

CS 422 Group Project

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Problem Statement:

Cooking at home is a fantastic way to stay healthy and save money. According to reportlinker, the number one reason why people cook at home is because it is cheaper than eating out. The number two reason is because it is healthier. It is obvious that the goal for many Americans is to eat cheaply and be healthy. One problem is that simply cooking at home does not mean the food is cheaper or healthier. According to reportlinker, 50% of Americans eat at home 3 to 6 days a week and 36% eat at home daily. However, according to the CDC, 42.4% of Americans are obese. People may believe that they are eating healthier by eating at home, but eating healthy requires eating healthy foods prepared in healthy ways and in proper portion sizes. Not many know the nutritional values of the meals they eat, something that needs to change.

Another problem is that finding good recipes for people with food allergies can be difficult. According to MedicalNewsToday, over 10% of American adults have a food allergy, with many being allergic to common ingredients such as milk, peanuts, wheat, soy, and eggs.

Another problem is that it can be difficult to find recipes that fit a person's preferences. Some recipes are meant for 3-4 people, but if a single person wants to cook it for themselves, they must manually do some math. Many people do not enjoy the flavor of certain items like cilantro or onions. According to ReportLinker, 27% of Americans can spend a maximum of 30 minutes on cooking, showing that many Americans simply have no time to cook many recipes.

The project seeks to solve these major problems of eating unhealthy recipes and portions, lack of nutritional value awareness, finding recipes for those with allergies, and finding recipes that fit each individual better.

Reference:

<https://www.reportlinker.com/insight/americans-cooking-habits.html>

<https://www.cdc.gov/obesity/data/adult.html>

<https://www.medicalnewstoday.com/articles/324094#-The-most-common-allergies-among-adults>

GR1 Analysis

Observations and Interviews:

- How do you usually find the recipe for something you don't know how to cook? Any problems?
- Why do you choose to buy out instead of cooking at home?
- What do you look for in a recipe?
- Do you look for recipes from other regular people or well known cooks?
- How important is the nutritional value of the recipe?
- Where do you usually buy ingredients?
- How much do you usually spend on cooking?
- What do you consider to be a healthy meal?
- What are the inexpensive healthiest meals have you tried to cook?
- When do you usually cook meals?
- What is your level of cooking skills?
- Do you like to meal prep?
- How often do you cook?

Person 1: This interviewee was a 23 year old construction worker. When asked if he's ever tried to cook anything they said yes but they hated the stress of having to figure out what to cook. When asked if they search for recipes online they said yes but they would occasionally forget where they found a recipe they really liked. They also mentioned that they liked recipes that had very few ingredients and were easy and fast to cook. They also looked for recipes that can be nicely packaged into a lunch bag.

Person 2: She is 28 years old, currently pregnant, and lives with her husband and her toddler son. She works from home full time 5 days a week. Her cooking skills are a little above average. She doesn't like to meal prep. When she looks for recipes, she just googles them and goes to the one with the best review. When googled through a phone, it shows the recipes with stars and pictures. She spends 1 hour to 1 hour and 30 minutes cooking and starts cooking at 6pm. She cooks home 5-6 days a week and the remaining days, eats at her parents or eats out because it is tiring and she has no time. She looks for simplicity in a recipe and just tries to find a recipe that has ingredients she already has at home. She doesn't care about well known cooks but she watches korean youtuber whenever she cooks korean food. Nutritional value is important but she focuses the most on protein as her husband gets weak if he doesn't eat enough protein. To her, a healthy meal is a home cooked meal that contains vegetables and protein. The main store she shops at is Costco. They spend about \$300-400 monthly on groceries. She said she wants to expand her menu.

Person 3: The interviewee was a mother with two kids. She goes to work every other day and has to cook for them daily in the morning and afternoon. More often than she likes, she spends most of her time shopping for ingredients in different stores. As a result, her kids order fast food because there's no time to unpack, prepare and cook the individual meals. As a mother, she wants her children to eat balanced meals such as protein, carbohydrates, fruits and vegetables. She emphasizes that a meal should have complete nutrition with vitamins as well as minerals that she and her kids need. She also spends more than \$40 each trip to the stores. Cooking daily means different recipes to make, so when finding new recipes she usually asks her friends first and then looks it up on Youtube.

User Classes:

Intermediate amateur cooks

- Familiar with knife skills, temperature control, and timing
- Moderate culinary knowledge
- Spends more time on cooking
- Can use application to develop skills and knowledge

Budget home cooks

- Cooking just to eat, not trying to improve
- May not be very familiar with knife skills, temperature control, and timing, many may be "winging" it
- Has a small budget for ingredients
- May desire lower cook times
- May be cooking for family or friends, who may have allergies

Dieters

- Eats healthier foods
- Need knowledge of nutritional info to make food decisions
- Some may need to eat within specific macro-nutritional confines
- Some may be cutting out certain ingredients completely (like sugar)

Intermediate cooks. Individuals on a cooking budget. People with special dietary plans. Working class people. People into health/fitness.

There is a large number of recipes that can be found all over the internet. It can become a time-consuming task to find a recipe you might like. Working class people tend to

have very busy schedules and lack the time and energy to put into finding recipes to cook at home, so shorting the time it takes to find a recipe that meets their needs would be very beneficial to them. For people with special dietary plans such as vegans or people with allergies, it could be helpful if they had a quick way to eliminate recipes that did not contain any ingredients that did not fit their dietary plan. Similarly, individuals who are into fitness and being healthy might want to find recipes that contain specific nutritional values. Some individuals are also likely to want to spend a certain amount of money when it comes to grocery shopping. Therefore, a tool that allows them to find recipes that are within their budget would be a huge money saver.

Goals:

1. Have a large selection of recipes to ensure everyone has options
2. Allow users to easily find recipes and save them.
3. Allow users to share recipes
4. Scale recipe serving sizes and time to cook to match user's preferences
5. Customize what recipes are seen based on preferences and restrictions like price, allergies, and taste
6. Lower time spent searching for recipes.

GR2

Scenario:

Tim is a home cook. He has invited Bob over for dinner, but Bob is allergic to peanuts and seafood. Tim is also saving for a new car, so he only has \$20 dollars to spend on this dinner. He has trouble thinking of a recipe, so he opens our app and sets his recipe preferences to include Bob's allergies, a serving size of 2, and an upper limit of \$20 dollars. Tim is also working on a six-pack and must limit his caloric intake, so he sets a limit of 800 calories per serving. Tim scrolls through the recipes and finds the perfect one. Tim and Bob love the recipe, so Tim goes in the app, looks in his history, and saves the recipe. Tim shares the recipe with Bob.

Individual Design Sketches

Kent Sketches

Design 1:

Since we want our users to set their preferences first, I decided to design a mobile application with a starting page consisting of buttons. The large rectangular buttons are for setting the user's preferences before searching for recipes and a search for recipes to explore the application right away. For others, the user will be able to check their profile, setting, go to the home page and add their own recipes.



This is the preference page where the user can set their preferences before searching recipes. It consists of checkboxes which allow for multiple selections. The page has diet options, price range, allergies, types of cuisine, etc. All of the selections can be saved as well as be edited later.

Preferences

Type of Diet

Diet 1 Diet 3
 Diet 2 Diet 4

Price

Min: Max:

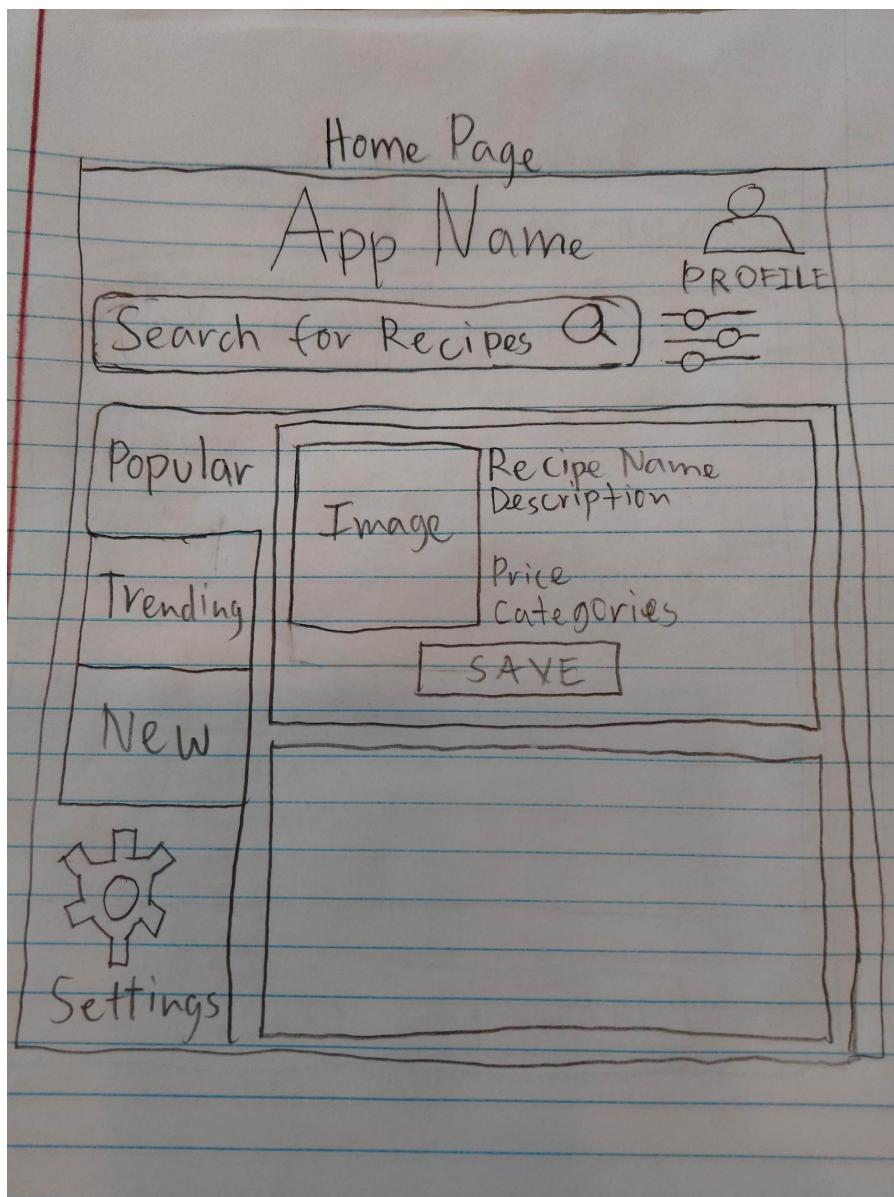
Allergies Have None

Allergy 1 Allergy 3
 Allergy 2 Allergy 4

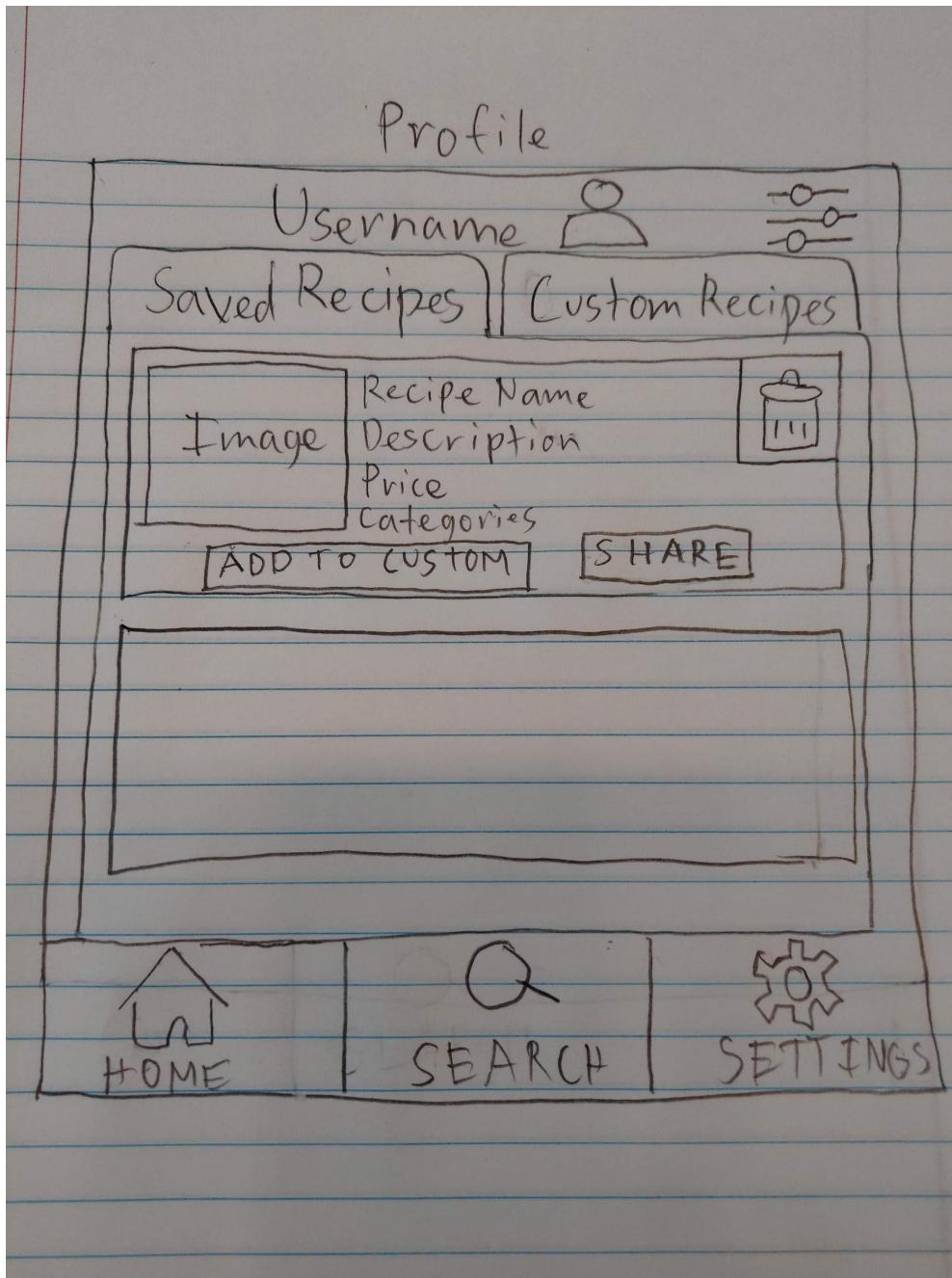
Cuisine

SAVE

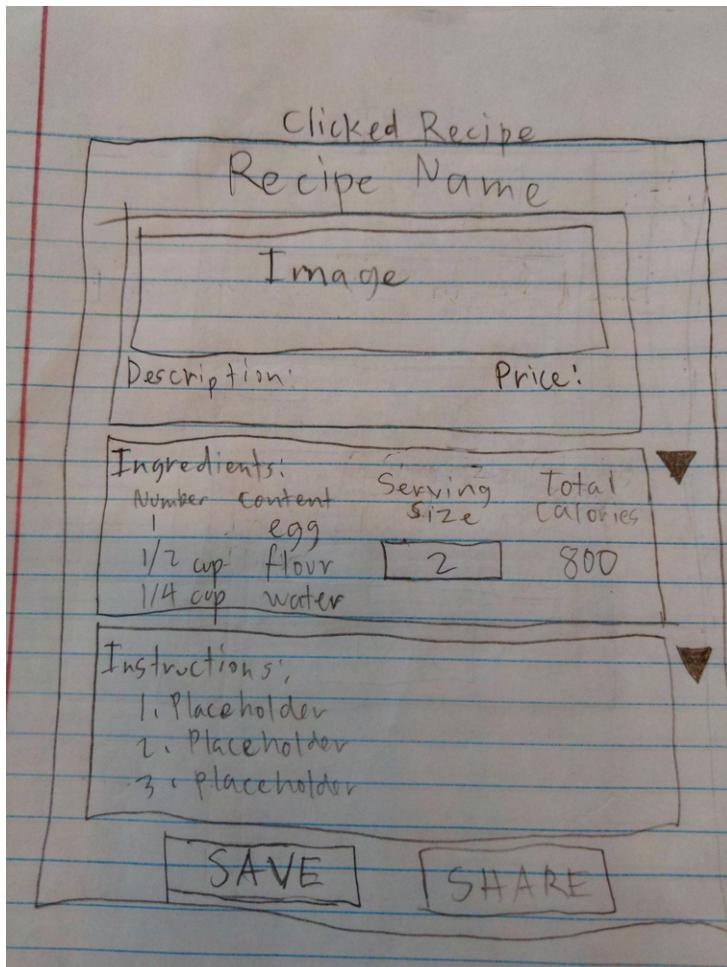
The home page is where the application showcases all the available recipes from popular, trending and new. The user can always search for recipes and edit their preference whenever they want. After finding the recipe, the user will be able to save it to their profile. The recipes are separated into cards so that it could be inspected immediately to improve efficiency.



This is the profile page where the saved recipes are stored. It shows the user name at the top and in the top right is the preferences icon. There are two tabs, the first one is the saved recipes from the home page and the second one is from the add recipe button from the start page. The saved recipes tab allows users to add to it the custom tab to edit it. And the share button allows the user to share it to friends and family. If the users no longer need the recipe they can delete it with the delete icon at the top right side of the card.

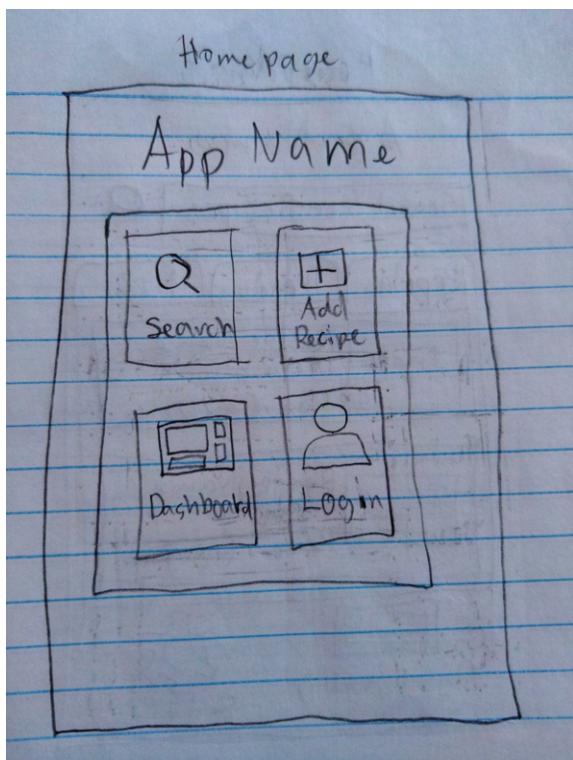


The recipe page is the card detailed content from the home page or profile page. It has an image, description, price, ingredients, total calories, serving size and instructions of the recipe. The serving size has an input text box where the user can edit the number of servings which corresponds to the total calories. The downward arrows from the right side for ingredients and instructions help minimize the details for better viewing accessibility.



Kent - Design 2:

This design utilizes big square buttons for easy learnability. The user can navigate the application through these buttons. Big icons and labels help them recognize its purpose.



Enter login information

Login

Name	<input type="text"/>
Username	<input type="text"/>
Email	<input type="text"/>
Password	<input type="password"/>
Check box to Agree	
<input type="checkbox"/> Terms and conditions	
<input type="button" value="Enter"/>	

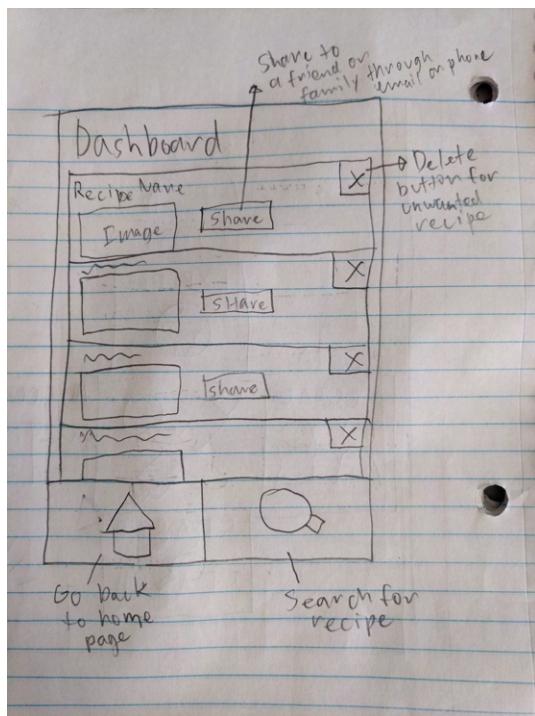
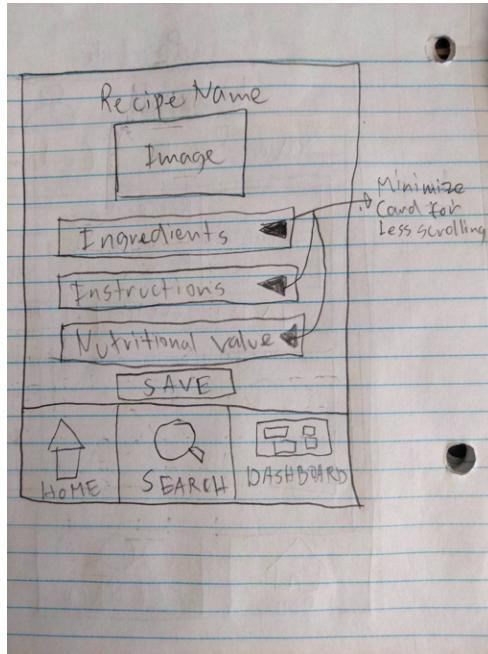
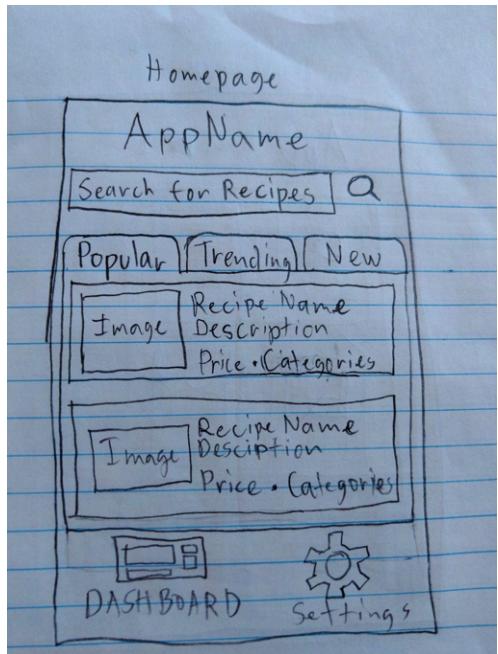
Recipe Builder

Name:	<input type="text"/>	
Description:	<input type="text"/>	
Ingredients +	Instructions +	
Nutritional value +	Image +	
Estimated price +		
<input type="button" value="POST"/>	<input type="button" value="SAVE"/>	<input type="button" value="SHARE"/>
<input type="button" value="Back"/>	<input type="button" value="Home"/>	<input type="button" value="Search"/>
Ingredients <input type="text"/> + 1 eggs 1/2 flour <input type="button" value="SAVE"/>		

Kent - Design 3:

This design is meant for efficiency by having most of the features in one page. The user can quickly search for recipes or scroll through the suggested recipes from

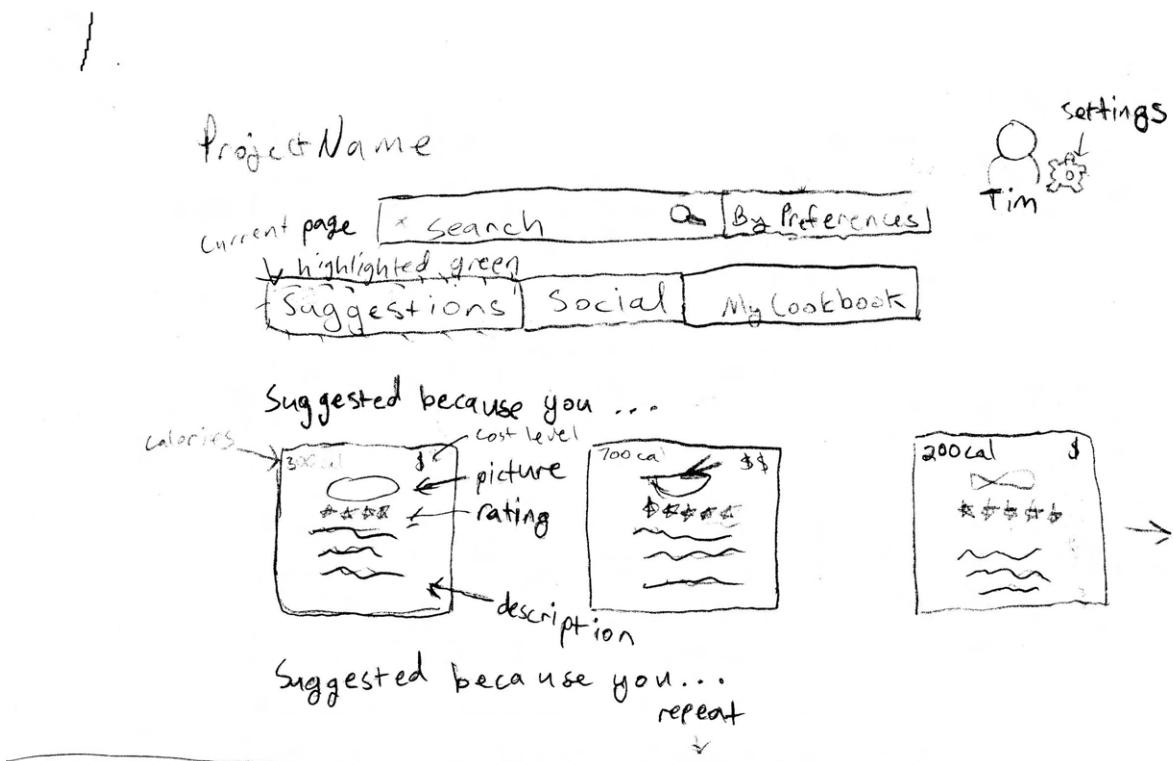
popular, trending and new. The user can go through their dashboard and edit their settings.



Nathan Sketches

Design 1

This design utilizes recognition through familiar icons (such as the settings icon, arrow, and stars) and labeled buttons and text fields. By using recognition, there are less things the users must remember, allowing them to more easily learn the UI.



2. Project Name Suggestions Social MyCookbook



Keywords []

Price [40.00] - [420.00] all values defaulted according to

Serving Size [2]

Tim's profile, but for this scenario, Values are adjusted

Calories [0] - [800]

Protein by % [min] - [max]

Fat by % [min] - [max]

Carbs by % [min] - [max]

Allergies [peanuts x] [seafood x]

Ratings [min] - [max]

Sugar [min] - [max]

... .

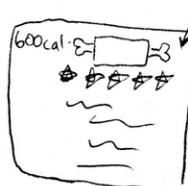


3

Project Name Suggested Social MyCookbook



Meat Lover (chile)



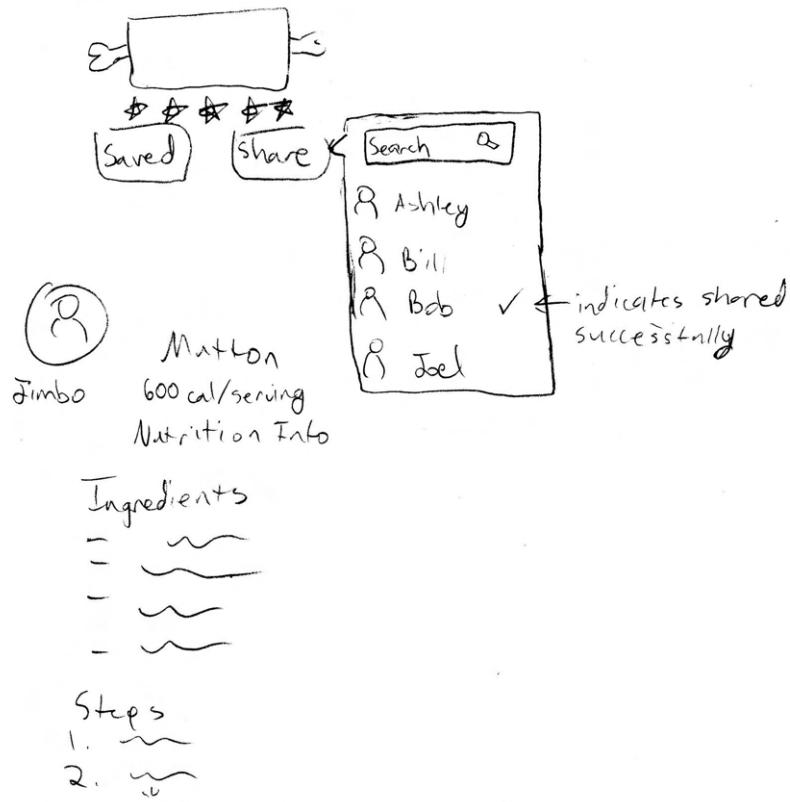
Vegetarian (chile)



More...

4

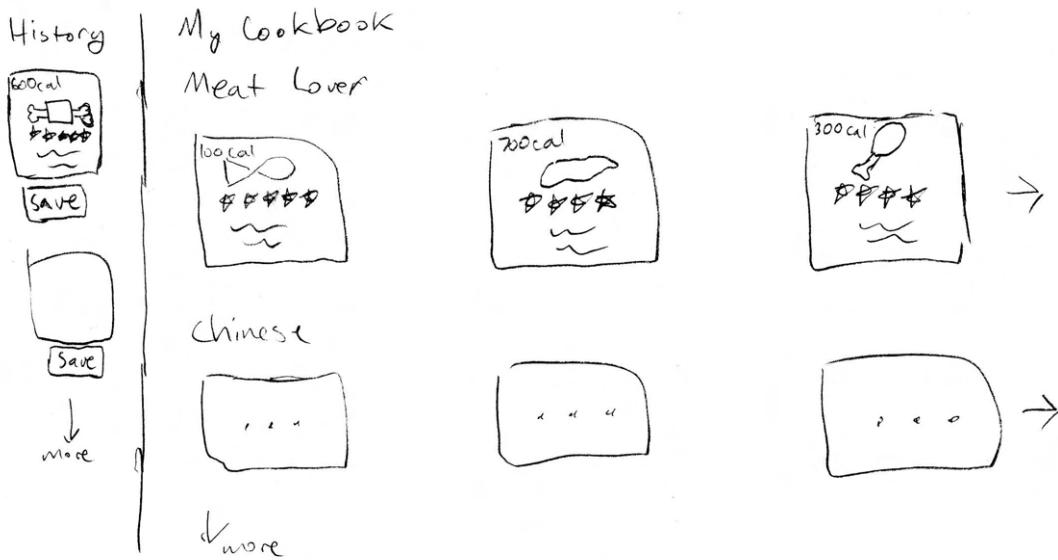
Project Name Suggested Social MyCookbook

R 83
Tim

indicates shared successfully

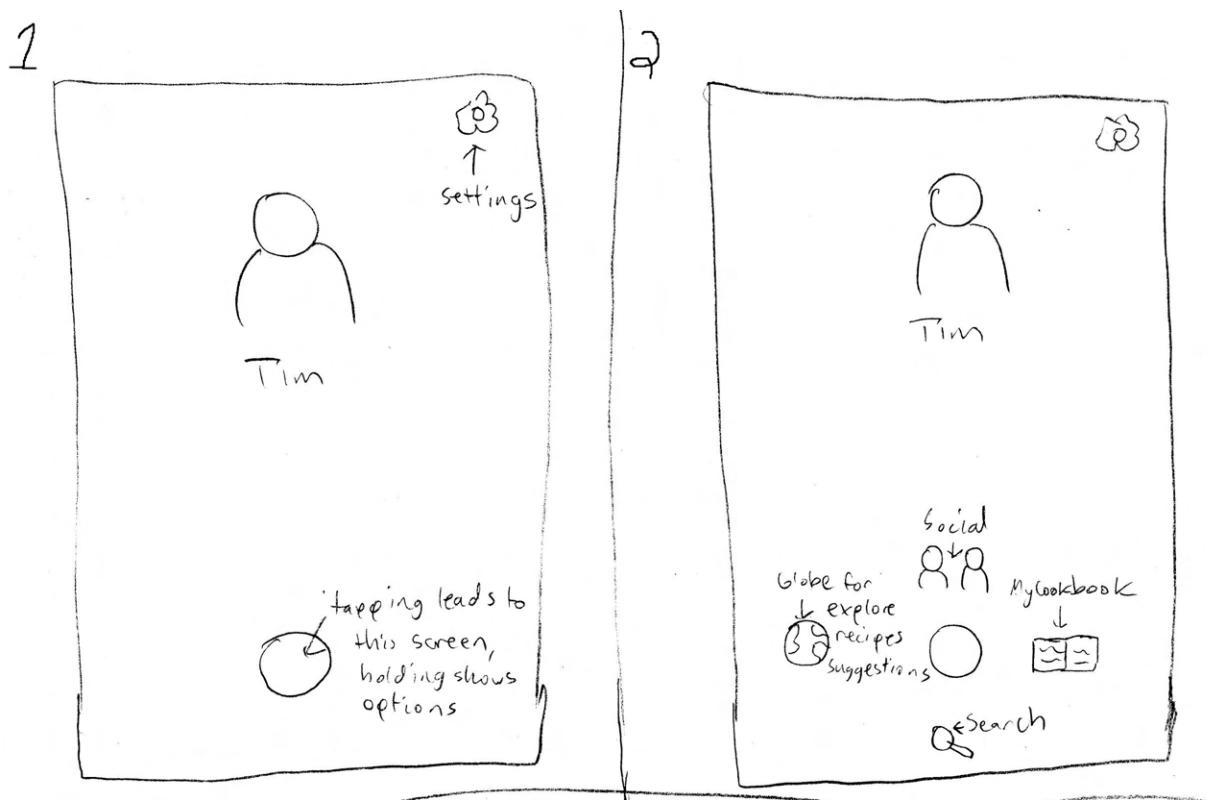
5

Project Name Suggestions Social MyCookbook

R 83
Tim

Nathan - Design 2

This design is meant to be as efficient as possible by utilizing a marking menu. Holding the large circle at the bottom reveals 4 other options at the top, left, right, and bottom. Swiping the finger while still holding selects the option. This allows users who have learned the UI to quickly go where they need to go with just a gesture, as opposed to tapping, where the finger must lift each time. The search in this design also uses sliders for numerical ranges, increasing efficiency by allowing adjustments through gestures, instead of tapping a box and typing.



3

Search

Keywords

Price ₦20 ₦200

Servings 2 dropdown

Calories 0 800

Allergies peanuts seafood Add More

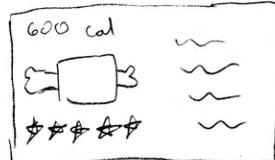
Ratings selected, left empty

shade = selected

↓ scroll for more

4

Meat Lover (hide)



next

Vegetarian (hide)



→



5

Nutrition

3

5

Jimbo

Mutton
600 cal/serving

↓ scroll down for ingredients & steps

6

My Cook book

History



→

Meat Lover



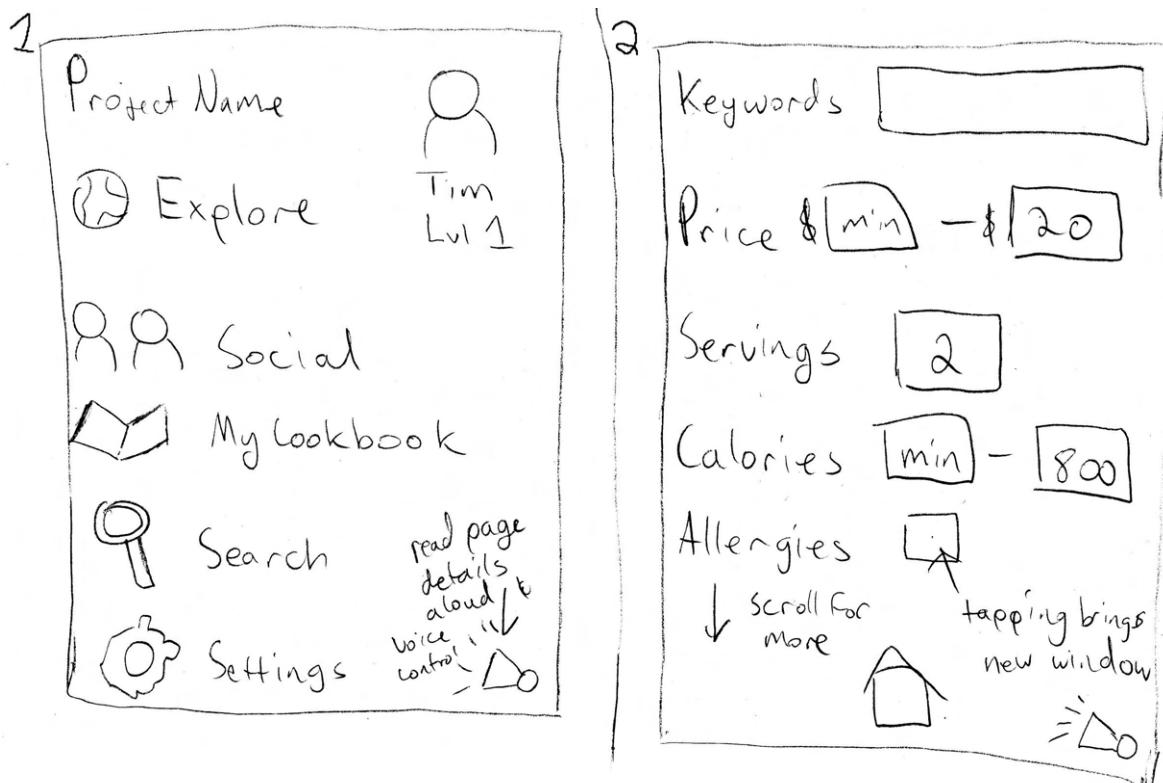
→

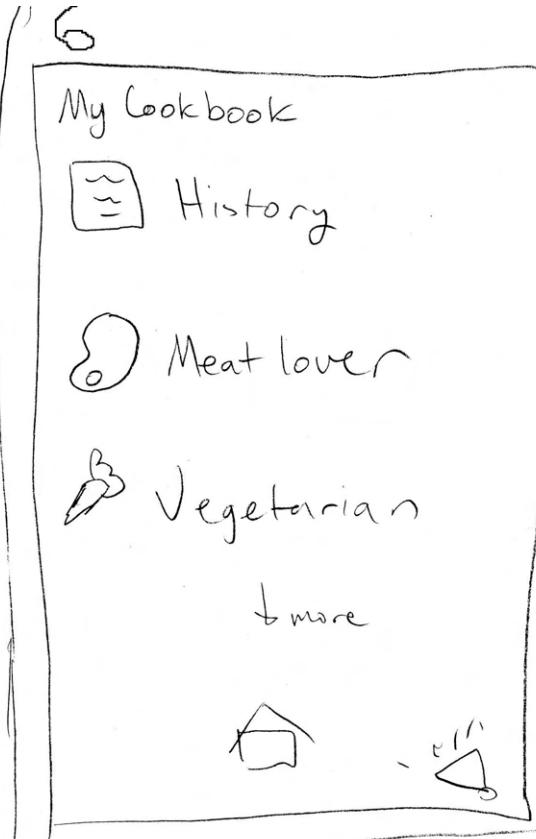
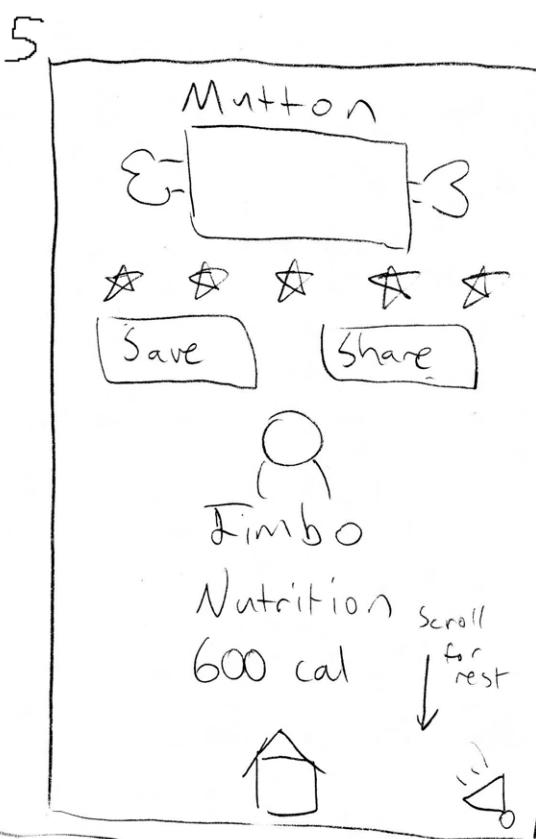
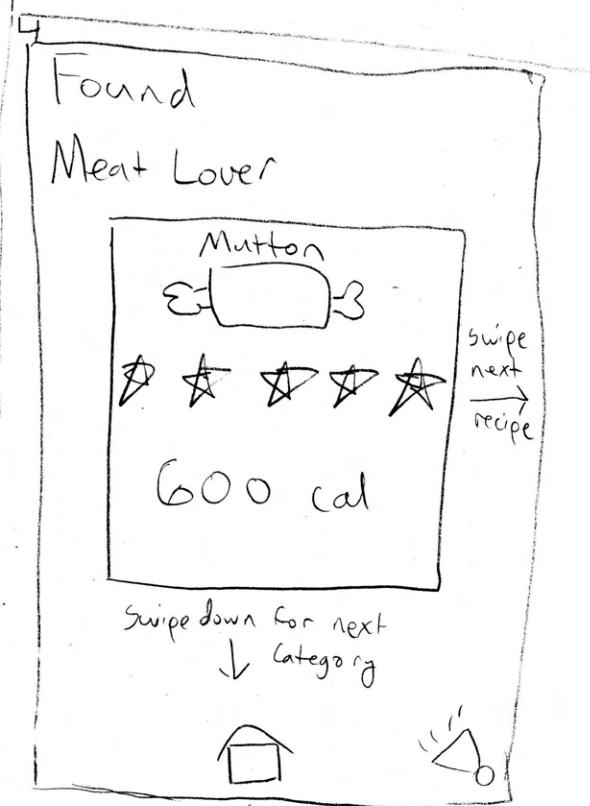
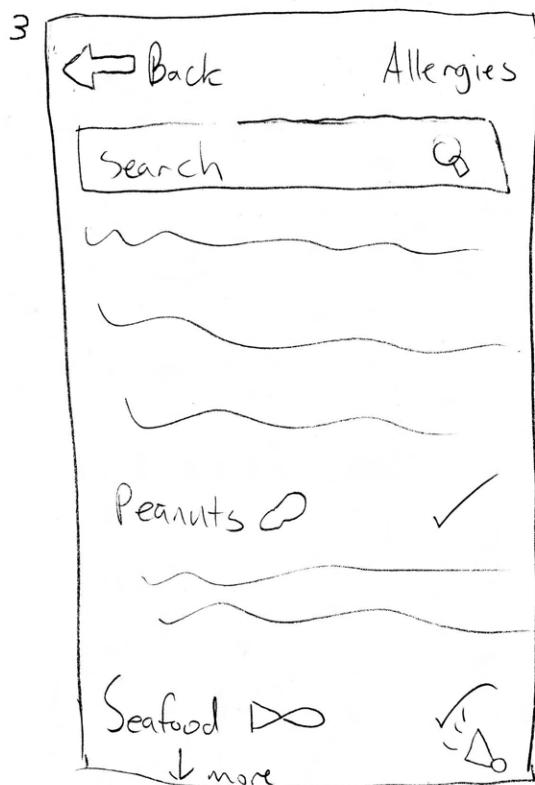
↓ scroll for more

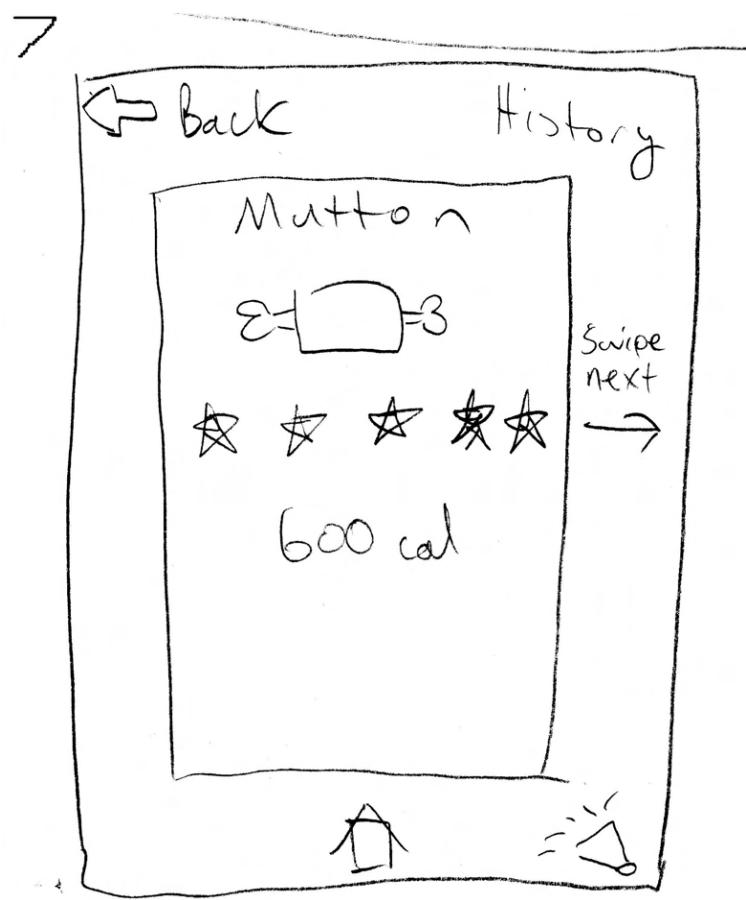


Nathan - Design 3

This design is meant for the elderly and those who have trouble seeing things close up. The design is simpler and uses larger texts and icons. More metaphorical icons are used, along with labels, to improve recognition as they are more easily remembered or the connection between the icon and the function is easily conceived. By utilizing recognition, the design becomes more learnable. The design also includes a megaphone icon to read the current page aloud, as well as take speech input.



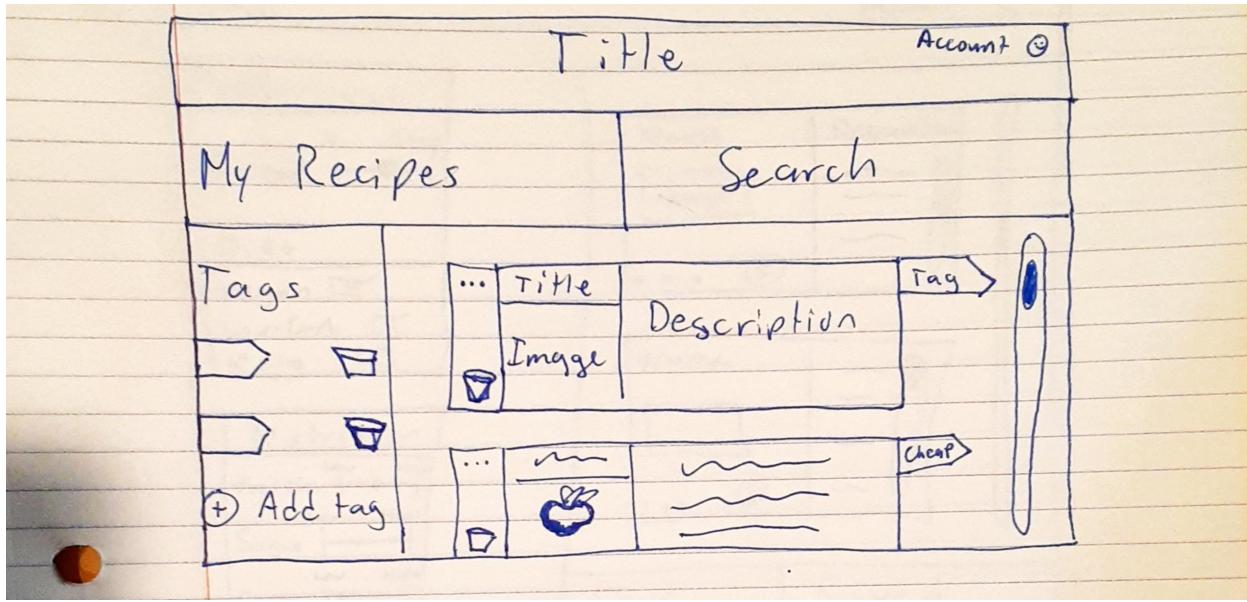




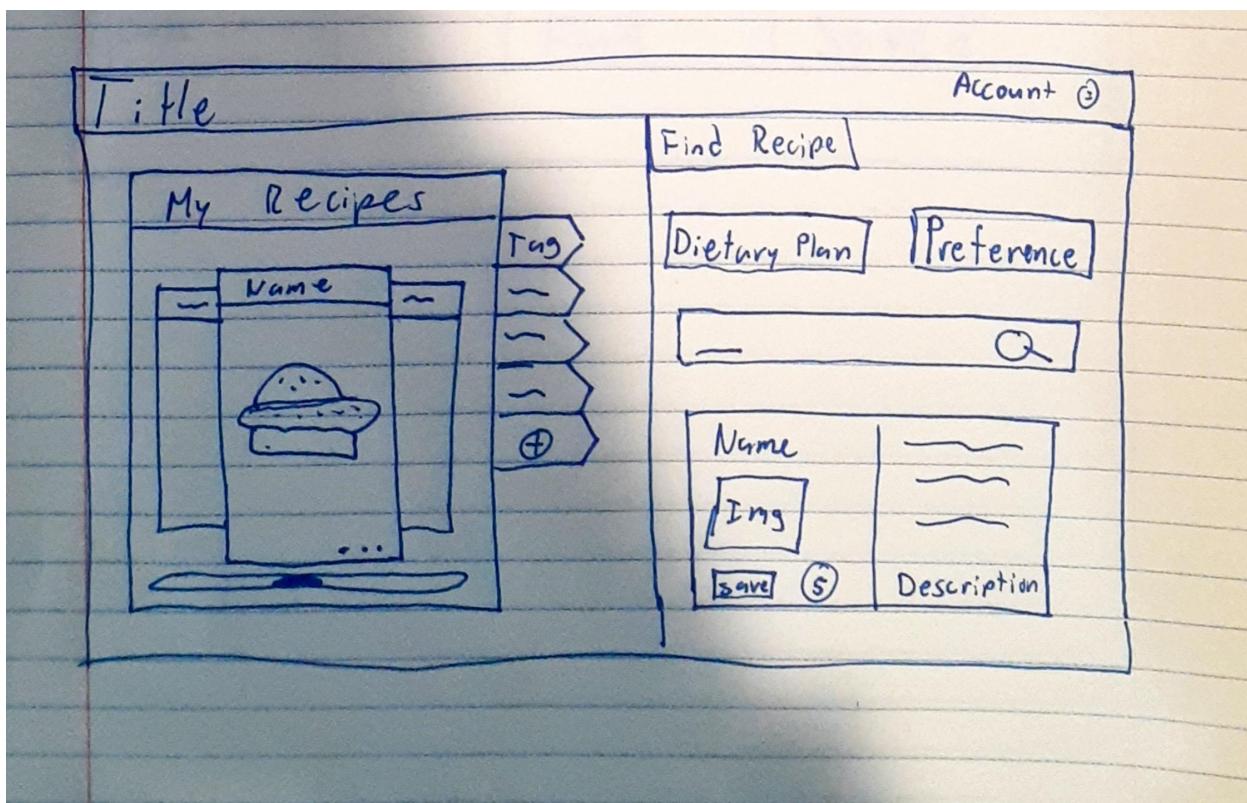
David Sketches

Design 1:

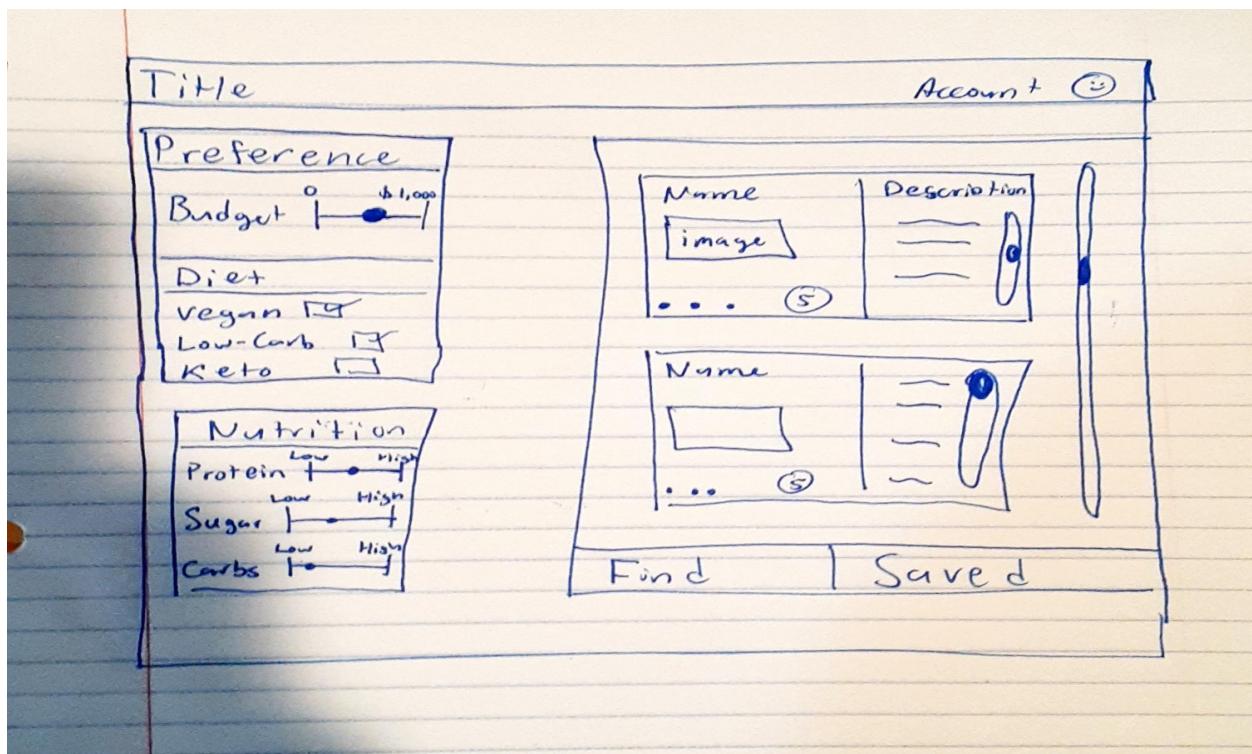
This design is meant to have large labels and make it easy to identify where everything is. It allows blind users to use a reader program that reads everything that is on screen. With everything having a clear label, blind users should be able to navigate the website as well. People with bad eyesight/focus should have an easier time with this design because of the large font sizes. The tags allow users to organize their saved recipes and quickly filter between the ones they want to see.



David - Design 2: This design will allow the ability to resize the page to fit on a phone or small table. When resized, the "My Recipes" section will now take up the whole screen and push the "Find Recipe" section down. This will be useful when users join the website on a phone. But if they have a big enough screen they can easily see both sections nicely and more efficiently use the application.



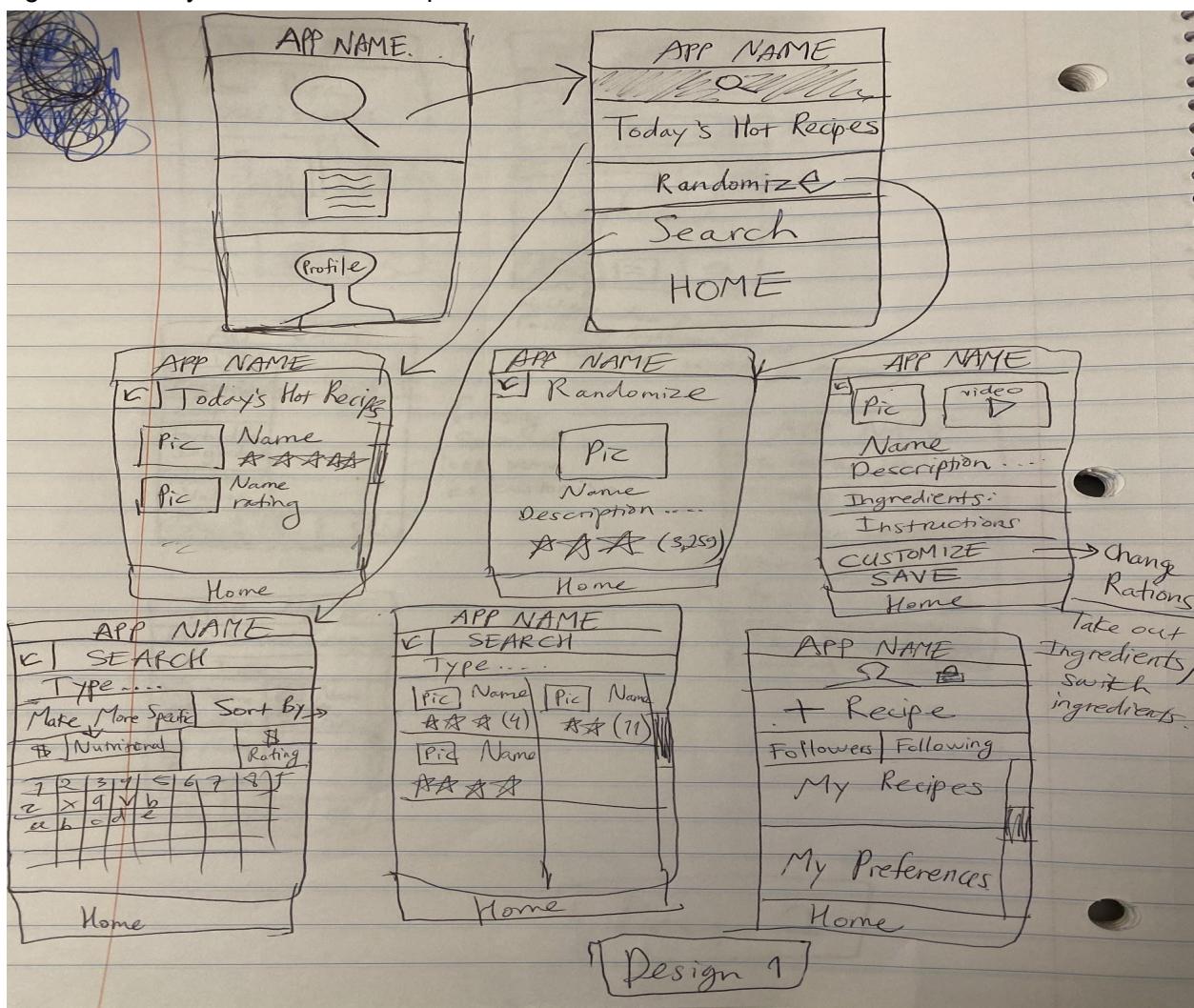
David - Design 3: This design is meant to provide efficiency. Users will be able to change their preferences and settings from the main screen and quickly find the recipes they want. They can also quickly toggle between their saved recipes and the search query. The GUI also changes in real time as they change the preferences and nutrition values.



Nara's Sketches

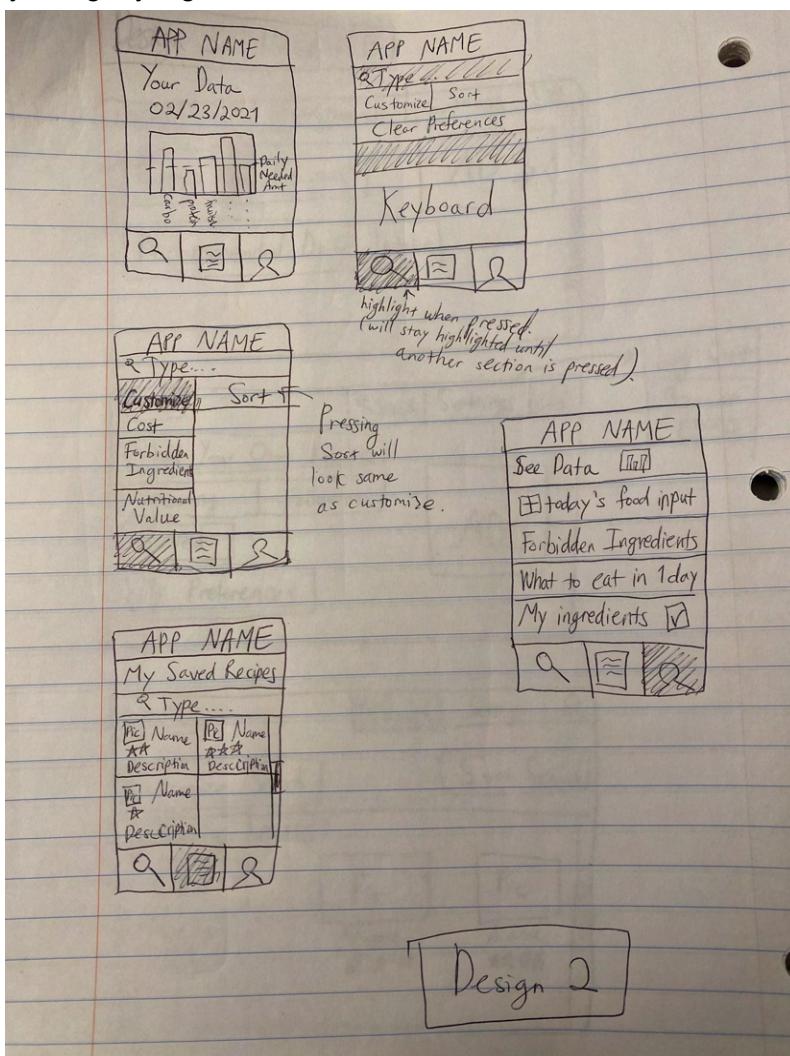
Design 1:

This mobile app design has a simple home page that offers 3 options. 3 options are search, saved, and the user's own profile. Whatever the user does, the home button will always be at the bottom of the app so users can retreat anytime they want with one click. The search option shows user's today's hot recipes which are the recipes that users interact with the most that day, kind of like trending recipes. Randomize option shows one random recipe that still keeps in mind the user's preferences like their allergies so recipes which contain user's forbidden ingredients will not even show up. The user can search for recipes using the search bar which also has customize and sort by options. Users can put in how much they want to spend and they can also reset all settings each time which users have the option to let the search ignore all their preferences in their profiles. The recipes show their pictures, videos if available, ingredients, instructions and a user can customize any recipes they want and save them for later. Users can take out ingredients and change ration sizes. The profile tab lets users be private or public, lets users follow people, and have followers as well. My recipes button is the recipes the users actually put in themselves. My preferences allow users to put in what ingredients they never want in recipes.



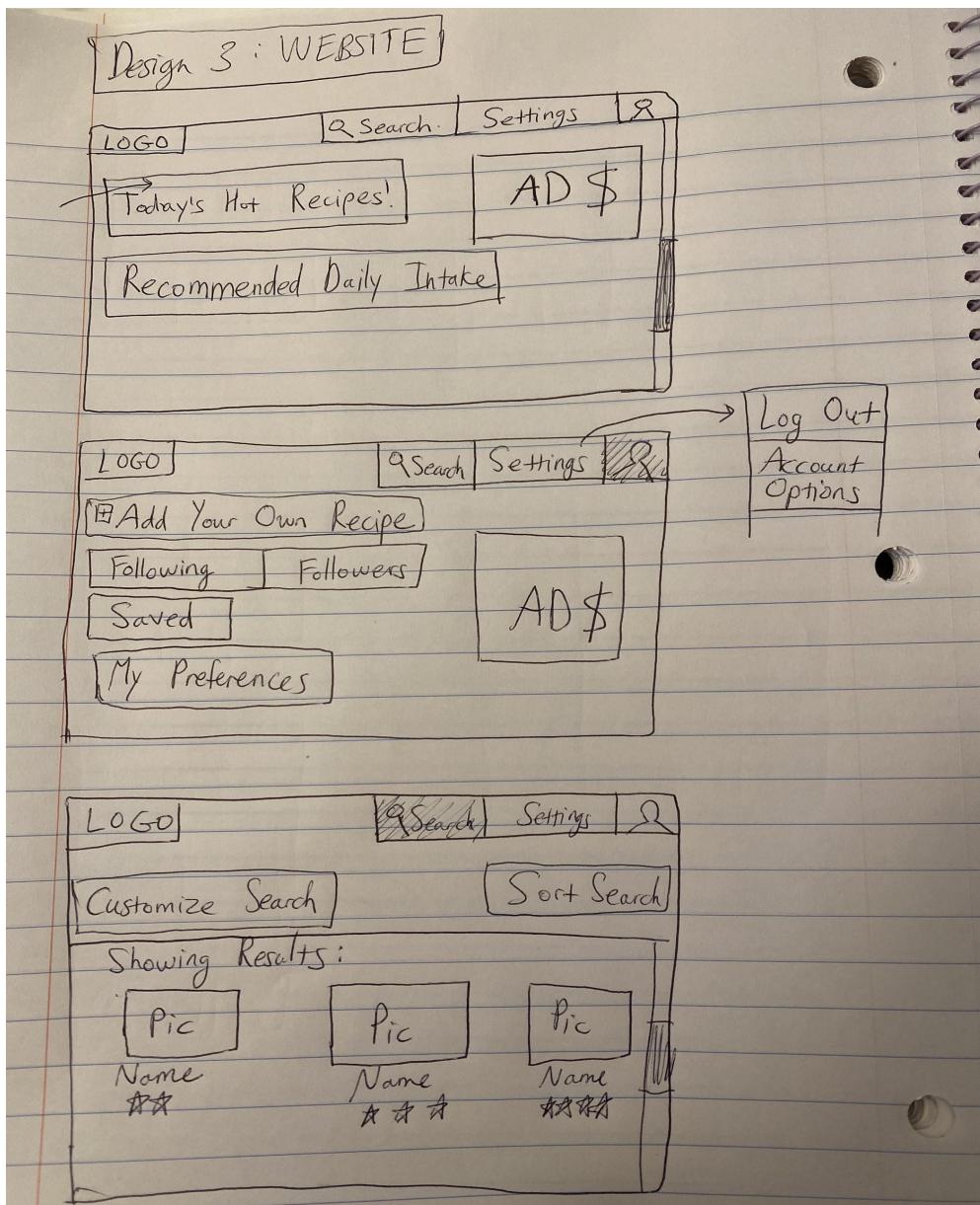
Nara - Design 2:

Design 2 focuses on the user's health and nutritional intake. Home page shows a graph that shows whether the user has reached or exceeded their goal intake. The search, saved, and profile button is always at the bottom. The buttons at the bottom get highlighted when the user clicks on them and stays highlighted until another button is pressed. To go to the home page again, the user can press on profile and press on see data. In the search tab, users can customize and sort search results, as well as clear preferences. In the saved tab, users also have a search bar to make it easier to find recipes they've already saved. For the profile part of the section, users can see their data of their nutritional intake, they can add their daily input and customize their forbidden ingredients. There is also a section that gives information and examples about what someone should eat in 1 day which can be very useful because people tend to forget. There is also my ingredients button which users can add and always if they don't want to shop for new ingredients. When they search for recipes, they can have the option to just click only using my ingredients.



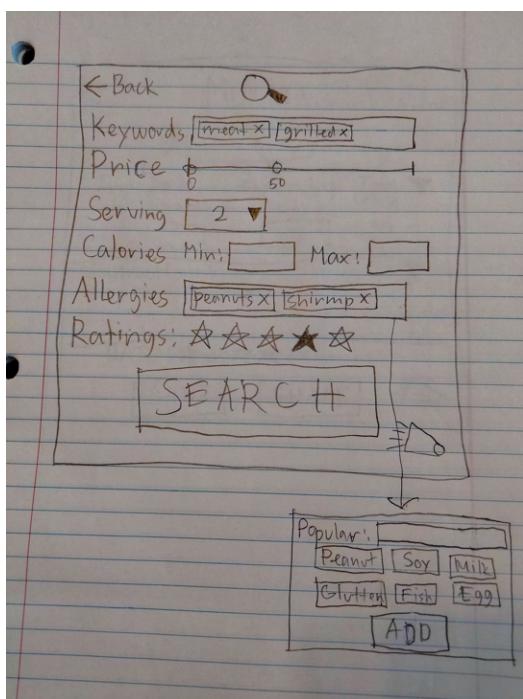
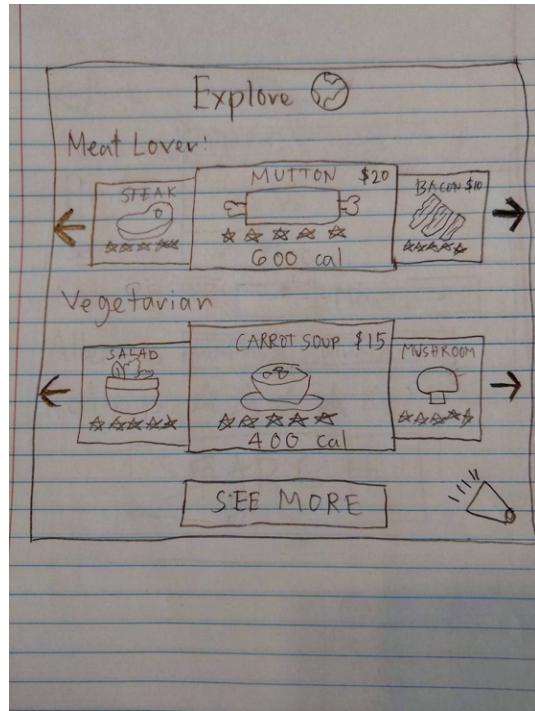
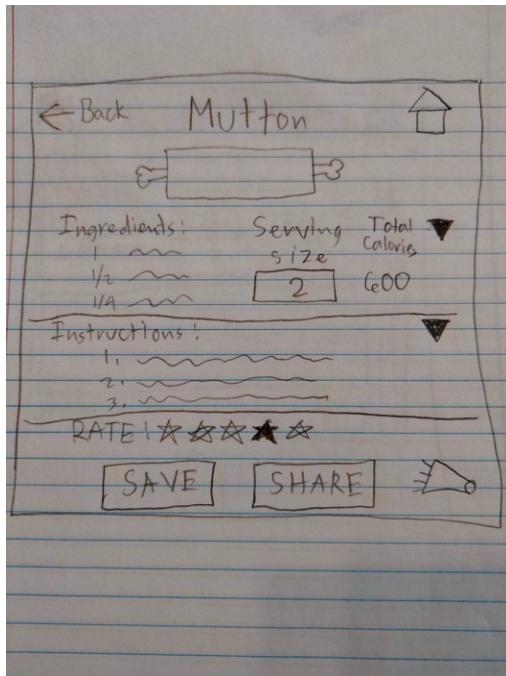
Nara - Design 3:

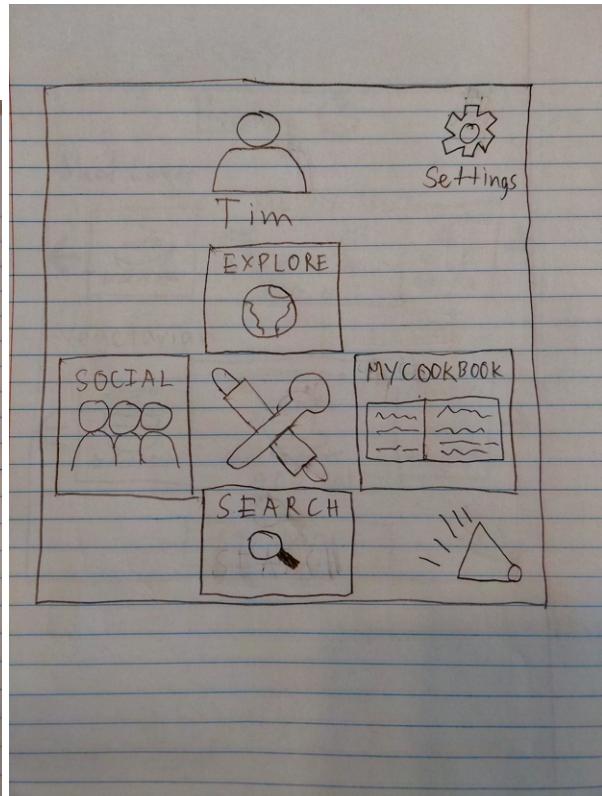
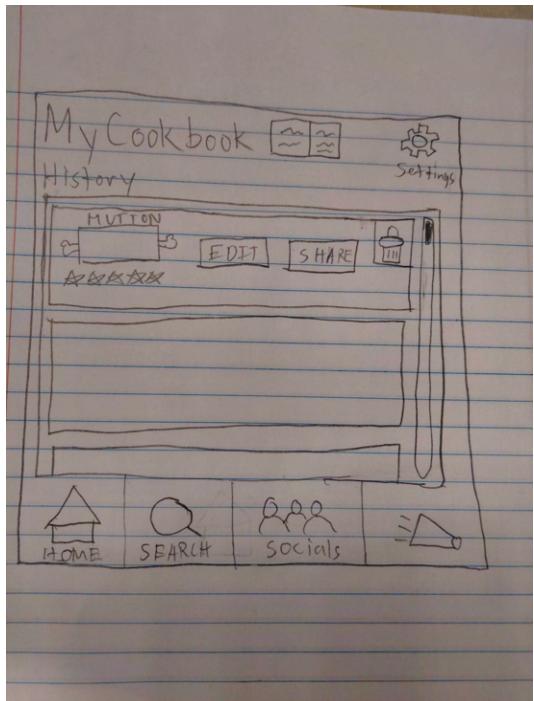
This one is for a website. It's pretty similar to the apps. The logo shows up on the upper left corner. On the upper right corner, we have the search bar, settings, and user profile. Also, there is a space on the right to have some ad revenue. The home page which users can go to pressing on the logo shows today's hot trending recipes and also shows recommended daily nutritional intakes. Search button lets users customize and sort searches. Settings button lets users log out and have account options which users can delete their account. For the website, you don't have to create an account. The profile section offers add your own recipe, follow and have followers, saved button, and my preferences button and still have ad revenue.



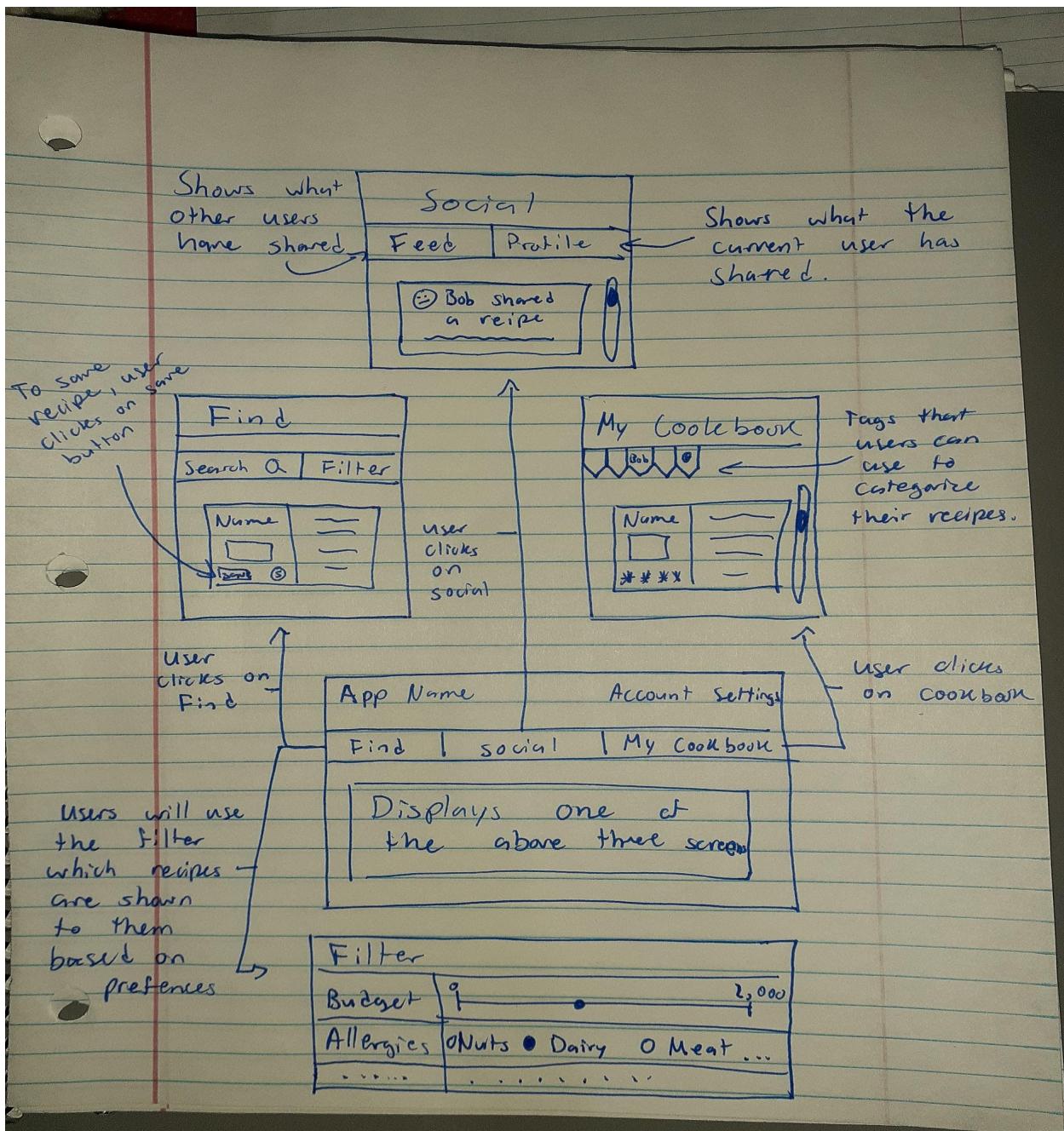
Group Design, consisting of storyboards and analyses

Group Design 1





Group Design 2



Group Design 3

1.

2.

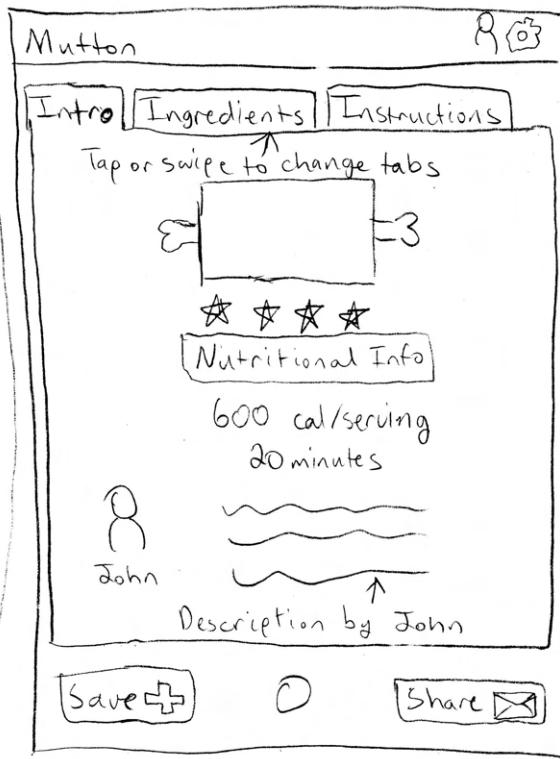
3.

4.

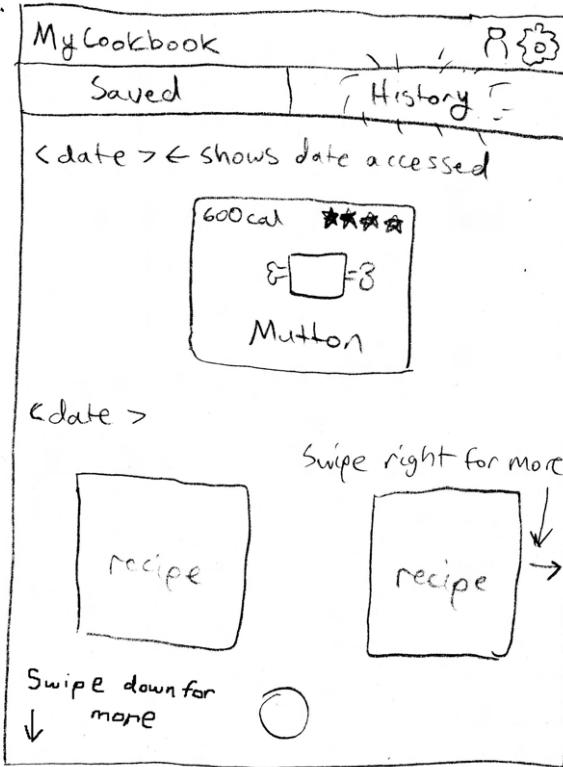
5.



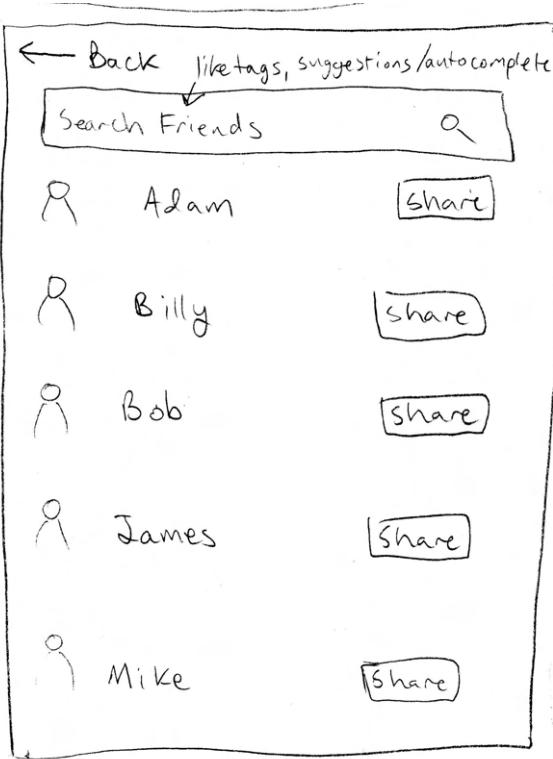
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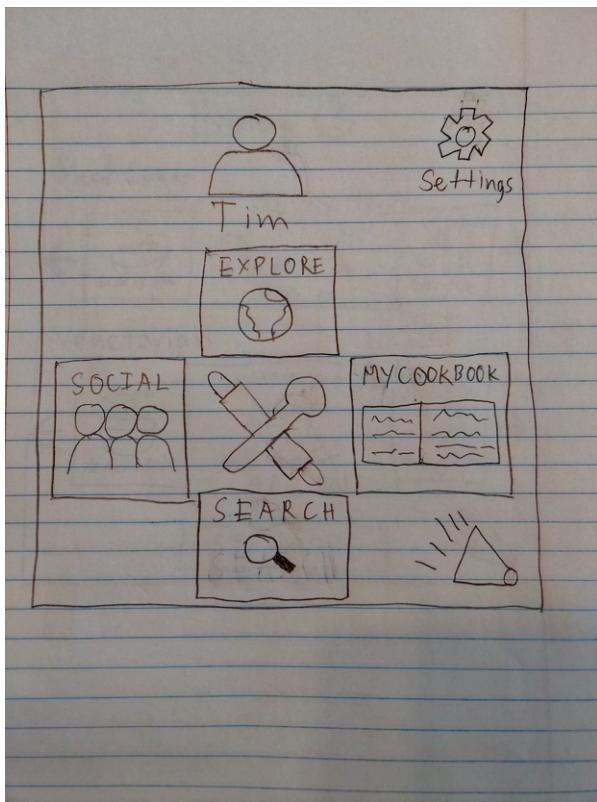
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8.



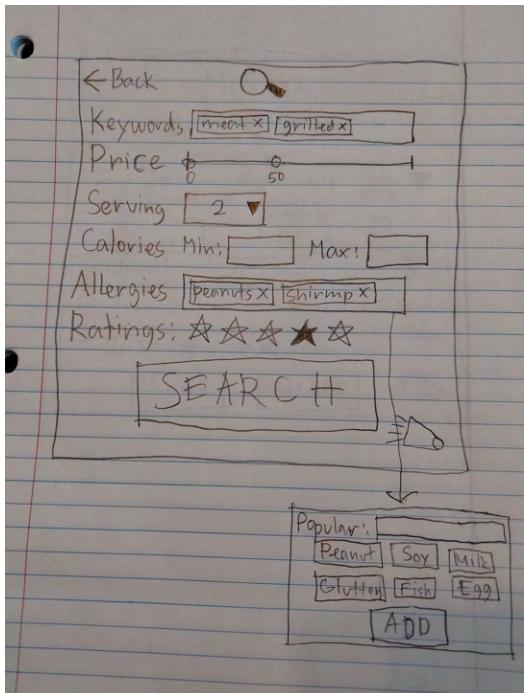
Group Design 1 - Storyboard



Bob's cousin Johnny from California is coming over for dinner tonight. Bob promised to cook for him a nice home cooked meal as Johnny is a university student living in the dorms who often cannot eat home cooked meals. Bob has no idea what he can cook for Johnny so he opens up the cooking app to get ideas.

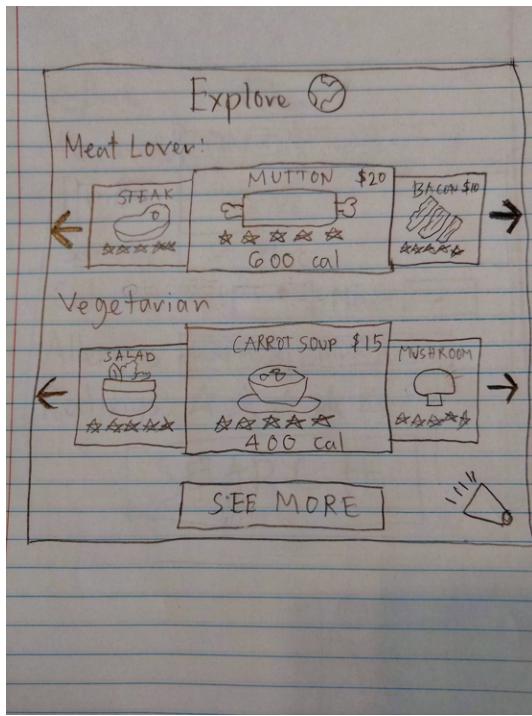
Bob is allergic to shrimp, and he wonders if Johnny is allergic to anything. He calls Johnny to ask about his allergies, and Johnny is indeed allergic to peanuts. When asked what Johnny wants to eat, Johnny said he wants to eat some grilled meat.

Bob considers the "SOCIAL" option of the app but he thinks there is a low chance that the people he follows are sharing grilled meat recipes. So Bob goes to the "SEARCH" option of the app.



After opening the "SEARCH" option, Bob types in meat and grilled for the keywords, sets his serving size to 2, and fills in both of their allergies so the app can only show results that do not contain shrimps nor peanuts. He wants the recipe to have a good rating so he sets the rating to a minimum of 4 stars.

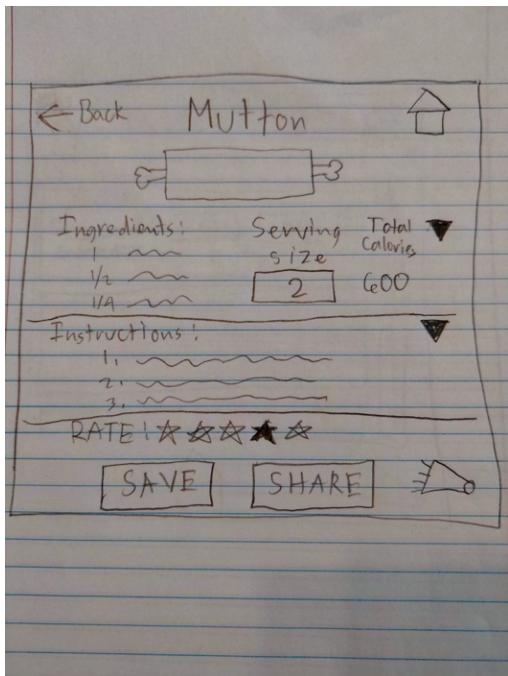
He can also put in calories and the approximate price of the recipe but those are not important to him today. After finishing making everything specific, he presses search.



Bob is not too crazy about the search results as there are too many to look through, and they all look the same so he has a hard time choosing. So he decides to just go to the "EXPLORE" option of the app.

On the explore page, while going through the meat lover category, a mutton recipe catches Bob's eye. It has 5 stars and the picture looks delicious.

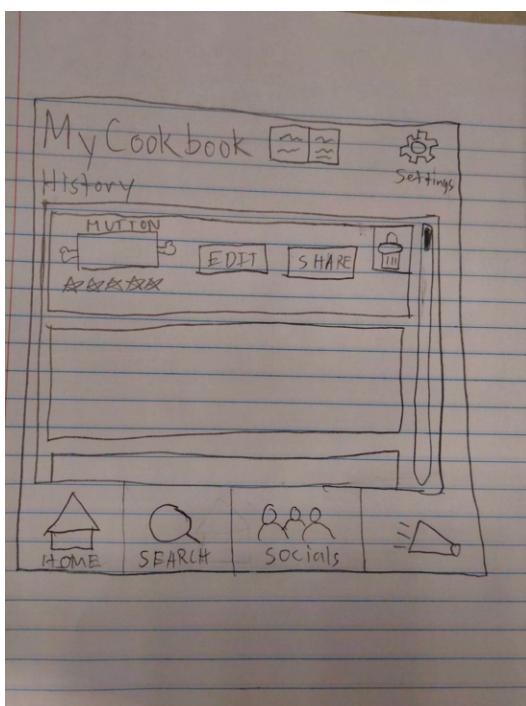
\$20 and 600 calories also seemed like a good deal so he goes to check that mutton recipe out.



Bob is feeling lazy after looking through so many recipes so he lays down, closes his eyes and makes the app read the recipe out loud. After hearing the ingredients, he learns that the recipe fortunately doesn't have shrimps nor peanuts.

He can change the serving size but it's already set at 2 which is perfect for Bob as he is cooking for 2 people.

Bob likes the mutton recipe so he saves it to his cookbook. Right now the time is 2pm. He will go out and buy the ingredients first then plans to start cooking around 6pm.



Bob goes to the "MY COOKBOOK" option of the app and checks to make sure the mutton recipe is saved. It is saved. At the grocery store, Bob opens up the app, goes to his cookbook, and looks through the ingredients using it as a note.

By 8pm, Bob and Johnny have eaten the mutton. Johnny really enjoyed his food and thanks Bob for the nice meal. Johnny really liked the meal so Bob ends up sharing the recipe to him using the share option.

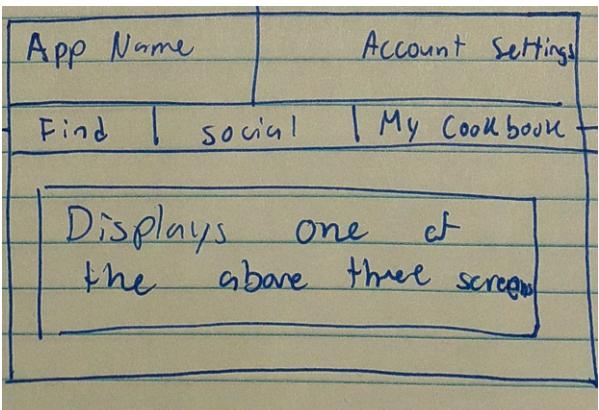
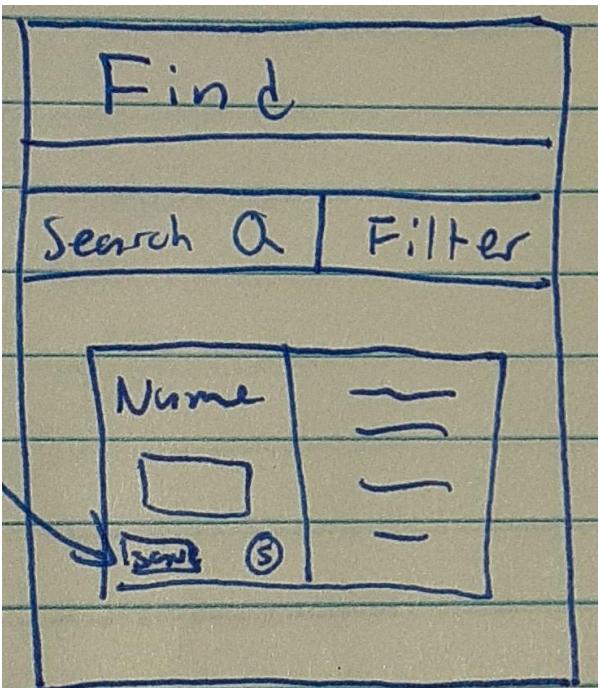
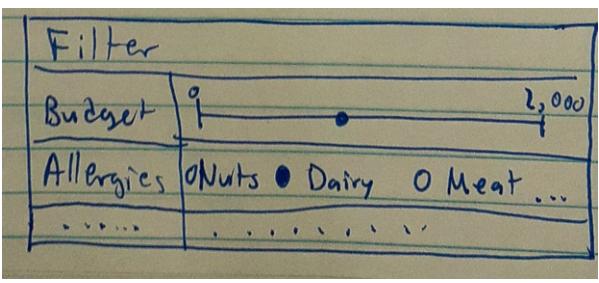
After Johnny leaves, Bob gives the recipe a rating of 5 and deletes it from his cookbook. Bob likes to keep his cookbook clean.

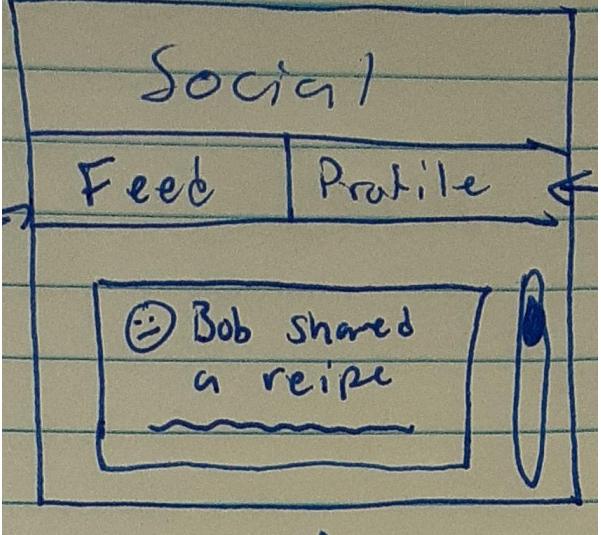
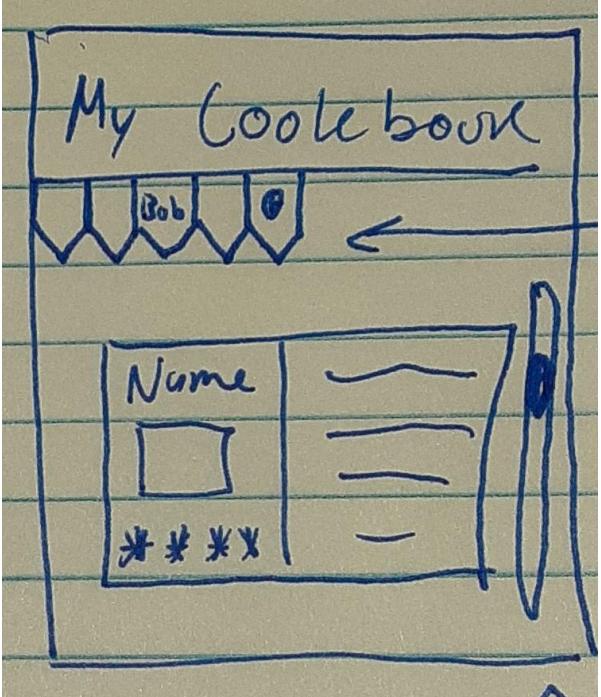
Group Design 1 - Analysis

The design of the UI is simple to recognize, learn and it utilizes the microphone or speaker to have speech input. It uses larger texts and icons to help the users who have trouble seeing things close up. The design provides all the necessary information for the user to do searching, explore, find new friends and check out recipes. However, the

infrequent users might get stuck in the explore page if they do not choose a recipe at all. The only way to get back on the home page is to click the recipe card and tap the home button at the top right.

Group Design 2 - Storyboard

	<p>Tim has opened up the application and the main menu displays on his screen. The GUI displays the "Find" tab when the application first starts and Tim is shown a list of recipes that he can save for a later time.</p>
	<p>Tim is having a friend come over for dinner and wants to cook something that seems really good. Tim's friend, Bob, is allergic to peanuts and seafood however, and Tim also only has a couple of dollars to spend in total. Therefore, Tim clicks on the filter button next to the search bar and sets his preferences according to what kinda recipes he wants to be shown.</p> <p>Recipes are displayed to him on the screen, with their name, a picture and a quick description of the recipe being shown. Tim finds a recipe that he likes and saves it by clicking on the save button that is located directly on the recipe.</p>
	<p>Tim used the filter to set his budget to \$20 by using the slider widget. Now only recipes that amount to at most \$20 worth of ingredients will be shown to him. Tim's friend has allergies so he also clicks on the radio widgets associated with the allergies that Tim's friend has. Once time has set all of his preferences he begins looking for a recipe to</p>

	<p>save into his “Cookbook”.</p>
	<p>Tim wants to know if his friend Bob has shared any new recipes that are good. He clicks on the socials tab in the main menu and the following is displayed on his screen. On the “Feed” tab Tim sees that his friend Bob has shared a recipe and left a comment about it. Tim decides to save that recipe to his cookbook and will then label it with a tag.</p>
	<p>Tim has found a recipe he likes and saves it. Next he clicks on the “My Cookbook” tab in the main screen and is shown the following. He sees the most recent recipe that he's saved at the top of his cookbook. He categorizes his recipes by creating a new tag when clicking the tag symbol with the plus sign. He selects the recipe he wants to cook for his friend Bob and adds the tag named “Bob” on it. Now, next time Tim is looking for a certain recipe he can quickly filter out his catalog by using the tags and finding what he needs faster.</p>

Group Design 2 - Analysis

This design aims to use common application design strategies in order to make learnability easy for the user. This design uses tabs at the top of the application display that can be clicked on in order to quickly switch between tasks. Having a menu tab at the top is a common practice when it comes to application designs, therefore the user should be able to quickly navigate through this application using knowledge of past experiences.

This design method also makes it easy to find everything the application provides since everything is organized in a top down manner and everything is labeled with big fonts so the

user can't miss anything. By having large widgets, it also allows the application display to be resizable and still have the fonts be easily readable on smaller screens.

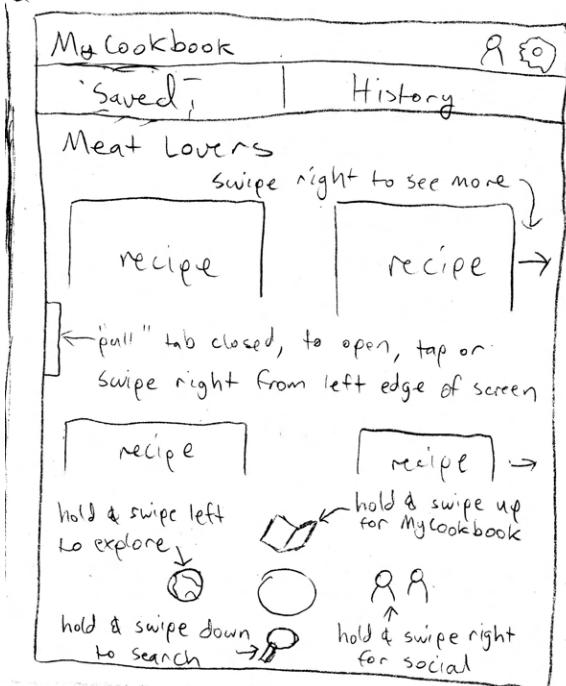
Group Design 3 - Storyboard

1.

A hand-drawn storyboard for a cooking app's home screen. The top navigation bar includes "My Cookbook", "profile", and "settings". Below this is a "Saved" section and a "History" tab. A "Chapters" section lists "Meat Lovers", "Vegetarian", and "Vegan" categories. To the right of the chapters is a "Selected tab highlights" section showing a "700cals" recipe card with a star rating. Below the chapters, there are two more recipe cards labeled "recipe". A note says "Swipe down to see more". At the bottom left is a circular "navigator" button with the text "button, hold to bring up menu". A note above the chapters says "pull tab to open chapters".

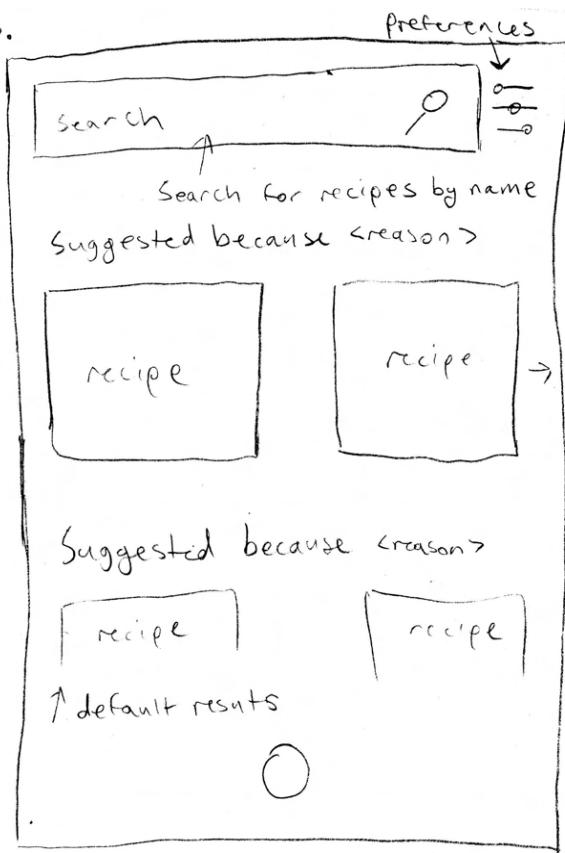
Tim has invited Bob over for dinner and must now find a recipe. Tim first opens the cooking app and starts off at the home page.

2.

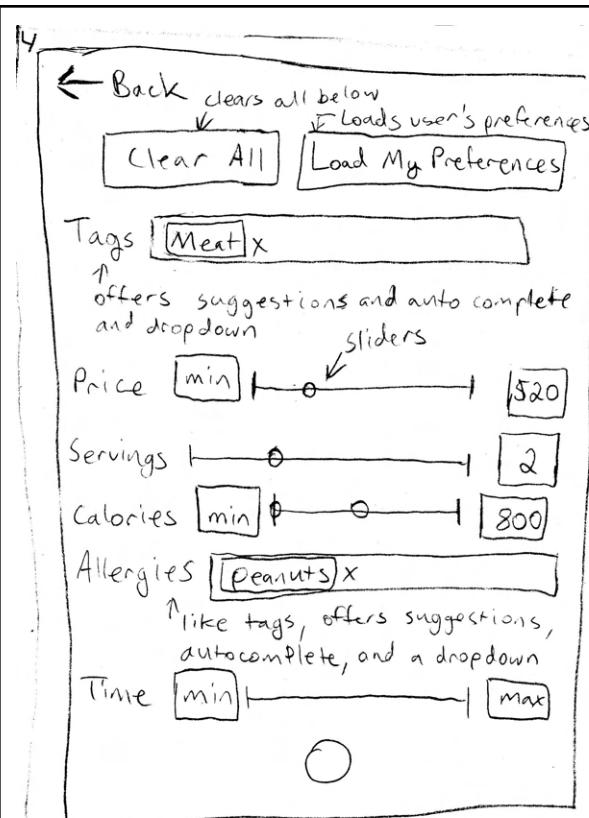


Tim then uses his thumb to hold down the circular navigation icon at the bottom of the page and swipes down to enter the search page.

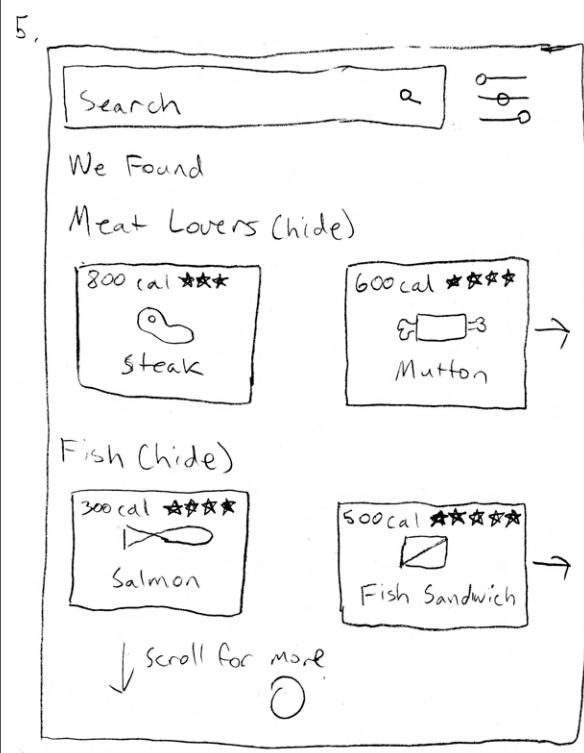
3.



Tim has arrived at the search page, where he is met with a search bar, a preferences icon, and recipes suggested to him due to Tim's habits. Tim is not looking for anything in particular, so he leaves the search text box alone. He wants to search based on certain constraints, so he taps the preferences icon at the top right.

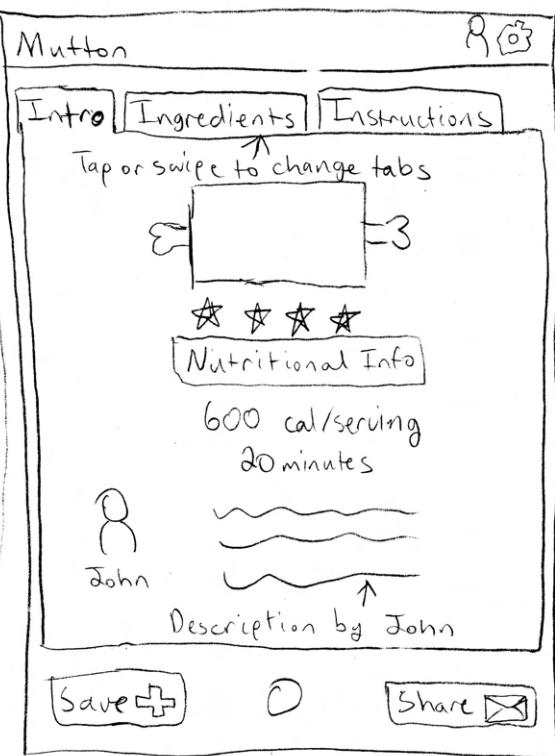


Tim is now in the search preferences page. He thinks that meat is necessary for a good dinner, so he taps on the Tags text box and types in "Me". The box gives a suggestion of "Meat", which Tim taps. Tim does not want to spend over \$20 on the meal as he is saving money for a car. He then adjusts the price to \$20 dollars by using the slider and sliding the circle indicating maximum price to the appropriate spot. Tim slides the servings slider to 2 as it is just him and Bob he is cooking for. Tim wants to stay healthy and eat less calories, so he slides the maximum calories to 800. Bob is allergic to peanuts and seafood, so Tim taps on the Allergies text box and begins to type "pea" and taps on the "peanuts" suggestion. Tim does the same for "seafood". These are the only constraints Tim wants, so he clicks the Back arrow and returns to the search page.



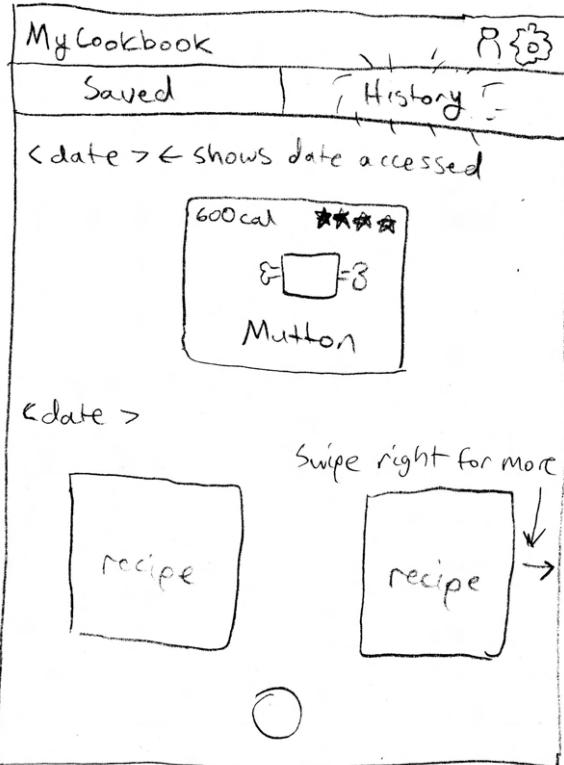
Tim's search is complete. The search page now contains recipes organized by category. Tim swipes up and down to browse all the categories. Tim is interested in the Meat Lovers category. He swipes right to view all the recipes and ultimately settles on Mutton, as he sees it is only 600 calories and has a 4 star rating. Tim taps on the Mutton recipe.

6.



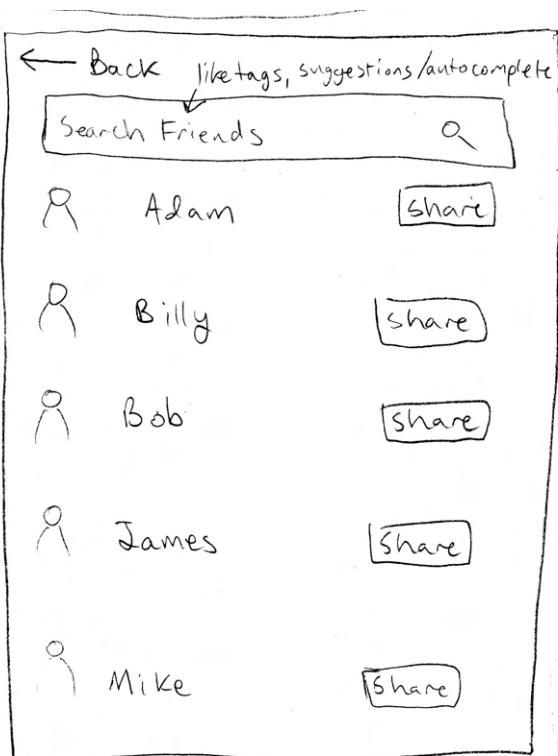
Tim has now arrived on the recipe page and is greeted with the recipe introduction tab. Here Tim views the nutritional info and decides to stick with this recipe. Tim swipes right to enter the Ingredients tab, which labels the ingredients and their exact proportions for 2 servings. Tim gathers all the ingredients and taps the Instructions tab. Tim follows the instructions and completes the recipe. Tim now has 2 perfectly cooked mutton dishes. Tim closes the app. Bob now arrives and the two finish their meals.

7.



Tim and Bob loved the recipe, so Tim decides he wants to save it. Tim opens the app back up. The app starts off again at the home page (img 1). Tim has not yet saved the recipe, so he taps the History tab to look at the past recipes he has browsed. He finds the Mutton recipe at the top and taps on the recipe. This sends Tim back to the recipe page (img 6, directly above this cell). Tim wants to save the recipe, so he taps the Save button on the bottom left. Bob then says that he would like the recipe too. Tim then taps on the Share button.

8



Tim has arrived at the Share page. Tim taps the Search Friends text field and types in "Bo". The only friend Tim has with the substring "Bo" is Bob. Tim clicks the Share button next to Bob's name. Tim now closes the app and Bob goes home.

Group Design 3 Analysis

The design utilizes icons, some of which are metaphors, to improve recognition, allowing users to instantly understand the icon's functions and better find the path to their goal. The tabs on pages with tabs are highlighted when selected, giving users better indication of where they are in the UI. For beginners, the marking menu icon could be mistaken for a button, leading beginning users to tap the button instead of hold.

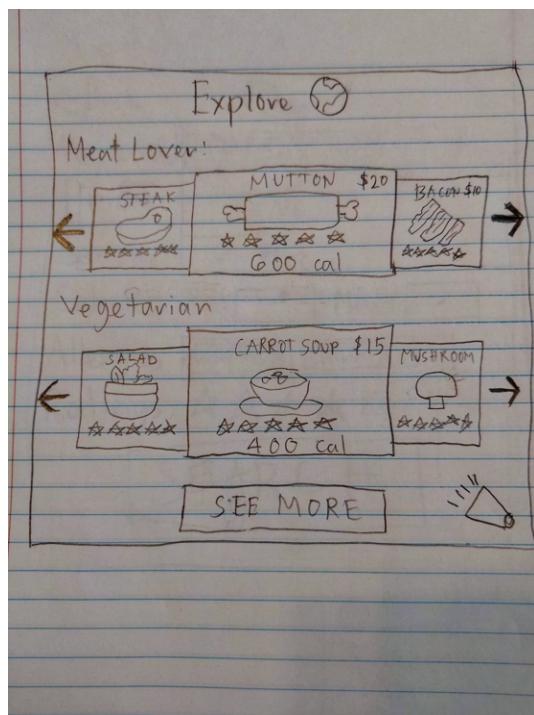
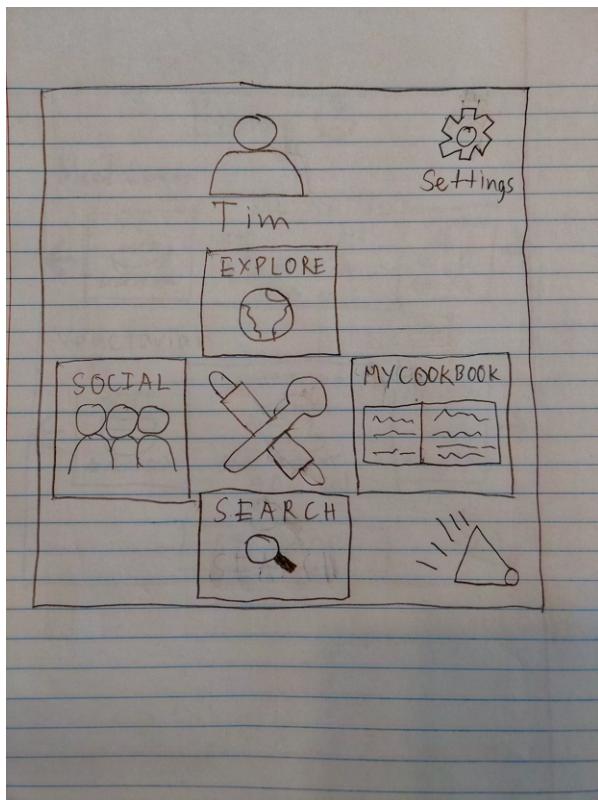
The design also uses a marking menu to increase efficiency, as a memorized gesture can quickly get the user to where they need to go. The use of sliders in the preferences page also increases efficiency when compared to form completion. However, both options are included as some may not have the ability to finely adjust the sliders, thus improving usability for those users.

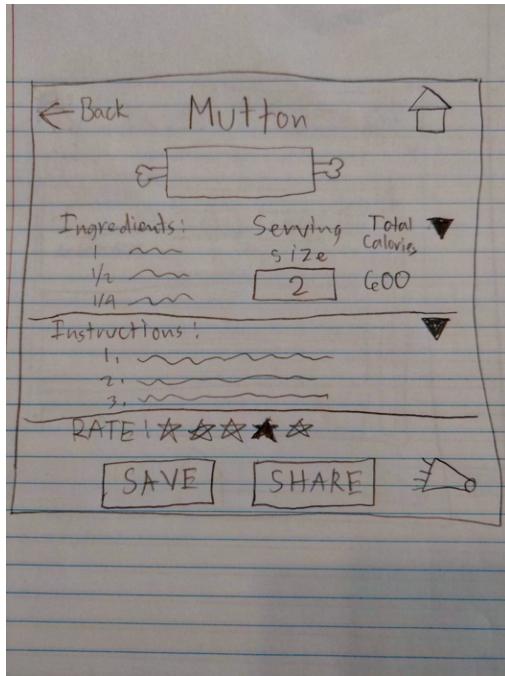
The design is safe in that there are no dangerous actions possible. To remove a recipe from the MyCookbook, the user has to enter the recipe again and click on the Save button again (may read Remove or something similar when saved). If this was accidental, the user can simply check the history and re-save the recipe. This makes deletion of a saved recipe reversible. The only thing that is unrecoverable is sharing a recipe, as the recipe is sent immediately.

GR3

<https://docs.google.com/presentation/d/1lj-V05e8XIClu2k3z6r1fgLRPPHGFUOgSN-aG8HK/edit?usp=sharing>

Images of your prototype





Briefing

- Keep in mind that we are testing the application. We are not testing you.
- Purpose of Application: letting users explore, specify searches such as not include allergies, and save recipes for later. Share it with friends
- We are writing notes to improve our application.
- You ask questions during the test.
- You can stop and leave at any time you want.

Scenario Tasks

- Find a vegan meal under 400 calories that can be made in under 30 minutes
- Organize recipes that you've saved.
- Pick and save a recipe of your choice.
- Share a recipe with your friends.
- Delete a saved recipe.

Observations

Round One

User 1 (28 yr old married woman):

- Found calories option in the search bar easily but found it confusing that there was no option for time search in the search customizations

- On the explore page, she couldn't find the home button. She thought the home button was an upwards arrow.
- On the explore page, she couldn't figure out what the search customization was and guessed it could be the home button.
- When she went to the recipe page, she was asking if there is a heart button to save the recipe.
- Everything else went smoothly

User 2 (19 year old boy):

- For the first task, the user explored all the buttons in the homepage. Going to the cookbook first, home, socials, home, search, back, and then explore. The user said it was easy, however it was confusing.
- On the recipe page, the user stated that the recipe page does not have a time stamp on it.
- When doing the second task, in the cookbook page, the user did not notice the tabs of cookbook and history. The user couldn't scroll through the saved recipes and the page does not have an indicator that the recipe is saved. Also, the user did not know where to organize the recipes and trying to find where it is located.
- When saving a recipe the user suggested that there should be a notification prompting the user that the recipe is saved and tell where it is placed.
- In sharing the recipe, the user tried to copy the link of the recipe and went to the social page. The user is wondering where the recipe should be pasted. The user stated that the social page needs a comment section to share the recipe.
- In deleting a recipe, the user finds it hard to finish the task. Once the pop up appears and selects yes, there's no changes happened to the cookbook page. So the user cannot tell whether or not the recipe is deleted from the cookbook or history page.

User 3 (17 year old girl):

- On the main home page, there was confusion between the explorer and search button. User did not know which to press in order to actually search for a recipe.
- On the search menu, the user was able to understand how to set a keyword to find a vegan recipe and set the calorie min and max. However, it seems that setting a minimum calorie was pointless to the user since they did not have a good idea of what to enter but they did know what they wanted to enter for the maximum calorie.
- While on the cookbook menu, the user did not understand what the edit button on the recipes was for. They believed it was to edit the contents of the recipe,

instead of a way of labeling the recipe. The user was unsuccessful in organizing the recipes that have been saved.

- The user was able to save a recipe but was surprised that there wasn't a popup menu when it was pressed to add a label or name to the recipe.
- Sharing a recipe was a task the user was able to do more straight forward. They simply clicked on the shared button and assumed it would get posted on the socials menu.
- The user was successfully in deleting a recipe by pressing on the trash bin symbol on the cookbook menu.

Round Two

User 1 (19 year old boy):

- The first three and last tasks were easy to do according to the user. This iteration is less confusing than the previous one. There was an immediate change when doing the task which affirms the users that the task was done successfully.
- The fourth task was still confusing to the user. When exploring the first three tasks, the user increased their learnability and quickly went for the "MyCookbook" page. Then, the user clicked the share button and copied the link but it had nowhere to go. The user went back to the home page and tried again. This time with the post button after clicking the share button. It went to the social page then this is where the confusion starts.
- The user did not know where to share and stated that the user cannot directly share to friends.

User 2 (25 year old male)

- The user first explored the UI by tapping every button and viewing the effects. All pages were viewed in this exploration. After learning the UI, the user was able to easily perform the tasks provided with only some trouble.
- The user had slight trouble finding the search function (magnifying glass icon on top left of Explore page).
- User could not use the sliders to adjust values in the search menu (there is only one bubble but two inputs for min and max)
- User had initial confusion on what the "Edit" button in the "MyCookbook" page did, but learned after tapping.

- When transitioning from task 3 to task 4, the user had difficulty navigating from the “Recipe” page to the “MyCookbook” page and complained that navigation bars were inconsistent between pages.
- User also suggested a log-in page.

User 3 (28 yr old woman)

- I asked her to delete a friend from the socials and she was confused on where to go but eventually figured out she would need to go to the profile tab.
- She was confused on which recipes would go to history. She asked whether if you just click on a recipe to view, does it end up in the history tab of MyCookbook.
- When asked to turn on the dark mode, she went to settings and did it with no problems.
- When asked to delete her account, she asked what if you don't know English when it asked for the user to type “DELETE” to confirm.
- Also, we noticed there is no way for the user to view one's own profile in cases where they might want to delete a recipe they shared. This option could be unnecessary though.

Prototype Iterations

Our prototype went through two iterations. During our initial prototype, we conducted three user tests and found out that there were a lot of confusing aspects to our original design. The users struggled to transition between tasks, did not understand how to organize saved recipes, and were confused on the wording of some of the buttons. Therefore, we decided to add more visual indications to the user on our first iteration. In this iteration, we added popup menus to ensure safety of some actions or to give the user visual feedback of what they did. For example, when a user removes a recipe they are now displayed a popup menu reassuring if they really want to delete the recipe. The share button also has a popup menu now that allows the user to add a personal title or description of the recipe they're sharing on their social feed, or gives them the option to share the recipe through a custom link they can copy. This iteration also got a new design for our social media menu. In the social media menu, a user is able to navigate through a feed or their own profile by using a menu bar. Within the feed, the user can see what recipes their friends have recently shared.

After our first iteration was done, we interviewed two more users for round two of user testing. In this observation, users were more easily able to understand how to complete the tasks that were given to them and seemed to know how to navigate

through the different menus. However, it did take the users some time to figure out exactly what to do, therefore our team focused on doing some redesigning for our second iteration to speed up the process of completing tasks. For starters, we redesigned the home menu by removing the search button and moving it to the “Explore” page. This is more efficient because the user can now see the results of their search query once they exit the search menu. Also, the search menu had some changes done to its original design, now users can use a slider bar to set the amount of calories they want for their recipes. The rating setting was also removed and replaced with a pretime setting which gives users the option to filter recipes by how long they take to make on average. Other simple redesignes were made such on the social media menu users can now remove friends from the friends list and in the Cookbook menu the search button was removed.

Summary of Iterations

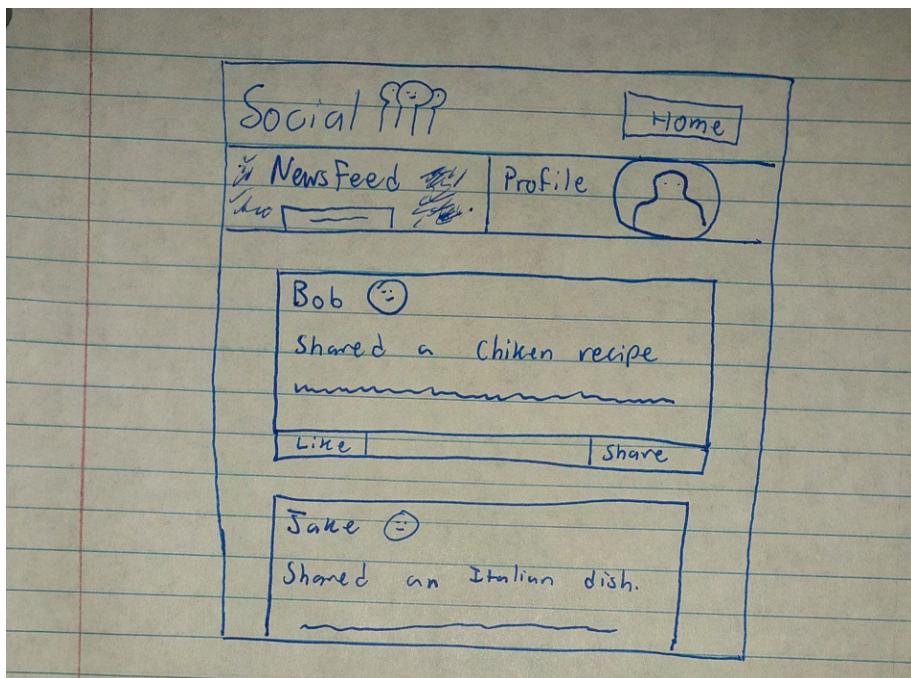
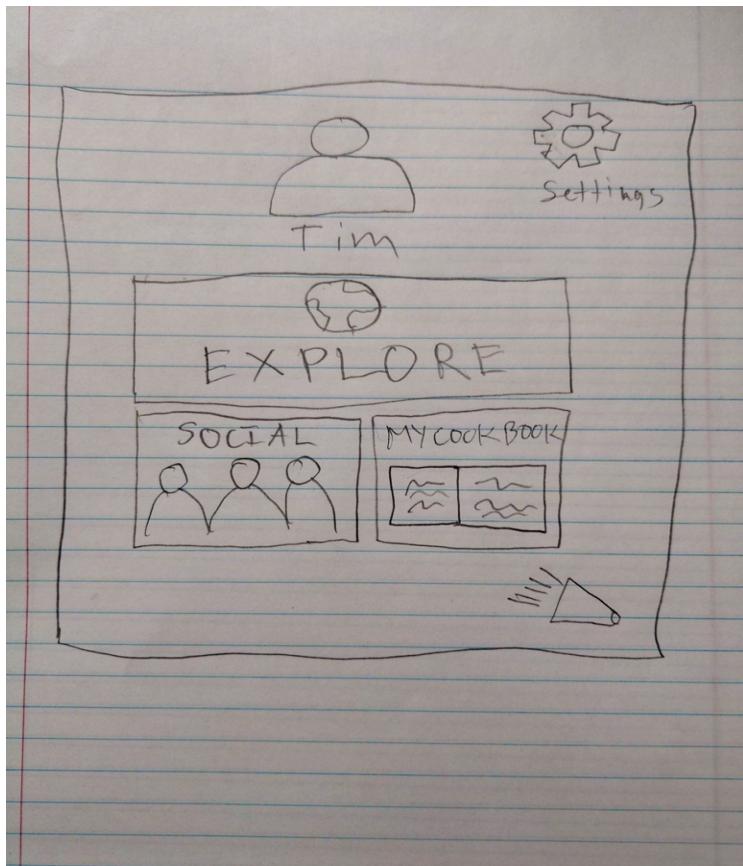
Two iterations were created after two rounds of interviews consisting of 3 users each. After the first round of interviews, the following changes were made to the prototype.

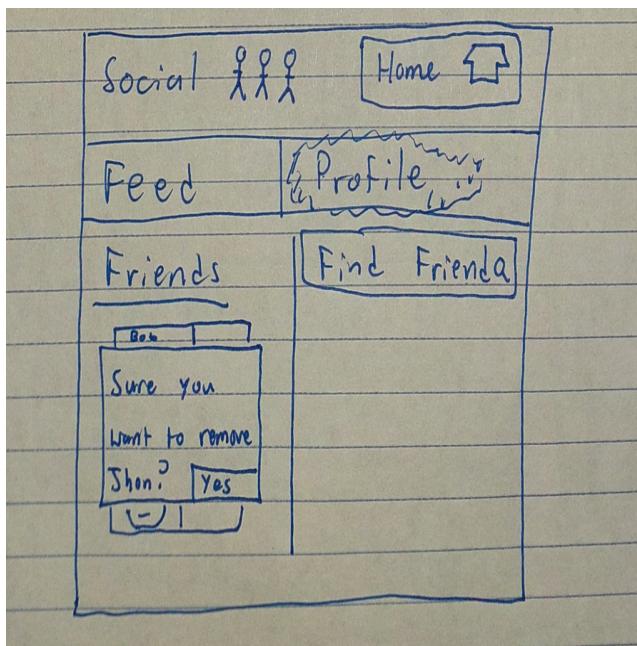
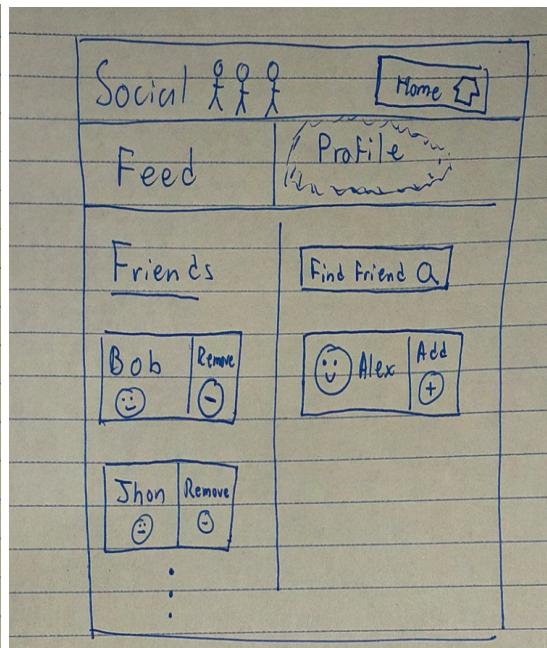
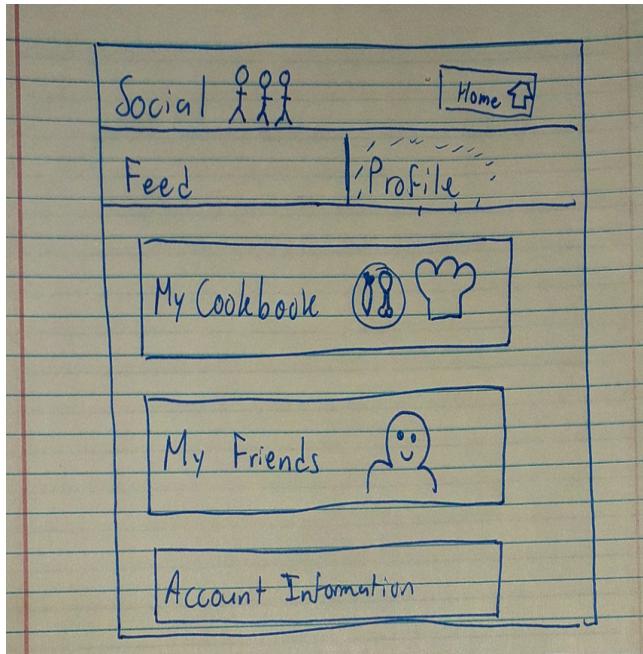
- “Save” button opens popup to categorize, say saved when it’s saved
- The “Remove” button opens a confirmation popup menu.
- “Share” button requires additional information to be entered on a popup menu
- Designed a menu for the Social page, containing a tab for news feed and a tab for user profile.
- Users can now add friends through the profile tab found in the Social page.
- Added settings
- Ratings setting was removed in the Search menu.
- Pretime setting was added to the Search menu.
- Get rid of search button in home page
- Add search function in Explore
- Added remove friend option.

After the second round of interviews, the following changes were made:

- Fixed navigation bar consistent in Explore and Social pages
- Changed delete account prompt to “<username>” instead of “DELETE”
- Added login page

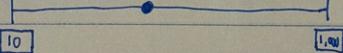
First Iteration (After Round 1):

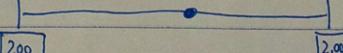




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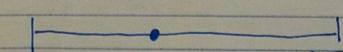
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Price 
10 1,000

Calories 
200 2,000

Servings 2 ▼

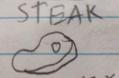
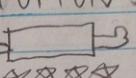
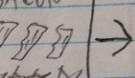
Allergies Peanuts Shrimp

Prep-Time 
10m 2 hr

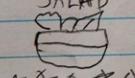
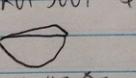
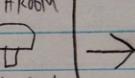
Search Explore

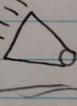
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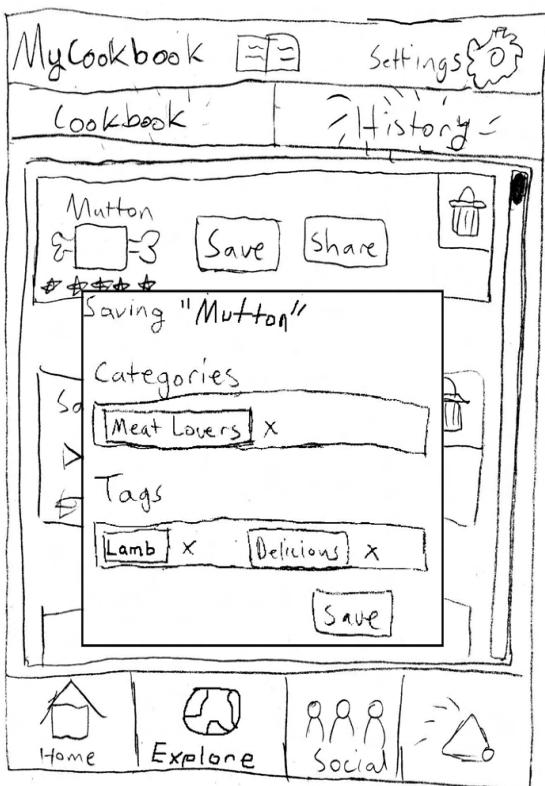
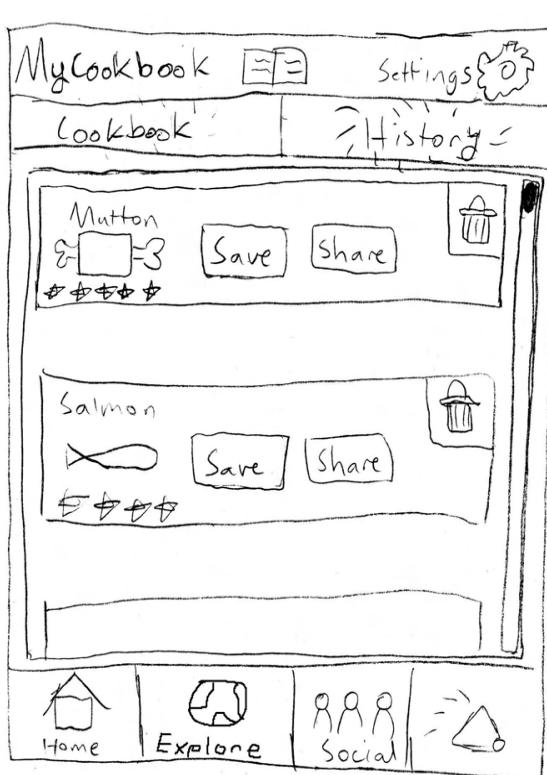
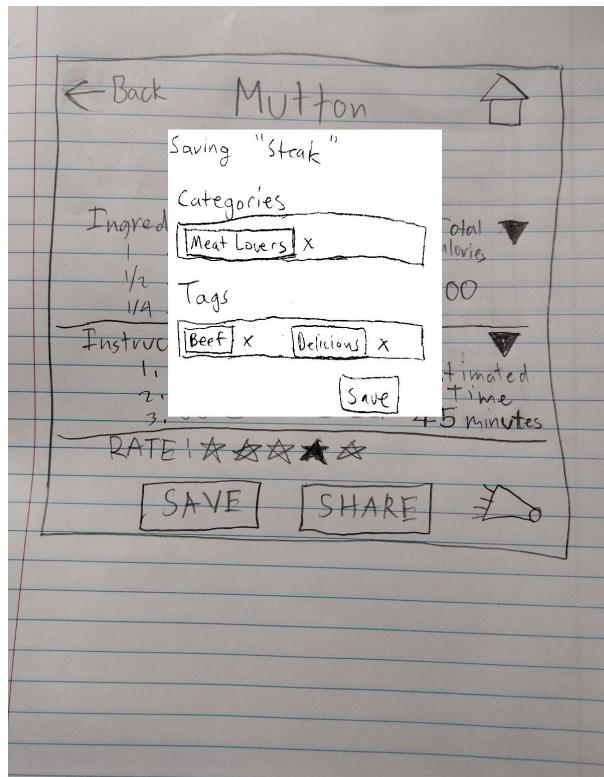
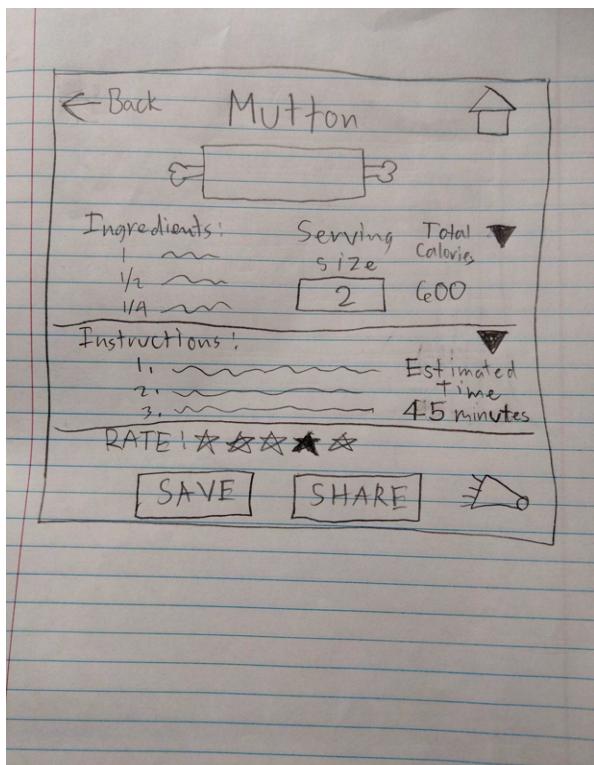
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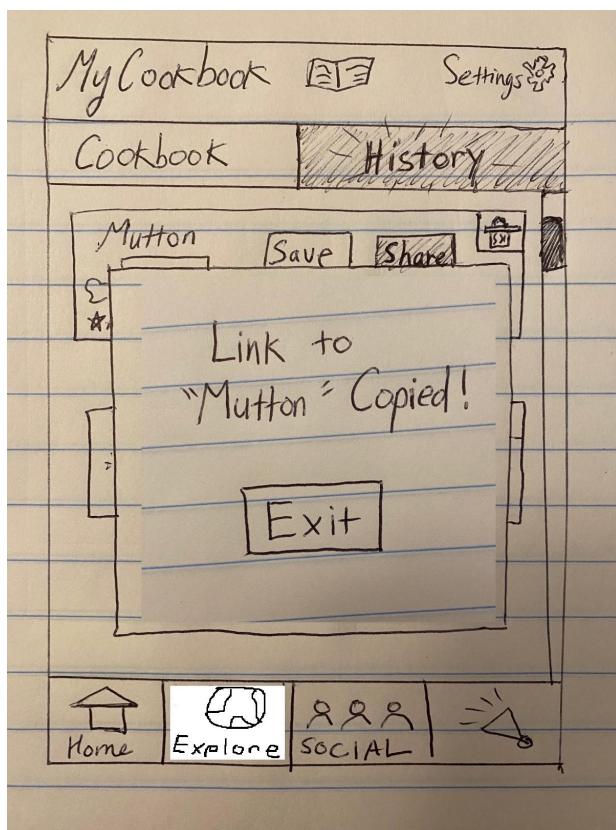
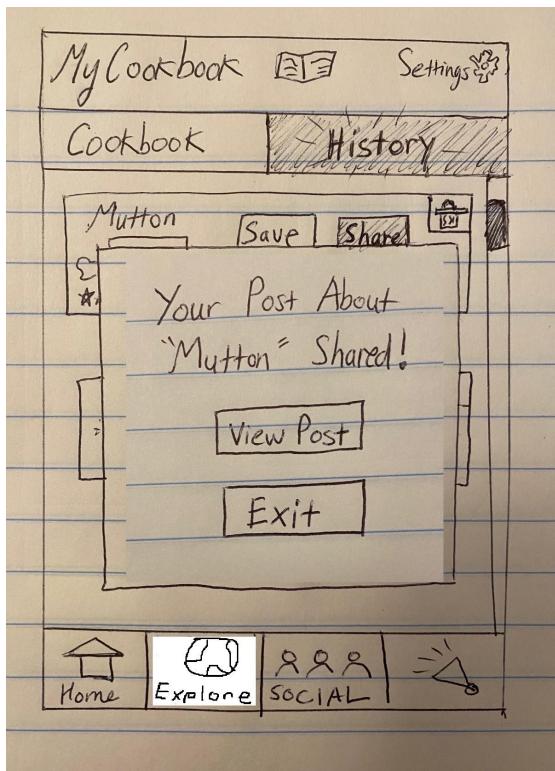
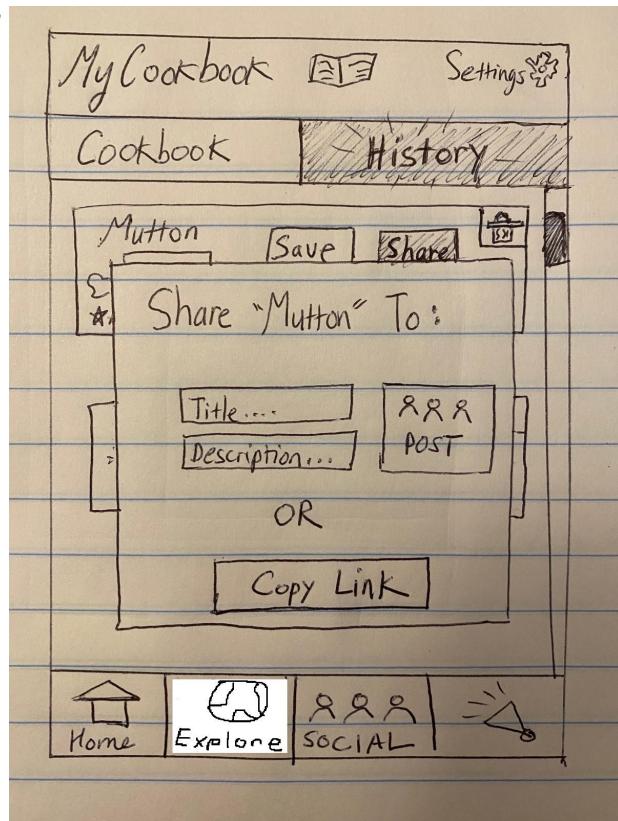
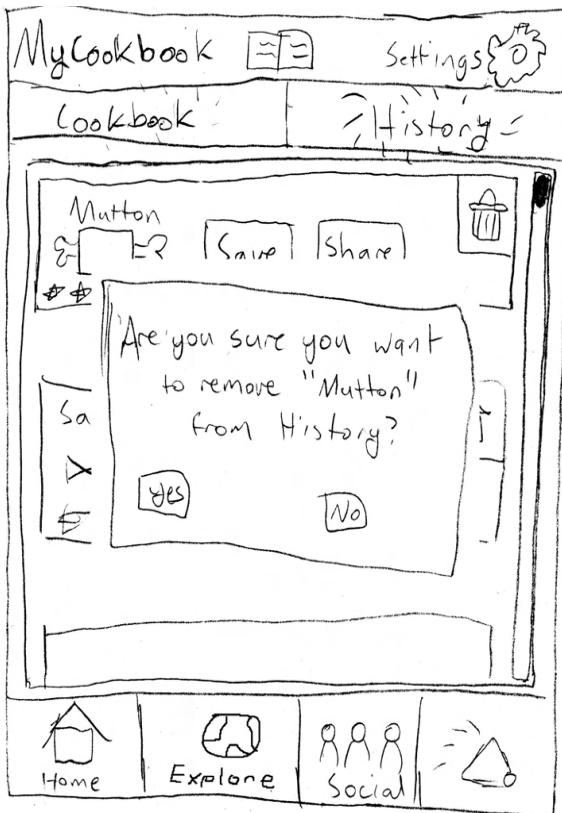
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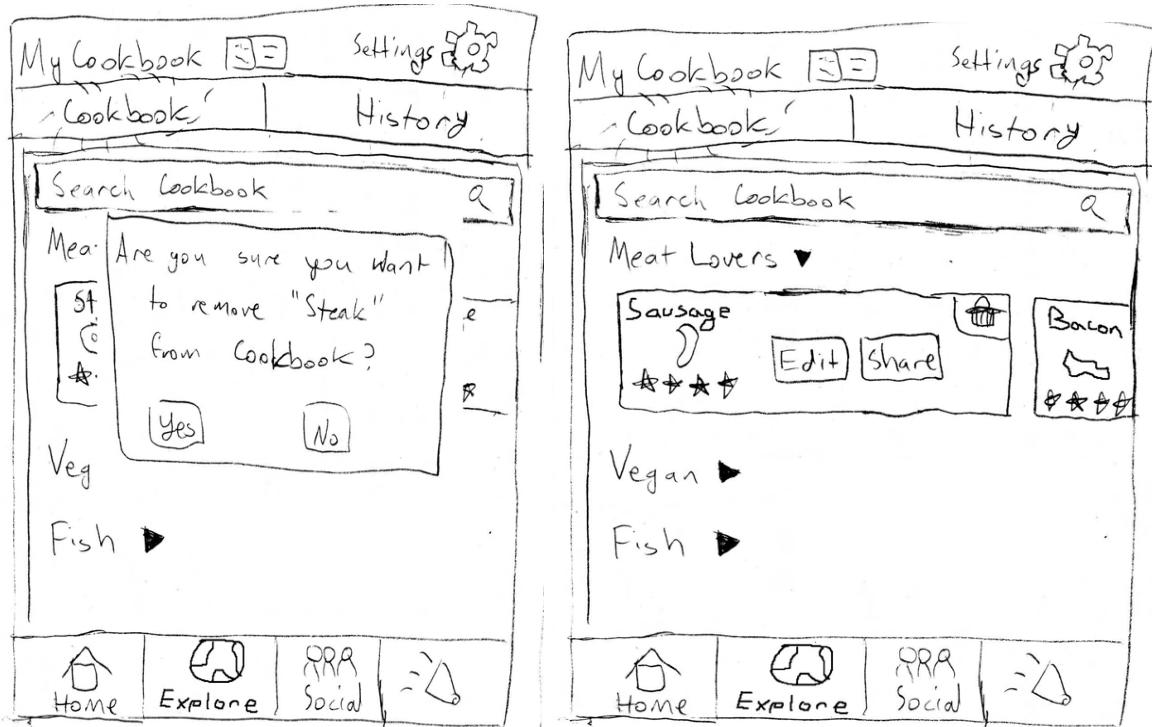
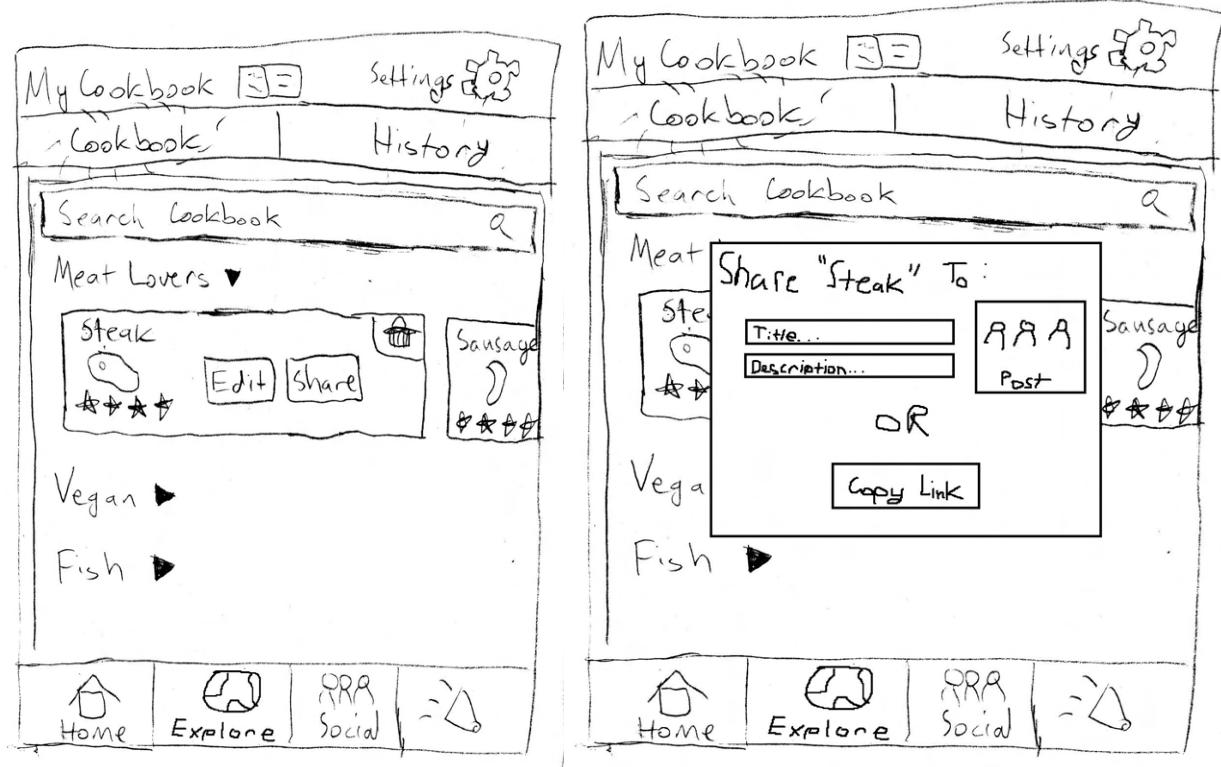
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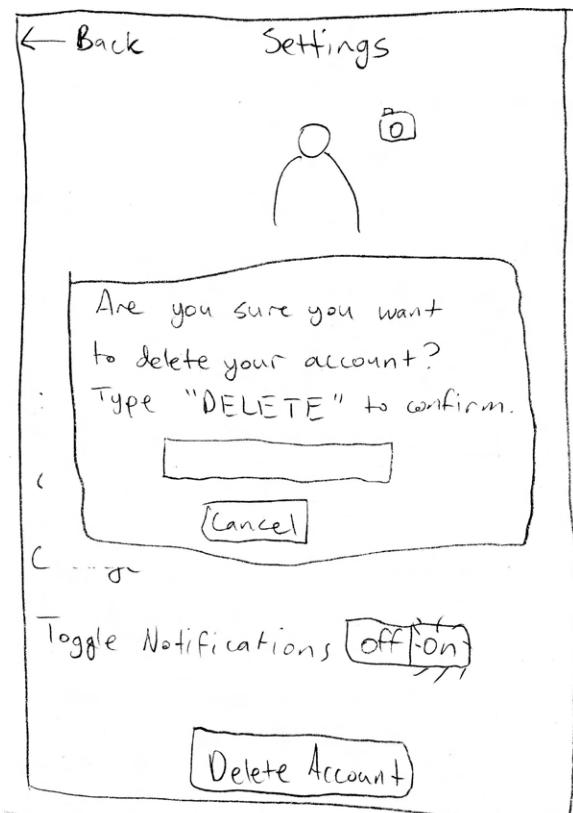
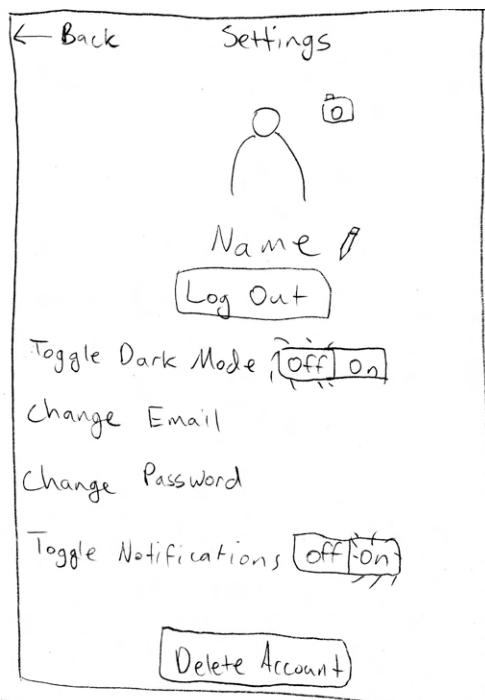
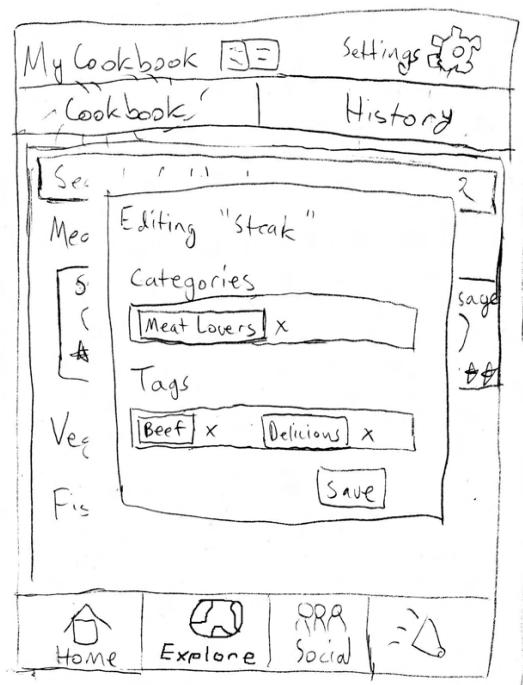
SALAD  ★★★★★	CARROT SOUP \$  ★★★★★ 400 Cal	MUSHROOM  ★★★★★
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 SWIPE UP ↑ TO SEE MORE 

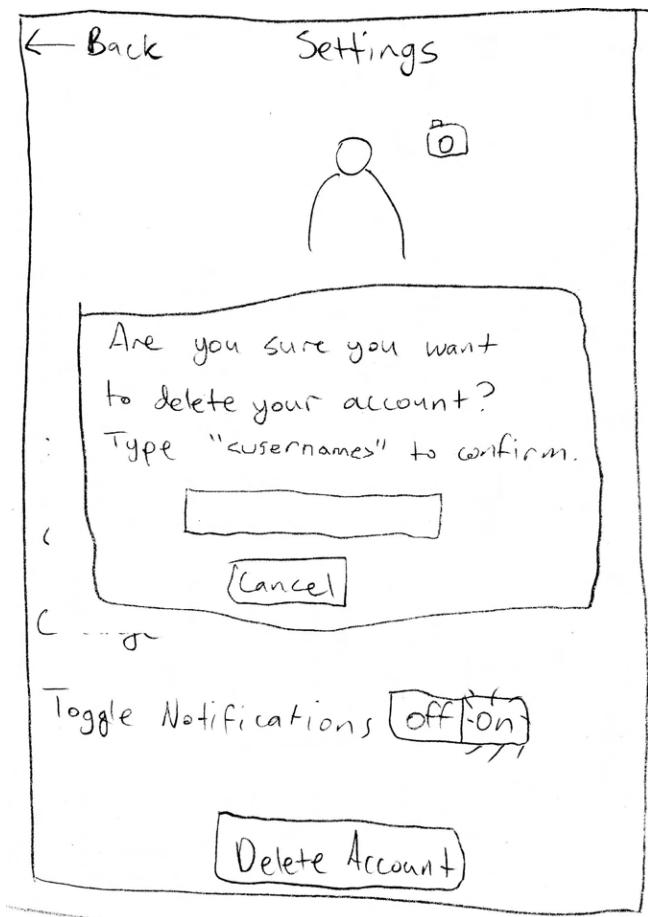


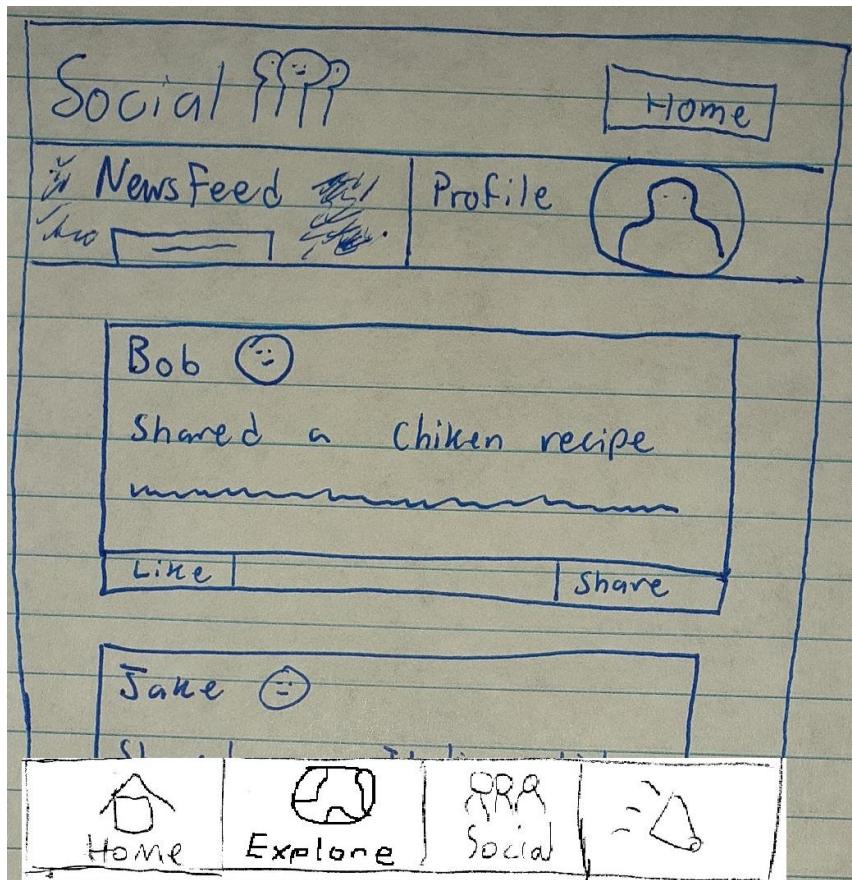






Final Paper Prototype Changes:



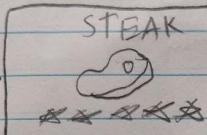




Explore

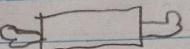


Meat Lover:



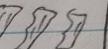
STEAK

LAMB \$



500 cal

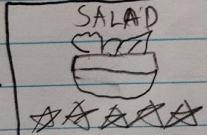
BACON



500 cal



Vegetarian:



SALAD

CARROT SOUP \$



400 cal

MUSHROOM



400 cal



Home

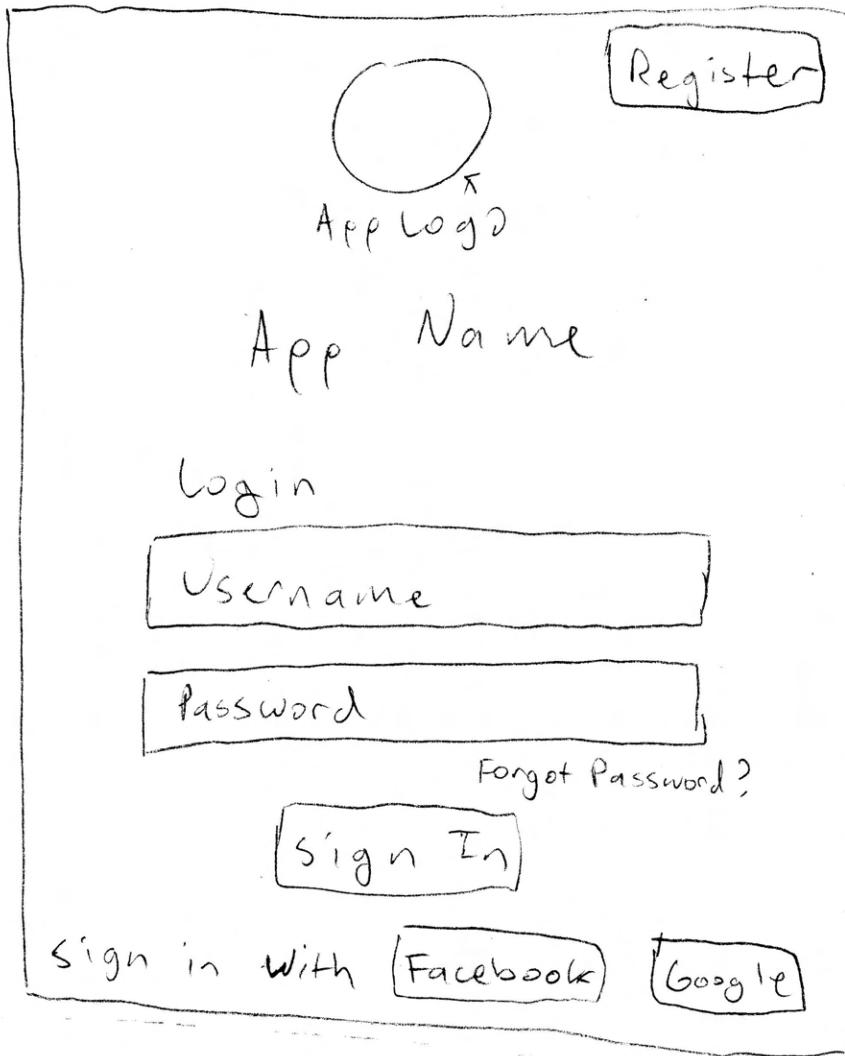


Explore



Social





PR1: Project Video

Presentation Slides: [PR1](#)

Presentation Video: <https://youtu.be/WOAfyC87Lu0>

GR4:

Platform Details:

The platform that was used for the prototype was Android Studios. The API used to develop the prototype was API 30 (Android 11). The Android Gradle Plugin Version was 4.1.1 and the Grade Version used was 6.5. The prototype was developed to fit only the Pixel 3 XL's screen size and using a Pixel 3 XL emulator running on Pie (API 28).

Instructions: To access the prototype simply click the following link.

- Link to Android Prototype (This is the prototype for submission)

<https://drive.google.com/file/d/1lQGslYu5u8Yqsj-ipZ2o-Y6pWIBZm-QC/view?usp=sharing>

The emulator used to run the prototype is the Google Pixel 3 XL on API 28. The Pixel 3 XL is required as the prototype's layout and spacing is dependent on the size being the same as the Pixel 3 XL's.

1. Download file and unzip
2. In Android Studios, open the project folder
3. The Android Gradle Plugin Version was 4.1.1 and the Grade Version used was 6.5. The prototype was developed to fit only the Pixel 3 XL's screen size and using a Pixel 3 XL emulator running on Pie (API 28). To do this:
 - a. Click on File in the top menu and click on Project Structure
 - b. In the left bar, click on Project and check the Android Gradle Plugin Version and Gradle Version. If they are not as described in instruction 3, then change them to that.
 - c. In the left bar, click on modules and check the Compile Sdk Version. The version should be 30 (API 30: Android 11.0 (R))
4. If you do not already have the emulator, you must do the following:
 - a. Open AVD manager
 - b. Click "Create Virtual Device"
 - c. Find the Pixel 3 XL in the device list and click "Next"
 - d. Download the Pie system image (API 28) (warning, 948 MB download)
 - e. Once download is complete, click "Next"
 - f. Click Finish and exit the AVD manager
5. Rebuild the project and then run the emulator

- This is what it is supposed to be like (Adobe XD non-code prototype)
<https://xd.adobe.com/view/8d23dc91-5b07-48d0-b9e4-0eca023d7432-d870/>

Shallow Parts:

- Within the login page, the register button, facebook icon, and google icon do not have functionality
- Any of the input text boxes do not have functionality.
- Navigation bar and settings works
- Cannot remove/scroll/add friends
- Non-functioning feed functions
- Cannot remove/scroll/add/edit/share recipes
- Only one recipe is available, cannot scroll to other recipes
- Only one cookbook category is available
- All arrows do not have functionality

GR5:

<https://github.com/natephan/WiCook/commits/main>

(^ We forgot and made commits after the deadline, so the below is the actual project from before the deadline. The commits on April 26 are also listed on github.)

<https://drive.google.com/file/d/19bdYEJs1N3Niv0er8uyeccCKe29DMIFv/view?usp=sharing>

The emulator used to run the prototype is the Google Pixel 3 XL on API 28. The Pixel 3 XL is required as the prototype's layout and spacing is dependent on the size being the same as the Pixel 3 XL's.

1. Download file and unzip
2. In Android Studios, open the project folder
3. The Android Gradle Plugin Version was 4.1.1 and the Grade Version used was 6.5. The prototype was developed to fit only the Pixel 3 XL's screen size and using a Pixel 3 XL emulator running on Pie (API 28). You must also do this if you are getting an SDK location not found error. To do this:
 - a. Click on File in the top menu and click on Project Structure
 - b. In the left bar, click on Project and check the Android Gradle Plugin Version and Gradle Version. If they are not as described in instruction 3, then change them to that.

- c. In the left bar, click on modules and check the Compile Sdk Version.
The version should be 30 (API 30: Android 11.0 (R))
4. If you do not already have the emulator, you must do the following:
 - a. Open AVD manager
 - b. Click “Create Virtual Device”
 - c. Find the Pixel 3 XL in the device list and click “Next”
 - d. Download the Pie system image (API 28) (warning, 948 MB download)
 - e. Once download is complete, click “Next”
 - f. Click Finish and exit the AVD manager
5. Rebuild the project and then run the emulator

David's Contributions:

Redesigned the “Explore” menu and “Cookbook” menu. Worked on displaying recipes and being able to save them. Implemented the ability to add category files to the list view. Added the ability to store recipes based on category. Created a category submenu. Added recipe data to a file that stores all of the information about recipes in the form of strings. Restructured the navigation bar to include all possible menus and highlight the menu that the user is on.

Kent's Contributions:

Implemented the search functionality on the “Explore” menu where the user could search recipes and be able to click on the recipe to take them to the recipe page. Also helped with the implementation of dynamically adding recipes to a list view.

Nathan's Contributions:

Implemented the settings page and the popup for the “Delete Account” button. Also implemented the filter page, the Social Feed page, and the Social Friends page. I also made some stylistic changes to some of the other pages.

PS3 Feedback:

The feedback we got from the PS3's mentioned that the navigation bar in our design was not consistent between different menus and failed to show which menu the user was currently on. We fixed this by having all menus be displayed on the navigation bar in

the same order in all of the menu pages. We also had the navigation bar highlight the current menu being displayed by changing its background color to a darker shade.

It was also mentioned that the colors we used for the background and text were too empowering and distracting. Therefore, we went with a combination of dark purple with white text and light purple with black text for easy readability and less strain on the eyes.

Another minor detail they brought up was that recipes did not mention how many people had reviewed the recipe so the rating system did not reflect its true meaning. Therefore, we added a small description to the recipe card that included some nutritional information plus the number of people that had reviewed the recipe.

We also received feedback that the “Filter” page had too many settings that the user had to interact with. Thus, we removed some of the text input widgets and reorganized the settings to maintain consistency between similar widgets.

GR6:

Design:

The final design of our application had many major changes done in the way we display recipes, how we store recipes, the colors used for styling, and some other minor details.



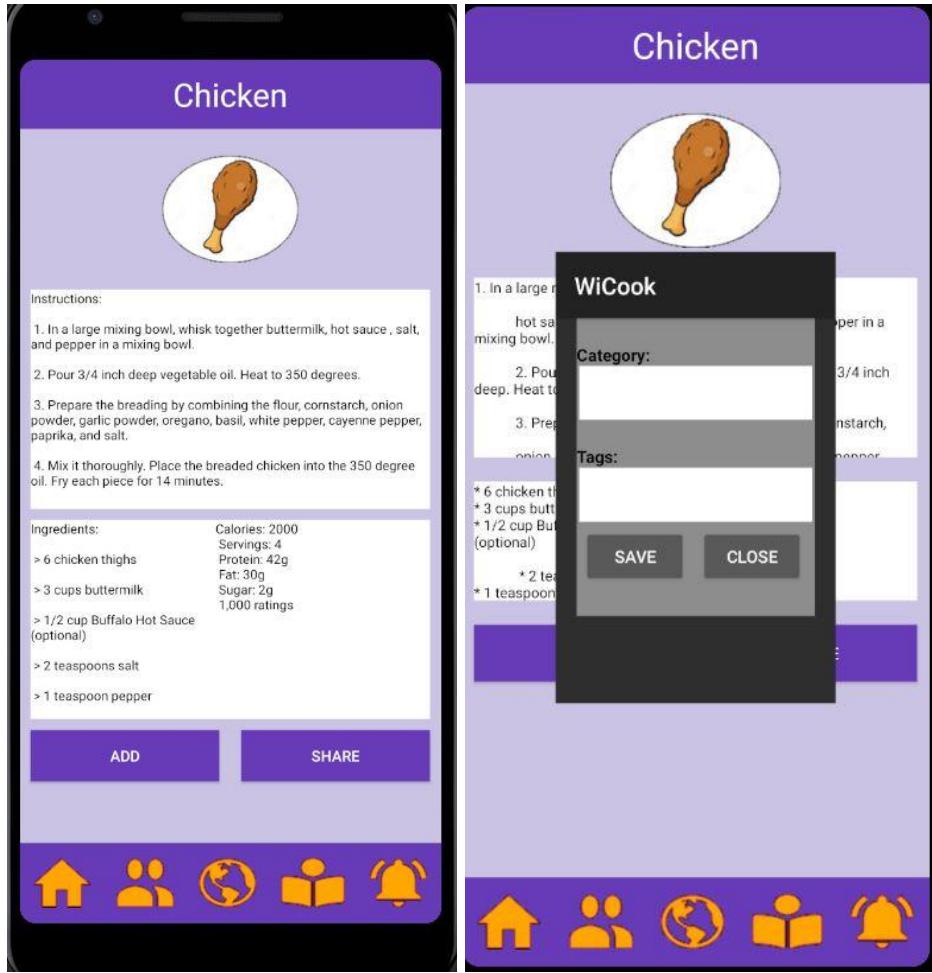
- From the login page nothing was changed from the original but it does a good job at displaying the new color scheme used for the styling of the application.



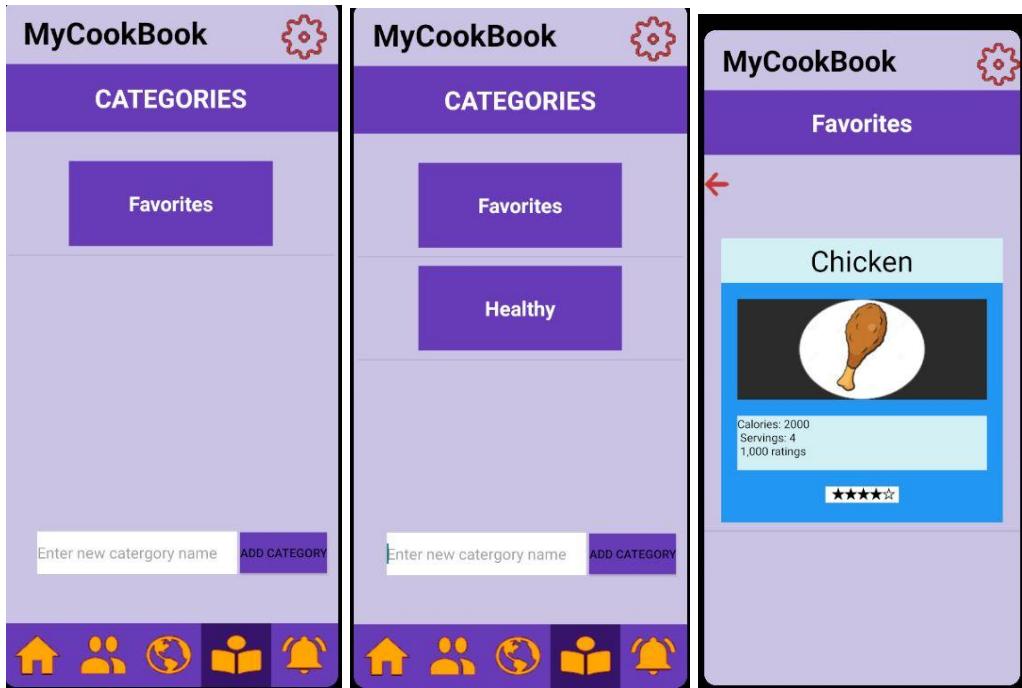
- The original design of the home page was kept the same because it provided an efficient way of displaying the overall structure of the application and lets the user know what features are available to them.



- Here we have the Explore page where recipes are put on a list display and the user can search for a particular recipe and has access to the filter menu in order to have more ways of filtering their search results. The design for the Explore was greatly simplified because the original design had too much going on with the horizontal layout and different category levels, so we chose to do a simple vertical layout. From the heuristics evaluations we also realized that we did not provide enough information about the recipes to the user. Thus, a text field with some bit of information was added to make the recipes more appealing to the user.
- Here we also see the improved design of the navigation bar which shows all the possible pages the user can go to and highlights the current page they are currently on.



- The design used for displaying recipe information was kept the same as well. Through the paper prototype and heuristic evaluations we found that users could quickly identify the information they wanted to know.
- An important design decision for the application is to allow users to have a way to categorise their recipes when saving them to the cookbook. Therefore, we utilized a popup window that lets the user pick a category in which to place their saved recipes.



- Here we have the design for the cook which displays the different categories the user can create. The original design displayed all of the saved recipes on the main cookbook page and also had a history tab. In order to maintain a minimalist design, the decision to remove the history tab was made and only the category options are displayed on the cookbook main page.
- In the last picture, we see the recipe that was saved under favorites, with the name of the category being displayed at the top to remind the user on what category they are in. There is also an arrow that takes them back to the cookbooks main page.

Filter Search

Keywords

Exclude

Allergies

Price 0

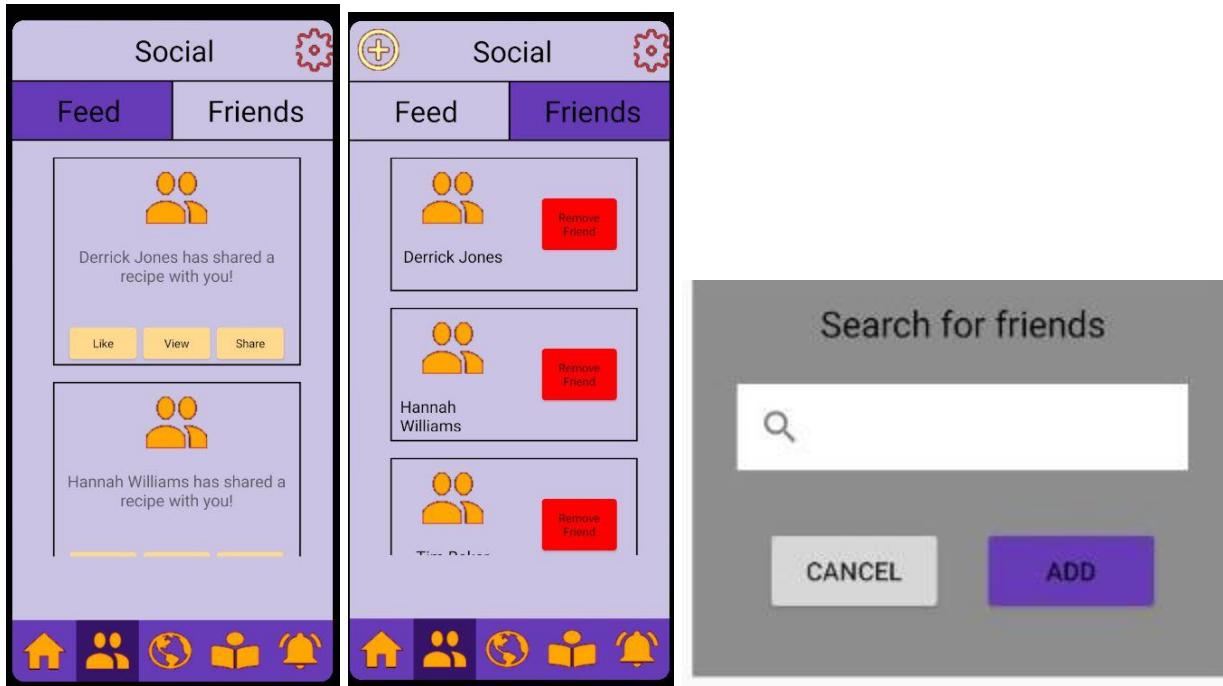
Calories 0

Time 0

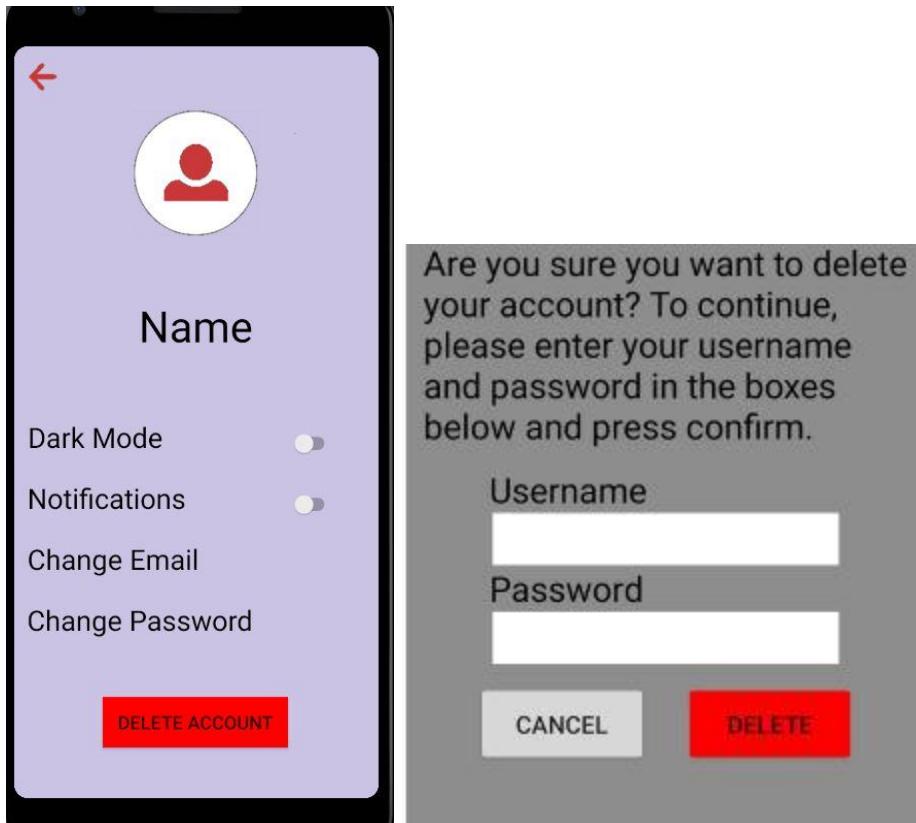
Servings 1

RESET **SAVE**

- The filter page design was kept just about the same, but it was reorganized to keep similar widgets next to each other. We also removed some input boxes from the original design because one the heuristic evaluations mentioned that they felt the amount of settings to change was overwhelming.



- This is the design for the social page we decided to implement. Alternatively we had planned to have two columns on the friends tab with one column displaying the current friends the user had and the other column displaying a search bar and friends the user could add. However, that design was too clustering and unnecessary because a user wouldn't always need to add a friend. Therefore, we decided that when the user wants to add a friend they simply click the plus symbol in the top left corner and the popup window (image on the far right) to add a friend will be on display. Also shown in these screenshots is the use of red colors on buttons to display dangerous actions. This was a design decision made to improve app safety.



- Finally, here we have the design for the settings page. Very simple design that allows the user to quickly find the thing they wish to change and gives them more control over the application. The red background on the delete account button was used to signify a dangerous action. And for added safety, we decided to add a popup window that prompts the user to enter their username and password before deleting their account. It was pointed out during user testing that having the requirement to enter the password was more safer so only the owner of the account could do it.

Implementation:

For our implementation, we utilized the Android Studio XML files (design files used by android studio for building UI's) to create widgets and assign properties to them such as color, width, and height, listeners, etc. However, due to inexperience with the technology our design failed to be compatible with different screen sizes.

The implementation of our design began with the login page and main menu page, both of which were fairly simple to create with the use of a couple of buttons, input text fields, and images. The text fields in the login page are simply cosmetic since

there's no back end to check that a valid username and password were entered. The Facebook and Google logos are for cosmetics as well. The buttons on both the login and the main menu have on click listeners that cause the application to jump to the next corresponding page when clicked.

Next in our implementation was the Explore page. In this design, we utilized a list view object to display different recipes at runtime. To do this, we created a class object named Recipe to store all the information about a recipe, and then we created an array of these objects. After that, we developed another class called RecipeAdapter which takes in a XML file and an array. It then populates the listview object with the data stored in the array and displays the data based on the specifications of the XML file. Thus, we were able to display the different recipes as cards with a title, a picture, some text, and another image for the star ratings.

A great property of the listview is that it is scrollable, therefore, we were able to create a simple vertical design to our Explore page while being able to display all the recipes we wanted. Also, we need to allow users to search for recipes within the Explore page, and see the results as soon as they enter their query. We accomplished this by programming a method within the RecipeAdapter that took in a string and filtered out the data in the given array by checking that only recipes that contained the input string were to be shown on the list view. Finally, a listener was attached to the list view to wait for clicks on any of the recipes that are being displayed, and take the user to the Recipe page where all the information about a recipe will be shown.

The implementation of the Recipe page was done primarily using the xml file. Widgets were organized in a vertical layout using the vertical layout class in Android Studio. A text widget was used to display the name of the receipt at the very top followed by an image of the food, so the user knows what recipe they clicked on. Next, we added text fields that displayed all of the information of the recipe in an organized manner, so it's easily scannable by the user. Finally we had to button at the bottom, one for adding the recipe to the cookbook and the other for sharing the recipe.

We decided to implement a popup window that would be shown over the current display when the add button was clicked. The popup window required its own XML file to be created in order to display the widgets we needed. When saving a recipe, the popup window would take in two text inputs, one for category and the other for a tag, that would be stored in the Recipe class when the user clicked the save button. This information will later be used to display recipes based on a specific category within the cookbook page. We wanted to implement a dropdown menu that displayed the current categories the user had created in the cookbook, that way the user didn't have to remember what categories they made, but it was a difficult task to do and that made our

design suffer a bit in terms of efficiency. Another unsuccessful implementation was showing the share functionality, therefore the sharing button had no visual effect when clicked.

Then, we began implementing the Cookbook page which used the same listview logic as the Explore page. In this page, the user would create a new category folder by entering some input text on a text field, and then clicking a button that grabs the text input and creates an object with the text and displays it on the listview. Unfortunately, we couldn't implement a way to remove category items once created because the way listeners work on objects wrapped within a listview is a complicated structure. Thus, it reduced the safety of our design which limits the user's control over the data. Also, we didn't have time to implement a way to remove saved recipes which was another issue that affects the user's control over the application.

Finally, we implemented the Social page that allowed users to add friends as well as seeing what recipes their friends had shared. To add a friend, the user must click on a plus icon that brings up a popup window with a text field, and buttons to confirm their input or close the window. This implementation lacks in efficacy because it is not shown a list of friends that they could add, instead, they need to enter one specific name and only add the person with that name. Removing a friend was something that we failed to implement for the same complications with the listview as in the category page, and thus, our design failed in giving the users control over data again.

Overall, we strived for maintaining a minimalist design by implementing a simple vertical layout for all our menus and used as few widgets as possible. That made the learning process of using our app easy but diminishing the efficiency of some operations.

Evaluation:

We conducted our user test by Zoom without showing the observers face and muting their microphones to avoid uncomfortable feelings from the user. We set up time for all of the team members to meet as well as the users. The facilitator was beside the user to give them the briefing and assign them a task one after the other. We used the record feature of Zoom to go back, review what the user did, and take notes. We thank the user for cooperating with us and making sure that we're not testing their skills but the application.

We found users by whichever team member has available family members or friends that they could trust. They are representative of our target user population by

having some interest in cooking or looking for recipes to cook during these times. Our users like to explore new things as well as keep being healthy to avoid getting the virus.

Each facilitator briefed their respective users by thanking them for their time to be part of our testing. Then, we explained that we are only testing the capabilities of our application and the purpose of it. We reassured them that the performance of the task completion doesn't have to be perfect as well as the other members of the group are there to take notes on what could be improved and limitations of the application. The facilitator explained to the users that they are being recorded only if they allow it for a review session that is only available to group members and no else. Then, the facilitator encouraged the users to ask questions, think out loud while performing a task or what comes to their mind as well as stop and leave at any time they want.

After the briefing, the facilitator handed them index cards where the tasks are written. The easiest tasks that the users did was searching for a fried chicken recipe, creating a new category and saving the recipe. When the users learn by exploring through the application, they recognize immediately that there's a search bar at the explore page. Then, when reaching the cookbook page they were able to add categories to their like as well as put a unique tag. The users discovered that they could save the recipe when doing the searching task, so they did both tasks simultaneously. There's still some confusion on using the filter feature since the user doesn't know what to do with it because of no visual feedback. The task was to use the filter settings to find a vegan meal under 400 calories that can be made in under 30 minutes. Another task that caused puzzlement was to delete a saved recipe which was not implemented. Picking , saving recipes of their choice and sharing a recipe with your friends caused mild confusion but the users did it eventually.

Usability Problems and Solutions

- Popup windows were too small. (**cosmetic**).
 - ◆ Can be fixed by simply changing the width and height of the pop up window.
- Adding a new friend was confusing. (**major**)
 - ◆ Can be fixed by switching the implementation of popup window to a full on screen for finding a friend. This way a list of names can be used to display all the people who match the search criteria and then can be added by simply clicking the name.
- Deleting a friend was not possible. (**major**)
 - ◆ Researching how to add listeners to items wrapped within a listview would fix this issue.
- No way of deleting a recipe. (**major**)

- ◆ A way to implement this is to change the functionality of the add recipe button when the specific recipe has already been saved. If it has been saved, the button will now be labeled as remove and its function will be to change the save parameter of the recipe class to false.
- Couldn't remember the name of the category they made while trying to save a recipe. (minor)
 - ◆ Using a dropped down menu that has the names of all the categories created by the user would fix this issue. The user would then need to simply just click on the item that they want from the drop down menu.
- Had trouble visualizing the amount change for the calories, price, and time.(minor)
 - ◆ A simple fix to this would be to have an integer variable that gets incremented/decremented on the on drag listener as the user drags the object to the right/left. The changed data will be displayed on screen every time the listener is called.
- Design was not compatible with different screen sizes. (catastrophic)
 - ◆ Can be fixed by limiting the amount of static widths and heights. Instead, widths and heights should be assigned at run time using android studios predefined attributes like match_parent or wrap_content. Also the use of fragment classes in android studio would have been a better choice over using purply activities classes because different design layouts could be decided at runtime with fragments.

Reflections:

Over the course of the iterative design process we learned that coming up with a simplistic and minimalistic design is better over a complex design with strange layouts and a lot of intractable items. If we were to do it again, the thing we would do differently is focus more on picking a design that wouldn't be too difficult to implement and take too much time. Many of the ideas we had seemed unique and interesting, such as displaying the recipes in a carousel fashion, but when it came time to implement that design it was difficult to get the layout and animation to work. Therefore, we learned that, while doing design sketches on paper, we should keep in mind the implementation and time risks we are introducing to our designs.

During paper prototyping we decided on prototyping the features that reflected each of our applications goals individually. We learned that users are constantly waiting for visual feedback from the UI and sometimes even expect a specific action to happen based on past experience. If we were to do this again, we would think more about what

kind of visual feedback the user would expect to see when perform a specific task. This would require looking at various UI and seeing what standard visualizations techniques they use so we better understand the background knowledge of the user. Then we would add these visualization techniques to our prototype and observe whether or not the user seems surprised by the actions of the prototype.

When it came to styling of the application, we learned that color combinations of background and text matter a lot when it comes to the usability of the application and that using light colors and dark colors is the best choice for styling. When we chose the color scheme for our computer prototype we focused more on using colors that really combine together nicely and looked bright. However, when we received feedback from the heuristic evaluations, we were informed that the color scheme was too vibrant and overpowering after a while. We now know to use color schemes that are easy on the eye, such as light shaded colors with dark text or dark backgrounds with white text.

PR2:

Youtube Link to Presentation

https://www.youtube.com/watch?v=G_5R6WcA2w8

Link to Slides:

https://docs.google.com/presentation/d/11DqGxXY2W4qK_-4IglRsRoki1vhJtlo0GV9MD1my1I/edit?usp=sharing