Final Report

Fridgely: A Solution to Cost Efficient, Eco-Friendly Shopping

Introduction

Fridgely helps college students on a budget manage their groceries and prevent waste by maintaining grocery inventories, creating smart lists and suggesting recipes. Fridgely was created by University of Washington students: Uday Mahajan, Derek Chiu, Georgie Chandler and Kristi Soranaka.

Background

As one of the first generations to be dramatically affected by climate change, young adults today are actively seeking out ways to reduce their own carbon footprint. However, they must also respond to increasing college tuition, rent and general cost of living here in the Seattle area. One thing that every young adult has to worry about is grocery shopping and how shop efficiently for a very small household.

Our motivation for choosing this problem space is the realization that technology can make a big difference in improving the shopping experience. Simply keeping track of the food the user has digitally could make a big difference in reducing over-buying and food waste. Using data from food consumption also has a lot of potential to improve shopping habits.

From this problem space we developed two main tasks we wanted our design to allow the user to perform. The first task involves planning which items to buy by checking inventories, creating lists and comparing items. We wanted our implementation to help the user complete this task quickly while also saving them money and encouraging them to buy eco-friendly items. The second task we wanted to implement was helping the user use their purchased food items efficiently by suggesting recipes that prioritize soon to expire items in their inventory. We knew we wanted our design to help them do this in a way which would minimize waste as much as possible.

User Research

Our target audience is environmentally conscious grocery shoppers in the Seattle area between the ages of 18 and 30. We want to improve the current state of grocery shopping and make reducing consumer waste easier for the consumer and more realistic for a young “Seattleite's” busy lifestyle.

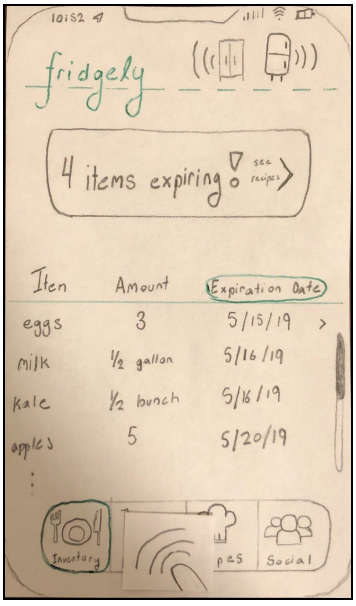
To find out more about our audience we conducted an online survey, and three

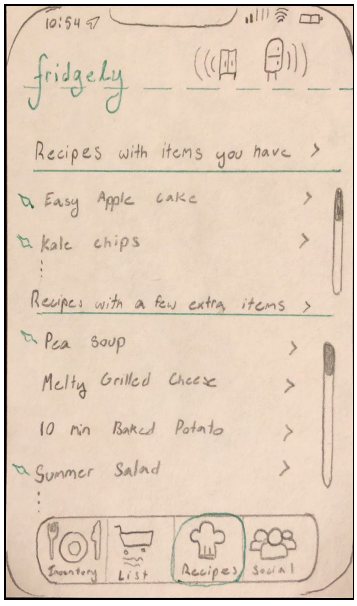
one-on-one interviews that were combined with personal inventories and contextual inquiries. The problems we noted during the research include wasting food due to excessive stocking and inadequate planning while buying groceries, forgetting reusable bags when going to shop, irrelevance of paper receipts. We also noted that the interviewees were annoyed due to lack of less expensive options available for being eco friendly.

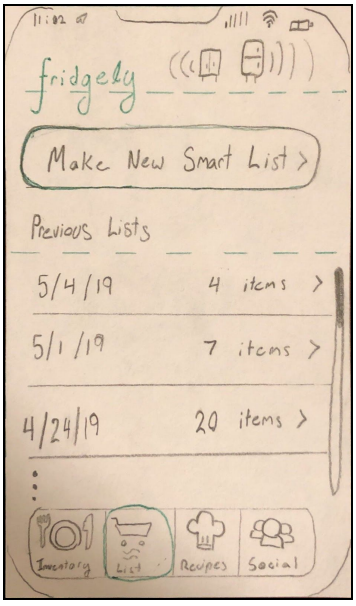
The results of our research lead us to conclude that though our audience is concerned about the environment and wants to decrease their impact on the planet, cost is a barrier to that goal. Of our 13 survey respondents 83% said that cost was the most important factor when choosing groceries. This showed that spending money is the biggest concern for young adults in Seattle. Our participants report that being eco-friendly is confusing, complex, and requires too many extra steps and thinking. They have concerns about excess plastic packaging, waste and price. Overall, our audience wants it to be easier to find convenient and cost effective, eco-friendly options to reduce their waste and environmental impact. These themes, problems, and practices suggest that it is important to design a solution for making the shopping experience of the consumer more convenient and eco-friendly.

Prototypes and User Testing

Our first participant is a 24 year old EMT who considers herself to be fairly eco-conscious. She was selected due to willingness and convenience. We conducted the test by asking what she thought she was able to do with the app, and if she got most of what the app was capable of and how to navigate and use the app.







Key images from the first draft of the paper prototype Fridgely 1.0

Feedback we received for this draft involved issues with the visibility of the “smart” features, how they work and what data they are drawing from to create lists, inventories and suggested recipes. We also had some issues of consistency between tabs due to the arrangement of features. One last major issue was clarifying add and delete gestures to be more conventional and obvious to the user. The participant really liked the recipe feature, and could see herself using it alot. She didn't like that she couldn't add in her own recipes into the app. She also suggested adding a loading screen for showing the progress of generating the smart list.

Key Images from the second draft of the paper prototype Fridgely 1.1

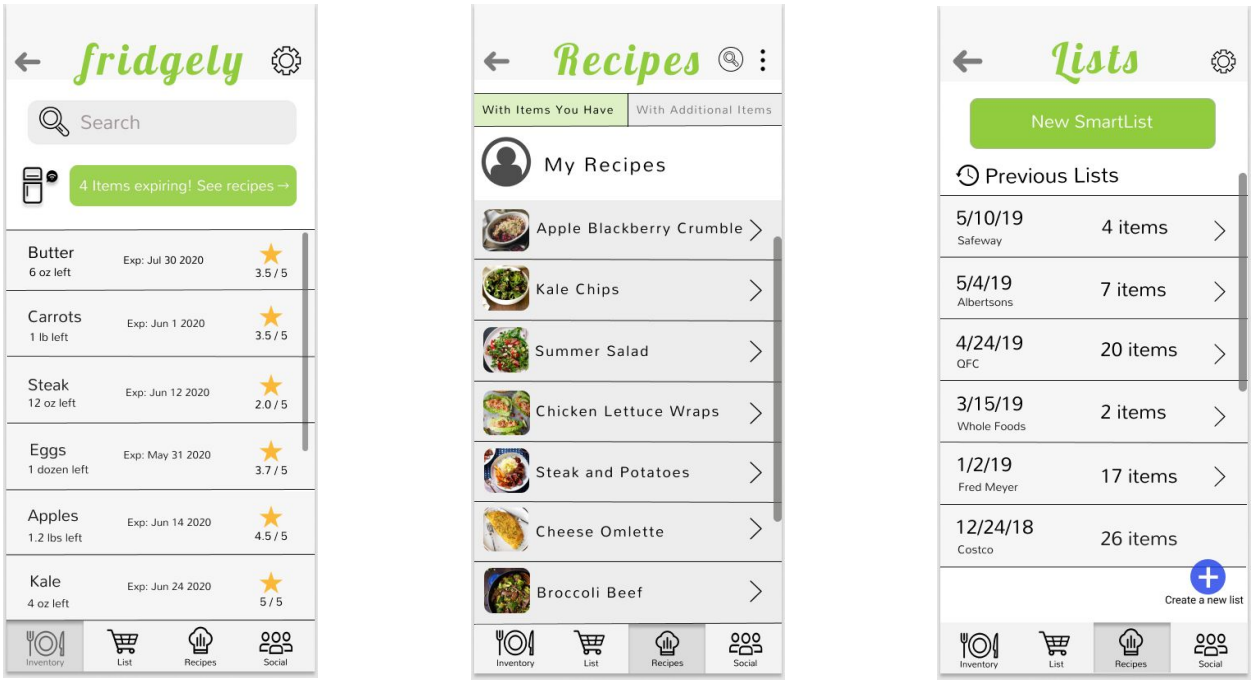
With these concerns in mind we revised our prototype and continued our usability testing. We recruited another set of strangers who still fit our target user group and did heuristic evaluations on three users. We presented the following paper prototype to the participants without explicitly telling them about the purpose of the app and asked for critical feedback regarding the design and features of the app.

Our second participant for the prototype evaluation is a student at UW who is familiar with apps and technology like ours and has done paper prototype tests in the past because his friends are in HCDE major. He got the main points of the app very quickly and didn’t need much guidance going through the tabs and tasks we asked him to complete. He provided us with great constructive criticism regarding the app such as adding visual representation to recipes, adding money saved and score accumulated by choosing eco-friendly products, displaying ingredients in stock vs ingredients needed for a recipe in case the stock was not enough. Overall he concluded that app design was “pretty solid”.

Our third participant is a tutor at the UW Writing Center who was familiar with with the struggles of food management and grocery shopping. She was quick to understand that the

primary objective of the app was to encourage eco-friendly shopping products and reduce food waste. She was very helpful in getting feedback regarding inconsistencies with ecoscore and favorite symbols on various screens, organizing favorite recipes and manually added recipes. She liked that the recipes were quick to the point and didn't have unnecessary images. She also pointed out good aspects of our design like a clear user interface that was not crowded and did not include unnecessary options.

We had developed a more consistent design and the feedback we got this time around was really positive. The new add buttons were obvious to our users and they had a much better idea of what a smart list is by looking at the app. Feedback we got for this design involved further improving the user flow and making our most important features stand out. At this point we moved on to create a digital mockup while keeping in mind the feedback.



Key Images from digital mockup Fridgely 1.1

We wanted to emphasize our goal of reducing food waste by highlighting using expiring ingredients in recipes, suggesting creative recipes with items the user has and creating smart lists to help the user buy groceries more efficiently.

Project Retrospective

From our user research, we learned from users that they are mainly concerned with affordability. They do want to pick more environmentally friendly choices without it being too

expensive, but they put cost first. Also from conducting user testing, we learned that our users needed consistency and clarity within the user interface.

The limitations/constraints we have identified was the inventory feature of our app would not be able to work without a smart fridge. The user needs a smart fridge for that feature to work in order to provide alert updates to the user about shortages on certain food items or food that will expire. We hope that in the future smart appliances could be used to help people achieve goals similar to the ones we have outlined in our project.

The impact our project could have would be to encourage people to be more active in protecting the environment. They would become more aware of how easily human actions can impact the environment. We hope that our app can evolve and integrate other technologies to support more eco-friendly practices.