RESPONSIVE WEB DEVELOPMENT

Project Two

Soap & Solutions

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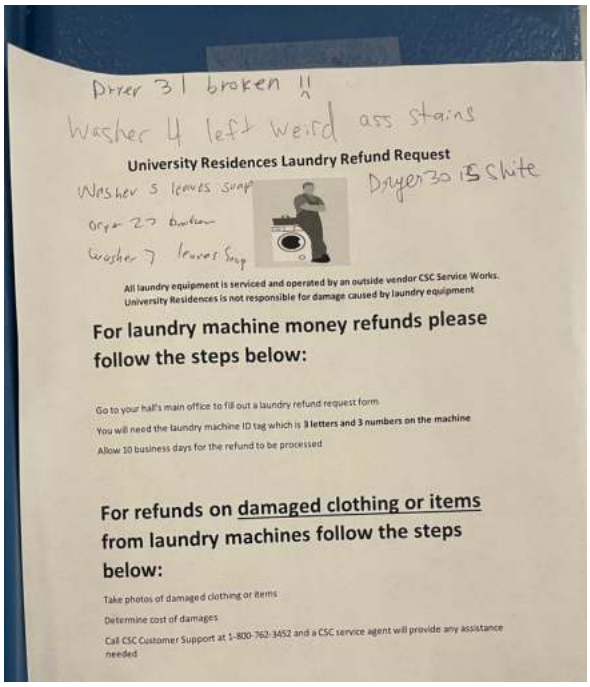
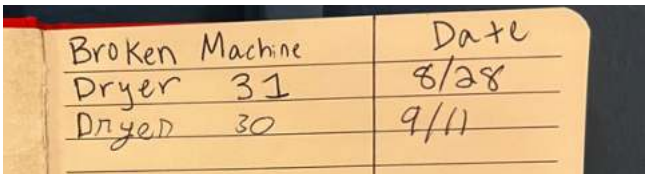
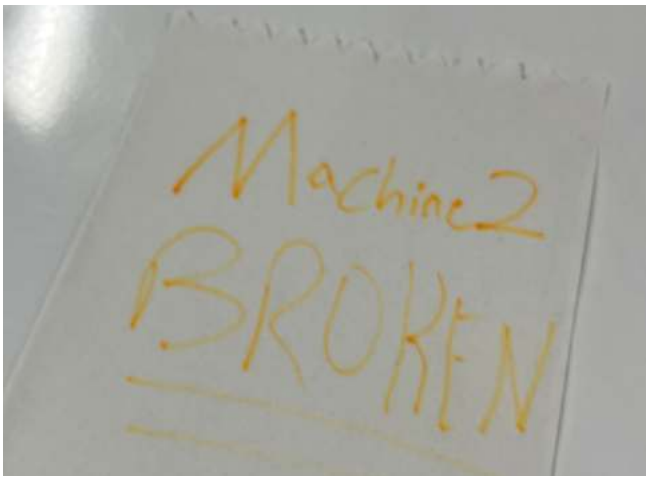
PROBLEM SPACE







Purdue's laundry system is riddled with issues, including those regarding machines as seen above. Machines are often out of order, or often all in use at choice times. However, the current method of communicating machine status is word of mouth or written notes. This is not only inefficient, but costly for users, in terms of time and money.

MAIN QUESTION

How can we employ technology to provide students with an efficient laundry experience?

GOAL

Address user pains of lost time and money by providing a laundry solution focused on machine availability and information sharing, offering improved refund and machine reporting abilities as well.

STEPS

- Interview to understand user pain points
- Research & analyze other laundry systems
- Ideate & mockup
- Engage users in a co-design to discover project opportunities
- Code a responsive web experience that improves Purdue's laundry system

USER GROUP

Potential stakeholders include the Laundry mechanics department, as well as the current IT team for the laundry system. We tried our best to get in contact with them, however, we weren't able to reach them. So we prioritized our focus on **Purdue students living in resident halls.** We set out to interview them and got feedback from 10 students who have experience with the laundry system.

INTERVIEW

LINK TO THE INTERVIEW PROTOCOL

The focus of our interviews was to gain a broad understanding of users' experiences with the current laundry system. We wanted to understand what processes/offerings currently work, and which caused unnneccesary troubles. We also asked about potential new features such as a reservation system and a way to check machine availability. Finally, we gauged interviewee interest on a new laundry system and how much they'd use a website with our proposed features.

INTERVIEW FINDINGS

Out of 10 participants, we developed the following findings:

- **Experience with Purdue Laundry:** Interviewees unanimously described poor experiences, with key complaints being busy laundry rooms, soaked clothes due to broken washing machines & an inability to dry clothes in broken dryers; Overall, the process is seen as costly for time and money, with users having to repeat loads; 5/10 participants have had their clothes removed from the machine by another person
- **Repeat Issues:** Machines are almost always either broken or taken, and these aren't well communicated; Lack of enough machines; Laundry process is overpriced for poor quality
- **Pros of System:** Overall, interviewees noted that the laundry system is easy to use and is well located. The payment system is easy to use as well.
- **Cons & Complaints of System:** Some interviewees thought prices to be higher than necessary, and the poor refund system adds to the problem
- **Reservation System:** Users had mixed views on the idea of reserving machines ahead of time; while 4/10 were neutral on the issue, 4/10 didn't approve and thought issues of poor timing and no-show reservers could arise. They thought it could make the availability issue worse. Only 2/10 actively supported the idea.
- **Machine Availability:** 10/10 users agreed that seeing the machines available
- **Website/App Use:** All 10 interviewees approved of and stated they would use an online system to improve the laundry system
- **Favorite Ideas:** 8/10 interviewees agreed that seeing machine availability ahead of time would be the most helpful site feature; 2/10 championed a cheaper system with improved refund abilities

INDUSTRY RESEARCH

COMPETITOR SCHOOLS

The laundry industry is an industry that affects every single person who machine washes and dries their clothes. While there are so many people that do laundry, we are focusing on how universities and laundromats conduct their laundry systems.

Every university has to provide laundry services for students. For industry research, we will look into the laundry systems of other universities as well as the laundry systems of laundromats.

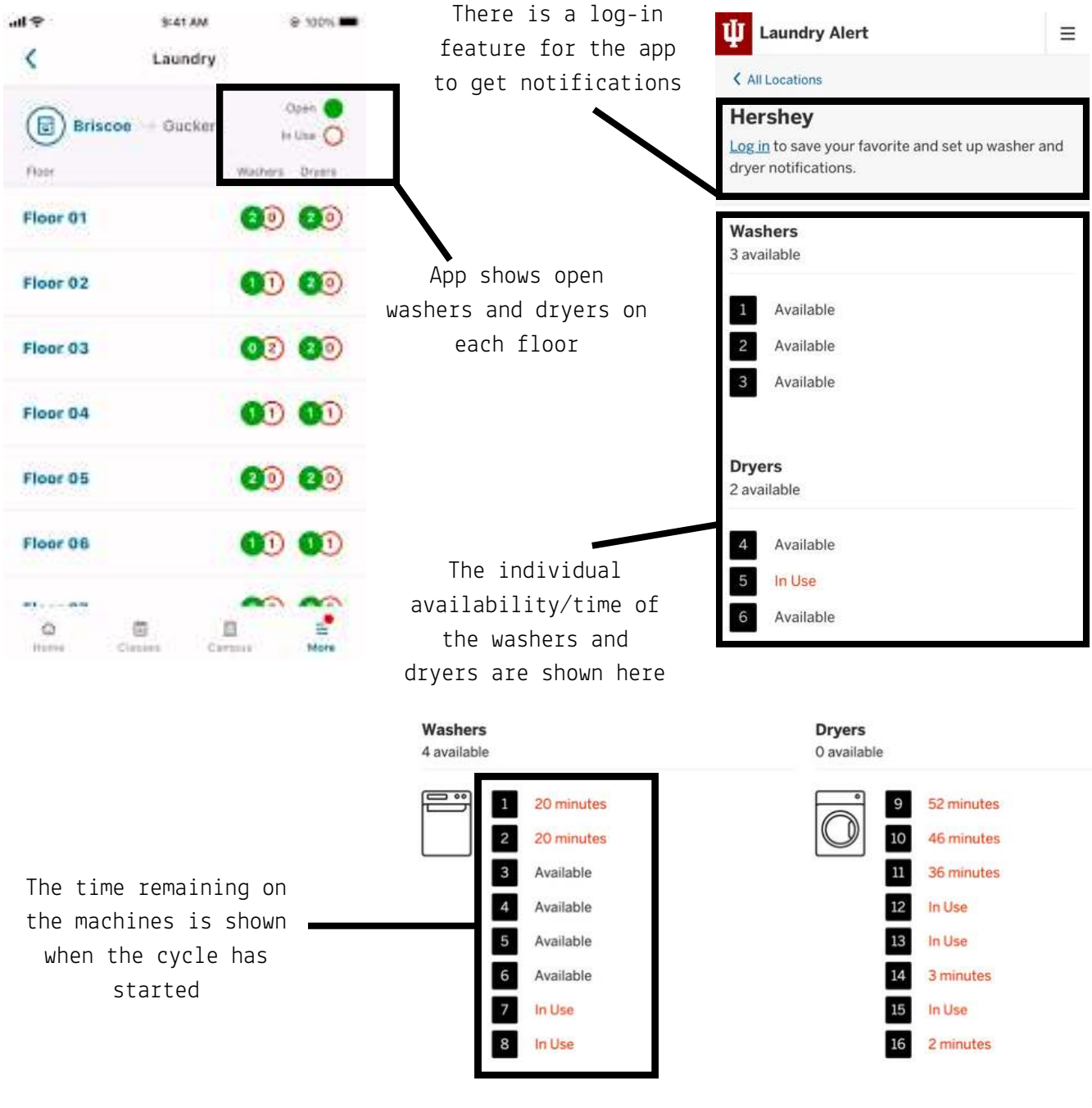
Our solution will potentially give students a better laundry experience at Purdue University.

IU'S LAUNDRY SYSTEM

IU is Purdue's biggest rival school, and they happen to do many things better when it comes to laundry...

Strength	Weakness	Opportunities	Threats
• Tracks machines that are open • Allows students to see when laundry rooms are busy • Provides students/school with data on when people do their laundry	• Doesn't allow students to reserve machines • Doesn't allow students to report broken machines • Doesn't allow students to appeal for a refund on their laundry machine	• Could allow students to track progress of their machines • Could allow students to lock their machines during washing/drying • Could allow students to add time to dryers in progress	• Students remove laundry that has been sitting in machine for a long time • Students can still steal clothes from machines • No way to monitor laundry time

INDUSTRY RESEARCH MEDIA



Insights:

- Indiana University uses a mobile application format to display the content instead of a website
- They show the number of minutes left for each load
- Log in feature to favorite a residence hall, so the user has to take less steps
- Users get dryer and washer notifications

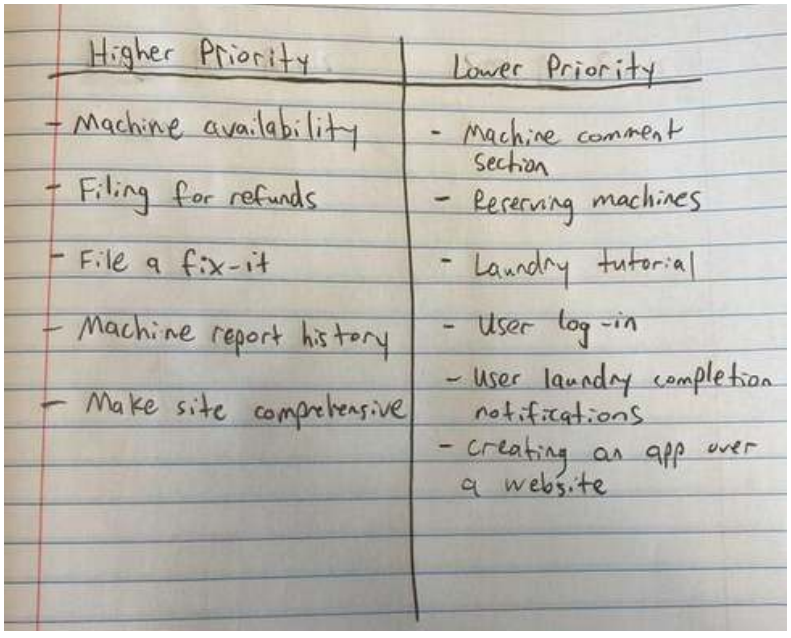
Link: https://one.iu.edu/task/iub/check-laundry-status-mobile-notification

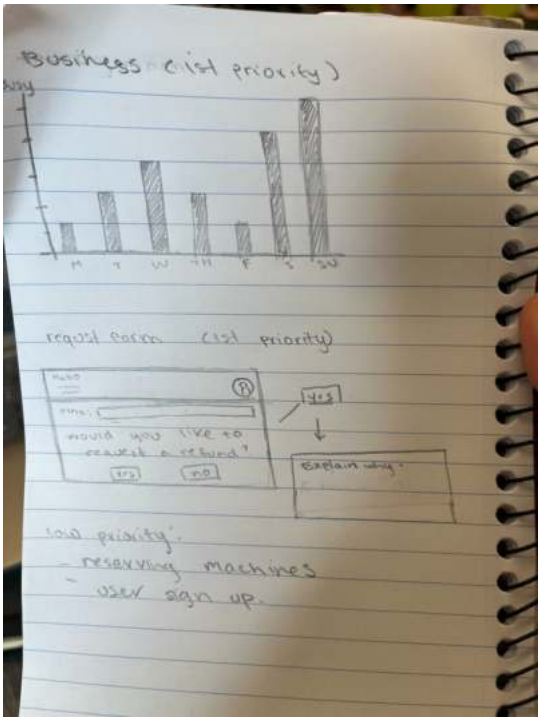
INFORMAL IDEATION

From the interviews, we identified that the main pain points to target are machine availability and the refund process. With the interview feedback, we performed early ideation on features our users may find helpful, and wrote our thoughts below:

- Real time availability scale
- Reporting machines/File a Fix-It
- Refunds
- Comment section so people can report machines that flood/need maintentance/don't dry right; and/or a way to indicate which machines are broken that isn't fix it worthy?
- Diagnostic question after machine use: Have you switched loads/removed your clothes? Did you have a problem with this machine?- these can go over text
- user sign up- if they'd like notifications they can enter their phone number
- Reserving dryers only, ahead time- probably not
- Tutorial on laundry system?

Additionally, we prioritized features and performed some early sketches





USER JOURNEY

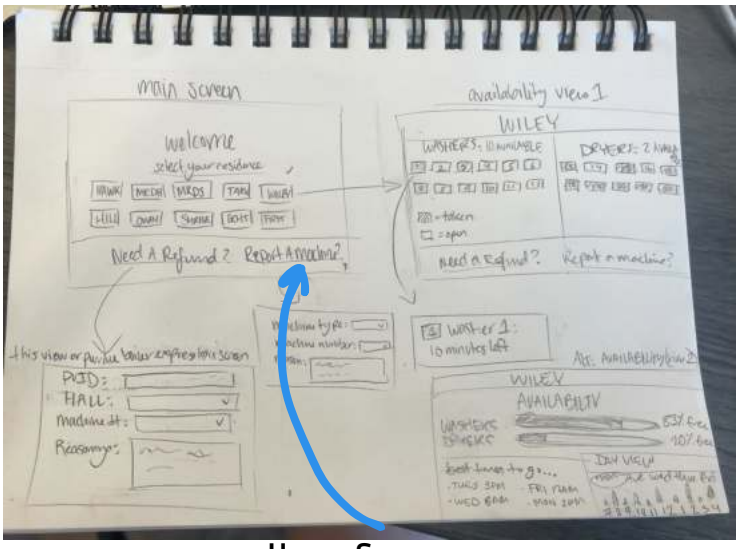
To better our understanding of our user group, identify pain points chronologically, and visualize them, we developed a persona's experience with common issues in Purdue laundry rooms.

John Smith is a typical college student: busy and on a budget. He's anxious to finish his homework and doesn't have hours to spend doing multiple loads in the laundry room. He's also a penny pincher, and after paying for his tuition, hopes unneccessary laundry charges won't add to his expenses.

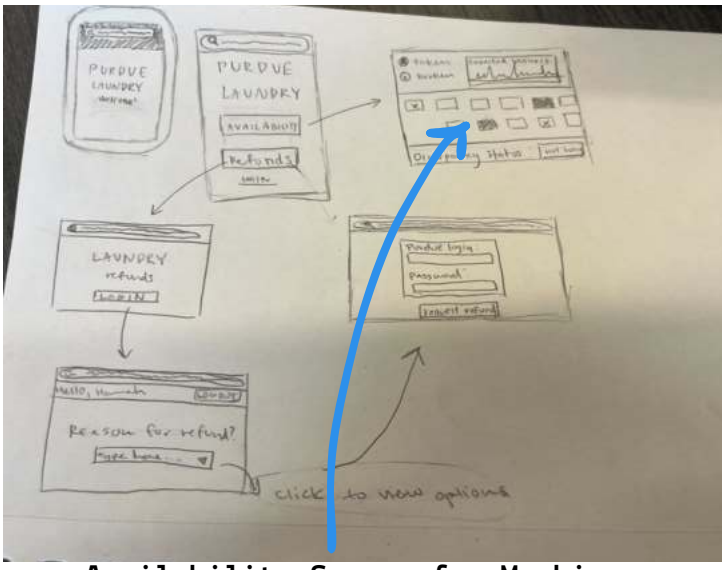
After sympathizing with the persona, conclusion we drew from the user journey was that users have issues picking laundry machines that work and getting refunds for the broken machines. These setbacks can be costly in terms of time and money, which bring on feelings of annoyance, anxiety, frustration, and sadness. From this, we identified changes that users would benefit from. These included reporting which machines are available and working to avoid initial annoyance, as well as providing ways to mitigate the anxiety and sadness that come with losing money, such as providing a streamlined refund service.

INITIAL IDEATION SKETCHES

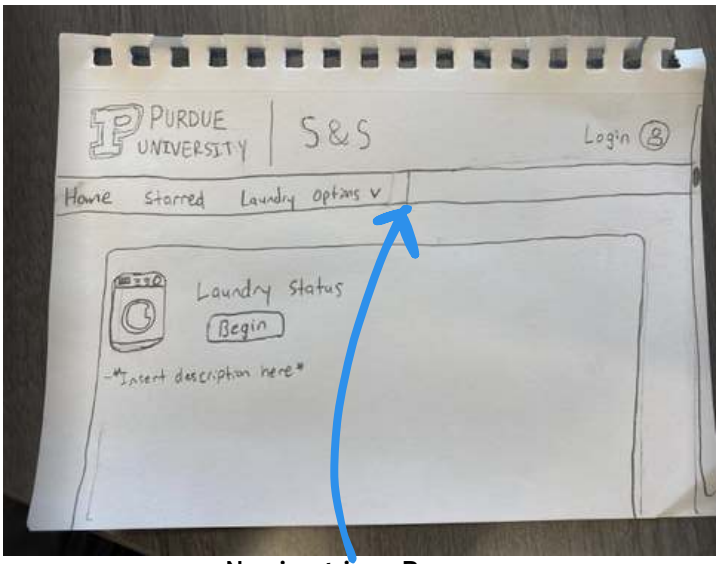
Sketched features include: home screen, the availability screen for machines, and refund forms.



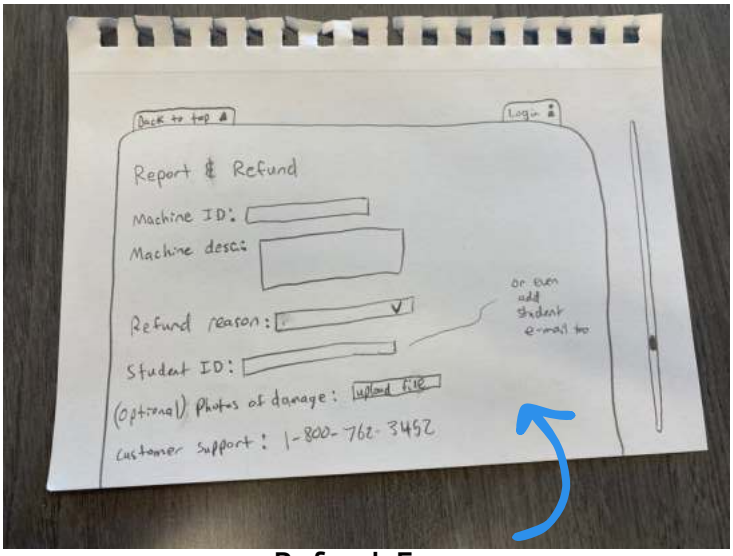
Home Screen



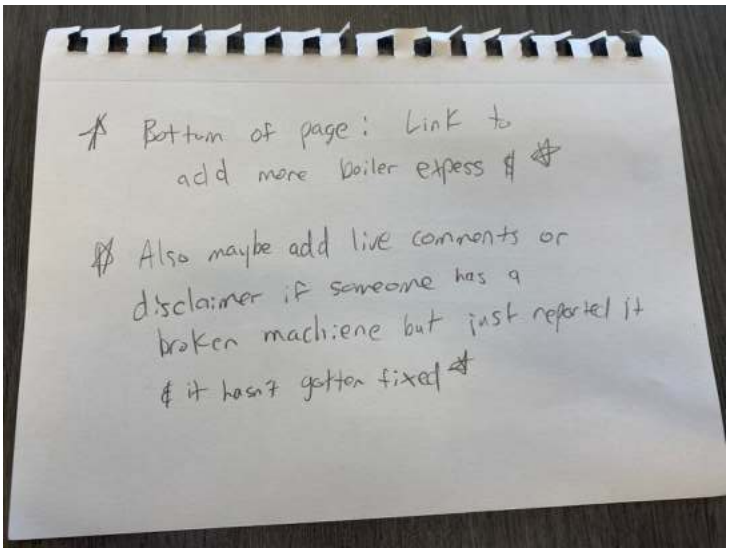
Availability Screen for Machines

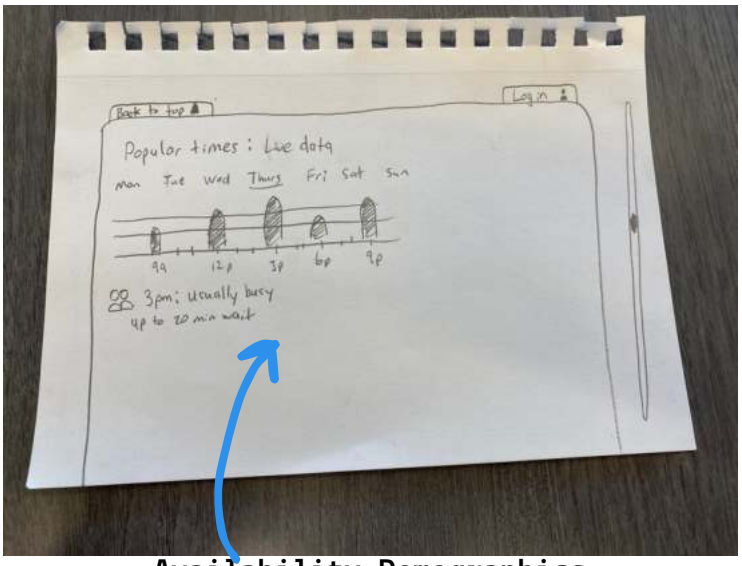


Navigation Bar



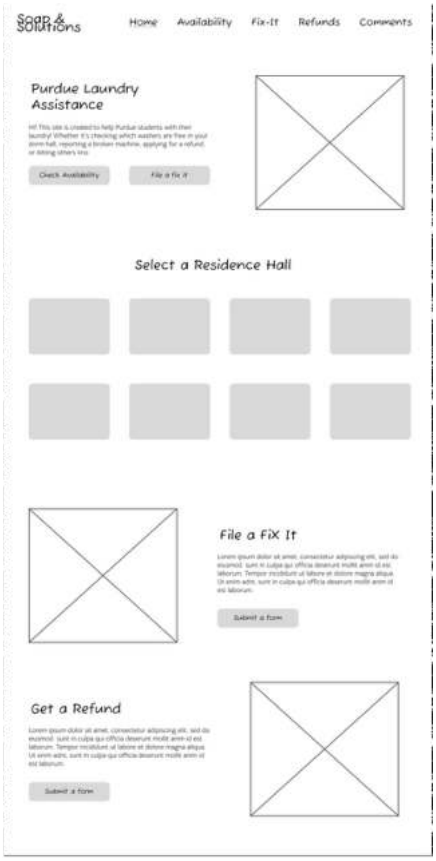
Refund Form

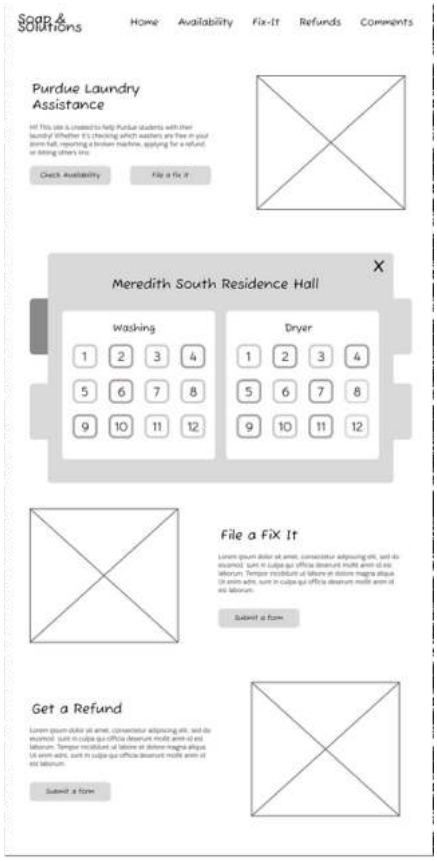


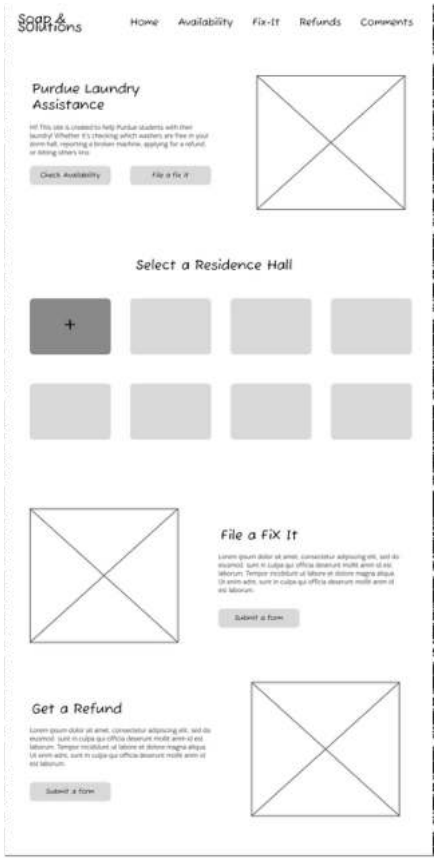


Availability Demographics

LOW FIDELITY MOCKUP







For our lofi mockup, we decided to implement features of the commonly identified problems from our interviews. With scheduling and refunds being the main issues with the Purdue laundry system, we decided to add options where users can see the availability and status of the machines. When needed, users can file a fix-it form and request refunds when issues with laundry machines occur. These forms would be submitted to our hypothetical laundry service.

CO-DESIGN

After recruiting 4 of our interviewees to participate, we had the folllowing goals for our codesign:

- Challenge participants to think like designers
- Better understand our users' pains & expectations for the website
- Take away new design opportunities

PROTOCOL

Link

Activities we included:

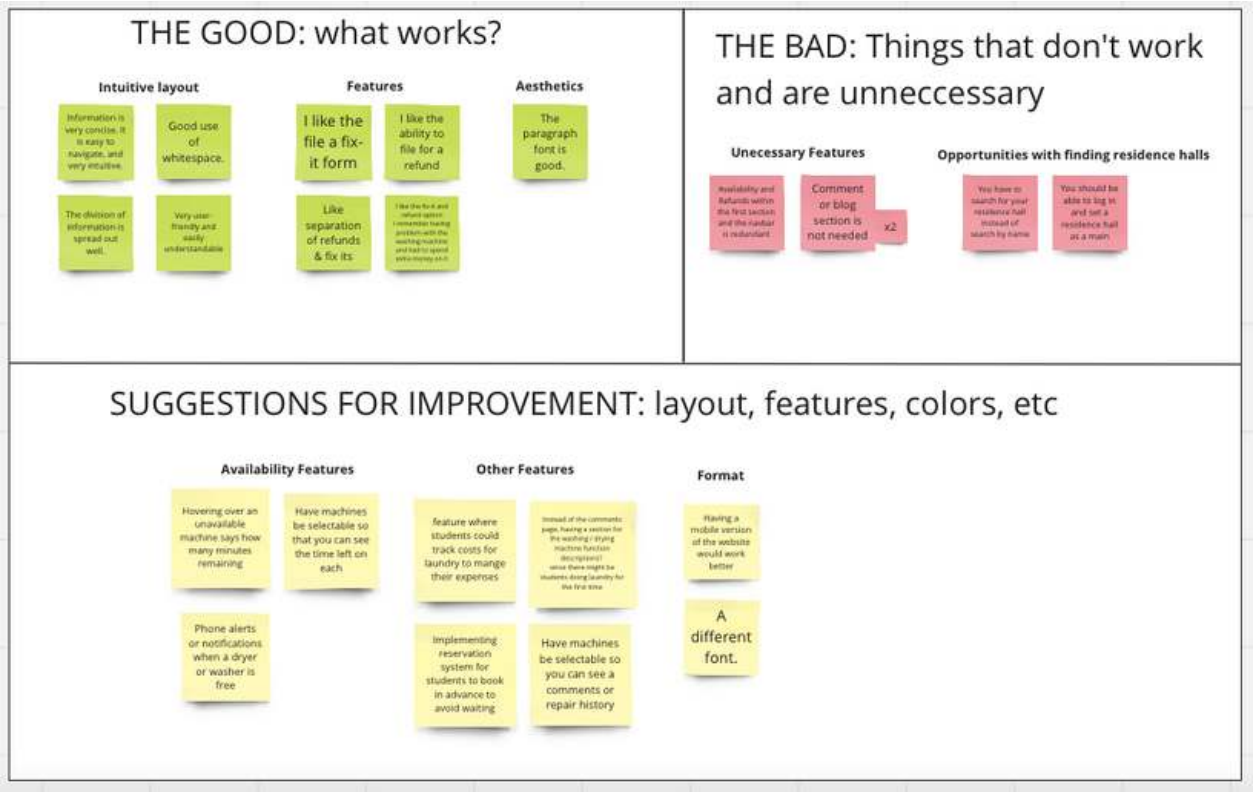
- Icebreaker
- Slideshow: Gave the background of our problem space & discussed interview findings
- Ideation: Participant's made their own lofi of a laundry site
- Feedback: Participants gave feedback on our lofi and affinity diagrammed on Miro
- Competitive Analysis: Participants gave feedback on IU's site and affinity diagrammed

RESULTS

Our codesign helped our participants understand the problem space better, as they reported. It opened their minds to features such as a streamlined refund process, and reinforced their confidence in using a laundry site. It also helped them ideate, and they came up with new features they'd like to see, such as hovering to see how much longer an in-use machine has left, and an ability to see repair history and comments on a machine to know more about its conditiion.

CO-DESIGN MOCKUP FEEDBACK

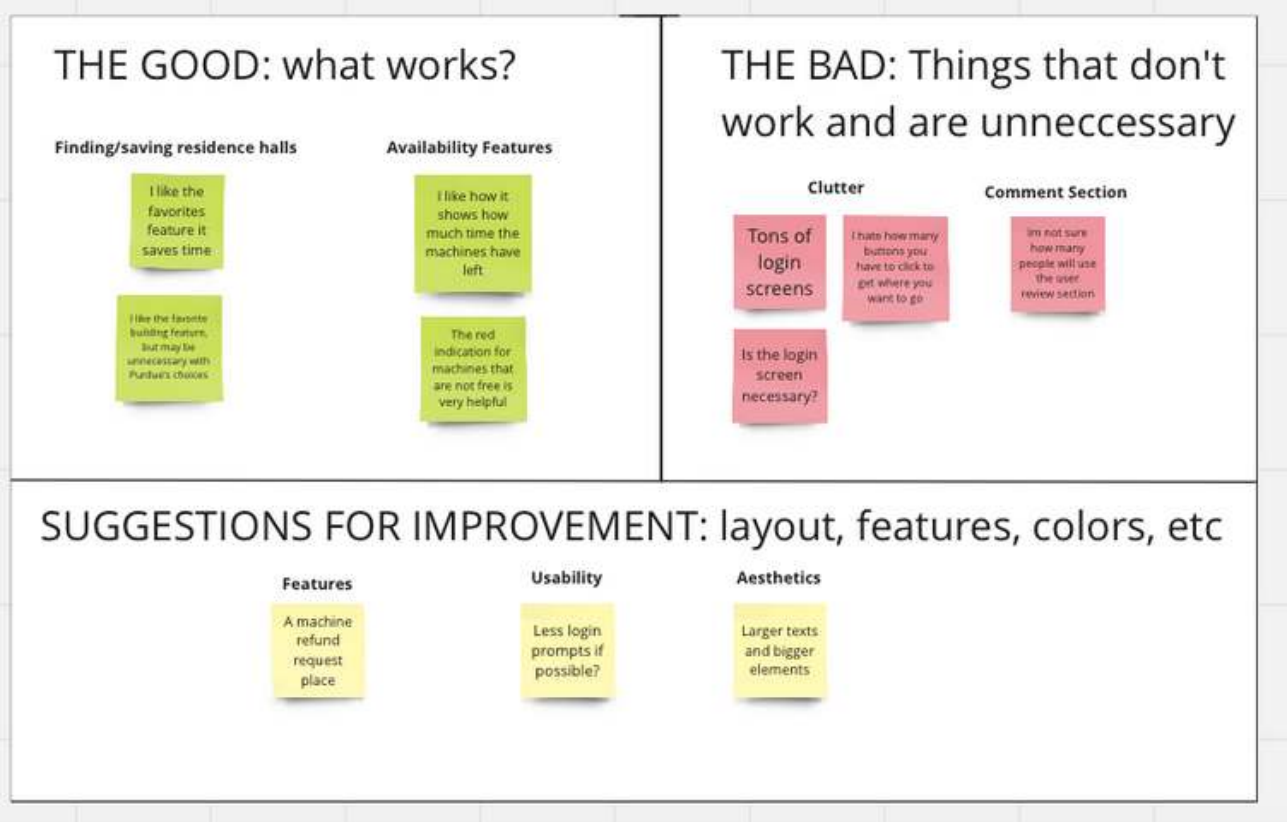
Our Lofi



Positives: Easy navigation, intuitive designs, refund & Fix it features
Pains: Redundancy of buttons
Suggestions: Participants wished the process of choosing residence halls was more streamlined, with an ability to search for and favorite halls. Also they suggested hovering on in-use machines to see time left, sending notifications for newly free machines, an ability to see machine comments and repair history, the addition of a laundry tutorial, linking our site with BoilerExpress to track costs, and adding a reservation system.

CO-DESIGN MOCKUP FEEDBACK

IU’s Laundry System



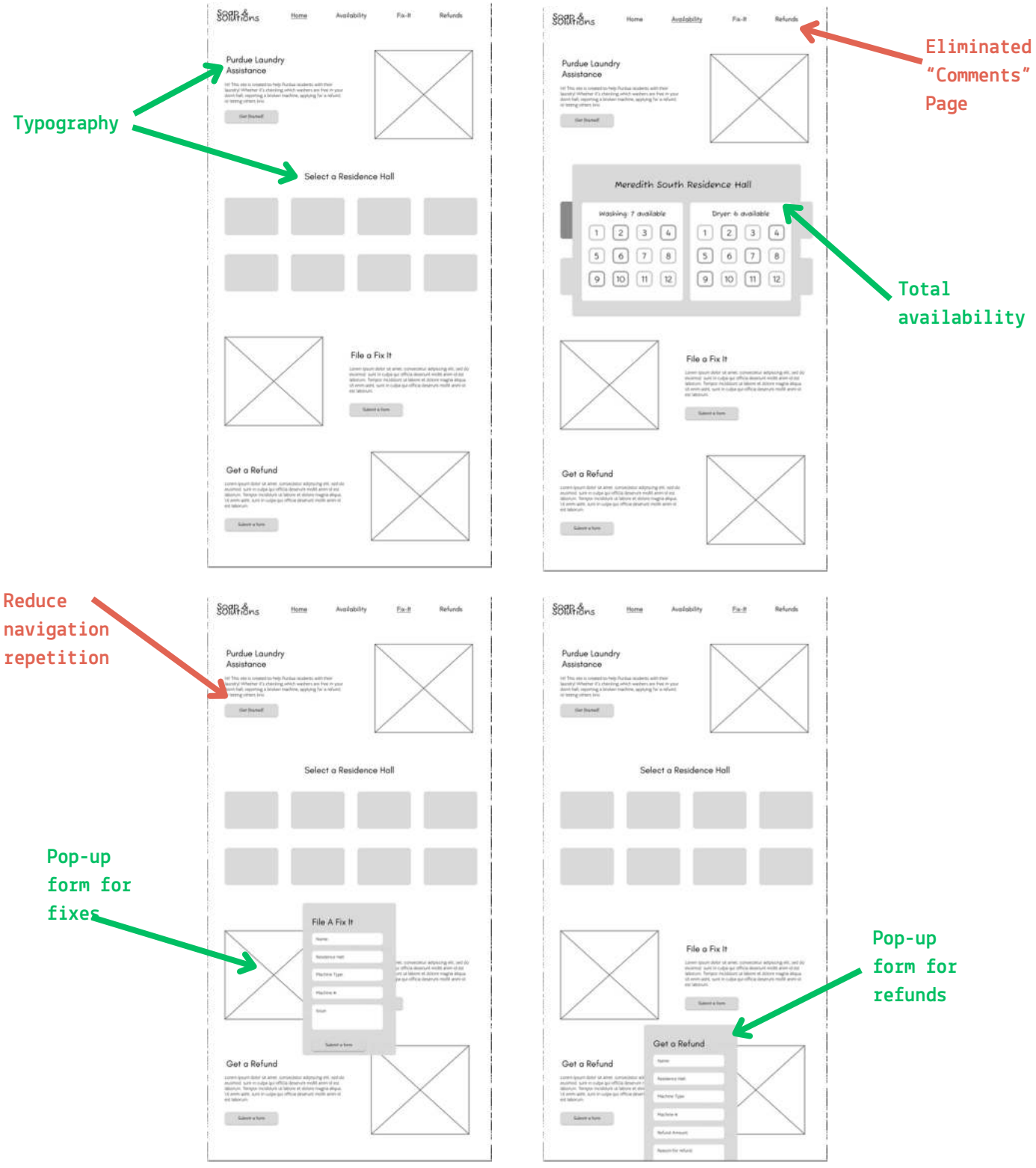
In an optional portion of our codesign, we had our participants share their views on IU’s laundry system

Positives: the ability to save favorite laundry buildings and seeing how much time machines in-use had left

Pains:the clutter and difficulties of excess login screens and an uneccessary review section

Suggestions: Participants wished for a refund feature, simpler navigation, and larger design elements.

REVISED LOFI MOCKUP



We revised low fidelity mock-up based off of the information we gathered from our codesign results. We had participants review IU's current laundry system as well as our first lofi mockup. The feedback we received asked for us to include the time left for the machines. However, we aren't sure if we can access that information about the laundry machines. We will need to do more research to see if this feature would even be a possibility. The major design changes like including a pop up form was integrated so the user has to take the least amount of steps to accomplish their desired goals.

PROJECT ROAD MAP

With our codesign finished, feedback compiled, and mockup revised, our immediate next steps include presenting our lofi and design space and receiving class feedback. Afterwards, we will create a hi-fi and usability test it before coding our final solution, updating our documentation along the way. We'll complete final testing with our user group, and look forward to presenting our results in class come October 15. The chart below details our upcoming actions:

NEXT STEPS

The roadmap highlighted our team's action plan for finishing project one. Along with tasks, we want to take a deeper dive into the new content we were asked to integrate from our co-design. A great piece of feedback from the activity was adding machine timestamps that will allow students to better plan their laundry room visits. Unfortunatley, with the knowledge we currently have about Purdue's laundry system, the only way to check the timings on the machine, is by looking at the actual machine. It's not listed on the payment screen. So, as part of our next steps following our presentation we want to do another round of research/user interviews with the Purdue Laundry Service, to better gauge the possibilities surrounding this new idea. We hope to come up with an innovative strategy that can assist students with their laundry runs.

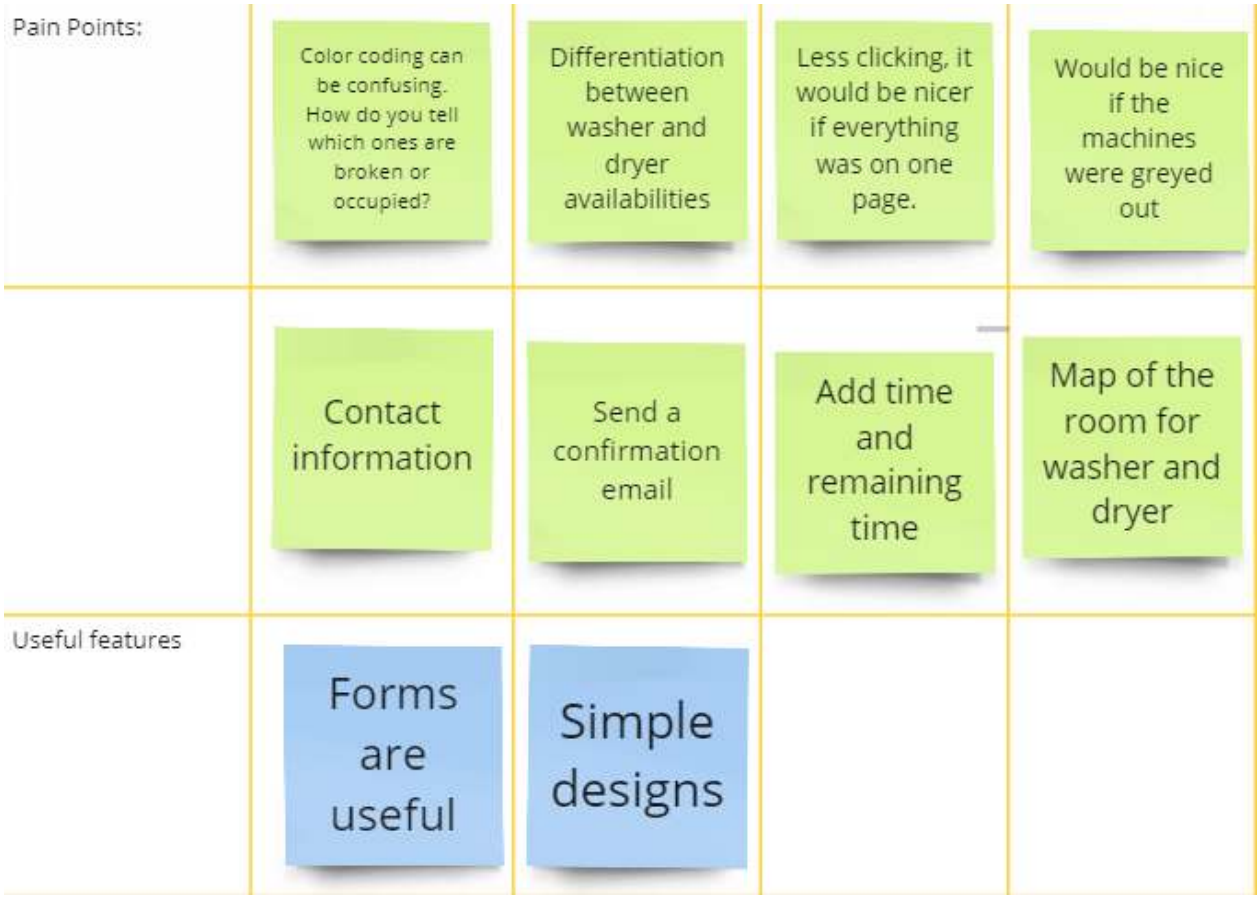
USABILITY TESTING

We took our initial HiFi and tested it with 5 students

To specify, our initial design involved the following elements commented on by our testers:

- Red & green colors indicating machine availability
- Having to click a button to navigate to a second page for residence halls, as opposed to fitting them all on one page

The following are our participants' ideas for improvement summarized in our Miroboard:



HIFI (UPDATED)

HiFi Layout in Figma

HiFi Prototype

To best provide for our users, we updated our HiFi with new features and details indicated in our feedback. Changes made after usability testing include:

- Updated machine descriptions with repair history on click (idea from codesign)
- Show time left for in use machines on click, not hover
- Show out of service machines on hover (with X on broken ones)
- Fit all machines into one page, got rid of “See More” button
- Added washer & dryer icons
- Changed red & green machine colors to grey (in use) and blue (available)
- Require Purdue email entry on forms; could allow for a confirmation email to be sent
- Added more accuracy to refund requests (added more forms)

HIFI LAYOUT

(Single Scrollable Page)

Machines: Availability & OOS

Machine Descriptions: Time left & history

Fix It Form

Refund Form Page 1

DESIGN SYSTEM

Colors:

Buttons & textboxes: C7E0E8 (below) or white

Submit

Fonts:

Logo: Sansita One - Laundry , LAUNDRY

All text: Sarabun - Laundry , LAUNDRY

Logo:

Soap & Solutions

Icons:

Washer: 

Dryer: 

Photos:

Background:

Home:

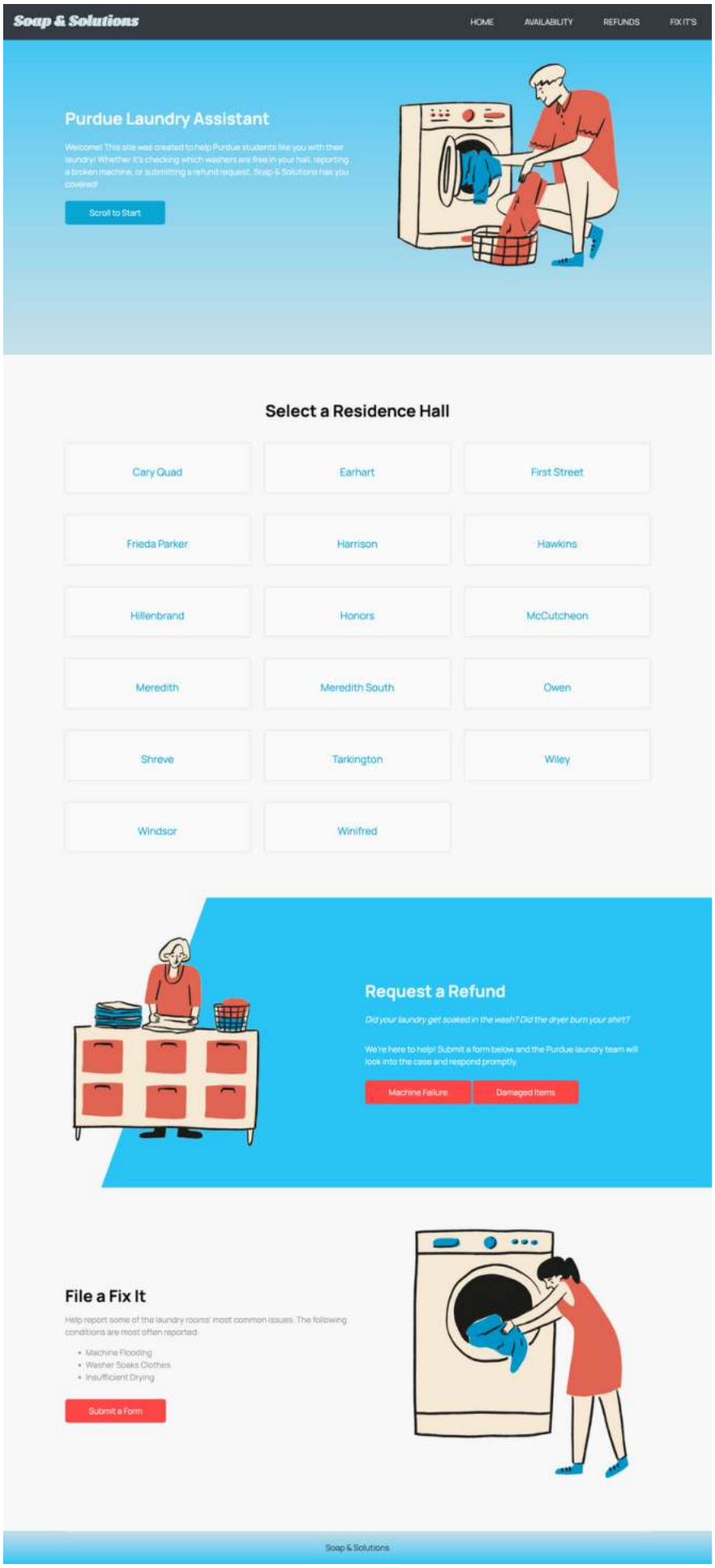
Fix it:

Refund:

SITE CHANGES & LAYOUT

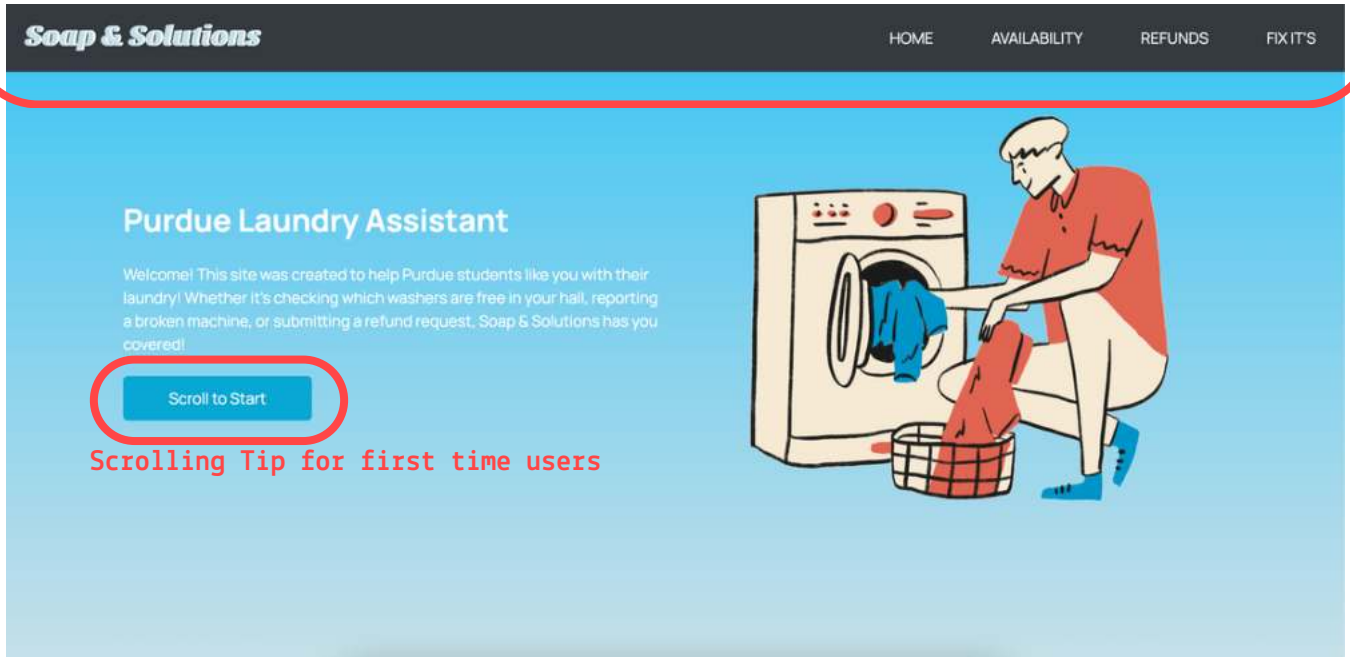
When turning our HiFi into code, we noticed few limitations. Our major features including the residence hall list and forms were feasible. **However, we did change aspects of our design as we went. These changes include:**

- **The design system:** Although not commented on in our testing, we felt the font, images, and colors we used previously weren't the most coherent. We instead wanted a modern look with consistent illustrations. Typography plays a sizable role in aesthetic and user experience, therefore we tested many fonts, and ultimately decided on one that we felt was clean and simple. As for the color scheme, we chose one more fitting for laundry, similar to colors brands like Tide and Downey use.
- **Representing machine availability with words, as opposed to just colors:** Colors such as red and green can be difficult to differentiate for those who are color blind, as reported in our usability tests. We felt these colors were the most intuitive though, and adding "Available," "In Use," and "Broken," would alleviate confusion while maintaining a logical design.

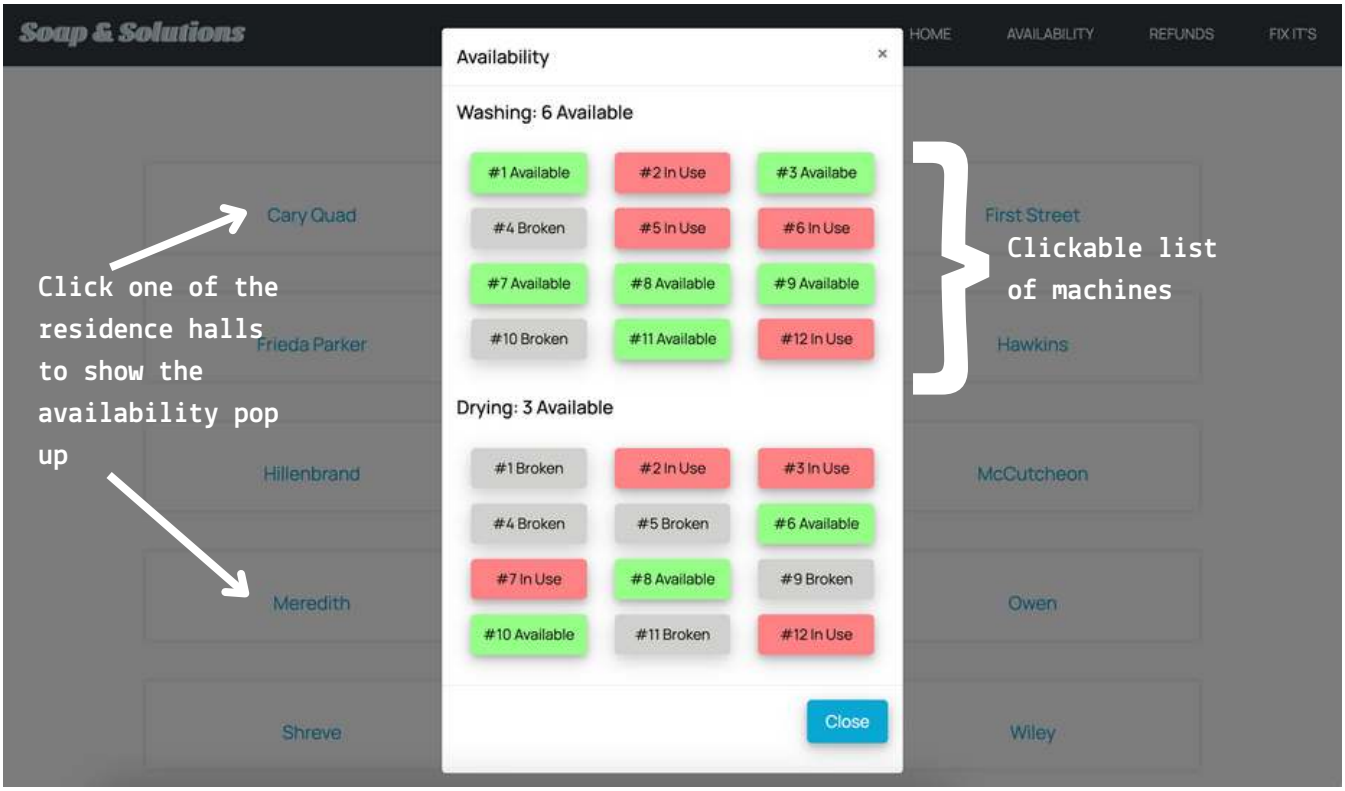


WEBSITE FEATURES ANALYSIS

Fixed Navigation Bar

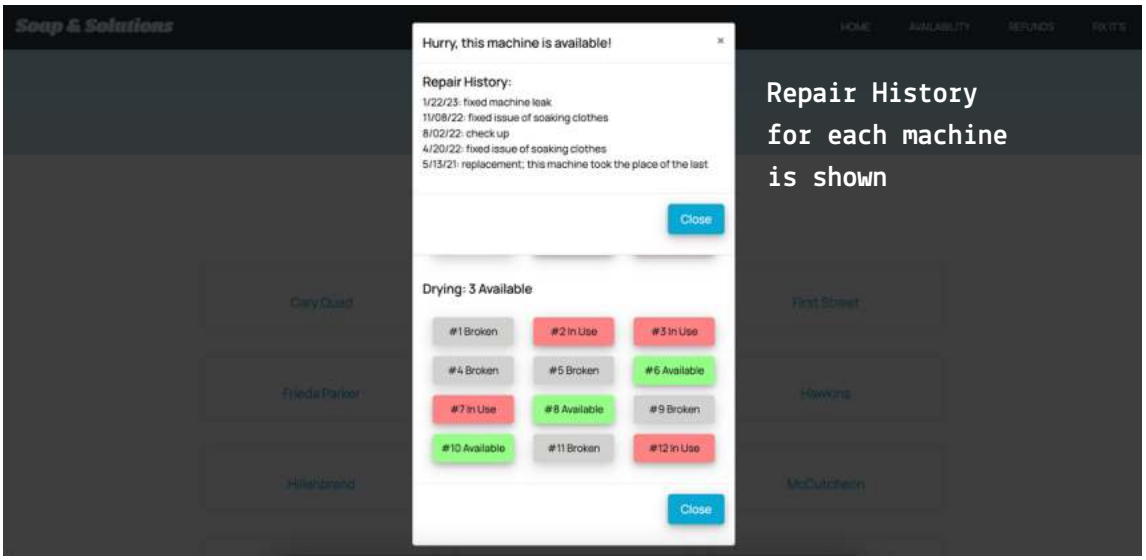


Home Section

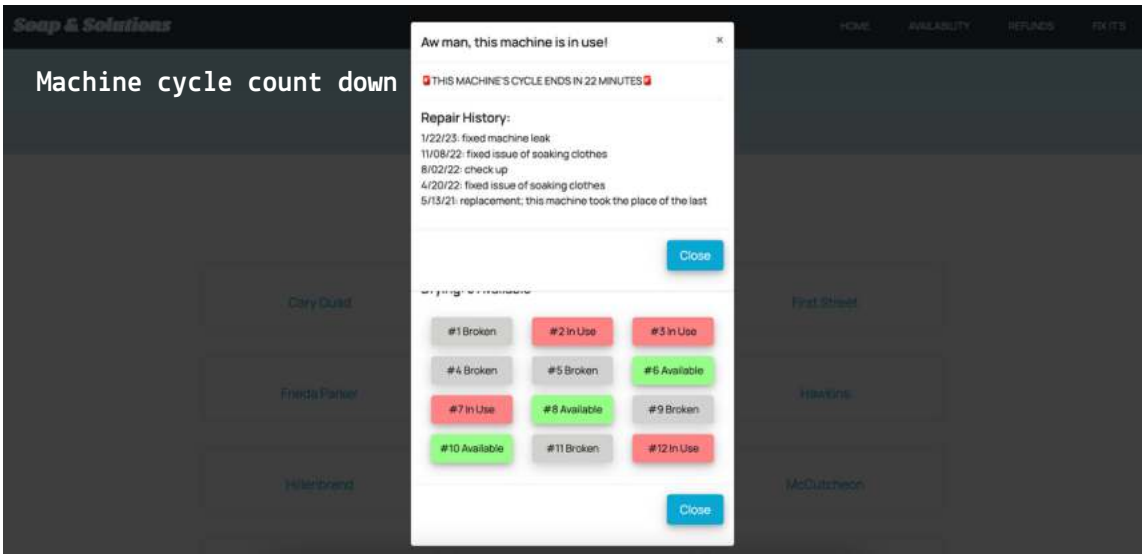


Availability Section

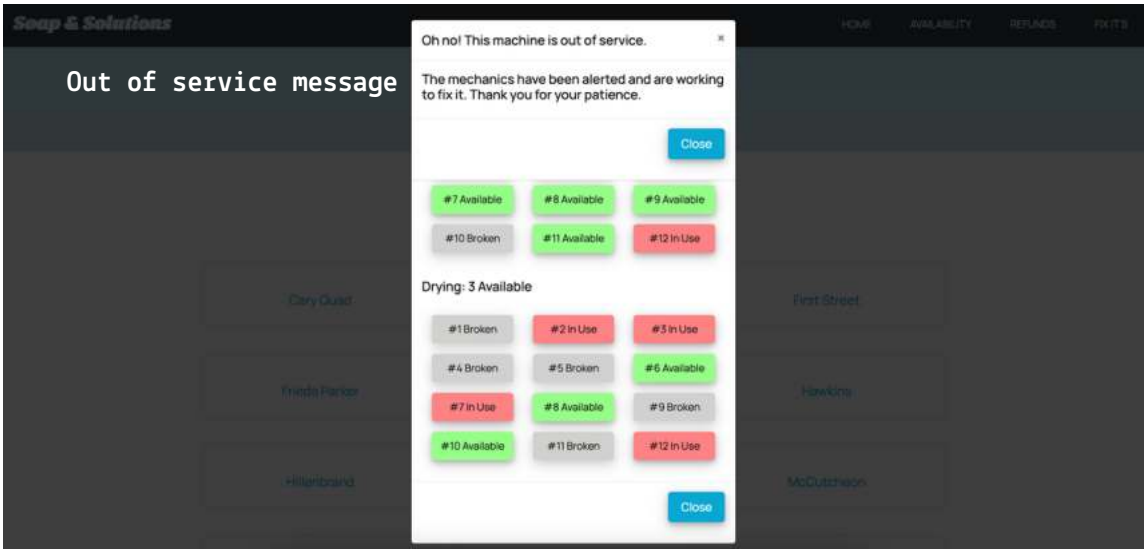
WEBSITE FEATURES ANALYSIS



if “Available” button is clicked

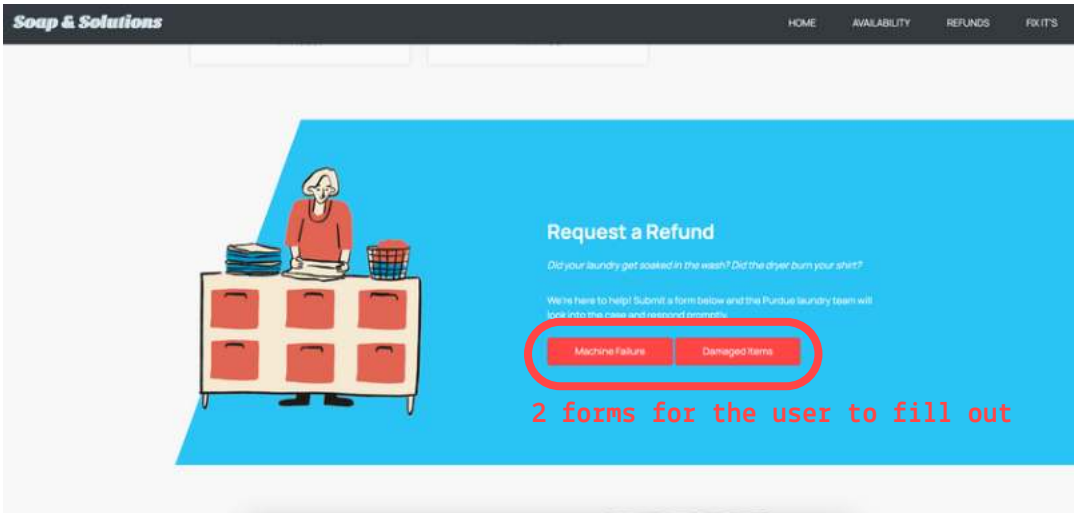


if “In Use” button is clicked

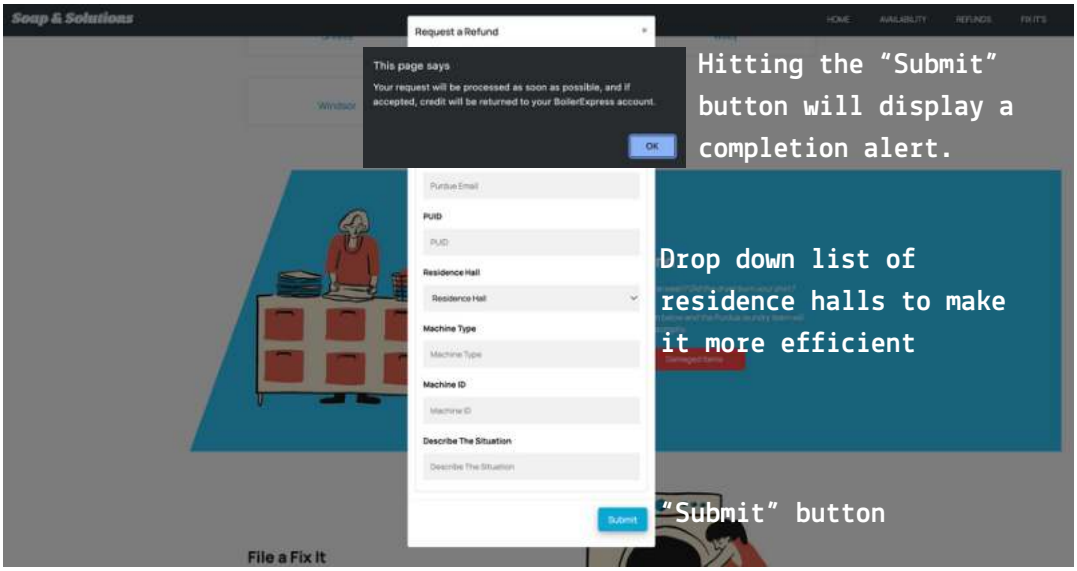


if “Broken” button is clicked

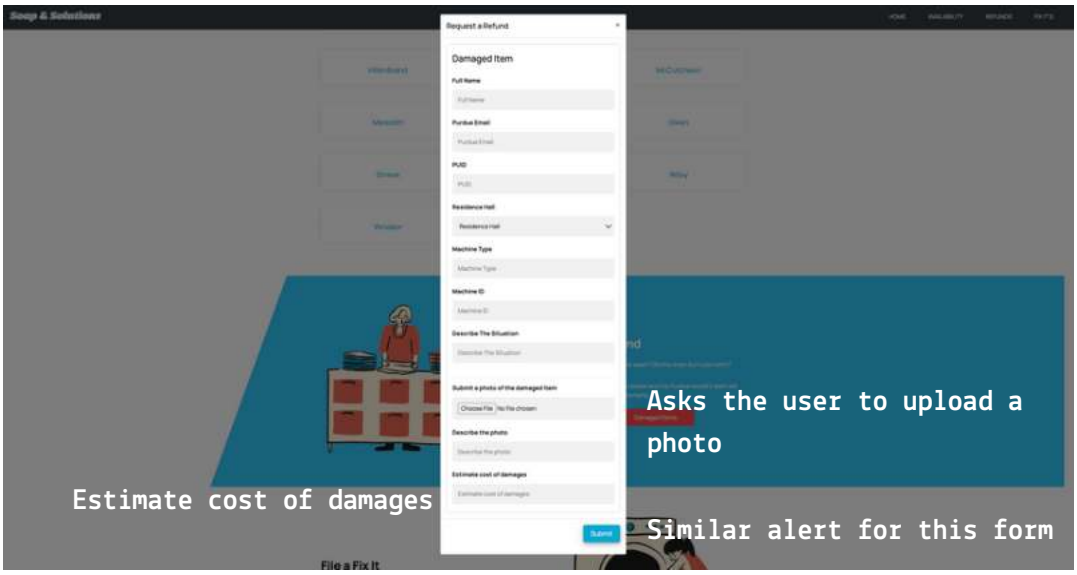
WEBSITE FEATURES ANALYSIS



Refund Section

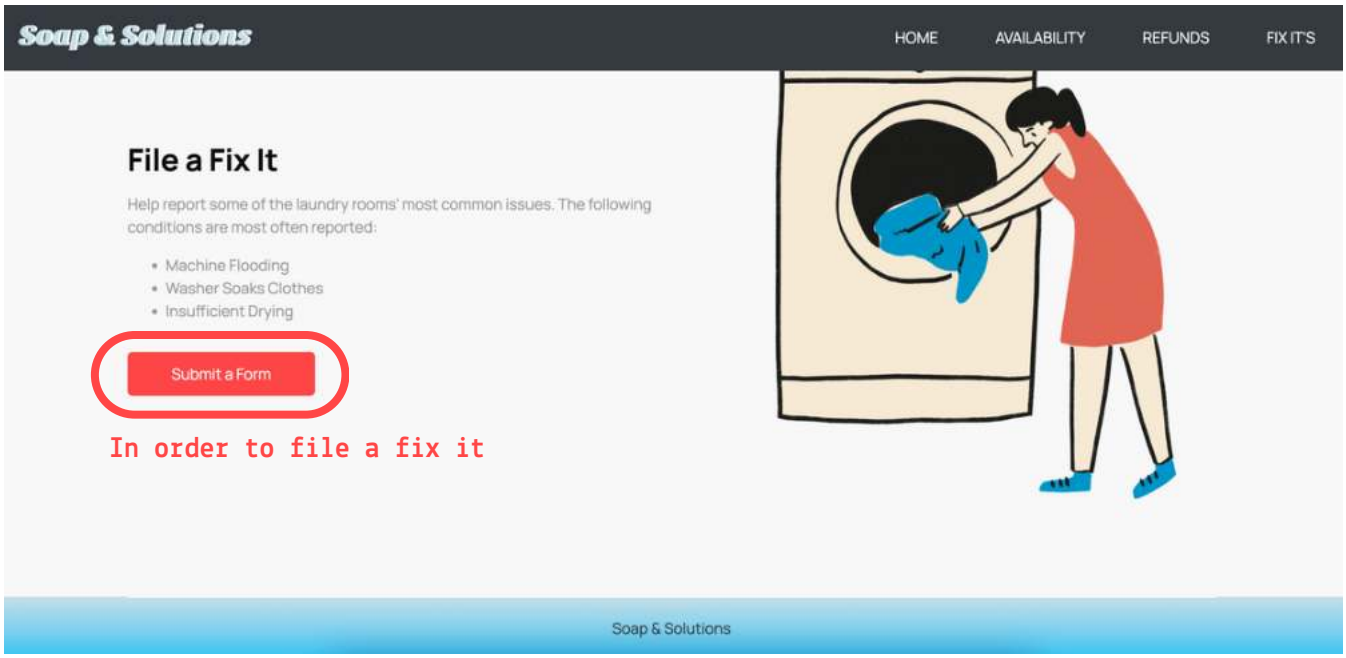


click "Machine Failure" button to pop up the Form

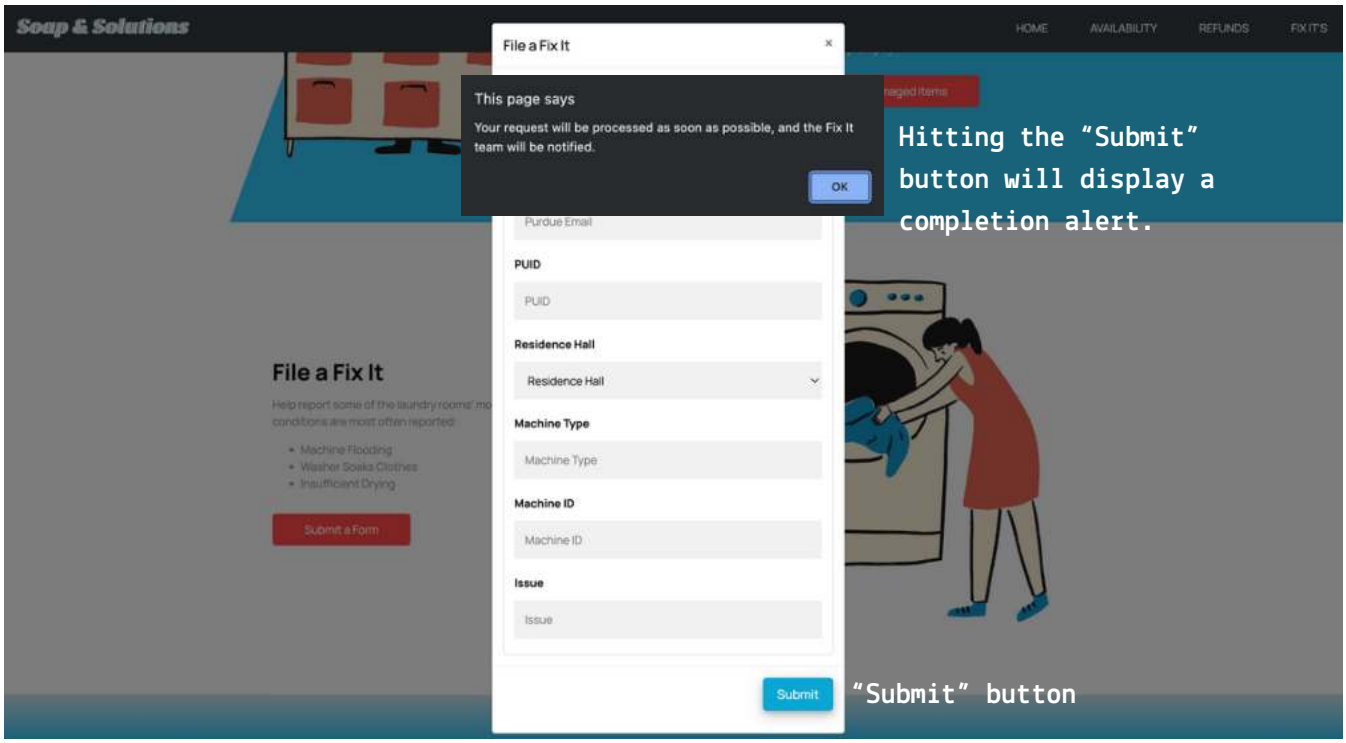


click "Damaged Items" button to pop up the Form

WEBSITE FEATURES ANALYSIS



Fix It Section



click "Submit a Form" button to pop up the Form

UPDATED DESIGN SYSTEM

Colors:

Primary Colors: #3DC4F5 #03a7d3 #353A3F #f8f8f8

Secondary Colors: #ff4646 #E16453 #0C93C5 #ffffff

Elements:

Main Page Buttons:

Machine Availability Buttons:

Fonts:

Logo: Sansita One - Soap & Solutions

Bold text: Manrope - LAUNDRY laundry

Regular text: Manrope - LAUNDRY laundry

Logo:

Web Icon:

Graphics:

CONCLUSIONS

Soap & Solutions Website

Summary

Overall, we are very proud of the work we've accomplished during the last 2 months. We were able to perform strong primary and secondary research on our design space, while retrieving constructive feedback on ways to narrow our focus. Our team was able to conduct interviews, competitive analysis, and rapid sketching rounds to help design our low fidelity mockup for our co-design. The co-design workshop went smoothly, we were able to generate some great ideas and feedback to inform our high fidelity prototype. During the walk-around session during class, we finished conducting usability testing, which assisted us in fine tuning the functionalities for our website. Our last step was to code the actual site. We definitely hit a lot of challenges during our coding journey, however, we are very excited with the results.

Limitations and Next Steps

Just like all design spaces, ours has its limitations. We wished we had a chance to interview some of our other stakeholders like the Purdue Laundry system or mechanics that receive messages from the File a Fix it form. Getting information from them would have made a huge impact on our designs and given Purdue a stronger possibility in integrating our ideas into their current system. If we had more time to iterate on our website, we would conduct usability testing once again, to receive feedback. We would also find a way to connect Purdue's current laundry system into our "machine availability" section.

CONTRIBUTIONS

Aashika

Completed user journey breakdown, brainstormed co-design activity, assisted with informal ideation, sketched website designs, produced all low-fidelity mockups (original and revised), designed final presentation, and completed Project Roadmap model and next steps; coded full website, updated the design system, and completed the conclusion page.

Avery

Completed three interviews & summarized findings; produced sketches; developed codesign protocol, slideshow, and miroboard; assisted with codesign & summarized findings; added design rationale to and organized documentation; produced hi-fi in figma; made final presentation

Logan

Completed industry research and insights, created initial ideation sketches, assisted with co-design and summarized lo-fi revisions, and assisted in informal ideation & and sketches; updated the documentation after receiving feedback

Hannah

Contributed to brainstorming, conducted a total of 5 interviews, assisted with codesign activities, helped create sketches and ideation, organized Miroboard for user testing feedback, and finished up documentation; updated the documentation after receiving feedback

APPENDIX

LINK TO THE INTERVIEW PROTOCOL

1. What is your name and what year are you in?
2. Do you live in University Residence Housing?
3. Does your housing come with washing and drying machines?
4. Describe your experience with laundry at Purdue
    a. Have there been any issues? If so, what caused these issues: the machine, or other people?
5. Have you had your clothes thrown out of a machine before?
6. What do you think works well with the current laundry system?
7. What works poorly?
    a. What is your biggest complaint, if any?
8. Do you like the current machine reservation system?
    a. Do you wish you could reserve machines ahead of time?
9. Would you benefit from knowing how busy the laundry room is ahead of time?
10. Would it help to know what machines are in use?
    a. How about knowing which are not operating properly?
11. Would you use an app/website to assist you in making your laundry process more efficient?
12. What would be the most helpful to know/which of our suggestions do you think would be most beneficial?
13. What changes, if any, would you like to see to Purdue's laundry?

CODESIGN PROTOCOL

Link

:00-:05 wait for everyone to arrive & do group introductions
:05-:10 Ice breaker (creative thinking, maybe have them draw their definition of "design"); maybe collect everyone's emails and share the miro link during this time
:10-:17 Slideshow Overview: explain problem space, findings, and goals: https://www.canva.com/design/DAFuceKvFSI/l5tM6fOV-MXlPpE5B7BLvw/edit
:17-:19 Explain what they can expect in our codesign;
ACTIVITES:
:19-:30 Wireframe Ideation: If you were designing a laundry site, what would you want it to include? Draw your own idea of a site and its features
:30-:34 Discussion
:34-:40 Have them evaluate our lofi design & put feedback in the miro: https://miro.com/app/board/uXjVMldxquU=/?share_link_id=664286009309
:40-:45 explain affinity diagramming and have them group their ideas in the miro
Optional competitive analysis: Have participants give their feedback on the IU laundry app in miro
:55-:00 Debrief & get final feedback:

- Did the codesign help you learn more about the problem space?-
- (If they interviewed) Did the codesign change any of your views or priorities before?
- Do you have any final suggestions or features you'd like to see?

CODESIGN FEEDBACK

MIROBOARD LINK

USABILITY TESTING FEEDBACK

- tab should be a different color on hover - nav bar
- confused about colors
  - maybe have a key
  - redo washing/drying interface
    - do you click on it?
  - add time left/remaining
  - shortest time to wait...
- likes the fix-it form
  - dropdown menu instead of typing
- request a refund
  - ask for email
- where to contact people
- send a confirmation email after the form is sent (for proof)
- take out “see more”
- EASY TO USE
- “we do need this”
- change red and green to icons or gray out for in use
- red makes me think it’s broken
- show the user needs to scroll down
- back-to-home feature - or overlay of the nav bar
- map of the room for the washers and dryer
- don’t have to post previous issues for the file a fix it
- simple, useful, good feature to have a residence hall, all on one page, good forms

RESPONSIVE WEB DEVELOPMENT

Project Two

Soap & Solutions

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