

Projectfresh

(University of Washington Information School, INFO 490/491 Capstone Project)

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Project Abstract

We set out to create a food spoilage tracking system that would allow a user to plan meals, coordinate shopping trips, save money, and keep a more clear mental image of the items the user currently has at home. Our hope is to foster an improved sense of what food items are available to a person and when those food items will pass their usable dates, so as to save our users time and money.

The goals of this project are not only limited to personal food storage and tracking, as the world is facing a mounting issue with food sustainability. As our numbers increase our demand for food increases and so does our overall cumulative waste. We seek to help not only those who would use our application, as much as the the world at large, by maximizing food consumption and reducing avoidable expiration based waste.

Problem Statement

How do we create a food spoilage and tracking system that will effectively input, track and display current food stores so that consumers in the United States can plan grocery shopping trips and meals, save money, and generally be more aware of their current at home pantry of items?

Project Documentation

Phase I: Research and Design

Early Project Goals

The goal for this project is to efficiently and effectively allow people to keep track of food expiration dates in order to reduce food waste. The outcome will be a mobile application.

Early Research Findings

There were many varying elements found in our research that suggests that this project could have a viable user base. Of those we interviewed, three fourths showed interest in the idea contingent on the ease of the input method. Nearly all those interviewed showed a desire to use an application that achieved these goals if the input method was easy and intuitive. Of the proposed input methods, our idea of scanning a single bar code on a receipt upon checking out at a store, was the most widely embraced. Interviewees were also interested in a method of input concerning scanning each individual food label, however it was less embraced by than the previous method.

Our interview process included finding people who eat food regularly, had purchased food before, and had some distance to a regularly visited destination away from home. The bulk of those interviewed included college students, though a few worked in some fashion, either full or part time. The living situations of our interviewees included student housing, living at home, and living on their own. We included discussions about commute times, cooking expertise, grocery shopping frequency, and food spoilage. All interviews were conducted in a semi-structured manner with openings left to determine individual pain points and possible fixes to those issues.

After discussing our findings, and verifying that our results were roughly similar in most areas, we decided to focus on some of the contrasting information in order to extract persona groups and pain points. Our findings included, but were not entirely limited to:

- Food expiration seems to be more likely for those who leave home frequently or are out for extended periods of time
 - Those who drove their own privately owned vehicles to and from their regular destinations appeared to have the highest perceived value of our idea
- Grocery shopping habits vary wildly, our findings show some visiting large chain-type grocery stores anywhere from weekly to monthly with differing numbers of items per person
 - Our most regular visit frequency was one week's time
- Some stated that they tend to buy more food items at smaller convenience stores to and from their normal destinations, those who stated this also reported they generally visited larger grocery stores less often
 - Those who did state that they followed this trend appeared to be roughly equal with those who drove their own privately owned vehicles to and from their regular destinations
- We noticed a correlation that those who tend to buy more infrequently used items tended to have more expired items on hand
 - **ex.** Buying spaghetti sauce and only needing half of the serving size for a meal
- For those who buy their food items in bulk, likelihood of some of the food items expiring before full use was higher
 - Though most seemed to purchase in bulk for the perceived savings, the amount of food items that expire before full usage may not negate those savings, but there appears to be a connection between bulk purchases and food item spoilage before full product use
- For those who lived with multiple other occupants in their household, related or otherwise, their food items seemed to expire less as it was more likely to be fully used before expiration
 - The most common answer as to why the interviewee thought this may be the case was that the groups seemed to eat more and thus more quickly, leading to less food item spoilage
- Upon inspection we found that some of our interviewees had expired food in their pantry/refrigerator without their knowledge
 - Though not all our interviewees gave us permission to look through their at home pantry/refrigerator, for those we did there were items when the owner assumed there would not be in both cases
 - There appears to be a correlation between the food item type and packaging that correlates to our regularly observed expired food items
 - Interviewees stated they assumed that mostly produce related items (fruits, vegetables) would go bad without their knowledge, however most expired food items seemed to be those contained in jars or containers as the packaging does not change overtime and often can block direct sight of the food item itself

- For those that we interviewed that were living at home with their parents during their student residency, though we anticipated little value from our primary ideas, we found that if there was a shared account feature that would allow multiple people to view a single at home pantry they would be interested in the idea (despite not being the primary grocery shoppers of the household)
 - Though we assumed that if the interviewee was not the primary grocery shopper of the household that they would be uninterested or offered little value from our idea, we found quite the opposite with interviewees stating possible to likely usage

Early audience definition

- People who buy groceries
- People who don't remember expiration dates
- People who would like to keep track of their food
- People who use an Android phone (for the prototype, possible iOS version)
- People who buy US products

Personas

	Evangeline	Roger	Betty Lou
Sex	female	male	Female
Age	27	21	21
Household	Family of one	Lives at home (mom, dad, 2 sisters)	Family of 3 (husband 23, daughter <1)
Commute	walks to school	commutes to school	drives to work
Grocery trips	weekly grocery store / few items	no grocery store, parents buy	monthly grocery store/many items
Cooking	cooks daily	cooks occasionally	cooks 3 nights a week
Phone Usage	smart phone user	smart phone user	smart phone user
Income	\$1500 /mon	\$0/mon	\$1300/mon(\$4100 mon with husband's income)
Shopping	Frugal	Broke	Liberal
Budget	200/mon budget on grocery	0 budget on grocery	\$ 800/mon budget on grocery

Roger is your typical broke college student who lives at home with his parents. He goes to school full-time and has no income. Sometimes his parents give him some spending money but it is not significant. Although he likes to stay on campus, he never stays past dinner time because he's too broke to buy food on the ave. Roger has an hour long commute to school everyday and always comes home starving and ready to eat. Usually his mom has something prepared for him, but there are those days when he comes home to an empty fridge. On these days he resorts to eating ramen or milk and cereal until his mom comes home to make him food. His cooking ability is limited to scrambled eggs and microwavable foods.

Evangeline, as a frugal shopper, buys few items from the grocery store every week. She admits her weekly grocery shopping is time consuming, but she believes that not buying grocery in bulk once a month allows her to not waste any food. Known for forgetting the little details, she knows she has a difficult time keep tracking of expiration dates. This grocery shopping habit has worked for her up until now, but taking a heavy course-load in school while balancing a part-time job and a social life is making her overwhelmed and she is having a tough time going shopping every week. She's hesitant to buy in bulk, but sees that as the only option moving forward. She hopes to prevent any food spoilage and not lose any money that way. She wishes there were a way for her to be more aware of when things are about expire.

Betty is having a busy life taking care of her newborn baby, working and doing household chores. She is so busy that she is not very aware of the state and quantity of food in her fridge. For the reason that she does grocery shopping once a month, she buys so many items at once that she has a hard time tracking the expiration date of all items. Furthermore, Betty's husband sometimes buys several items on his way home while she is not aware. Betty has a large budget on grocery shopping but she would like to save the money she wasted in food to buy better ingredients for her baby.

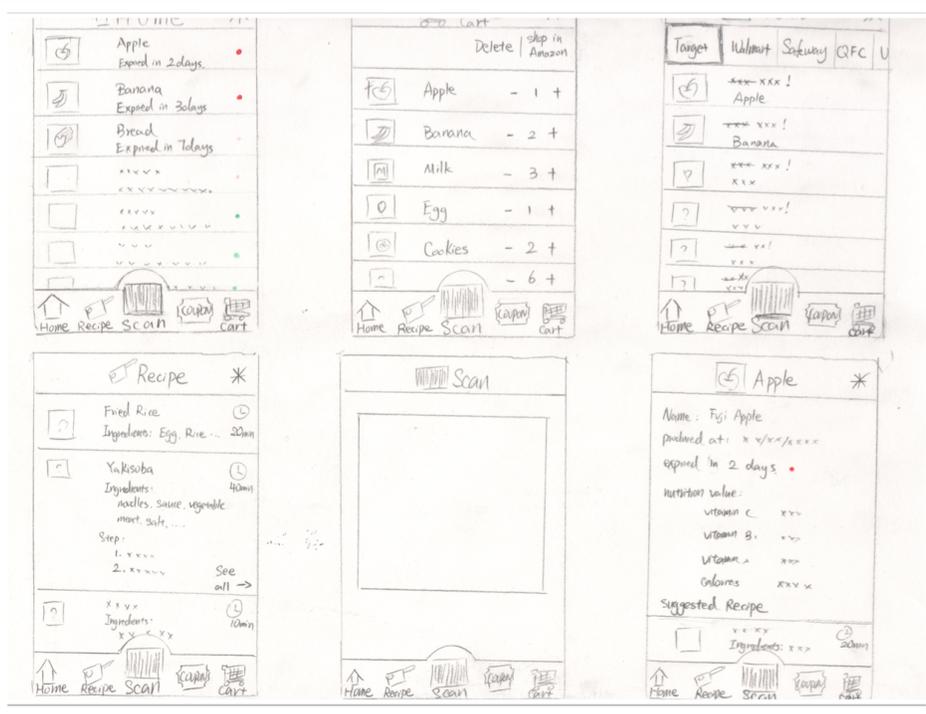
Comparator analysis

We found a number of applications/web services that offer general uses in this field. Though we found a few applications that did things close to what we aim to do, we noticed a number of things about these services that could be exponentially enhanced by improving some of the following items.

- Well implemented UI and Design

- Nearly every application had an issue with fluid and understandable design. Many use design principles that appear dated based upon older design styles and nearly vacant mobile first design.
- Automated Inputs
 - Nearly every application that we looked at used manual input methods. Manual inputs require a large amount of user based involvement that can negate the gains of just remembering what a user may have purchased. This reduces the client base by a large number, however there is good reasoning. We intend to base our project around a newly emerging market of food labelling approved by the US government over the past few years.
- Well implemented features
 - A number of the reviewed applications offered useful features in addition to their base functionality. However, these “good ideas” were split over many differing apps. As we work on our application we intend to combine all the good ideas we found and then refine them to work within the context of our design.
- Main application focus
 - We found a number of applications that appeared to attempt to help users with their at home food supply. However, there were many differing reasons as to why they wished to focus on these aspects. As we reviewed applications we were able to better refine what we wanted the end result to be while also focusing on the benefits to the user, general consumption, and directed design focused on our primary goal.

Paper Prototypes



Storyboard



Mood Board

Mood board #1 Fresh and Simple

1) Color:

2) Image:

3) Android:

4) Icons:

5) Font:

Helvetica Neue Regular
 Helvetica Neue Thin
 Helvetica Neue Light
 Helvetica Neue UltraLight
 1234567890

Overall Style:
 Clean, fresh and simple. Minimalistic and uncluttered design

1) Color:
 Light color theme that denotes 'freshness'. Using light green and blue as background while white as major color for content. Fresh red and orange as highlighter to raise awareness.

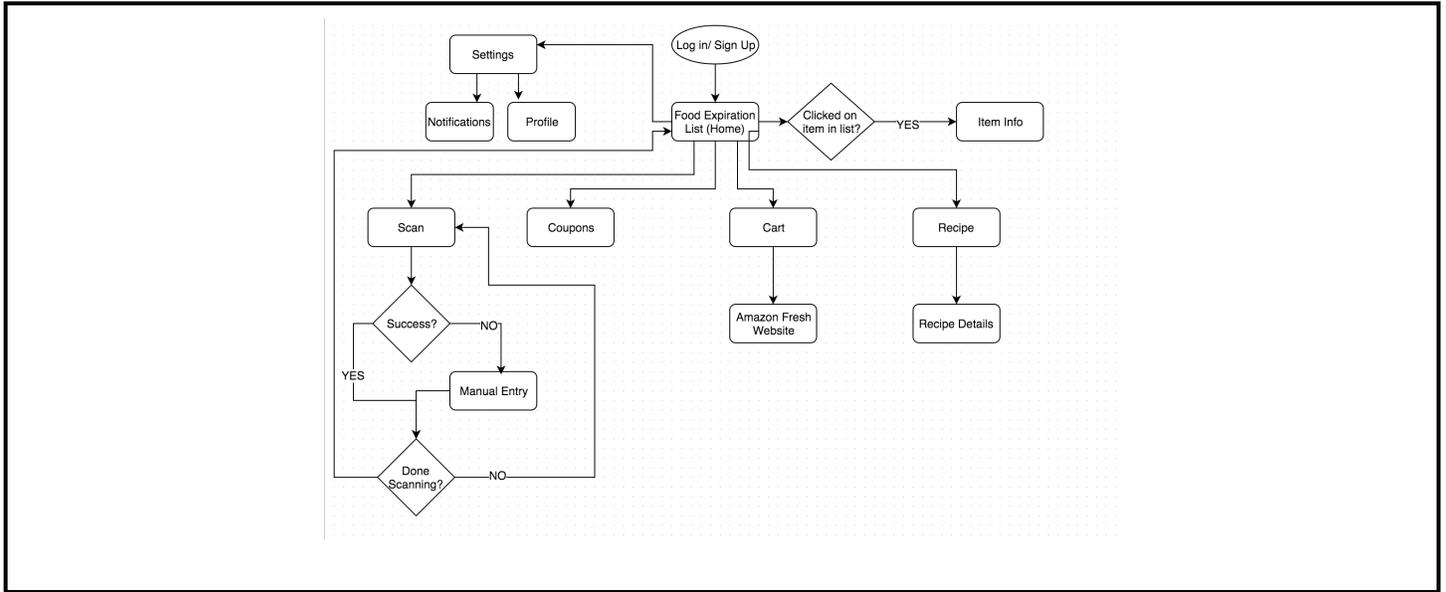
2) Image:
 Rounded edges in color.

3) Android:
 This app will follow Android's design language

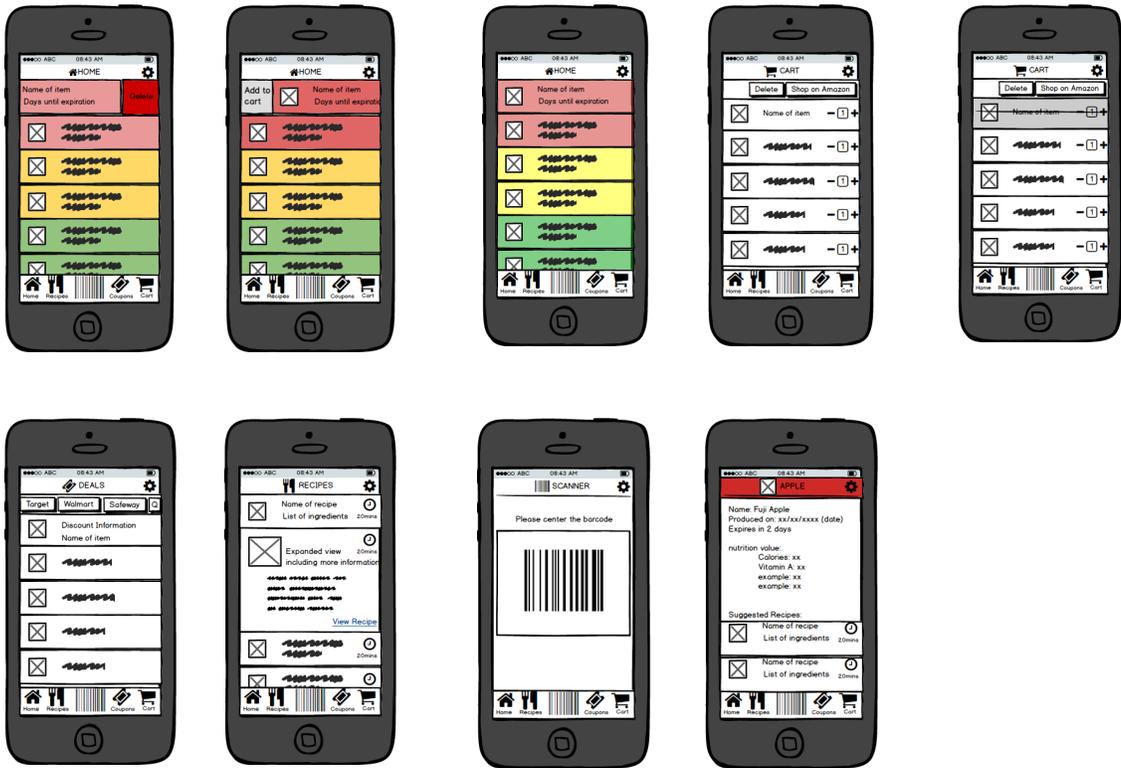
4) Icons:
 White shows the inactive tab, and different background color to highlight the active tab.

5) Font:
 Helvetica Neue Large fonts.

User Flow



Early Wireframes



Summary of Usability Testing (Round 1)

While the majority of the navigation and features within our app were straightforward for our users, there were a few key things we noted that need to be improved upon. One thing that was unclear to our users is the gestures possible on our application screens. They were unaware of swiping left and right on items displayed in a list to access additional features such as adding an item to the cart or deleting it. They were also unsure on how to delete items within the cart. In order to make these things more intuitive, we may need to add little buttons or images like arrows to help understand swiping and checkboxes to indicate a “check and delete” concept. Our users mentioned it may be valuable having a tutorial when they initially install the app to understand the possible actions. One thing we need to add is a success/error message when a user tries scanning an item. If the scan fails, then there needs to be a manual entry option for the user so that the item can be incorporated into the user’s product list.

When it came to features, users give us their thoughts on what they liked and didn’t like. User’s didn’t show much interest in our coupon feature. This is due to the way we are presenting it to them as well as their loyalty to a given store. The recipes feature was highly favored among most of our users and they suggested that there should be a way to filter recipes by cook time and level of difficulty. They also mentioned that clicking on the recipe for more details should not redirect them to a recipe website as we originally intended, but should rather expand the recipe on the app screen making it convenient for them to browse multiple recipes. The shopping cart feature is unclear to many users because of the way it is phrased. They are unsure if it is a shopping list or a way to shop within the app. Overall, our users fully understood what the main purpose of our application was and provided ample feedback for us to continue improving upon our design.

1. User Research Script

Please make sure that the person being interviewed is aware of the following things before starting the interview. Make sure to let them know that if there is any of this information that they would prefer not to answer that is fine. If so, just record that questions as “N/A”. Let them know that this information is meant to gauge their interest in a possible time/hassle saving application regarding food purchase and storage. This way we give context but we don’t give possible basis to our collected data. At the end of the interview feel free to explain as much about the project as you want, and if any other relevant data is given, record in “AFTER” separated end section.

This interview is set to be semi-structured, which means that we want to capture any data that we can from the person being interviewed in sometimes discreet or overt ways. If you notice something interesting or out of place about an answer please pursue the thought and ask another question that area. The basic premise just being that we want to understand truly why people’s consumption habits occur the way that they do. By doing this we can get a more accurate representation of their personal problem statement and pain points. If nothing seems out of the ordinary, please continue to record anything you think might be pertinent but please make sure to get all the base information asked for below in as best of detail as you can capture

it. Try to use their personal phrases as much as possible so as to understand their exact meaning when describing their difficulties and successes.

Our demographic is incredibly wide for this round of data collection, but let's try to find people who have a commute or leave their home frequently/daily. This should address the idea of being at distance from the actual item when trying to determine the expiration time. Otherwise, everyone should be relevant for the data we wish to collect. If we shoot for about **2-4 interviewees each** I think we should get a bit of a base of information for our personas.

Section 1 - Personal Information:

- First Name:
- Age:
- Gender:
- Occupation:
- Marital Status:
- Number of Occupants normally in your home (Roommates/Family):
- Favorite/Regularly Eaten Meal:

Section 2 - Distance Information:

- Regular Distance from Home to Destination (Work/School/etc.):
 - How often?
- Do you make your own breakfast/lunch to bring with you during your day?
- Do you normally stop at a store on your way to or from your normal destination?
- Do you ever find, upon waking, that you were missing some component of your meal/drink you planned to take with you to your destination?
 - If so, how did it affect your day?

Section 3 - Grocery Shopping (Part 1):

- How often would you say, you buy groceries at a large grocery/general store?
 - How many items would you estimate you purchase during any given visit?
- How often would you say, you buy groceries at a small convenience store/gas station?
 - How many items would you estimate you purchase during any given visit?
- How often would you say, you buy groceries at a farmer's market/local store?
 - How many items would you estimate you purchase during any given visit?
- Where is your preferred place to shop?

Section 5 - Cooking Style:

- Would you describe yourself as someone who cooks at home a lot?
- How often would you say, in a normal week, that you cook at home?
- What are the most important items to have in your pantry/refrigerator?
- Do you ever plan a meal while away, and upon returning home, find that some of the ingredients were expired without your knowledge?
- If so, do you find this need to then make a new meal frustrating?

Section 6 - Spoilage:

- On average, what percentage of items that you purchase would you estimate must be disposed of before your full usage?

- On average, how long after expiration date did you find out it is expired?
- How much money would you estimate is lost in this manner?
- If you had been aware of the expiration date of these items as they approached, do you feel it might increase your desire to use the full product?
- What do you find yourself disposing of the most?
 - Why do you think that is the case?

Section 7 - The App:

- Are you aware that there is a now standardly accepted barcode on items for sale that can track the expiration date of a product?
- If you could track the spoilage of your food and receive customizable updates about your food's current statuses, would you?
 - Why or why not?
- Would you use this application even if you had to scan each item as you placed it in your shopping cart?
 - Why or why not?
- Would it increase your interest in this application if you could simply scan one code on a printed receipt at the end of your shopping trip?
 - Why or why not?
- If such an application existed, what do you feel might be of most use to you in terms of home food management?

Questions? Please record any questions they may have and feel free to discuss our plans informally while also noticing points of happiness or displeasure. We want to get a feel for how this lack of home food information is affecting their current lifestyle and how it could be improved from our plans. We are **looking for pain points** to help us resolve them. Please record as much as you feel comfortable recording.

2. Prototype Research Script

Please also remember to let the interviewee know that if they choose to not answer any questions that is fine. We want to collect as much data as possible about the User Experience at this point. Throughout the script there are a number of *italicized phrases*. These are meant to explain what we would like to focus on next for the testing.

Name:

- Age:
- Gender:
- Occupation:
- Marital Status:
- Number of Occupants normally in your home (Roommates/Family):
- Favorite/Regularly Eaten Meal:

"We are going to look at a design prototype today that is set to be used on a smartphone, or smartphone-like device, in order to track and display data. I would like for us to go over this design step by step, please bear with me as I present this design one piece at a time. If you have

questions about the design please ask. I would like to obtain as much data about your experience as possible.”

Design Walkthrough (Home):

- Can you please explain what you see in this view?:
- Can you tell what data this view appears to be organizing/presenting?:
- What actions would you assume that you could use, as a user, to manipulate the current view with inputs? (Ex., scrolling left to right, tapping a portion of the screen for more information):
- Have you used any form of scanner or picture-type input application for barcodes?:
- What actions would you take in order to SCAN in a new item?:
- How would you get more information about a single item in this list?:
 - Do you feel this information is relevant and useful to you?:
- Do you feel that the accessing the details of an item is understandable?:
- If I were to ask you to navigate to your user menu/settings, where would you tap/click on the screen?:
 - What would you expect this action to accomplish? What do you think will happen if you tap/click it?:
- How would you assume that we navigate to the feature RECIPE from here?:

“Now that you have navigated to the menu view you are prompted to pick one of these options. Which would you like to look at first?”

Design Walkthrough (Feature 1 - Recipe):

- From the basic look of this view what would you assume this portion of the design is meant to accomplish?:
- What actions/gestures would you assume you can take to interact with it?:
- Where would you determine the estimated cooking time of a recipe?:
- If you wanted to see a full recipe, where would you tap/click?:
 - What do you assume would be displayed and how? Why?:
- Does this feature appear to be a feature you might be interested in using?:
 - Why or why not?:
- If I were to ask you to navigate from this feature to another feature would you know how to do that? If so, how?:

Design Walkthrough (Feature 2 - Coupon):

- From the basic look of this view what would you assume this portion of the design is meant to accomplish?:
- What do you assume the top “retailer” bar is meant to apply to the data displayed?:
- If I were to ask you to display the coupons related to Safeway, how would you do that?:
 - How would you assume the view would change from this action?:
- What actions/gestures would you assume you can take to interact with it?:
- Does this feature appear to be a feature you might be interested in using?:
 - Why or why not?:

Design Walkthrough (Feature 3 - Cart):

- From the basic look of this view what would you assume this portion of the design is meant to accomplish?:
- Do you feel that this information is displayed in a way that is easily understandable to you?:
- How would you delete an item from this list?:
- What do you assume the “Shop in Amazon” button may accomplish?:
 - Do you feel this has been implemented with a clear and simple manner?:
- What actions/gestures would you assume you can take to interact with this view?:
- Does this feature appear to be a feature you might be interested in using?:
 - Why or why not?:
- How would you return to the home view from this feature view?:

Afterthoughts:

- What do you think the primary use of this design would be?:
- How did you feel about the overall flow from view to view on this design?:
- What was your favorite feature of this design?:
 - Why?:
- What was your least favorite feature?:
 - Why?:
- Did you feel that this information is displayed well?
- How do you think this design can be improved?:
- If this design were to work as advertised, do you feel you would interested in using it?:
 - Why or why not?:

Phase II: Design Refinement and Development

Summary of Usability Testing (Round 2)

Methodology

The methodology that we used for this round of testing was based around a task oriented testing plan. In order to test the usability of our app, we believed it would be best for the participants to perform the tasks with little to no help. After briefing them about our app, we simply gave them a short scenario/situation and then asked them to perform a task. While performing the task, we simply watched and observed as they walked us through the process. Throughout this process, we did not answer any questions they had about how to use the app until the end. We believed this was the best method because it closely emulates the use of our app in the real world. Real world users would not have someone to help guide them. This method allowed for any frustrations with our app to emerge.

Key Findings

The findings we have found to have the most bearing on our decisions moving forward are:

- We ran into a few issues with the shopping list area of test participants having trouble deleting items from their shopping list, we intend to streamline this moving forward
- We had some small issues with our filtering commands on our recipe page that we will be taking a look at in order to find some more intuitive ways to approach the same goals
- We had some strong feedback on the homepage usage of color and how to identify expired items
- A lot of our icons were not as obvious/clear as we thought they were
- Color association was actually more difficult to achieve than we thought
- There were some smaller comments about colored text readability which we may revisit

Recommended Improvements

Based upon the findings from this round of testing we plan to focus on a few things for our next phase of development. The key things we gained from this round of testing and plan to implement are:

- We plan to look over our sorting icon and try to find a more understandable one
- We plan to discuss the use of descriptive words under our main selection area
- We are going to implement an icon over the shopping list that when it is activated will make a mental connection to the actual shopping list icon
- We may actually re-evaluate our shopping list icon to be more understandable to a new potential user
- We will rework the deleting process in the shopping list
- We are going to discuss our icon used for recipes and it's meaning
- We may look at how we intend to display the color association to our expired, near expired, and fresh items

Summary of Test Results

	Participant #1	P. #2	P. #3	P. #4	P. #5
Task One: Check formation of a product	PASS	PASS	PASS	PASS	PASS
Notes	Simple and straightforward for the user.	Thinks the items should look more clickable. Looks like just a list.	Clearly saw expiration date and nutrition label	Click the item and look at what pops up	I am going to click the chicken breast item, this shows me the nutritional values and expirations dates
Task Two: Add To Shopping List	PASS	PASS	PASS	PASS	PASS

Notes	User saw the button from doing the previous task. Otherwise, would not have been the first place to look	Clicks through the bottom menu first before finding shopping list. Manually inputs egg but doesn't work. Returns to pantry and tries from there. Icon doesn't look like a shopping list. Didn't know you can add to shopping list from pantry.	Found the button to add item to shopping list fairly quickly. Tried long pressing the item first.	Clicks the add to shopping list button	I see how to add the item, maybe also a checkmark would be good on the confirmation, a callback to the shopping list itself
Task Three: Remove From Shopping List	PASS	PASS	PASS	PASS	PASS
Notes	Shopping list icon seems more like a check list icon and wasn't clear. Expected check boxes on the side of items. Thinks the deleting process isn't common.	First instinct was to click on the item in the list. Deleting process was confusing. Suggested emulating the process in Apple's Reminder App.	Took a while to delete item. Thought cross item off would get rid of it. Then tried swiping left right until he finally noticed the delete button and realized how it works. Expected checkboxes on the side to mark an item as bought.	On my phone for deleting you normally slide the bar so I was surprised to see that a tap would select an item for deletion and not a swipe. Delete did not work as I expected, but after I understood the process then it was a workable way to accomplish this task. Aesthetically I like the lines, however maybe expand the selection area to the whole bar, I like the movement of a swipe more so than the line, and the mass delete is also a good idea.	The thing that was weird for me at first was that there would be a swipe left or right. I assumed that the delete button would highlight all items and allow me to choose them individually. I think that this would work, but more for mass cases. I think the method I described would be more understandable right away.

Task Four: Search for a Recipe	PASS	PASS	PASS	PASS	PASS
Notes	Started scrolling through recipes before realizing the search bar. Noticed that it searches by exact words (egg & eggs has different results), Search only searches the name.	Manually searches the recipes one by one.	Words are exact as a searching for a word like milk will only look up items that contain the word milk in their title.	The arrow for enter kinda threw me off, I assume the search on it's own would be for the item and not the title though	I would use the search function and type in chicken
Task Five: Filter Search	PASS	PASS	PASS	PASS	PASS
Notes	Filter icon is obscure, not sure what it is. More used to just the word 'filter'. Was not sure if filtering was working, nothing to indicate it is filtered. Expected check boxes within the filter menu to be more specific (hard medium easy)	Typed in 'easy' in the search bar. Didn't know that was a filter icon.	Filter icon wasn't very clear. But once user knew about it, was able to filter by cook time and difficulty.	the filter icon looks like a flashlight, this works though, understandable	I would click the filter and filter by difficulty
Task Six: Check recipe/add missing items	PASS	PASS	PASS	PASS	PASS
Notes	Understood what the color encoding meant. Realizes the button adds all ingredients not just the one she needs. The button is confusing because she gets the impression that she is adding the recipe as a whole to the list and not its ingredients.	Add button adds all ingredients. Single items are clickable but does nothing. Thought red ingredients meant expired at first.	Determined what red and green mean, was able to add items quickly	I thought at first that the red stuff in the ingredients list would be what was expiring soon, I like the button and the feedback The green for items you have is a little hard to read, change the amount of time to hours and minutes	Ok green I assume are items that I have and then red is stuff I don't
Including notes	Icons and buttons needs to be more specific/clear (filter icon). Didn't realize what the colored dots were for, thought it was just for	Likes the simplicity but expects it to be more sophisticated. Feels like there's a missing 'layer' to things (ie filtering). Wants autofill in the	Added terminology is not good, user prefers remove from list button text instead. Filtering icon wasn't very clear. Didn't immediately look like	Easy to use after learning, makes me want to eat healthier. The deletion aspect was probably the most confusing.	I really like the ease of use but there were some confusing aspects like deletion, the filter was not that intuitive, I would prefer the word filter possibly.

	<p>design. Suggested we place it closer to the rest of the information because it was so far apart.</p> <p>Would prefer side swipe navigation in the more info page. Thinks the design is a bit basic.</p>	<p>entry bars.</p>	<p>a funnel image.</p> <p>The lag of the pictures and the little things like intuitive gestures Wants A more complete UI overall and shopping screen specifically and also reduction of lag if possible.</p>	<p>I almost expect the home button to be in the middle, the recipe icon kinda looks like a trashcan, otherwise it is pretty good.</p> <p>Notifications about expirations possibly, the text being red for expiration may be good, I thought the dots were just pretty colors</p>	<p>The filter and the deletion were my biggest points.</p> <p>The expiration colors were a little less obvious, three colors may be better match with the difficulty colors as well, maybe use the dots as days left number in that font color</p>
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3. User Testing Script

The following is our script for this round of testing:

Name:

- Age:
- Gender:
- Occupation:
- Marital Status:
- Number of Occupants normally in your home (Roommates/Family):

“Thank you for volunteering to help test our software. Today we will be focusing on the usability of this app. We will be asking you to perform a series of tasks. While doing so, please think out loud and tell us your thought process as you are figuring out how to execute the requested action. Being able to hear your thought process is very important as it will help us build a better product. Please feel free to voice any opinions and frustrations you may have as we go along.

This is an app that allows you to track your food items by inputting them into a database. This app can scan an item’s barcode and utilize the encoded information to help you manage your pantry of food in 3 main ways. It provides a list of items sorted by expiration date and will notify you when something is about to go bad, it has a recommendation system to suggest recipes in order to best utilize your soon to expire items, and it has a shopping list function to help with grocery shopping. Now that you have been given a brief overview, do you have any questions? Let’s begin.”

Scan a Product:

User will be presented with 3 items. #1 and #2 have barcodes but #3 does not.

-Please input item #1 into your pantry.

Notes:

-Please input 3 counts of item #2 into your pantry

Notes:

-Please input item #3 into your pantry

Notes:

-Did you have any difficulties executing this task?

Answer:

-How could this process be improved to be more intuitive and efficient?

Answer:

Check information of a Product:

-You have just inputted item #1 into your pantry and want to find out more information about it. Please check the information received from inputting item #1 and determine its expiration date and nutritional value.

Notes:

-You want to know what else you can do with this item. Explore the information page to find a use for this item.

Notes:

-Did you have any difficulties executing this task?

Answer:

-How could this process be improved to be more intuitive and efficient?

Answer:

Add to Shopping List:

-You realize you need to buy more of item #1. Please add this item to your shopping list.

Notes:

-You have purchased the item. Please remove item #1 from your shopping list.

Notes:

-Did you have any difficulties executing these tasks?

Answer:

-How could these processes be improved to be more intuitive and efficient?

Answer:

Recipes:

-You noticed that item #1 is about to expire. Search for a recipe that will use that item.

Notes:

-Filter your search results to show easier recipes first.

Notes:

-Filter your search results to show recipes using items expiring sooner first.

Notes:

-Pick a recipe and check to see if you have all the ingredients necessary. Add items that you don't have to your shopping list.

Notes:

-Did you have any difficulties executing these task?

Answer:

-How could these processes be improved to be more intuitive and efficient?

Answer:

Conclusion:

-Rate your user experience with the app overall (1-10):

-What was your reasoning for the rating above?

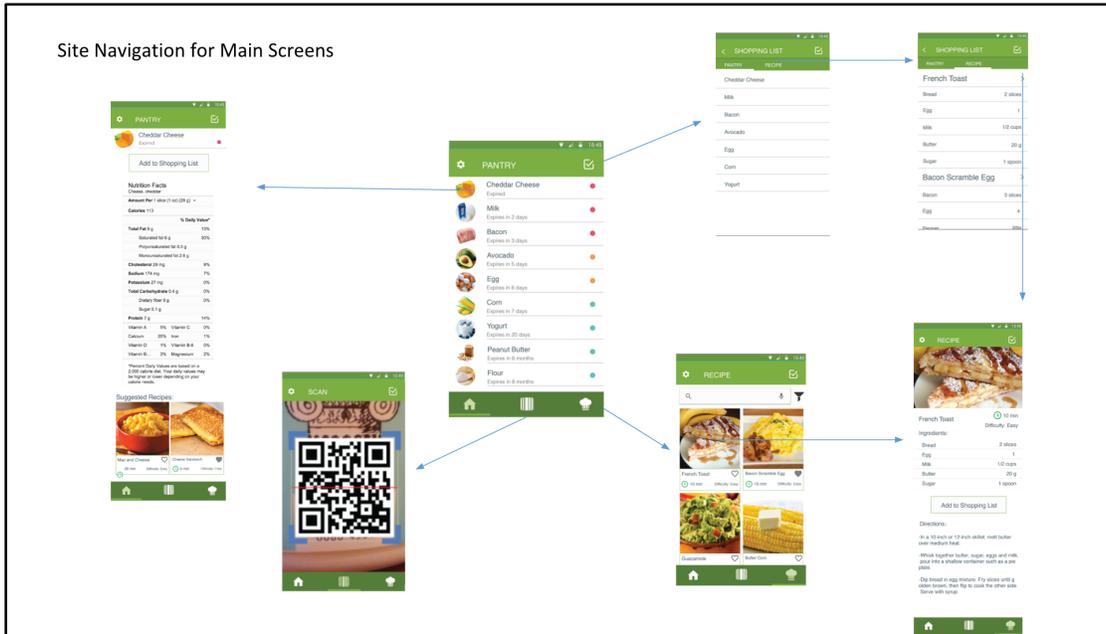
-Which feature do you find the most useful?

-Was there any major pain points from using our app?

-Any suggestions for us to improve our user experience?

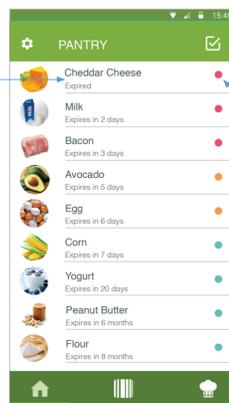
-What would you like to see out of our app in the next iteration?

Digital Prototypes and Screen Mapping



Pantry Screen - This screen is the home page where users can see their pantry items ranked by the expiration dates.

This Screen shows only item's picture, name and expiration data.



The color of the dots indicate the item's expiration state:
Red represents urgent (expired or expires in 3 days);
Orange represents moderate (expires in 3 to 7 days);
Green represents safe (expires in more than 7 days)

Scan Screen - This screen is designed for scanning either item's barcode or receipt barcode

This entire screen is in "camera" mode until it detects a bar code



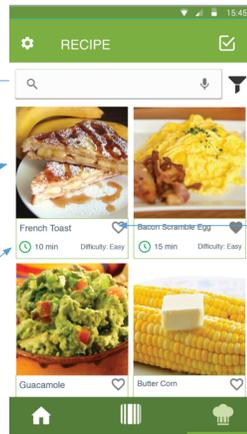
The app will automatically pause and take a picture and scan when it detects a barcode. Relative data will be automatically added to the pantry list.

Recipe Page - This screen is the recipe page where users can search or browse through various recipes.

Users can search for specific recipes

We choose "block's form" instead of list form since we believe picture is very important to our recipe feature.

Average cooking time is listed.

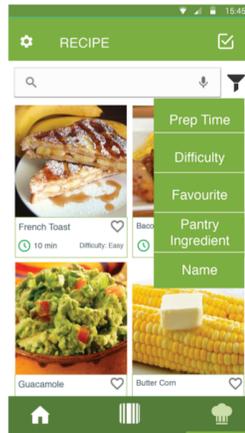


This is the filter that users can select. Details will be shown in next slide.

Users can favorite the recipe simply by tapping the heart, which will turn into solid instead of hollow.

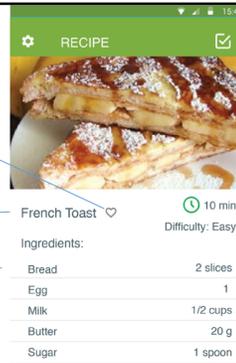
Difficulty level is separated into three main levels: easy, medium and hard.

Recipe Page - filter.



Users can filter by prep time, difficulty, Favorite, pantry ingredient or name.
 -If users choose pantry ingredient, the recipes that include the almost expired items from the pantry will be shown first.

Recipe Screen – details page - This screen is the detailed page for a specific recipe.



Appealing Picture

Favorite the recipe

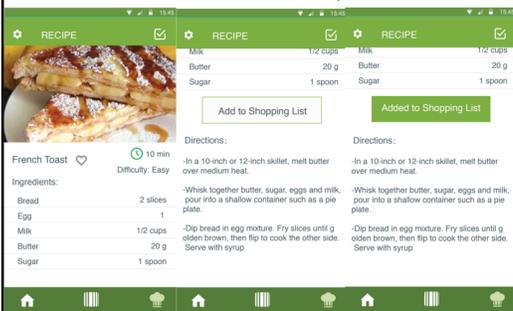
Average cooking time

Name of the recipe

Ingredients with quantity

Cooking difficulty

How the screens look like on phone



Add the ingredients needed to shopping list

Cooking direction

Directions:
 -In a 10-inch or 12-inch skillet, melt butter over medium heat.
 -Whisk together butter, sugar, eggs and milk, pour into a shallow container such as a pie plate.
 -Dip bread in egg mixture. Fry slices until golden brown, then flip to cook the other side. Serve with syrup.

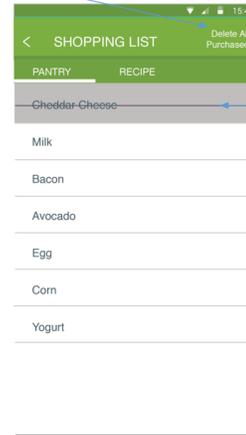
Shopping List– Pantry Page- This screen shows the shopping list of the pantry list

Go back to where it comes from



Delete all the ingredients that are crossed off, which is seen as purchased

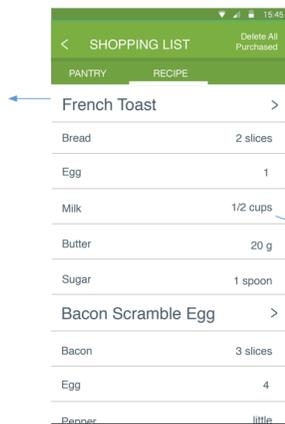
Show only the items added from pantry, which does not have quantity units



Tap to cross the item off.

Shopping List– Recipe Page- This screen shows the shopping list generated from recipes

The ingredients are categorized based on the recipes that they are generated from.



Delete all the ingredients that are crossed off, which is seen as purchased

The name of the recipe will lead users to that recipe

Quantities are specified



Tap to cross the item off.

Item Page – This screen shows the shopping list generated from recipes

How the screen look like on phone

Basic information including name, expiration date and picture will be a static bar

This part will be the scrollable zone

Show the name, expiration state, and picture.

Users can add the item to shopping list simply

Detailed nutrition information

Suggested recipes that use this specific item as the major ingredient

Posters Prototypes

Fresh

PROBLEM
1.3 Billion tons of food, 1/3 of all food generated for human consumption is wasted each year. An average American household throws away approximately \$2200 worth of food each year.

SOLUTION
We create a food spoilage tracking system that will effectively input, track and display current food stores to reduce food spoilage waste and to help users save money.

FEATURES:

- Food Tracking
- Meal Suggestions
- Recipes Included
- Shopping List
- Easy Input

SCANNER **EXPIRATION DATE TRACKER** **RECIPE**

RESEARCH | **DESIGN** | **DEVELOPMENT**

Sen Chen | Harpreet Jaswal | Patrick Harper-Jones | Gabo Tran

Information School
University of Waterloo

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RESEARCH
Audience Research, Content Analysis, Competitive Analysis

DESIGN
Color Scheme, Paper Prototyping, Wireframes, Mockups, Usability Test

DEVELOPMENT
Using In-Depth Code, Content Analysis, Competitive Analysis

Sun Chen | Harpreet Jaswal | Patrick Harper-Jones | Gabe Tran | Information School University of Washington

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PROCESSES

- RESEARCH**: Audience Research, Content Analysis, Competitive Analysis
- DESIGN**: Color Scheme, Paper Prototyping, Wireframes, Mockups, Usability Test
- DEVELOPMENT**: Using in-depth code, Content Analysis, Competitive Analysis

PROPOSED SOLUTION

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Finalized Designs and Assets

Pitch video URL

https://www.youtube.com/watch?v=k_zBqsR44uM&feature=youtu.be

Viral Video URL

<https://www.youtube.com/watch?v=oK7aiS4CpZw&feature=youtu.be>

Final Icon/Logo





Project Fresh

Keeping track of your food has never been easier!

PROBLEM

Amount of food waste each year globally

1.3 Billion tons

Percent of wasted food that was generated for human consumption

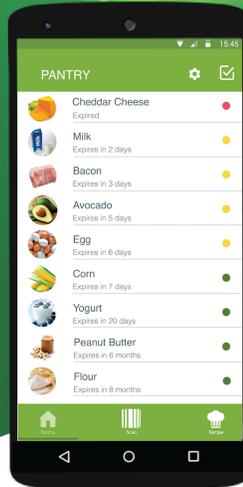


Amount of money wasted on food in America annually, by household

\$2200

SOLUTION

We created a **food spoilage tracking system** that will effectively **input, track and display** current food stores to **reduce food spoilage waste** and to help users **save money**.



FEATURES:

- Food Tracking
- Recipes Included
- Meal Suggestions
- Shopping List
- Easy Input
- Nutritional Info

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