

PROJECT I: WEB-BASED SERVICES INTRODUCTION.

The focus of our project is the Study Room Reservation website for UW-Madison students. Based on our experience using the site and our peers complaints about it, we agreed that the website is inefficient, confusing, and offers a great opportunity for improvement.

The website is a resource for students to find a private room for studying alone or hosting a group session. There are four different locations, some of which have rooms that are available 24 hours a day. Students find these rooms useful not only to study with a group, but to utilize other features such as whiteboards, chalkboards, computers, and projectors. Because the website is made specifically for students, we believe it should be intuitive for first time users to ensure that freshmen are not deterred from using it throughout their education.

Currently, the website is not intuitive because the pattern is not linear. The site supports searching for rooms, creating a reservation, and canceling a reservation. Our initial trials of these tasks made us wonder why there are so many steps required to complete simple tasks, some of which required at least 10 clicks (if no errors occur), and navigating through four different screens. We believe that these tasks are simple, and the effort needed to complete them can be reduced. Decreasing the number of steps per task and increasing the ease of navigating the entire site could be achieved by making the booking pattern more linear and reducing the options presented to the user to eliminate confusion.

We hypothesize that making simple changes to the layout, display, and pattern of the site will enhance the user experience. In order to test our hypothesis, we conducted a Contextual Inquiry in which we observed three participants navigate the site, noting the successes and failures.

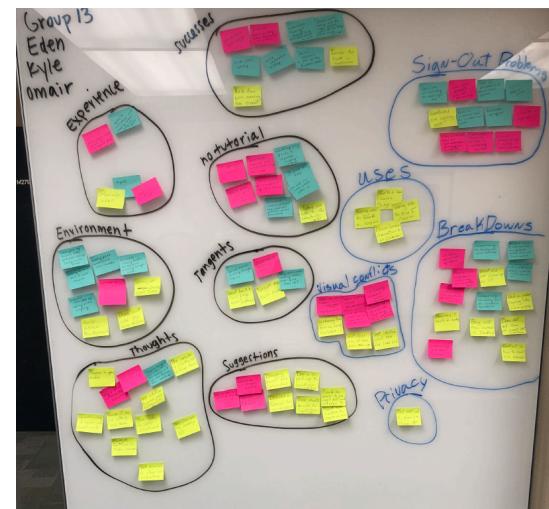
UNDERSTANDING.

In order to analyze the site's major flaws, we conducted three interviews, two students and one librarian, in order to develop a comprehensive understanding of how all users approach the site.

Our tasks included making a reservation, searching for their reservation, canceling the reservation, and signing-out.

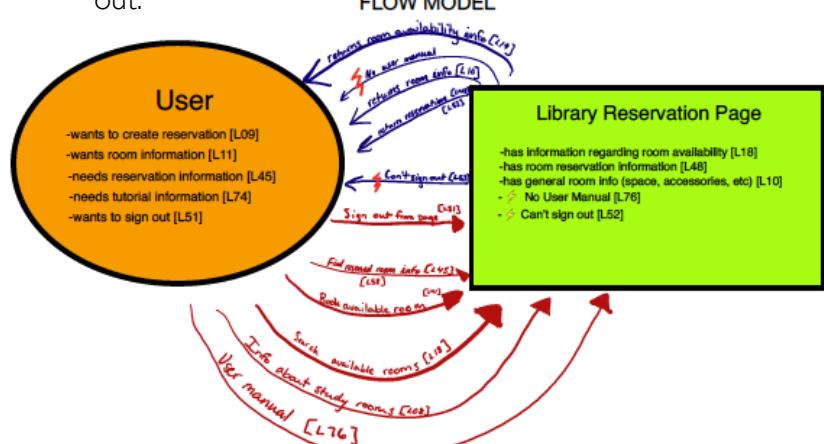
The data we obtained confirmed our hypothesis that the website's functionality is limited because users struggle to follow the pattern, causing them to get lost.

Our affinity diagram helped us pinpoint themes of the user experience, making it easier to distinguish the patterns that lead them to a breakdown.



Major Breakdowns

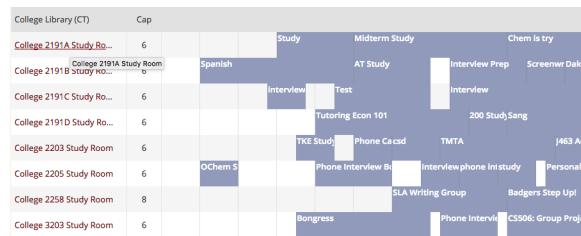
The breakdowns that occurred in every interview included creating a reservation, accessing the "help" resource link, and signing out.



PROJECT I: WEB-BASED SERVICES UNDERSTANDING CONTINUED

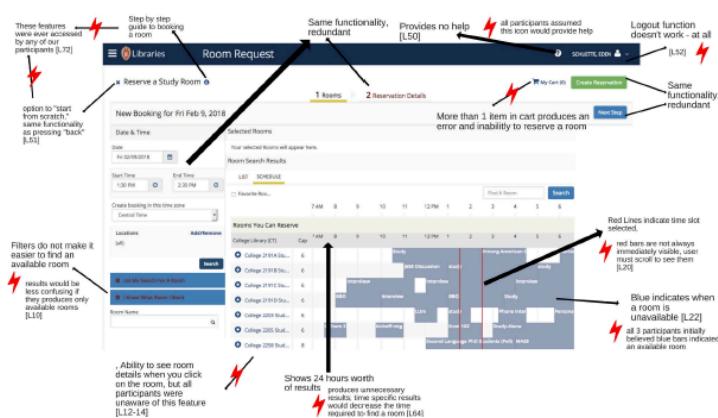
Search Results:

Most of the breakdowns occurred because of visual conflicts. The participants were confused by colors and shapes used to display results.



All three participants tried to select a time slots covered by a blue bar because they thought blue indicated availability.

The work-arounds the participants employed for this task included changing the date, time, and room out of frustration, indicating that a student with a specific study time in mind would become very frustrated with this seemingly straightforward task.



The artifact model we developed helped us recognize how important visual design is for users. We developed the artifact model using the interview transcript and a screenshot of the website for analysis. We added notes to the artifact model about how the breakdowns (indicated by red bolt) were caused by the visual interface of the site. Developing this model helped us realize that

the site could be majorly improved by providing a legend for the user, guiding them through the colors and patterns.

Help and Sign-Out:

Another major breakdown was navigating around two non-working features of the site.



The question mark icon is a promising sign that there is help available, but all three participants tried and failed to use this feature. Instead of providing a help tutorial or user manual, the icon navigated to a completely different website, leaving the user at a dead end.

Another broken feature is the sign out button. This is another feature that all three participants failed and found impossible to work around. They all expressed frustration vocally at this point, as they were nearing the end of the interview and had failed several tasks before this one. To the participants it was both annoying and comical that they were unable to sign out of the website, as they expected it to be easy.



We expected the librarian would be able to complete the tasks with ease, but she stumbled in making a reservation and had to shut down all her internet browsers to sign-out of the website.

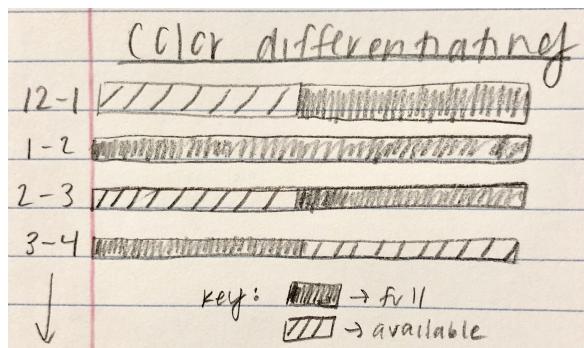
PROJECT I: WEB-BASED SERVICES IDEATION

The design ideas inspired by our Contextual Inquiry focus on simplifying the visual design and making the user pattern more linear and straightforward.

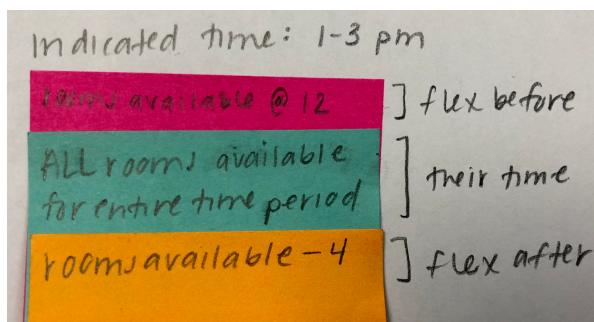
Search Results Display:

One of the major breakdowns we wanted to focus on was displaying the results from searching for a room. We wanted to improve the readability of the results by making the distinction between what was available and unavailable clearer.

Some of our first sketches focused on differentiating between colors.



We determined that even if the colors were more distinguished, the amount of results are still overwhelming and frustrating to filter through. We decided that rather than making the results easier to read simply through colors, we wanted to decrease the total number of results by filtering out unavailable rooms and presenting only available rooms to the user.

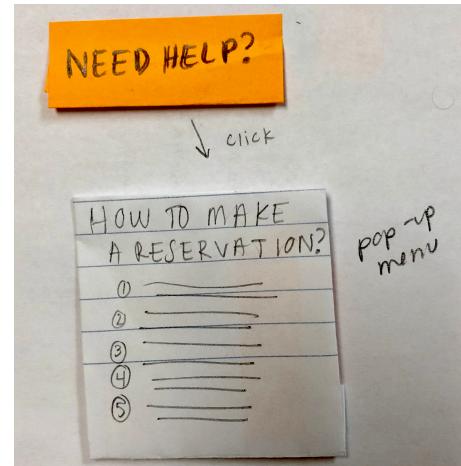


We filtered out the unavailable rooms from the results, and also decided to have “flex” options that would show the availability an hour before and an hour after the indicated time to ensure there were enough options provided for them to find a satisfactory room.

Help Menu:

Another breakdown we wanted to focus on for redesign was the “help” option. Currently, the small question mark icon provides no information on how to create a reservation, and no user manual. We think the option for “help” should be visually obvious, and when the “help” button is clicked, extensive and helpful information is provided on how to book a room.

We think these changes can be implemented easily by making the “help” button bigger, and creating a pop-up instruction manual.



Sign-Out

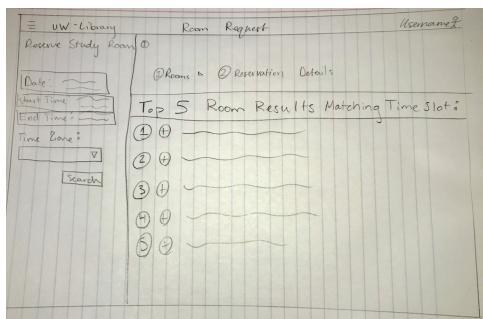
Finally, we wanted to make the sign out button functional. We knew this was a matter of making a technical change rather than a visual one, so we kept the visual appearance of it the same.

PROJECT I: WEB-BASED SERVICES PROTOTYPING

Lo-Fi Prototypes:

The first prototype we made had a similar layout to the original page. All of the major features were still located in their original places, and we focused on manipulating the search results. Initially, our lo-fi prototype filtered the results without any color coding, and focused on displaying only available rooms.

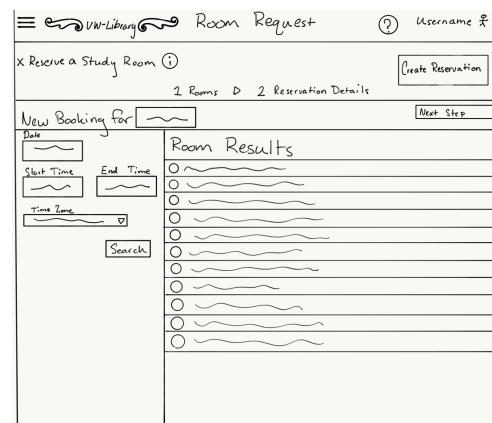
Our first idea was to have the user enter their desired time slot for a study room, and the results would feature 5 different options of available rooms during that time. Upon further analysis, we realized that while this simplification would make the process less confusing, it would cause other problems; at times of high demand there may not be 5 rooms available, and the user may not like the 5 rooms chosen for them.



We decided we could expand on this idea without over-simplifying by having the results display all available rooms at the desired time. This way users can have plenty of rooms to choose from, and all the results they are presented with are available.

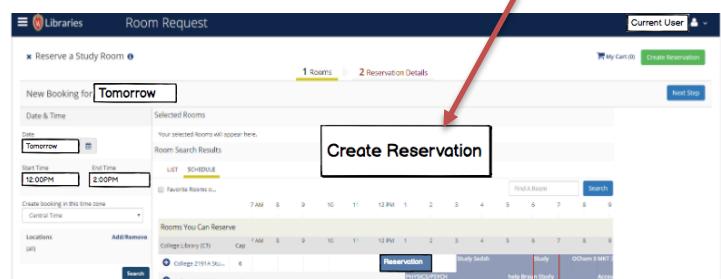


From our initial sketches we developed this wire frame lo-fi prototype that resembles the original site with our desired changes.

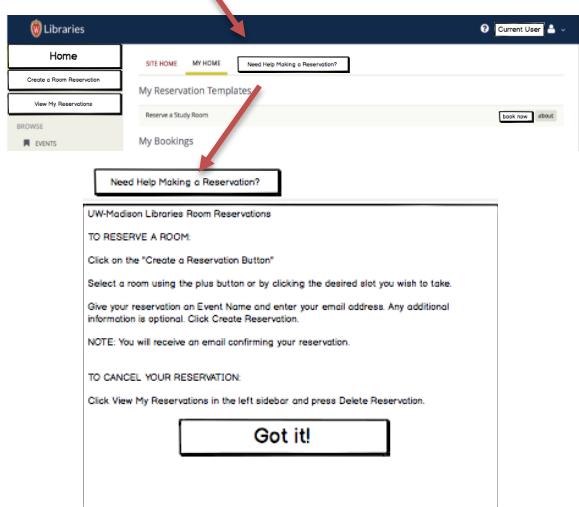


Hi-Fi Prototypes:

Implementing the ideas from the lo-fi prototype to the hi-fi prototype was challenging. We decided that although the display is confusing, there is value in featuring both the available and unavailable rooms as search results. To avoid confusion, we made the user's desired time bolder than the rest, and feature the "make reservation" button larger than the rest.



We also made the "help" icon a large, obvious button instead of a small question mark, linking it to a help tutorial.

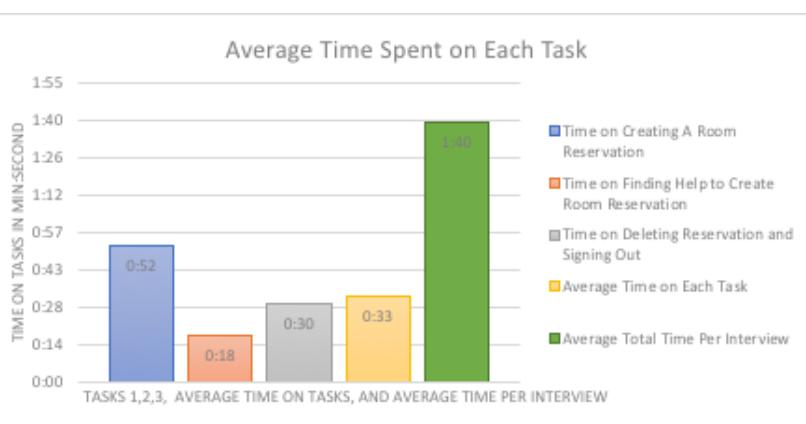


PROJECT I: WEB-BASED SERVICES EVALUATION

Our complete hi-fi prototype supports the same tasks as the original website but implements the changes we hypothesized would significantly improve user experience. In order to produce our final prototype, we first developed three separate prototypes for each feature we wanted to improve: result display, help link, and sign-out. Once we were satisfied with each of these prototypes individually, we combined them into a fully functioning and comprehensive prototype.

We conducted three interviews using our hi-fi prototype to analyze whether the changes we made improved the user experience. We had the participants complete tasks which included: sign in, create a reservation, find the reservation, find the “help” tutorial, and sign out.

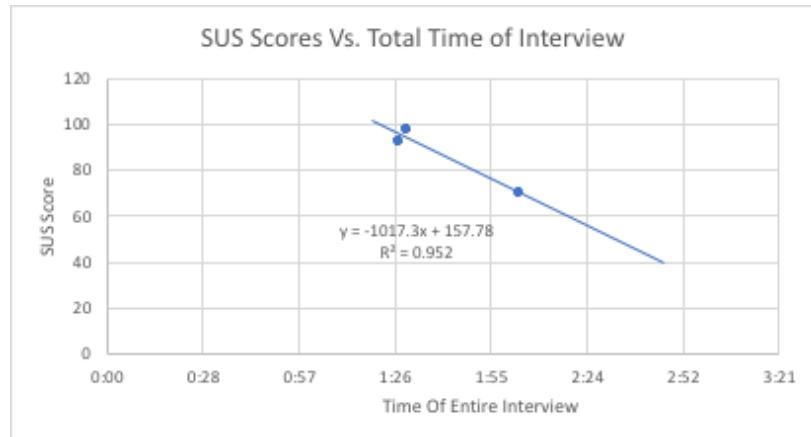
Based on these interviews we were pleased to find that the simple changes we made to the website reduced the total amount of time it took each user to complete every task.



During our Contextual Inquiry interviews, creating a reservation required the user to navigate through 4 screens, whereas our prototype only requires 2 screens. This is reflected in the total time required, as the average time per task for our prototype was

less than a minute – much faster than the original sites.

After our participants completed the tasks, they completed a Qualtrics survey as a form of user evaluation. The survey was an exact replica of the SUS questionnaire.



After analyzing the SUS scores and comparing them to the total time of each interview, we found a negative correlation between SUS score and total time to complete the interview, indicating that the longer a participant spent on the site, the lower their SUS score was.

We are satisfied with the SUS scores because they are consistent with what we learned in class, which is that lower SUS scores are predictive of poor user experience, and the more tedious and time consuming a task is the lower their overall satisfaction will be.

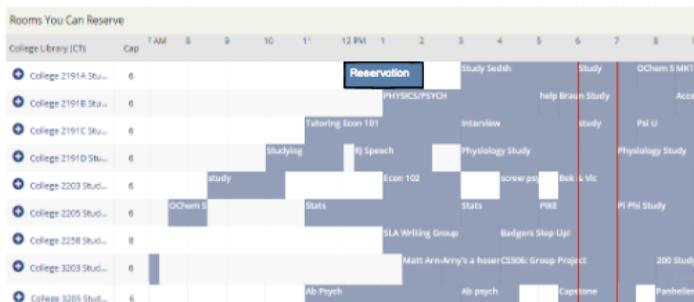
Overall, the changes we implemented using our hi-fi prototype were successful, but inspired us to continue thinking about improvement. The simple visual changes we implemented were effective, but even those changes did not give us confidence that users will enjoy their experience on the site. We think the future of this site requires a complete redesign.

PROJECT I: WEB-BASED SERVICES FINAL SOLUTION

By focusing on visual design and layout changes for our hi-fi prototype, we concluded that user experienced is enhanced when the site has less options, and it is easier to make choices when they are presented clearly.

Although the changes we made to the Library Reservation Room website in our hi-fi prototype improved the user experience, further refinement would enhance the experience, making it more functional and easier to navigate.

One area that needs more refining is the result display. We improved it by making the desired time selection bolder than the rest of the results, but we were unable to implement a more advanced change because of limited time and technology.



Ideally, the results would be more aesthetic and streamlined. Moving forward in the design, we envision the user selecting their desired time, and then being presented with the four locations to choose from.

Using pictures of the libraries eliminates confusion for first time users, and makes the visual design more enjoyable. It also makes the choice feel more familiar, selecting a building you know well rather than a line on a spreadsheet.



Once the time and location are determined, the user will see a pop-up screen with the available rooms displayed in green, followed by unavailable rooms in red for future reference of all possible rooms at this location.

PICK ANY AVAILABLE ROOM. OR, PICK A DIFFERENT LOCATION.	
COLLEGE LIBRARY	2/2/18 1:00 p.m - 3:00 p.m
21291A	
21291B	
2205	
2258	
2259	
3251	

We used Canva, a design website, to mock up our vision for the future of the site. These designs incorporate our initial ideas of using color and design to make the pattern more linear, require less clicks, and make the user experience more enjoyable overall.