SwapServer: Revolutionizing Food Donation Coordination for Local Communities

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INTRODUCTION

SwapServer is a web-application designed to improve the food donation process by connecting surplus food providers with local food banks. The current process causes Food Banks to let food go to waste.

SwapServer was started by the UNH Center for Business Analytics to address inefficiencies and coordination challenges that are prevalent in traditional methods of food donation.

The goal of this capstone project is to start the development of an application to be used by local food banks and donors.

Our vision for this application is that it will streamline the donation process and positively affect the lives of those in need.

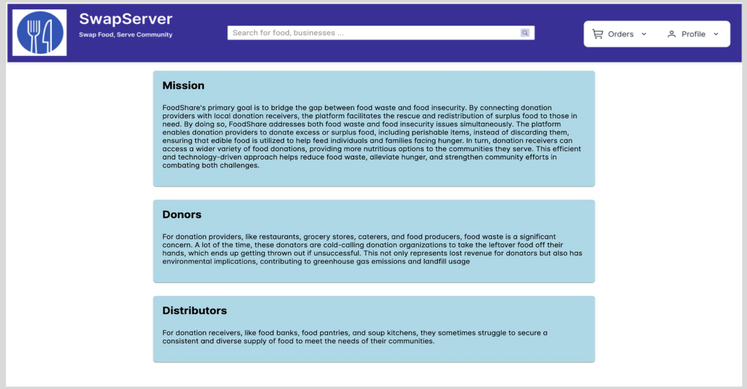
REQUIREMENTS

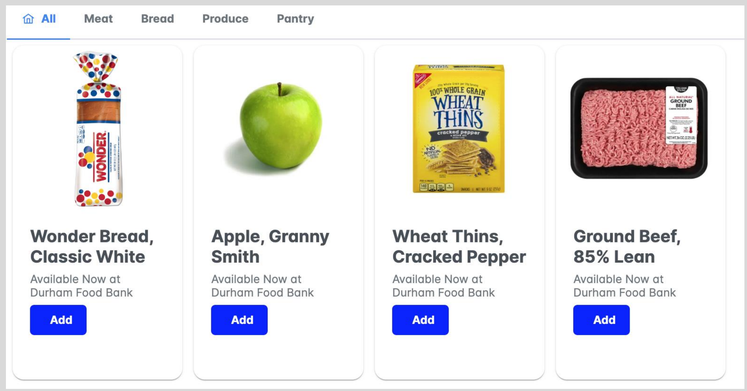
- **Donors:**
  - Register accounts
  - Post food donations
  - Tie donations to company EIN
- **Receivers:**
  - Create an account with delivery and contact information
  - Search for and add food from cards into a cart
- **Food Banks:**
  - Manage inventory FIFO metrics more efficiently
  - Consolidate orders to other food banks closer to receiver locations

DESIGN/IMPLEMENTATION

- **Frontend:** We use HTML, CSS, and TypeScript through the web framework called Angular to facilitate an interactive user application where users can log in and view available food donations.
- **Backend:** On the backend, our application uses Express.JS to send and receive data as well as authenticate users. Sequelize ORM is used in conjunction to define data models and connect to our database. MySQL is utilized as our database management system securely storing user credentials, food data, and important statistics.

USER INTERFACE





RESULTS

We conducted user testing and found it to align with our intended audiences needs. We succeeded to cover a majority of our code with test cases.

```
Statements   : 65.21% ( 90/138 )
Branches     : 50% ( 6/12 )
Functions    : 55.35% ( 31/56 )
Lines        : 64% ( 80/125 )
```

CONCLUSIONS

Original Measurable Organization Value (MOV):

"To create a hosted web application where users are classified by "donor" or "receiver" and can view a feed that is updated within one minute of real-time, that contains relevant food donation information requests by May."

We failed our MOV because of a shift in the direction of the project. We moved from an interface resembling social media to an interface resembling grocery store pages. We prioritized the "receiver" side of the MOV resulting in a site with a feed of mock data to display functionality with a proof of concept for the NH Food Bank.

NEXT STEPS

- Present product to NH Food Bank for review
- Implement a process to add new items to be donated
- Store and use location data to suggest pickup locations and delivery of donations

ACKNOWLEDGEMENTS

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