the data on member's page
- Create / edit / delete items in their troop inventory
- Create events
- Assign tasks to other members

Admins/Troop Leaders Can

- Invite others to register through email

All Users Can

- Reset their password
- Add or Delete their sales
- View tasks they have been assigned

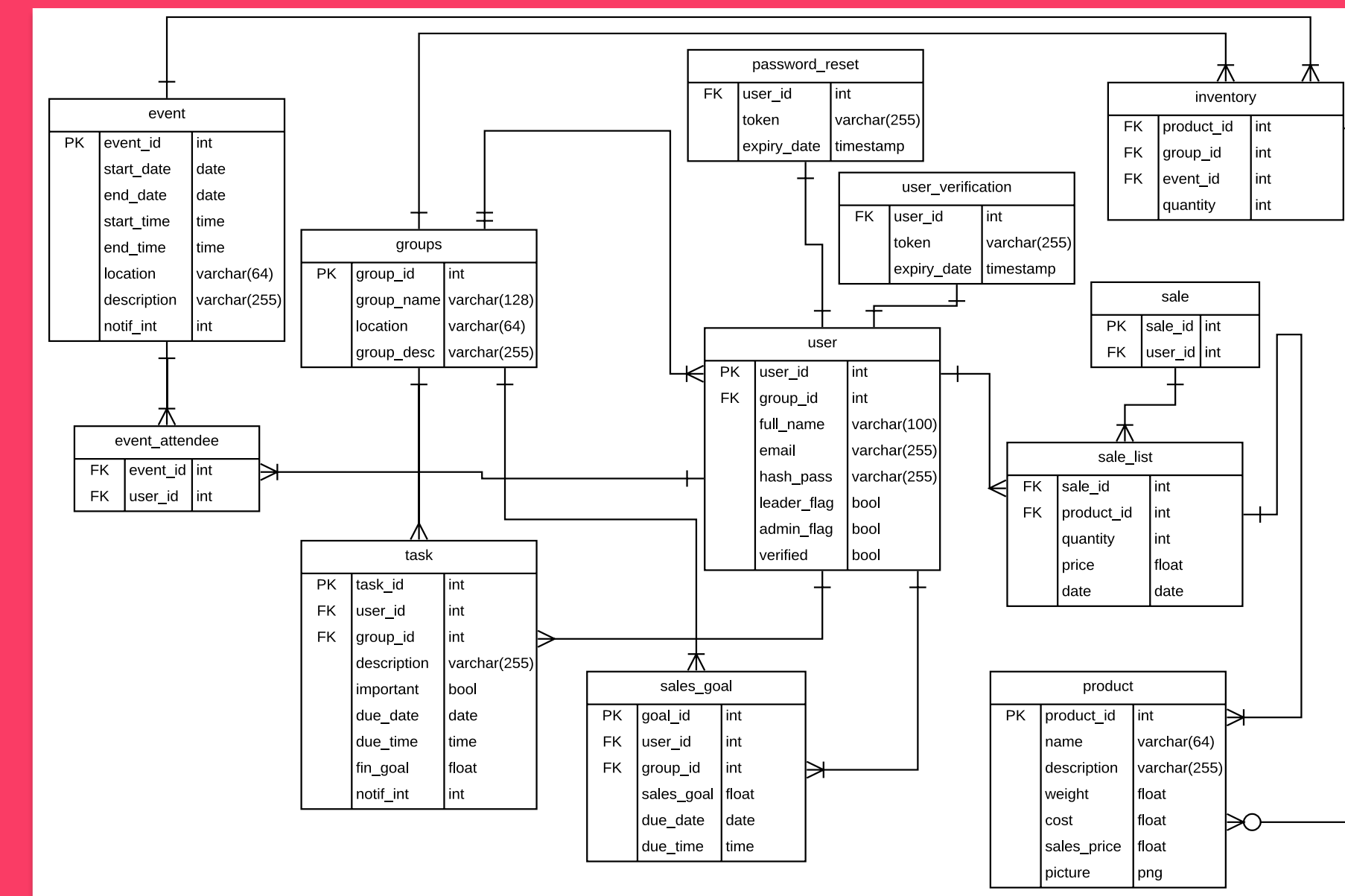
Technologies



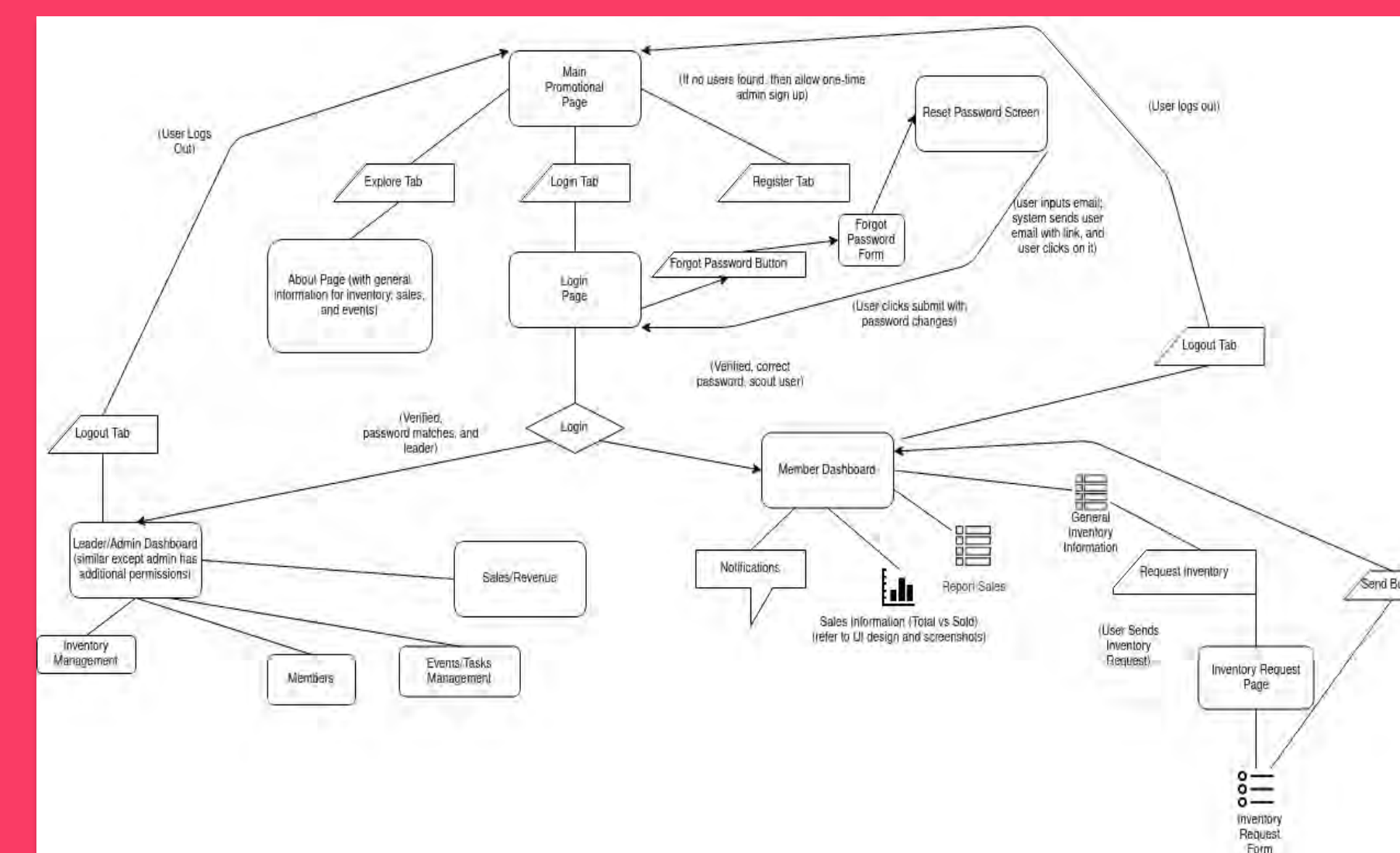
To develop the front end we used Angular, with Bootstrap and Angular Material for UI components. The backend server was developed using NodeJS and Express, thus providing a RESTful API for our front end. MySQL server is the database used by the backend to store the scout's data, which is hosted on Google Cloud Platform (GCP). Also, Nodemailer is used in backend server to handle sending emails for authentication and notifications. For password security we utilized Bcrypt to hash passwords. In turn, for authorization we used JSON Web Tokens (JWT), to allow users to securely access our backend API.

Design

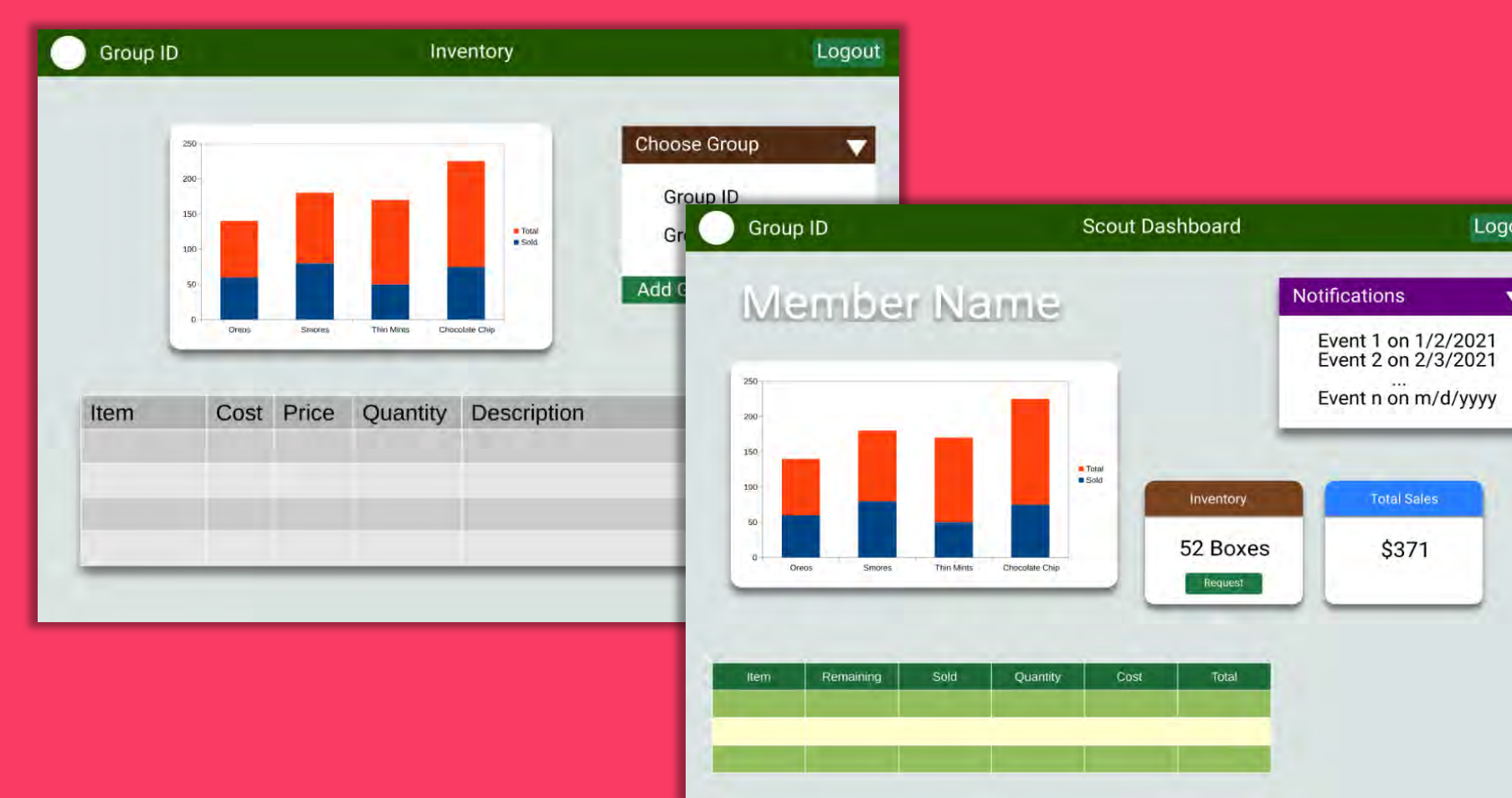
This section details how we conceptualized the system. This section includes some of the most important designs we made for the project, such as the Entity Relationship Diagram (ERD), Info Architecture Diagram, and some of the UI designs. The following diagram is the ERD which contains the information related to the structure of the database:



The next diagram is the info architecture diagram, which details the flow of the our system's components.



The next few images are some of the initial wireframes we designed for the UI, further changes are shown in the Results section.

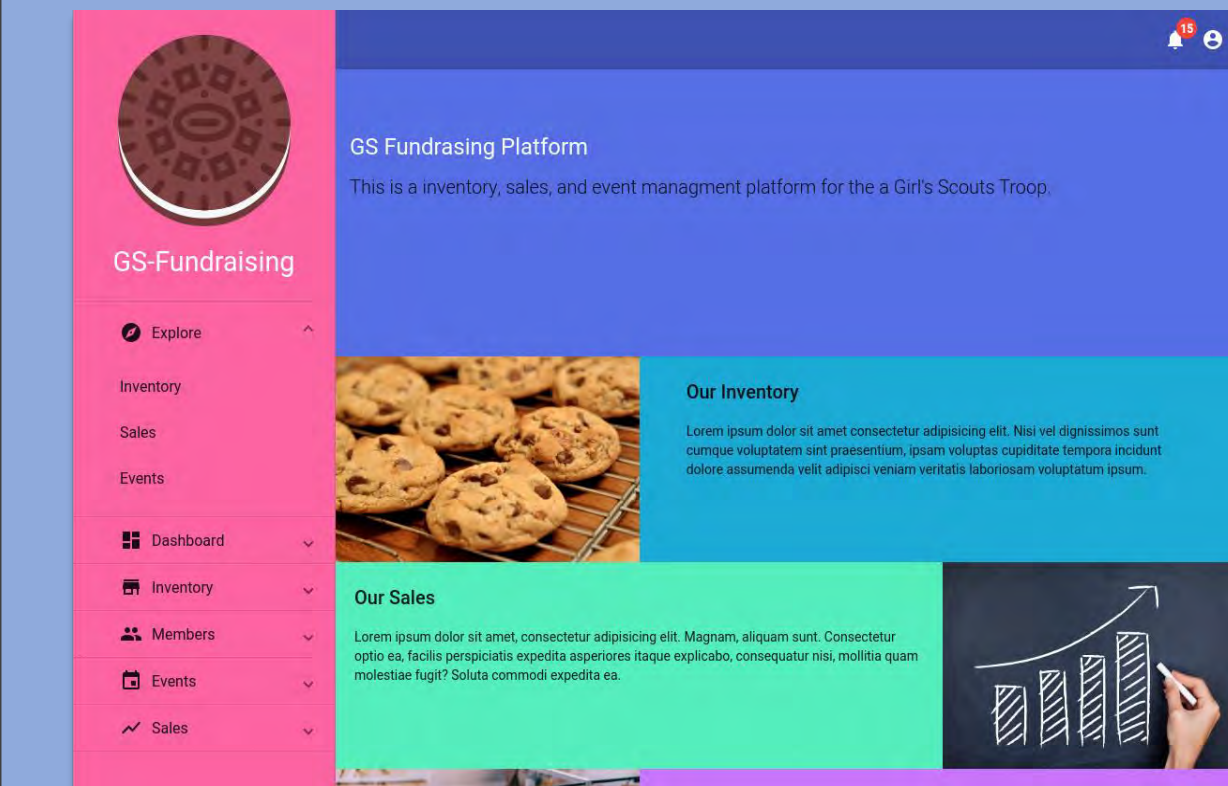


Testing

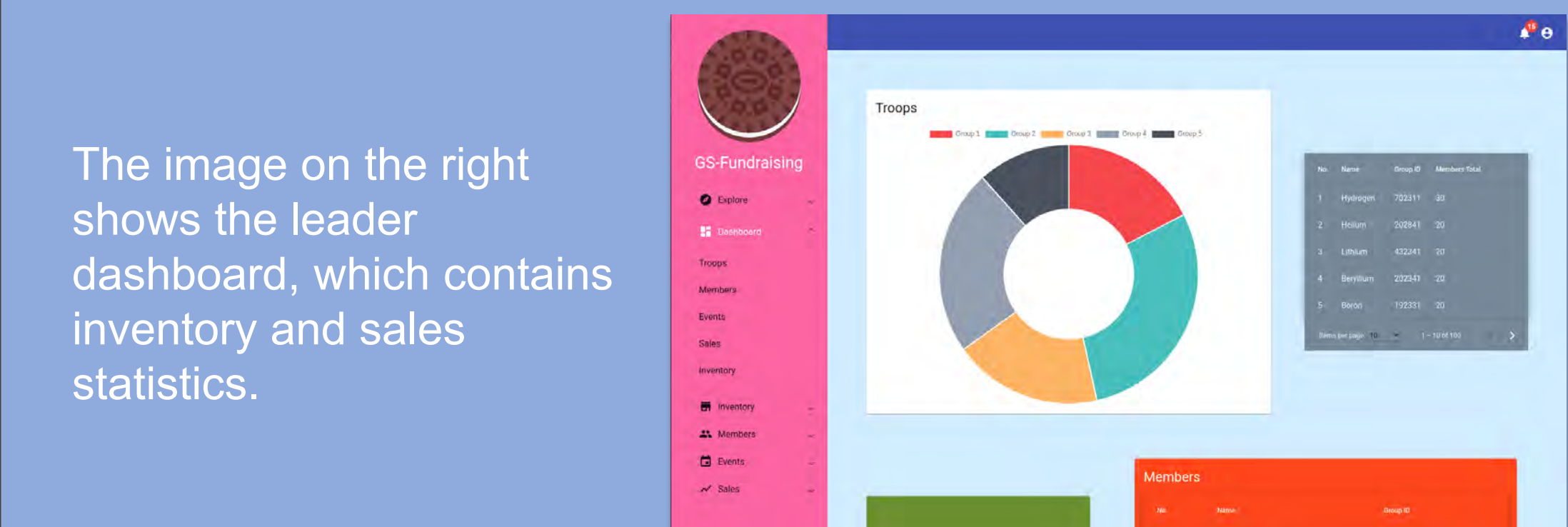
For automated functionality testing and unit testing for our general backend JavaScript code, we are using Mocha. This will allow us to ensure that both individual modules, such as the inventory system, and the entire system can handle a variety of use cases. We are also using Selenium for front end testing. This consists of both black-box based functionality testing through Selenium IDE, as well as performing regression testing through Selenium WebDriver and Server. Some additional testing methods include sql injection testing through sqlmap on a locally-hosted version of the application, and manually performed use-case testing.



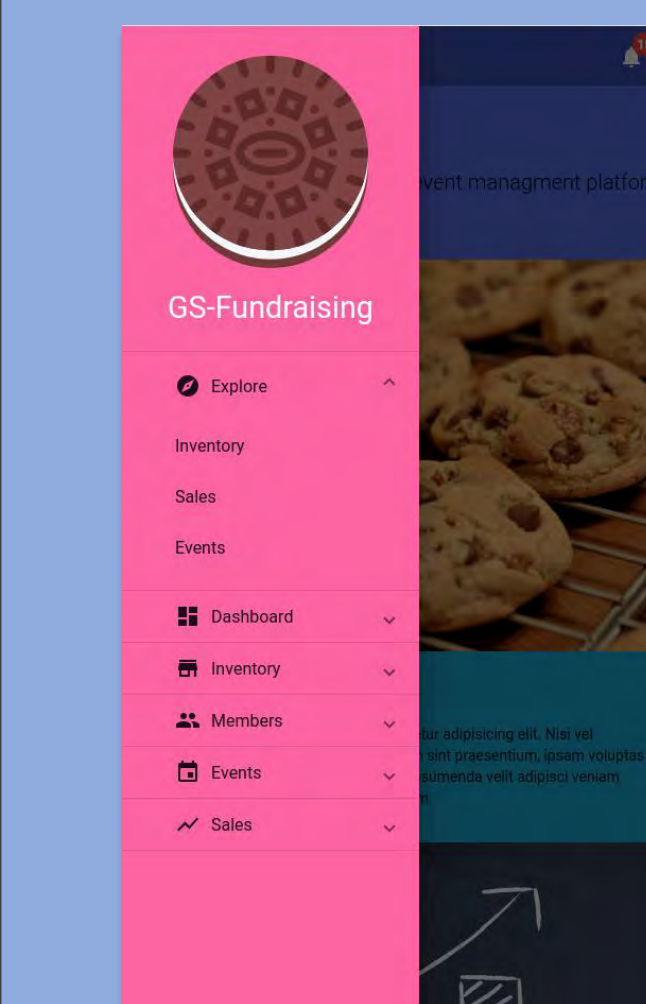
Results



The image of the left is the final design of the homepage.

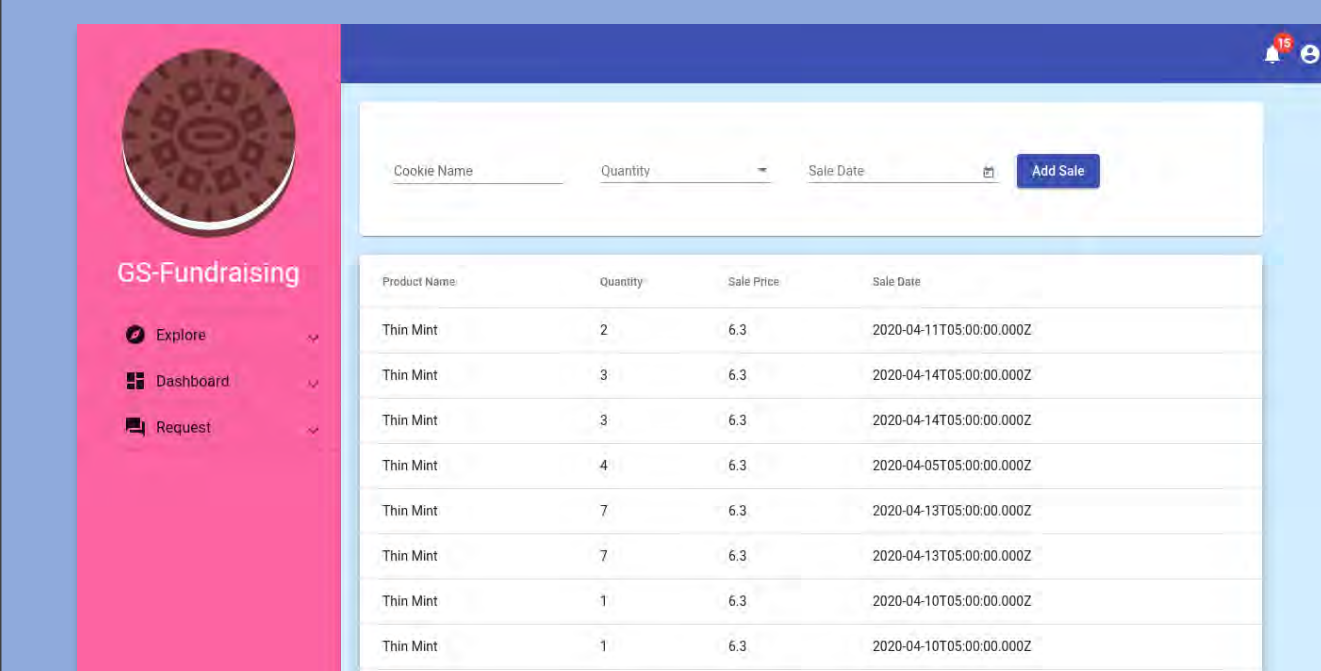


The image on the right shows the leader dashboard, which contains inventory and sales statistics.



The image on the left shows that the site is reactive. When the web-app is full screen, the navigation bar on the left is always in view. When the site is accessed from a phone, the bar condenses to the left and can be opened with the icon in the top left.

The image on the right shows the login page, which has advanced error detection and error mitigation built in.



The image on the left shows the inventory page for scouts so they can update the items they have sold.

Conclusion

Our goal was to create a robust and reactive website that could manage inventory, sales, events, and tasks for a group. We have focused ourselves on providing a product that meets industry standards in terms of readability, maintainability, stability, flexibility, and extensibility.