

**Interaction Design Milestone 4 Report**

We had a three-step protocol that we went through to conduct both the retrospective interviews and the think-aloud evaluations. Both were “within-subjects” tests with all participants performing every benchmark task. For the think-aloud evaluation, one of us wrote down notes on the participant’s thought process regarding the application while another nudged the participants to continue talking if they stopped by asking them questions from the questionnaire related to the part that they were on.

**Protocol:**

- 1: Read the appropriate script.
- 2: Hand the task sheet to the participant.
- 3a: If retrospective, ask the participant to fill out the question sheet. Answer questions that they may have about the questionnaire.
- 3b: If think-aloud, ask the questions at the appropriate time or after the tasks are completed.

**Scripts:**

Retrospective interview:

This is a test for a prototype user interface designed for our Interaction Design class. We made a few tasks to complete to show how the prototype works. Please do the tasks written on this card. Afterward, we will ask you a few questions.

Think-aloud evaluation:

This is a test for a prototype user interface designed for our Interaction Design class. We made a few tasks to complete to show how the prototype works. While doing these tasks, I will be asking you some questions. It would be great if you could explain your thought process as you are doing the task. Let's start with the first task.

**Benchmark tasks:**Map

- Determine where to park for the class ORNT-2000
- Determine when they should arrive at school to make it to the class on time.
- Switch to the forum

Forum

- Find an offer to drive to school before ORNT-2000.
- Reply to the offer.
- Make a request for a ride to school on Tuesdays at 10 AM.
- Reply to a message.
- Switch to map

## **User evaluations:**

We conducted our tests in the Keck lab on-campus. Our participants were all LMU students who commute. A confounding variable that we likely have encountered is that all of the students we interviewed were in the Seaver college, and likely have more experience with computers and prototyping software than students located elsewhere on campus. Due to time constraints on when we could meet in-person to conduct these interviews, we only performed two retrospective interviews, and three think-aloud evaluations.

For our first tasks involving the map, we want participants to find where a given class is using the Commuter Map. After finding out where to park, determine the time one needs to arrive at school. We chose this as our first test as it was the sole focus of the map portion of the webpage. We initially planned to have users estimate the time it would take to reach the class with how much time it takes to reach the school, but decided that was unnecessary personal information that could affect the time it takes to complete the task. The tasks regarding the forum are simply the core features of the forum page.

We decided to add a task for the user to reply to a message separately from the task where they should reply to an offer. We hoped that participants would find the “messages” button on the profile tab in the corner of the home screen. While one participant used this button, others clicked on a post in the feed to return to the messages screen.

## **Questionnaire:**

Q1: If you could make one change to the website, what would it be?

Q2: Was the map easy to use?

Q3: Are colors easy to read on the map?

Q4: If you move from the map page to the forum, will you still be on the forum page you were last on?

Q5: From 1 - 5, how intuitive was it to plan a carpool using the forum?

Q6: Which parts of the website are not enjoyable to use.

- Forum feed
- Forum messages
- Map
- Transition button (Blue bar with arrow)

Q7: Please rank the tasks in terms of difficulty to accomplish (from hardest to easiest).

## **Retrospective interviews:**

### Participant 1 Questionnaire:

Q1: The make post button should be more noticeable

Q2: Yes. Very easy.

Q3: Yes. Distinct and simple.

Q4: I think it would be a nice feature, but not totally necessary

Q5: 4

Q6: Forum Feed

Q7: (Hardest < Easiest) Feed < Messages < Map < Transition

### Participant 2 Questionnaire:

Q1: The make post button should be more vibrant

Q2: Yes. It was easy to read and orient myself.

Q3: Yes.

Q4: Yes. The prior state should be maintained.

Q5: 3.5. I prefer web functions put next to each other.

Q6: None

Q7: N/A (Wrote: Everything was easy)

### Results:

We were only able to interview two participants with retrospective interviews. To prevent

Both said that the “make a post” button should be more visible. We should do this before future testing.

Both found the map easy to use and the colors distinct.

Both expected the prior state of the forum side to be maintained. However, the wording of this question may have confused the participants. Combining the two prototypes is necessary to properly test this feature.

Both gave the forum a 4 on intuitivity. One stated that they prefer having the features lined up in the same area on the screen. This would be a complete redesign of the page, but is worth noting.

One found the forum feed page to be not enjoyable. In future interviews, we should have a follow-up question to this, asking why the page(s) they chose were not enjoyable.

One gave a hierarchy of difficulty as: Feed < Messages < Map < Transition, generally putting the tasks on the HTML forum side of the program behind the Figma pages. The feed needs to be tested more to determine exactly what users dislike about it.

## **Think-aloud evaluations:**

We performed three think-aloud evaluations with different participants. Below are key takeaways from the evaluations.

### Results:

All participants understood that the time given on forums was the time that the poster intended to arrive on campus. This may have been on their mind because of the order in which we set up the tasks, as we ask the participant to determine what time they should arrive for the tasks on the map. In the future, we should perform a “between-subjects” test to test each side of the program individually.

$\frac{2}{3}$  wanted to arrive at school before 3:30PM to make it to their class at 4:00PM, while  $\frac{1}{3}$  considered all of the classes on that day and decided that they should arrive at 10:00AM. We should randomize the class selection for future tests.

All participants easily understood the sliding transition button on the map prototype.  
 $\frac{2}{3}$  noted that messages should be sent upon pressing enter. This should be fixed before further testing with this prototype.

1 disliked how there were no details on the person who posted an offer/request. We should consider adding profile pages. This could also address another topic that our group had previously discussed: Users could add the area that they are driving from to this page.

1 expected a section to manage current carpool plans. This does not seem possible with the current freeform messaging system, but it may be worth creating a more structured system in a future iteration of the prototype if more users expect this feature.

## **Heuristic evaluations:**

We met with the Parking Lions group (Chase Cour, Kevin Gager, Warren Binder) to exchange heuristic evaluations. We used a severity scale from 1 to 5, with 0 being “no immediate issues.” Their full evaluations are on the next page of this document.

### Conclusions:

All evaluators noted with a very high severity rating that there is no button to delete a post once it is posted. This is a vital feature for our application and must be implemented for the next iteration of the prototype.

The second highest priority should be considering how error screens would work on the page. As there is no back-end to our prototype, all forum posts will be successfully posted. However, we should determine what exactly an error message would look like if the system fails to create a post or send a message.

The next priority should be having the “offer” and “request” tags be deselectable. Two of our evaluators also thought that clicking on the tag in a user’s post should be another way to sort by that tag. This should be implemented as well.

We had multiple notes regarding the profile box on the left of the forum page containing classes and the “Back to Feed” button. The courses are difficult to read and the button needs to be more visible. We should make the information on the box larger and more visible. It was also mentioned that there is no way to “cancel” making a post. A separate “Cancel Post” button was considered in the past, but we thought of going “Back to Feed” as the same thing as canceling the post. Further testing is necessary once the “Back to Feed” button is more visible.

The evaluators also noted various consistency issues that should be fixed, the most glaring of which is the visual disparity between the HTML forum page and the Figma map page, which were created separately. The top and side bars on the forum page should be adjusted to match each other. Buttons on the forum page should have consistent coloring as well.

## Chase Cour:

Heuristic Evaluation		Notes sheet (1)	
<b>Heuristic</b>	<b>Is the heuristic violated? How?</b>	<b>Severity</b>	
1. Visibility of system status	Visibility of classes on the left is a little difficult. Maybe adding the profile is better image	2	
2. Match between system and the real world	The terms felt pretty good, I didn't see any issues with wording	0	
3. User control and freedom	I don't see a way to delete posts so it feels difficult to delete a post if you no longer want it. Also, there doesn't seem to be a message reporting if its fool	4	
4. Consistency and standards	Some buttons are grey w/ white or others' grey w/ black. Adding more consistency. Zooming changes with messages	2	
5. Error prevention	Error prevention is good. Everything makes sense. Very intuitive so its tough to make errors	0	

  

Heuristic Evaluation		Notes sheet (2)	
<b>Heuristic</b>	<b>Is the heuristic violated? How?</b>	<b>Severity</b>	
6. Recognition rather than recall	There is not many places for this. But if someone tries to make a post for similar times then they should be notified instead of having to remember that there was already a post	2	
7. Flexibility and efficiency of use	Using it for the first time the features didn't seem super clear, but it was quick and easy to navigate so no menu wasn't too bad	1	
8. Aesthetic and minimalist design	Design was clear and not too overbearing	0	
9. Help users recognize, diagnose and recover from errors	When I tried putting in bad times it fixed them but didn't notify me of it, and spelling was notified.	0	
10. Help and documentation	I didn't see any documentation or guide so I wasn't sure if there is any. Didn't feel super nessicary	1	

Based on the 10 Usability Heuristics for User Interface Design by Jakob Nielsen: [www.useit.com/heuristics.html](http://www.useit.com/heuristics.html)

## Kevin Gager:

Heuristic Evaluation		Notes sheet (1)	
<b>Heuristic</b>	<b>Is the heuristic violated? How?</b>	<b>Severity</b>	
1. Visibility of system status		?	
2. Match between system and the real world		0	
3. User control and freedom	No way to cancel making a post. You cannot cancel a tag	4 3	
4. Consistency and standards	His current course size does not stop consistent Window size change when switching chat rooms Top button looks better or friendlier	1 1 1	
5. Error prevention	Required fields on make a post are not highlighted	3	

  

Heuristic Evaluation		Notes sheet (2)	
<b>Heuristic</b>	<b>Is the heuristic violated? How?</b>	<b>Severity</b>	
6. Recognition rather than recall	Clicking on tags, does not act by tag	3	
7. Flexibility and efficiency of use	Comma in hub black background fails to line up with the end of the profile background Blue map button on home does not reach top of the page	1 1	
8. Aesthetic and minimalist design			
9. Help users recognize, diagnose and recover from errors	No error messages if you forget to include a title in make a post	2	
10. Help and documentation	No help page at all	2	

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## Warren Binder:

**Heuristic Evaluation**

*Warren Binder*

Heuristic	Is the heuristic violated? How?	Severity
<b>1. Visibility of system status</b> <small>This heuristic requires that users receive timely information about what is happening in the system, so they can make appropriate decisions in a reasonable time.</small>	<ul style="list-style-type: none"> <li>- "Back to feed" button doesn't contrast well with background color</li> <li>- No cancel button for "Make a post"</li> </ul>	2
<b>2. Match between system and the real world</b> <small>This heuristic requires that the system matches with the user's mental model of the world. This includes things like consistency of language, matching user expectations, and providing clear feedback.</small>		
<b>3. User control and freedom</b> <small>This heuristic requires that users have control over their environment. It means that users should be able to undo actions, change settings, and have choices.</small>	<ul style="list-style-type: none"> <li>- No cancel to make a post</li> <li>- cannot deselect tag</li> </ul>	4
<b>4. Consistency and standards</b> <small>This heuristic requires that the system follows established conventions and standards. This includes things like consistent layout, predictable behavior, and standard icons.</small>	<ul style="list-style-type: none"> <li>- current courses don't stay consistent on each page</li> <li>- windows size changes when switching char (message)</li> </ul>	1
<b>5. Error prevention</b> <small>This heuristic requires that error messages are useful and prevent a problem from occurring in the first place.</small>	<ul style="list-style-type: none"> <li>- No error messages!</li> <li>- especially for making a post</li> <li>- required parts are not highlighted</li> </ul>	5

*Notes sheet (1)*

**Heuristic Evaluation**

*Warren Binder*

Heuristic	Is the heuristic violated? How?	Severity
<b>6. Recognition rather than recall</b> <small>This heuristic requires that users can recognize system activities and options rather than recall them. This makes it easier for users to remember how to use the system and provides better instructions for use if they forget.</small>		
<b>7. Flexibility and efficiency of use</b> <small>This heuristic requires that the user can easily switch between different ways of interacting with the system, such as keyboard and mouse, and that the system can adapt to different user preferences.</small>	<ul style="list-style-type: none"> <li>- clicking on tag doesn't sort the posts, kinda of like reddit</li> </ul>	2
<b>8. Aesthetic and minimalist design</b> <small>This heuristic requires that the system has a clean, simple, and uncluttered appearance. It also requires that the system is visually appealing and easy to use.</small>	<ul style="list-style-type: none"> <li>- Computer Hub block background fails to line up with current course's</li> <li>- blue map background doesn't extend all the way up</li> </ul>	2
<b>9. Help users recognize, diagnose, and recover from errors</b> <small>This heuristic requires that the system provides clear messages for errors, gives context, and suggests ways to fix the error. It also requires that the system is forgiving and doesn't blame the user for mistakes.</small>		
<b>10. Help and documentation</b> <small>This heuristic requires that the system can be used without documentation. It also requires that the system provides help and documentation. Any such documentation should be clear, concise, and relevant to the user's task. It should also be correct and not too large.</small>		

*Notes sheet (2)*

Based on the 10 Usability Heuristics for User Interface Design by Jakob Nielsen: [www.useit.com/heuristics.html](http://www.useit.com/heuristics.html)

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## Predictive Evaluation:

Determine where to park

M find class in legend

M find matching color on map

M decide which shape is parking lot

4.05 sec

Determine when to arrive

M find class time under legend

M find estimated walking distance

M perform calculations

4.05 sec

Switch to forum

P point to blue bar (no reason to use the keyboard since start)

P\_1 click

1.3 sec

Find an offer

\*(Optional)

P point to filter

P\_1 click

\*

M\*n where n is the number of offers you have to go through and skim to find what you want

$1.35n + *1.3*$  sec

Reply to offer

P point to post

P\_1 click

P point to text box

P\_1 click

H home to keyboard

Variable typing time

3 + variable sec

Make a request

H home to mouse

P point to make post button

P\_1 click

P point to the "request" button

P\_1 click

P point to title box

P\_1 click

H home to keyboard

Variable typing time

H home to mouse

P point to content box

P\_1 click

H home to keyboard

Variable typing time

H home to mouse

P point to time

P\_1 click

either

M find desired hour

P point to number

P\_1 click

M find desired minute

P point to number

P\_1 click

P point to submit button

P\_1 click

Or

H home to keyboard

K\*5 (hour, minute, AM/PM [1/2]) (num keys usually unused, using single key time)

16.4/11.95 + variable (title and content) sec

Reply to another message

M find another messenger

P point to messenger conversation

P\_1 click

P point to text box

P\_1 click

H home to keyboard

Variable typing time

4.35 + variable time

Switch to map

H home to mouse

P point to blue bar

P\_1 click

1.7 sec