

Design Synthesis

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Overview

Problem Statement

There are a lot of University of Michigan students who came from outside of the state and the number of these students is rising (Allen, 2015). About a half of total students are from outside of the state and most of these students need a place to live. These students have to rely only on searching on the Internet unless they visit Ann Arbor and walk around to see houses. There are several house searching websites and they are providing critical information about houses such as monthly rental rate, location, room type, etc. However, they are not well-organized and not enough for students to make a good decision since there are various needs and priorities among students. So students who live in out of the state normally have difficulties in finding a proper house for them. This is the reason why I came up with the idea of solving difficulties in searching off-campus housing for University of Michigan students.

Target Audience

With a broader point of view, my project aims at new University of Michigan students who are coming from outside of the state and looking for off-campus house. If I focus on the persona who is going to use my project more than others, the target group could be narrowed down to new coming international students, since they have less chance to visit houses before their semester begins and they also have less friends in Ann Arbor to ask about places to live.

Target Solution

As a solution, I would like to build online communities for sharing information about off-campus houses. The biggest difference of these communities from other websites is that these are based on each school or major so that new students can easily get information which is critically related to their school life. In the community, current students are going to leave structured reviews about their own house and get some incentives. At the same time, new students can easily search for houses with filtering options and they also can post questions about houses in their mind.

Key Three Features

- Feature 1: Feature that makes current students to leave structured reviews
- Feature 2: Feature that helps new students to find houses by using filter
- Feature 3: Feature for asking a question

Critical Feature

Making current students to leave structured reviews about their house is the most important feature of my application. Filtering options or questioning feature are not going to be useful if whole data set is not containing enough information. In this

project, we can get a collective and abundant set of data by current students' reviews and comments.

Feature Approaches and Rationales

Feature 1

Approach

1. Users are required to log into the application in order to leave reviews because the application has to know whether users are current UM students.
2. As a first step of leaving a review, users have to specify the name and location of their house.
3. Then, users are going to rate their house according to a list of aspects which contains monthly rental fee, utilities, services, public transportations, noise level, etc.
4. For the last part of leaving a review, users can include additional resources such as video clips or pictures which show the structure of their house and free text comments. Along with this part, users can see the quality level of their review.
5. After they submit their review, they can get a feedback message that the review is successfully posted to the system and they are going to get benefits in the future.

Design Rationale

1. There could be several options for users to log into the application. The diagram drawn below is a rationale for this. I came up with three different options which enable users to get into the application and prove their identity. All of these options are using UM unique name or @umich.edu email account since it is the best way to prove individual user's identity. I also came up with three key criteria which are mostly concerned when designing login option. At first, users may want to avoid privacy issues because providing information about their address could be sensitive for some people. For getting more users, the application should minimize its steps to get into the system for the first time. It also has to consider whether all users are able to use authentication method if we are going to use other SNS accounts.

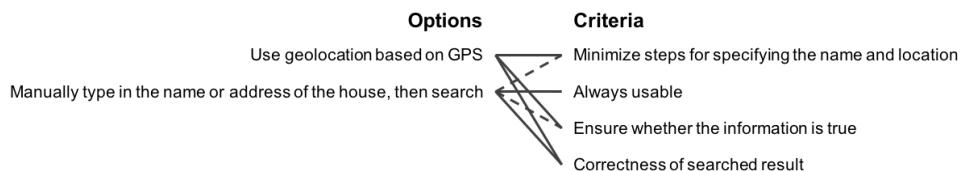
(Q) How can users get into the application and prove their identity?

Options	Criteria
Create an account then authenticate with @umich.edu email account	Minimize steps for getting into the system for the first time
Use UM unique name and password	All users have their own one
Use other social accounts (Facebook, Twitter, etc.) then authenticate with @umich.edu email account	Minimize privacy concerns

2. For the next step, users are going to specify the name and location of their house. This step can be done by several options such as using geolocation based on GPS sensor, typing the name or address of the house and select one option from recommendation list, and so on. The diagram below is a rationale

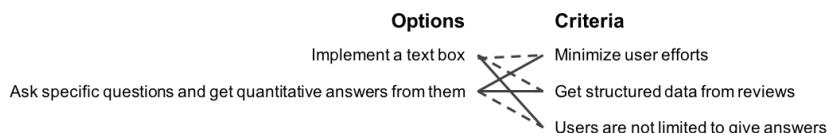
for this. If users are going to specify the name and address of their house, they have to be able to specify anytime and anywhere, and the information they are providing has to be true. Also, it would be better if putting information part is minimized.

(Q) How can users specify the name and location of their house?



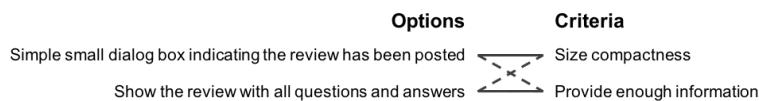
3. Then, users are going to leave a review. Since collecting structured data from students' reviews is the most important thing in this application, I came up with a criterion which is related to getting structured data. Also, I put minimizing user efforts and not restricting user's behavior from usability perspectives.

(Q) What is the best way to get reviews?



4. Almost all of applications which enable users to put external resources like videos or pictures are providing two options – choosing files from local drive / taking videos or pictures and upload them immediately. Therefore, I decided to implement this feature.
5. For the last part, users are going to see feedback message that their review is successfully posted to the system. Feedback messages could be either providing simple abstract or show all information. In designing this feature, I came up with two criteria which are about size compactness and whether it provides enough information to users.

(Q) What is the best way to show feedback messages?



Feature 2

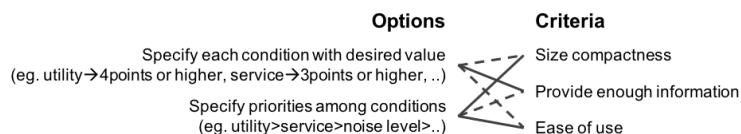
Approach

1. New student users are also need to login to the application to use services.
2. For the next step, users can search for information by using filter or putting the name or location of houses they want to find.
3. Then, the application shows a list of reviews.
4. Users can rate each review.

Design Rationale

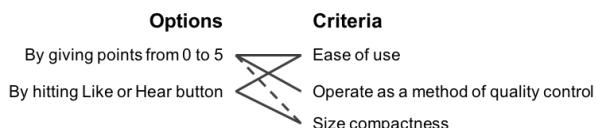
1. New student users also need to identify themselves in order to use the application. QOC diagram would be same as the one addressed in the *Feature1-Design Rationale1*.
2. When users are going to search by putting the name or address of the house, we could use the results from QOC diagram addressed in the *Feature1-Design Rationale2*. For designing filters, I thought users can either setting each filter condition with their desired values or just setting priorities among provided conditions. In terms of usability, this filtering option has to be compact, easy to use, and also provide enough information.

(Q) What is the best way of implementing filter feature?



3. A sorted list of search results is going to be shown in the application. Most of recent leading applications like Facebook and Twitter are expressing each post in a single card shaped interface. I am also going to adopt this interface in the application.
4. There are two major ways for users to rate each post in social media services – giving start from 0 to 5 or hitting ‘Heart’ button. The main purpose of rating each post would be giving different weights to them and controlling quality of posts. So I put this purpose in the criteria list in QOC analysis.

(Q) How to rate each post?



Feature 3

Approach

1. If users are trying to search for the name or location of the house in their mind but cannot find any results from Feature 2, the application links them to question asking feature.
2. Users can select either post a question about the house to the system or not.
3. If the question is posted to the system, users will be notified when there's a new review about the house is posted to the system.

Design Rationale

1. & 2. If there's no result for user's search, there should be a feedback message indicates that there's no result. Within this message, the system recommends users to post a question to the system automatically. For users who concerns privacy issues came with posting a question about specific place, the

- application also shows a message that the question is not shown by other users and the purpose of posting a question is to notify users when there's new review about the house. Below these messages, there's a 'Post a question' button so that users can simply post a question about the house.
3. If users post a question, they will see a feedback message that the question is successfully posted to the system and they will be notified when there's new review about the house.

Final Decision

For the login part, I decided to **use UM unique name and password** as a method to login since this method satisfied the largest number of criteria. This is the shortest way to authenticate all users and make them login to the system, and all target audience are able to use their unique name if they are UM student.

For specifying the name and address of the house part, I came up with a method to make users to **type in the name or address of their house manually**. Both typing and using geolocation information options scored same points in QOC analysis, but typing option is satisfying more criteria than geolocation method.

I chose to **ask structured questions and get quantitative answers** from current students in the 'leaving reviews' section rather than just put a big text box. Because getting structured data and provide them based on new students' needs is the most important feature of this application.

In the feedback message, both providing simple abstract message and showing all information scored same points in QOC analysis. Therefore, I had to give different weights to two criteria and I thought size compactness could be more important than providing enough information. Because I assumed that most of users are young students and they are going to use this application in their smartphones. By doing this, I came up with **showing simple abstract message** in the feedback part.

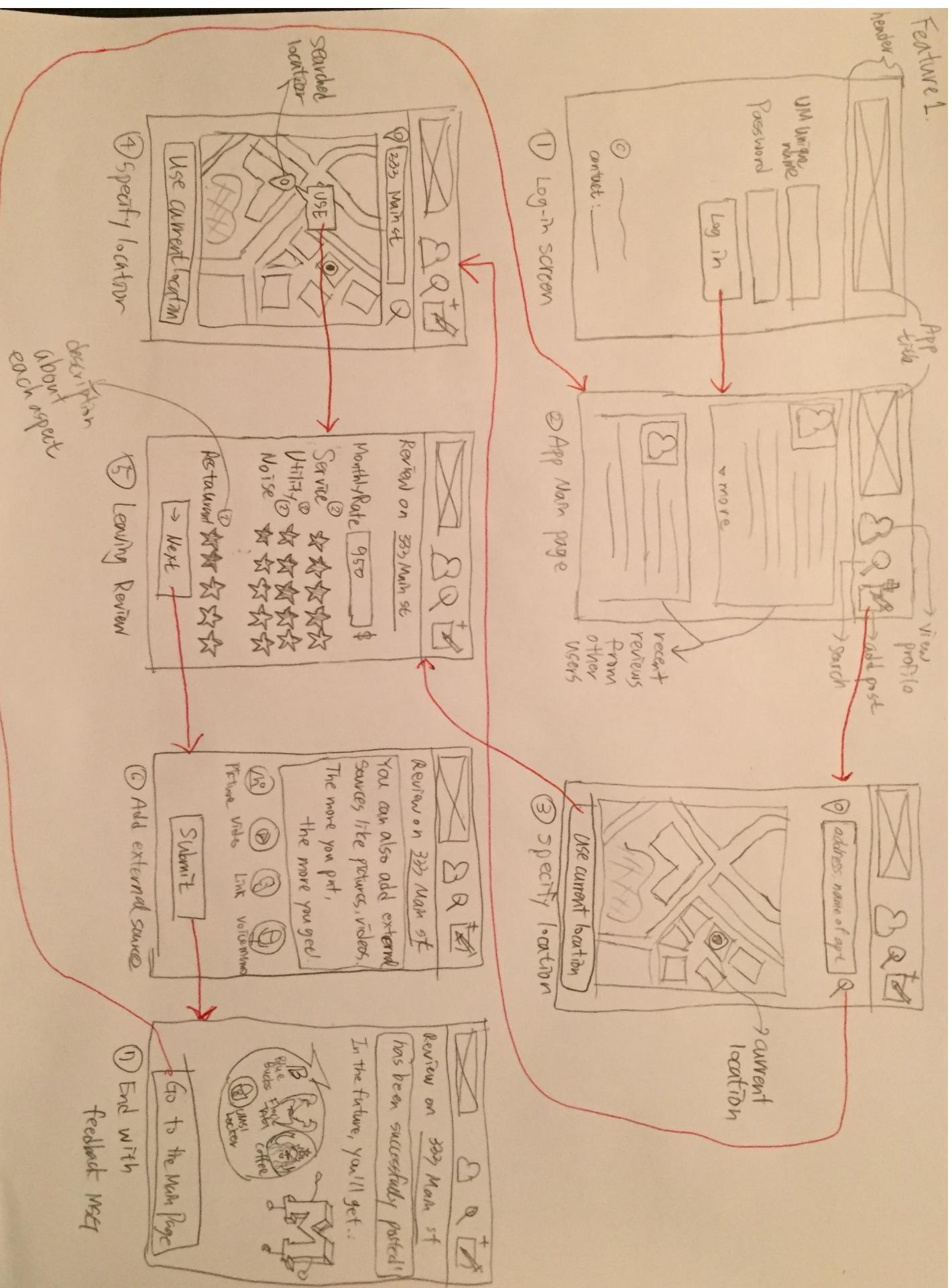
For filtering option, I chose a feature which let users to **set their priorities** among conditions rather than specifying each condition with their desired value since this options is much easier to use and also size-effective.

For the last part, I found out that **star rating** could be a good method to make users to rate posts since it can control quality of each review. Because a post which has no 'Hearts' does not necessarily mean that this post is not a valid one – it just means that the post is not quite attractive to hit 'Heart' button. On the other hand, if a post got a lot of 0.5 or 1 point out of 5, it means that the post is not quite valid or informative one.

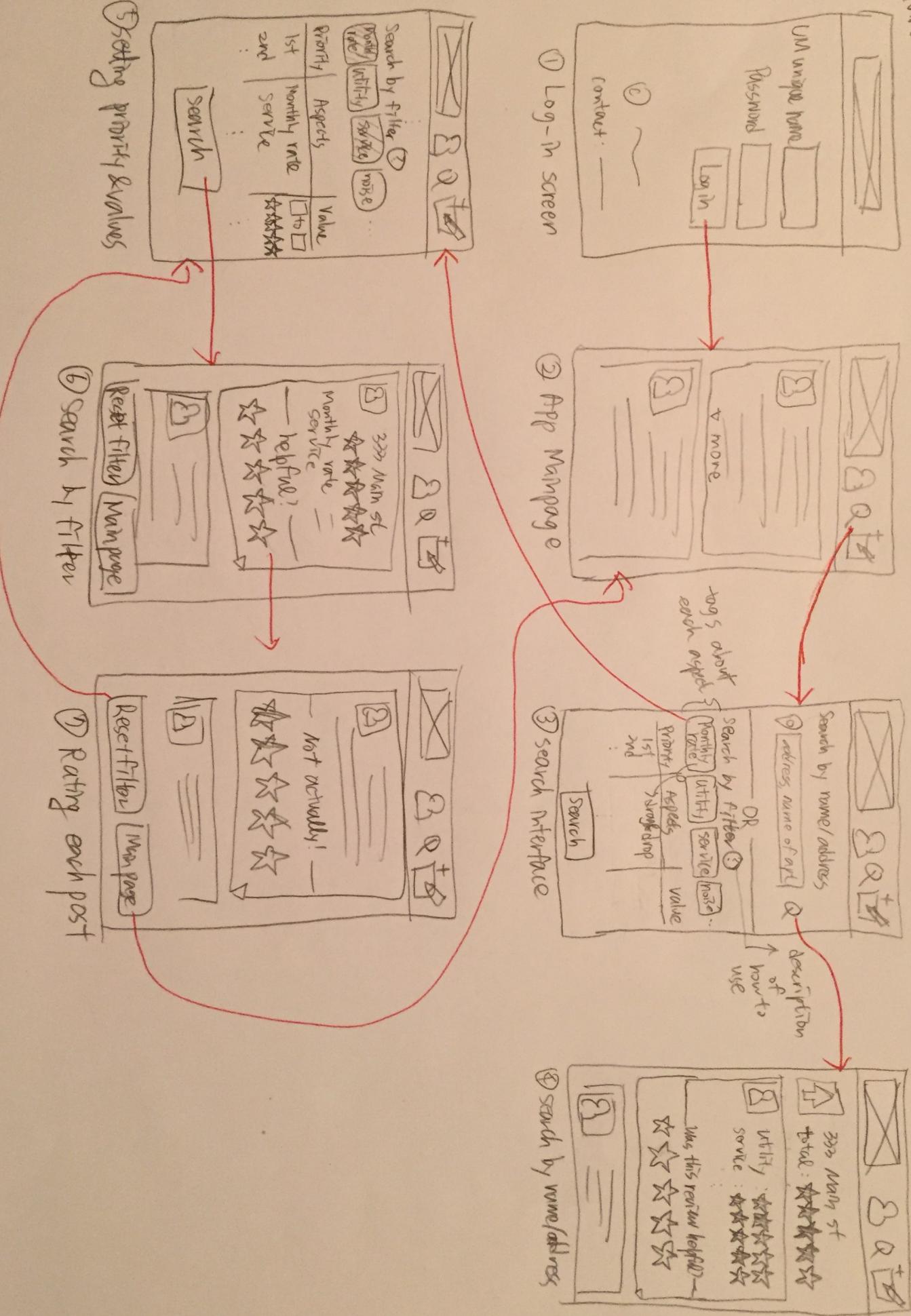
Reference

Allen, J. (2015, Feb 8). Number of out-of-state students on the rise at University of Michigan. *MLive Media Group*. Retrieved from http://www.mlive.com/news/ann-arbor/index.ssf/2015/02/u-m_out-of-state_residents.html

Wireframe



Feature 2.



Feature 3.

no search result →

