Final Project Proposal

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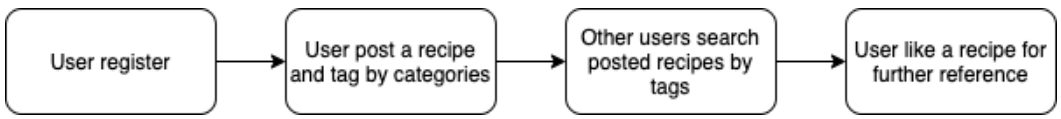
1 PROBLEM STATEMENT AND RELATED WORK

The main product of this project is a workable cook recipe sharing social network application, where users can share their recipes and tag them by categories. Shared recipes can be searched and viewed by other users. It is inspired by cook-at-home experience in COVID-19 pandemic. To avoid risk of virus spreading, cooking at home has become the major choice for meals. As self cooking becomes more frequent, the need of learning and sharing cook recipes is growing.

Main motivation and target of this project is to research on user interface design of social network application on both desktop and mobile platform. As there are many existing social network applications, we plan to use them as user interface samples and research on features of their designs.

The following figure represents the main user story of this application.



2 NEED FINDING

The main need finding technique we used are survey and interview.

The survey was distributed mainly to fellow students and close friend and family members. By December 1, 2020, 12 responses are collected.

This link directs to the online survey

The responses indicates that learning cooking recipes by social network is common among respondents. Almost all of them use one or more social network platforms, and more than half of them are learning cooking recipes on them. However, the most popular form of cooking recipe sharing is videos on YouTube or other localized video sharing platforms rather than social networks based on text and photos. Also, very few of respondents who frequently cook for themselves are willing to share their recipes, which represents a potential challenge on the quantity and quality of the contents of the product.

This link represents survey feedback statistics

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Three fellow students were interviewed on potential needs of recipe sharing social networks. The interview went informally and unstructured. The finds of the survey was shared to in the interview, the interviewees agreed on the need of learning cooking recipes on social network, and the fact that the form of videos have advantages of presenting cooking contents compared to texts and photos. Possible solutions were brainstormed and discussed, but none of them was found practical or implementable.

Also, as we used existing social network applications as examples, during the research on their user interface designs we have also derived some common needs of social network applications.

3 PROTOTYPING

We used Miro and Modao as wireframe and mockup prototyping tools. The prototyping work includes three stages: wireframe, mockup, and webpage.

Firstly, wireframes was created. At this stage the focus is to setup cross-platform layouts based on responsive webpage design principals, and apply interface efficiency rules.

Then wireframe prototypes was concreted to mockup prototypes, which illustrates style and color design of page elements to evaluate the visual effects of different designs.

Webpage prototypes are made to be interactable, by which test users can experience the user interface, and provide feedback on potential design flaws or problems if any difficulties occurred in test use sessions.

4 IMPLEMENTATION

The project is implemented as a cross-platform web application. By following responsive webpage design principals, the web frontend can adaptively adjust its layout for different devices. We plan to use Vue.js for the frontend framework and Flask for backend framework.

Users can register and manage their account (including setting up and change user name, email and password), and post, edit, delete recipes. For each recipe, the poster can append multiple tags to represent the feature of the recipe (for example, Asian, Mexican, Vegetarian), these tags can be added or removed at any time. All posted recipes can be searched by all users according to their tags, and search results will be presented in order of post time (the most recent at first). Readers of recipes can like a recipe, liked recipes will be listed in a personal liked list for future reference. Liked recipes can be removed from the list at any time.

This link directs to the GitHub repository of this project

5 USER STUDY / EVALUATION METHODS

To evaluate the prototypes and the application, we tested our webpage prototypes on classmates and other fellow students. Three fellow students took part in the test sessions. The test use sessions

were performed without guidance, in which we can observe how the tested user perform their usage to find potential design flaws or problems if any difficulties occurred in the test use session.

Also, after each test session, a short and informal interview was carried out to collect feedback of the test users. According to the collected feedback and observations in the process, we can improve user interface design and then iterate the test use process.

6 STUDY EVALUATION

The webpage prototype and the software product was test used by three test users, all of them were fellow students volunteered to participate.

During the test use sessions of webpage prototypes, some design flaws were found. For example, originally there used to be a register button and a login button, placed side by side on the top left corner of the page. When clicked, a corresponding dialog will pop up for the user to carry out the wanted operation. One of the test users found that if the user accidentally clicked the wrong button, the user has to close the dialog and then click on the right button, which takes a long path of mouse movement, making it time consuming and inconvenient.

After discussion with the test users, we added a tag control to allow user to toggle between register and login dialogues without closing the dialog. This design turned out to have better fault tolerance for user operation errors.

It indicates that it is necessary to execute test use sessions on those users who have no previous knowledge to the system. Since project members are already familiar with the design of the system to some extent, they may easily ignore some operational errors subconsciously, which can let some design flaws keep undetected, and finally damage user experience.

This experience inspired us that crowdsourced user interface design testing can be a tool to provide valuable information, especially for teams will limited amount of members. Such practice can also be implemented to earlier phases of prototyping in future work of user interface design, for example, finding some hard-to-reach placed components of mobile application wireframe prototypes. However, because of the nature of crowdsourcing, it can be a challenge to distinguish valuable information from all collected test use results.

7 ALTERNATIVE APPROACHES

As time and efforts available is very limited, it is estimated that the complexity of the application will be relatively low comparing to existing applications. Since the main purpose of this project is to explore user interface design to social network application, some minor functions will be simplified, for example, search is limited to tags and ranking of results are in time order. However, all the functional simplifications should be carried out without affecting representation to the user interface design.

8 TIMELINE AND DELIVERABLE

- **November 15:** collect user interface designs of existing applications *(Tao Xie)*

- **November 15:** construct the structure of program source code *(Yang)*
- **November 15:** design and distribute survey for need finding *(Xie)*
- **November 17:** design wireframe prototypes *(Xie)*
- **November 20:** design mockup prototypes *(Xie)*
- **November 22:** recruit regular test group *(Yang, Xie)*
- **November 22:** preliminary design and implement database and backend API *(Yang)*
- **November 25:** implement webpage prototypes based on mockup prototype *(Yang)*
- **December 6:** carry out test use sessions and improve prototype *(Yang, Xie)*
- **December 6:** program backend API *(Yang, Xie)*
- **December 9:** first version of workable application *(Yang, Xie)*

9 BIO

- **Jiaxing Yang:** Team leader and programmer, will implement major part of programming and testing
- **Tao Xie:** Designer and prototype sketcher, mainly gather and analyze user interface designs of similar social networks, and prototype this project