Recipe Exchange Final Report

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SMAD 317 - 12/17/2020

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We created Recipe Exchange to help users find and store new recipes without frustration. Having access to many recipes right at your fingertips can be very beneficial when you're struggling to think of what to make for breakfast, lunch and dinner. Many college kids are sent off to school with little cooking knowledge, and many parents struggle with finding quick and easy meals to cook during their busy schedules. Before Recipe Exchange existed, people would spend lots of time scrolling on Pinterest/Instagram, searching in their mother's cookbook or looking on Google for a new recipe. Recipe Exchange will put its users minds at ease by providing a platform that allows users to easily exchange recipes with others. This report serves to document the user design process as we conducted it over the course of a semester to research, develop, and test the Recipe Exchange app.

Problem Statement

People need a way to connect with each other to share and exchange recipe ideas because they are either new to cooking or searching for a new food to try out. This "Recipe Exchange" app will be very beneficial to users. They won't have to spend 15 minutes searching on google anymore to find a perfect recipe.

1. **Recipe Swap**
   https://apps.apple.com/us/app/recipe-swap/id1059579679
   The Recipe Swap App allows users to keep recipes on their iPhone/iPad for quick reference. It's designed for anyone who wants to keep recipes in their pocket and share with others. For example, if you're going on a trip and you don't want to carry your heavy cookbooks with you, all you need to do is take a picture of the recipe and save it in the app. Once your recipe is saved in the app, you can share it with friends, family, etc. The design of this app is very simple and organized. It's beneficial to users because it keeps their recipes organized in one space with easy access. I find that many people often lose their recipes and struggle last minute to find a new one before a big event. If all of the recipes are organized and in one place on the Recipe Swap app, no one would lose their recipes.

2. **Cooking Light**
   https://www.cookinglight.com
   Cooking Light was a subscription magazine that is now a website that posts cooking-related articles and recipes. The website addresses the problem of providing recipes to those in search of them. It also contains some current news and dieting articles and information. The website curates articles and recipes for readers to try out. Recipes are sorted by type, meal, and even holiday which makes it easy for users to find what they're looking for. It is a useful source for those seeking new recipes to try out, but because Cooking Light is a magazine, it doesn't have ways for its users to share recipes, only find them. The website is more informative and doesn't connect its users to each other. There is also other information on the site in the form of news and dieting articles, so it distracts users trying to purely use the site to find recipes.

3. **All Recipes**
   https://www.allrecipes.com
   All Recipes is a website that addresses the same design problem we seek to address and offers a similar solution. The website allows users to search for recipes that are sorted by type, while also allowing users to share their own recipes. The site has a rating system that allows users to rate recipes, which is useful for finding reliable recipes that others really enjoy. This allows a "Top-10" in each category so the users can find the highest-rated recipes on the site when they search. User feedback is important on a site like this, especially in cooking where skill matters. All Recipes contains a really useful feature that allows users to search by ingredient, which is a feature we hoped to include in our design solution.

4. **Pinch it! Recipe Box**
   https://play.google.com/store/apps/details?id=com.justapinch.recipebox&hl=en_US
   On this app users can find, save, organize, and share top recipes from the web. The first thing users will do is create a recipe box account. Once they make an account, they can find popular recipes, search the internet for new ones, organize favorite recipes into custom folders, and upload your personal recipes. This app is iCloud based; therefore users can access their recipes from any device at any time. Having an account with Pinch it! Recipe Box will also give you access to JustAPinch.com. On this website users can create online grocery lists, build custom meal plans, search, rate and comment on recipes, post your own recipes, chat with others about cooking tips, and get all of the answers to your cooking questions. This app is very inspiring because it has so many great features that users love and will want to continue to use.

5. **Say Mmm**
   https://www.saymmm.com/sharemmm.php
   Say Mmm is a website that encompasses a lot of the aspects of the design problem. It allows users to share recipes, search for new recipes, plan meals with a calendar, use a built-in smart shopping list, and comes in both a website and a mobile app. These features address user needs as stated in the problem statement and are handy for those that want to go really in-depth with keeping track of meals and finding new ones. One place the website falls short is in the recipe sharing itself. Instead of recipes directly on the site, users post links to recipes on other sites that they like or links to their own blogs or websites. This is a flaw because the website isn't self-contained, and therefore not every link can be vetted for safety and legitimacy. Other than that, the website is comprehensive and contains useful features for its users.

Design Process: User Research

        The first step to the user research process was to define our users, which we began by categorizing our users into two groups, one being young adults (high school/college) and the other being adults of any age who spend time in the kitchen. We made sure to interview people of different ages considering our potential users have wide age variety. Because of the current nature of online school during the pandemic, interviews were conducted through various means based on level of comfortability and interviewee preference.

        Our first interviewee was Allison Cavicchio (21), who is a college student that cooks the majority of her meals. She felt as if she has intermediate cooking skills and would like to step it up to be able to cook better and more challenging meals for herself. Our next interviewee was Carolyn Baumann (51), who is normally very busy and spends a good amount of time cooking meals for herself and her family. She often gets bored of the same meals and is in constant search of new and exciting recipes. The third interviewee was Brian Baumann (18), who is a high school student learning how to cook for himself. Brian knows how to make simple meals but would like to practice with more recipes before he goes to college. The next interviewee was Sarah Humphreys (23), who cooks for herself and meal preps. She has a wide range of recipes at her disposal and cooks many different types of food but is always looking to try new things from family or friends, as well as things she sees online. The final interviewee was Elijah Steele (23), who has recently begun cooking a lot more due to being at home during the pandemic. He is a fairly advanced cook but is somewhat picky in what he likes to make so generally sticks to the same meals.
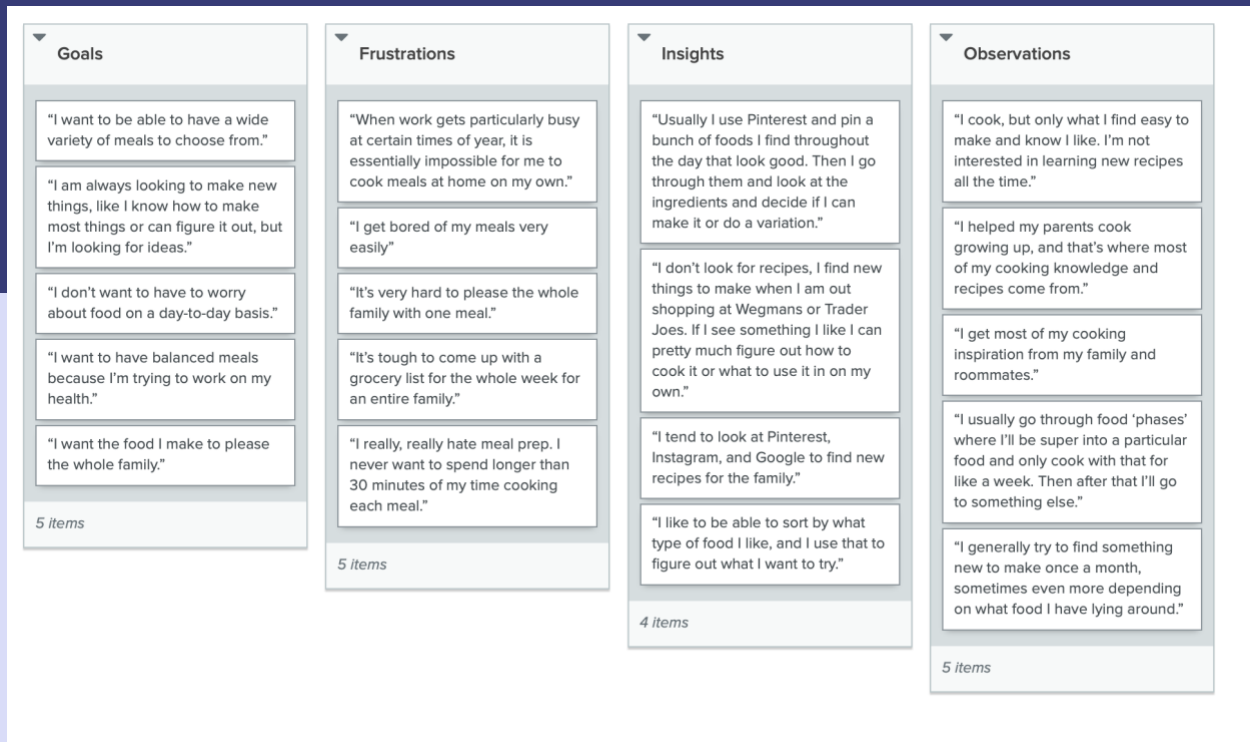
We asked our interviewees the following questions:
1. How are you doing?
2. Explain the project.
3. Can I get your name, age, and school year/job?
4. Tell us more about your school/job…
    a. Are your days very busy or do you have lots of free time?
    b. Where are you located?
    c. Are you currently working remote/have online classes?
5. Do you usually cook at home or go out to eat?

6. Do you usually cook for yourself at home or does someone else cook for you?
    a. If someone else cooks for you, who is that person?
    b. If you cook at home, how often do you cook per week?
7. How much time do you spend cooking? (lunch or dinner)
8. What would you say your skill level is cooking-wise?
9. Do you feel as if you have a good variety of meal recipes to choose from to make?
10. Do you often get bored of eating the same meals?
11. How often do you look for something new to cook, if at all?
12. Do you struggle to find new recipes?
13. Can you describe for me the process you use to find something new to cook?
14. How often would you say you meal prep? If you don't, do you wish you did more often?
15. Do your friends/family make meals that you wouldn't know how to make?
16. How do you exchange these recipes? (passed down, shared links, cookbooks, etc.)
17. Thank them for their time!

We decided that closed card sorting would work best for us to be able to organize the important information we found in our interviews. Because there were only two of us sorting the data, we agreed on the categories beforehand: Goals, Frustrations, Insights, and Observations. The results of the card sorting are below (**Figure 1)**.

Figure 1 - Card Sorting

Goals	Frustrations	Insights	Observations
"I want to be able to have a wide variety of meals to choose from."	"When work gets particularly busy at certain times of year, it is essentially impossible for me to cook meals at home on my own."	"Usually I use Pinterest and pin a bunch of foods I find throughout the day that look good. Then I go through them and look at the ingredients and decide if I can make it or do a variation."	"I cook, but only what I find easy to make and know I like. I'm not interested in learning new recipes all the time."
"I am always looking to make new things, like I know how to make most things or can figure it out, but I'm looking for ideas."	"I get bored of my meals very easily"	"I don't look for recipes, I find new things to make when I am out shopping at Wegmans or Trader Joes. If I see something I like I can pretty much figure out how to cook it or what to use it in on my own."	"I helped my parents cook growing up, and that's where most of my cooking knowledge and recipes come from."
"I don't want to have to worry about food on a day-to-day basis."	"It's very hard to please the whole family with one meal."		"I get most of my cooking inspiration from my family and roommates."
"I want to have balanced meals because I'm trying to work on my health."	"It's tough to come up with a grocery list for the whole week for an entire family."	"I tend to look at Pinterest, Instagram, and Google to find new recipes for the family."	"I usually go through food 'phases' where I'll be super into a particular food and only cook with that for like a week. Then after that I'll go to something else."
"I want the food I make to please the whole family."	"I really, really hate meal prep. I never want to spend longer than 30 minutes of my time cooking each meal."	"I like to be able to sort by what type of food I like, and I use that to figure out what I want to try."	"I generally try to find something new to make once a month, sometimes even more depending on what food I have lying around."
5 items	5 items	4 items	5 items

The next step to our user research was to analyze the data and finalize results. After important information was recorded via the interview summaries and sorted in the closed card sorting above, we analyzed the data to find similarities and differences in user opinions regarding cooking and searching for new recipes. Regarding user meal variation, almost all users interviewed except for one outlier were in search of new recipes to add to their repertoire, as they wanted variation in what they cooked and got bored with the same tastes over and over. Social media such as Pinterest and Instagram were common choices when searching for new things to eat, and the users that used these would sometimes even have potential recipes that they had found in the past favorited in order to sort through them efficiently and find what they're looking for. Something similar across all users was the fact that they all found that cooking was a large time commitment that was impacted by their school/job. Simplicity, time, and variety are a large part of what users are looking for based on the interviews conducted. We feel like the data we have collected helped us to effectively create a solution that addressed user needs.

Figure 2 - Primary Persona

Josh Terry

Age: 21
School: James Madison University
Relationship Status: Single
Location: Harrisonburg, VA

Biography: Josh Terry is a junior psychology major at James Madison University. He wants to be a research psychologist when he finishes school. Josh is a diligent worker and strives to do the best he can in his classes. He also likes to hang out with his roommates whenever he can, but he is quite busy. He doesn't mind working alone and likes to spend his free time browsing the internet. Josh is not the best cook, but he is definitely a foodie!

Goals:

Do well in school while having a good time
Try to eat at least two meals a day
Eat healthy when possible
Go out on the weekends with friends

"Sometimes it gets really difficult to fit in all the things I want to accomplish in a day."

Frustrations:

Long, repetitive tasks
Not having enough time to do what he wants
Not the best under pressure
Simple and efficient ways of doing things

Needs:

An easy way to relieve stress
A better way to manage his busy schedule
A balance of being social and time to himself
To learn quick meals he can fit in his day

Personality

Introvert — Extrovert

Analytical — Creative

Inactive — Active

Tech Illiterate — Tech Savvy
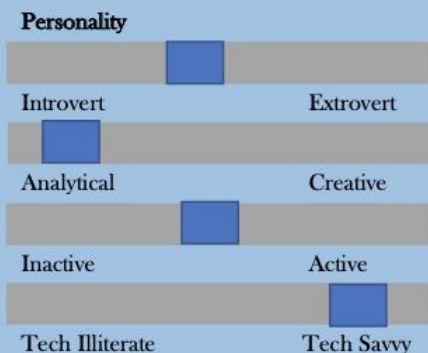
Figure 3 - Secondary Persona

Julie Hansen

Age: 45
Work: Teacher
Relationship statua: Married
Location: New York City

Biography: Julie Hansen has been working as an elementary school teacher ever since she graduated college. She owns her own online boutique as a side job. She launched this boutique 15 years ago and it has been thriving ever since. When Julie isn't busy working she spends time taking care of her kids and relaxing with her family. Julie spens a good amount of time online, therefore she is decently good with technology.

Goals:

Make sure she can provide for her kids and family
Keep a balanced died
Exercise
Drink lots of water everyday

"I love working with kids because they put a smile on my face everyday."

Personality:

Introvert — Extrovert

Analytical — Creative

Inactive — Active

Tech illiterate — Tech savvy

Frustrations:
Never having free time on the week-days.
Always being the person to take care of the dog
Coming home to a messy house
Waiting in line while short on time

Needs:
An easy way to find more meals to cook for the family
To better manage her time while not on the job
Beneficial to have a gym nearby

Primary Scenario

One Thursday afternoon, Josh is walking home from his last psychology class of the day at JMU. He is particularly frustrated as his mind races thinking about all of the assignments he has to complete before Friday night: write up his project proposal, turn in the research he has been diligently working on finishing up all week, and study for an important exam. He is especially disappointed because he spends so much time on schoolwork that he rarely gets to hang out with his roommates. Earlier today, he had to turn them down when they invited him to go downtown for dinner that night. And then all of a sudden, it hits him: what is he going to do for dinner? Josh and his roommates had run very low on groceries, and that was the reason why they were going out to eat tonight. Josh had only had a light lunch and didn't have time to get groceries because of all his schoolwork. Josh thinks about the few ingredients they have left in the fridge and uses his limited cooking knowledge to figure out they can probably be made into something that would suffice as a meal. He is unsure exactly what, so he pulls out his phone and does some searching. Josh comes across an app called "Recipe Exchange" that has somewhat decent ratings on the app store. When he opens the app, he finds a function that lets him search by the ingredients he has, and in doing so, he finds a few recipes he thinks he could manage. They have high ratings from other users and according to user comments, they are fairly easy. He even reads a comment of someone describing a similar situation to his! Because it saved him from stressing out about dinner, Josh keeps the app to use the next time he finds himself cooking during a busy school week.

Design Process: Scenarios

Secondary Scenario

It was Wednesday evening when Julie had a frustrating mid-week mental breakdown. Recently, she has been so busy with teaching, watching her kids and the dog, keeping up with her boutique, and many other adult responsibilities. She was so upset and busy that she didn't get around to making dinner that night which left her kids feeling hungry and frustrated. The next morning, her kids started to complain about always having the same thing to eat for dinner. "Mom, all you ever make is tacos, chicken, and spaghetti! We're tired of it!!" both of her kids whined. The complaining only made Julie more frustrated and upset because she didn't have any other recipes in mind. For her whole life all she ever used as reference for cooking was a small cookbook that was passed down from her grandmother. Julie's husband, Jeff, comforted her and told her that she has been working so hard and it will all pay off one day. He also mentioned how he picked up take out for the kids last night because he isn't a very good cook himself. "I downloaded this app called Recipe Exchange the other day and it will give you tips on cooking and new recipes which could help ease your mind around dinner time" Jeff said. Right away Julie downloaded the app and found so many new recipes. She also posted some of her old recipes to the app for others to see. She now has something to look forward to around dinner time which makes it more exciting for her and less frustrating in general.

Figure 4 - Primary Storyboard
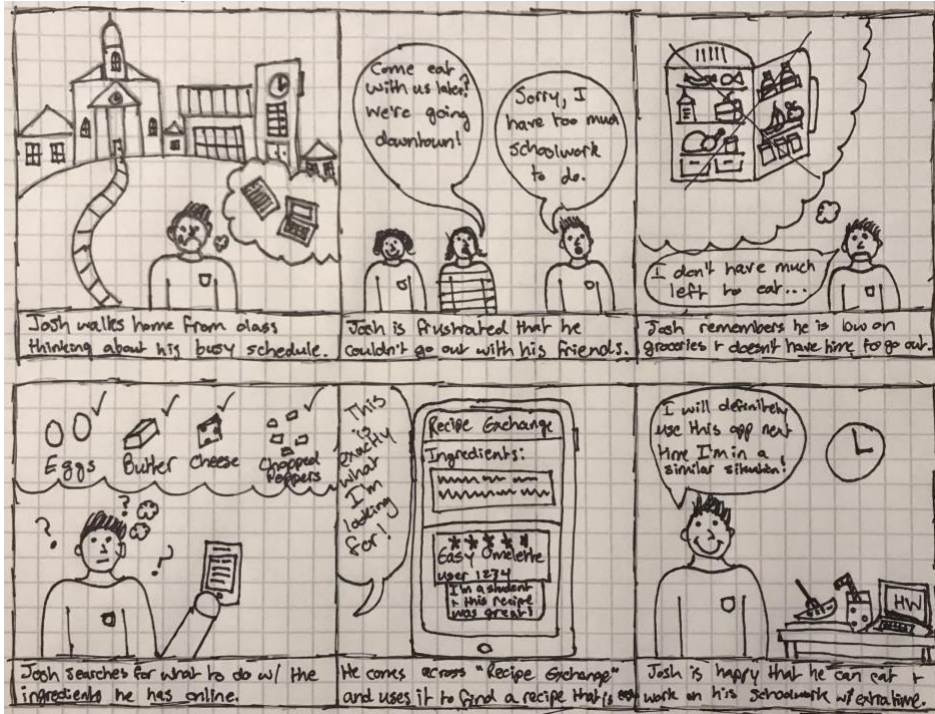
Figure 5 - Secondary Storyboard
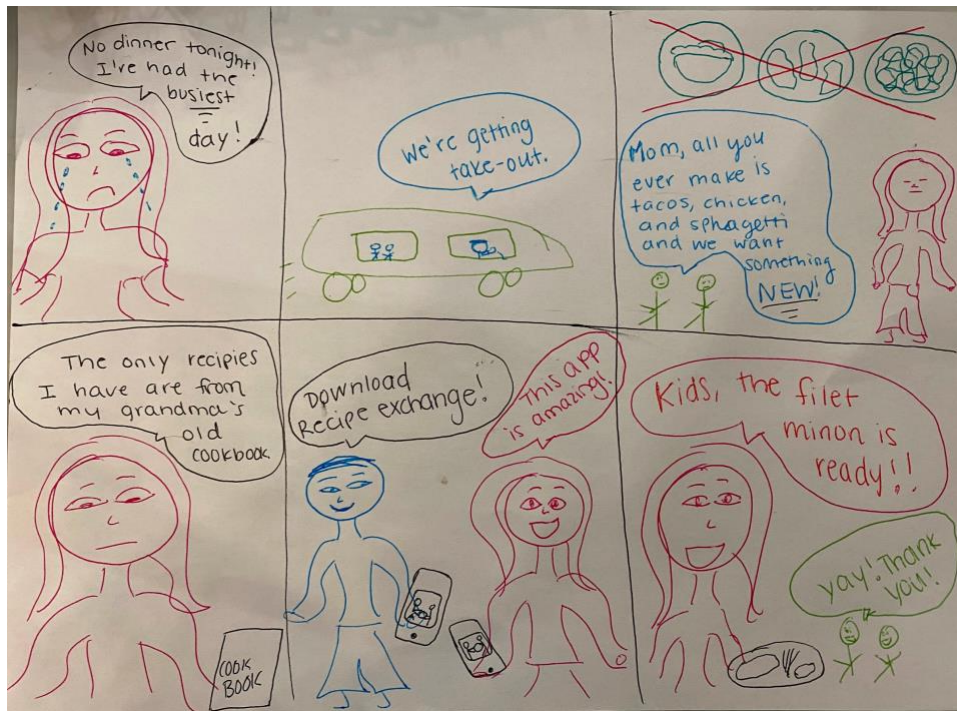
Design Process: Design Requirements

Based on the information we gathered from our user research, we recorded and categorized all of the design requirements that the design solution would need to account for. This includes data requirements, functional requirements, contextual requirements, technical requirements, and user requirements. The requirements are sorted by these categories below.

Data Requirements
- The product will allow users to search for specific meals.
- The product will allow users to connect with their friends/family.
- The product will allow users to search based on specific ingredients.

Functional Requirements
- The product won't be cluttered. It will be simple for the user to navigate.
- The product will categorize meals into 6 sections to make it easy for the user to find. (breakfast, lunch, dinner, desserts, drinks, snacks)

Contextual Requirements
- The product will allow users to connect with others based on their location.
- The product should have tags to allow users to see ingredients required, difficulty, user comments, and user ratings for recipes.
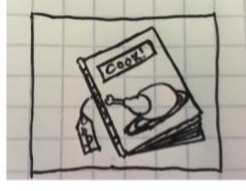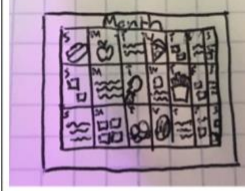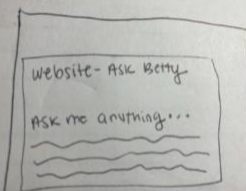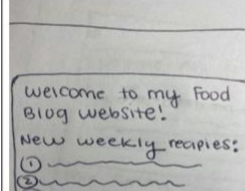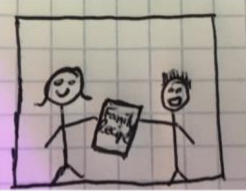
Technical Requirements
- The product must fit Apple screens. (Webpage, iPhone app, iPad)
- The product must abide by accessibility requirements.
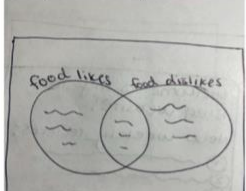
User Requirements
- The product will require users to create an account with their email and password.
- The product will require users to create a username.
- The product will allow users to enter their cooking skill level. (beginner, intermediate, or advanced)
- The product will allow users to like and comment on other user's recipes.
- The product will allow the user to upload a picture of the recipe.

Figure 6 -
10 Ideas From Designs that Already Exist in the World

Buy/borrow a cookbook that contains a bunch of different recipes that you can consult to decide what to make.	Plan meals in advance using a calendar, either physical or digital.	Download an app that puts a recipe together with ingredients you already have in your house.	Watch Food Network/any cooking show on TV to learn new recipes and step-by-step on how to make them.	Visit the Betty Crocker website/ more specifically ask her any of your recipe or cooking questions online.
Use the Pinterest app to find inspiration for your recipes.	Subscribe to a food blog website. These websites are always coming out with new and exciting meals.	Subscribe to a cooking magazine to get articles, recipes, and cooking tips on a regular basis.	Search online for recipes others have posted when you have a specific type of food in mind and need a recipe to make it.	Gather recipe ideas from family and friends.

Figure 7 -
10 Ideas We Thought Do Not Yet Exist in the World

Connect with others through the internet/app based on food likes and dislikes.	Find recipes through an app based on location to other people in your area that are sharing recipes.	A social media website that is specifically for posting and talking about recipes.	Find new food to make based on local produce and local cuisine by setting location in an app. (Types of unique foods you would find in a city/state)	An app that will make your grocery list for you. This grocery list will include breakfast, lunch, and dinner for the week based off of your specific likes and dislikes.
A store that lets you go in and try a small amount of a meal and gives you the recipe if you enjoyed the meal.	Gather with friends/family. Each person cooks a meal and also hands out the recipe to the meal.	Join a Facebook group where members switch off cooking meals and posting the recipes daily/weekly.	An app that lets you input and save recipes so that they are all in one place. This would get rid of the need to keep around cookbooks, magazines, paper recipes, etc.	A website that allows you to friend professional chefs that create and post recipes for anyone to see and cook.

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Design Solutions: The Best 3 Concepts

Once we gathered 10 ideas from designs that already exist in the world and 10 ideas that don't yet exist, we utilized the NUF test to finalize which ideas were best. After the testing, we came to the conclusion that there were three designs that stuck out among the rest. The first (with a high total score of 27), being an application that allows the user input and save recipes for their convenience of having them all in one place. This application would take place of the need to keep around cookbooks, cooking magazines, paper recipes, etc. The design coming in second (with a total score of 26) was a store that allows customers to come in and try a small portion of a meal. If the customer enjoyed their meal, they can purchase the recipe for it. The final design coming in third place (with a total score of 23) was a social media website that is specifically for posting and talking about recipes. For example, this would be similar to Facebook, but revolving around meals and recipes. We found these top three ideas to be very new, useful, and feasible.

Paper Prototype and Testing
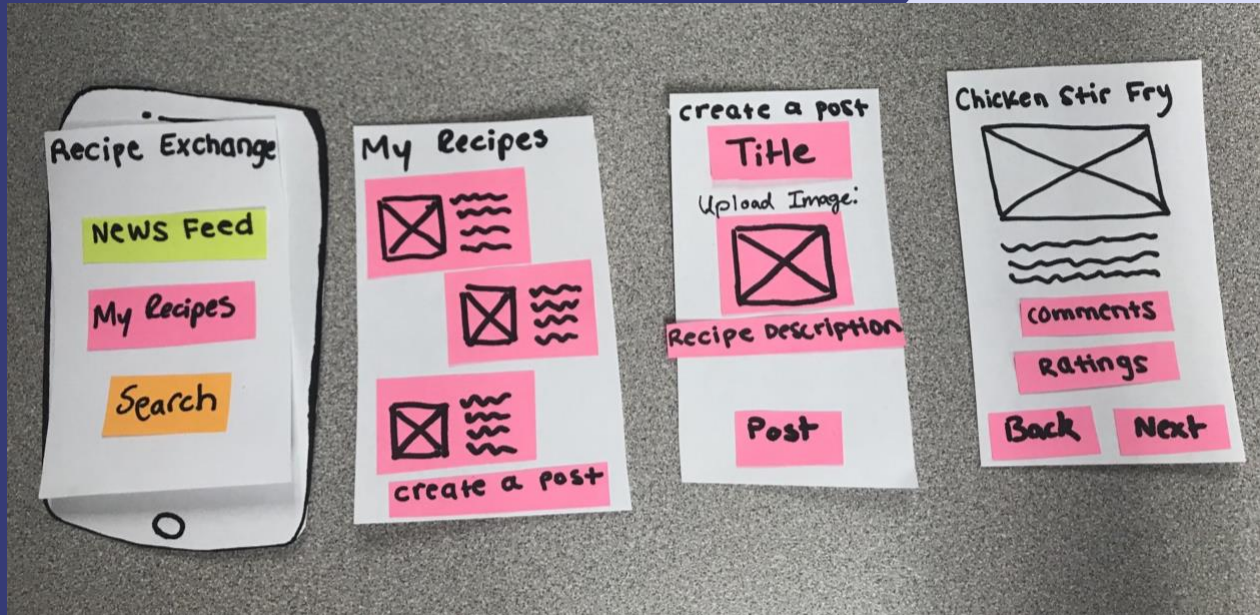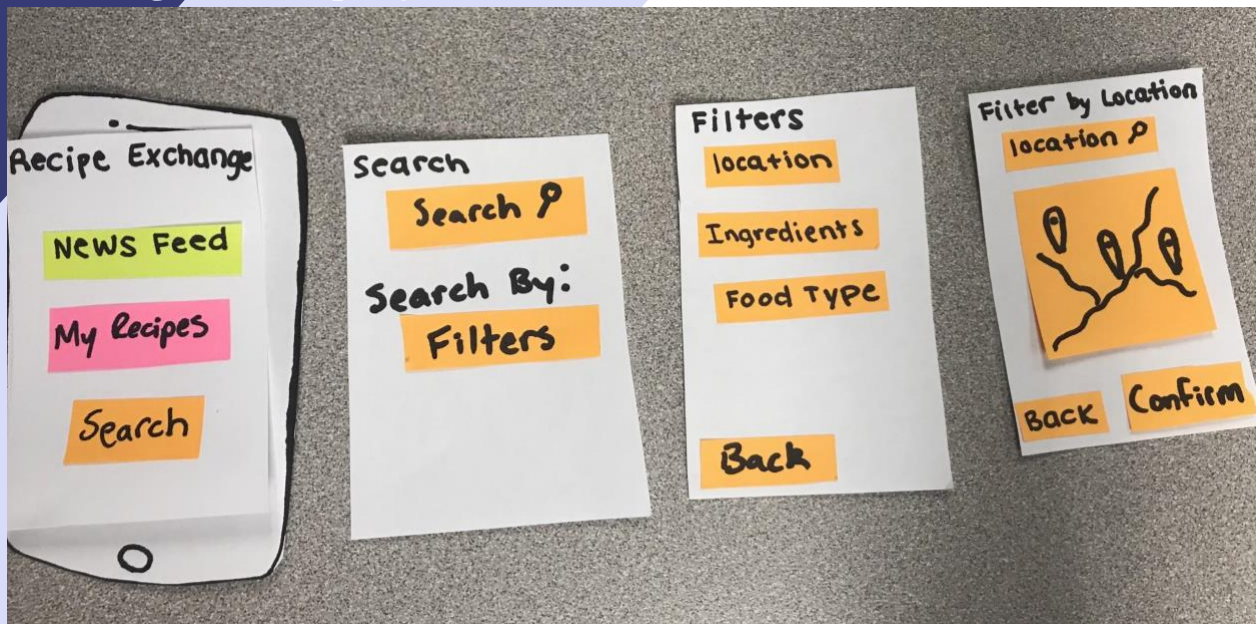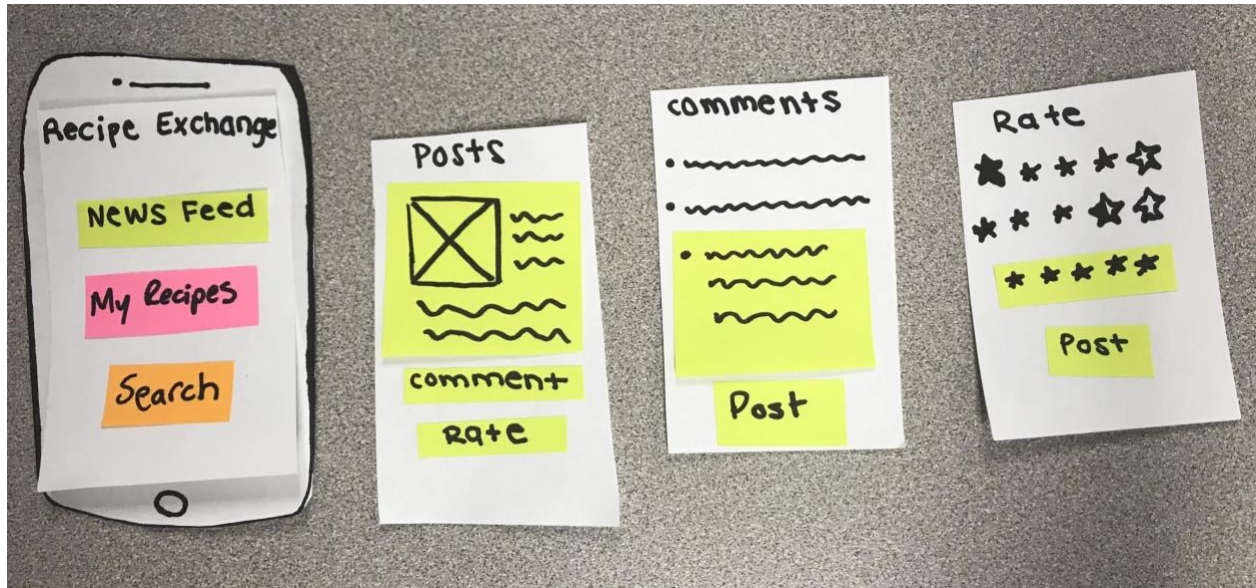
Figure 8 -
Creating a Post

Figure 9 -
Searching for a Recipe by Location

Figure 10 -
Leaving a Comment and Rating on a User's Post

The Paper Prototype was the first step in testing our initial idea for the Recipe Exchange app. This prototype consisted of 3 tasks: Creating a Post (**Figure 8**), Searching for a Recipe by Location (**Figure 9**), and Leaving a Comment and Rating on a User's Post (**Figure 10**). This prototype was a very simplified version of each task and after user testing, required many changes going into the Low-Fidelity Prototype round of testing. The Low-Fidelity Prototype would require changes to be made to allow for more description of specific items in the prototype as well as implementation of navigational features. The main problems users had with this prototype were the lack of a "Back" button and a navigation bar to go to different sections of the prototype. These problems were addressed and fixed going into the Low-Fidelity Prototype.

Low-Fidelity Prototype and Testing

Figure 11 -
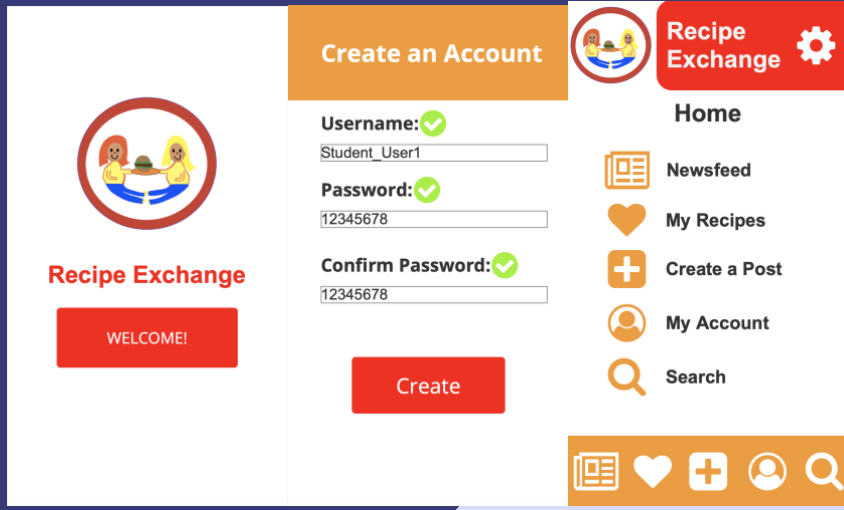**Welcome Screen, Create an Account, and Home Screen**

Figure 12 -
Newsfeed and Comments/Ratings
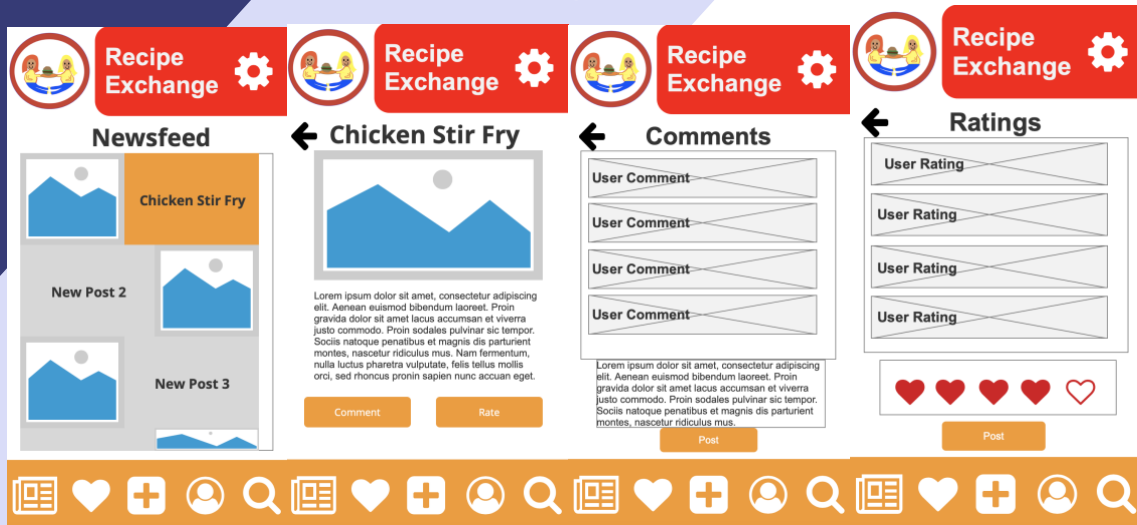
Figure 13 -
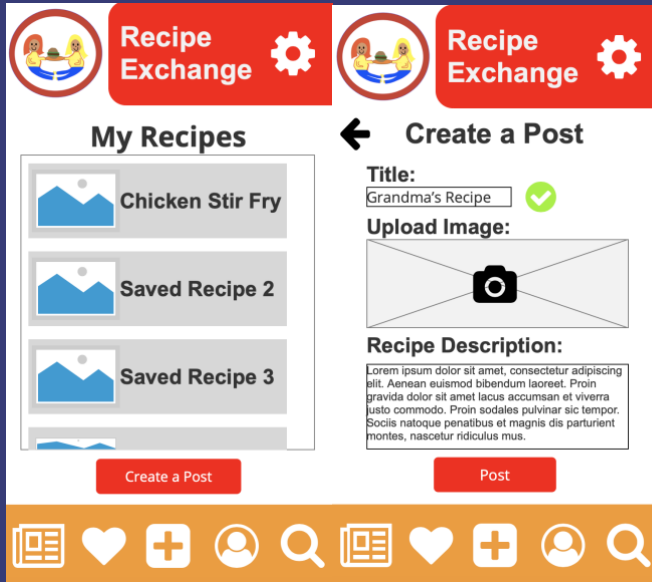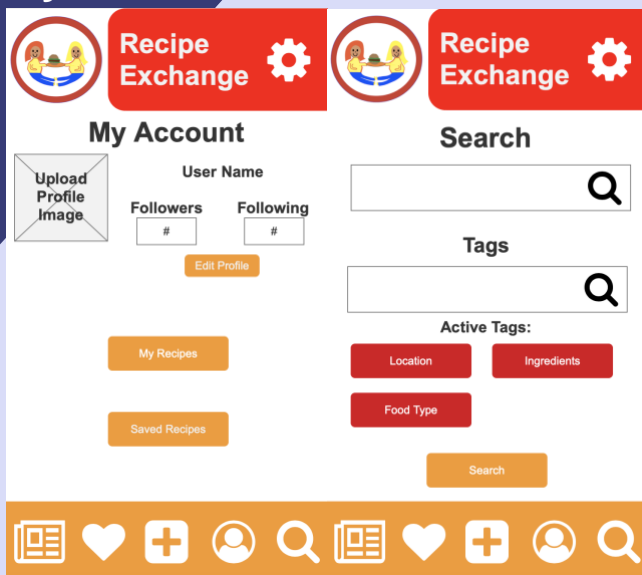**My Recipes and Posting a Recipe**

Figure 14 -
My Account and Search

Low Fidelity Prototype and Testing

For the Low-Fidelity Prototype, we used Axure-RP to create a functioning prototype with 5 interactions to test. These interactions were Create an Account (**Figure 11**), Comment and Rate a Post (**Figure 12**), Post a Recipe (**Figure 13**), Check Account Info, and Search (**Figure 14**). From our user feedback, this iteration of the prototype had multiple errors that required fixing going into the High-Fidelity Prototype. The first of these changes was the aesthetics. The color scheme we chose for this version of the app included reds that would not be able to be seen properly by colorblind people using the app. Besides that, the reds were also too harsh on users' eyes and the overall design was too simplified. In the next iteration, this would need to be changed to look more like the final app. Our next issue was the information hierarchy. The home page was redundant, as there was already a navigation bar on the bottom of each screen. To fix this, the home page was deleted, and the landing page was changed to the Newsfeed, as it appears first in the navigation bar. Next, we needed to flesh out the Newsfeed and Create a Post interactions, as they were too simplified for what they needed to represent. For the Newsfeed, user posts looked too much like the Paper Prototype and required detailed info when clicked on. The same goes for both the Comments and Ratings sections. For Create a Post, posting a recipe was too simplified. A real recipe has many steps and ingredients, so this needed to be expanded to account for ingredients, recipe statistics such as time and portion size, and each step being able to have an instruction and reference image.

High-Fidelity Prototype and Evaluation
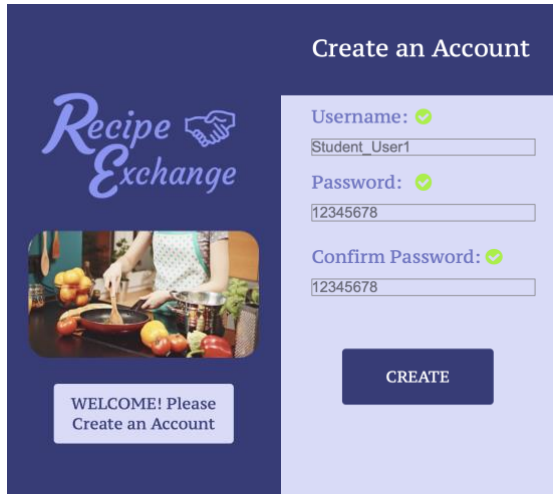
Figure 15 -

Welcome and Create an Account

Figure 16 -

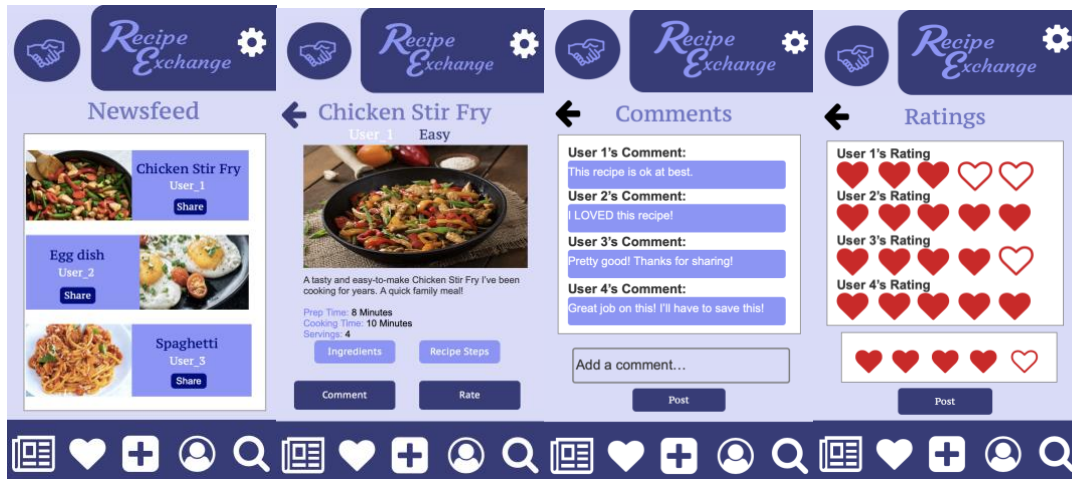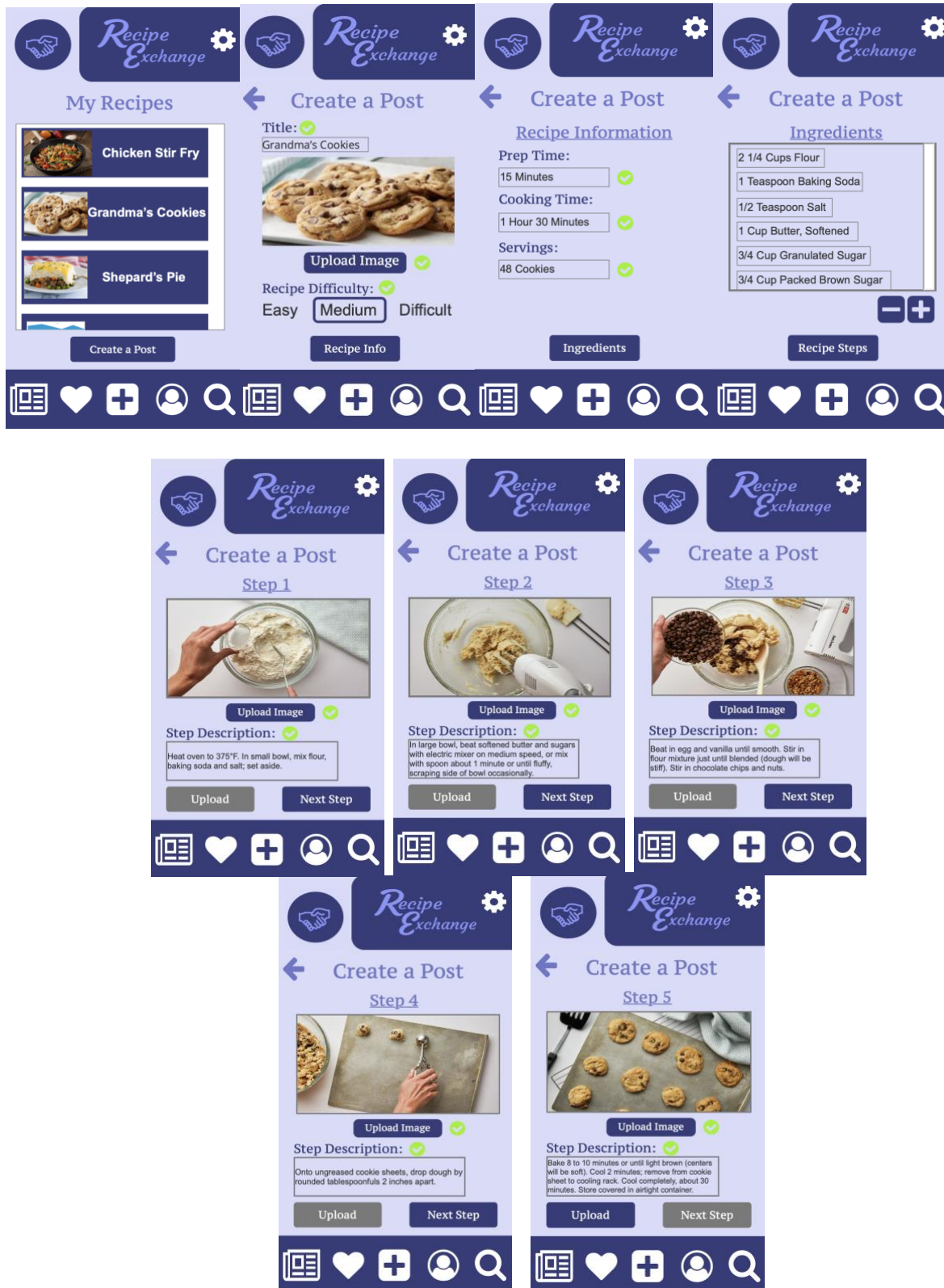## Newsfeed and Comments/Ratings

Figure 17 -

My Recipes and Posting a Recipe

Figure 18 -

My Account and Search

       The High-Fidelity Prototype implemented all of the changes needed based on user feedback from the Low-Fidelity Prototype. This included a complete overhaul of both the aesthetics and the Create a Post feature of the app. The tasks that can be conducted using this prototype remain the same. These tasks are Create an Account (**Figure 14**), Comment and Rate a Post (**Figure 16**), Post a Recipe (**Figure 17**), Check Account Info, and Search (**Figure 18**). We changed the reds and oranges from the Low-Fidelity Prototype to a cooler blue color scheme. We also changed the app's logo to be simpler and reflect the "exchange" part of the app's name. In the High-Fidelity Prototype, you will notice many things have been further fleshed out. This includes images and more detailed descriptions. The largest feature that was fleshed out was the Create a Post feature. It now allows for more detailed information to be posted about a recipe, including prep time and total time, as well as difficulty, serving size, and ingredients. It also allows for more descriptive steps with the ability to post a picture of each one. Create a Post now guides the user through creating a post screen-by-screen and allows for the user to add as many steps as they need to post a complete recipe. Because of the addition of more detail to recipes, this would also allow the Search function to be more thorough and accurate when functional.

Usability Testing: Participants

Participant 1: Kevin Baumann
- **Age:** 20
- **Gender:** Male
- **Occupation:** Currently attending a college/university
- **Education:** University of Delaware, B.S.
- Kevin has a basic understanding of technology.
- Kevin gets take-out food often because he never knows what to cook. Kevin wants to learn how to make more meals so he can cook for himself while he's on his own.

Participant 2: Tom Baumann
- **Age:** 49
- **Gender:** Male
- **Occupation:** Business
- **Education:** Salisbury University, B.S.
- Tom has worked in software sales which has led to him being very knowledgeable when it comes to technology.
- Tom loves to cook a good meal. He usually makes breakfast, lunch and dinner for himself and will occasionally cook for the whole family.

Participant 3: Ben Greenbaum
- **Age:** 19
- **Gender:** Male
- **Occupation:** Student at University of Mississippi
- **Education:** Working towards B.S. in Accounting
- Very proficient in technology. Uses social media often.
- New to cooking, does not cook often but wants to learn for when he lives on his own.

<u>Usability Testing: Testing Methods</u>

1. **Greet Participants**
2. **Brief Participants**

   "As part of our User Design class at JMU, we have been developing a mobile app that will make it convenient for users to find and share recipes. As part of the app's development, we are testing a prototype to assess the effectiveness of the application's tasks at meeting user needs. As part of this test, you will be asked to complete certain tasks (See "Tasks" below). Please use the prototype to complete these tasks, thinking out loud while you do so."

3. **Tasks**
   a. Create your own recipe post. Make sure to add recipe information, ingredients, and all steps.
   b. Comment on and Rate another recipe post.

4. **Test Measures**
   - Task completion time
   - Completion of tasks (Success or Fail)
   - Errors

5. **Pre-Test Questions**
   a. What is your name, age, and gender?
   b. What is your current occupation?
   c. What is your current level of education?
   d. How proficient would you say you are in technology use?
   e. What is your relationship to cooking and recipes?

6. **Post-Test Questions**
   a. Would you rate your overall experience of using the prototype for the Recipe Exchange app as Satisfied or Dissatisfied?
   b. Do you feel as though you could navigate through the tasks easily/without frustration? If so, what did you find helpful? If not, where did you run into problems?
   c. Do you suggest that we make any specific changes to the app?

7. **Thank Participants for Their Time**

Test Environment & Equipment

Due to the COVID-19 pandemic, access to participants has been severely limited. Because of this, we had to use family members as users during prototyping in order to test the app. This caused difficulty in finding users that met our target demographic, but also had a brighter side as we would be testing extreme users. Tests were conducted on our own computers using the Axure RP "Preview" Function that simulates the prototype in a browser. Tests were conducted in quiet places in our own homes. We used pen and paper as well as the stopwatch on our phones to record observations and time tasks. The users' interactions and voices were recorded as a screen recording with QuickTime while using the prototype.

Evaluation Measures

Quantitative Measures:
- How long does it take for a user to complete each task?
- How many users succeeded in completing assigned tasks vs. failed in completing assigned tasks?
- Were users satisfied or dissatisfied with using the prototype to complete tasks?

Qualitative Measures:
- Where are users making errors?
- What distracts users when trying to complete tasks?
- What do users find helpful/problematic?
- What do users suggest we add/make changes to?

Usability Testing: Findings & Recommendations

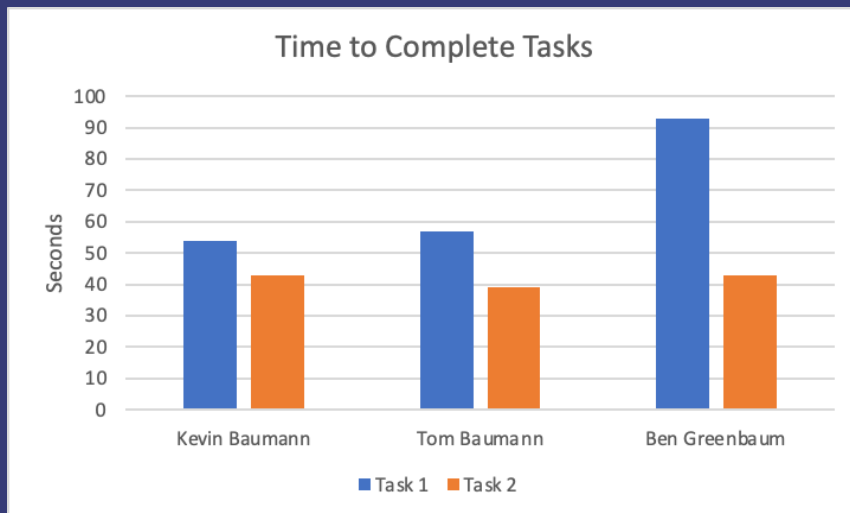## Quantitative Results

Figure 19 - Time to Complete Tasks

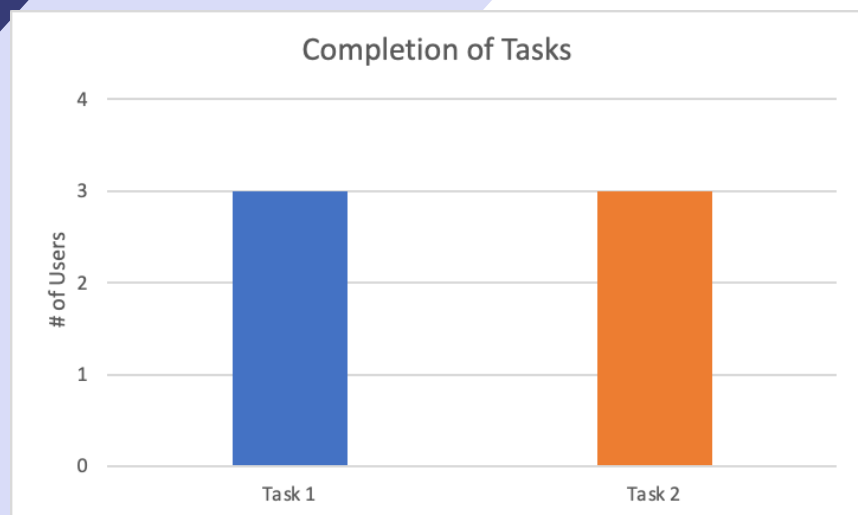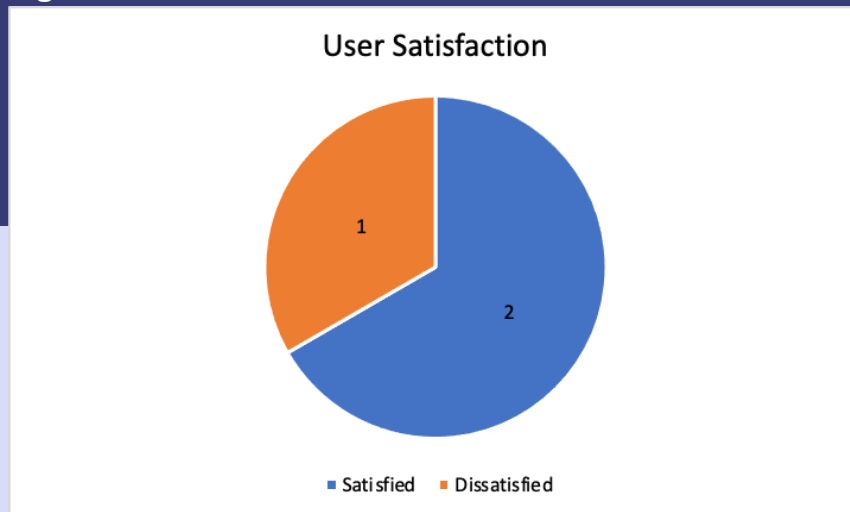

Figure 20 - Completion of Tasks

Figure 21 - User Satisfaction

Qualitative Results

Kevin and Tom succeeded the given tasks, and Ben had trouble due to Axure RP crashing during the usability test. Upon restarting the program, Ben was able to complete the task. Ben was dissatisfied with using the prototype to complete the tasks due to the crash and dislike of the color scheme. Ben thought that the idea for the app is promising and the tasks themselves are fine, but experienced some frustrating usability issues with the prototype, which are listed under the "Usability Issues & Severity" section of the report. Kevin and Tom didn't run into any specific frustrations but mentioned that the overall feel of the app could've been improved. They also mentioned that they were happy with how fast they were able to complete the given task. The users found it helpful how there was a separate page for each step of the recipe while creating a post. They found that the steps helped to keep the recipe instructions organized.

Usability Issues & Severity

To break down the severity of usability issues found during the test, we used the severity rating scale created by Jakob Nielsen. The scale is as follows:

0 = I don't agree that this is a usability problem at all
1 = Cosmetic problem only: need not be fixed unless extra time is available on project
2 = Minor usability problem: fixing this should be given low priority
3 = Major usability problem: important to fix, so should be given high priority
4 = Usability catastrophe: imperative to fix this before product can be released

The usability issues we found are recorded below in no particular order with a severity rating assigned to each.

- Back button broken on "Chicken Stir Fry" Page. Rating:4
- Clicking on posts doesn't work when clicking on text, only works when clicking on the box itself. Rating:3
- Axure RP crashed mid-task while completing the "Rate and Comment" task. Rating: 0
- Confused underlined font as a link to something, although irrelevant to the task assigned. Rating: 2
- Font for normal items (not the logo) is plain and boring. Rating: 1

Design Recommendations

In the future, we hope to apply what we learned throughout this project. It's necessary that every button is working and bringing the user to the correct page. As designers, we should stay away from underlining any text unless it's a link, as people already have predetermined expectations for underlined text when using a website or app. The errors listed in the prior section need fixing in the next iteration of the prototype, and another round of user testing should be conducted. Moving forward, more functionality could still be added to the app, such as fleshing out the "Search" function and making the app's functions act more like the finished product. This app ended development at the second iteration of the High-Fidelity Prototype, so there is much more work to be done in the future, along with the eventual creation of the actual finished product.

Conclusion

We found our Recipe Exchange app to be successful considering our team is happy with the end results and our users were mostly satisfied upon completion of the final usability testing. As a team, we have made a great amount of progress throughout the semester while acquiring new knowledge and skills along the way. Developing the Recipe Exchange prototype challenged us to push our design skills to their best potential. Our team agrees that this semester-long project has allowed us each to grow as a creator and learn for what is to come in the future. We are proud that we were able to adapt to the challenges present from the COVID-19 pandemic that affected this project and were still able to effectively work as a team online. Although there are still problems with the prototype that need to be addressed, moving forward we have both learned many things about user design that will help us research and develop future projects.

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