

Introduction

Blue Ribbon Foods is an application designed to assist users with making a meal with ingredients already in their fridge (see [Appendix A](#)). Our interface is modeled to quickly and efficiently help individuals find a recipe based on time and ingredients on hand to make a healthy meal. Features of the interface include (see [Appendix B](#)):

- Camera options to take pictures of food quickly
- Ingredient recognition with machine learning
- Customize the number of ingredients
- “My Plate” option to view ingredients selected
- Recipe list based on ingredients added to “My Plate”
- Detailed recipes with list of ingredients needed and step by step instructions
- Option to add a recipe to “Favourites”

Design Motivations/Changes

User Observations

Our initial concept based on user observations (see [Appendix C](#)) or the interface had users adding each item individually from a list of ingredients broken down by type, e.g. Vegetables, Meat, Dairy, etc. (see [Appendix D](#)). Based on user observations the main factor for not cooking a meal was time and not knowing what to make with what they had (see [Table 1](#))

Initial Design

Feedback about the initial concept provided in our first presentation (see [Appendix E](#)), we modified our idea from searching through a list to find an ingredient, to having users take a picture. Using machine learning to train the several types of ingredients, users would not have to worry about ingredients not being recognized. The major design change was reflective of the main factor: time (as seen in [Table 1](#)). Users were not spending time on finding their ingredients then selecting their items to find a recipe, instead they were able to upload what they had directly onto the application.

Expert Session

Based on our session with design experts (*see* [Appendix F](#)) the following changes were made to the design (*see* [Table 2](#)):

- Remove the menu icon from the camera page
- Change the camera icon so that it is distinguishable from the “My Plate” icon
- Adding an X or cancel button on the quantity pop up screen if the user wants changes their mind
- Make the “Home” button into a camera icon
- Move the “Back” button and the “Home” button (now changed to camera) across from each other
- Remove camera flip option
- Include an error screen for instances where an item may not be recognized due to lighting or insufficient data
- Remove the arrow buttons and let users add the number of ingredients
- Add a Max value text to let users know how maximum number of items they can add

In addition, our experts suggested allowing users to add multiple items at a time when taking a picture. This led to a split in our design to include two types of interfaces:

- Taking a picture of a single item
- Taking a picture of multiple items

Further consideration on the idea of adding a multiple item option was abandoned because it could lead to confusion among users, therefore, we kept to the single item option.

User Testing - Session 1

Based on our design scenario (*see* [Appendix G](#)) we asked our users to perform specific tasks to test our interface. This session revealed some problems with our questionnaire as it did not provide us with the feedback that was needed. We improved that for the next session (*see* [Appendix H](#)). In addition, observations from our testing sessions displayed some issues with our design. For example, placement of some buttons, i.e. users clicked on the time instead of the name of the recipe, users weren't sure how to use the application. This session highlighted the following changes based on user testing (*see* [Table 3](#)):

- An instruction screen was needed to inform users how to use the application
- Increasing the range to select a recipe from the "Recipe" page from the name of the recipe or time to the entire box, therefore, allowing users to tap anywhere
- Restricting our users' tasks for testing the final application

User Testing - Session 2

Final user testing reflected the ease of use of the application (see [Table 4](#) Table 4: Summary User Testing - Session 2). While, some users did not follow the script for testing, this is more of a user issue than a design one for our purposes. In this session, we were successful in completing our desired tasks for testing the functionality and features of the interface (see [Appendix I](#)). One of the limitations in our high-fidelity prototype was the fact that it was interactive. Users sped through the scenarios as opposed to the paper prototype where they were forced to slow down and think about choices that they made. This highlights the difference in testing between low-mid fidelity prototypes and high fidelity ones that include interaction. Our session disclosed that some features could be taken away, such as "Favourite" icon, and scenarios for testing could be improved.

Future Considerations

Further refinement of scenarios would be required for additional user testing. In addition, allowing users the freedom to determine what type and quantity of ingredients would allow some autonomy without adding unnecessary complexity. Improve the flow of screens to account for user input.

Table 1: Summary of User Observations

	Out of 6 User Observations	
Time Spent at Fridge	55% of users spent < 10 secs	45% of users spent >20 secs
Time spent Cooking	37% of users spent 10 – 25 mins cooking	63% Chose to eat out or not at all
Time Willing to spend Cooking	67% of users would spend < 30 mins	33% of users would spend > 30 mins
Level of Cooking Experience	83% rated themselves as having Little - Average	17% rated themselves proficient

Table 2: Summary from Expert Session

Design Changes	Out of 4 Experts	Statistics
Removal of menu icon from camera page	3	75% of experts did not find the standard menu icon to be relevant to the application
Differentiate camera icon from 'my plate' icon	2	50% of experts found the icons to be too similar
Change quantity of food items	2	50% of experts wanted to be able to change the quantity of items after they were added
Switch back button to camera button	2	50% of experts were confused about the back button and indicated a direct button to the camera would be better
Remove camera standard icons such as the flip option	3	75% of experts found no purpose in having a 'selfie' option for taking pictures of food
Error Prevention screens	2	50% of experts indicated that suggesting alternatives for a wrong food item would be sufficient for errors in their process
Allow users to add in # of ingredients	1	25% of experts wanted to increase user autonomy by allowing them to add in their own values
Set a max value of text for feedback	1	25% of experts suggested by capping off the max value it will be helpful in giving feedback to the user

[Table 3: Summary of User Testing - Session 1](#)

	Out of 8 Participants	Statistics
Clicked on Time on Recipe List	4	50% of users clicked on Time to view recipe
Clicked on Hyperlink on Recipe List	4	50% of users clicked on the hyperlink to view recipe
Confused/Hesitant about 'my plate' icon	6	75% of users did not know how to proceed after taking pictures
Did not comply with pre-made scenarios	3	38% of users used food items in scenarios we did not anticipate for

- 50% of users clicked on 'time' rather than the hyperlink shown on the screen under the recipe titles.
- 75% of users were confused and/or hesitant about what to do next after they had taken pictures, which was to click on the 'my plate' icon.
- 38% of users first approached the scenario by taking pictures of all the food items at once, while they were in the fridge. These users were then told to take out items individually.
- 38% of users also, tried out different scenarios that were not designed for the user session. They began to take pictures of food items that we did not create a scenario for; therefore, we had no screens to accommodate for the selections. These users were then instructed to make use of specific food items to generate the pre-made recipe list we had.

[Table 4: Summary User Testing - Session 2](#)

Participants	Total Time (secs)	Timing (secs)			
		<i>Instruction Screen</i>	<i>Adding Food</i>	<i>Using My Plate</i>	<i>Selecting a Recipe</i>
#1	01:32:12	13	43 (1 st) *19 (2 nd)	4	10
#2	01:26:38	20	48	8	6
#3	01:39:12	n/a	n/a	n/a	n/a
#4	02:10:11	11	104	5	10

*indicates the second time the user attempted adding food because they clicked on wrong process for my plate.

Unfortunately, video footage for #3 was not readable; therefore, results could not be recorded.

Appendix A

Initial Concept for Blue Ribbon Foods

Topic: Leisurely Interactions

Group Members: Amrita Maharaj, Amanpreet Bains

Group # 6

Idea: Scrap Foods

Introduction

There is a common trend among young adults that they do not know how to cook or know how to make a meal with ingredients or leftovers in their fridges. They tend to eat out regularly, which can end up being expensive and unhealthy. Our proposal is to design an interactive system that addresses the problem of food waste and that educates users on not only how to make a healthy meal with simple ingredients they already have but also, offer solutions for alternative usage of certain ingredients.

Need

Scrap Foods is a mobile application that will improve the quality of eating at home. Having “scraps” of food and/or random ingredients may seem undesirable but with the help of this application, users can find recipes or different uses for these ingredients. The need for this application relies on user’s desire to: save money, eat healthy, have convenient/fast meals, restrictions on food waste, and the notions of independence making your own food provides.

Users

The users of this application are post-secondary students, ideally students living on their own and primarily independent, with little to no knowledge about cooking. This application is heavily dependent on user participation. Students will be able to enter/select the ingredients they have on hand and find a recipe of their liking. Recipes will meet requirements set by the student such as portion size.

Solution

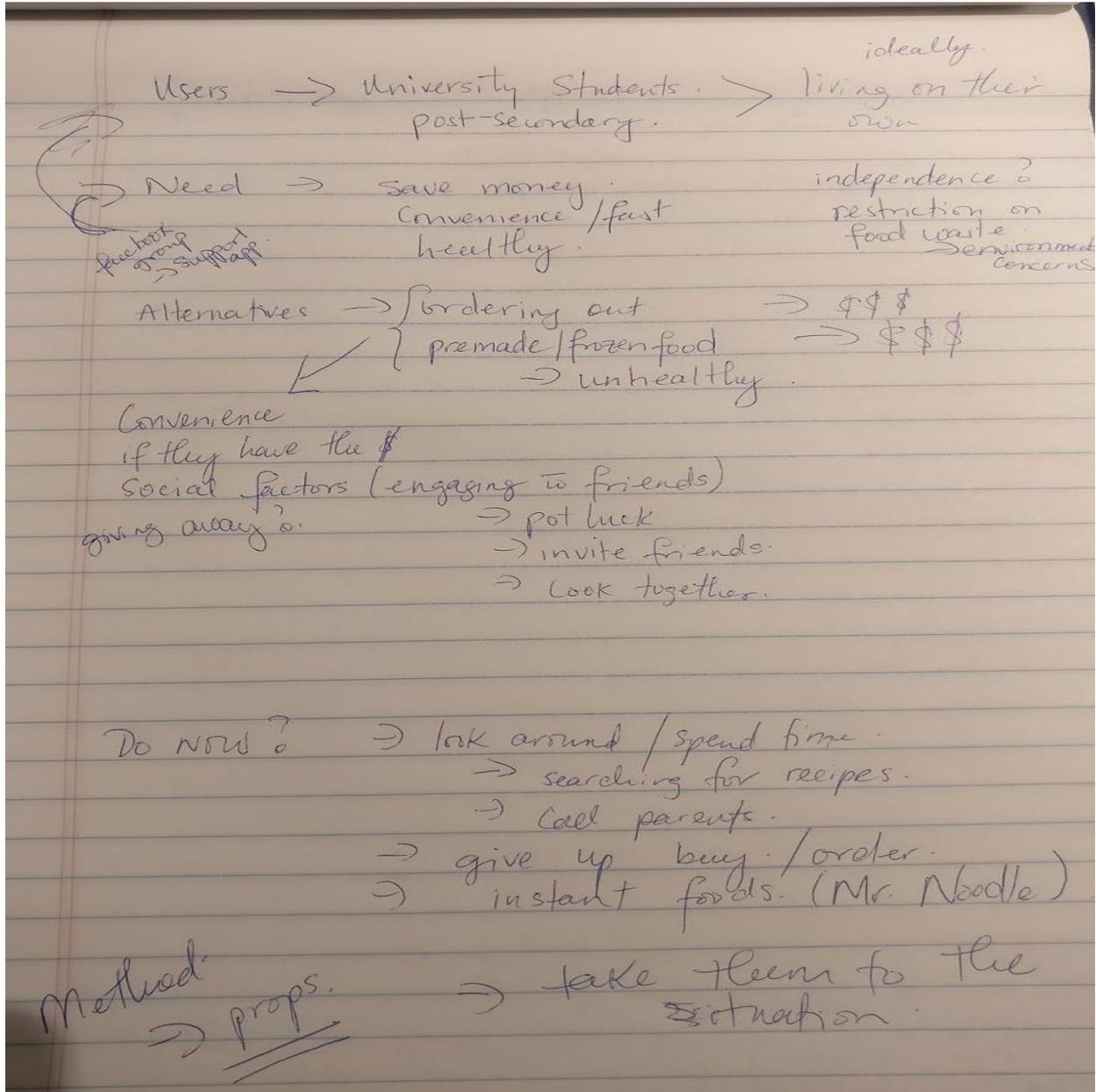
Scrap Foods will be designed to meet user needs. Students in particular want convenient, fast, and healthy options for eating. Often, students are faced with the dilemma of eating out or painfully preparing a meal for themselves. Addressing this user pain is the goal for Scrap Foods. Additionally, the long term goal for Scrap Foods is to enhance social interaction amongst students. By confidently preparing food for themselves and eventually their friends and family - they will no longer have to settle for going out to eat, as many may indulge in this activity to spend time with friends and meet new people. Our observations with users will potentially give us an insight to the patterns of users and address these needs with our solution.

Another complementary feature by Scrap Foods is the ability to offer an alternative to use specific ingredients. For example, if recipes are not preferred or ingredients are not intended for consumption use, then recommendations on how the ingredients can be used in other ways are suggested. Other uses of certain food items can include creating fragrances with peels, using leftover lime and lemons in cleaning solutions and potentially instructions on how to compost.

Method

The development of our design will be based on participant observation into the needs and routines of our users. We are interested in their current interactions when they prepare a meal. We hope to gain insight into what features would be most helpful to them and how we can go about designing a solution that will work with their busy lives.

Brainstorming



Appendix B

Final High-Fidelity Screens

Figure 1: Instruction

Screen Figure 2: Camera Screen to Add Item

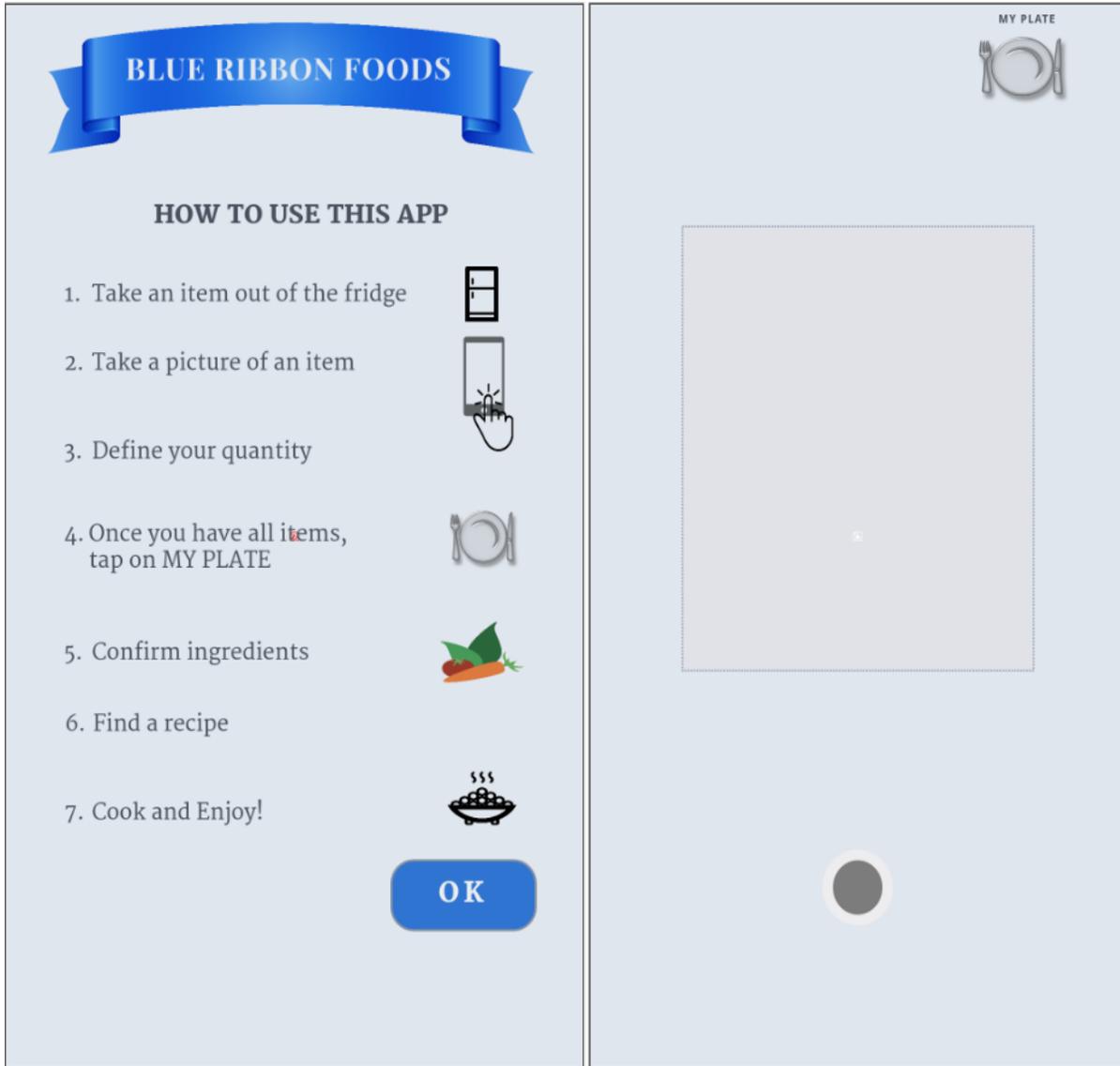


Figure 3: Adding an Item

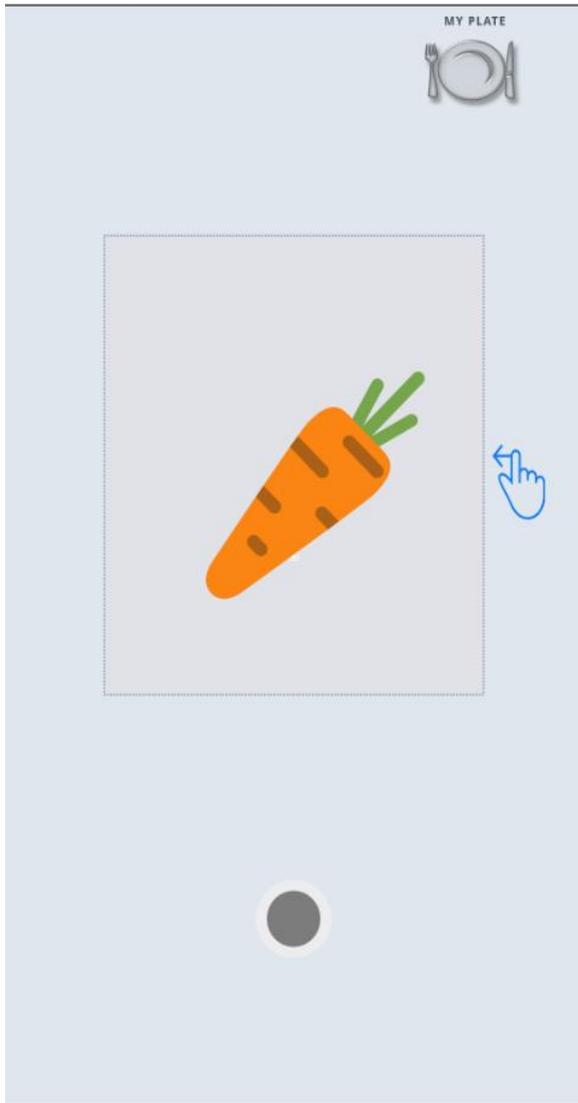


Figure 4: Quantity of Item

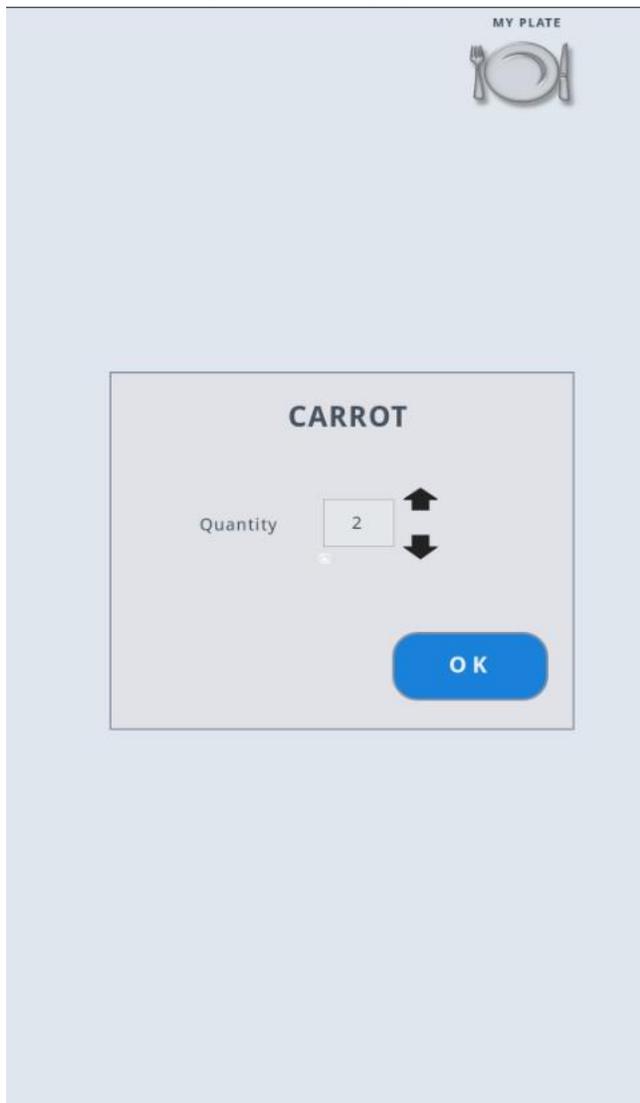
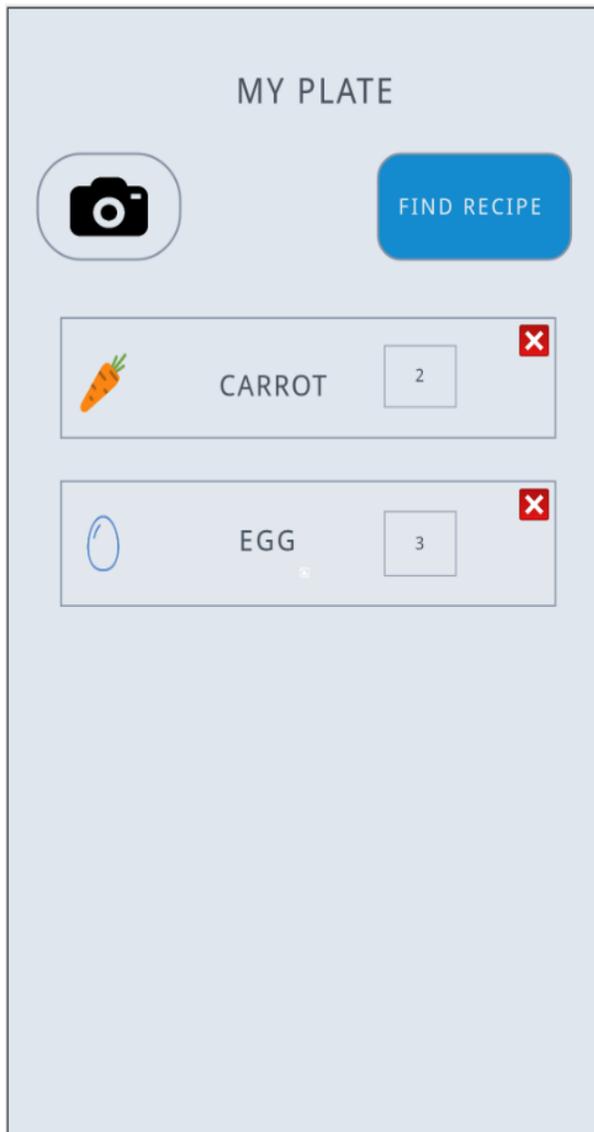


Figure 5: My Plate



ScreenFigure 6: RecipeFigure List



Figure 7: Detailed Recipe

RECIPES



Omelette with Carrots



INGREDIENTS

- * 2 carrots
- * 3 eggs
- * salt and black pepper to taste
- * 2 tbsp of oil/butter

PREPARATION

1. Wash, peel, and grate carrot
2. In a small frying pan on medium heat add 1 tbsp of oil/butter
3. When oil starts to simmer, add carrot, salt, and black pepper
4. Allow to cook for 5 mins, stirring occasionally
5. Crack eggs in a medium sized bowl
6. In a bowl put together eggs and cooked carrots.
Beat it and put in a pan on medium high heat with 1 tbs of oil
7. Wait 3 mins until eggs start to bubble.
With a spatula flip one side onto the other
8. Allow omelette to cook for another 5 mins
9. Plate and serve!



Appendix C

User Observations

Table 1. Quantitative Data for Users 1-3 based on observations. User 4-6 were not observed. Each observation is at one instance at the fridge.

User	Date	Time	Time Spent at Fridge	Time Spent Elsewhere	Time Spent Cooking	Notes
User 1	Feb 11	10:12am	10 secs & 3 secs	Pantry: 15 secs	10 mins	User went back to fridge after pantry and cooked food
	Feb 11	12:15pm	12 secs	n/a	n/a	User did not find anything
	Feb 12	10:35am	5 secs & 10 secs	n/a	15mins	User went back to fridge after 30mins and cooked a meal
	Feb 12	9:30pm	15 secs	n/a	n/a	User ate out
User 2	Feb 10	11:32pm	15 secs	Pantry: 35 secs	n/a	User found a snack to eat
	Feb 11	1:31pm	10 secs	Freezer: 20 secs Pantry: 40 secs	n/a	User did not eat
	Feb 11	8:21pm	10 secs & 15secs	n/a	n/a	User came back after 10 minutes to the fridge

	Feb 12	7:57pm	20 secs	Freezer: 5 secs	20 mins	Cooked food from freezer
User 3	Feb 11	9:20am	5 secs	n/a	n/a	Got something from fridge
	Feb 11	5:32pm	7 secs	n/a	n/a	User did not find anything
	Feb 12	10:53pm	12 secs	Freezer: 5 secs	25 mins	Found freezer food and made it

Table 2. Summary of Quantitative Data collected from questionnaire from Users 1-6.

User	Whole/ Raw	Hours spent without eating	Avg # of ingredie nts used	Avg. Time Spent Cooking	Meals eaten at home (per day)	Level of Cooking (1-bad, 10- really good)	Time wiling to spend cooking	Meals eating out (per week)
1	Whole	3-4	3	1 hr	3	4	1hr	2
2	Whole	3	n/a	n/a	2-3	0	15min	5
3	Whole	1	1	30min	1	4	45min	3
4	Whole	2-3	5	15min	1-2	3-4	30min	4
5	Whole	4	4	30min	2	7	15- 20min	4
6	Whole	6-7	8	1hr	All meals	5	None	2

Observation Notes

User 1

- Lingers around the fridge, more than five times a day, even when nothing has changed
- Asks “what’s to eat” (incapable to making something on his own)
- Settles for eating out after giving the fridge a try
 - Mostly for dinner
- At the fridge for more than 30 seconds (the alarm goes off on the fridge)
- Q: “If there’s nothing to eat in the fridge, what do you usually do?”
 - A: Go to Munny’s (cousin) house or order food or go to downstairs fridge
 - I said: you’ve never ordered food before, then he gave a relevant response: “eat something from freezer, call someone to get me food, otherwise starve...until someone makes something”
- Nothing in his hands at the fridge
- When eating alone, eats with entertainment i.e. usually phone and headphones

User 2

- Found hidden food (food she kept from others) – but it had expired
- Does not want to eat out but settles for it
- Bought ingredients specifically to make 1 meal: pizza
- Frozen food is more accessible
- Q: “If there’s nothing to eat in the fridge, what do you usually do?”
 - A: go to the downstairs fridge
 - Say there’s no downstairs fridge
 - A: then grab food from outside
- Usually checks for expiry before using/consuming
- Q: Do you ever save recipes
- A: Yes
- Q: Do you ever make them
- A: I’m a better baker than a cooker .. but no I don’t make them
- Q: Why don’t you make them?
- A: because I don’t have time
- Q: Then why do you save them?
- A: because I think I will have time
 - A: I save them because they look so good and easy to make

User 3

- Know what she’s going to eat: takes out same few items every time
- (on a diet) = repetitive meals
- salads
- too dependent on frozen chicken
- eats with laptop when alone
- wants to eat healthier

User 4

- aware of what he's bought, knows what to look for
- very little time at the fridge
- often snacks from pantry
- found expired food from pantry
- eats out daily
- wants to eat healthier
- Q: "If there's nothing to eat in the fridge, what do you usually do?"
 - A: iunno I've never had an empty fridge... protein shake
 - Q: "say your fridge is full but you don't want to eat anything from there"
 - eat out i.e. McDonalds

From our preliminary observations, we expanded to a more logical approach where we narrowed down our observations to watch for direct actions of our users. With the use of the questionnaire we could understand the users' eating patterns and determine user needs. As a result, we realized there was a theme that occurred amongst all users: if they did not find anything in the fridge, they would look elsewhere and not go back to the fridge until they were desperately hungry or no other options were present. The intent of the user in every instance at the fridge is to find something to eat. If this need is not met immediately they often look in other places such as pantries or freezers. However, after attempts are made to look for something to eat at least 3 out of the 4 users decide to wait until another option arises such as waiting for someone else to cook or until they get very hungry. Sometimes users weren't back to the fridge to settle for something else. Consequently, based on the observations and questionnaire, if users do not find something to eat they either a) wait it out b) look somewhere else and come back c) look somewhere else and wait d) wait for someone to cook food for them or e) eat out. These options however are only exercised if they do not find anything in the fridge; therefore, users' pain is in not finding anything to eat. With our qualitative observations however, users approach the fridge throughout the day with no added food items in the fridge but still find meals for later in the day. It is apparent then that it is not that there is nothing in the fridge but that users cannot or choose not to make something themselves. This is further assured by their questionnaires, where some state they choose not to cook or wait until someone else cooks for them.

Based on the feedback from our previous observations of users we decided to conduct semi-structured interviews with our participants to see where our design would fit into their daily activities of making a meal. We are looking to assist our users (post-secondary students) with making a meal with ingredients present in their refrigerator. From these observations, we created an early prototype of our application.

Semi-Structured Interview Questions

User 1

Age: 17

Occupation: Grade 11 Student

of people in household: 4

Describe your thought process and steps that you take when approaching the fridge to look for something to eat:

Are you usually looking for something to eat whole or to make?

Usually looking to eat something as a whole

What happens when you can't find something as a whole?

I usually look in my pantry

What happens if you can't find something in your pantry?

Then I don't eat.

How long will you go without eating?

3-4 hours

What do you eat after those 3-4 hours?

Usually wait for my mom to make something

If she's not home then I go back to the fridge to look for something to make like eggs.

When you make something, how many ingredients do you usually take/use?

3

On average, how long would you say you spend making this?

10 mins

On average how often do you eat a meal at home?

In a Day: Three times

How would you describe your level of cooking?

Out of 10: 4

Beginner, Intermediate, Advanced: Beginner

On average how long would you be willing to spend to make a meal?

an hour

**It is to be noted that as clarification I repeated his answer back to him and he changed his answer to 30mins, but his initial answer was 1 hour. Perhaps he thought 1 hour was too long or not the right answer.*

On average how long do you have to spend on a meal?

An hour

Are expiry dates something that stops you from eating something?

Yes

Do You keep track of expiry dates? No

On average how many times a week do you eat out?

Twice

On average how much money do you spend on food in a week?

\$20

What types of food do you enjoy?

Pizza

User 2
Age: 18
Occupation: Grade 12 Student
of people in household: 6

Describe your thought process and steps that you take when approaching the fridge to look for something to eat:

Are you usually looking for something to eat whole or to make?

Looking to eat whole, I want things ready-made and already prepared. I don't want to make anything.

What happens when you can't find something as a whole?

I don't eat. I'm too lazy to make something so I wait until mom can.

What happens if your mom isn't home and you get really hungry?

I'll have multiple snacks.

How long do you usually go without eating?

3 hours

Do you ever cook for yourself?

No.

Do you ever make anything from the freezer?

Yes.

Do you consider that cooking?

No. I consider it warming it up because it's already made.

On average how often do you eat a meal at home?

In a Day: 2-3

How would you describe your level of cooking?

Out of 10: 0

Beginner, Intermediate, Advanced: Beginner

On average how long would you be willing to spend to make a meal?

No more than 15mins

On average how long do you have to spend on a meal? 30 minutes

Are expiry dates something that stop you from eating?

Yes.

Do You keep track expiry dates?

No.

On average how many times a week do you eat out?

5 times a week

On average how much money do you spend on food in a week?

\$30

What types of food do you enjoy?

Rice and chicken

Burgers

Sandwiches/Subs

Pizza

User 3
Age: 21
Occupation: 3rd year UTM Student
of people in household: 6

Describe your thought process and steps that you take when approaching the fridge to look for something to eat:

Are you usually looking for something to eat whole or to make?

Usually looking to eat something as a whole

What happens when you can't find something as a whole?

Then I don't eat

How long will you go without eating?

An hour

What do you eat after that hour?

Iunno a snack.

If there's no snacks then I don't.

Then when do you eat?

When someone makes food for me.

Do you ever make food then? Not a lot.

When you do make something, how many ingredients do you usually take/use?

1

On average, how long would you say you spend making this? 20 mins

On average how often do you eat a meal at home?

In a Day: once

How would you describe your level of cooking?

Out of 10: 4

Beginner, Intermediate, Advanced: Beginner

On average how long would you be willing to spend to make a meal?

45 mins

On average how long do you have to spend on a meal? 30 mins

Are expiry dates something that stops you from eating something?

No

Do You keep track expiry dates?

No

On average how many times a week do you eat out?

3

On average how much money do you spend on food in a week?

\$20

What types of food do you enjoy?

Chicken

Burgers

User 4

Age: 21

Occupation: Medical Student

of people in household: 4

Describe your thought process and steps that you take when approaching the fridge to look for something to eat:

Are you usually looking for something to eat whole or to make?

Eat something whole

What happens when you can't find something as a whole?

Look for the easiest option to cook; something that requires the least amount of effort to cook.

How long will you go without eating if you can't find anything to make?

2-3 hours

If it's been 2-3 hours, what do you do then?

Grab something from outside to eat.

When you do make something, how many ingredients on avg do you usually take/use? 5

On average, how long would you say you spend making this? 15 mins

On average how often do you eat a meal at home?

In a Day: 1-2

How would you describe your level of cooking?

Out of 10: 3-4

Beginner, Intermediate, Advanced: Beginner-Intermediate

On average how long would you be willing to spend to make a meal?

30 mins

On average how long do you have to spend on a meal? Hour +

Are expiry dates something that stop you from eating something?

Obviously.

Do You keep track expiry dates?

No

On average how many times a week do you eat out?

4 meals

On average how much money do you spend on food in a week?

\$40

What types of food do you enjoy?

Chipotle

Pizza

Combinations/variations of Chicken, rice, vegetables

User 5

Age: 22

Occupation: Master's of Accountancy

of people in household: 2

Describe your thought process and steps that you take when approaching the fridge to look for something to eat:

Are you usually looking for something to eat whole or to make?

Eat something whole

What happens when you can't find something as a whole?

Resort to snacks.

Say you don't have snack, how long will you go without eating if you can't find anything to make?

4 hours.

If it's been 4 hours, what do you do then?

Grab something from outside to eat.

When you do make something, how many ingredients on avg do you usually take/use? 4

On average, how long would you say you spend making this? 15 mins

On average how often do you eat a meal at home?

In a Day: 2

How would you describe your level of cooking?

Out of 10: 7

Beginner, Intermediate, Advanced: Intermediate

On average how long would you be willing to spend to make a meal?

15-20 mins

On average how long do you have to spend on a meal? Half hour

Are expiry dates something that stop you from eating?

Yes.

Do You keep track expiry dates?

I don't keep track but I usually check before eating.

On average how many times a week do you eat out?

4 times a week

On average how much money do you spend on food in a week?

\$35-45

What types of food do you enjoy?

Pasta

Burgers

Pizza

User 6

Age: 22

Occupation: Nursing Student

Job: CBSA Officer - Once a week

of people in household: 5

Describe your thought process and steps that you take when approaching the fridge to look for something to eat:

Are you usually looking for something to eat whole or to make?

As a whole.

What happens when you can't find something as a whole?

I try to look for something to make.

How long do you usually go without eating?

If I don't take lunch from home then I go 6-7 without eating. I may have a snack.

Do you usually make food at home?

Yes

When you do make something, how many ingredients do you usually take/use? 8

On average, how long would you say you spend making this? Hour

On average how often do you eat a meal at home?

In a Day: all meals at home. I usually take food from home.

The food that you do take for lunch, do you make that?

No, usually my mom makes it.

How would you describe your level of cooking?

Out of 10: 5

Beginner, Intermediate, Advanced: Intermediate

On average how long would you be willing to spend on making a meal?

I do like cooking but it takes up too much time...probably 30 mins.

On average how long do you have to spend on a meal? No time.

Are expiry dates something that stops you from eating something?

No.

Do You keep track expiry dates?

If I buy something and I know it expires soon, I do try to eat it.

On average how many times a week do you eat out (meal)?

2

On average how much money do you spend on food in a week?

\$30-40

What types of food do you enjoy?

Healthy food/ vegan food à smoothies, fresh juice, rice+beans+guac

Burritos

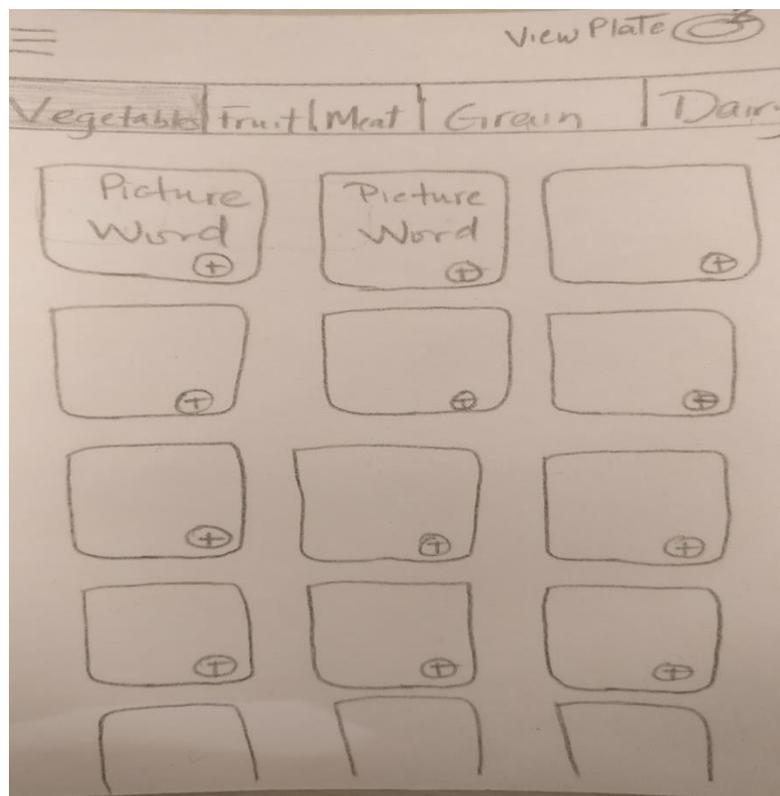
Roti+daal

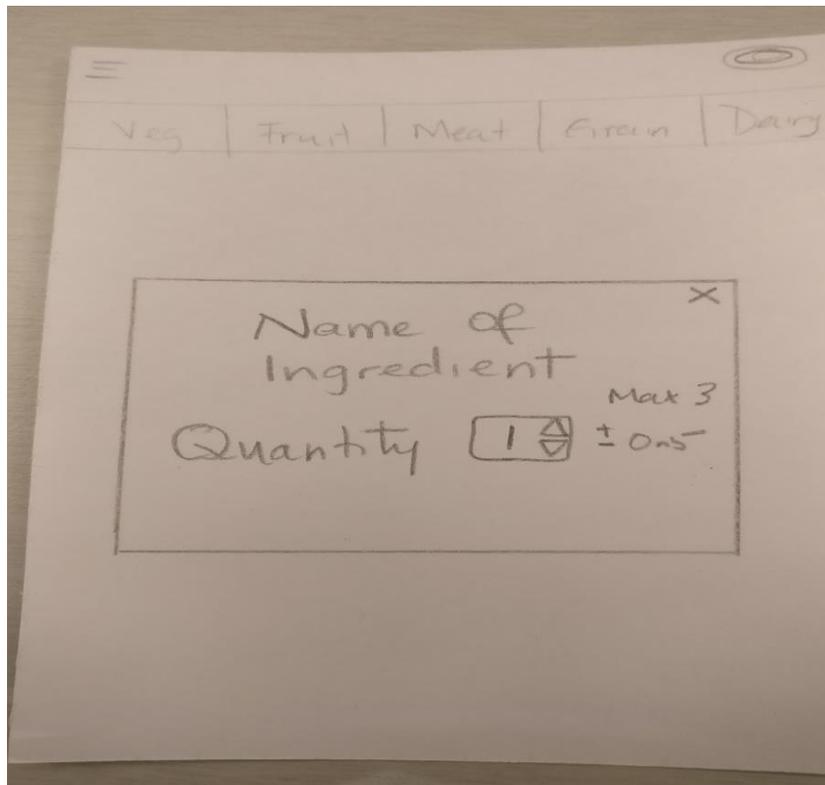
No oily fast food

Appendix D

The feedback we got from our presentation and comments about our justification for our application were taken into consideration and hence semi-structured interviews were added to our observations. We had already done some early design sketches (seen below). From the feedback given in class there have been some modification to our thorough process and design sketches. These we will treat as iterations for our initial ideas and they will follow in our subsequent design sketches.

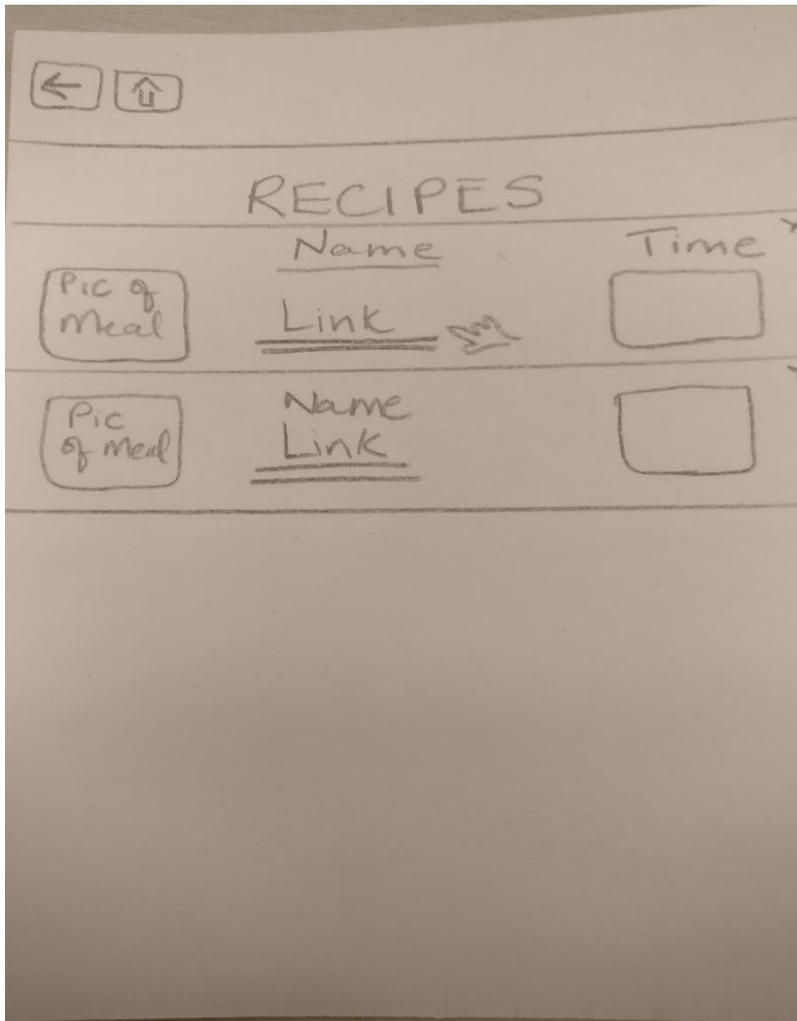
Our first screen offers users a list of vegetables with both a picture and the word of the item. We decided to do this in order not to exclude those who are not native English speakers and could identify an item using the picture if they did not understand the word. The + button is to add the item to a cart (View Plate) that tells you how many items you have there. The view plate option mimics that of the shopping cart that most users will be familiar with if they have performed any online shopping or interactions. We decided to break down the different food areas into the main food groups to make the process of looking up items and adding them easier. Since this app is designed for a smartphone a scroll option is available for the touch screen.



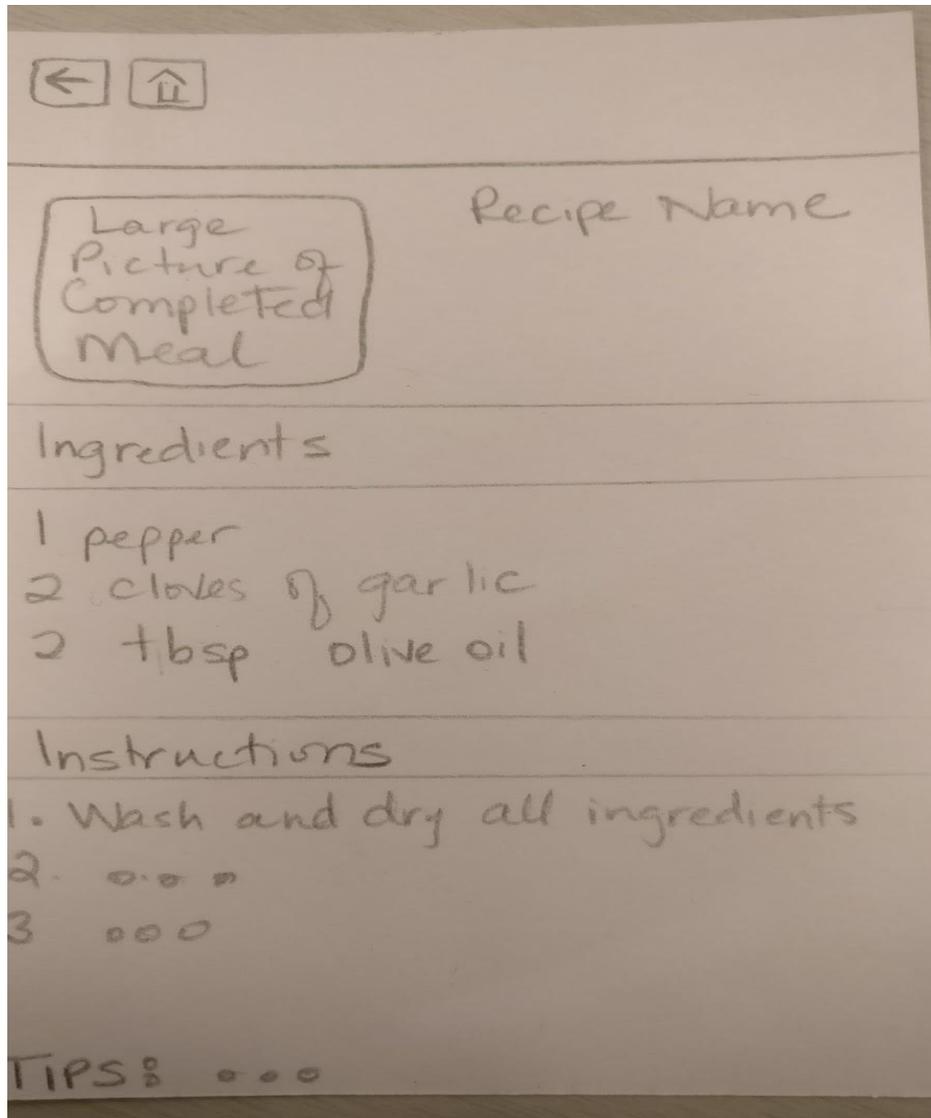


Once an item is selected from the main window a small screen pops up that asked them to define how many of an item they have. We started with 1 with a maximum of 3 and had the numbers increase in increments of 0.5. This is so the app can determine how much of an item a person has and does not give the user a recipe that calls for more than what they have. For example, if they have only half a sweet pepper they can indicate that through the program.

Once the user is done with adding items from their fridge they can look at what they have added via the View plate button. This brings the user to another screen that looks like a checkout screen when online shopping. They can remove items and view the quantity they have added. When they are satisfied with their list they can hit the Find Recipes button at the bottom of the screen.



A new screen appears after hitting the Find Recipes button with a list of recipes matching the ingredients the user has. On this screen, they will see a picture of the finished meal, the name of the recipe that appears as a clickable link and the time it takes to make the meal. They can also go back to the previous screen via the <- button or go HOME using the house icon.



Finally, when the user clicks the recipe link they are taken to a final screen. This screen has a larger picture of the finished meal, the name of the recipe, the list of ingredients needed, and step-by-step instructions on how to make the meal. The rationale behind listing the ingredients first is so that users know what they need and can get those items out of the fridge before beginning. At the end of the screen there is a tips section and could include useful information about things pertaining to the meal.

Appendix E

Revised Design

We chose to simplify the process of how food is recorded on the app, from selecting food items to simply taking pictures of the food. This will drastically reduce time spent on searching food items and selecting food items in the application. With image processing, users' image of their food will be saved and used to generate appropriate recipes.

Also, we initially wanted to incorporate a composting feature in this app but we have concluded based on our user observations that this is not something all users desire. In our observations, none of the participants participated in composting with an exception of a few instances.

Numerical value on the plate indicates the number of items the user has captured and added on to their plate. Every time the user takes a picture and adds it to their plate - the numerical value increases on the plate, thus signifying an addition to their list. The plate is like a shopping cart used in applications; the plate is a metaphor that relies on the users' prior experience with online shopping. Similarly, the plate is designed to promote a more natural feeling of placing items on your plate. Furthermore, the plate icon is located on the top right of the screen, away from the user's fingers. This way users can take pictures repeatedly without accidentally have clicked on the plate. Once done, users must click on the plate icon to view their plate.

Assumptions:

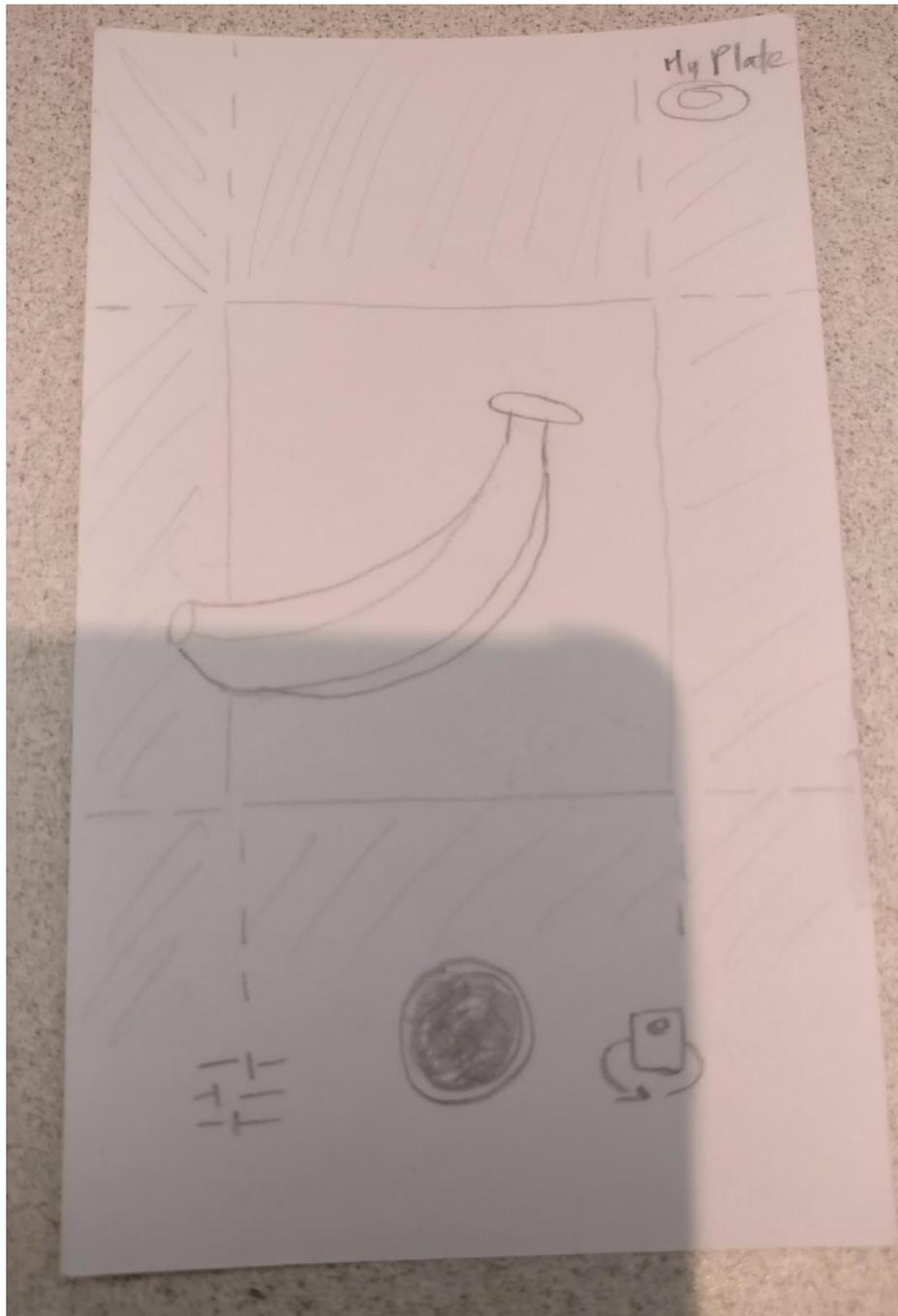
We assume users have basic cooking/baking knowledge.

- Users have basic household items such as: cooking oil, salt, pepper and sugar.
- Users have appropriate cookware i.e. pots, pans, spatulas

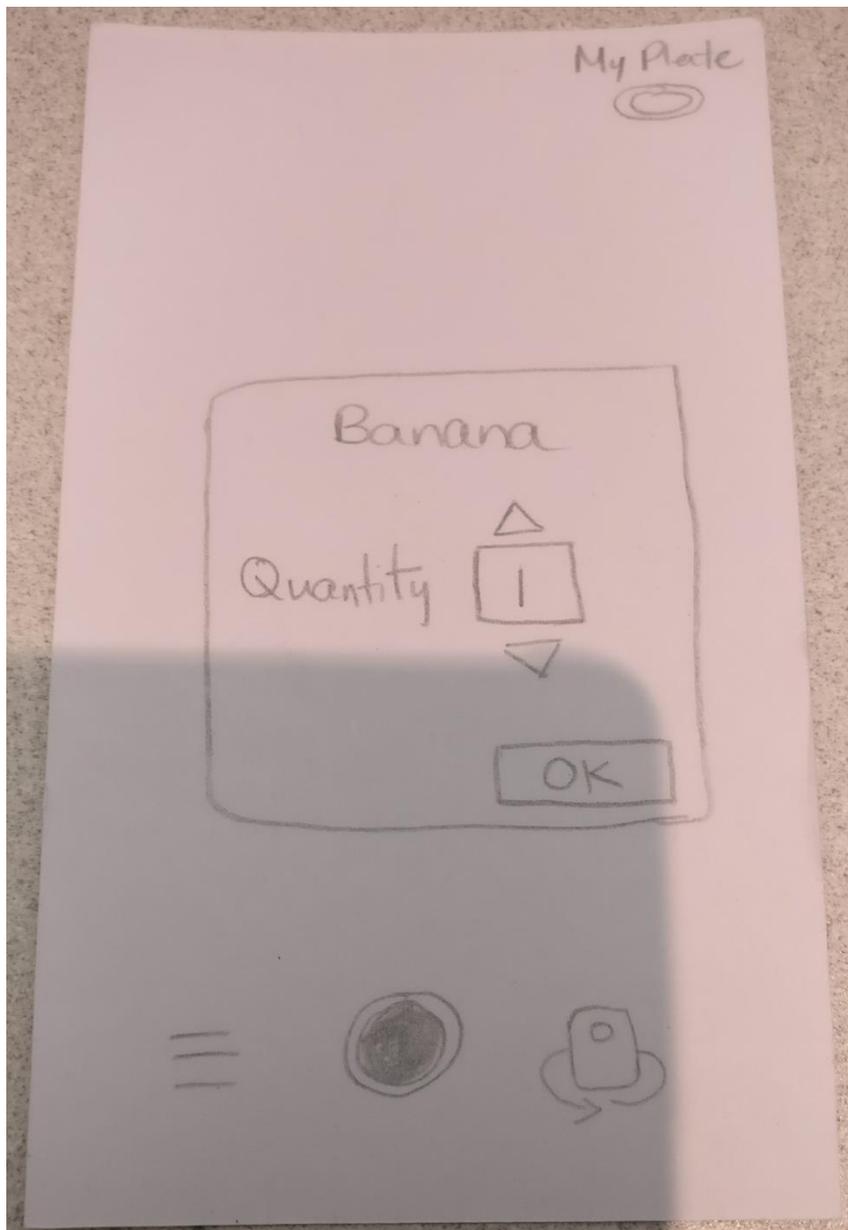
User Testing:

- Phase 1 (Pilot Test): Usability evaluation with group members
- Phase 2: Role playing with classmates. Props will be used to replicate the environment in which users will be using the app. Props will include food items and a fridge.
- Phase 3 (User Testing): Usability testing with participants we interviews/observed initially.

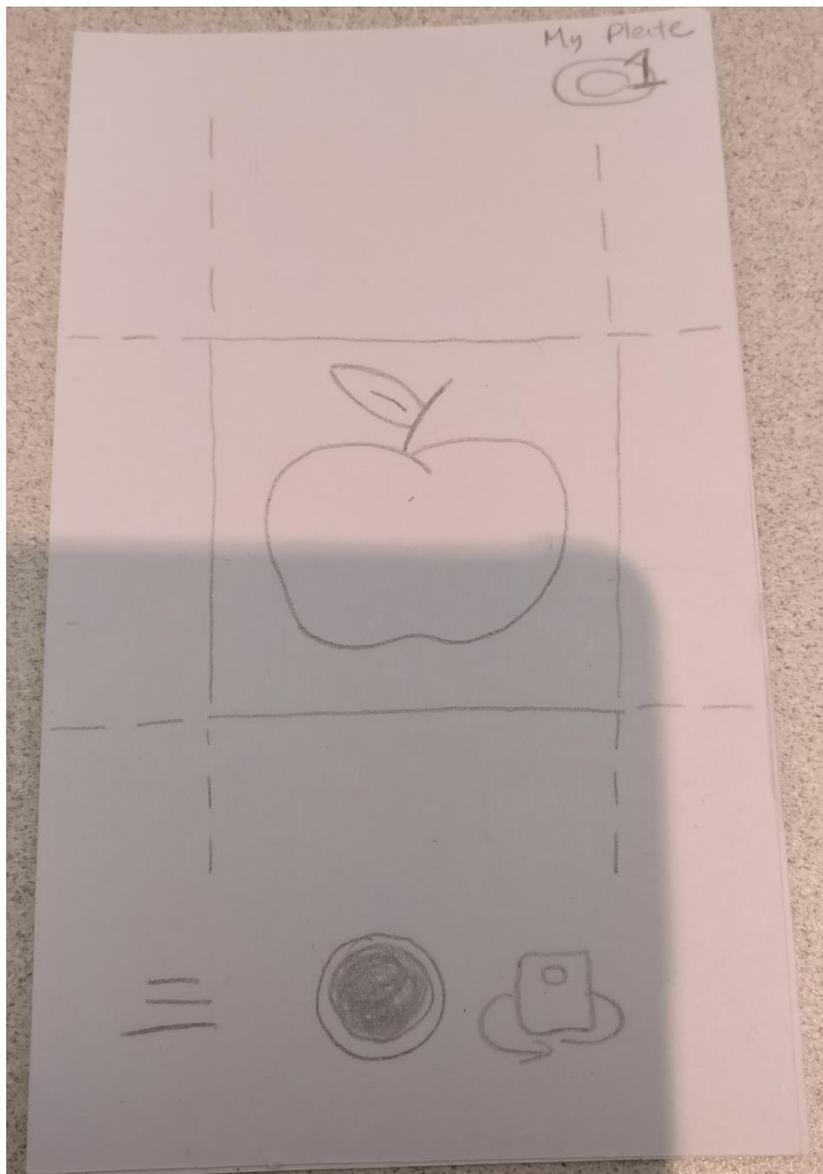
This first screen is from a user capturing the image of their food item. The shading and lines indicate to the user that the food item must be placed within the square so that the app can process the image. Camera icons are similar to the traditional icons on a smartphone with a menu item, an icon to take the picture and a reverse camera icon. There is also a “my plate” icon at the top right; this is placed away from the bottom so that users do not accidentally click on it.



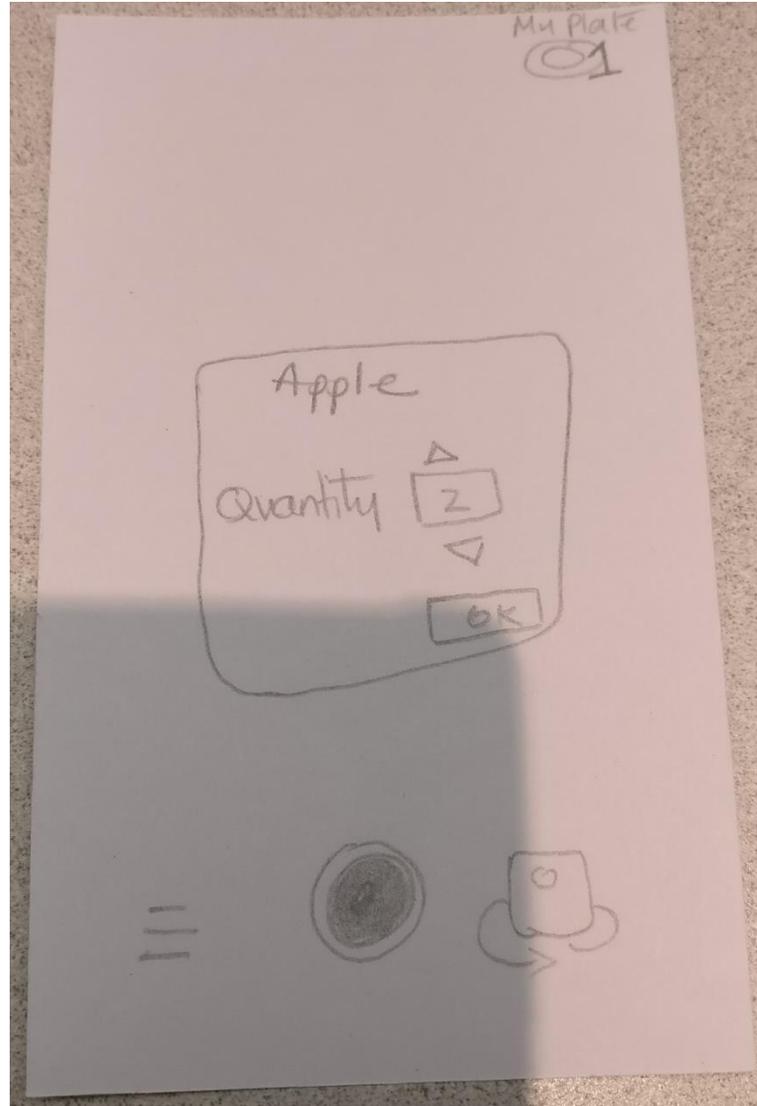
After taking the picture of their food item, the user is prompted with an overlaying box. This box includes the name of the food item the application has detected, in this case a banana, as well as an opportunity for the user to indicate how many of these food items they have. Users can enter the quantity of the food item by clicking on the arrows “up” or “down”. After achieving the desired value, users can click on “ok” to clear the screen. The design choices are made to be very simple. Users do not have to enter any values. Also, the increments go up by 0.5.



This next screen is of a user taking a picture of another food item. This screen is important to include as part of the wireframes because the “my plate” icon now displays a numerical value. This numerical value is reflective of how many food items the user has processed/included in their list. The design choice to show the number of food items verse the quantity of food items is reflective of the user’s memory. The user is more likely to remember how many times they took a picture of a food item compared to how much of each quantity they entered. It is also, based off their conceptual model; recipes usually call for food items and only after indicating the quantity of each.



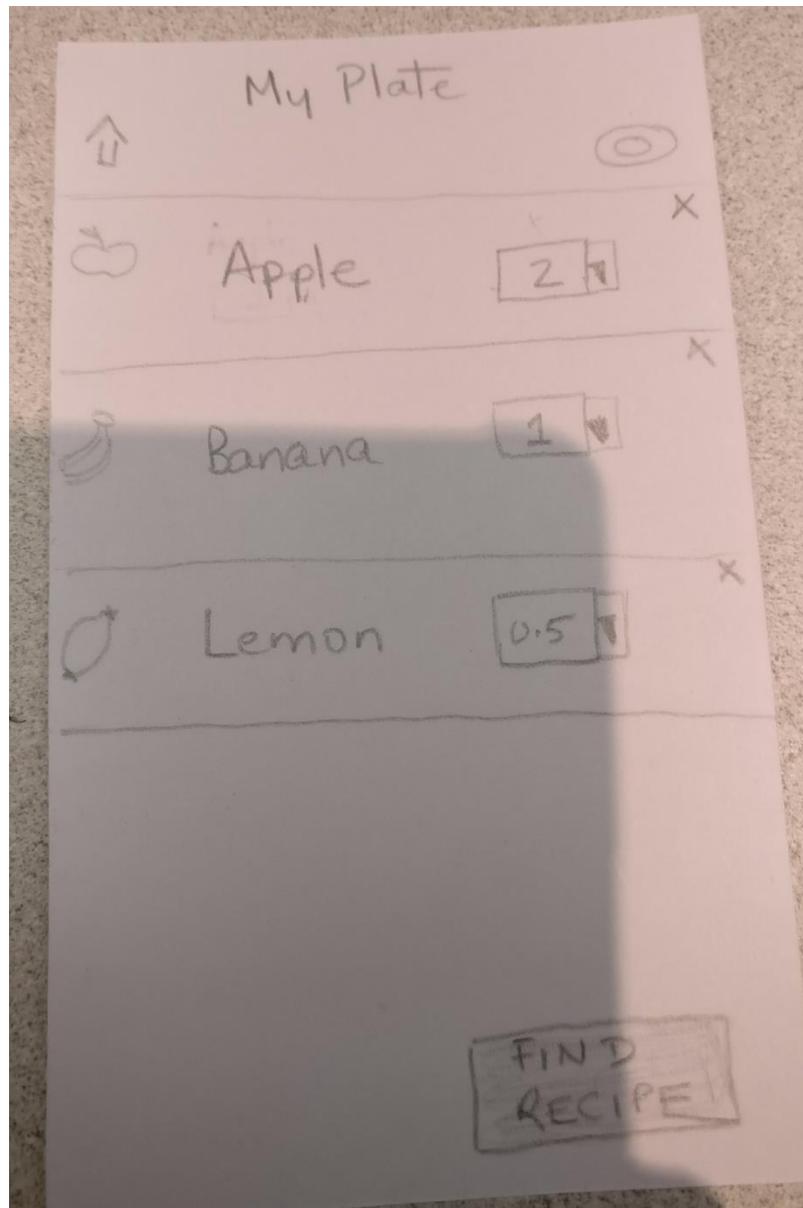
This screen is similar to the second screen, whereby the user is prompted with an action box. They are presented with the name of the food item and must enter the quantity available.



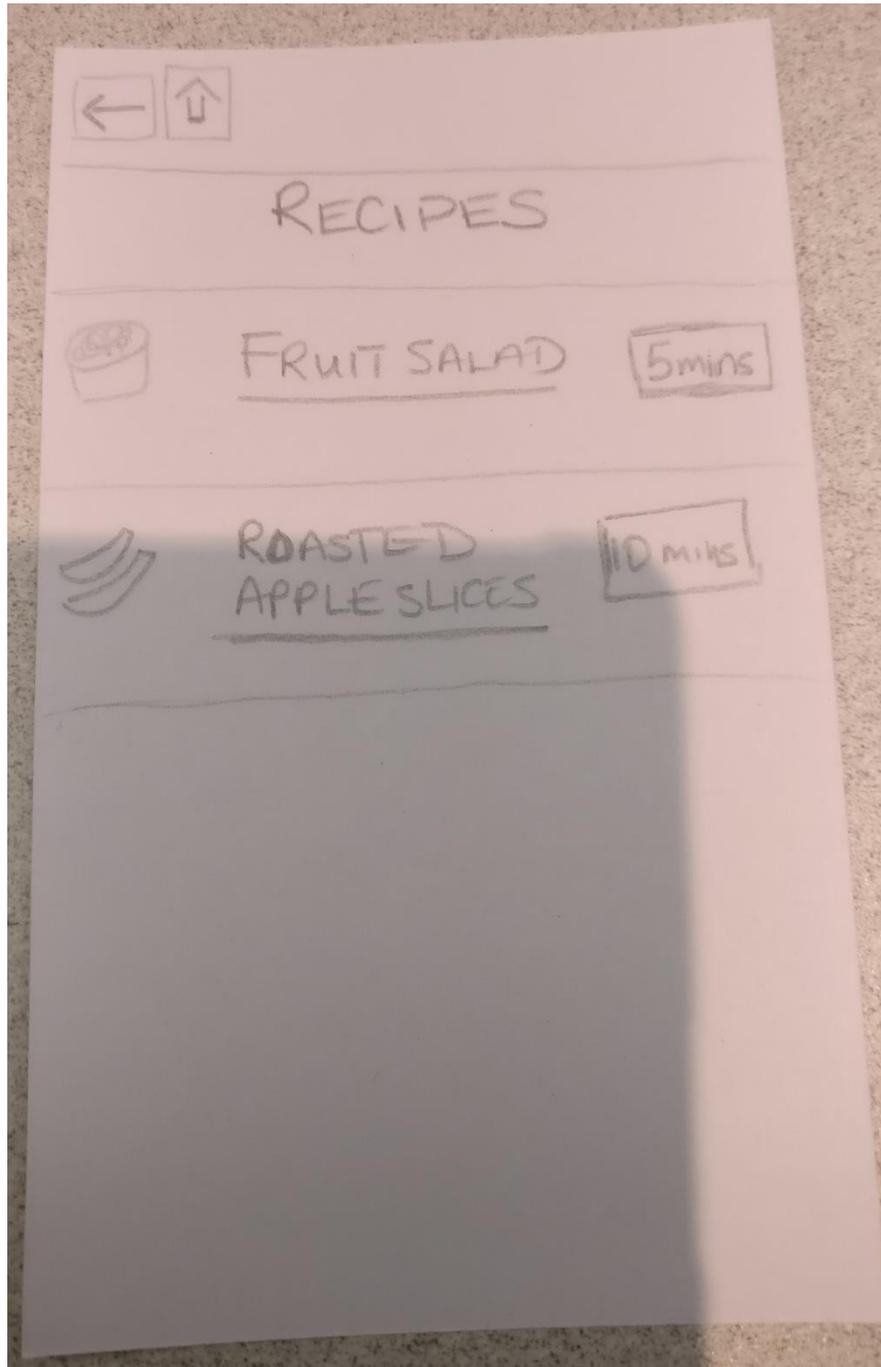
This screen is blank because the user is still on camera code but is done taking pictures of the food items on hand. The user now has to click on the “my plate” icon to view their plate.



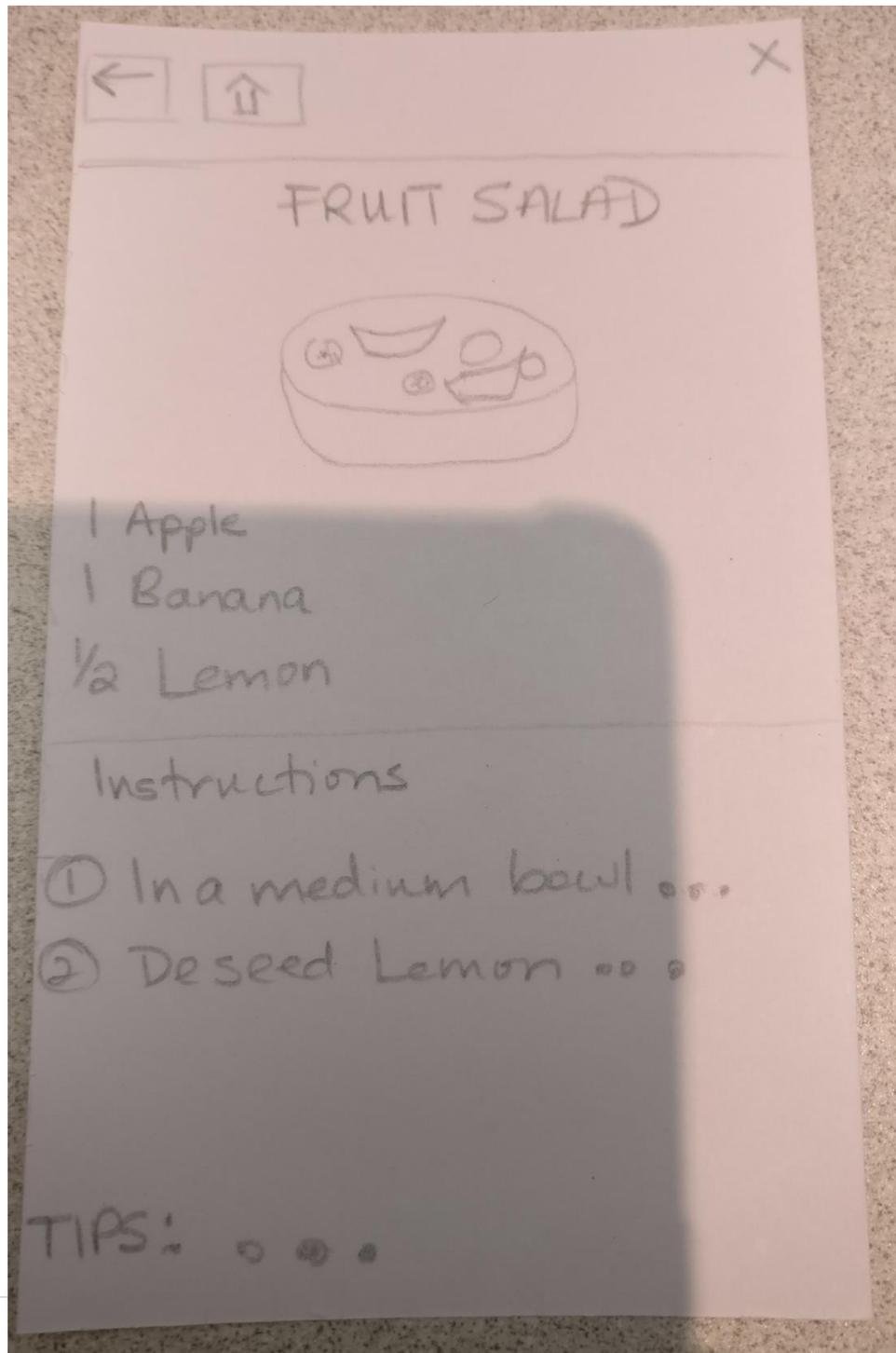
After clicking on the “my plate” icon, the user is shown the list of food items that they have taken pictures of. The users have the opportunity at this point to remove items or change quantity. Each food item is contained within a rectangular figure, showcasing a visual representation of the food item, the name, quantity, as well as an “x” at the top right corner of each box for users to delete any food items. If users are satisfied they can click on “Find Recipe” at the bottom right. This button is prominent on the screen to indicate to users what the main purpose of viewing the plate is.



After clicking the “Find Recipe” button, the user is given a list of recipes that is generated by the app. These recipes are also, displayed in rectangular boxes (to keep consistency) followed by a visual display of the recipe, the name as well as the amount of time it should take users to make the recipe. Showing time is an important factor in this design because there is a desire amongst users, based on observations and our questionnaire that time is vital in their daily routines.



This screen is an example of a user clicking on a recipe they would like to make. The recipes are aimed to be short and concise. Some recipes may include food items that the user did not include in their list but are staple items such as salt, pepper, oil, and sugar. The recipe screen shows the name of the recipe, followed by a picture of the final product, the ingredients and their quantity, as well the instructions on how to make the recipe. The “Tips” section at the bottom is given to users as additional information about the recipe.



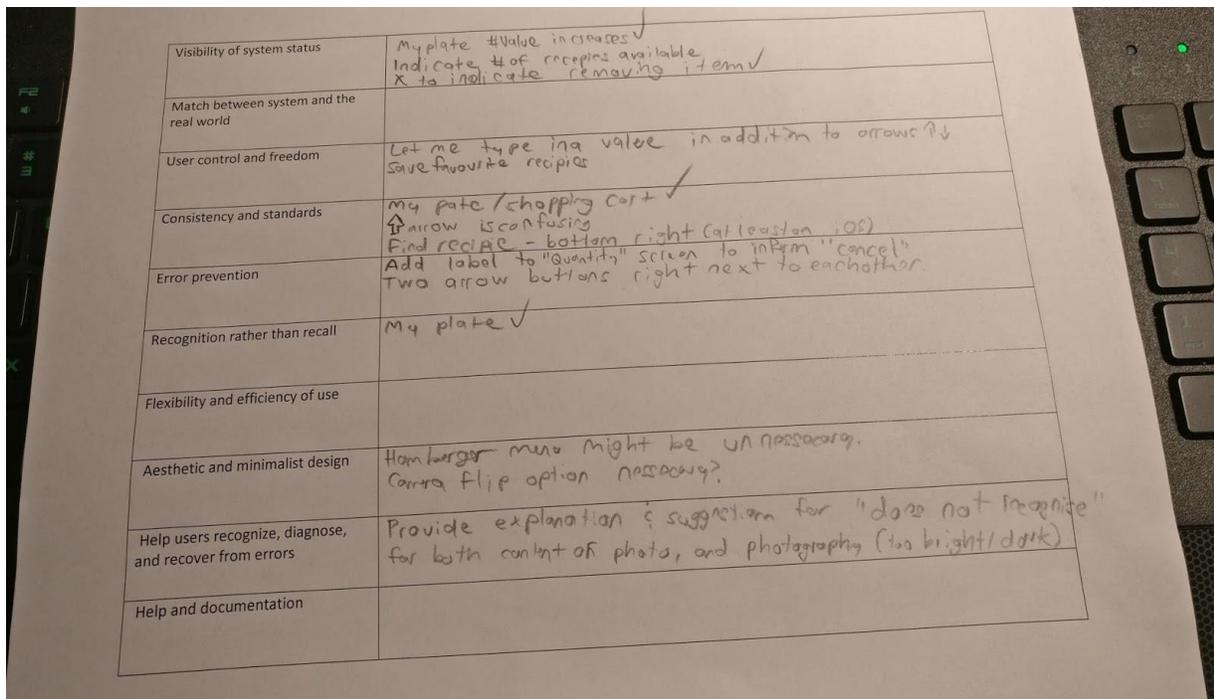
Appendix F

Feedback from Experts

Overall, the experts liked the minimalistic qualities of the Blue Ribbon Foods application (See Appendix A). Using the 10 heuristic qualities for judgement they gave positive feedback on the visibility of the system status, an X to indicate the removal or closing of screens, the recognition of features on the system such as the plate that uses previous experiences of online shopping to mimic that style, the plate icon was clear, and it was easy to learn.

Negative comments included confusion over the icon for the home button, it wasn't clear if this was an arrow to download, and the placement of the "Find Recipe" button was a cause for contention. In addition, icons from the camera such as the menu and the turn camera were seen as unnecessary for the application. Consequently, we had no explanation for if an item was not recognized in the system, i.e. what if the person takes a picture of a bag, or pencil. From our session, it was determined that 50% of experts liked the single item system for the application and the other 50% liked the multiple icon. We have decided to keep the single item option for the application to reduce error and keep consistent with adding items.

Expert Evaluations on Design



Visibility of system status	My plate #value increases ✓ Indicate # of recipes available X to indicate removing item ✓
Match between system and the real world	
User control and freedom	Let me type in a value in addition to arrows ✓ Save favourite recipes
Consistency and standards	My plate / chopping cart ✓ Arrow is confusing Find recipe - bottom right (at least on iOS)
Error prevention	Add label to "quantity" screen to inform "cancel" Two arrow buttons right next to each other.
Recognition rather than recall	My plate ✓
Flexibility and efficiency of use	
Aesthetic and minimalist design	Hamburger menu might be unnecessary. Camera flip option necessary?
Help users recognize, diagnose, and recover from errors	Provide explanation & suggestion for "does not recognize" for both content of photo, and photography (too bright/dark)
Help and documentation	

Visibility of system status	Start over process icon, Home button → camera icon
Match between system and the real world	
User control and freedom	
Consistency and standards	
Error prevention	take out selfie
Recognition rather than recall	
Flexibility and efficiency of use	
Aesthetic and minimalist design	
Help users recognize, diagnose, and recover from errors	Suggestion for wrong pic taken
Help and documentation	

Visibility of system status	<ul style="list-style-type: none"> - It provided continuous feedback to the user, - The "numbers" on the plates provided transparency.
Match between system and the real world	
User control and freedom	<ul style="list-style-type: none"> - The users were able to increase food items in increments. - provided control to users.
Consistency and standards	<ul style="list-style-type: none"> - Universal symbols (plate could be colored differently to not resemble the camera button).
Error prevention	<ul style="list-style-type: none"> - Users could press "x" to cancel.
Recognition rather than recall	<ul style="list-style-type: none"> - Easy to recognize, easy learnability.
Flexibility and efficiency of use	
Aesthetic and minimalist design	<ul style="list-style-type: none"> - Very minimalistic - to the point.
Help users recognize, diagnose, and recover from errors	
Help and documentation	<ul style="list-style-type: none"> - Self explanatory, no documentation needed.

Visibility of system status	The visibility of the Design is clear to the users, it explicitly states and it is easy to follow
Match between system and the real world	
User control and freedom	- Making a mistake might be difficult for the single system
Consistency and standards - Universal Design	- Step by step instructions, the Food logo, taking a picture all is pretty standard. - User is able to understand individual interface using basic camera
Error prevention	- Symbol is clear for everyone to use
Recognition rather than recall	
Flexibility and efficiency of use	The users can learn on-spot regarding some features
Aesthetic and minimalist design	- Few steps as possible for the Design, but regarding the increased recipe, it might be complicated.
Help users recognize, diagnose, and recover from errors	
Help and documentation	

Appendix G

User Testing – Session 1

The following is a script we will follow by to keep on top of our user-testing sessions, which should last between 3-4minutes. Majority of the script is comprised of our scenarios that we will ensure all participants follow.

-Script Blue Ribbon Foods

→ Amrita and Aman introduce each other:

[Introduce the application]: Blue Ribbon Foods is an application designed to aid in your daily routines of preparing food. This application is based on image processing, whereby taking a picture of your food items will generate recipes.

[Introduction]: We will present to you a variety of screens, with an array of scenarios. We encourage you to think out loud while you go through these different scenarios. Also, note that *you, yourself* are not being evaluated but rather your interaction with the application. In front of you is a screen of the application. Let's begin Scenario 1.

[Evaluator - Scenario #1]: You are in the kitchen and you want something to eat. There is a fridge on the right of you and you have the first screen of Blue Ribbon Foods. Please proceed to using the application to take a picture of your choice of food item.

--Once user has taken a picture, hand over next screen--

--Record any interesting behaviour and useful commentary provided by user--

[Evaluator]: In front of you is the next screen in response to your previous actions on the application. Do you know what this implies? Please explain what you're thinking.

--This screen should be of a quantity--

[Evaluator]: In front of you is the next screen in response to your previous actions on the application. Do you know what this implies? Please explain what you're thinking.

[Evaluator]: Please proceed with entering your desired value.

--Once user has taken a picture, hand over next screen--

--User is presented with a blank camera scene, with "1" displaying in my plate--

[Evaluator - Scenario #2]: Please enter the quantity of food items you'd like and when you're done let us know.

--The aim of this scenario is to make sure the 'quantity screen' is easy to use and makes sense.

[Evaluator – Scenario #3]: Please proceed with using Blue Ribbon Foods, once you are done taking pictures of food items you'd like let us know.

[Evaluator – Scenario #4]: After confirming your ingredients and the quantity please find a recipe of your choice you would like to make.

Alternative Script

Ask the user to role play they are about to make dinner and speak out loud the steps they would take when doing so by using the application. We will have a prop fridge where they can select items as they would at home and ask them to use the application to create a meal.

Each action taken will be video recorded, with 1 observer and 1 moderator. We will offer minimal assistance and have the user walk us through each screen and how they would expect it to respond to the tasks they are performing.

Each screen the user interacts with will have additional screens that will react as if they are using the final product to account for all scenarios of use and reduce error or confusion. Screens will be colour coded so that the flow of interaction will not slow down or confuse the user.

The following is an evaluation form we will use to evaluate our scenarios.

Evaluation - Blue Ribbon Foods

Participant Form

Date:

Time:

Participant to fill out:

Name:

Occupation:

Number of household members:

Living at home: Yes or No

After each scenario, please rate the experience from how well you think you were able to complete the task.

Scenario #1:

On a scale of 1-5 (1 being easy to use and 5 being hard to use) rate the easiness of taking a picture of your chosen food item using Blue Ribbon Foods. Please circle.

1 Easy to Use	2	3	4	5 Hard to Use
--------------------------------	----------	----------	----------	--------------------------------

Scenario #2:

On a scale of 1-5 (1 being easy to use and 5 being hard to use) were you able to successfully enter the quantity of items you had hand.

1 Easy to Use	2	3	4	5 Hard to Use
--------------------------------	----------	----------	----------	--------------------------------

Scenario #3:

On a scale of 1-5 (1-being not satisfied at all and 5 being completely satisfied) how well were you able to maneuver through the application on your own to complete the task.

1 Dissatisfied	2	3	4	5 Satisfied
---------------------------------	----------	----------	----------	------------------------------

Scenario #4:

On a scale of 1-5 (1 being easy to use and 5 being hard to use) how easy was it for you to successfully generate a list of recipes.

1 Easy	2	3	4	5 Hard
-------------------------	----------	----------	----------	-------------------------

General Feedback.

Please feel free to provide us with any feedbacks and concerns about the application.

Post-Session Questionnaire

This questionnaire is focused on your overall experience with using Blue Ribbon Foods' application.

	1 (not satisfied)	2	3	4	5 (very satisfied)	Notes
The purpose/use of Blue Ribbon Foods was clearly demonstrated in this session						
How easy was it to take pictures of the food						
How easy was it to navigate through the list of recipes						
Layout of the recipes on screen						
The amount of time/steps it took to get a recipe						
Overall experience with the application						

Quantitative Results from User Testing Interactions

Participant	Time vs. Hyperlink	X = Confused/Hesitant about 'my plate icon'	Took picture of multiple items/entire fridge	Scenarios Not Accounted for
1	Hyperlink	x	x	x
2	Hyperlink			
3	Hyperlink	x	x	x
4	Time	x	x	x
5	Hyperlink			
6	Time	x		
7	Time	x		

8	Time	x		
---	------	---	--	--

The following are post-questionnaires that were asked of participants to complete after having completed the testing session.

Facilitator Observations

Participant #1: Mitch

Time: 11:18am

- Took picture of food items in the fridge all at once
- Was confused about where to click to select the recipe he wanted – he wasn't sure if he was supposed to click on the name with the hyperlink or on the time on the right side
- User was hesitant as to where to click on next after they were done taking pictures – 'my plate' icon was not located immediately
- Time took to complete: 2m39s

Participant #2: Christine

- Smooth testing
- Time took to complete: 1m32s

Participant #3: Kevin

- Said post questionnaire was too similar to scenario evaluations
- Didn't have enough screens to accommodate for his selections
 - He chose 3 food items, which we did not have a screen for because that combination was not anticipated
- There was hesitation to move from the camera screen to the food item list – after scanning the top of the screen – clicked on the only icon available
- They were hesitant and expressed confusion when finding the 'my plate' icon – by default he said aloud he will click the 'my plate' icon because there doesn't seem to be any other option
- Was asked to close the application – took time to find the 'x'
- Time took to complete: 2m36s

Participant #4: Aniq

- For selection of recipe screen, user immediately clicked on the "time" rather than on the "name" of the recipe that had a blue line underneath as an indication of a hyperlink.

- This action was completed immediately, perhaps because of the way the user was holding the phone, they were inclined to tap on the right side of the Recipe Item to select it.
- User did not want to take out the food from the fridge, but were then told that the camera cannot detect multiple items at once.
- User proceeded to take pictures of the food items in the fridge and THEN take out the items out from the fridge
- Was asked to close the application – took time to find the ‘x’
- Time took to complete: 2m10s

Participant #5: Ranjana

- This user was extremely confused about the ‘my plate’ icon.
 - User did not know how to proceed after they were done taking pictures of their desired food items
 - After giving them time to figure it out, they were instructed to look at the top portion of the screen after which they realized the only icon left available to click
- Was asked to close the application – took time to find the ‘x’
- Time took to complete: 2m6s

Participant #6: Reid

- User almost immediately click on the ‘time’ part of the recipe list screen to select the recipe of their choice although the title of the Recipe was underlined blue to indicate a hyperlink
- User was very engaged in role playing – proceeded to act out the ‘making’ of the fruit salad
- Questioned the ‘my plate’ icon – but by default proceeded to click on it
- Was asked to close the application – took time to find the ‘x’
 - Mentioned that in reality they would just hit the ‘home’ button on their smartphones and not even close the application
- Time took to complete: 2m49s

Participant #7: Justin

- User clicked on the right of the recipe food item list instead of the hyperlink to the recipe. This was done almost immediately when getting to that screen.
- User was unsure of where to click after they were done taking pictures; took more time than anticipated to realize ‘my plate’ icon needed to be clicked
- Was asked to close the application – took time to find the ‘x’
- Time took to complete: 2m57s

Participant #8: Michael

- Only User to take a picture of the fridge instead of a food item; was given an error screen
- Was asked to close the application – took time to find the ‘x’
- Time took to complete:

Evaluation - Blue Ribbon Foods

Participant Form

Date: 7/6/17
Time: 12:06 pm

Participant to fill out:

Name: Rangina Naidoo
Occupation: student
Number of household members: 4
Living at home: Yes or No

After each scenario, please rate the experience from how well you think you were able to complete the task.

Scenario #1:

On a scale of 1-5 (1 being easy to use and 5 being hard to use) rate the easiness of taking a picture of your chosen food item using Blue Ribbon Foods. Please circle.

1 Easy to Use 2 3 4 5 Hard to Use

Scenario #2:

On a scale of 1-5 (1 being easy to use and 5 being hard to use) were you able to successfully enter the quantity of items you had hand.

1 Easy to Use 2 3 4 5 Hard to Use

Scenario #3:

On a scale of 1-5 (1-being not satisfied at all and 5 being completely satisfied) how well were you able to maneuver through the application on your own to complete the task.

1 Dissatisfied 2 3 4 5 Satisfied

Scenario #4:

On a scale of 1-5 (1 being easy to use and 5 being hard to use) how easy was it for you to successfully generate a list of recipes.

1 Easy 2 3 4 5 Difficult

General Feedback.

Please feel free to provide us with any feedbacks and concerns about the application.

The "myplate" icon took a while to register

Evaluation - Blue Ribbon Foods

Participant Form

Date: 17/03/17
Time: 11:39 am

Participant to fill out:

Name: Aniq Siddiqui
Occupation: Student/Part time job
Number of household members: 4
Living at home: Yes or No

After each scenario, please rate the experience from how well you think you were able to complete the task.

Scenario #1:

On a scale of 1-5 (1 being easy to use and 5 being hard to use) rate the easiness of taking a picture of your chosen food item using Blue Ribbon Foods. Please circle.

1 2 3 4 5
Easy to Use Hard to Use

Scenario #2:

On a scale of 1-5 (1 being easy to use and 5 being hard to use) were you able to successfully enter the quantity of items you had hand.

1 2 3 4 5
Easy to Use Hard to Use

Scenario #3:

On a scale of 1-5 (1-being not satisfied at all and 5 being completely satisfied) how well were you able maneuver through the application on your own to complete the task.

1 2 3 4 5
Dissatisfied Satisfied

Scenario #4:

On a scale of 1-5 (1 being easy to use and 5 being hard to use) how easy was it for you to successfully generate a list of recipes.

1 2 3 4 5
Easy Difficult

General Feedback.

Please feel free to provide us with any feedbacks and concerns about the application. after taking quantity shows up on its own, maybe add a confirmation that they are these strawberries or some kind of confirmation.

Post Questionnaire Answers

Name: Mitch

	1 (not satisfied)	2	3	4	5 (very satisfied)	Notes
The purpose/use of Blue Ribbon Foods was clearly demonstrated in this session				X		
How easy was it to take pictures of the food				X		
How easy was it to navigate through the list of recipes					X	
Layout of the recipes on screen					X	
The amount of time/steps it took to get a recipe				X		
Overall experience with the application				X		

Name: Christine

	1 (not satisfied)	2	3	4	5 (very satisfied)	Notes
The purpose/use of Blue Ribbon Foods was clearly demonstrated in this session					x	
How easy was it to take pictures of the food					x	
How easy was it to navigate through the list of recipes					x	
Layout of the recipes on screen					x	
The amount of time/steps it took to get a recipe					x	
Overall experience with the application					x	

Name: Kevin

	1 (not satisfied)	2	3	4	5 (very satisfied)	Notes
The purpose/use of Blue Ribbon Foods was clearly demonstrated in this session					x	
How easy was it to take pictures of the food					x	
How easy was it to navigate through the list of recipes					x	
Layout of the recipes on screen					x	
The amount of time/steps it took to get a recipe					x	
Overall experience with the application					x	

Name: Aniq

	1 (not satisfied)	2	3	4	5 (very satisfied)	Notes
The purpose/use of Blue Ribbon Foods was clearly demonstrated in this session				x		
How easy was it to take pictures of the food			x			
How easy was it to navigate through the list of recipes			x			
Layout of the recipes on screen				x		
The amount of time/steps it took to get a recipe		x				
Overall experience with the application				x		

Name: Ranjana

	1 (not satisfied)	2	3	4	5 (very satisfied)	Notes
The purpose/use of Blue Ribbon Foods was clearly demonstrated in this session					X	
How easy was it to take pictures of the food					X	
How easy was it to navigate through the list of recipes					X	
Layout of the recipes on screen				x		Location of "my plate" icon was not extremely straightforward
The amount of time/steps it took to get a recipe					X	
Overall experience with the application				x		

Name: Reid

	1 (not satisfied)	2	3	4	5 (very satisfied)	Notes
The purpose/use of Blue Ribbon Foods was clearly demonstrated in this session					X	
How easy was it to take pictures of the food					X	
How easy was it to navigate through the list of recipes					X	
Layout of the recipes on screen					X	
The amount of time/steps it took to get a recipe					X	
Overall experience with the application					x	

Name: Justin

	1 (not satisfied)	2	3	4	5 (very satisfied)	Notes
The purpose/use of Blue Ribbon Foods was clearly demonstrated in this session					x	
How easy was it to take pictures of the food					x	Really easy
How easy was it to navigate through the list of recipes					x	Supa easy
Layout of the recipes on screen					x	Simple, easy to read
The amount of time/steps it took to get a recipe					x	Really simple, super quick
Overall experience with the application					x	

Name: Michael

	1 (not satisfied)	2	3	4	5 (very satisfied)	Notes
The purpose/use of Blue Ribbon Foods was clearly demonstrated in this session					x	
How easy was it to take pictures of the food					x	
How easy was it to navigate through the list of recipes					x	
Layout of the recipes on screen					x	
The amount of time/steps it took to get a recipe				x		Scanning literally everything is annoying. Maybe search for things too?

Overall experience with the application				x	Super clean interface.
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Appendix H

Design Improvements from User Testing – Session 1

In preparation for our next user testing session, we made improvements to the usability forms, note-taking forms, and overall execution of our session. Forms have been updated and we also, revised our scenarios. These scenarios were no longer broken up into different time slots but rather the user could go through the whole application with post-questionnaires to accommodate for any gaps.

Notetaker Guide Revised

Notetaker _____

Date _____

Location _____

Participant # _____ **Time** _____

Application: Blue Ribbon Foods

Purpose

The purpose of this test is to learn how our users engage with the Blue Ribbon Foods application. The application will be evaluated for ease of use, performance, and user satisfaction including: user flow, iconography, and the ability to get to a recipe with the items available.

Introductory Questions

- Do you live on your own or with your parents?
- On average, how many times a week would you say you cook at home?
- What are the biggest obstacles when cooking?
- What would you rate your level of cooking? Beginner, Intermediate, Advanced?

Scenario 1 – Adding Food to MY PLATE

You have the following ingredients in the fridge, use all of them to make a meal for yourself.

Pathway(s)	Success (Circle 1)	Notes/Observations
Camera -> Item -> Quantity -> Ok OR Camera -> Item -> Quantity -> Cancel -> Item -> Quantity ->Ok	0 Not completed 1 Completed with difficulty or help 2 Easily completed	(Note why was the user successful or not successful, e.g., wrong pathways, confusing page layout, navigation issues, terminology)

Scenario 2 – Using My Plate

Now that items have been added to My Plate, how would you go about getting a recipe?

Pathway(s)	Success (Circle 1)	Notes/Observations
My Plate -> Edit Items -> Find Recipe OR My Plate -> Find Recipe OR My Plate -> Edit item -> Error -> Camera -> Quantity -> OK -> My Plate -> Find Recipe	0 Not completed 1 Completed with difficulty or help 2 Easily completed	

Scenario 3 – Selecting a Recipe

You have a list of recipes, how do you choose a recipe?

Pathway(s)	Success (Circle 1)	Notes/Observations
Recipe -> Click on Time OR Recipe -> Click on Name OR Recipe -> Click on Picture	0 Not completed 1 Completed with difficulty or help 2 Easily completed	

Exit Questions/User Impressions

- What is your overall impression of the Blue Ribbon Foods application?
- Compared to taking a picture on SnapChat, how easy was it to take a picture on the application?
- What excited you the most about Blue Ribbon Foods?
- What did you like least about the application?
- On average, how often do you see yourself using this application?
- Was there anything you felt was missing from the application?
- If you were to explain to someone what this application was about, how would you summarize it in 1-2 sentences?
- Do you have any final comments or questions?

Appendix I

User Testing – Session 2

Second User-Testing Session on March 24th, 2017

Notetaker Observations

Participant #1

Time: 1m45s

Time on Instruction Screen: 13s

Scenario 1 – Adding Food to MY PLATE

Pathway(s)	Success (Circle 1)	Notes/Observations
Camera -> Item -> Quantity -> Ok OR Camera -> Item -> Quantity -> Cancel -> Item -> Quantity ->Ok	0 Not completed 1 Completed with difficulty or help 2 Easily completed	*impressed with the application

Scenario 2 – Using My Plate

Pathway(s)	Success (Circle 1)	Notes/Observations
My Plate -> Edit Items -> Find Recipe OR My Plate -> Find Recipe OR My Plate -> Edit item -> Error -> Camera -> Quantity -> OK -> My Plate -> Find Recipe	0 Not completed 1 Completed with difficulty or help 2 Easily completed	*was able to figure out the consequences of his actions relatively fast * This scenario does not exist in the application yet, but does not mean its wrong

Scenario 3 – Selecting a Recipe

Pathway(s)	Success (Circle 1)	Notes/Observations
Recipe -> Click on Time OR Recipe -> Click on Name OR Recipe -> Click on Picture	0 Not completed 1 Completed with difficulty or help 2	*Clicked in the middle of Time & Name

Easily completed

Observations:

Participant noted that the text at the end might be a bit too small to see and advised to use a scrollable screen

Participant #2

Time: 1m26s

Time on Instruction Screen: 20s

Scenario 1 – Adding Food to MY PLATE

Pathway(s)	Success (Circle 1)	Notes/Observations
Camera -> Item -> Quantity -> Ok OR Camera -> Item -> Quantity -> Cancel -> Item -> Quantity ->Ok	0 Not completed 1 Completed with difficulty or help 2 Easily completed	*had to instruct him to use the carrots first

Scenario 2 – Using My Plate

Pathway(s)	Success (Circle 1)	Notes/Observations
My Plate -> Edit Items -> Find Recipe OR My Plate -> Find Recipe OR My Plate -> Edit item -> Error -> Camera -> Quantity -> OK -> My Plate -> Find Recipe	0 Not completed 1 Completed with difficulty or help 2 Easily completed	“Whats this do?” → questioned the ‘swipe left icon’ on the screen He said he wasn’t sure what would happen when he swiped. *He knew to swipe left but was unaware of what would happen *He wanted to edit the quantity values but figured since there wasn’t an option of doing so he couldn’t and proceed on with the application to ‘Find Recipes’

Scenario 3 – Selecting a Recipe

Pathway(s)	Success (Circle 1)	Notes/Observations
Recipe -> Click on Time OR Recipe -> Click on Name OR Recipe -> Click on Picture	0 Not completed 1 Completed with difficulty or help 2 Easily completed	*Picked “Omelette & Carrots” because he said, “15 minutes - that’s short” * Time was a factor in his decision *Clicked on Time for the first selection & went back to click on the second recipe → clicked on Name this time

Participant #3

Time: 1m39s

Time on Instruction Screen: n/a

Scenario 1 – Adding Food to MY PLATE

Pathway(s)	Success (Circle 1)	Notes/Observations
Camera -> Item -> Quantity -> Ok OR Camera -> Item -> Quantity -> Cancel -> Item -> Quantity ->Ok	0 Not completed 1 Completed with difficulty or help 2 Easily completed	*did not add 3 eggs but realized since he could not proceed forward to “my plate” that he needed to add all of the eggs

Scenario 2 – Using My Plate

Pathway(s)	Success (Circle 1)	Notes/Observations
My Plate -> Edit Items -> Find Recipe OR My Plate -> Find Recipe OR	0 Not completed 1 Completed with difficulty or help	*he later went back to explore the third pathway, in which he went through the steps of adding items again and finally going to ‘find recipes’

My Plate -> Edit item -> Error -> Camera -> Quantity -> OK -> My Plate -> Find Recipe	2 Easily completed	screen
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Scenario 3 – Selecting a Recipe

Pathway(s)	Success (Circle 1)	Notes/Observations
Recipe -> Click on Time OR Recipe -> Click on Name OR Recipe -> Click on Picture	0 Not completed 1 Completed with difficulty or help 2 Easily completed	

Participant #4

Time: 2m10s

Time on Instruction Screen: 12s

Scenario 1 – Adding Food to MY PLATE

Pathway(s)	Success (Circle 1)	Notes/Observations
Camera -> Item -> Quantity -> Ok OR Camera -> Item -> Quantity -> Cancel -> Item -> Quantity ->Ok	0 Not completed 1 Completed with difficulty or help 2 Easily completed	*tried to drag the picture of the item into the ‘my plate’ icon *took 7 clicks to complete this step *could not swipe appropriate but figured it out after trial and error *user mentioned they got slightly confused about what to do

Scenario 2 – Using My Plate

Pathway(s)	Success (Circle 1)	Notes/Observations
My Plate -> Edit Items -> Find Recipe OR	0 Not completed 1	*user did not add all of the eggs, so was instructed by the application to go back and

<p>My Plate -> Find Recipe OR My Plate -> Edit item -> Error -> Camera -> Quantity -> OK -> My Plate -> Find Recipe</p>	<p>Completed with difficulty or help 2 Easily completed</p>	<p>add all items *user was verbally instructed of what they needed to do; therefore, little help was given *user did not know all 3 eggs were the same *they also, thought since they took a picture of an egg already, she could take a picture again and add in 2 *but she had to take a picture and add in 3 altogether ** this could be prevented by quantity screen/adjusting values</p>
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Scenario 3 – Selecting a Recipe

Pathway(s)	Success (Circle 1)	Notes/Observations
<p>Recipe -> Click on Time OR Recipe -> Click on Name OR Recipe -> Click on Picture</p>	<p>0 Not completed 1 Completed with difficulty or help 2 Easily completed</p>	<p>*favourited the recipe first before viewing it</p>

Notes:

Based on the user’s interaction with the application, we proceeded to ask 2 follow-up questions:

Do you use any food application? If so, which ones?

My Fitness Pal

Do you save recipes from online?

I usually take screenshots from recipes I find online

*It is interesting to note that the user takes screenshots from recipes found online, because this user was the only one to use the Favourite Icon. Hence, they would want to save their recipes for future use.

Pre-Questionnaire results from Participants 1-4.

Participant	Living on Own/Parents?	How many times do you cook at home?	Biggest obstacle when cooking?	Level of cooking: Beginner, intermediate, advanced
1	On Own	3-4	Time to cook, time to shop for groceries	Between Novice and Intermediate (Beginner)
2	Parents	2	Ingredients, time, motivation	Beginner
3	Parents	5	Laziness & not wanting to think about what to make	Beginner
4	Parents	2	Figuring out what to do with food items available	Beginner

As seen above from our pre-questionnaire results, Blue Ribbon Foods matched participant's biggest struggles when it came to cooking.

- 50% of participants noted time as an obstacle
- 50% of participants noted lack of motivation/laziness as an obstacle
- 75% of participants noted ingredients to be an obstacle, both obtaining and knowing what to make with them

100% of our participants categorized themselves as being Beginners and 75% of them lived with their parents. The one participant who lived on their own only cooked at home on average about 3-4 times, which was higher than 50% of the participants. Thus indicating that whether participants lived with their parents or not, they relatively cooked the same amount; therefore finding other ways or methods of surviving on their own.

Post-Questionnaire Results

	Of 4 Participants	Statistics
Use the App in the Future	4	100% of participants indicated using this application in the future
Ease of taking pictures compared to on Snapchat	4	100% of participants agreed that it was easy to take pictures
Require a Search Option (future)	1	25% of participants would like a Search Option as a feature on the application
Require a 'suggested ingredients' feature (future)	1	25% of participants would like to see a suggested list of ingredients on the application
Change value of ingredients on the quantity screen	2	50% of participants wanted to change the quantity or at least have the option to change the quantity of ingredients

Pre-Questionnaire, Notetaker Guide, Post-Questionnaire

Amrita Maharaj & Amanpreet Bains A7 March 20, 2017

Note-taker guide

Notetaker _____

Date 24/03/17

Location _____

Participant # 4 Time 11:45am

Application: Blue Ribbon Foods

Purpose

The purpose of this test is to learn how our users engage with the Blue Ribbon Foods application. The application will be evaluated for ease of use, performance, and user satisfaction including: user flow, iconography, and the ability to get to a recipe with the items available.

Introductory Questions

1. Do you live on your own or with your parents?

with parents

2. On average, how many times a week would you say you cook at home?

twice (2)

3. What are the biggest obstacles when cooking?

figuring out what to do with food items available

4. What would you rate your level of cooking? Beginner, Intermediate, Advanced?

Beginner

Note-taker guide

Notetaker _____

Date 24/03/17

Location _____

Participant # 3 Time 11:36am

Application: Blue Ribbon Foods

Purpose

The purpose of this test is to learn how our users engage with the Blue Ribbon Foods application. The application will be evaluated for ease of use, performance, and user satisfaction including: user flow, iconography, and the ability to get to a recipe with the items available.

Introductory Questions

1. Do you live on your own or with your parents?

Parents

2. On average, how many times a week would you say you cook at home?

~~3~~ 5

3. What are the biggest obstacles when cooking?

laziness & not wanting to think about what to make

4. What would you rate your level of cooking? Beginner, Intermediate, Advanced?

Beginner

Note-taker guide

Notetaker _____

Date 24/03/17

Location _____

Participant # 2 Time 11:30am

Application: Blue Ribbon Foods

Purpose

The purpose of this test is to learn how our users engage with the Blue Ribbon Foods application. The application will be evaluated for ease of use, performance, and user satisfaction including: user flow, iconography, and the ability to get to a recipe with the items available.

Introductory Questions

1. Do you live on your own or with your parents?

With parents

2. On average, how many times a week would you say you cook at home?

2

3. What are the biggest obstacles when cooking?

ingredients, time, motivation

4. What would you rate your level of cooking? Beginner, Intermediate, Advanced?

Beginner

Note-taker guide

Notetaker _____

Date 24/03/17

Location CC 3

Participant # 1 Time 11:22

Application: Blue Ribbon Foods

Purpose

The purpose of this test is to learn how our users engage with the Blue Ribbon Foods application. The application will be evaluated for ease of use, performance, and user satisfaction including: user flow, iconography, and the ability to get to a recipe with the items available.

Introductory Questions

1. Do you live on your own or with your parents?

No

2. On average, how many times a week would you say you cook at home?

3-4

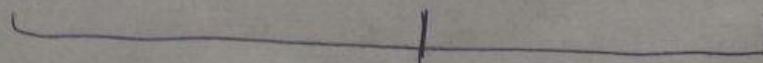
3. What are the biggest obstacles when cooking?

Time to cook, time to shop
for groceries

4. What would you rate your level of cooking? Beginner, Intermediate, Advanced?

Novice

intermediate



Scenario 3 – Selecting a Recipe*You have a list of recipes, how do you choose a recipe?*

Pathway(s)	Success (Circle 1)	Notes/Observations
Recipe -> Click on Time	0 Not completed	
OR	1 Completed with difficulty or help	
Recipe -> Click on Name	2 Easily completed	
OR		
Recipe -> Click on Picture		

#3: MICHAEL

Scenario 1 – Adding Food to MY PLATE

You have the following ingredients in the fridge. use all of them to make a meal for yourself

Pathway(s)	Success (Circle 1)	Notes/Observations
Camera -> Item -> Quantity -> Ok	0 Not completed	(Note why was the user successful or not successful, e.g., wrong pathways, confusing page layout, navigation issues, terminology) did not add 3 eggs but realized since he could not proceed to "myplate" that he needed to add more eggs
OR Camera -> Item -> Quantity -> Cancel -> Item -> Quantity -> Ok	1 Completed with difficulty or help	
	2 Easily completed	

Scenario 2 – Using My Plate

Now that items have been added to My Plate, how would you go about getting a recipe?

Pathway(s)	Success (Circle 1)	Notes/Observations
My Plate -> Edit Items -> Find Recipe	0 Not completed	instructed him to try this -> went well ✓
OR My Plate -> Find Recipe	1 Completed with difficulty or help	
OR My Plate -> Edit item -> Error -> Camera -> Quantity -> OK -> My Plate -> Find Recipe	2 Easily completed	

2 ALEX

Scenario 1 – Adding Food to MY PLATE

You have the following ingredients in the fridge, use all of them to make a meal for yourself

Pathway(s)	Success (Circle 1)	Notes/Observations
Camera -> Item -> Quantity -> Ok	0 Not completed	(Note why was the user successful or not successful, e.g., wrong pathways, confusing page layout, navigation issues, terminology)
OR	1 Completed with difficulty or help	
Camera -> Item -> Quantity -> Cancel -> Item -> Quantity -> Ok	2 Easily completed	Had to instruct to start with carrots

did

Scenario 2 – Using My Plate

Now that items have been added to My Plate, how would you go about getting a recipe?

Pathway(s)	Success (Circle 1)	Notes/Observations
My Plate -> Edit Items -> Find Recipe	0 Not completed	"What's this do?" "Tried by H waxed-supe left" didn't know what "supe" would do next
OR	1 Completed with difficulty or help	
My Plate -> Find Recipe	2 Easily completed	- wanted/questioned to edit the quantity values but figured he could NOT
OR		
My Plate -> Edit item -> Error -> Camera -> Quantity -> OK -> My Plate -> Find Recipe		

Wanted to switch quantities*

Scenario 3 – Selecting a Recipe

You have a list of recipes. how do you choose a recipe?

Pathway(s)	Success (Circle 1)	Notes/Observations
① Recipe -> Click on Time OR Recipe -> Click on Name OR Recipe -> Click on Picture	0 Not completed 1 Completed with difficulty or help 2 Easily completed	Picked "bunlette pancake" "15 minutes - that's short" clicked on 15 mins 2nd time for 2nd recipe clicked on name.

20 seconds for instructions

Scenario 3 – Selecting a Recipe

You have a list of recipes, how do you choose a recipe?

Pathway(s)	Success (Circle 1)	Notes/Observations
Recipe -> Click on Time	0 Not completed	middle clicked ↳ low TIME & title
OR Recipe -> Click on Name	1 Completed with difficulty or help	
OR Recipe -> Click on Picture	2 Easily completed	

wants it to be

- Text at end was small - scrollable
- wanted to go back after taking pics - but we can't make screens for that - will be possible though

3 seconds to go through instructions

#IMIKE DORSA

Scenario 1 – Adding Food to MY PLATE

You have the following ingredients in the fridge, use all of them to make a meal for yourself

Pathway(s)	Success (Circle 1)	Notes/Observations
Camera -> Item -> Quantity -> Ok OR Camera -> Item -> Quantity -> Cancel -> Item -> Quantity -> Ok	0 Not completed 1 Completed with difficulty or help 2 Easily completed	(Note why was the user successful or not successful, e.g., wrong pathways, confusing page layout, navigation issues, terminology) impressed

Scenario 2 – Using My Plate

Now that items have been added to My Plate, how would you go about getting a recipe?

Pathway(s)	Success (Circle 1)	Notes/Observations
My Plate -> Edit Items -> Find Recipe OR My Plate -> Find Recipe OR My Plate -> Edit item -> Error -> Camera -> Quantity -> OK -> My Plate -> Find Recipe	0 Not completed 1 Completed with difficulty or help 2 Easily completed	

Scenario 3 – Selecting a Recipe

You have a list of recipes, how do you choose a recipe?

Pathway(s)	Success (Circle 1)	Notes/Observations
Recipe -> Click on Time	0 Not completed	+ need "one letter of colour" a favourite
OR	1 Completed with difficulty or help	
Recipe -> Click on Name	2 Easily completed	
OR		
Recipe -> Click on Picture		clicked not beneath title

Had difficulty seeing

Do you use any food apps? If so, which ones?
MyFitnessPal

Do you save recipes from online?

Screenshots - used Favourite icon

Took time to go through instructions

#4: YOMNA

Scenario 1 – Adding Food to MY PLATE

You have the following ingredients in the fridge, use all of them to make a meal for yourself

Pathway(s)	Success (Circle 1)	Notes/Observations
Camera -> Item -> Quantity -> Ok OR Camera -> Item -> Quantity -> Cancel -> Item -> Quantity ->Ok	0 Not completed 1 Completed with difficulty or help 2 Easily completed	#Tried dragging pic to plate multiple times #TOOK 7 clicks to complete (Note why was the user successful or not successful, e.g., wrong pathways, confusing page layout, navigation issues, terminology) couldn't swipe appropriately but figured out on own Had difficulty swiping - she said she got confused BUT there was an icon + instructions

Scenario 2 – Using My Plate

Now that items have been added to My Plate, how would you go about getting a recipe?

Pathway(s)	Success (Circle 1)	Notes/Observations
My Plate -> Edit Items -> Find Recipe OR My Plate -> Find Recipe OR My Plate -> Edit item -> Error -> Camera -> Quantity -> OK -> My Plate -> Find Recipe	0 Not completed 1 Completed with difficulty or help 2 Easily completed	all needed to add eggs had to go back 1/2 re-add.

Exit Questions/User Impressions

1. What is your overall impression of the Blue Ribbon Foods application?

Very cool, interesting to use app.

2. Compared to taking a picture on SnapChat, how easy was it to take a picture on the application?

It was easy to use (just like a regular camera)

3. What excited you the most about Blue Ribbon Foods?

Find a recipe for items you only have in the fridge

with no need to go run to the grocery store to cook

4. What did you like least about the application?

W/A

Something doesn't

5. On average, how often do you see yourself using this application?

very frequently, at least every time I cook

6. Was there anything you felt was missing from the application?

NO

7. If you were to explain to someone what this application was about, how would you

summarize it in 1-2 sentences?

An application that ~~you~~ provides you with a recipe given any ingredients ~~at~~ in your fridge

8. Do you have any final comments or questions?

NO, it is very cool and fun to use. ^{Quick} ~~Quick~~, intuitive and makes life much easier for users

Exit Questions/User Impressions

1. What is your overall impression of the Blue Ribbon Foods application?

It would work well!

2. Compared to taking a picture on SnapChat, how easy was it to take a picture on the application?

IF it showed on screen it would be simple but obv the prototype made it feel easy

3. What excited you the most about Blue Ribbon Foods?

the result of showing recipes

4. What did you like least about the application?

Very little options

5. On average, how often do you see yourself using this application?

Every day

6. Was there anything you felt was missing from the application?

a search option

7. If you were to explain to someone what this application was about, how would you summarize it in 1-2 sentences?

It helps you find recipes from pictures of food in your fridge

8. Do you have any final comments or questions?

no

Exit Questions/User Impressions

1. What is your overall impression of the Blue Ribbon Foods application?

Pretty good interaction flow.

2. Compared to taking a picture on SnapChat, how easy was it to take a picture on the application?

Similarly easy.

3. What excited you the most about Blue Ribbon Foods?

It was fast.

4. What did you like least about the application?

It didn't find recipes when I used certain numbers of ingredients. The recipe button was too small.

5. On average, how often do you see yourself using this application?

I would try it for a week.

6. Was there anything you felt was missing from the application?

Color

7. If you were to explain to someone what this application was about, how would you summarize it in 1-2 sentences?

Like snapchat but for recipes.

8. Do you have any final comments or questions?

No.

Exit Questions/User Impressions

1. What is your overall impression of the Blue Ribbon Foods application?

Simple, easy to use

2. Compared to taking a picture on SnapChat, how easy was it to take a picture on the application?

6/10

would be 10/10 if I saw camera preview

3. What excited you the most about Blue Ribbon Foods?
(I know this is proto-limitation)

it knew I meant carrots!!!

4. What did you like least about the application?

Not seeing camera feed

No ability to "add more" only restart.

5. On average, how often do you see yourself using this application?

Most days I cook

6. Was there anything you felt was missing from the application?

Suggested ingredients (for next time)

7. If you were to explain to someone what this application was about, how would you summarize it in 1-2 sentences?

An app that gives you recipes based on what you have laying around.

8. Do you have any final comments or questions?

all covered ↑

Nice looking prototype!!

