

CookExpress: contextual inquiry, task analysis, and rough sketches

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1 Value proposition

Online recipes are not easy and attractive to try. Our goal is to motivate people to cook.

2 Roles

- Manager: Wen Sun
- Design: Gene Oetomo
- Development: Omar Rizwan
- User testing: Kyle Qian
- Documentation: Omar Rizwan

3 Problem and solution overview

People often find it difficult to match up the ingredients they have with the things they might cook. This greatly discourages them from cooking, and existing recipe apps only address the problem of finding high-quality recipes. Our solution is to let people always have ingredients ready for cooking. We enable people to

- match recipes with on-hand ingredients
- get ingredients for a recipe easily and instantly



Figure 1: Y.L.'s kitchen



Figure 2: Y.L.'s recipe photos

4 Contextual inquiry customers

Y.L was a graduate student at Stanford in East Asian study. She graduated in June 2014 and is currently working in Santa Clara as a marketing analyst. She loves cooking very much. When she was at Stanford, she often cook on weekends with friends. She makes really good dishes and desserts (pictures here). She uses recipe websites

and apps a lot and has tried out hundreds of recipes. She is now running a personal webpage on Wechat (a very popular Chinese instant communication app) sharing easy-to-make recipes with friends.



Figure 3: J.C.'s kitchen

J.C. was recruited partially for age variety, but also because he fits the mold of our potential target audience. Being a single, full-time worker and basketball coach, he doesn't always want to cook for himself due to time constraints. He's also somewhat of a gym rat; nutrition and healthy eating is important to him, so it's more a problem of inconvenience than importance. When he does cook, it's usually a very active effort to block out time for it. He doesn't currently use anything to keep track of recipes; either he remembers it or he looks it up on the Internet, or has a sticky note in his kitchen area reminding him. He claims that grocery shopping is his biggest deterrent from cooking at home. In fact, having groceries left over in his fridge is an extra incentive for him to cook on consecutive days, because he doesn't want to waste the food.

J.K. is currently a pre-med student at Stanford University. He lives in apartment housing, so he cooks every meal rather than eating at a cafeteria. As a student, J.K. has classes throughout the day, and doesn't really have prolonged amounts of free time to cook on a regular basis. Instead, he cooks simple meals, most of which are the same, just to get through the week. J.K. stated, "If I didn't have to buy groceries, I would cook non-stop. For him, going out and buying groceries deters him from cooking more often because it is a really big inconvenience. We chose J.K. because one of our goals is to motivate people to cook more by making it more convenient. He also represents the population of college apartment dwellers. At Stanford, that population is not very big. Thus, J.K. gives us a good perspective on college students nationwide.



Figure 4: J.C.'s kitchen, alternate view

5 Contextual inquiry results

Through our contextual inquiry, we learned of many different facets of cooking that could still be improved. First, we discovered that the method of gathering groceries was a problem for most people. Nowadays, when someone wants to look for a cook, after looking for a recipe, they have to look through their groceries to see what they have. If not, they either choose to abandon the recipe or to go out and buy these groceries. Both of these choices are imperfect. The former issue correlates to the larger issue of finding a recipe that contains the ingredients they have. It's easy search up "Chicken recipes", but there are many ingredients under many different types of chicken that the cook might not have. That brings us to the second choice: to go out and buy groceries. Through our contextual inquiry, we discovered that grocery shopping is one of the most dreaded procedures in cooking a meal. In all cases, the interviewees would have really liked a system that could deliver the groceries they don't currently have.

The factor of time and availability was also a really big deal. Through our inquiries, we discovered that people almost always look up recipes on Google to find

one that they want. However, one big issue is that Google returns all related keyword searches, which leaves out many different facets of cooking such as cooking time and convenience. When J.K. wanted to cook something fast between his classes, he would have to sift through the more elaborate recipes to find one that fit his time schedule. It would be easier if he could choose to search for simple recipes or ones that are more gourmet. In addition, only one of our interviewees kept track of his recipes, and that was through bookmarking on a webpage. Everyone else would just look up the recipe again if he/she wanted to make it again.

Initially, we were also entertaining the idea of a social platform for cooking. However, through our inquiries, we realized that people don't really interact with others when they cook. There also wasn't a very big desire to share recipes with other people. Therefore, it wouldn't be very significant to create a gamified system of sharing recipes, or to link up friends with other friends to share their recipes. It seems that instead, we should invest in connecting people simply to create a big user base to provide the best recipes. One function that this could serve is to have good feedback from many different users on a recipe. For example, if the cook were to make a mistake and wants to know how to fix his recipe, the recipe could have references from other users to alternative ways to finish the recipe.

Lastly, we asked our interviewees if there was anything missing out of the cooking experience that they would like to see. The idea of instant delivery was favored by our interviewees, but with the concern of price. Another interviewee also suggested that he would really like if there was a way to organize recipes into different tiers, based on simplicity. This would mean that it could be organized into 10-minute recipe groups, 30-minute recipe groups, in terms of number of ingredients, etc. This way, people can choose the level of convenience that the recipe allows.

6 Task analysis questions and answers

6.1 Who is going to use the system?

People who cook (and people who might cook if it were more straightforward and convenient) and who get groceries to cook would use the app.

6.2 What tasks do they now perform?

J.C. has a limited set of recipes memorized, or he looks up random recipes on the Internet. He has trouble cooking consistently because he needs to get the groceries in advance.

Y.L. uses existing recipe websites and buy groceries in local grocery stores.

6.3 What tasks are desired?

Find easy-to-make recipes.

An easy way to manage getting groceries.

6.4 How are the tasks learned?

Recipes are picked up at random from friends and family, or from the Internet. Both J.K. and J.C. look up recipes online whenever they need them.

Physically go to local grocery stores to buy groceries.

6.5 Where are the tasks performed?

Customers look up recipes online at home. (J.C. generally looked up recipes from home, for example.)

They buy groceries at grocery stores or from home.

They cook at home.

6.6 What's the relationship between customer & data?

Customers usually look up data (recipes) online. J.C. often does this if he cannot remember a recipe. They cannot make changes to data, but can make comments on recipe sites.

Y.L., in contrast, produces data; she runs a recipe page and shares her own recipes with others.

6.7 What other tools does the customer have?

Learning recipes: from books, parents or friends.

Getting groceries: manually placing orders on Amazon Fresh, Google Shopping Express and Safeway. Physically going to grocery stores.

6.8 How do users communicate with each other?

Users make comments on recipes. Sometimes they post pictures of what they made.

6.9 How often are the tasks performed?

This depends on how often the user cooks. Some use it on a daily basis. Some use it weekly. Some use it even less often.

6.10 What are the time constraints on the tasks?

Usually groceries need to be ready within less than half a day.

6.11 What happens when things go wrong?

If users cannot get all ingredients easily, they usually choose to use another recipe or buy food instead of cook.

7 Three best application ideas

7.1 Recipe searching and ordering

According to the results of our contextual inquiry, it seems convenience is by far the most prominent concern of our interviewees. In particular, the prospect of driving all the way to a store to purchase missing ingredients seems to put off all but the most determined of our would-be cooks. We came up with two complementary ways of resolving this—online ordering and recipe filtering. We decided that these two options are complementary because one can cover the other in case of failure; not enough ingredients? Get them delivered quick. Don't have time to order? Filter the recipes by ingredients or preparation time.

The online ordering function will allow customers to remotely purchase ingredients for quick delivery. Customers can select which recipes they want to purchase, whether as a one-time thing or perhaps for an entire week. The recipe filtering function will allow customers to choose recipes that best accommodate their time and on-hand ingredients. Instead of plain text recipes on our database, we will restructure recipes to categorize them by time, ingredients, tools, and portions. By simplifying the decision making process, we can help our customers maintain momentum when they decide to cook.

7.2 Cooking instructor/assistant

For our non-expert interviewees, another recurring concern is recipe difficulty and lack of experience. We decided to combine this with the fact that not a single interviewee kept written records of their recipes, resulting in a cooking assistant tool that serves as both a guide and an organizer for cooking.

The guide part of the application would first involve standardizing all recipes. With that in place, we can then implement a database of common cooking terminology/procedures that appear in various recipes. Using this database, customers can simply hover over common words ('temper', 'cure') to find out what they mean.

They can also tap on each individual step of a recipe to get a more in-depth explanation of the procedure.

With the guide part of the application in place, the assistant part will include a step-by-step, slideshow-style recipe viewer. This would make it easier for the user to keep track of where they are in the recipe while they cook. Half the view can be set in the whole recipe; the other half can be swiped to reveal the next part. Motion control can also be enabled for hands-free operation. Furthermore, an automated timer can be built in to the steps where the cook needs to wait (baking, setting, etc).

7.3 Recipe sharing and crowdsourcing

Our final is to introduce a social application on which customers can post, share, and comment on recipes. The goal is to create a user-friendly creative space that's a bit less 'professional' and more accessible than most recipe websites. Rather than comparing to a professional recipe, customers can have a more realistic expectation of how to cook. Other customers can comment on the minutiae of the recipe, offering tips, suggestions, and potential pitfalls.

It would also allow people to utilize their own social circles. Some customers already use other general-purpose social networks to share their cooking recipes and insights; we believe that those makeshift networks can be consolidated under a single-purpose application dedicated to cooking. Customers could also plan a party with friends (something like a potluck) and be able to see and share all the different recipes that their friends plan to use.

7.4 Conclusion

Idea	Significance	Feasibility	Interest
Improve find/buy	Y	Y	Y
Social recipes	?	?	?
Teach to cook	Y	Y	?

Table 1: Design idea evaluation

Despite the various possibilities we came up with, we ultimately decided to go with the Recipe Searching and Ordering application. As we previously explored, the issue with convenience and motivation is the greatest deterrent for people who want to cook. The other two ideas are helpful, but they both hinge on the customer being willing to cook in the first place. By removing such a huge barrier to cooking,

this application would allow customers who've always wanted to cook more to do just that.

8 Sketches of important screens

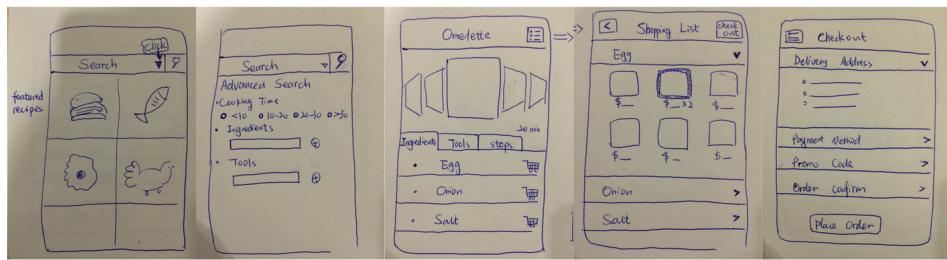


Figure 5: Wen's first set of sketches, focusing on advanced recipe search and food delivery

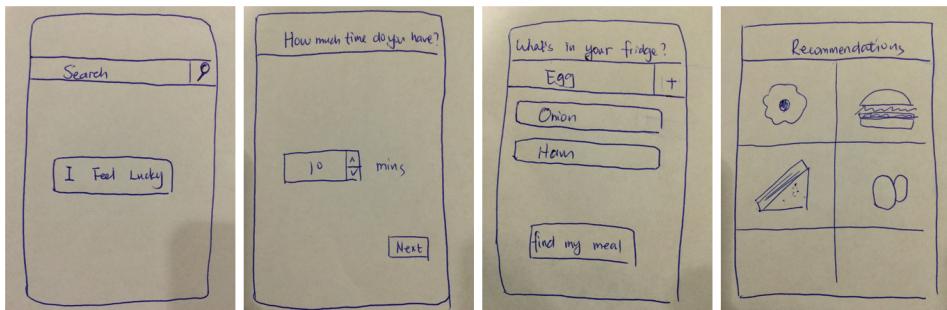


Figure 6: Wen's second set of sketches, focusing on recipe recommendations

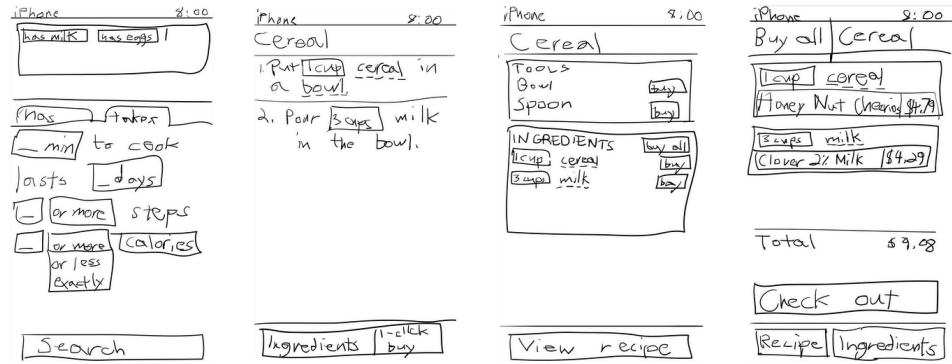


Figure 7: Omar's sketches, showing workflow from search to ingredients purchase

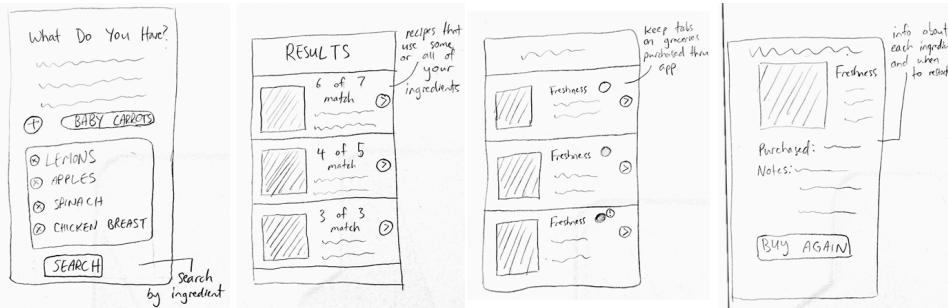


Figure 8: Kyle's sketches of recipe lookup system

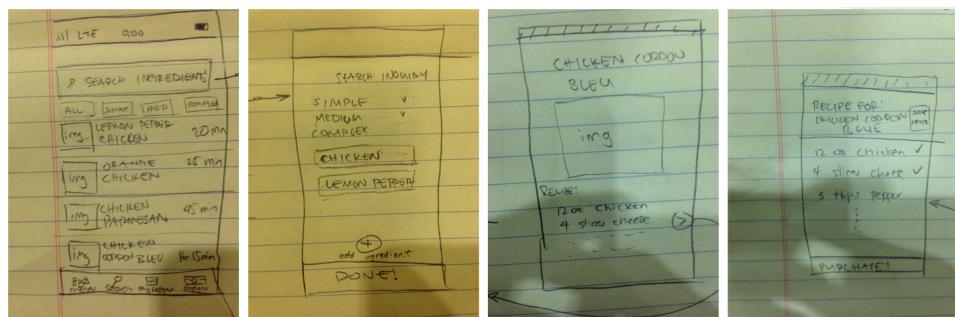


Figure 9: Gene's sketches showing 'find recipe by ingredients'

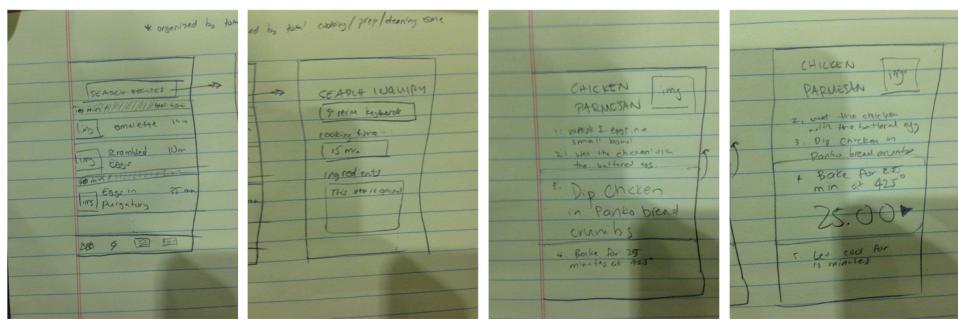


Figure 10: Gene's sketches showing recipe view, find recipe by time