Team R Project Stage Two

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Team R Portfolio

https://sebastienwong.github.io/cpsc481teamr/portfolio/

Team R Repository

https://github.com/sebastienwong/cpsc481teamr

Description of Project Idea

The project we have chosen is a grocery shopping mobile app. The app will have two main modes, home mode and shopping mode. While in home mode, it will allow users to easily add items to their shopping list by simply scanning the barcode. While in shopping mode it does the opposite, removing items from the list when the barcodes are scanned, and tallying the price of each item scanned. This will allow users to easily keep track of exactly what they purchase and the cost of their groceries. As the app is used over weeks or months, it will keep track of the users spending habits, allowing them to easily keep track of their grocery budget. The app will also provide features such as recommending coupons for frequently purchased items, reorganizing the list to group similar items and so improve the shopping experience, and allow users to manually add and remove items that don't have barcodes. This app will be useful for anyone who buys groceries regularly, but especially for people who buy large amounts of groceries at once, people shopping on a tight budget, and people with poor memory such as the elderly.

List of Stakeholders

The stakeholders for this project are people who buy lots of groceries at once, people shopping on a tight budget, people with poor memory, and grocery stores. Traditional shopping lists allow shoppers to record what they need to buy. However, they can be slow and cumbersome to use, especially when buying large amounts of items. Because of this, an app which removes items from the list as the user shops, makes it much easier to keep track of what they have and have not yet added to their cart. Shopping on a budget can be difficult. Knowing the cost of the groceries before shopping allows the user to change the list before they get to the store and so stick to their budget. Shopping can be difficult for people with poor memory. An app which provides a simple and easy to use interface can greatly improve the shopping experience for those people. The final stakeholders are grocery stores. Grocery stores have a vested interest in keeping customers. An app which improves the shopping experience for their customers over other grocery stores could be something they would be very interested in.

User Research Methods

1. *Ask: Surveys & Questionnaires*

We used this card's method to ask a series of questions from several individuals with the purpose of better understanding grocery shopping habits, preferences for grocery lists and budgeting practices from the point of view of customers. We generated a questionnaire with nine questions and, using Google Forms, gathered responses from thirteen individuals. This included questions such as "How often do you go shopping?", "If you went over budget, which items would keep? Which ones would you let go of?", "What functionality would you find useful in a shopping list tracker?", among other questions which are included in the appendix at the end of this document. This method helped us learn about shopping frequency, that the majority of responses indicated a weekly frequency; the significance of budgeting and some pertinent details, namely that most shoppers have a particular budget in mind and prefer certain items over others in case over-budget situations arise; and important shopping list functionality for customers, namely categorization of items, shopping list templates for frequently purchased items, and features to help with coupon usage and budget management.

2. *Learn: Error Analysis*

We used this card's method to consider and identify many of the possible errors and wrong occurrences that could come up in the usage of a grocery shopping list app. We conducted error analysis by identifying, using insights from the questionnaires and the team's own thoughts and experiences, a variety of possible errors that could surface in using a grocery list app, including errors related to budget, item selection, coupons, and other aspects of the shopping experience. This method helped us learn and better understand some of the common misuses and failures that might occur, namely that items could wrongly be selected multiple times or incorrectly selected instead of another item, budget could be accidentally surpassed, items could be mistakenly forgotten, and coupons could be overlooked.

3. *Try: Paper Prototyping*

We used this card's method to quickly sketch out and articulate various elements and features of the app's interface and how users would be able to interact with it. We created a paper prototype of the grocery list app by articulating together how the user's experience in the app would go, and briefly sketching the layout of some of the possible screens, buttons and other elements of the app that a user might see and interact with. This method helped us learn more specifically how different features and elements of the user interface would be laid out on the screen. For example, we considered how the shopping list would look visually including relevant information such as items details and budget would be presented, how the user would go about adding new items to the list, how the user would confirm addition of an item, price checking functionality, and other features.

Method Cards Justification and Complementarity

We picked “Ask: Surveys & Questionnaires” in order to quickly and efficiently gather a large amount of answers and explanations from potential users about grocery shopping habits, preferences for grocery lists, budgeting practices, and other relevant information. We picked “Learn: Error Analysis” because it allowed us to think to some extent about potential errors and misuses of the app which would be significant to consider when designing the interface in order to avoid such errors and mistakes from occurring. We picked “Try: Paper Prototyping” because this method was a simple way to consider practically the interface for the user and begin articulating how the features and elements of the app would be visually represented. Additionally, we picked these three method cards because they allowed us to conduct research while following safety measures for the pandemic, all through online communication. In terms of the complementarity of these three method cards, it was clear that the insights from one method card would help the team in the next method card we were doing. For example, when the team was conducting error analysis, the different insights gained about the different considerations and functionalities for shopping with a shopping list (such as budget, coupons, list templates) helped us in generating a more diverse variety of errors and mistakes that could occur. In another instance, the answers to the question about helpful functionality for a shopping list app and the identification of some errors both helped us in considering how to design certain parts of the app in paper prototyping so that they would be clear for the user.

What Went Well and Poorly

The three methods that we chose complemented each other because of the order in which we used the methods in. The order was surveys and questionnaires followed by error analysis and paper prototyping. We used the answers from the surveys to help think of things that could go wrong and that helped us shape the paper prototype. Each stage of our user research was very insightful. One of the things we think could have gone better is our sample size for the survey, it would have been nice to get a few more responses. Overall, we have no complaints with the IDEO Cards that we chose and how they performed. Each of the IDEO Cards taught us something that we would otherwise have missed or not thought about.

User Task Descriptions

MUST BE INCLUDED

- User wants add items to their shopping list.
    - User takes an empty box of crackers that they want to add to their shopping list.
    - User scans the barcode with the app, and it is added to their shopping list.

- User can remove items from their shopping list while shopping by scanning a barcode.
    - At the store, User finds the box of crackers, scans the barcode with the app, and adds it to his cart.
    - The box of crackers is then removed from his shopping list.
- User can track their purchases and budgets.
    - User wants to see how much they've spent on crackers in the last month
    - User opens the budget manager, which tracks how much they've spent on crackers, as well as other insights on their food spending habits.
- User can search for and apply coupons to their list
    - User gets notified that there is a 2-for-1 cracker coupon that they can use on their next purchase
    - User can also search for coupons for different cracker brands, and other items as well.

IMPORTANT

- User can create new shopping list templates
    - User is hosting a Thanksgiving dinner and wants a shopping list separate from their usual list.
    - User creates a new shopping list template called Thanksgiving, to ensure there's no mixing of his lists.
- User can organize list by aisle/store
    - User doesn't have a lot of time to shop, and wants to minimize the time spent at the store.
    - User can sort their list by item type, to quickly view and pick up the items section by section.

COULD BE INCLUDED

- User can track health and nutrients of their groceries
    - User is worried they eat too many unhealthy crackers.
    - User can see how many calories are gained from crackers, and the app can offer healthier suggestions

Appendix

Questions Used for the Questionnaire

1. How often do you go shopping?
2. Do you use a shopping list or any other type of shopping tracker?
3. Do you have a budget when shopping?
4. What is your average budget per shopping trip?
5. If you went over budget, which items would keep? Which ones would you let go of?
6. When do you use coupons? Would you use coupons more often if you could?
7. What functionality would you find useful in a shopping list tracker?
8. Do you buy the same brand items every time you go shopping?
9. Who is the one that goes shopping in your family? How old are they?

Error Analysis

- Using the wrong template
- Accidentally saying you bought something when you haven't
- Getting the wrong item or too many of the same item
- Multiple people in one household buying duplicates of items
- Going over budget without knowing it
- Finishing the shopping trip without everything you need
- Not applying or showing a coupon when one was available
- Not being able to add items to a shopping list

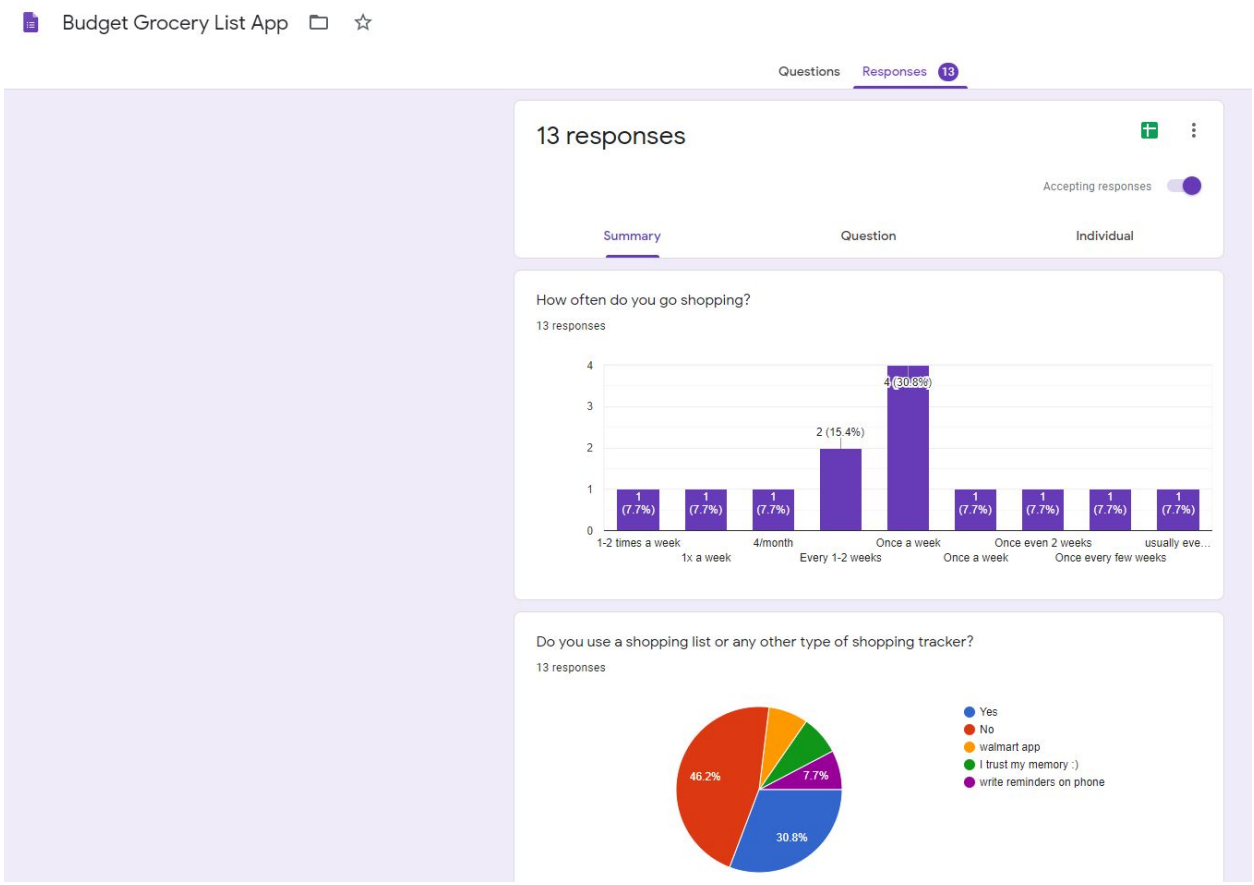

Figure A: Some answers from research questionnaire.

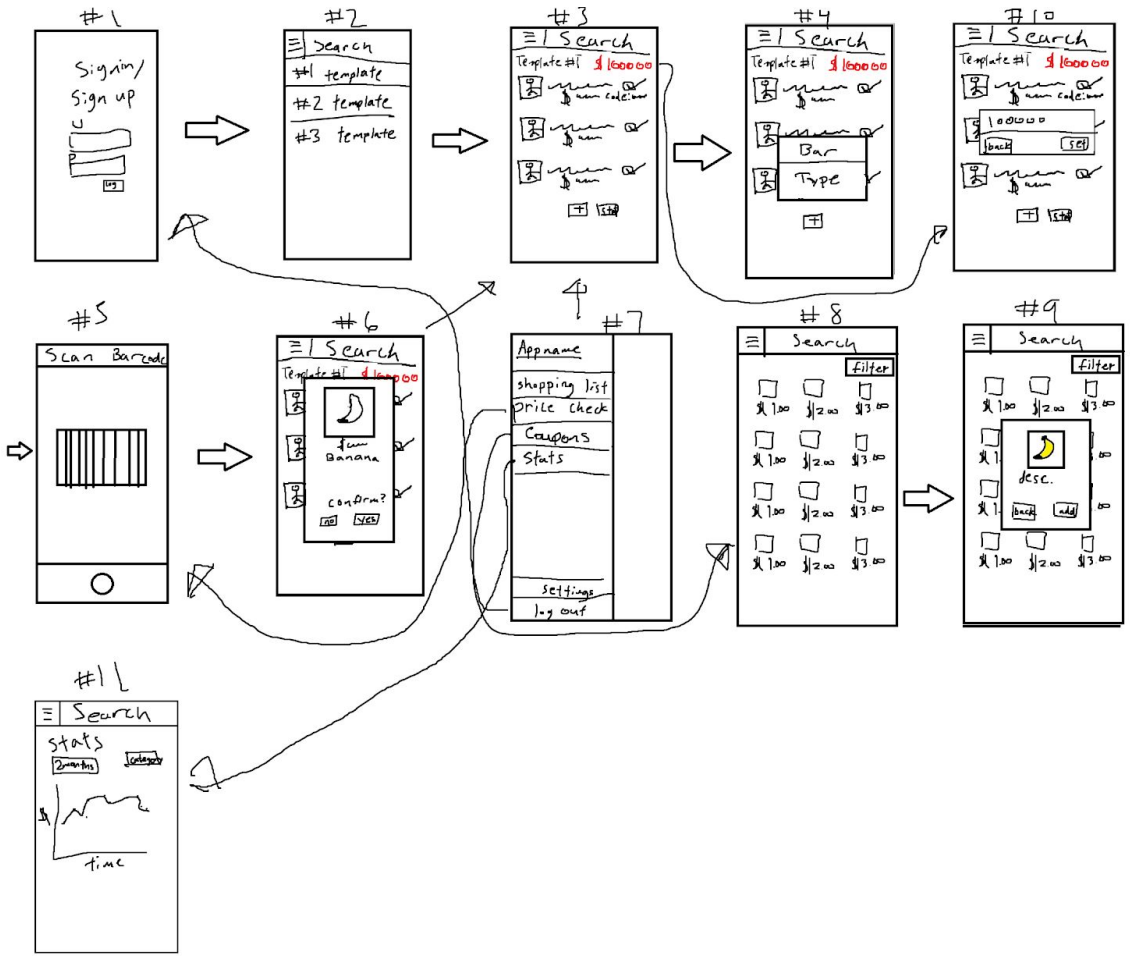

Figure B: Digital paper prototype for grocery list app.