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 troop leaders need to do in order to properly track and manage their troops, such as inventory management, sales tracking, and the organization of events.

### Overview

- **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 scouts' 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
    - View their troop sales
    - View chart to represent the data on member's page
  - **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**
  - Use Angular, Bootstrap, and Angular Material for UI components
  - Use NodeJS and Express for the backend
  - Use MySQL as the database
  - Use Cloud Firestore for dynamic storage
  - Use Google Cloud Functions for cloud integration
  - Use Bcrypt for password security

- **Testing**
  - Use Mocha and Chai for automated unit testing
  - Use Selenium for automated end-to-end testing
  - Use Jest for unit testing
  - Use gRPC for backend communication

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

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### 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 API injection testing through sqlmap on a locally-hosted version of the application, and manually performed use-case testing.

### 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.

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406 Not Acceptable

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