Chinese Food Is Easy

CFIE

Final Project: Information Architecture & Design
Fall 2015

Project Proposal/Concept

Purpose: We wanted to develop a site to showcase what we've learned about Information Architecture while providing something unique to our audience. The number of Chinese students enrolling in American universities has grown to nearly a quarter million and preparing meals that remind them of home can be difficult and time-consuming for a number of reasons, such as limited availability of Chinese ingredients, the complexity of recipes, limited transportation options, and searching inefficiencies on existing cooking websites.

Concept: We designed a website focused on addressing the cooking needs of Chinese students in American universities.

We originally planned to incorporate the following features:

- "Where to buy" - allowing users to easily locate needed ingredients and compare prices.
- Improved faceted search display, making search more flexible and detailed so users can find specific meals easier.
- Search will include the option to input ingredients users want and can find recipes with those ingredients.
- Translation between Chinese and English to make it easier to find and use ingredients
- More detailed cooking method instructions to better explain the cooking process so that non-Chinese nationals can follow recipes better. A lot of cooking methods are cultural and there can be a cultural barrier when translating recipes.

Scope: This website will serve the 250,000 Chinese students currently studying in America, those that follow in their footsteps, and non-Chinese nationals who enjoy eating and cooking Chinese dishes.

Competitive Analysis

We used competitive analysis to determine the best practices for organization of information in recipe websites. By reviewing top sites in both English and Chinese, we could determine common features vital to a good recipe site, while also critiquing design mistakes. To easily compare and contrast our chosen websites, we created a table and divided it into four sections: Organization System, Labeling System, Navigation System and Search System. Checkmarks in a row indicate the particular feature was found on the website (See Appendix A).

We decided that elements of information architecture found across the majority of the sites reviewed would form the foundation of our website. A top-down organization structure, primarily organized by topic, was found on all five sites. Every site analyzed utilized both sitemaps and global navigation. All five sites allowed visitors to easily print and share recipes using social media sites, with the majority also offering the option of saving the recipe for future use. We decided these elements were thus essential to creating a good site.

Textual labels and limited icon usage was a notable design choice in the majority of sites. The search results defaulted to sorting by relevance for three of the five sites, which is a convention we chose also follow, finding it intuitive for users. Four of the five sites included either an advanced search feature or a results filter, which we also incorporated in our design. While these were not universal features, our individual analyses independently rated them as positive features, and so we decided to incorporate them in our design.

Filtering results by popularity, ratings, cooking method, and photographs were all potential options for design found on some sites but not others. We decided we should gauge user interest in these features through our contextual interviews before committing to using them in our site.

Contextual Interviews

We conducted contextual interviews to understand users' needs and behaviors while using recipe websites. We also wanted user feedback to help decide which features from our concept to develop further based on user research. We invited 5 UT students for interviews over the course of two weeks in October 2015. Four of them are Chinese and one is American (Figure 1). Each session included one participant, one interview moderator, and one note-taker. The interviews lasted between 30-60 minutes. (For Interview questions see Appendix B).

Name	Gender	Age	Nationality	Education Background
Yihan Yan	Female	22	Chinese	UT Graduate Student, Electrical Engineering
Yang Zhang	Female	30	Chinese	UT Graduate Student, Information Studies
Zhen Wang	Male	24	Chinese	UT Graduate Student, Information Studies
Yanyao Shen	Male	23	Chinese	UT Phd Student, Electrical Engineering
Andrew Wallace	Male	38	American	UT Graduate Student, Information Studies

Fig.1 Interviewees' Personal Information

Process

The contextual interviews started with learning the backgrounds of our participants, asking questions such as "When did you move to Austin?," "How often do you cook Chinese food?," and "Which ingredients do you use?" We asked the interviewees to demonstrate how they search for a recipe. This allowed us to observe their information seeking behaviors, including which devices they use (mobile or laptop), which keywords they entered, which results they clicked, and what content they browsed (Figure 2). Participants discussed how they decided which recipes to use, which features of the website they liked and disliked, and whether they would use other functions such as an account for the website, saving recipes and commenting on recipes.

Our interviews concluded with a priorities activity. We provided participants cards with features our site concept would provide written on them, as well as blank cards for adding any new ideas. Participants were asked to prioritize features for us by placing the one they like best on the top of the list and the one they liked least at the bottom (Figure 3).

Fig. 2 Interviewee searched recipes

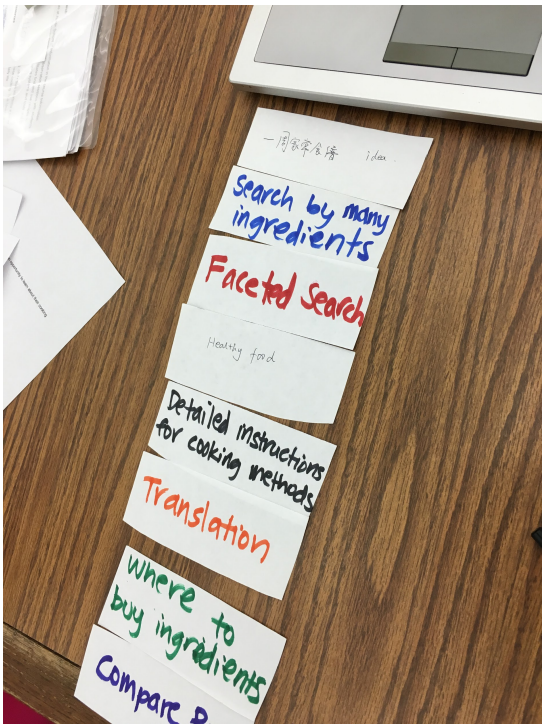
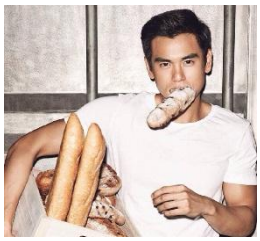


Fig. 3 Priorities activity results

Personas

Our contextual interview findings formed the basis of two personas, one representing Chinese students and the other representing American students.



Chi Huo

Chi Huo is 24 years old Chinese student. He has been in Austin for half a year. There are few traditional Chinese food restaurants nearby. So he would like to cook at home sometimes. He did not have much cooking experience before. Since he is very busy with his studies, he wants to find easy and quick methods to cook food.

Objectives

Detailed steps to cook food.
How to find the ingredients locally.
Get recommendations from website.
Eating healthy foods.
Find recipes easily.

Concerns

Am I eating healthy foods?
How long it will take to cook foods at home?
Where can I buy those ingredients?
Is the steps in the recipes clear?
What should I eat this week?
How can I find the recipes I want quickly?

Justin

Justin is an American student who enjoys cooking. He and his wife cook most of their meals, have a database of favorite dishes, and are always interested in adding new recipes to their collection. He does not have a lot of experience cooking traditional Chinese dishes, but does have a few he has found and liked on the Internet and is actively seeking to enhance his ability.

He knows where he likes to shop for ingredients and will make substitutions if presented with ingredients not available at his local grocery store. He is willing to experiment and improvise based on what he has/sounds good to him.

When he looks for recipes online, he searches by ingredients initially. Once he has results, he will refine by the calorie count of a dish, but he will also consider the content of a recipe (style, complexity, time), and may be influenced by photos of the dish. He does not consider ratings of a recipe to be important, as they reflect a user's individual tastes and not his own. However, he does like user comments for their analysis of a recipe regarding the accuracy of stated time or difficulty.

Objectives
Eating healthy food, specifically lower calories
Clear directions for cooking (specifically if a recipe is translated from Chinese)
Finding recipes that match the ingredients he has on hand/substitutions he can make
Cooking large amounts for consumption through the week

Concerns
Healthy dishes
Time management
Can he save/organize these recipes into his database

Analysis of Priorities Activity

Each feature received a point according to the number they were ranked. For example, Yanyao ranked 'Faceted search' as the number one feature, so it was assigned one point. We calculated the average ranking for each feature and ordered them by average points. An average score closer to one indicates a feature should be a higher priority for our site design, as it was ranked highly by our interviewees.

Suggested features added by interviewees are included in our table for consideration, without an average calculation (Figure 4). "Read recipe to user" is ideal for a mobile app, not our site. "Nearby ingredient" is similar to the "Where to buy" feature. We incorporated the "Weekly homestyle recipes" into our homepage design and added "healthy food" to our faceted search filter options.

The unique concepts from our site proposal did not rank highly during this activity and were outperformed by features commonly found on recipe websites. We opted to focus our efforts on developing a site with the higher ranked features - faceted search, detailed instructions for cooking methods, the ability to search by many ingredients and translation.

	Features	Yang	Zhen	Yihan	Yanyao	Andrew	Average	Decision
1	Faceted search	2	3	3	1	2	2.2	√
2	Detailed instructions for cooking methods	1	4	5	3	4	3.4	√
3	Search by many ingredients	5	1	2	6	3	3.4	√
4	Where to buy ingredients	4	2	7	2	5	4	×
5	Translation	7	3	6	4	1	4.2	√
6	compare prices	6	5	8	5	6	6	×
	read recipe to user (add)	3						×
	weekly homestyle recipes recommendation (add)			1				√
	healthy food (add)			4				√
	nearby ingredient (add)		2					×

Fig. 4 Analysis of Priorities Activity

Conclusion

Findings	Design decisions
1. None of the participants have rich Chinese food cooking experience. Foreigners are likely to overcook. 2/5 have difficulty in American-pan use.	Provide detailed instructions about how to cook. Maybe provide videos.
2. 5/5 use keyword search to find recipes.	Place the searching bar in the most noticeable position.
3. Not difficult to find Chinese ingredients, just transportation inconvenience.	Do not need to offer 'where to buy' information.
4. 2/5 select the recipe according to ratings/popularity/clicks.	Provide the option to sort the result by ratings/popularity. Enable users to rate.
5. 4/5 look for reviews.	Make reviews available.
6. One uses 'download, share via email, save recipes', and one shares via Wechat.	Provide 'save', 'share', 'download'...features. Connect to social media.
7. 2/5 look for required ingredients.	Have a list of required ingredients in the recipe page.
8. One looks for nutrition information, 2/5 prefer easy meals.	Make filter function available. Filter options include time, difficulty, health.
9. 4/5 look at photos in the recipe page. One says that images will influence when browsing the results.	Show photos both in result pages and recipe pages.

Fig. 5 Findings and design decisions from contextual interviews

Challenges

We intended to create an innovative website, but users seemed disinterested in new features during the Priorities Activity. As we want to make educated design decisions based on user wants and needs, we decided against developing new features for our first site design.

	Features	Average
1	Faceted search	2.2
2	Detailed instructions for cooking methods	3.4
3	Search by many ingredients	3.4
4	Where to buy ingredients	4
5	Translation	4.2
6	compare prices	6

Fig. 6 Ranking of Features

The second challenge is that users' need vary. For example, contextual interview participants newer to Austin viewed the "Where to buy ingredients" feature positively, while it seemed useless to participants who've lived in Austin for over a year. Also, students who owned a car face few obstacles to buying groceries and specialty ingredients, but it is difficult for those who rely on public transportation. On one hand, we want to satisfy people's needs by providing useful features. On the other hand, we are concerned that too many options, especially ones not deemed valuable, will make the website overwhelming. In an effort to visualize our website and limit undue complexity, we developed a site map.

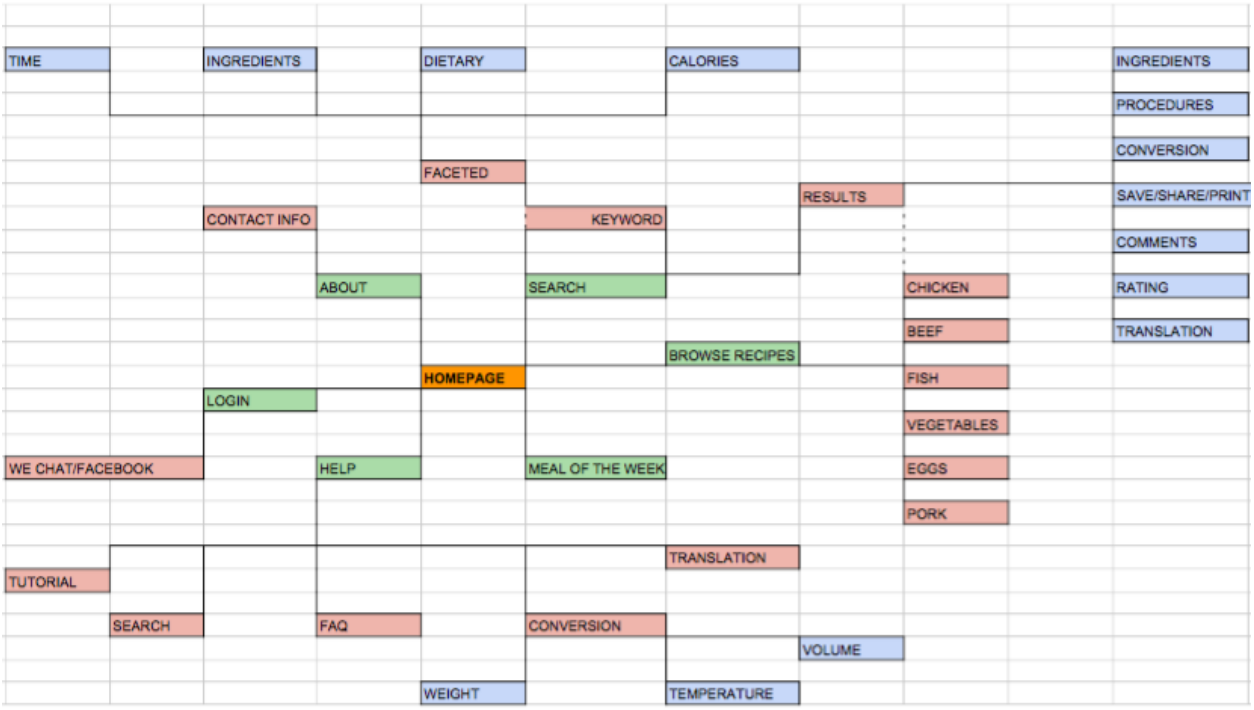


Fig. 7 Site Map

Design Phase 1

Combining the information collected during our competitive analysis and the interview process, we created a wireframe prototype for our initial round of usability testing.

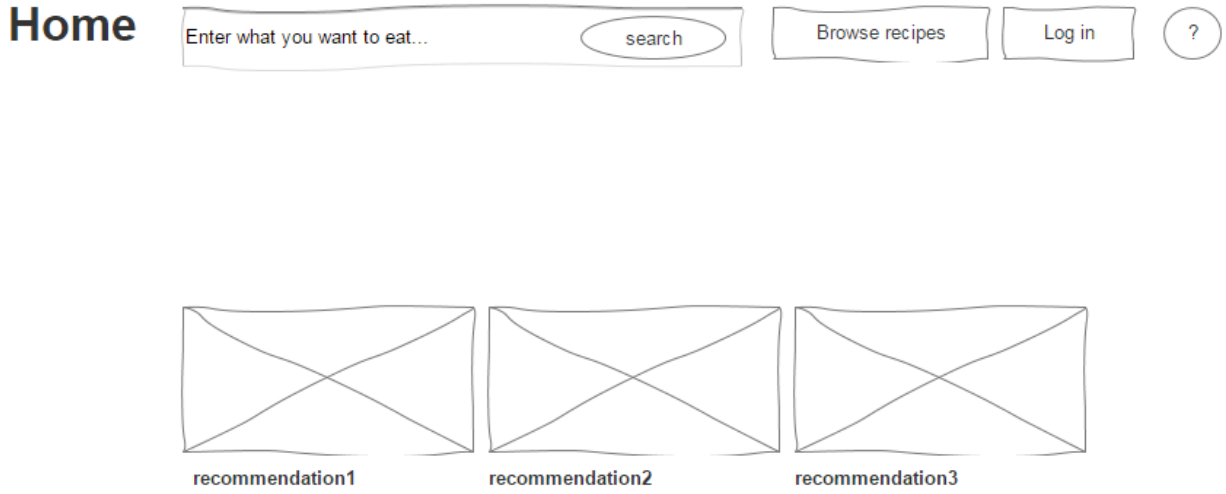


Figure 8 Prototype Homepage

The home page displays the site's logo, search options, and a rotating display of recommended recipes. Our competitive analysis showed global navigation is an integral part of recipe sites. We placed a search bar within our global navigation bar where users can implement keyword searches, along with a drop down browse menu. This provides users with search options and may assist users who do not have a clear idea of what they would like to cook.

Fig. 9 Browse Menu

Once a user inputs a selection, either through keyword search or by browsing, they will land on our results page.

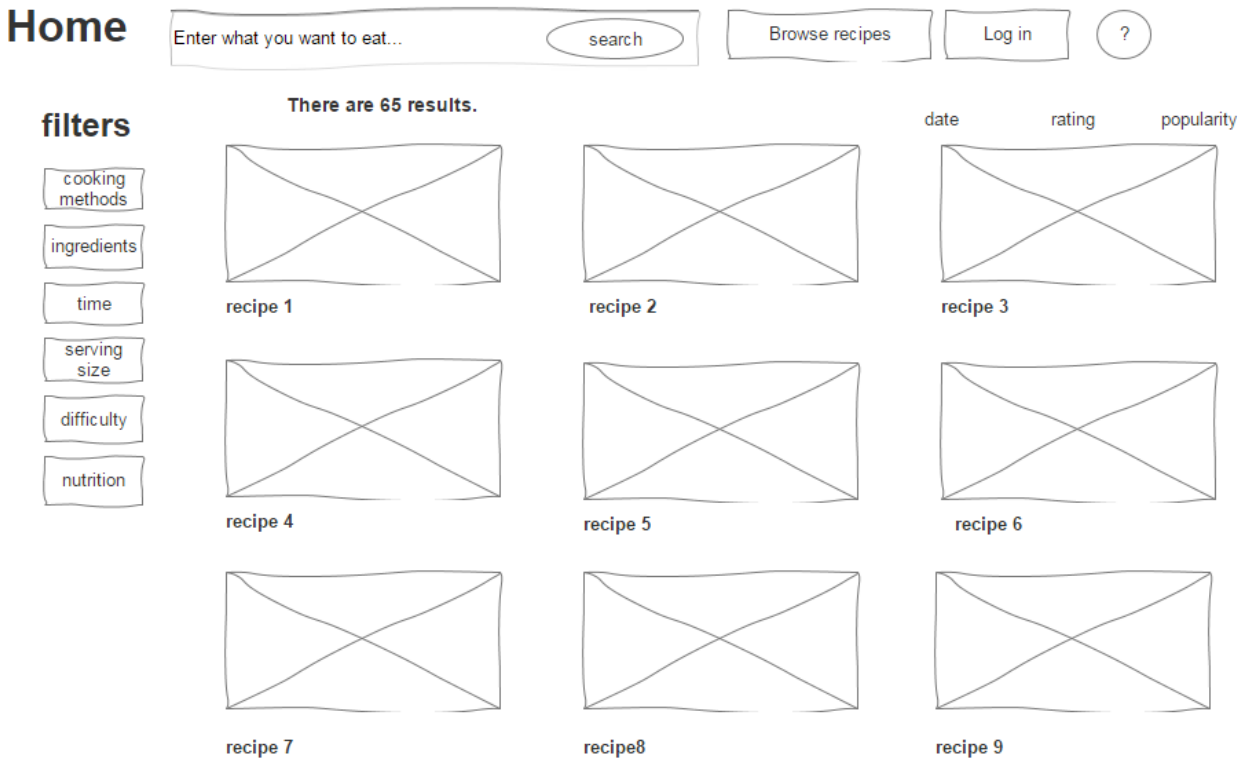


Fig. 10 Results Page

Underneath the global navigation, users will see the number of results matching their search query, along with options for sorting those results by date, rating, or popularity. We designed a faceted search so users can view different recipes based on their applications of filters such as cooking style, time or difficulty. This faceted search will enhance the search process for users.

Usability Testing

We conducted usability testing to inform navigation and content design decisions. Specifically, we were interested in how test participants navigated the homepage and search results pages, their expectations regarding filter options, and how users expected to engage with the site.

Our test participants ranged in age from 22-38, five were Chinese graduate students, two were graduate students from the United States, and six of them typically cook for themselves.

Test description:

Participants were asked background questions to ascertain their general cooking habits, how they search for recipes, and interest in using recipe websites. They were then asked to provide their opinion on the homepage format and visible features. Users were then tasked with finding a new recipe. We observed whether they chose to search by keyword or to browse and then to provide feedback on which options on the results page would help them choose a recipe from the results. (See Appendix C for full usability test script and all findings)

Findings

General:

- Five participants use a mobile device to search for recipes and also to reference while cooking.
- The prototype's filter options were praised by four test participants.
- Images and ratings were the most common attributes that would help a test participant choose a recipe.

- Only one user reported creating an account on a recipe website previously and only because he was required to in order to access a feature of the site.

Homepage:
- All seven test participants correctly associated the textual labels with the corresponding features.
- Five expected to be able to personalize their experience using the site by creating an account to save recipes, save food preferences, and have the capability to provide feedback by rating recipes.

Search task:
- 100% completion rate.
- Five participants used the keyword search to find a new recipe.
    - Four of those five used an ingredient as a keyword.
- Three participants expected search results to be organized by ratings, with the more highly rated recipes appearing higher in the results

Browse feature:
- Suggestions and expectations for the drop-down browsing menu varied.
    - Two participants expressed preference for the meal categories, Breakfast, Lunch, and Dinner, be aligned horizontally rather than vertically.
    - Two Chinese participants noted the absence of staple meal bases for Chinese cooking, such as noodles.
    - Two participants suggested including cooking methods as a category.
    - Other suggestions: most frequently searched, dumplings, buns, smoothies/drinks, cuisine style, and cooking method.

Filters:
- Faceted search as a means of refining search results was well-received.
    - Four participants requested secondary options after selecting a filter.
    - Two participants noted they thought including “Ingredient” as a filter was redundant, since they had just searched by using an ingredient as a keyword.
    - “Serving Size” did not translate well for Chinese test participants.
- Participants were unsure of the difference between “rating” and “popularity” filter options.

Design Phase 2

Our first design was informed by the feedback received during the contextual interviews. Specifically, we eliminated many of novel site attributes due to lack of interest from interviewees. However, our usability testing revealed that while our site was very navigable, it was not unique. Our second design incorporates the most commonly received feedback from the test and also includes the novel features we conceived at the outset of this project.

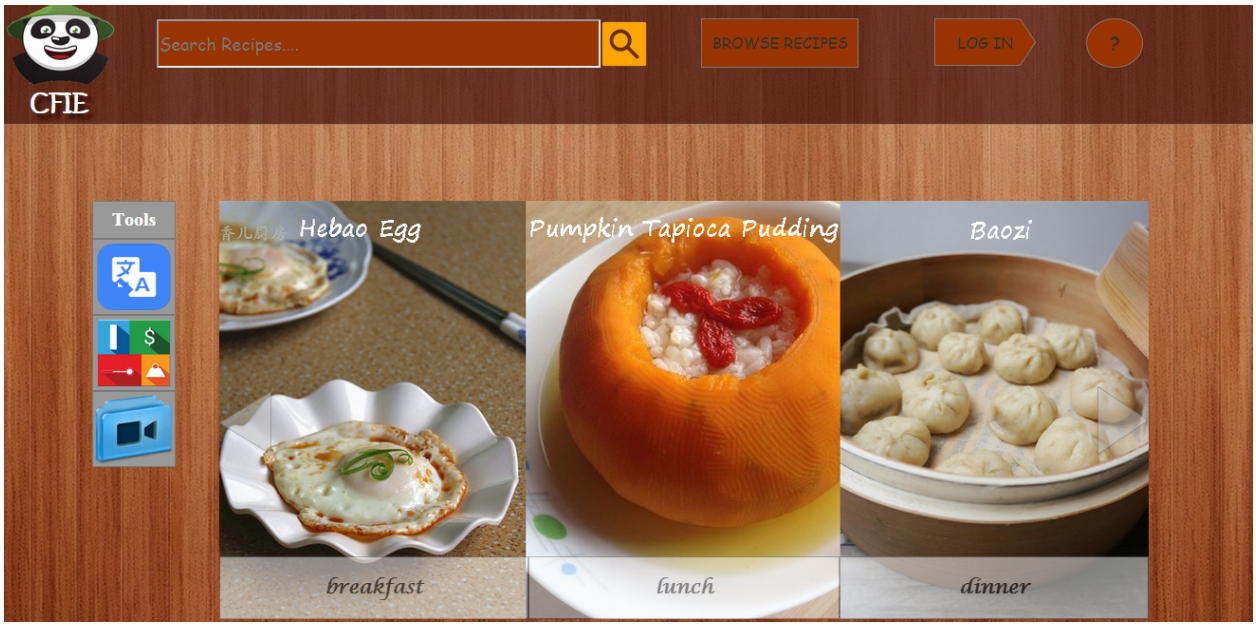


Fig. 11 Final Homepage

We added our logo to the global navigation on every page. When a user clicks the logo, they return to the home page. We added functionality to the ? icon, with tutorials and a site map to provides a concrete way for users to see and understand the structure of the website and navigate through it.We enhanced our recipe recommendations, suggesting multiple options for breakfast, lunch and dinner accessible by clicking arrows to scroll through the options while remaining on the homepage.

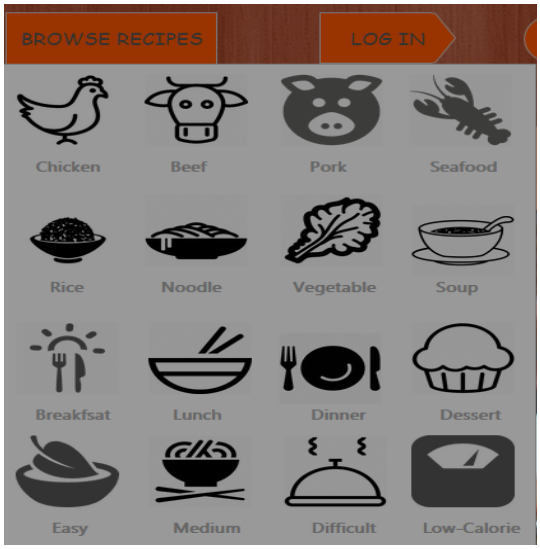


Fig. 12 Final Browse Menu

We also changed our local navigation based on our first round of usability testing. In the browse recipe drop down menu, we added categories based on user feedback. These new options include categories common in Chinese cooking and will help users to navigate the site. To further enhance the browsing process, we added icons to the local navigation.

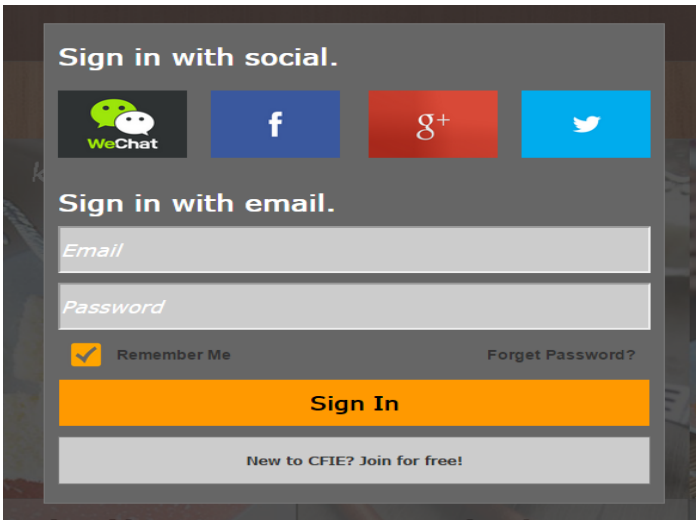


Fig. 13 Log In

We created a login button encouraging users to sign in or register with the site. We gave users the option to register quickly with their preferred social media account or to sign up via their email account. Based on our personas, our target users are Chinese students and American students interested in cooking Chinese food. With that in mind, we created links to both Chinese and American social media sites. Registering with the site allows users to save recipes and preferences, share content from the site via their social media account, and rate or comment on recipes.

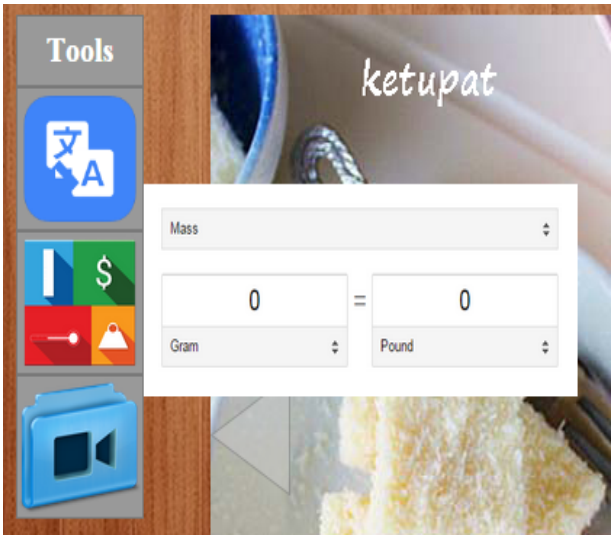


Fig. 14 Translation Feature

In our redesign, we added novel features that differentiate our site from other recipe sites. We included a translation button to assist users who may not understand a recipe direction in English. A unit conversion tool aids users who may be more accustomed to working with metric measurements. Finally, we added a tutorial section with videos to guide users.

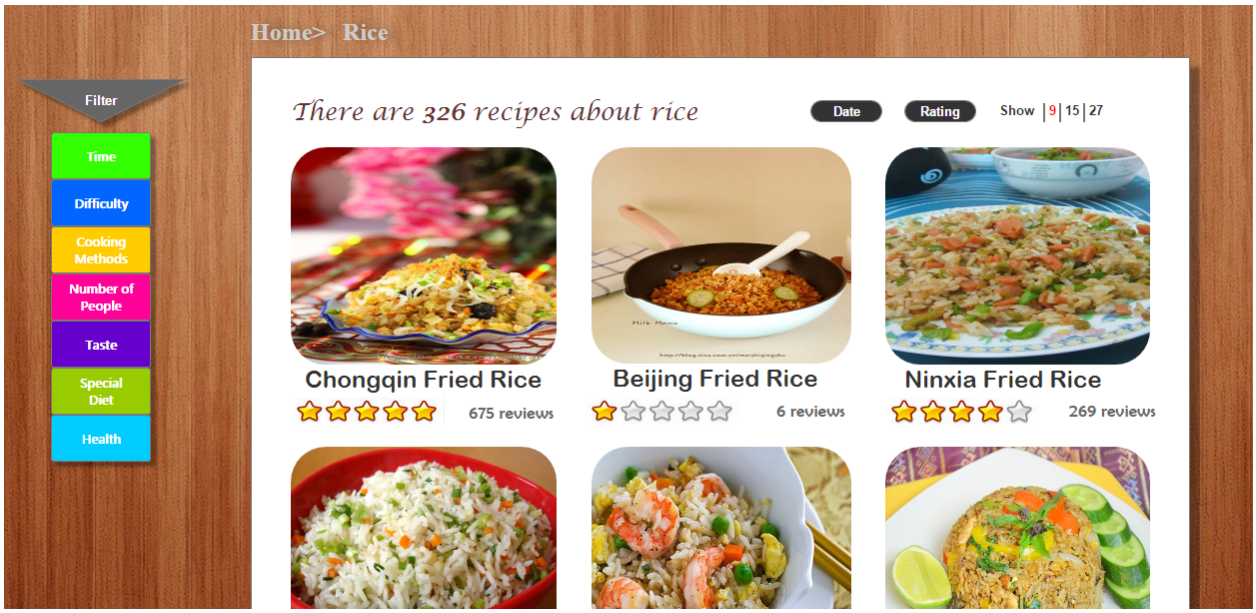


Fig. 15 Search Results

Our redesigned results page also incorporated user feedback. We added breadcrumb navigation s o users can go back to the previous page. Users can now sort their results based on date or ratings. We eliminated the Popularity category because our usability test subjects expressed confusion about the difference between Rating and Popularity. Users can now customize the results display, choosing how many results they want to see in one page.

Fig. 16 Filters

We also redesigned our search filters based on the usability testing results. Now users can narrow down their search scope further with secondary filter options for better results. We reordered our filters based on our usability feedback. For example, most users stated time is the most important factor for them, so made time our first filter option. Additionally, we changed the wording of our portion filter from Serving Size to Number of People, after discovering that serving size is not a phrase that translates well to a native Chinese speaker. Another factor important to many in our usability testing was Yangsheng. Users want to know if a recipe is good for a particular organ in their body. We added this filter under the heading of Health.

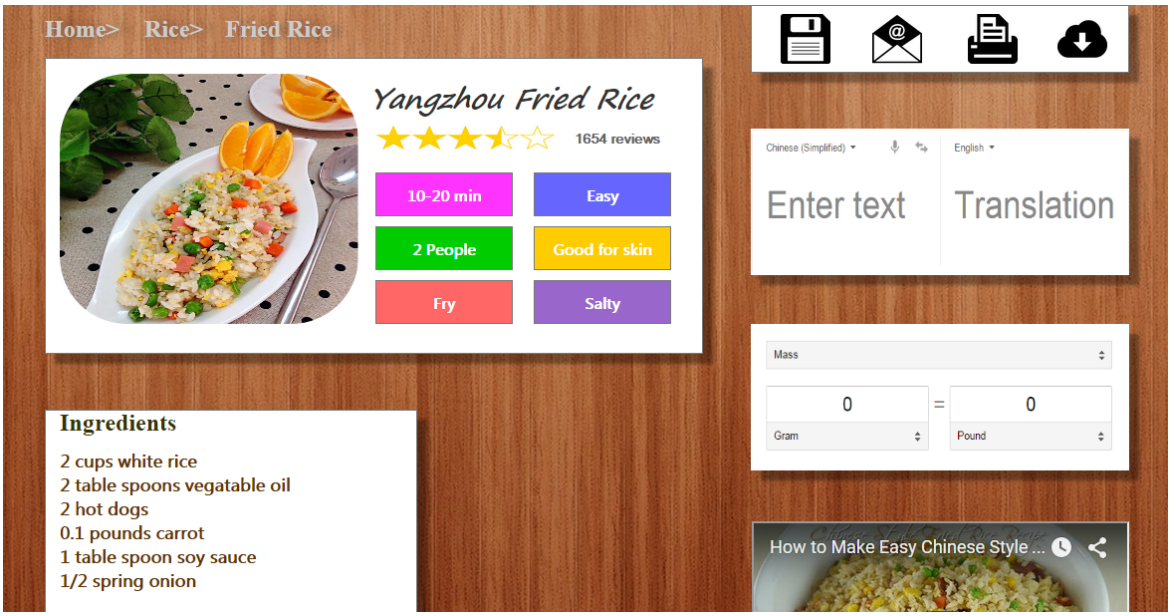


Fig. 17 Recipe Page

Once a user makes a selection, they will land on the recipe page. Like the homepage, this page contains translation and conversion functions, as well as an embedded video tutorial for the recipe. Many users stated they expect the option to save recipes, so we added a toolbar for save, email, print, and download. The recipe page also displays user ratings for the recipe and descriptions of the applicable filters.

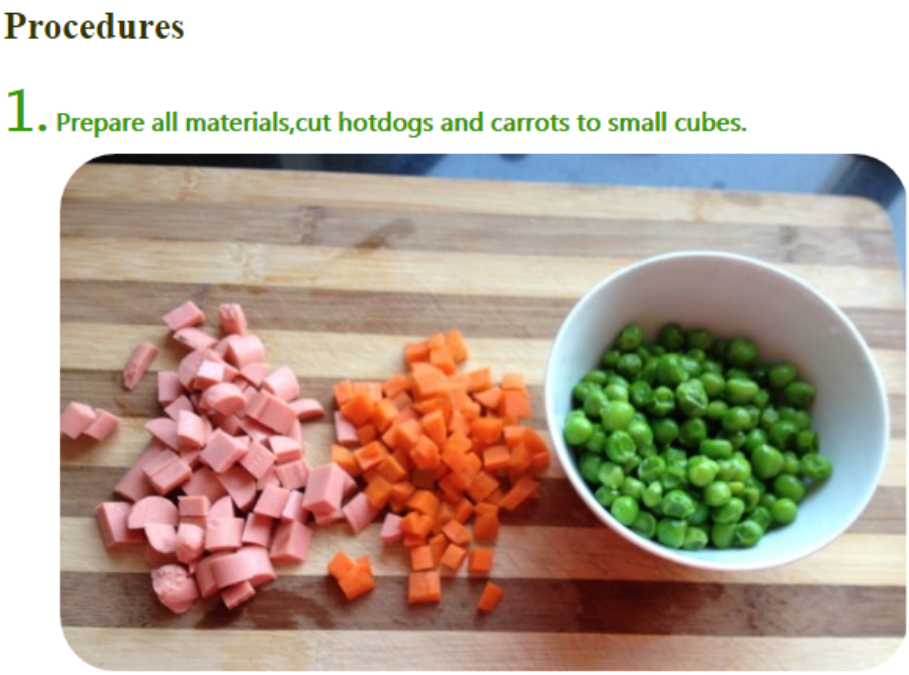


Fig. 18 Cooking Procedures

Each recipe has both detailed instructions and photographs to guide users through the process step by step.

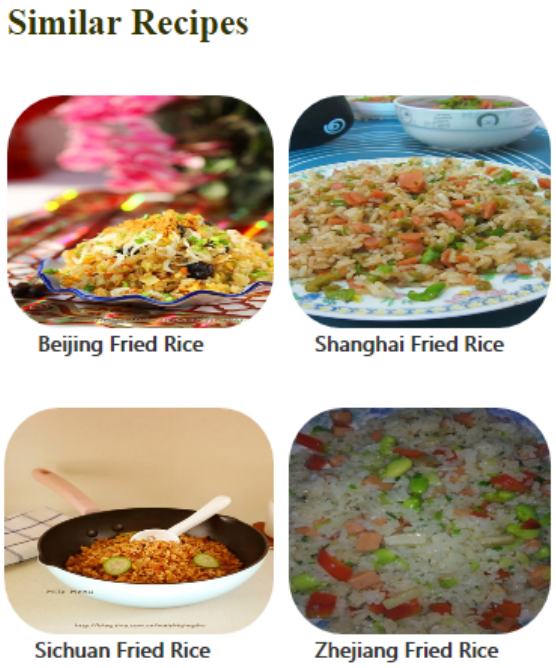


Fig.19 Similar Recipes

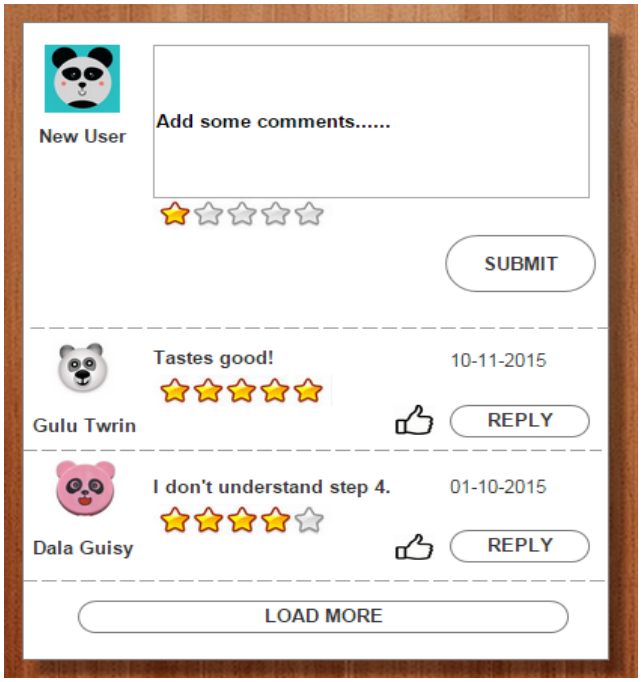


Fig. 20 Comments

Additionally, we included a Similar Recipes section on the page, so if a user is dissatisfied with their selection, they can choose from other recipes that incorporate many of the same ingredients or techniques.Finally, we encourage logged in users to add comments and rate the recipe.

Next Steps

We need to conduct additional usability testing with the second design to determine whether our changes to the filters, browse drop-down menu, and site features impacted navigability and understanding. We also should develop a controlled vocabulary for search so that Chinese characters as well as Romanized Chinese will be recognized. Since our test participants relied on ratings to help choose recipes but reported they did not typically provide ratings themselves, we should specifically recruit recipe-site super-users to test site account features. Lastly, 10 of the 12 people we interviewed during our site development process primarily use a mobile phone to search for recipes. It would be prudent to develop and test a complementary app.