Project 7 - Evaluation

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Abstract—Our model is a website design concept that allows users to rate and evaluate realtors for real estate transactions. Previously we created an evaluation plan that would identify how easy it is for users to evaluate and find Realtors; we have now asked two users to evaluate our concept and additionally each one of us independently performed an analytical evaluation.

I. ANALYTICAL EVALUATION

For the analytical evaluation, we decided to use a heuristic evaluation. Using the heuristic evaluation, we had hoped to uncover as many usability problems as possible. We evaluated on two tasks:

- 1) Finding a review
- 2) Leaving a review

These tasks were chosen because they will be the main tasks our users will come to our website to do. A heuristic evaluation was chosen because our website will likely be used more than once, but not regularly; GOMS models and cognitive walkthroughs are not likely to be as useful as a heuristic evaluation.

The four members of our group were the "experts" that carried out the evaluations. Two of us performed the task of writing a review on the website and two of us went the steps to find a review. We chose heuristics that were specifically designed for websites, namely the heuristics developed by Budd (2007) from our textbook.

- 1) Clarity
 - Is the language clear and not technical?
 - Are labels and icons meaningful?
- 2) Minimize unnecessary complexity and cognitive load
 - Is there visual clutter?
 - Are complicated processes broken down sufficiently?
 - Is size, shape, color, alignment, and proximity used appropriately?
- 3) Provide users with context
 - Is the site name and purpose clear?
 - Is the current section of the navigation highlighted?
 - Is there a breadcrumb trail?
 - Are feedback messages appropriate?
 - Are there visual cues to help reduce perceptions of latency (e.g., progress bar)?

- 4) Promote a pleasurable and positive user experience
 - Is the design attractive?
 - Are goals easily attained?
 - Are there rewards for usage and progression?

Our original plan was to do the analytical evaluations before the empirical evaluations, however due to time constraints they were done simultaneously. It's hard to know whether this would have been truly beneficial as if we had fixed portions prior to them being seen, we might not know how it would have been perceived and if there were alternative solutions.

A. Finding a Review

1) Clarity

• Is the language clear and not technical?

[ES] Yes, the language is clear and easily understood by anyone who knows what a Realtor is and what reviews are. Since our target users are home buyers, I think it is safe to assume they know both of these terms. There may be some information that is more complex provided on the detailed review page, but the main review categories are broken down by terms that everyone will understand to ensure that the information is easy for users to comprehend. [JB] Yes the language is clear. Having an option to search by "Realtor ID" might be somewhat confusing, as some people might not know what a Realtor ID is or where to find them.

Resolution: Add small question mark next to search box that when hovered on or clicked explains what a realtor ID # is and suggests methods for how to find them. Or have text below the search box.

• Are labels and icons meaningful?

[ES] Yes, the logo clearly states that it is for realtor reviews and have the "search" label in the search box makes it clear that you can use key words related to realtors in the search bar to look up reviews. Since it is similar to search bars on many sites (such as Google, Facebook, Yelp) I think the user can easily tell that a variety of terms used to find results, not just realtor names. Similarly, using stars as a rating system is easy for users to understand, since it conforms to how other similar

sites work.

[JB] Yes icons are clear and visible, and representative of what they represent. Large stars for the rating, small picture holders for reatlor/homes, rectangular boxes for buttons.

2) Minimize unnecessary complexity and cognitive load

• Is there visual clutter?

[ES] No, there is nothing on the page besides the logo and search bar. More information appears when the user hovers over the search bar, making it easier to understand how to use it, but without providing too much unnecessary information. On the page with the summary of search results, the information is limited to only 4 realtors at a time, with limited information for each one, making it easy to scroll through and find the one the user is looking for or to compare if they arent sure.

[JB] There is definitely not visual clutter. The site goes straight to the point with asking you to search in the box to find a review. The layout on the results page shows the realtor, and then links to up to three houses they currently have for sale.

Are complicated processes broken down sufficiently?

[ES] Yes, the search process takes the user first to a page with a summary of the results, showing the top candidates first. This allows the user to easily choose which they are interested in knowing more about. Once they go to a realtors page, they then see more detailed information.

[JB] Yes. The purpose is to find a review and you can simply type something into the search box, or if wanted go to a more advanced search to specify more criteria to search on.

• Is size, shape, color, alignment, and proximity used appropriately?

[ES] Yes, the logo and search bar are centered in the page and with nothing else on the page, the users eyes go straight to them. On the search result page, there is good spacing and alignment to let the user see which realtors they are interested in. The one change that could make it less cluttered is to take off the Read Review button, and simply make the picture/name clickable and enlarge it. That way the user can just click on the face they are most interested in. However this may make it harder if the user doesnt realize that there are more detailed reviews to see.

[JB] Yes, everything appears to be centered and evenly spaced. What is unclear to me is on the review page there shows a house that the realtor sold and information on it. What house is this information for? Can I click other houses and then will their information show up? Where will the information show up? I'm imagining clicking the

next house would shift it left and have the text about it to its right.

Resolution: Have small text overlay on the links for the houses that say "Expand". Once expanded, there should be another link saying something to the extent of "show further detail". This same concept of text overlays would be used for the search results page so that it reduces clutter by having "Read reviews" as a text overlay on the picture of the realtor.

3) Provide users with context

• Is the site name and purpose clear?

[ES] Yes, the name Realtor Reviews clearly explains that it is a site to find and leave reviews for realtors [JB] Yes it is clear that this site is meant for Realtor Reviews.

Is the current section of the navigation highlighted?

[ES] There is not currently a navigation bar, so the user must rely on the title of each page. At the least I think there should links at the top to start a new search and go back to results.

[JB] There is not any navigation bar so there are no selections. However each page shows the title of it at the top so it is clear where the user is.

Resolution: Agree that there should be at least a limited navigation bar with links to different areas of the site

• **Resolution:** Is there a breadcrumb trail?

[ES] Yes, on the search results page, a short summary of four realtors displayed before they must scroll down, this shows users what kind of information is available and entices them to scroll down, if they dont see the realtor they are looking for. Then, on the detailed review page for a realtor, there is a variety of types of information about them at the top of the page and the actual written reviews begin before the user scrolls down. This lets them know that there is more information they might find useful if they keep reading.

[JB] Yes, pages have immediate information to show and there are up to four realtors displayed if results are found, with arrows enticing the user to see more information. Most screens have immediate information with optional actions to see more.

• Are feedback messages appropriate?

[ES] Once search results are displayed, the user can see if they are getting the information they are interested in. They should see realtors with the same/similar names or in similar locations depending on the search criteria that they use. This means that they will know if it is pulling the information they thought it would.

[JB] It is unclear if there is validation in the user input or if there is some type of autocomplete

feature for finishing your search for you based on information entered. What happens if nothing is found? What happens if too much is found? **Resolution:** We need to show a page that displays what it looks like when nothing is found, or if there are a lot of results found. Also should clarify that search box is omnipresent and searches all aspects and content of the site and suggests searches as you type.

Are there visual cues to help reduce perceptions of latency (e.g., progress bar)?

[ES] There currently are none in the design. Since the results should be pulled quickly, I dont know if the user would require it (for example, there isnt a progress bar on Google since no time is spent waiting).

[JB] There are not and I don't really see there being a need for something like that.

4) Promote a pleasurable and positive user experience

• Is the design attractive?

[ES] The design is minimalistic and easy to understand.

[JB] Yes assuming I can find what I'm looking for or if I can't how I can go about finding it

• Are goals easily attained?

[ES] Yes. A search by name takes just three steps to get from the homepage to the realtors detailed review page. Using more complex criteria adds an additional step. If the realtor has no reviews it is just the second page where the user can see that.

[JB] It would appear so since the search box is visible on the landing page. One thing that is not addressed is what if I want to search again? It does not show a search box on each page, it should be accessible everywhere. **Resolution:** The search box will be available on all pages

• Are there rewards for usage and progression? [ES] Yes, more information is found the further the user progresses

[JB] Yes, as you click you find more things to read

B. Leaving a Review

1) Clarity

• Is the language clear and not technical?

[AC] Yes the language is clear and not technical. [RE] Yes the language is clear and not technical.

· Are labels and icons meaningful?

[AC] Yes labels and icons are meaningful.

[RE] Yes labels and icons are meaningful. There are too many icons though. It is unclear whether the person should click on the face of the realtor or click on the read reviews button.

Resolution: We both agree that there are too many icons.

2) Minimize unnecessary complexity and cognitive load

• Is there visual clutter?

[AC] The pages are minimalist with little clutter. [RE] The front page is minimalist with little clutter. The results page with houses shown next to the realtors is cluttered. The way the realtor reviews are organized looks cluttered. One section for comments and one section for star ratings would have a cleaner look

Resolution: We both agree that we can clean up the results page.

Are complicated processes broken down sufficiently?

[AC] Leaving a review was a complicated process and should not have been.

[RE] Leaving a review was a complicated process. After searching by name for the person you want to leave a review about, you see a picture with that person. There is no place on this page to leave a review. If you go to the realtors bio, again no place to leave a review. You have to look at the reviews in order to leave one. This is fairly intuitive because the user just keeps clicking review until they get to the right place, but takes too much effort.

• Is size, shape, color, alignment, and proximity used appropriately?

[AC] Yes these seem to be used appropriately.

[RE] Size and alignment are well used. The prototypes are black and white, so this is not used. Proximity is not used well in the realtor review section. (See visual clutter).

Resolution: Proximity can be better-used in the review section

3) Provide users with context

• Is the site name and purpose clear?

[AC] The site makes clear that there are realtor reviews but not that they can be left.

[RE] The site makes clear that there are realtor reviews but not that you can review a realtor. The main page should have more information to draw the user in.

Is the current section of the navigation highlighted?

[AC] No we do not currently have a navigation bar. [RE] No we do not currently have a navigation bar.

• Is there a breadcrumb trail?

[AC] No we do not.

[RE] No we do not.

Are feedback messages appropriate?

[AC] The feedback is that the user gets to the next page, and it seems to be getting them closer to where they need to be.

[RE] Also on the page with the realtors bio, there is a little bit of information about reviews that make the user want to scroll down to see more reviews.

• Are there visual cues to help reduce perceptions

of latency (e.g., progress bar)?

[AC] No there is no progress bar but I am not sure one is necessary the only thing that happens is that the user gets to the next page, which should not take long enough to need a progress bar.

[RE] No there is no progress bar. We might want some kind of searching circle while results load.

Resolution: We will add a searching circle while results load.

4) Promote a pleasurable and positive user experience

• Is the design attractive?

[AC] Yes the design is minimalist and attractive. [RE] Yes the design is minimalist and attractive overall. More could be done to streamline. It is not necessary to have so many buttons.

• Are goals easily attained?

[AC] No it was not easy to find where to leave a review.

[RE] No it was not easy to leave a review.

• Are there rewards for usage and progression?

[AC] Yes, at each click, it is clear that you are getting closer to your goal.

[RE] Yes, at each click, the pages get more information making you feel that you are getting closer to your goal. It goes from a very simple to search page, to search results, to a specific realtors page. All moving general to specific making it clear to the user that they are getting closer to their goal.

C. Analytical Results

Overall the page is attractive and easy to use, particularly if the user is looking for reviews. However, we identified several areas that need to be improved, particularly in relation to leaving a review.

1) Clarity:

- We should reduce the number of images and icons used so that each page is more simple
- 2) Minimize unnecessary complexity and cognitive load:
 - Need to consider simplifying the results and review pages. Can reduce the number of pictures on the results page. Detailed review page could have one section for comments and one section for star ratings to create a cleaner look.
 - Need to simplify the process for leaving a review and reduce the number of steps required, perhaps add a button for leaving a review on the results page
 - Color not used at all in prototype, need to consider how color will affect the display since there are a large quantity of images used on most of the pages
 - Proximity could be improved in the realtor review section (see visual clutter)
- 3) Provide users with context:
 - Need to highlight the fact that the user can also leave reviews
 - Currently no navigation bar, need to add one

- Need to improve the breadcrumb trail (make it more clear that reviews can be left)
- Are feedback messages appropriate?
- Will add a searching circle while results load, to provide better visual clues
- 4) Promote a pleasurable and positive user experience
 - Design is attractive but we could work on removing some of the buttons to make it more minimalistic
 - The goal of leaving a review is not easily attained

II. EMPIRICAL EVALUATION

The goal of the empirical evaluation was to discover usability problems. We had two participants. User 1 was a 42-year-old male who had already used a realtor to sell a house and would leave a review for that realtor.

User 2 was a 23- year-old male who has never used a realtor before. He was searching for a realtor using this website.

We used the Wizard of Oz approach and asked users to think aloud as they performed a task with the paper prototype.

A. Empirical Evaluation: User 1

During the first research session, we assigned User 1 the task of leaving a review for a specific realtor.

Environment



The People in the Space

The only people present were the interviewer and the interviewee. The emotions of both were neutral. See the appendix for what was said during the session. No problems were encountered during the session.

The Objects in the Space

The interview took place in the dining room of a suburban home with no decorative or functional elements besides the dining room table and chairs (see figure). The only objects present were those for the research session (paper prototype, paper and pen for the experimenter, and Surface used to record the session). During the session, the user did not interact with any objects except for the paper prototype.

The Layout

The layout was that of a typical dining room with a dining room table and chairs, which is where the user sat (see figure). The environment was quiet, clear, and well-lit, which let the user focus on the task at hand.

The Session

The session was broken down into three parts. There was a warm-up and introduction, where we explained the task to the user and had them practice doing a think-aloud task. Then we used the Wizard-of-Oz approach with the paper prototype and asked him to think aloud as he left a review for a realtor. Then we performed a short interview in order to give him a chance to clarify anything that happened during the session.

The Results

We found that there were a few problems that users could face when trying to leave a review.

The first problem was that the user the user decided to search for the realtor by name, but he did not understand that he could have just typed the name into the search box. This led to the user having to perform extra steps to get to the list of search results. Instead of going right from the home page to the search results, he had to get through an intermediate step of searching by location.

The second problem was that the "leave a review" button was buried deep. It took the user 6 clicks to find it. Since this is one of the two main tasks for this website, it should be much easier to figure out how to do it.

The user did not seem to understand what the list of houses represented, which distracted him.

The Insights

People intuitively understand how to use the initial search page, but are confused about what happens when they click or hover over it. Instead of a drop down box, we should just have a search bar with text in it that says "search by name, location, or realtor ID" and have the search algorithm understand what type of results to give based on the input.

We should make it much easier to leave a review. There should be a button that says "leave a review" for each realtor on the search result page so that users can get to it much more quickly.

We should make sure that the user understands that the houses next to the realtors names are their current and past listings. Appendix 1: Data from Interviews

User 1: Leaving a review

The warm-up and Introduction

Experimenter: "Thank you for agreeing to help me today. I have a really early version of a website I am going to show you in a few minutes. I am interested in finding out how people might use it. Its just a rough sketch, but should still give you enough information to understand basically how it might work. If you dont mind, I am going to record you just so I dont miss anything. Is that okay?"

User 1: "Yes"

Experimenter: "I also wanted to let you know that there is no wrong way to do the task I am going to ask you to do. This is not a test of you or your abilities, its just a test of the website." "I also wanted to ask that you speak aloud your thoughts as you are going through the website. This would help me understand what kinds of things other users might be thinking about as they go through the website. Now its kind of unnatural to think out loud, so we are going to practice it. Im not recording this or anything its just to get you used to thinking out loud. I would like you to add 234 and 456 in your head."

User: "Uh, 254 plus 456?" Experimenter: "234 plus 456" User: "Carry the 1, uh, is it 690?"

Experimenter: "Yes. Okay now lets try another one. How many windows are in your parents house

If they need more practice, ask them to talk about how many windows are in their parents house?"

The user spoke aloud as he counted the windows and described the rooms they were in.

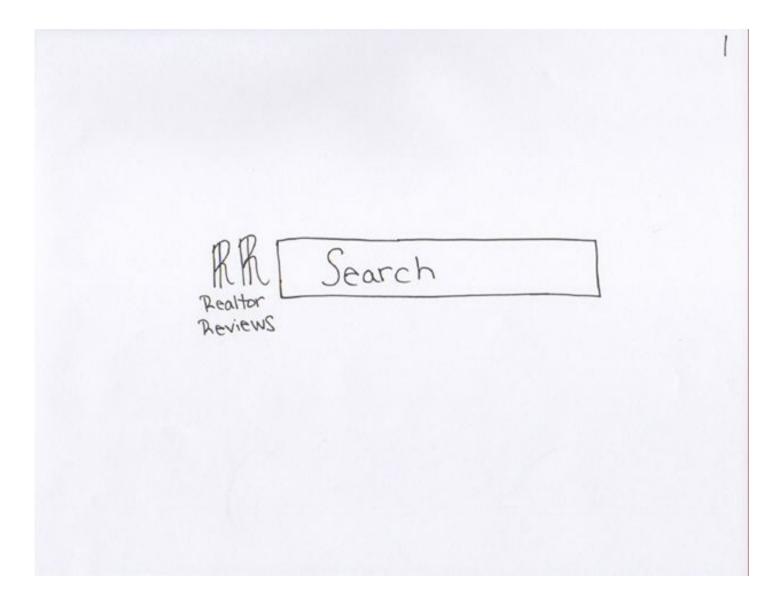
Wizard of Oz Session

Experimenter: "Okay it is time to start. I am going to start recording, ok?"

User: OK

Experimenter: "Your task is to leave a review for a realtor. You can pretend that it is a touch screen and put your finger on any area you would touch. Dont forget to think aloud. Heres the home screen"

(Experimenter presents screen - next page)

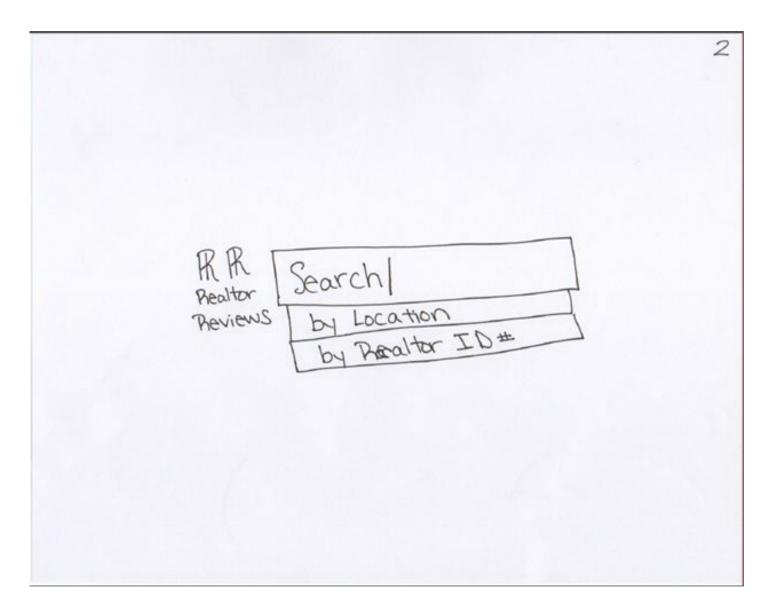


User: "Do I need to log in?"

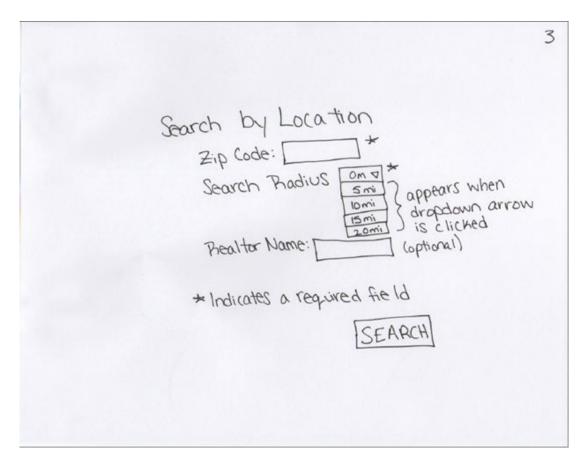
Experimenter: "Does it look like you can?"

User: "No."

User touches search box and says "So I would click here and Im going to"



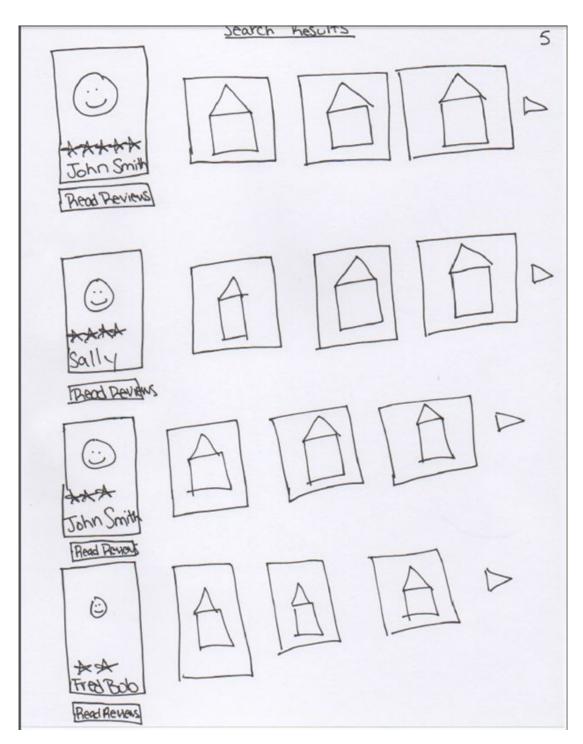
User: "Oh thats interesting. This drop down. So I assume I would pick probably location unless I knew my realtor ID" (and then touches location) (next screen presented)



User: "What? Okay" puts finger in zip code box "Im going to type in my zip code and Ill say, uh, 10 miles (puts finger on 10)

User: "Then Ill type in the name" (and pretends to type it in)

User: "And then click search" (and touches search button)



User: "What are these?" and points to houses

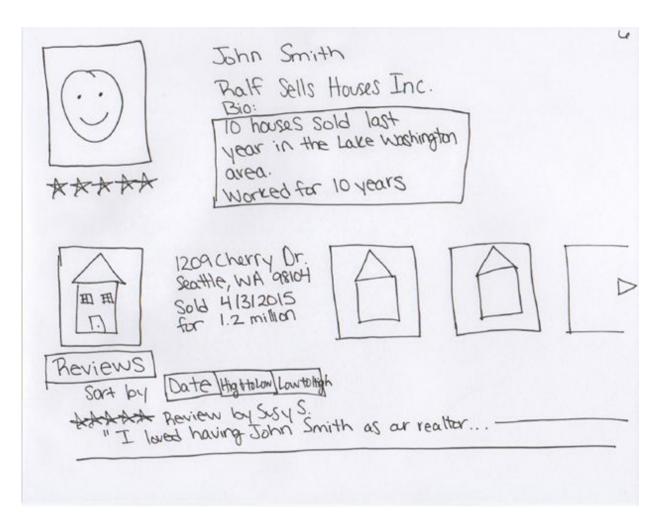
Experimenter: "What do you think?"

User: "Maybe houses he sold? OK I assume this would scroll" (pointing to arrow) "so they have more houses"

User: "I could click Sally to read review" (and clicks both realtor face and "read review")

Experimenter: "Did you click the Sally or the read review?"

User: "I clicked Sally"



User: "Where can I leave a review? I guess I would click reviews" (and touch review button) (next screen presented)

Revie	Leave a Review by Susy S. Review by Susy S.
2	"I loved having John Smith as ar realtor
-	
*	Ability to Listen **** Ability to Listen *** "John wanted our price range higher "John wanted our price range higher than it was. It took him awhile to listen to my requests for a cheaper place." Knowledge of Area *** "He's been selling here forever!" Price range looking for \$ 200,000 - 300,000 Price vange Purchased \$ 350,000
-	** * Review by John

User: "Oh there it is" and click button for leave a review (next screen presented)

Name: WMM.
Ability to Listen wholeh
Knowledge of Avea **** Comments: Additional Comments: 250 word max
If you bought a house from this realtor: Price range looking for Price range purchased
Submit Reven

User: "I would write the review in here and submit it" (pretends to write and click submit)

POST-SESSION INTERVIEW

On a scale of 1-10, with 1 being easy and 10 being hard, how difficult was the task? "Six"

2) What could have made the task easier?

"I should have been able to go directly to leaving my review without having to read reviews. There were too many clicks to leave the review 1 to initiate the search, 2 to submit, 3 to select the realtor 4 to read reviews it was not intuitive, 5 to write the review, and 6 to submit the review. It was way too many."

3) What was hardest thing about the task?

"I expected to see a button or something in my search results. Also I expected that just to be a search box that I could type in my search information. It presented itself like Bing or Google or any other search thing. So that was counter intuitive."

4) How would you fix that?

"It should really just have a simple either radio button or you figure it out. If I submit something numeric, you just take the zip code and if I type in a last name you just give me that. The other thing is now with html5 you can use location apis to know where I'm at and instinctively return people in my area."

5) Anything else to add?

User: "No!"

Experimenter: "OK, were all done. Thank you for your time."

B. Empirical Evaluation: User 2

For this session, I used an updated version of the prototype in line with some of the feedback we got earlier in the evaluation process. Specifically, for this session the search bar was changed so that there is no longer a dropdown menu, but text that disappears when the user starts typing. The user is directed from this to the search results page. This makes pages 2 and 3 from the previous section irrelevant. On the search results page, there is now a leave review button that the user can click to leave a review for that specific realtor.

During the second research session, we assigned User 2 the task of searching for a realtor. Specifically to read reviews.

Environment

Small Seattle city apartment. Casual setup, user and I sat at the table and went through the prototype.

The People in the Space

The only people present were the interviewer and the interviewee.

The Objects in the Space

The interview took place in a dining room in an open floor plan small apartment. There is a table, couch, desk, television etc in the space. The space also had the users dog in it. The user did not interact with the dog at any point during the interview.

The Layout

The layout was that of a typical dining room with a dining room table and chairs, which is where the user sat. The environment was quiet and well-lit, which let the user focus on the task at hand.

The Session

The session was broken down into three parts. There was a warm-up and introduction, where we explained the task to the user and had them practice doing a think-aloud task. Then we used the Wizard-of-Oz approach with the paper prototype and asked him to think aloud as he left a review for a realtor. Then we performed a short interview in order to give him a chance to clarify anything that happened during the session.

The Results

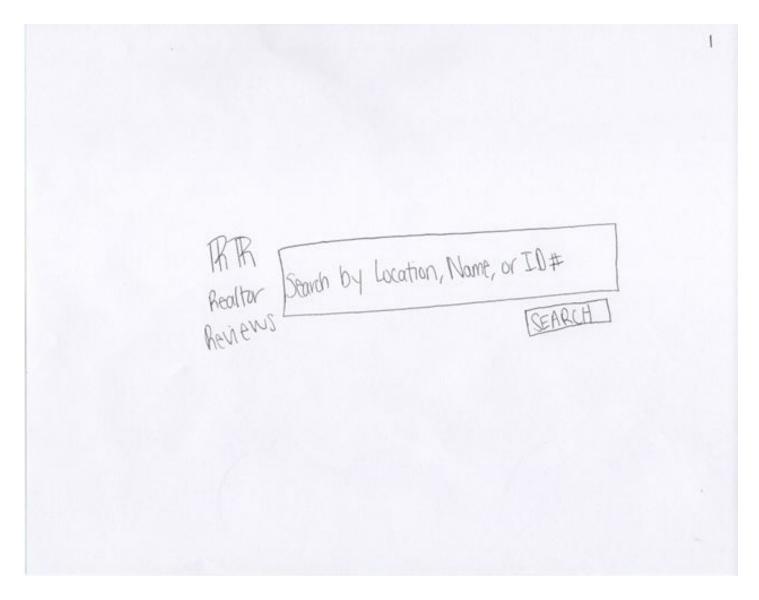
We found that there were a problem the user could encounter when trying to find out information about a prospective realtor. The user was able to easily get to the read reviews page, but was unsure how to get more information about the realtor. It was also difficult for him to easily see what categories the realtor was well-rated in without looking at each review. There should be a spot with an average review in each of the categories.

The houses were too much visually for this user as well. There were too many buttons in the user #2s opinion.

The Insights

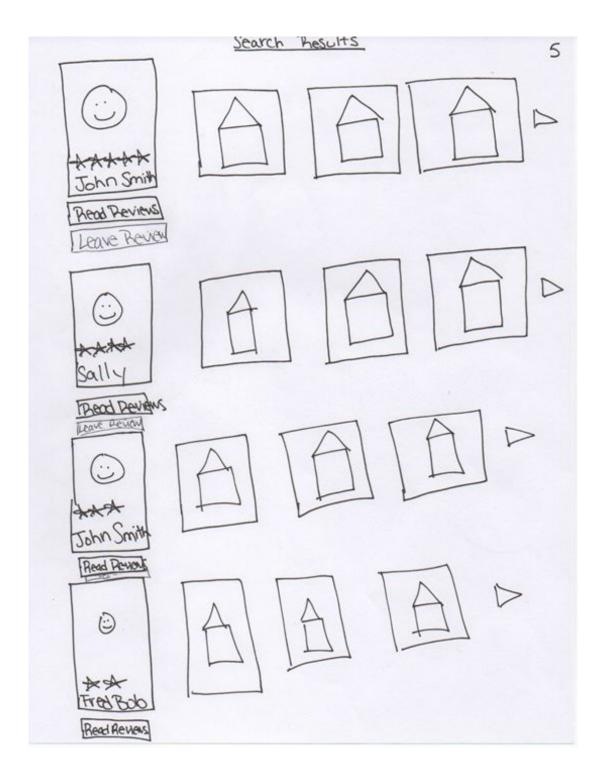
We should make the realtors page one continuous page with links that take the user to that part of the page. There should only be one clickable link on the first page, the realtors picture. Once the user is on the realtors page, there should be links to read reviews and leave a review.

(Experimenter presents first screen)



User: "Okay, I know where I want to buy a house. So I touch on this search box looking thing and I type in my...I guess city name. Then I click search"

Experimenter: Then you would get this page. Flip to reveal search results page.



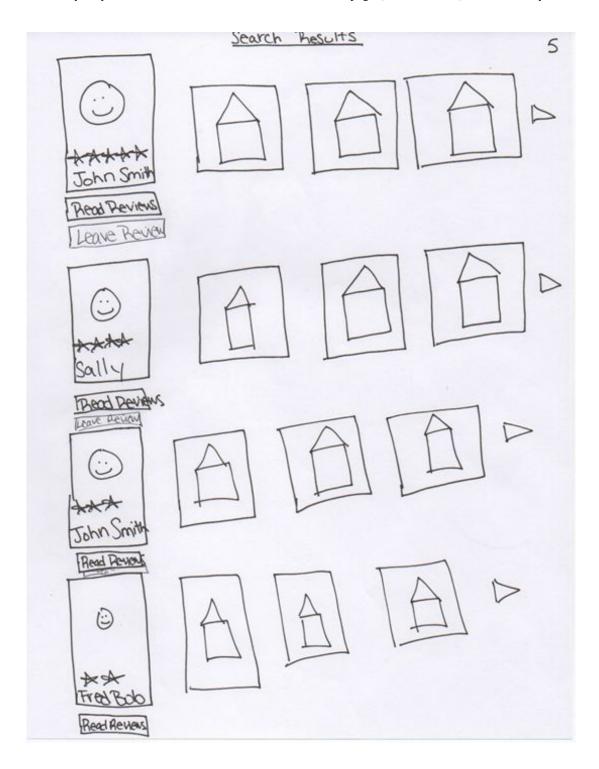
User: I see a bunch of realtors, and they have stars. I assume stars mean how good they are, so Im gonna look at the best one first. So Im going to click read reviews for John Smith.

t	Review by SUSY S.
	"I loved having John Smith as our realtor
-	
	Ability to Listen *** "John wanted our price range higher "John wanted our price range higher than it was. It took him awhile to listen to my regrests for a cheaper place."
	"He's been selling here forever!"
	Price range boking for \$ 200,000 - 300,000 Price range Purchased \$ 350,000
	*** Review by John

User: Id probably click on John [picture].

Experimenter: Then you would get this page:

Experimenter: Okay, if you clicked the back button and went to this page [search results], what would you do?



User: Id probably click on John [picture].

Experimenter: Then you would get this page:



User: Okay. I see how active hes been in the last year, and I realize that hes worked for a long time. Um, and I can see some of the houses that hes sold So, Im gonna look through the houses and see if they match what, if he sells to the same sort of people as me. And I click on them? To get more information? And they do something? Do they go to another page?

Experimenter: They just open like this, collapse and open.

User: Okay, they show their information.

POST-SESSION INTERVIEW

Experimenter: At each step, is that what you expected to happen? Were there any unexpected steps?

User: Im a little confused by the difference between read reviews and seeing his page. Um, why there were separate pages or why I couldnt see that information on the read reviews page. It was a little hard to get from the reading reviews back to seeing information about him.

Experimenter: Okay. So, reading a review was easy, but you were also interested to read information about him, that was more difficult.

User: I looked at the reviews first because I trust reviews more than I trust biographies, but Im interested in biographies if the reviews look good.

Experimenter: Okay. On a scale of 1 to 10 how easy was this task? 1 being very easy, 10 being very difficult.

User: Oh thats kind of inverted from what I expect. Um. I can just put in any search location, and when I put in my city name, it works?

Experimenter: Yes.

User: I give it about a 3. It was pretty reasonable. It was pretty hard to get to his biography from his reviews.

Experimenter: Okay. So, what could have made the task easier?

User: Um Maybe if the reviews and pages were linked, or if they werent even different. It doesnt look like theres too much information in the top half [of the profile page] and then you could just have reviews below. Thats what I expect out of sites that have products with reviews.

Experimenter: Okay. What was the hardest thing about this task? Finding?

User: Um Knowing which of the buttons to click on the search results page, since there seem to be a lot of different buttons for each realtor, and I wasnt sure which one would give me the best information about... what went on, although I pretty quickly decided that the house buttons wouldnt do what I wanted.

Experimenter: And how would you fix that?

User: Maybe only have a single path to get to information about the realtor?

Experimenter: Is there anything else that you would like to add?

User: [flips to the reviews page] I would like to be able to see his star rating by subsection. It looks like you can rate by Communication and Ability to Listen and Knowledge, but the summary is only on the total, so I cant get a quick at-a-glance picture of if he can listen well, Id have to look through each review and do the calculation in my head.

Experimenter. Okay. [Sarcastically] Thank you for your time. We appreciate your help. Im going to stop recording now.

User: [Relieved] Youre welcome.

III. CONCLUSION

Based on the information we collected from both the empirical and analytical evaluations, we have discovered that we need to simplify our user interface and make it easier for the user to navigate. We will address this by:

- Reducing the number of icons/images used on all pages except the home page
- Adding a navigation bar to allow the user to move between pages more easily
- Adding a searching circle while results are loading
- Adding links to allow the user to immediately leave a review
- Improving the layout of the detailed page for an individual realtor
 - Make better use of proximity and spacing
 - Reduce the number of images
 - Have all information on one page with links to jump between categories
 - Display the star rating that the realtor has overall, along with in each category
- Making the search more clear so that the user knows exactly how much information will need to be entered