Milestone 4 - Evaluation

CSCI 4800

Cook This, Not That

Prototype link: https://xd.adobe.com/view/32284166-1bf7-49c8-7a9d-7f25d4390f3c-4419/

Heuristic Evaluation

Initial observation disclaimer:

The system prototype does not have all the button functionalities for every clickable part of the program. Knowing this, the heuristic evaluation will be conducted assuming the same designed patterns will be followed for the rest of the non-clickable parts.

1. Visibility of system status:
   a. Upon opening the app, users get a list of categories to pick from. Upon clicking a selection, a new page is opened and you can find the selection title at the top of the page. It is centered and follows the same font style. It does seem like it is not perfectly at the same place in between screens and uses different colors. When you click on a dish selection however, the title of the dish is under the picture, which is different from when you select categories. Tabs are clearly labeled.
2. Familiar metaphors and language:
   a. Generally the app uses common language that one could expect a typical user to understand. The only possibly misleading term is the "Directions" tab when a dish is selected. The tab itself will display instructions on how to cook the dish. However since it is next to the "Ingredients" tab, people may misunderstand it for directions to a store that carries the ingredients.
3. User control and freedom:
   a. It is clear that once an item from a list from any given tab at the bottom is touched, it will take you to that new page with a "< Back" button in the

same place at the top of every screen. In terms of functionality it will undo the last user action (such as going to a new page or clicking between tabs of a dish) in every case except when an in ingredient is touched and the tabs "Alternatives" and "Info" appear. It does not go back between touches for tabs, it goes back to the the dish itself. This may be intentional because it seems redundant to have the "< Back" command record actions between tabs for a pop up screen.

4. Consistency and standards:

    a. User commands are really simple thus the app itself is consistent in what happens between certain commands, such as pressing a "< Back" button or shifting between tabs. The location for titles and buttons are almost in the same spot on every screen. A standard font is used throughout the app however font size and color differ. Pictures follow the same format as they are all square and layed out in a table format of rows and columns.

5. Error prevention:

    a. The app does a good job of error prevention so far as clickable text are always highlighted in blue, like hyperlinks so users can know which pieces of the text is clickable for more functionality. Auto-fill search functionality cannot be evaluated as it has not been implemented yet.

6. Recognition rather than recall:

    a. The app is successful in making things visual, sporting a "see and pick it" layout with plenty of menu options and tabs for quick exploration of dish types. There is a favorites tab which will record the dishes users have click on and pressed the "heart" icon, although this functionality has not been implemented yet.

7. Flexibility and efficiency:

    a. Navigating between different menus options are easy because categories, tabs, icons, and clickable text are labeled well. With a simple idea of what

you're looking for, it is easy to find a quick solution. Ex. Categories →
Gluten Free food → A dish you want to get more information on.

8. Aesthetic and minimalist:

    a. There isn't a screen with too much going on as pieces of information are broken up into pieces between tabs and pop up. Menu options are not overwhelming as the pictures and labels are large with a simple layout.

9. Help user recognize, diagnose, and recover from errors:

    a. A useful thing to do is to have pop up messages appear in response to user actions such as adding or removing an item to the favorites tab by clicking on the "heart" so users can get feedback that their action was successful and registered by the system. Offering feedback for the search functionality also helps the user understand what is going on, so simple messages like, "no results found for the input 'your input'".

Cognitive Walkthrough

Tasks/goals below	Will users understand how to start the task?	Are the controls obvious?	Will users know the control is the correct one?	Was there feedback to indicate the task was complete or incomplete?	Were you able to complete the task?	Notes
Search for a specific dish						
Press "search" on bottom nav bar	Yes	Yes	Yes	Yes	Yes	No usability issues occurred
Type in name of dish in search bar	Yes	Yes	Yes	Yes	Yes	No usability issues occurred
Press "Go/Enter"	Yes	Yes	Yes	Yes	Yes	No usability issues occurred
Press desired dish thumbnail to select	Yes	Yes	Yes	Yes	Yes	No usability issues occurred
View recipe	Yes	Yes	Yes	Yes	Yes	No usability issues occurred
Add a recipe to favorites						
Press search or browse for recipe	Yes	Yes	Yes	Yes	Yes	No usability issues occurred
Select recipe	Yes	Yes	Yes	Yes	Yes	No usability issues occurred
Press heart icon to save to favorites	Yes	Yes	Yes	No	No	No feedback from pressing heart icon, this needs immediate fixing and is high priority
Find alternative for ingredient within a recipe						
Press search or browse for recipe	Yes	Yes	Yes	Yes	Yes	No usability issues occurred
Select recipe	Yes	Yes	Yes	Yes	Yes	No usability issues occurred
Press "Ingredients" tab	Yes	Yes	Yes	Yes	Yes	No usability issues occurred
Select ingredient alternative for blue highlited items	Yes	Yes	Yes	Yes	Yes	No usability issues occurred
Press "Alternatives" tab	Yes	Yes	Yes	Yes	Yes	No usability issues occurred

View alternatives	Yes	Yes	Yes	Yes	Yes	No usability issues occurred
Browse by category						
Press "Categories" on bottom nav bar	Yes	Yes	Yes	Yes	Yes	No usability issues occurred
Select category	Yes	Yes	Yes	Yes	Yes	No usability issues occurred
Select dish	Yes	Yes	Yes	Yes	Yes	No usability issues occurred
View recipe	Yes	Yes	Yes	Yes	Yes	No usability issues occurred
Browse Featured recipes						
Start on home page/"click featured" on bottom nav bar	Yes	Yes	Yes	Yes	Yes	No usability issues occurred
Select dish	Yes	Yes	Yes	No	No	No feedback from selecting dish, needs immediate fixing; high priority
View recipe	Yes	Yes	Yes	No	No	Not able to reach the recipe; high priority

Predictive Evaluation

A predictive evaluation was performed using KSLM. Although the KLSM model was not intended for use with touch screens, it provides a good approximation for the purpose of an initial evaluation. The following tasks were evaluated:

1. Find a recipe for salmon.
2. Find a favorited salmon recipe and choose an alternative for red-skinned potatoes.
3. Select a vegan recipe using the vegan category.

All tasks begin on the home page (featured tab).

Task 1

Find a recipe for salmon.

1. (M) Initiate search
2. (P) Find search icon
3. (P1) Press search icon
4. (P) Find search bar
5. (M) Initiate typing
6. (6 K) Begin typing "salmon".
7. (P) Find "Go" button.
8. (P1) Press "Go" button.
9. (M) Evaluate search results.
10. (P1) Select a salmon recipe.

$3M + 3P + 3P_1 + 6K = 3 \times 1.35 + 3 \times 1.1 + 3 \times 0.2 + 6 \times 0.28 = 9.63\ seconds$

Task 2

Find a favorited salmon recipe and choose an alternative for red-skinned potatoes.

1. (M) Initiate task.
2. (P) Find favorites icon.
3. (P1) Press favorites icon.
4. (P) Find favorited salmon recipe.
5. (P1) Select favorited salmon recipe.
6. (P) Find "red skinned potatoes" in ingredient list.
7. (P1) Press "red skinned potatoes" link.
8. (M) Evaluate possible alternatives.
9. (P1) Select alternative.

$2M + 3P + 4P_1 = 2 \times 1.35 + 3 \times 1.1 + 4 \times 0.2 = 6.8 \; seconds$

Task 3

Select a vegan recipe using the vegan category.

1. (M) Initiate task.
2. (P) Find categories icon.
3. (P1) Press categories icon.
4. (P) Find vegan category.
5. (P1) Select vegan category.
6. (M) Evaluate recipe choices.
7. (P1) Select recipe.

$2M + 2P + 3P_1 = 2 \times 1.35 + 2 \times 1.1 + 3 \times 0.2 = 5.5 \; seconds$

Retrospective Testing Interview

For the retrospective testing, users were recorded using the system naturally. Each user was given the same task list. For this test, there was no help from the proctor, but only to clarify details listed within the task list. Afterwards, the retrospective interview was conducted to walkthrough what was going on through each task, and any difficulties that may have risen along the way.

Task list:
1. **Search by category**
    a. Go to categories tab
    b. Find and go to vegan recipes
2. **Search by recipe name**
    a. Search for a salmon recipe
    b. Open up recipe and look for alternatives for "red-skinned potatoes"
    c. View nutrition info of salmon recipe

After users finished the task list, we proceeded with the retrospective testing interview. Each user was asked what was going on in certain parts of the testing recording, and to elaborate on confusing details and navigation.
Participant 1:

While searching for categories in the first task, user had difficulty locating the categories tab, and finding vegan recipes. User was asked to elaborate on difficulty finding category.
A: User had trouble finding the category initially due to the color of the tab bar. User also noted that the text on the categories clashed with the image background.

Finding a recipe for salmon was much quicker. User was asked about the experience of navigating through a recipe. User was also asked to elaborate on what could be taken from this to improve the categories feature.
A: User said the search was straightforward and the navigation looked better for searching by recipe than category.

Participant 2:

User finished the tasks quickly. User was asked to elaborate on the experience of navigating through each task, and any confusions with searching.
A: User mentioned that the tasks were very simple. The search feature seemed unrealistic since it wasn't completely fleshed out.

User was asked about the UI design choice, and what thoughts the user had while testing.

A: User noticed that the design wasn't all the same. The tab color doesn't match the rest of the app. The different menu styles was also confusing to the user.

Participant 3:

User finished the categories tasked quickly. User was asked about what made the search quick and what problems occurred.
A: User said task was easy, but the menu items looked unattractive.

User found salmon recipe quickly but had trouble when finding ingredient substitutions. User was asked why it was difficult to substitute an ingredient.
A: User stated that the difficulty with substitutions was that the ingredients did not stand out enough to show that you could click on it.

Participant 4:

User hesitated for a minute at first, but finished both tasks quickly. User was asked to elaborate on the experience of navigating through each task, and any confusions with searching.
A: User said there was difficulty finding where everything was at first, but quickly learned and tasks were simple.

User was asked about stood out in the UI.
A: User said that navigation needed to be clearer so that it is easier to find where everything is.
Participant 5:

User finished both tasks quickly. User was asked about the substitution system.
A: User said that substituting was easy, but it should clearer which ingredients are substitutable and that it is more clear to user.

User was asked about instruction clarity.
A: User said list was simple, but could use more details for the user of the system.

Think Aloud Evaluation

The think aloud evaluation was performed with five different participants who had not taken part in the retrospective testing interview. Each user was given the same set of tasks, listed below. Each user was first given a brief explanation of what the app does, told they should think aloud throughout the entire test, and that they were free to ask any questions they may have, but not to expect an answer during the test. They were free to go at their own pace and were not assisted by the proctor, allowing a better understanding of points where users struggled naturally. The tasks were:

1. Search for a salmon recipe
   a. This is perhaps the most basic functionality in the app and provides a good starting point for users to explore some of the app without being asked to do too much. Seeing how they expect to be able to search will allow us to refine where we place the search and how we display results.
2. Find your favorited salmon recipe and see what alternatives are available for red-skinned potatoes
   a. With a bit more complexity, and several ways to reach the end goal, this gives us some idea of the path users may be more inclined to take, allowing for further refinement of the process and elimination of unnecessary paths. It'll also be a good opportunity to get feedback about clarity of the favorites page.
3. Find a category of vegan foods
   a. It's important that users be able to quickly find a category of recipes they're looking for.

User demographics:

- All were full-time college students between the ages of 20 and 23
- Three were male and two were female
- Four were caucasian and one was Hispanic
- Two held part-time jobs and had income levels below $15,000 annually

Instructions read to participants:

Thanks for taking part in this test! It'll help us get a better understanding of how usable our app is. This app is meant to allow users to find alternative ingredients for any recipe, whether it be because of diet, restrictions, or preference. I'm going to give you a list of three tasks and I'd like you to do your best to complete them. While you're going through them, please think out loud and voice everything you're considering. If you have questions, be sure to ask! I can't reply during the test, but it helps us all the same. If you get stuck and need help, I can't provide answers, but that is also very useful in understanding difficult points in the app. Do you have any questions before we get started?

Results

Participant 1:

Task 1: Spent good bit of time at the home screen but then found search easy to use.

Task 2: Intuitively went to favorites, said hard to tell what meals are without labels, not immediately clicking on ingredient names in recipe, left recipe to go back to main page

Task 3: Instinctively went to categories, but only because of the wording of the task. Thinks the name of the page (categories) is ambiguous.

Other feedback: Wants to know if proportions will be adjusted based on the new ingredient, doesn't think some things have viable alternatives, favorites should have words underneath

Participant 2:

Task 1: Mentioned the search nav menu item was convenient and easy to find, proceeded to finish the task quickly

Task 2: Took some time to find the salmon recipe on the favorites page and noted that the lack of labels made it more difficult to tell which was which

Task 3: First thought was to use the search feature, but upon realizing that didn't provide a way to filter by category, went to the category page and finished the task relatively easily

Other feedback: The color of the nav bar is a bit unappealing and the search functionality could be a bit more fleshed out

Participant 3:

Task 1: Said the search was easy to find, but was a bit disappointed that it wasn't fully built out yet

Task 2: Started by clicking search, but realized that there was no way to do anything on that page yet and was a bit put off by that. Re-read the question and went to the favorites tab and found the recipe. Spent a few moments going through tabs before realizing the ingredients page had clickable blue ingredients

Task 3: Again commented that search would've been their first choice, but since that wasn't available, clicked on categories and found it easily

Other feedback: The only thing I'd say needs major work is the search page

Participant 4:

Task 1: Completed the task quickly without much feedback

Task 2: Tried first using the search page and clicked search since it has salmon by default at the moment, but realized that wasn't the way to get to favorited recipes. Clicked the favorites tab and mentioned none of the recipes are labeled, making it a bit confusing if they were to look similar

Task 3: Quickly found the categories page and the vegan option

Other feedback: No other feedback

Participant 5:

Task 1: Said search was placed in a convenient spot in the nav menu and found salmon quickly

Task 2: Similar to other users, tried searching first before going to favorites tab

Task 3: Found the category without much issue or delay at any point

Other feedback: No other feedback

Questionnaire

The following questions were given to five participants in the think aloud evaluation and five more in the retrospective test.

Open ended:
1. What are your thoughts, positive or negative or neutral, about using this app?
2. What do you think could be improved upon?

Closed:
3. Would you use this app again?
4. Would you recommend this app to a friend?

Scalar:
5. Please rate the following features 1-10, 1 being the worst and 10 being the best.
   Navigation
   Search
   Recipe pages
   Individual ingredient pages
   Design

Multiple choice:
6. Which of these pages needs improvement the most?
A) Featured
B) Favorites
C) Search
D) Categories

Ranked question:
7. Please rank the following reasons to use the app in order of their importance.
   Dietary restrictions
   Ingredient preference
   What's available in my kitchen
   What's in stock in stores near me
   More options for making any meal
   Exploring a new diet

Questionnaire Results

Participants 1-5 (think aloud participants):

1. **P1**: I think there should be a home page, as it was a bit overwhelming to be thrown right into favorites. I like the accessibility of the search option. Categories was a bit ambiguous.

    P2: The color of the nav bar is a bit out of place, but the navigation experience is overall really simple and intuitive. This seems like a practical way of making existing recipes more accessible.

    P3: It's not something I'd personally use, but I can see this being useful for people with issues like lactose intolerance or allergies.

    P4: As someone who's allergic to certain nuts, it's great to have something like this when I want to make something that calls for things like peanuts. I think as long as the recipes stay curated and consistent with their original flavor and whatnot, it'll be a great idea.

    P5: Being able to cook with what I have on hand seems like a nice idea. While the app doesn't seem to have a lot of features, sometimes that's a good thing to limit scope so that what is there is at least high quality.

2. **P1**: I don't know how I would save recipes or share them with other apps or people. If I got a new phone and lost my recipes I wouldn't be willing to reinstall and redo all my saved recipes. There's also no way to filter searches.

    P2: . Simplified ingredient info page with more practical info. More intuitive alternative page and how good the ingredients would be.

    P3: The search was pretty limited and I expected to be able to do more from that page but couldn't. Usually being able to filter at least is expected.

    P4: The ingredients pages could be easier to process. It's currently a lot of text to take in and could be broken up or made into pictures or icons.

    P5: The search functionality is really limited and could use some work to make finding what I want much easier.

3. Yes: 4
    No: 1

4. Yes: 3
    No: 2

5.

Feature	P1 rating	P2 rating	P3 rating	P4 rating	P5 rating
Navigation	8	9	9	10	9
Search	5	6	4	6	5
Recipe pages	8	6	6	8	7
Individual ingredient pages	6	5	6	7	6
Design	7	7	8	9	8

6. A: 0
   B: 1
   C: 2
   D: 2

7.

Reason to use	P1 order	P2 order	P3 order	P4 order	P5 order
Dietary restrictions	6	5	5	1	6
Ingredient preference	1	4	4	5	5
What's available in my kitchen	4	3	1	2	1
What's in stock in stores near me	5	6	6	6	4
More options for making any meal	3	1	2	3	2
Exploring a new diet	2	2	3	4	3

Participants 6-10 (retrospective testing interview participants):

1. **P6**: The navigation of the app doesn't seem very smooth. The design style isn't consistent. Finding recipes are easy, but could have more details about each recipe.
   P7: I don't cook much or have any allergies so I can't exactly relate but the app seems useful for those that do. It could have some improvements on the looks so users can find things easier.
   P8: I'm only lactose-intolerant so there isn't many substitution that can really be replaced. I think it would be helpful, but cannot be used by everyone.
   P9: I've used other food apps and they seem easier to navigate through. If the buttons and menus were cleaner, I would have found it easier to find what I am looking for. The app idea is really cool and I think some people would really use it.
   P10: Picking different ingredients is a really good idea for this app. I just think it would be hard to substitute different recipes.
2. **P6**: Favorited recipes don't have a name so you may forget what the dish is.
   P7: Ingredient list could be cleaner and be more obvious that it is clickable
   P8: The bottom bar should be a different color. It looks off from the rest of the app
   P9: Categories are hard to read because of the image. Either the image should change or the color should be different
   P10: Ingredients should have more detail so the user can know what each ingredient substitutes to
3. Yes: 2
   No: 3
4. Yes: 3
   No: 2
5.

Feature	P6 rating	P7 rating	P8 rating	P9 rating	P10 rating
Navigation	7	8	7	8	9
Search	4	5	5	5	4
Recipe pages	7	7	8	9	6
Individual ingredient pages	7	7	8	8	7
Design	6	6	7	8	8

6. A: 0
   B: 0
   C: 4

D: 1

7.

Reason to use	P6 order	P7 order	P8 order	P9 order	P10 order
Dietary restrictions	6	6	5	4	5
Ingredient preference	4	5	6	6	4
What's available in my kitchen	2	3	4	2	1
What's in stock in stores near me	1	2	2	1	3
More options for making any meal	3	4	1	3	2
Exploring a new diet	5	1	3	5	6