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Cooking Companion

Final Report

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Abstract

Today there exist a multitude of applications for smartphones and tablets designed to aid the amateur chef. Most of these applications focus on finding and managing recipes, or providing general cooking advice. Personalizing these applications to one's needs is cumbersome at best, and not possible in many cases. *Cooking Companion* proposes a next generation cooking application that elevates itself from a mere recipe-search application to a more meaningful kitchen helper. *Cooking Companion* turns any smartphone or tablet into a companion that knows you and your family, understands your tastes, and even adjusts to your kitchen appliances. Although *Cooking Companion* can be used by anyone, it is targeted toward working adults who are enthusiastic, but not expert, cooks. These people enjoy experimenting with recipes and trying new cooking techniques, but lack the time for formal training. *Cooking Companion* helps them find recipes that they—and their families—love, and provides the culinary support they need without requiring any additional time.

1 Paper Prototype

The paper prototype design consists of many integrated components, which were broken up into sections as follows:

- **Sign in registration / preferences** – initial setup screen for first time users where information such as family members, kitchen appliances, device accessibility, and dietary preferences can be modified. This can also be accessed in preferences and changed at any time thereafter. See Figure 2.
- **Search and filtering** – search for recipes from a variety of online sources, and choose filtering mechanisms to help narrow the search results by ratings, reviews, and time duration. See Figure 3.
- **Planning and grocery list** – user can see calendar view of meal preparations and appointments in a given day/week/month, and can view the list of grocery items required for a particular day/week. This will help with meal planning and will reduce the amount of grocery shopping in a given week. See Figure 5.
- **Upload with camera picture** – upload a recipe from a camera screenshot of a magazine article, newsletter, etc. and add it to the user's favorites, calendar, or begin cooking the recipe immediately. See Figure 2.
- **Cooking navigation with voice control and gestures** – recipe navigation hands-free with voice and gesture navigation. This enhances the user's interactive experience during cooking without having to fuss with touching the phone screen display. See Figure 4.
- **Landing site** – home screen which ties all of the features together, where the user can choose to modify family preferences, search for recipes, plan for the week, etc. See Figure 2.

The prototype was done on 3x5 index cards to emulate a smartphone display.

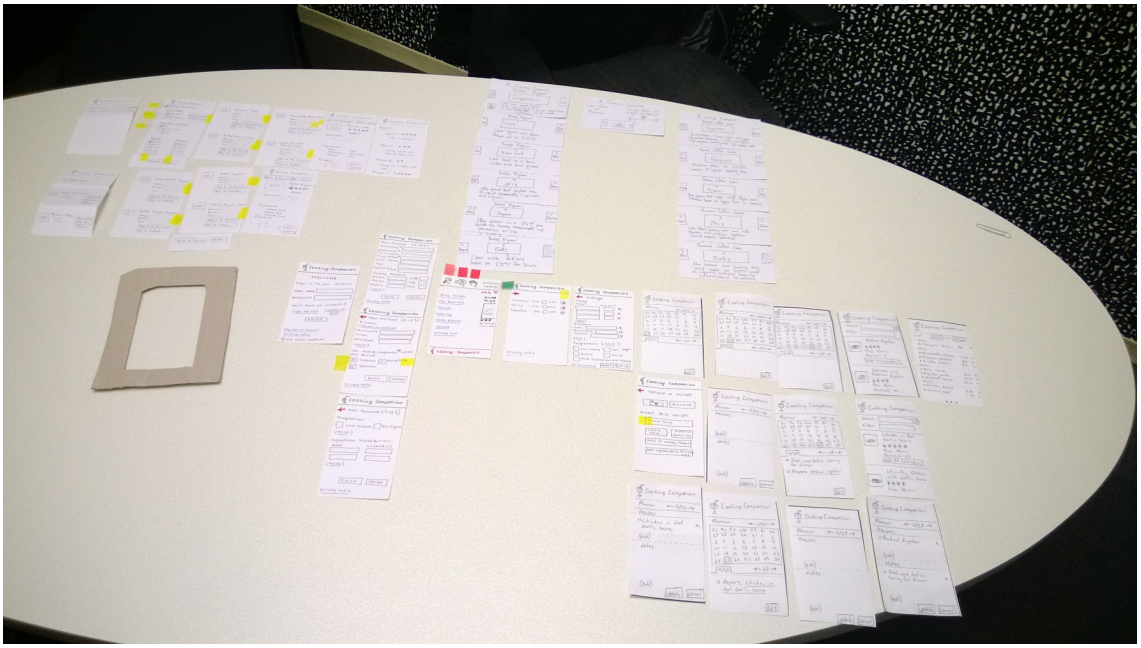

Figure 1. Prototype – Overview.

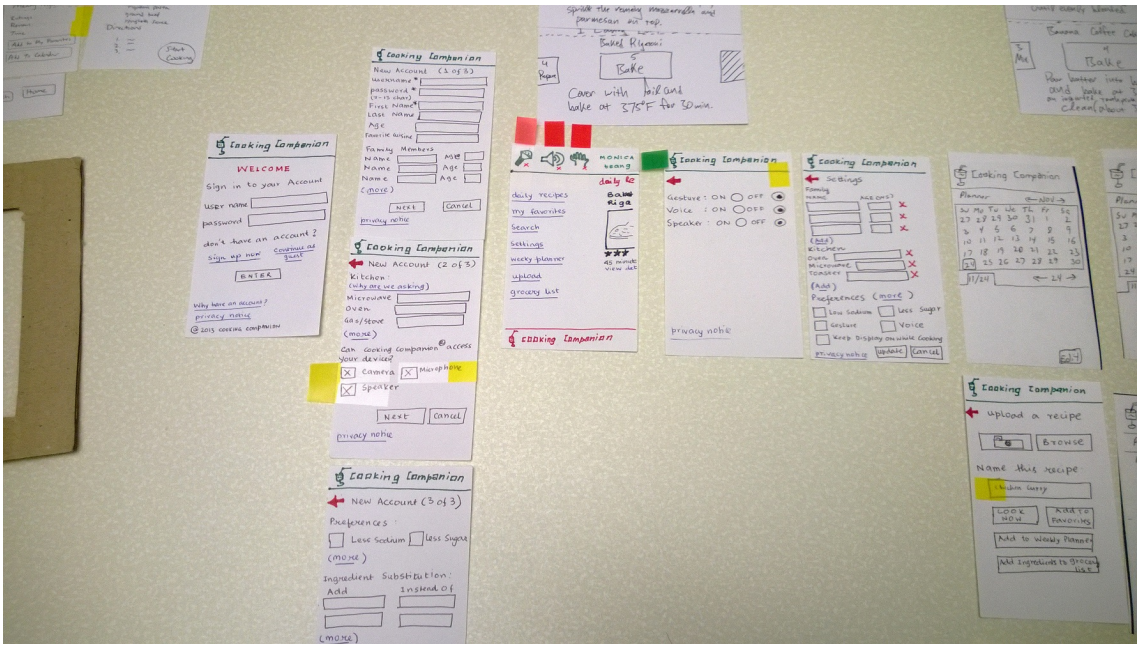

Figure 2. Prototype – Sign In

Figure 3. Prototype – Search.

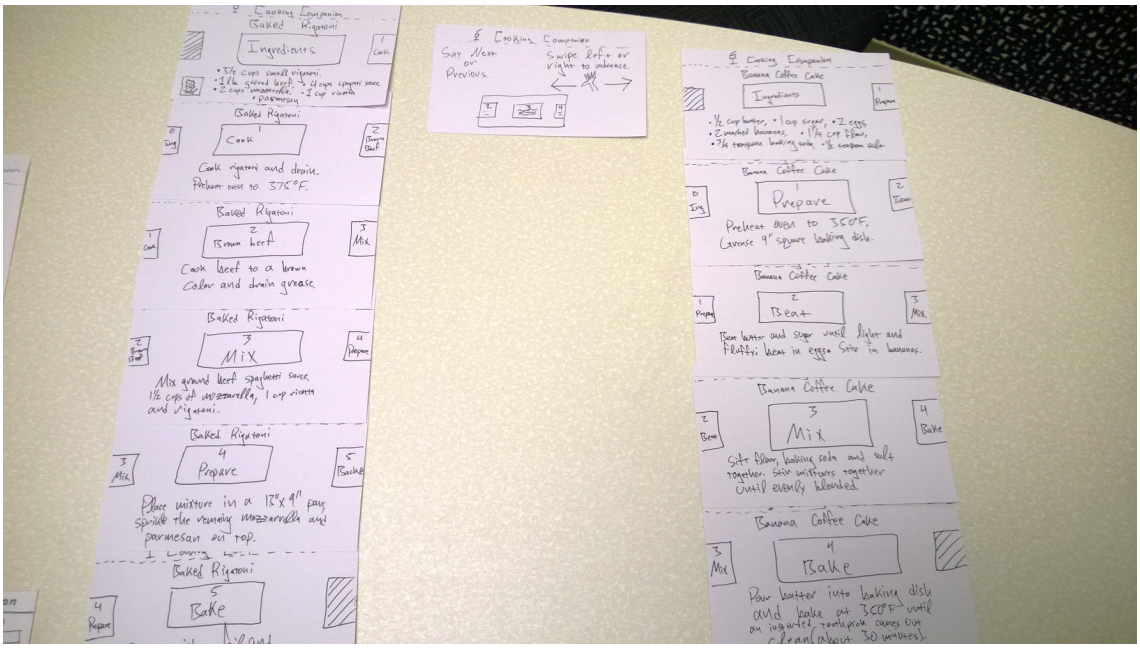

Figure 4. Prototype – Recipe.

Figure 5. Prototype – Planning.

2 Usability Testing

2.1 Participants

The participants chosen in the testing procedure were friends, colleagues, or family members of the team members. Each individual considered met the criteria of the targeted audience type: working adults who showed enthusiasm while trying new recipes, with little formal training (and an aptitude for mobile technology).

2.1.1 Chelsey

Chelsey lives with her husband in Issaquah, WA. She is a financial analyst that loves using apps (e.g., pinterest) to find recipes. She enjoys almost all of the pinterest recipes that she finds.

Some of the major takeaways from Chelsey were:

- She never signed in, as she assumed that the app would just save her "guest" selections locally.
- She got really stuck on trying to go back to the home screen...we should address that somehow.
- She commented on wanting more filter options...she was not specific, but she mentioned allergies and specific types of diets (like paleo).
- She was surprised with the grocery list but was really impressed with recipe navigation.

2.1.2 Dayne

Dayne is a small business owner. He does not cook very often, but is frequently constrained for time, so an app to make it easier would be worthwhile. He did not have any problem navigating the cooking screens. For the substitution, he was navigating the recipe verbally, and asked for a substitution for baking powder verbally. It was assumed that our application would be sophisticated enough to handle this. He had no problem uploading the recipe, but had difficulty adding a recipe from the library to the calendar. From the calendar view, it took him a while to figure out that he had to click on "edit" to add a recipe to the selected day.

2.1.3 Margaret

Some of the major takeaways from Margaret were:

- She liked idea of finding pictures and adding to recipe. Wondering if this automatically searches similar recipes based on picture (image) alone—and not with recipe included in picture.
- She liked how grocery list shows all ingredients needed for week. Asked if getting onion for 3 different recipes would combine the quantity into the grocery list or just list it out once.
- She did not understand the purpose of needing to know her appliances in the preferences feature. She doesn't know her microwave brand and wanted to have a link on appliance info or to know more about why this information was needed.

2.1.4 Ruby

Ruby lives with her husband and a 3 year old in her Bellevue home. She is a software engineer by profession and is comfortable with smart phone and apps on her phone. She typically searches and looks for maximum stars and reviews for the recipes (doesn't actually read the reviews though). She has decent success with online recipes so far.

Some of the major takeaways from Ruby were:

- She says she used "Continue as Guest" on task 1 as she thought it would be faster, suggested that there should a prompt around why sign-up is important. Also it should tell how she could sign-up later—like clicking on Guest on the title bar.
- In the cooking steps—in the ingredients page—or whatever that number of people the recipe is adjusted for.
- Expects a finish page on the recipe.
- Expects an easier way (than clicking on title bar) to get to home page.
- Search page should have a link for "upload now".

- Search filter page is nice but she wants a way to avoid some ingredients—like no beef.
- Search result page—along with "cook now", she thinks there should be a second button for "cook for family". "Cook now" should follow the recipe as is and cook for family should adjust the recipe for family. Also if no family members are defined, that button could cook for 1 person.
- Thinks "settings' should be called "customize".
- Liked the overall cleanliness of the design: very much likes the grocery list.
- Didn't see much value for adding notes for 11/28 for the invite list.

2.2 Environment

Tests were conducted in the comfort of the participant's home (dining room table near kitchen), and spread out throughout the course of the week when the participant was available. The paper prototype design was separated into various task walkthroughs (registration / sign in, search and search results, meal recipe navigation, calendar and grocery list planning, etc.). The tasks assigned to each team member: Computer, Facilitator, and Observer(s). The facilitator was the person who knew the volunteer while the other team members swapped roles between computer and observer for each participant. The test typically took 30 minutes to an hour to complete all three tasks per participant.

2.3 Tasks

Each participant had to accomplish three different tasks (easy, medium and hard). The tasks were chosen were based on the most common scenarios that the audience would face in the kitchen—searching for and cooking a recipe for the family, planning ahead for the day/week, and changing the recipe based upon necessities, appliances and personal taste.

2.3.1 Easy

Sign in, search for a recipe and cook for family. Use gestures to follow recipe.
Monica lives with her husband and 2 kids (ages 3 and 7). She is cooking dinner for her husband's birthday. Her husband likes pasta dishes. Monica does a quick search of her recipe library in *Cooking Companion* and selects a baked rigatoni recipe. She goes to the recipe ingredients list and veries that she has all of the ingredients in her kitchen. Though the original recipe was meant for 8 people, Monica easily adjusts the recipe down to 4 with the help of *Cooking Companion* and sees that the ingredients are also scaled down as well. Using her phone, she follows the recipe step by step. She uses gestures to move from one step to the next without having to touch the screen.

Data:

- Sign up data: Monica Tsang.
- Family includes: Rob Tsang (husband), Kids: Chloe (7 years) and Stanley (4 years).
- Use GE Advanced for Microwave and GE 1245 Oven for Oven appliance.
- Search for baked rigatoni recipe.

2.3.2 Medium

Find a recipe using filters. Use voice commands to follow recipe. Follow steps out of order, and use substitution on ingredients.
Joe is a grad student and does not have the budget for a well-stocked pantry. He is taking a dessert to a potluck at a friend's house, and he uses *Cooking Companion* to nd a banana cake recipe that everyone will appreciate. He begins cooking it immediately. Joe is an ecient cook, and does not like to keep walking back to his phone to check the ingredient list. Instead, he tells *Cooking Companion* to read the recipe step to him. Joe performs some recipe steps in a dierent order than the recipe lists them, and *Cooking Companion* is able to accommodate this based upon Joe's voice command by telling the phone to move on to the next step. When Joe gets to a point in the recipe that calls for baking powder, and he realizes that he only has baking soda, Joe asks for an alternate and *Cooking Companion* suggests baking soda with lemon juice instead. Joe is pleased to see that he is able to continue on with his recipe steps even with the substitution mishap during cooking.

Data:

- Start with sign-in page of Joe Johnson.
- Search for banana cake recipe that can be completed in under an hour.

2.3.3 Hard

Upload camera picture, and plan meals for week to get shopping list of ingredients.
Robin works as a Software Engineer and lives with her ancé. Given that she typically has a busy schedule throughout the week, she prefers to plan her dinner plans for the week well ahead of time. She picks up a few recipes suggested by Cooking Companion, and she also takes a picture of a Chinese dish from a magazine that she is reading using her smartphone. The picture is imported into *Cooking Companion*, and this new information is now updated in her recipe library. *Cooking Companion* sends an alert through its calendar reminding her that Josh and his wife would be over for dinner Thursday. Robin has recently resolved to cook healthier meals, and decides to adjust her recipes to reduce sodium. She updates her prole, and her recipes are automatically adjusted. Based on her choices for the dinner all week, *Cooking Companion* is able to plan her grocery list. As Robin heads out grocery shopping Sunday evening,

she checks *Cooking Companion* grocery list for the week, and checks them o as she purchases them. She is condent that she got all ingredients covered for the week.

Data:

- Sign-up data: Robin Alphin; husband, Sam Alphin.
- Use photo for chicken in hot garlic sauce (take picture) for Monday.
- Use baked rigatoni for Thursday.
- Thursday dinner should be for 4 people (including Josh and Katie).

2.4 Procedure

Paper prototyping was conducted on the participants with various flag tape for each control input. Text edit box entries (searchbox, registration name fields, etc.) were also handled in a similar manner so users would simply write in the text field, rather than prototyping a pseudo software input panel (SIP). The emphasis was on the scenarios at hand and not at how well the participant could type on the SIP or hardware keyboard. (The assumption is that the user is familiar with using a smartphone and comfortable typing on it). Tasks were assigned to each team member and rotated across participants. The facilitator was the person who knew the participant and could ease the comfort in discussion of the experiment. The other roles were divided up between the team members for each participant. The tasks were given to the participant one at a time, and read aloud, starting with the easy task. Upon completion of one task, the next task was provided.

Prior to meeting the participants, a dry practice run was conducted amongst the designers to facilitate the timing, order and flow of operation for each scenario. Each design section was developed independently by each team member, while keeping the interface design and brand logo consistent. This helped distribute the workload evenly among the team members.

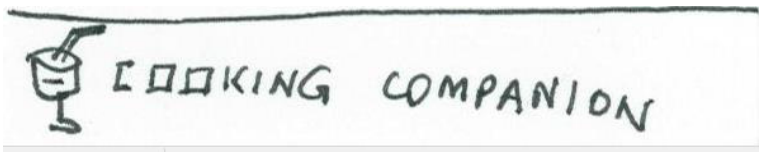

Figure 6. Prototype – Planning.

2.5 Testing Measures

Many test metrics were used to conduct the experiments and help determine the key data points with regard to human-computer interaction and human accessibility. This includes measurements in both process data as well as bottom-line data:

- Was the participant able to complete the tasks easily?

- How long did the participant take to go through each of the three tasks?
- Which screens did the participants end up staying the longest on?
- Were they stuck or confused on any of the UI screens? If so, why or how?
- Did users find navigation-by-voice or navigation-by-gestures more useful during the recipe navigation? How?
- Was the meal planning process intuitive? How about ingredient substitution?
- Did users explore other UI not listed in the tasks such as review links, today's recipe, and my favorites?
- During registration process, did the participants find the appliances and dietary section useful?

2.6 Usability Testing Results

The information collected from the paper prototyping experiments was quite useful and informative as each user handled the three scenarios differently. Some of the testing proved to be consistent among the four participants. In other parts, participants showed variations in the way they interacted with the prototype. Table 1 represents a table of heuristic evaluations conducted by the team. Challenges that the participants faced with the paper prototyping design follow.

2.6.1 Signing in using Guest Account

In the first task, where users were required to sign in to the application, most of the participants skipped the registration process and simply signed in using a guest account. This made it difficult to test the scenarios where the user wanted to modify preferences later, or add family members when it came time to cook for family (as there was no easy way to sign in from that point).

2.6.2 Navigation Difficulties to Home Screen

During the cooking recipe steps, participants had difficulty getting back to the home screen from the recipe navigation page. One participant attempted to use voice navigation to say "CC Home", while another participant used hand gestures to navigate all the way back to the gestured all the way back to the home landing page. There were also challenges with the upload section as not everyone uploaded from the home landing page. Some users navigated to the Calendar page first and then attempted to upload from the search recipe page, but were unable to do so.

2.6.3 Lacking Help and Privacy Notice

In the registration section, many participants noted the lack of privacy rights and some did not understand the purpose of recording appliances in the 3rd page of the sign in section. Also, during the recipe navigation, there was little information or help regarding substitution of ingredients (besides by voice).

Issue	Category *	Sev *	Mitigation
Forcing users to sign-up. No emergency exit during cooking.	User Control & Freedom	4	Allow Guest sign-in. Easy access to go back to "home screen"
Guest users did not know what they missed	Error Prevention	4	A soft block on "guest sign in"
User name, family info, appliance info were buried and not visible in context	Visibility of System Status, Recognition rather than recall	4	Home shows user name, search page reminds family info, easy access to settings, recipe reminds appliance info
Help not always available at fingertip	Help & Documentation	4	Make Help first class citizen (home page, recipe navigation page)

Table 1. Heuristic Evaluation.

3 Interface Revision Sketches

The feedback gathered from the participants during the paper prototyping exercise helped shape and mold the evolution of the high resolution web interface design. Common examples follow.

3.1 Personalization Experience

During the experiment, most of our users skipped the registration process initially and chose to continue as guest. This made it confusing when performing tasks that require adjusting their kitchen appliances or finding recipes for their families. To mitigate this risk, a soft-block on the page was placed to help inform users of potential features that they were missing.

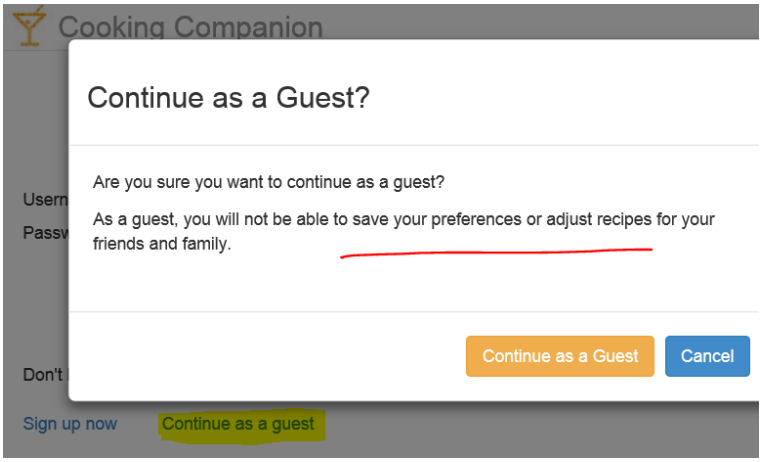

Figure 7. Continue as guest.

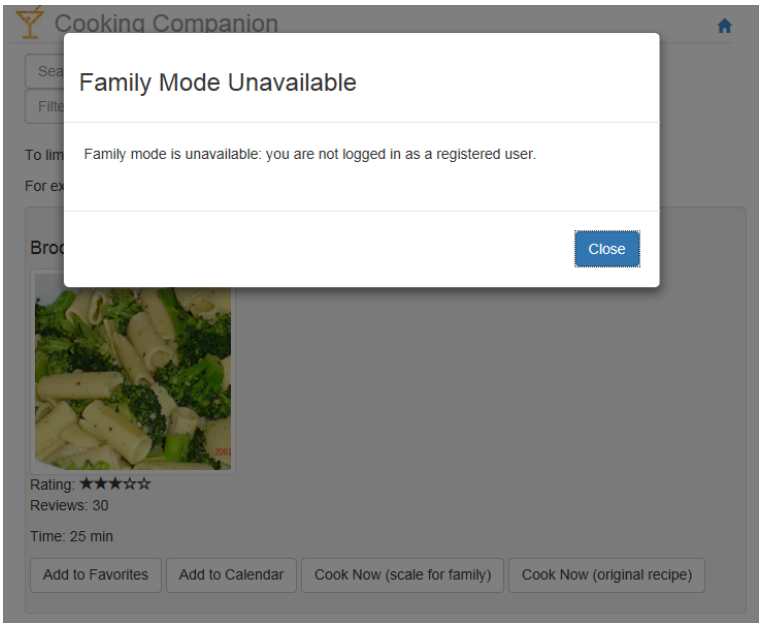

Figure 8. Family mode unavailable.

To further educate users along the way in helping them make smarter choices, as well as make it easier to access their preferences and family settings, links to the family settings and/or kitchen appliances were added.

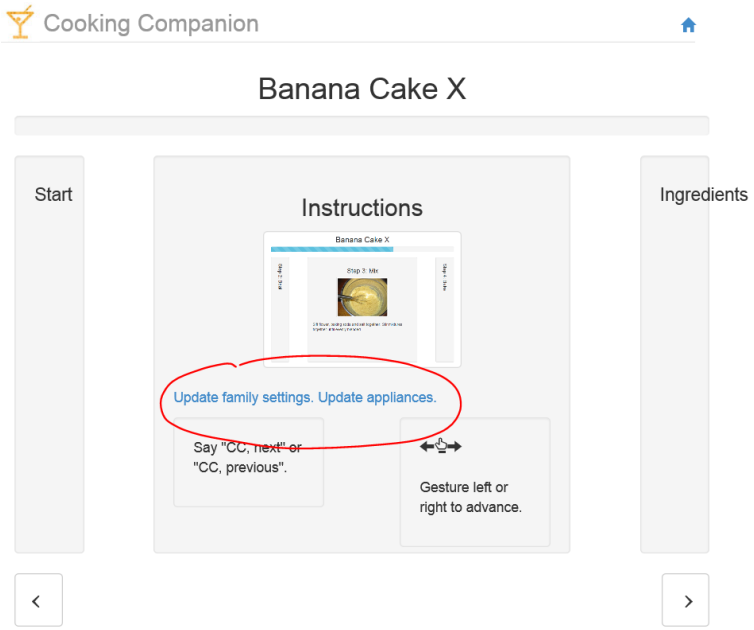

Figure 9. Educating users along the way.

3.2 Search Experience

While conducting the experiments for the third task, it was observed that each user navigated the upload walkthrough scenario differently. One participant clicked on Upload from the landing page, while another attempted to do this from the Search Page after clicking in the Calendar add recipe link. With various ways to access the link, the design became more robust by making specific features more accessible in the design, such as the upload button.

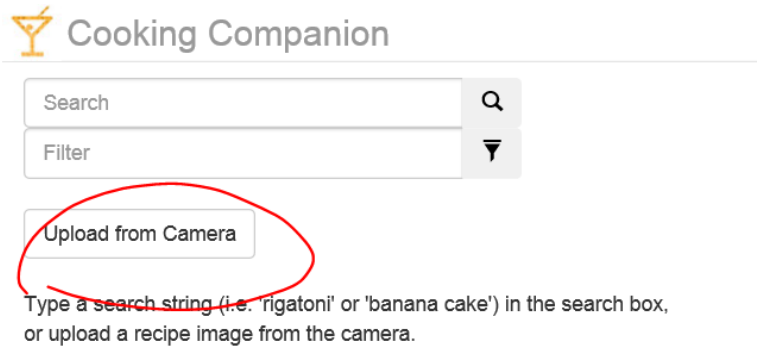

Figure 10. Upload from camera.

When the user found a recipe that they intended to use for cooking, he/she was not clear whether or not the "Cook Now" button was already scaled up/down to

his/her family preferences, or if this was the original recipe from the search results. To bring clarity and more freedom to the user, both button options were added to the design.

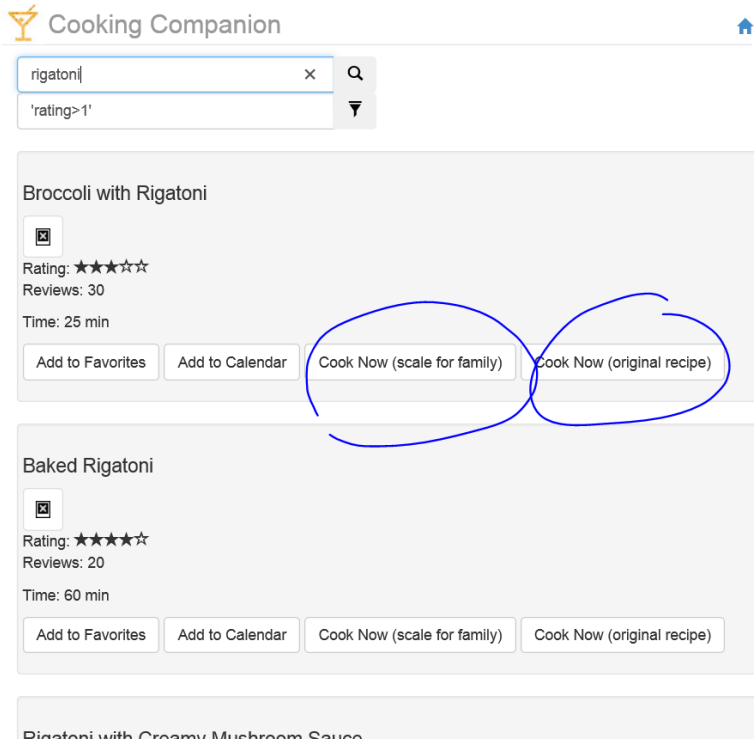

Figure 11. Separate "cook now" buttons.

3.3 Cooking and Navigation Experience

During the recipe navigation task, participants were having difficulty navigating back to the home screen. Although the title ("Cooking Companion") at the top of each page was a link that could be interacted upon, users were not aware of this and ended up gesturing back through the recipe steps in order to get to the home page. To mitigate this, a home icon was added to the top of each page in order to make it more visible, apparent and accessible to users.

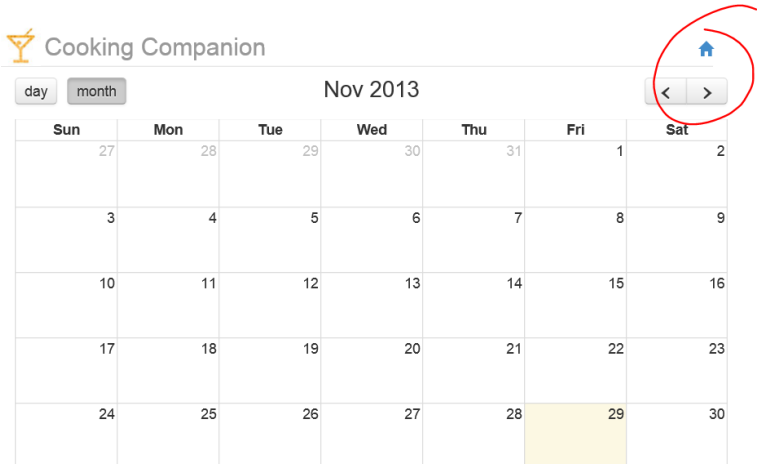

Figure 12. Home icon for each page.

Another issue encountered that required some design evolution was providing additional help and support during the recipe navigation page. Some users had trouble remembering what actions they could say and/or hand-gestures they could perform. To make help and documentation a first class citizen for the users, the new design includes more complete help instructions with additional voice command recognition system.

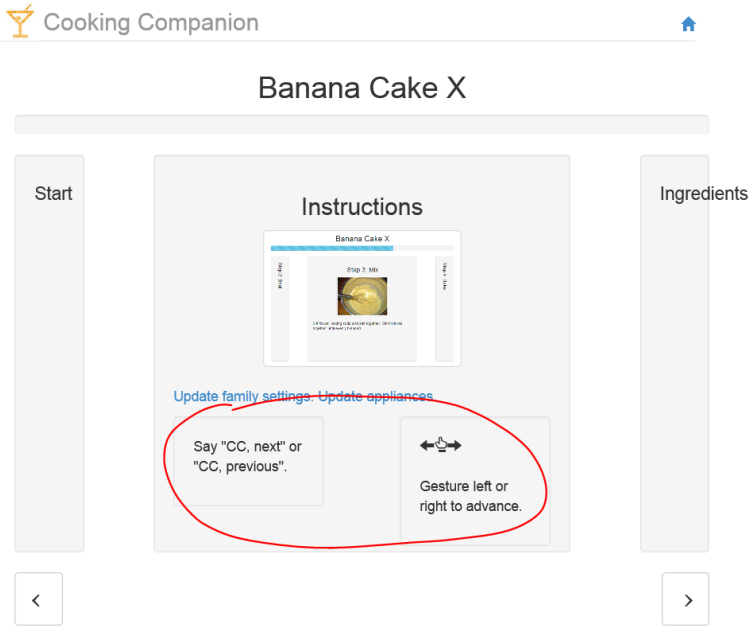

Figure 13. Navigation help instructions.

3.4 Planning Experience

Another area of improvement was in the planning scenario. During the test experiments, the home page did not initially include a grocery list as part of the main activity. Due to popular demand by users, and realizing that planning was a crucial activity in *Cooking Companion* activity, both "Planning" and "Grocery List" became a priority section to the Home Screen activity. This helps facilitates the importance of *Cooking Companion* as a companion app, rather than a recipe finder application.

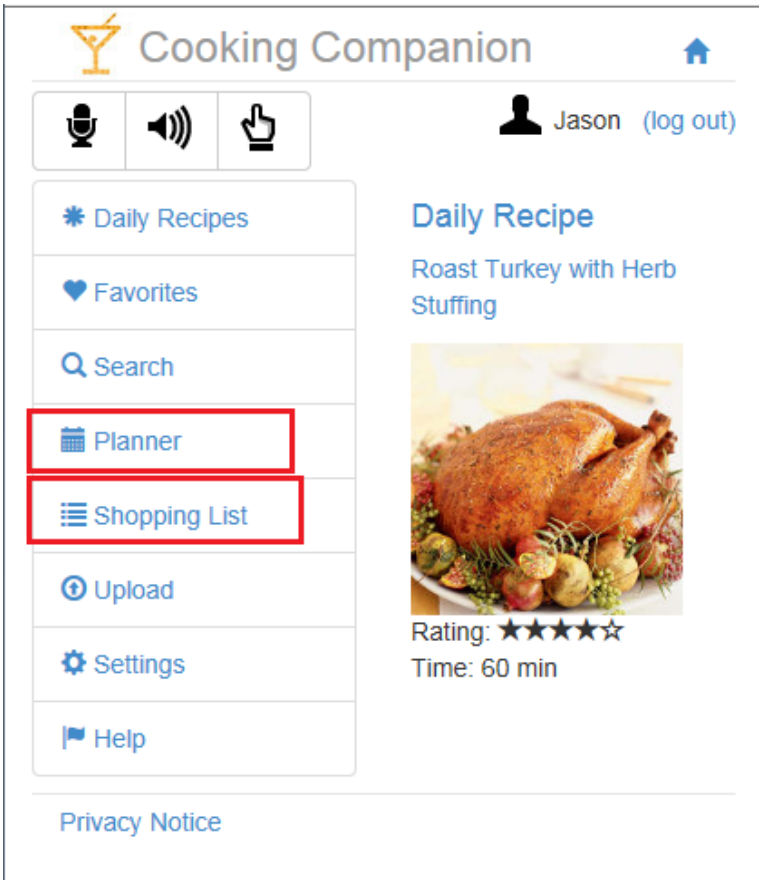

Figure 14. Planner on Home Page.

Another area of design evolution came in the integration of search, upload, and planning experience. Originally, the paper prototype simply had the camera upload link shown on just the home landing page. However, the task experiences went more smoothly for our users when they were placed together. The design was changed to integrate planning, upload, and search together to give a richer experience for the customers.

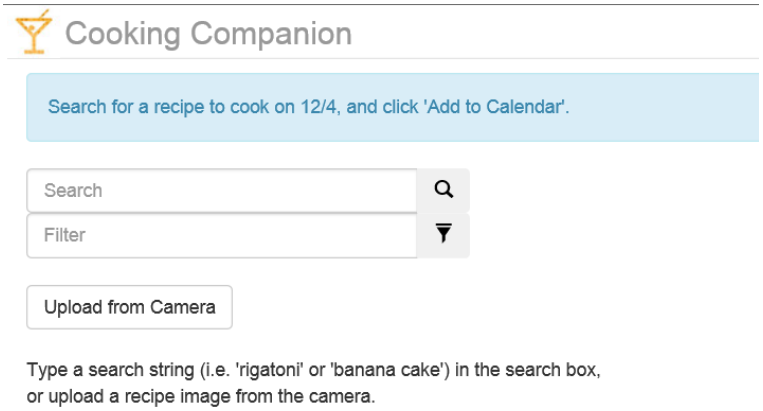

Figure 15. Camera Upload in Planner.

4 Prototype Overview

4.1 Implementation

An interactive web-based prototype was developed as it seemed most feasible for a smartphone application. The technology used behind the application is AngularJS. Although users can run freely in the web application, only a subset of the product was implemented to focus on what was essential to the application. The full design would have taken much more time and dedication than the allocated time constraint given for this assignment.

The prototype used fixed-path to convey the design with hard-coded data points for specific tasks (e.g., uploading a snapshot, static recipe results rather than large database, recipe navigation only for "baked rigatoni" and "banana cake x", etc.).

The *Cooking Companion* prototype can be found on the course website at: `http://courses.cs.washington.edu/courses/csep510/13au/projects/cooking-companion/app/index.html`. Although the prototype was designed for a smartphone, the prototype is on the website for ease of access and to show how this could be easily extended to larger devices such as tablets. The *Cooking Companion* prototype can be broken down into the following features:

- **Sign up** – account creation that asks information about the user, kitchen and food preferences. See Figure 16.
- **Searching** – search for food recipes to cook or plan. See Figure 21.
- **Planner** – calendar view of cooking planner with details notes per day. See Figure 28.
- **Shopping List** – list of required ingredients based upon calendar schedule. See Figure 30.

- **Upload** – recipe uploading via smartphone camera. See Figure 26.
- **Settings** – users can update their personal profile, kitchen settings or preferences at any time. See Figures 17, 18 and 19.
- **Cooking Navigation** – step by step navigation of meal preparations accustomed to user's kitchen appliances and food preferences. See Figures 24 and 25.

4.2 Storyboard Scenarios for Tasks

4.2.1 Easy

Sign in, search for a recipe and cook for family. Use gestures to follow recipe.
Search for a recipe online using your smartphone to cook for your family (spouse and two small children). Your spouse likes pasta dishes so keep that in mind while searching for the dinner recipe. Verify that you have all the necessary ingredients and adjust the recipe serving to 4 people. Follow the recipe step by step from your phone while cooking.

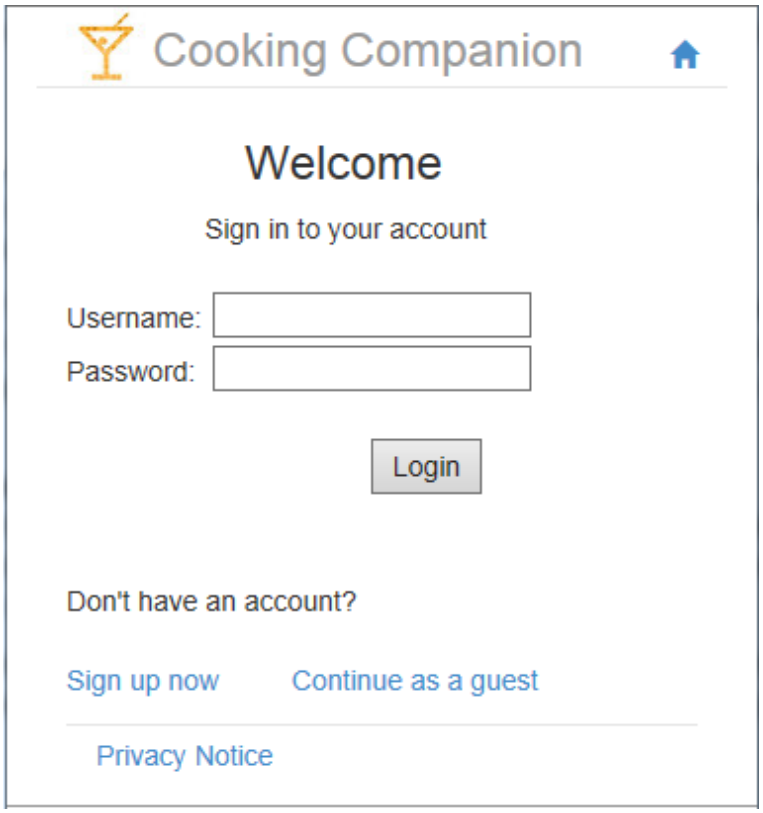

Figure 16. Sign In Page.

Figure 17. Registration Page 1.

Figure 18. Registration Page 2.

Figure 19. Registration Page 3.

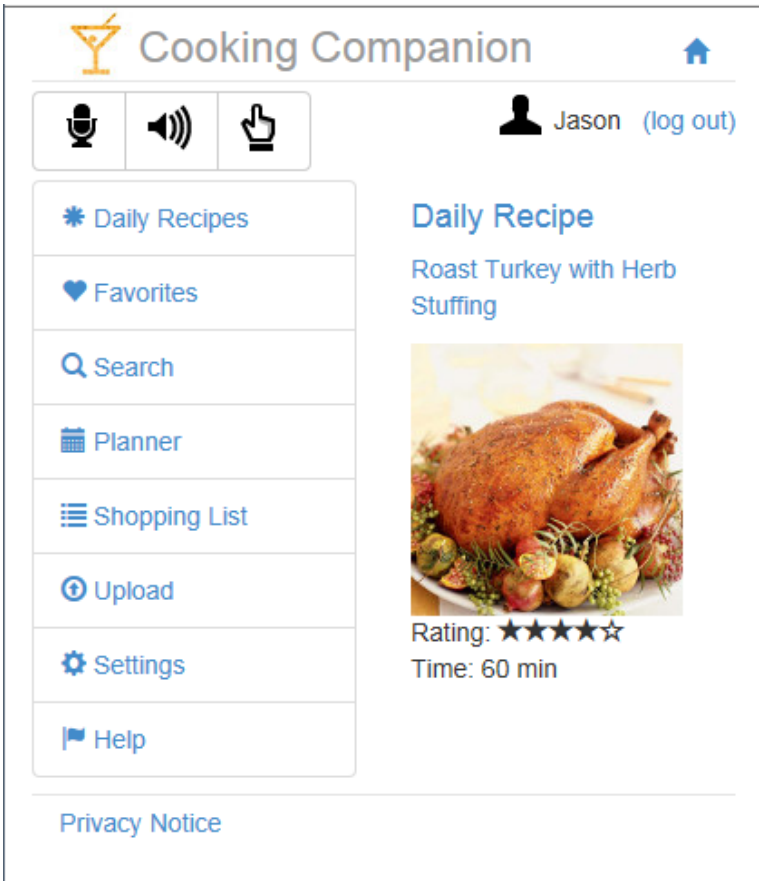

Figure 20. Home Landing Page.

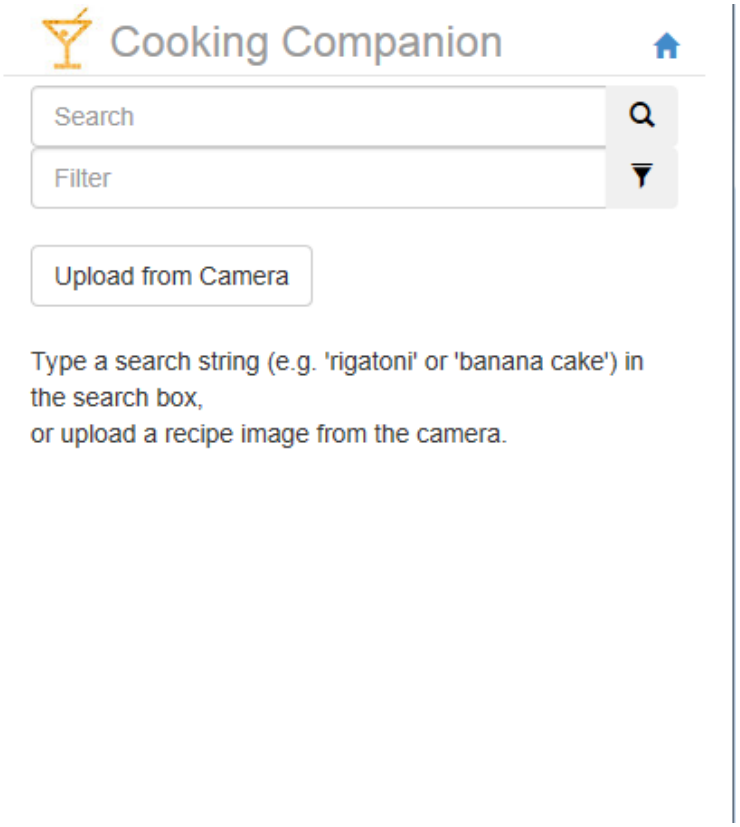

Figure 21. Search Recipe.

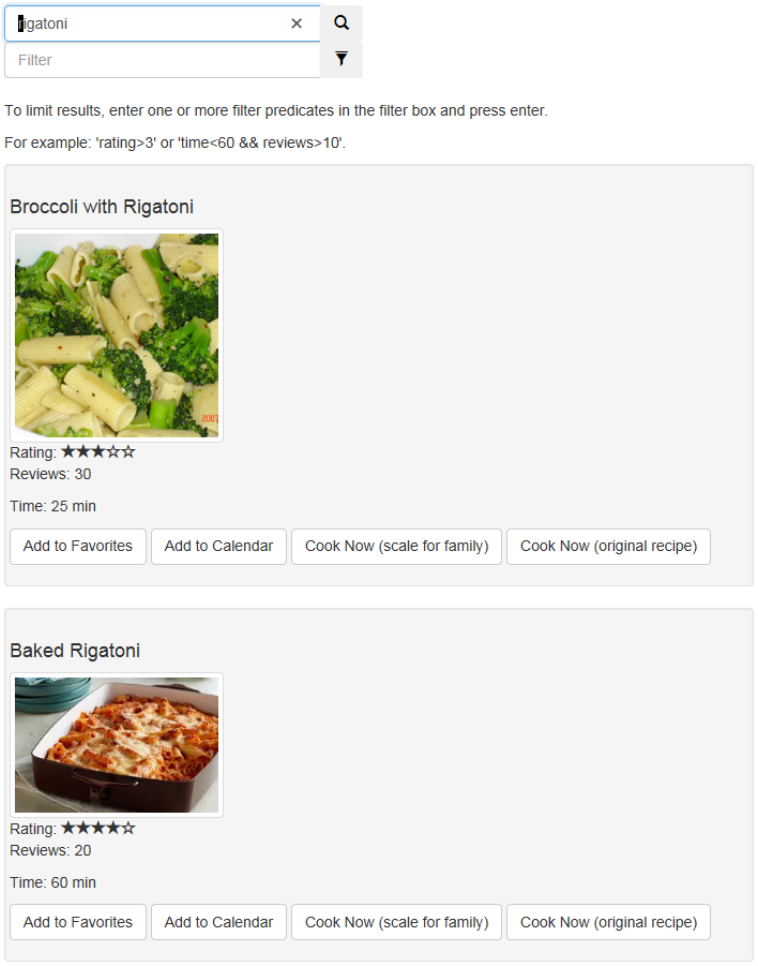

Figure 22. Search Results.

4.2.2 Medium

Find a recipe using filters. Use voice commands to follow recipe. Follow steps out of order, and use substitution on ingredients.
Find a banana cake recipe online using your smartphone, and perform some of the recipe steps in a different order. Keep the ingredients list handy on your device. When asked for ingredients which you might not have in your kitchen, please substitute them with a closest match in your kitchen pantry (for example, replace baking powder with baking soda and lemon juice).

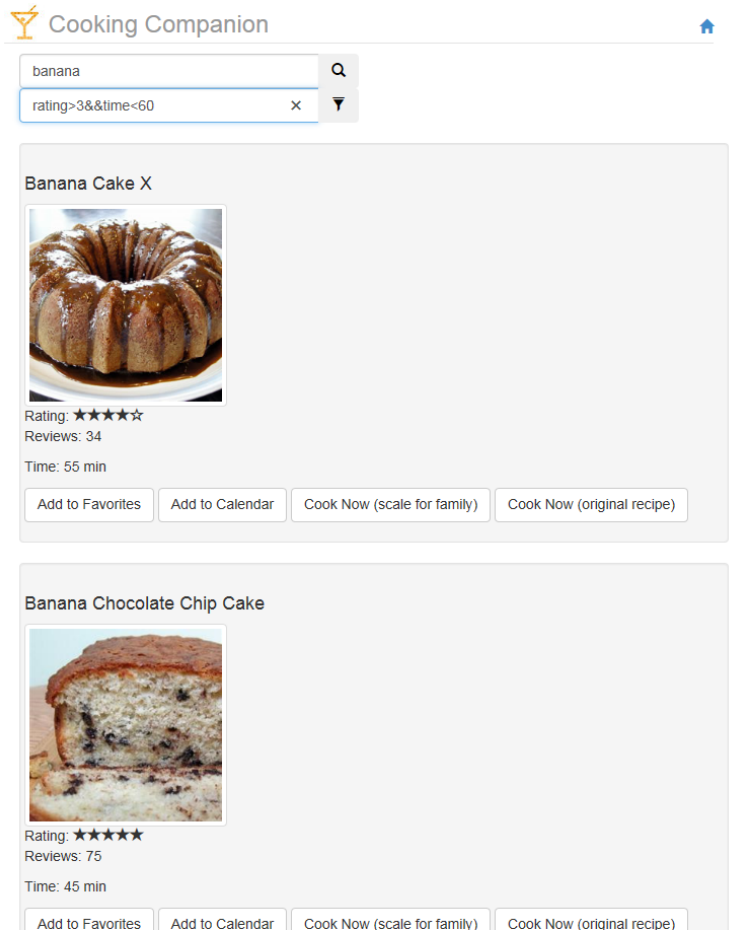

Figure 23. Search Banana Cake with filters.

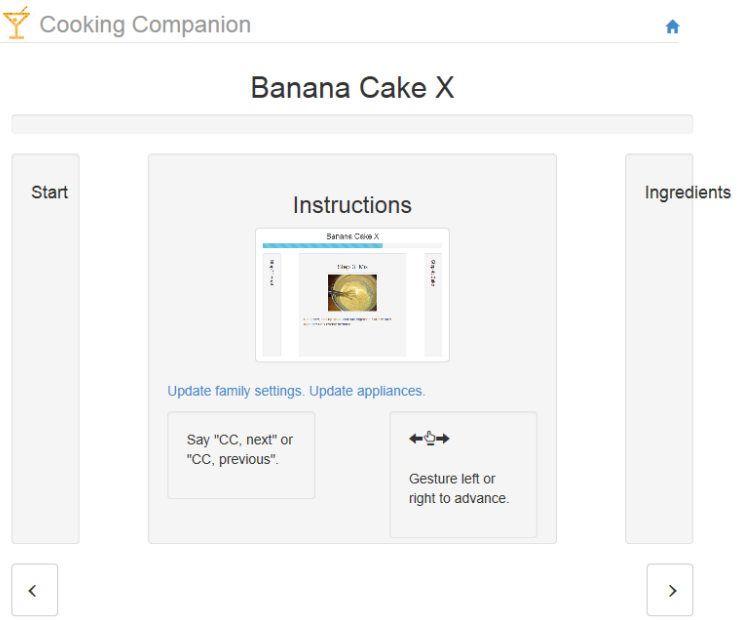

Figure 24. Recipe Navigation Help.

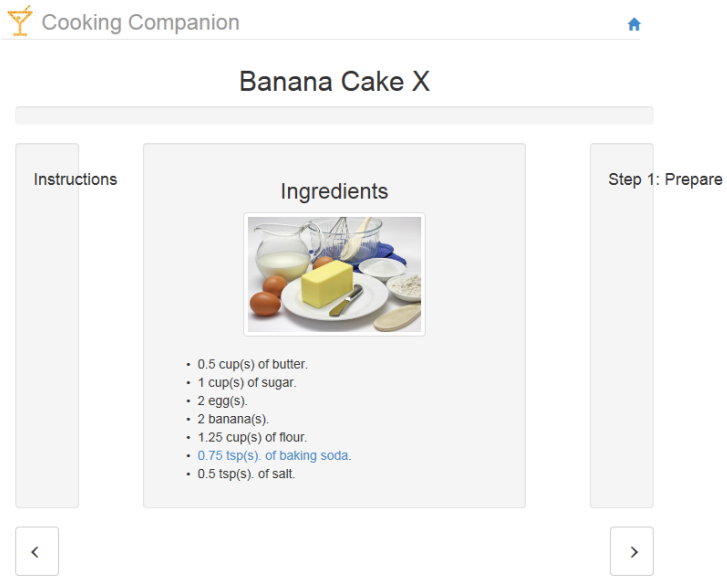

Figure 25. Recipe Navigation.

4.2.3 Hard

Upload camera picture, and plan meals for week to get shopping list of ingredients.
Pick out a few dinner recipes a week out ahead of time to plan using your smartphone. Also, pick out a Chinese dish recipe from a magazine and upload it to your phone recipe library. You will be having dinner with family friends on Thursday, and decide

to reduce sodium in your preferences. Keep track of the total ingredients required for the week and purchase them all with a single stop shop at the grocery store.

Figure 26. Upload Magazine Recipe.

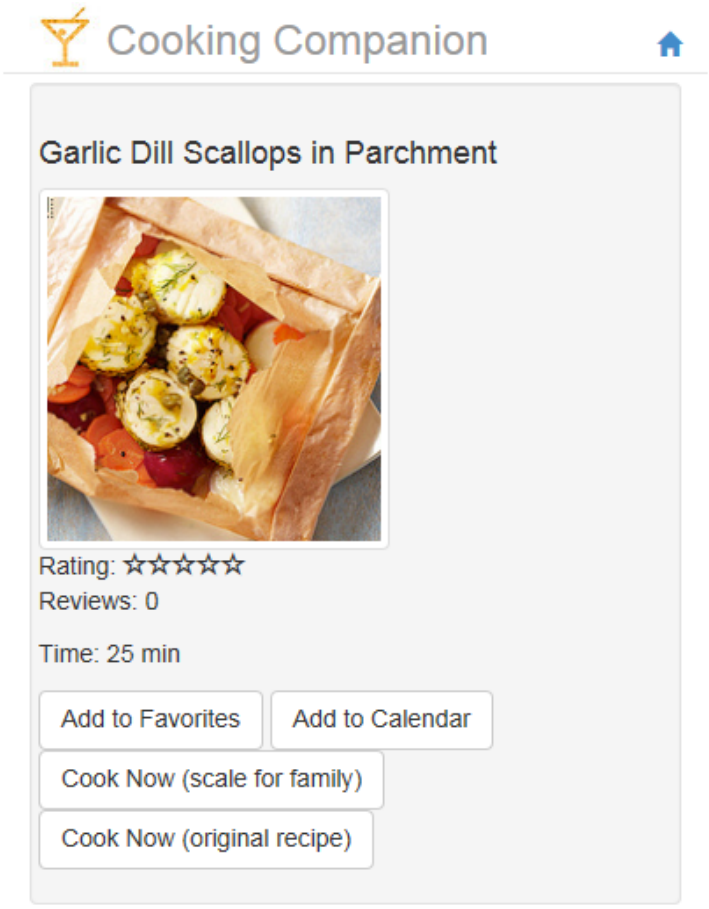

Figure 27. Recipe Cover.

Figure 28. Calendar View.

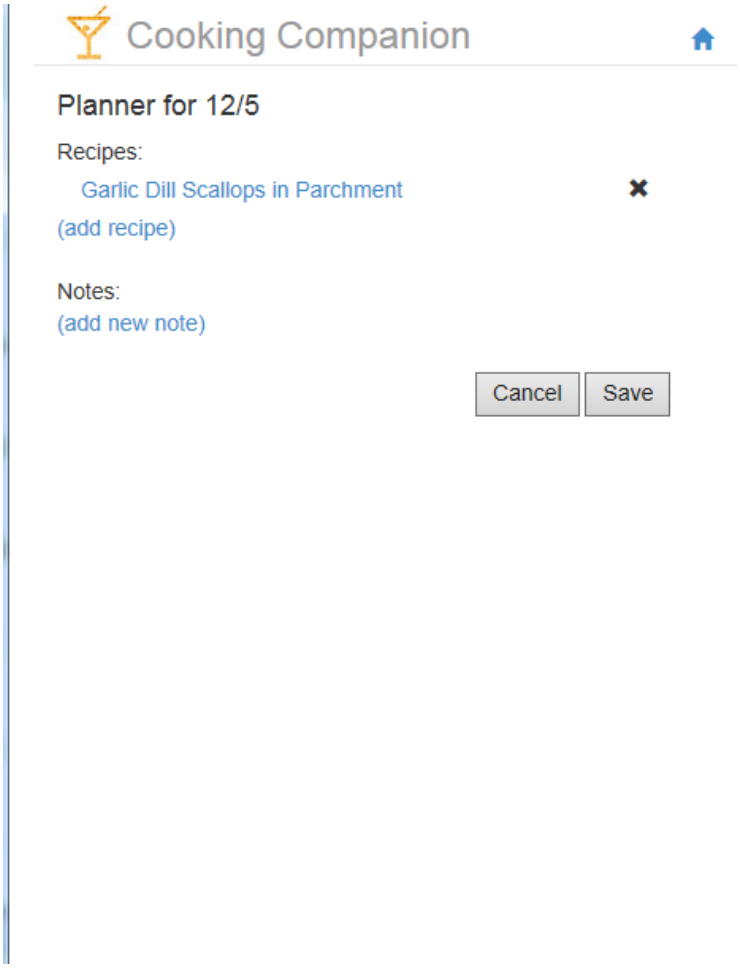

Figure 29. Planner Day Card.

Figure 30. Shopping List.

4.3 Prototype Tools

The *Cooking Companion* prototype was developed with AngularJS as a web application. GitHub was used as a central repository system to help coordinate code revision changes, which helped tremendously for coordinating the web application changes amongst designers and to keep track of the latest deployment of the code production live site.

4.4 Prototype Omissions

After iterating through the prototype design with the participants, the design team researched on some Value Sensitive Design (VSD) perspectives (see Table 2 for a table on VSD). Due to time constraints, a full VSD, goal-based evaluation on various stakeholder perspectives was not conducted. Instead, a preliminary VSD study on direct and indirect stakeholders was discussed, which focused on taking the side of direct stakeholders—who are the users registered with the app.

This discussion led to cutting the features for integrated services and social scenarios from the prototype design due to privacy concerns and complexity of dependencies on external app integrations. The design push helped move personal dietary and health information out, and provided a simpler preference view to align with the individual. It was also decided that the grocery list should not contain any brand information; in this way, the app would not espouse the use of one brand over another.

Issue *	Mitigation
Direct: User consent should be obtained before collecting information.	Privacy Notice shown contextually, Users in control and not forced to provide personal data
Direct: Camera, Microphone data is sensitive.	Never store device data. Also devices turned off except only during recipe follow (cooking).
Indirect: Users should not be guided towards a particular brand / product	Grocery list does not contain any brand information
Direct: Integration with services, social scenarios cause privacy concerns.	Cut social & service integration scenarios.

Table 2. Value Sensitive Design.

Other areas that were left out of the high-level prototype design were strictly due to time constraints and focus on the key scenarios. These areas were marked with "Not Yet Implemented" to help inform the user of the non-active sections. These areas include Daily Recipes, Favorites, Recipes for random menu items, and Help. Other features such as the Search Filter Page was reduced to a programmatic text box entry rather than a separate UI page to generalize the concept on how this would be done.

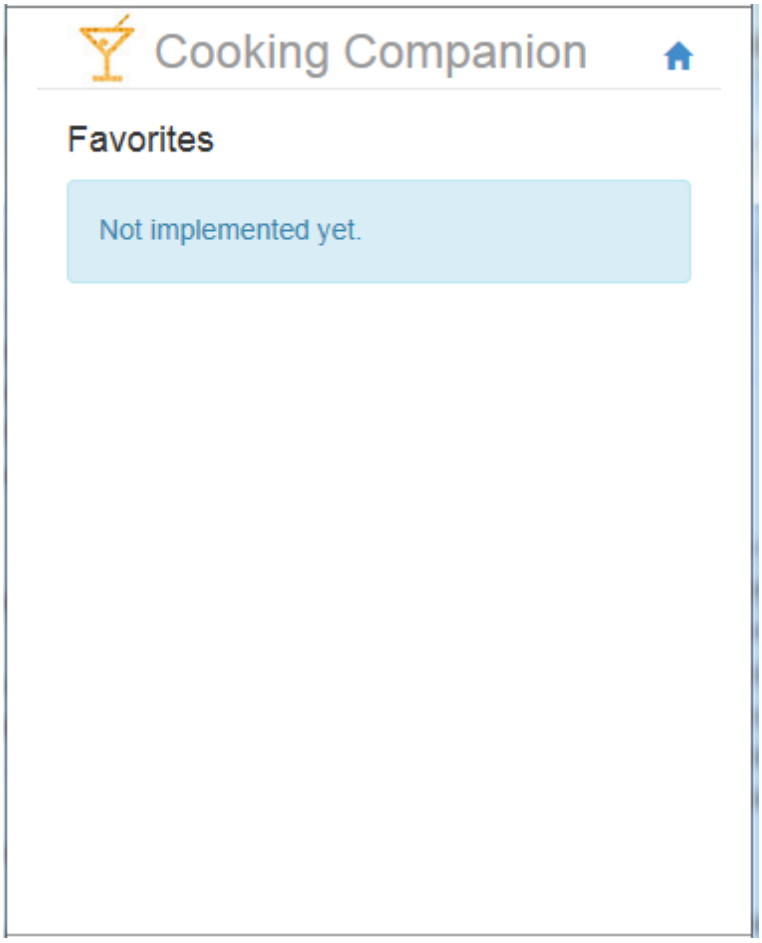

Figure 31. "Not Implemented" Page.

5 Summary and Lessons Learned

The team applied many materials learned throughout the course into this final assignment. The scoping exercise was extremely useful after the brainstorm session and contextual inquiries were completed, as the problem space became quite large. Yet, it was also important in the beginning to not be too confined and targeted, as ideas were forming and the team continued to explore and expand on areas outside of a simple recipe application in various scenarios and walkthroughs.

The key features that were common among users based upon contextual inquiry analysis helped scope down the scenarios and feature set dramatically and helped solidify the ideas and foundation for the paper prototype. Furthermore, value sensitive design was important in scoping out social scenarios, removing brand names, and issues around privacy.

The paper prototyping experiments demonstrated that users will think differently on certain aspects of the design and may have different perspectives from one another (especially when compared to what the designers may have desired for the users). This helped evolve the high-level interactive prototype design into having more than

one way of doing almost everything, with a user interface that was flexible enough to provide users the freedom of choice. Furthermore, heuristic evaluation was an insightful tool that helped rectify issues with the design early on (informing users during guest sign-in, upload functionality in multiple areas, home navigation visibility on all pages, etc.).

Having the benefit of a fourth person in the team, as opposed to a three person team, helped reduce the load on each individual for the team. This also made the experimentations run more smoothly and allowed the team to collect more feedback from the extra variety of information provided from team members and participants.

A Appendix – Extra Screens

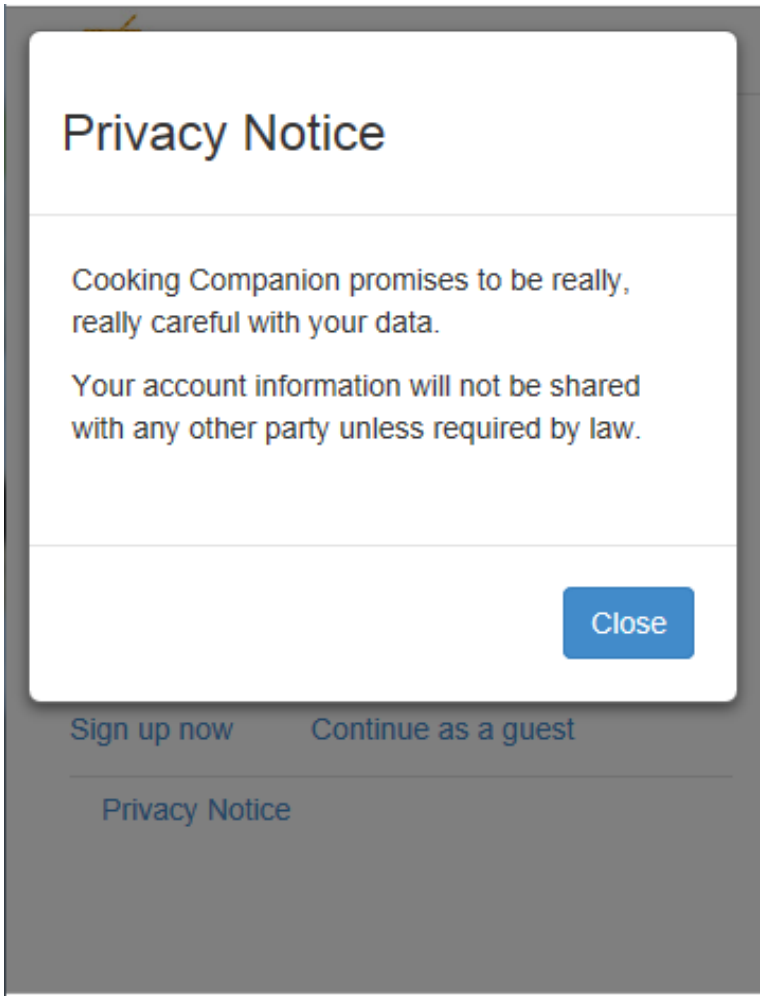

Figure 32. Privacy notice.

B Appendix – Raw Participant Data

B.1 Chelsey

The interviewer typed the notes on a laptop while the operator went through the paper prototype.

B.1.1 Task 1

- Did not log in, just proceeded as a guest.
- Was about to click on search, but clicked on the "baked rigatoni" on the right-hand side.
- Looked at some reviews (she said she normally doesn't, but she wanted to "check functionality").
- She noticed that the ingredient amount were probably not enough for four people, so she stated, "CC, adjust to four people."
- She took note of the changes that occurred on the ingredient list, but she commented that a voice reply would be nice.
- She began to cook, and she used voice commands the entire time.
- Halfway through, she said, "CC, show me the help screen." After this, she tried out the gesture features.
- After completing the recipe, she commanded "CC, add this recipe to my favorites."
- She was confused that the app went back to the home screen after she completed the recipe (I wasn't sure what to do); however, she checked her favorites to make sure "baked rigatoni" was there.

B.1.2 Task 2

- Did not log in, just proceeded as a guest.
- Clicked on search, types in "banana".
- She seems to be overwhelmed with the options, so she tries the filter page.
- Commented that the filter page is nice, but she would like other options (did not mention what options).
- She clicked on the correct recipe.
- Clicked on "cook now".

- She seems to enjoy the fact that she can skip around easily with just a wave or command.
- She didn't go out of order becauseshe needed to, but she skipped around because she felt comfortable after the first use.
- Surprised that she actually got through the 'preparation" steps before the oven was done preheating (she said that this does not happen typically when baking).

B.1.3 Task 3

- Did not log in, just proceeded as a guest.
- Clicked on upload.
- Clicked on the camera button, but she was a little confused with all of the options...
- Clicked on the button to add to calendar.
- Commented that she thinks it was added correctly, but she did not fee lshe got a confirmation.
- Clicked on Thursday 11/28. Clicks on (add).
- She commented that she likes the idea of the planner but didn't think it was required.
- Searched for "baked rigatoni".
- She clicked on add.
- Commented that she was not sure how to tell the recipe that it should adjust for two people, but decided to just add them as a note.
- She commented that she knows she has to go to hergrocery list, but she is not sure how to get back.
- She asked if there is a hardware back button, she was given a response in the negative.
- Eventually, the operator assisted her by suggesting to click on the title.
- Clicked on grocery list.
- Commented that she would like to retract her previous statement about this feature...she loved the compiled grocery list.

B.2 Dayne

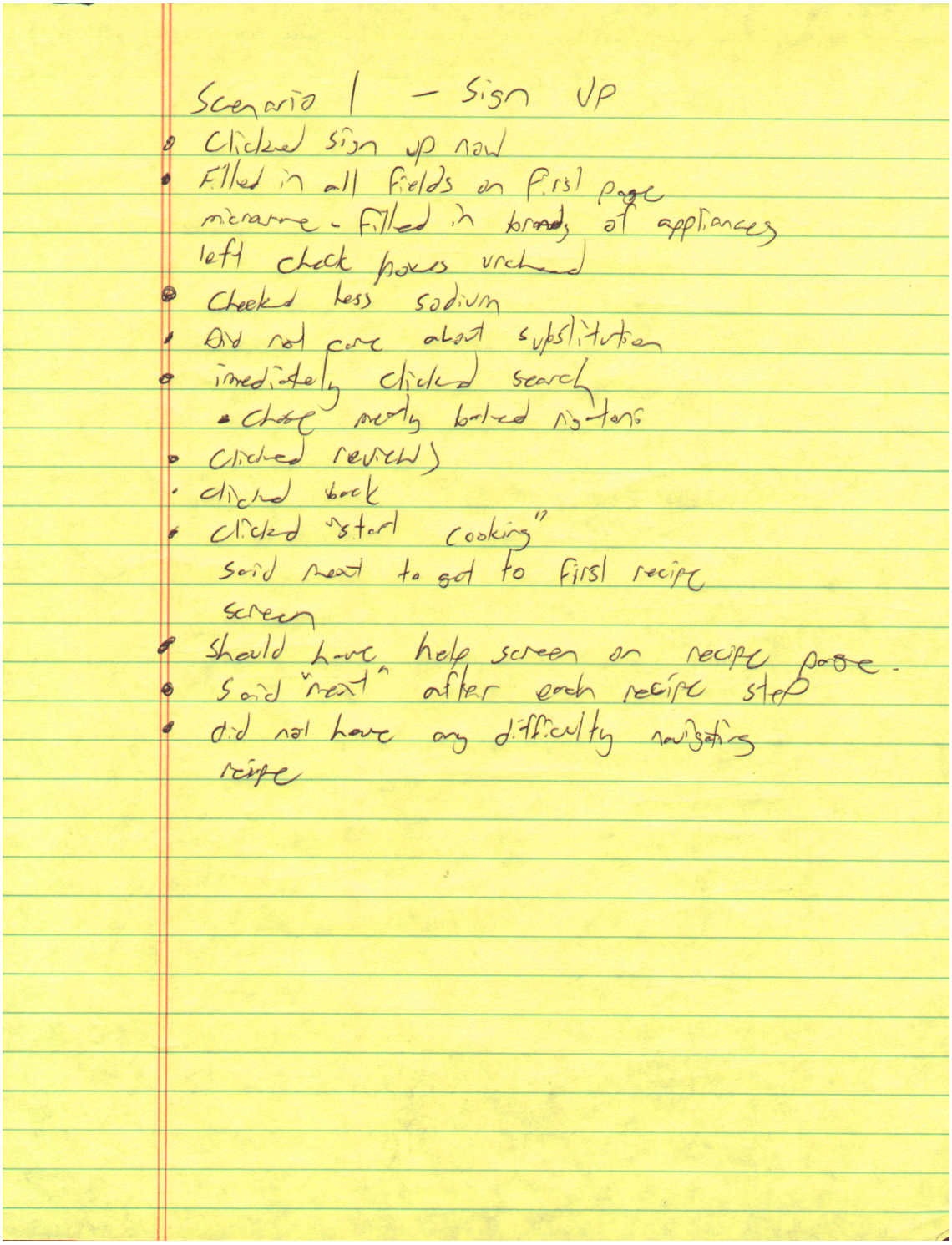

Figure 33. Dayne Notes Task 1

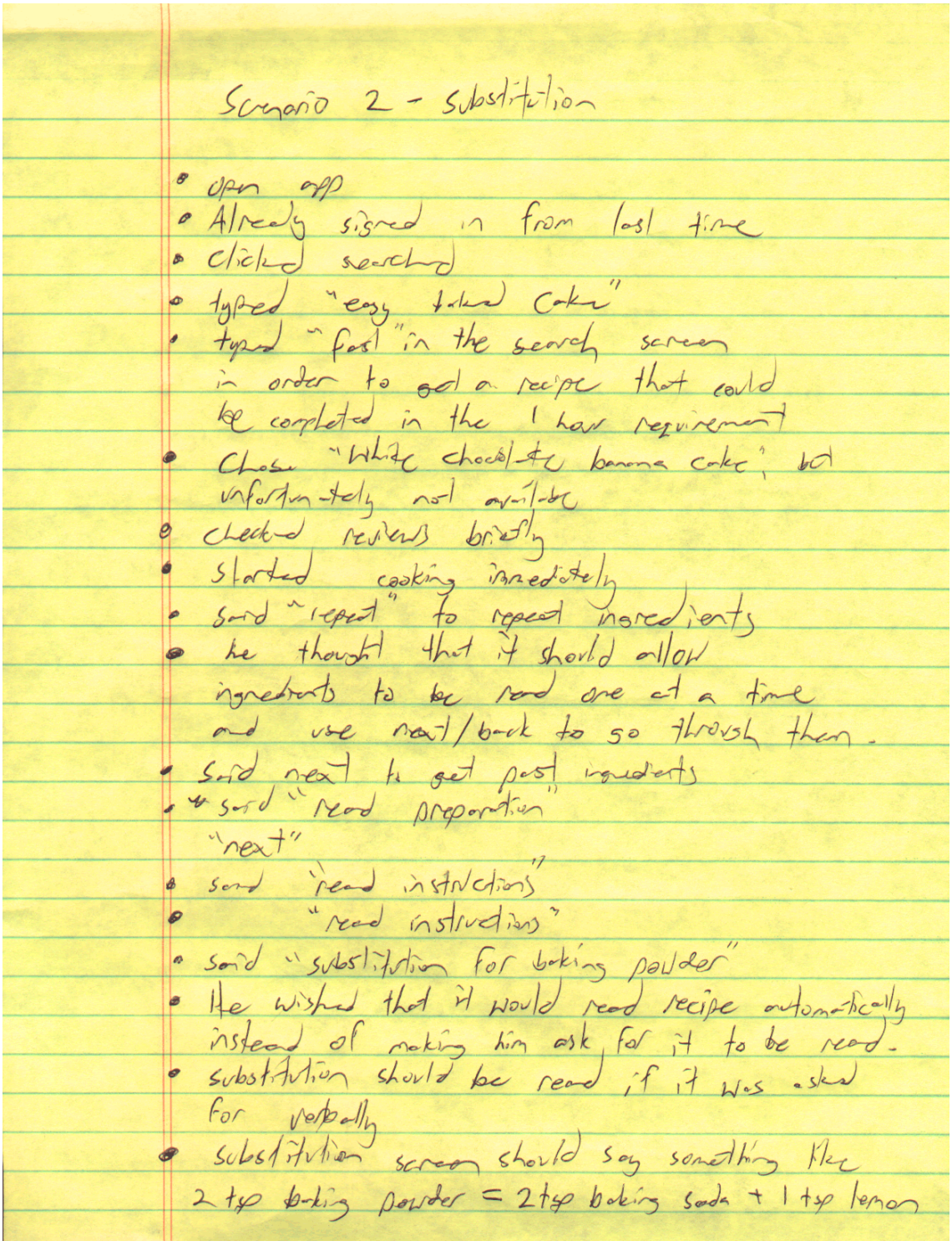

Figure 34. Dayne Notes Task 2 Part 1

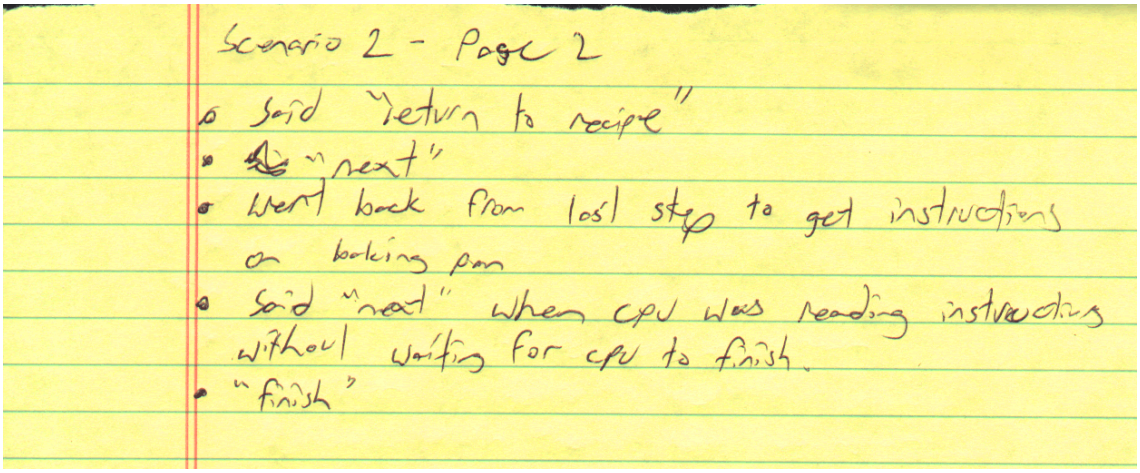

Figure 35. Dayne Notes Task 2 Part 2

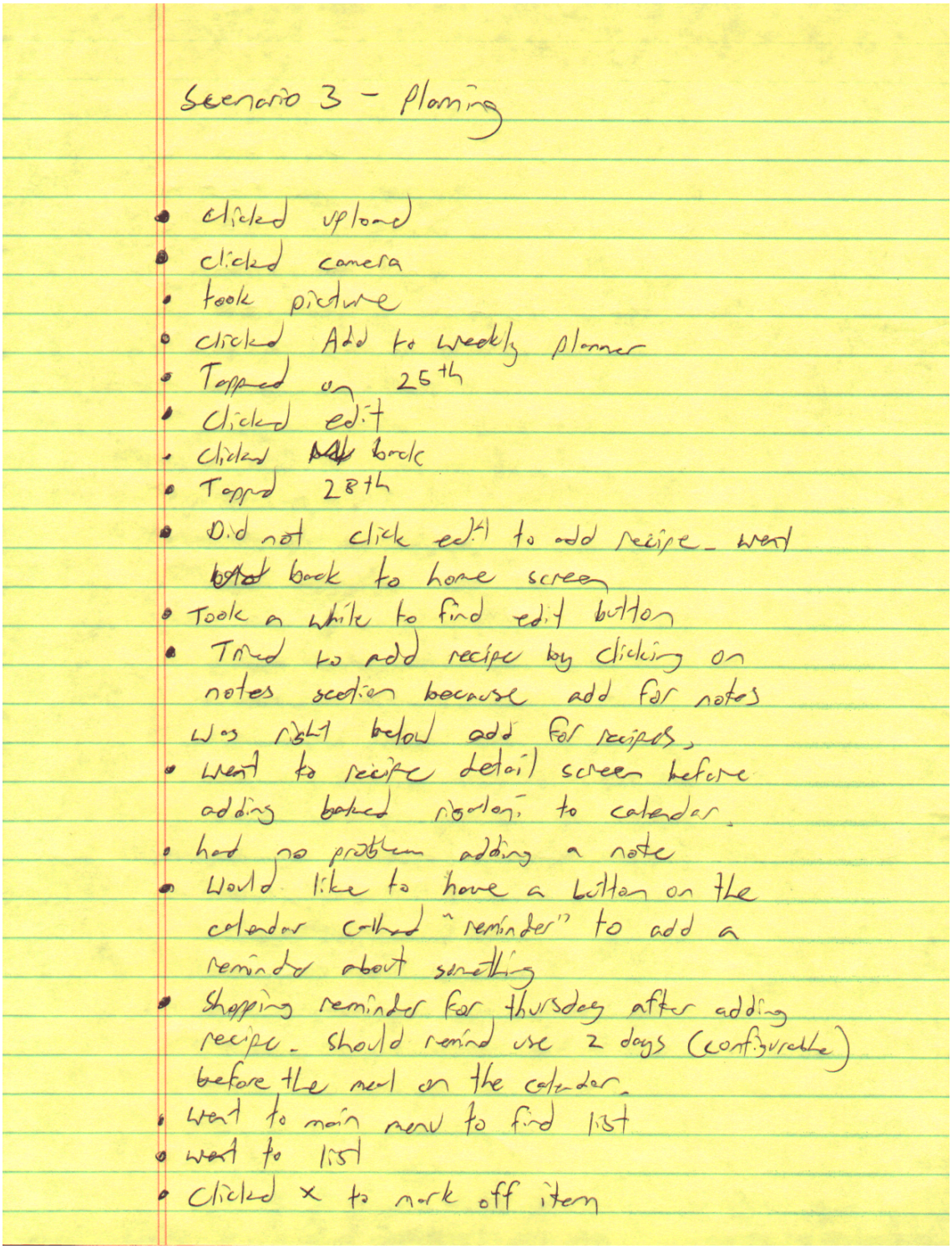

Figure 36. Dayne Notes Task 3

B.3 Margaret

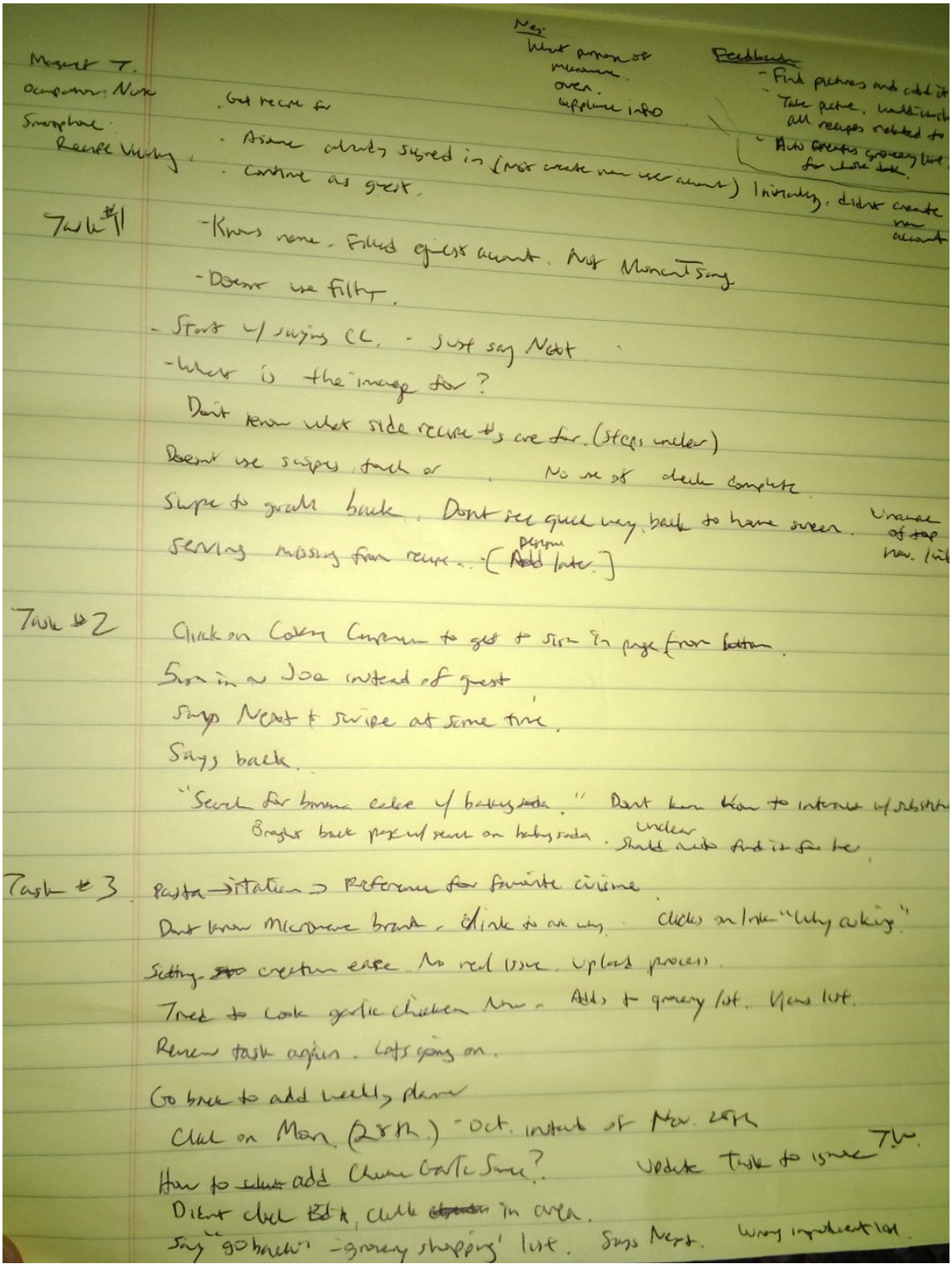

Figure 37. Margaret Notes

B.4 Ruby

The interviewer typed the notes on a laptop while the operator went through the paper prototype.

B.4.1 Task 1

- On the first screen, clicked "continue as guest".
- Found Baked Rigatoni recipe on home screen.
- Clicks on that recipe. Likes that it has so many stars. Doesn't read reviews.
- Stuck with "cook now" button. Can't figure out how to customize the meal for 4 people.
- Clicks on "cook now" anyway. Reads the instruction screen, swipes to ingredients screen.
- Confused with 3-1/2 cup of pasta — taps on it to try to change the portion size. Clicks on the "Ingredients" box and nothing happens. Getting frustrated.
- Goes previous and somehow lands on home screen.
- Clicks on details for the recipe. Still can't find out how to customize for 4 people.
- Clicks on "grocery list" to see if she can adjust the ingredients there. L
- Finally clicked on "Settings" — now happy to enter her family. Enters herself as the 4th member of the family, still continues as guest.
- Goes to Baked Rigatoni recipe. Now assumes "cook now" will actually cook for 4 people. (tells me it's not intuitive but she thinks it's the case)
- She expects a Next button on the cooking screens. Uses hand gesture to move to next screen.
- At the last cooking screen, waves next and I'm not exactly sure what screen to show. I showed her the home screen.
- She now tries to add the recipe to my favorites. Clicks on My favorites and is pleasantly surprised to see her recipe there.
- Note: it is very non-intuitive according to her to tap on the title to get back to home page.

B.4.2 Task 2

- This time, I started the task with logged in as "Joe".
- Clicks on "Joe" user name on the home screen. I come up with a new screen saying "logged in as Joe" — switch user, cancel and sign-up as new options. She clicks Cancel.
- Clicks on search, searches for Banana Cake.
- Realizes she had to set filter, goes back and sets filter. Likes the filter screen.
- Picks up the Banana cake recipe.
- Clicks on "cook now".
- Surprised to see that the details pages call it "Baked Banana Cake".
- Says CC Next and waves hand at the same time. I deliberately moved forward 2 screens. She doesn't realize that she is 2 steps ahead. Later realizes something's wrong as a step seemed missing. Goes previous and gets to the screens. Tells me that she expects some feedback if two screens are forwarded at same time.
- Goes through rest of the steps in order, doesn't go out of order.
- Again, expects a Finish page at the end of recipe.

B.4.3 Task 3

- This time, we discussed about issues around using Guest for Task 1 and requested her to sign-up to a new account to test the sign-up experience. She went through the sign-up steps. Interestingly, enters herself as a Family member too.
- Doesn't click on Upload from home page but straight-away clicks on "Weekly Planner".
- Clicks on Monday — 25th. Slightly confused on the screen, eventually figured out the Edit button. Clicks on it.
- Clicks on Add Recipe.
- I showed the search screen. Expects a link to My favorites.
- Also missing the Upload button. We need to add Upload button on search page. I added one runtime.
- Clicks on Upload. Clicks on browse instead of camera button. I'm thinking that browse button is not required there.

- Goes through the flow and clicks on add to calendar — expects it got added to 11/25.
- Clicks on Thursday 11/28. Clicks on Add Recipe.
- Searches for Baked Rigatoni. Adds it.
- Confused how to add about two guests on Thursday. Stuck for 2-3 minutes. Eventually adds a note.
- Clicks on title bar to get to home page. Now, clicks on grocery list.
- Very happy with the grocery list screen.
- Completes the task.