Assignment 3c: Usability Testing Check-in

Team members: Sam Wolfson, Emily Zhang, Hang Bui, Atharva Naik

Inspection based methods:

Issue: Consistency and standards
- Severity: 1
- "Last wash" and "Next wash" are not tappable
- We removed the "Last wash" and "Next wash" display because evaluators didn't find this information useful and we thought it crowded the dashboard display
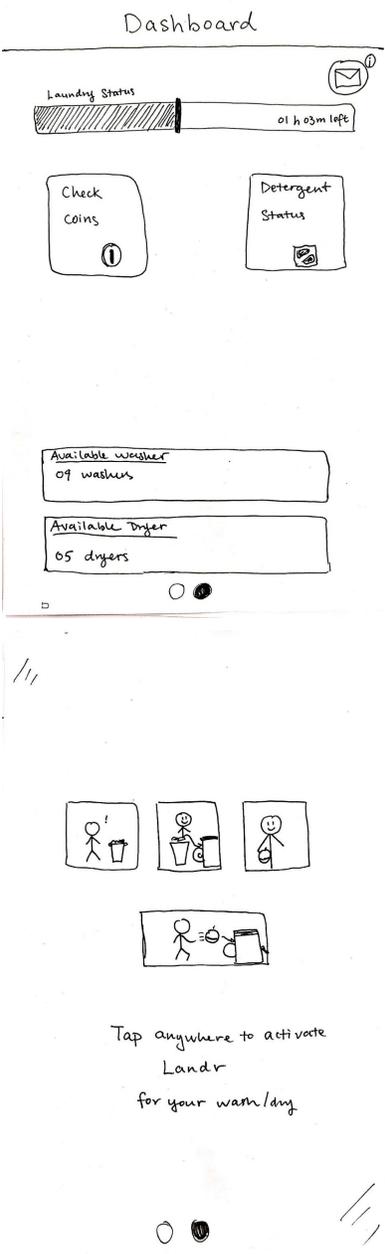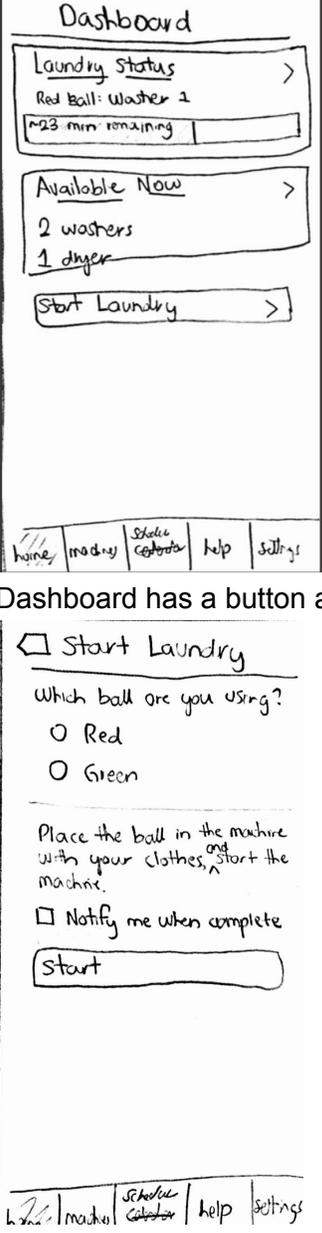
Original	Revised

Assignment 3c: Usability Testing Check-in

Team members: Sam Wolfson, Emily Zhang, Hang Bui, Atharva Naik

Issue: Consistency and standards
- Severity: 2
- All screens should have navigations to go back or to the dashboard
- Each screen has the standard 5 buttons at the bottom: home, machines, schedule, help, and settings. Any screen that is not one of those screens has a back button to return to the correct main screen.

Original	Revised
	 Dashboard has a button at the bottom "Start Laundry" screen has a back button that takes you back to the Dashboard

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Issue: Flexibility & efficiency use
- Severity: 2
- Consider not showing help on how to activate the ball each time for experienced users
- We removed this screen and moved it into a separate "help" section that can be accessed from the dashboard

Original	Revised
	 Separate "help" screen

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Issue: Flexibility & efficiency use
- Severity: 2
- What if there are multiple balls?
- We added an extra UI component that allows user to select the balls they want to monitor before reaching the "Laundry Status" screen
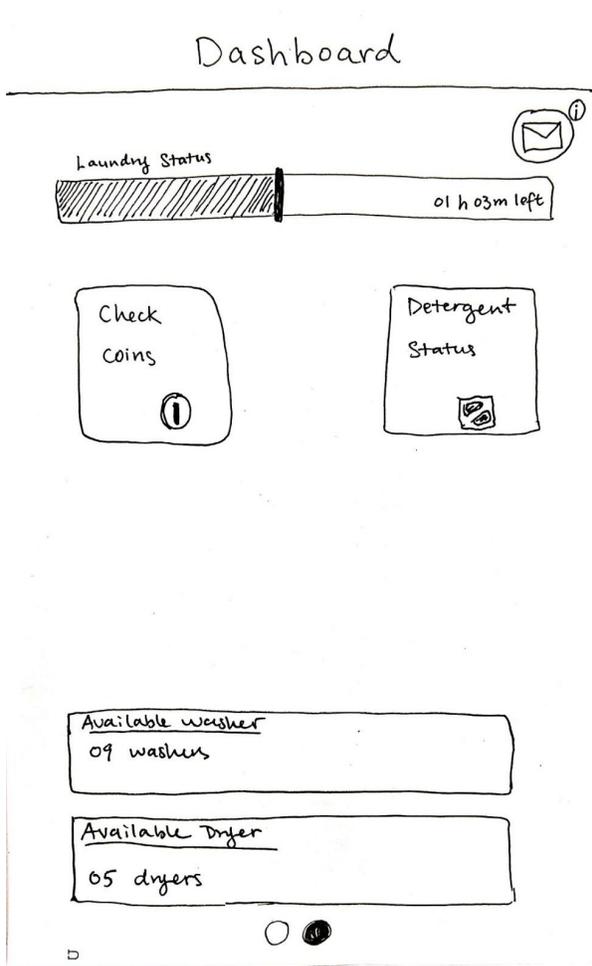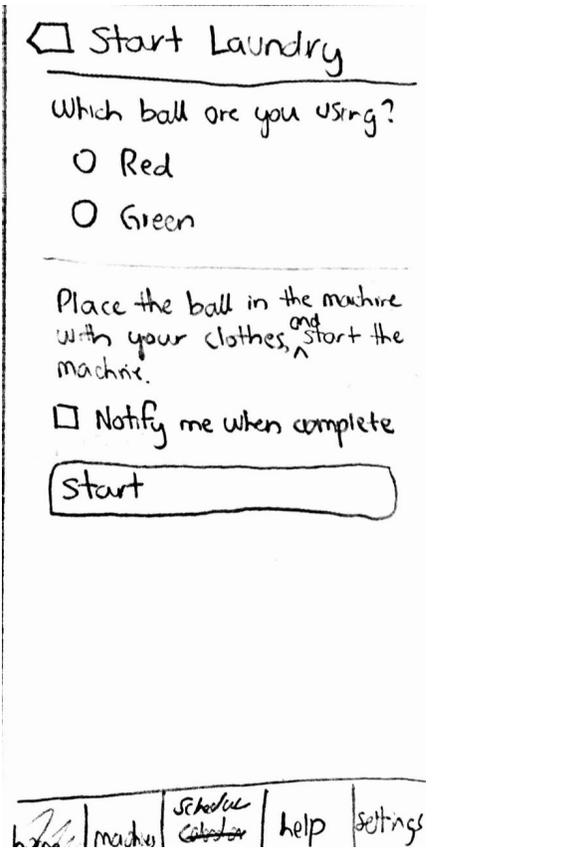
Original	Revised
Dashboard Laundry Status — 01 h 03m left Check Coins Detergent Status Available washer — 09 washers Available Dryer — 05 dryers	Start Laundry Which ball are you using? ○ Red ○ Green Place the ball in the machine with your clothes, and start the machine. ☐ Notify me when complete Start home | machines | Schedule Calendar | help | settings When starting laundry, the user can select the ball they're using

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If multiple balls are in use simultaneously, the dashboard screen will show them all

"Laundry status" screen also shows all in-use balls

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Issue: User control and freedom

- Severity: 3
- Feature to make a personal schedule instead of only waiting for the basket to be full
- We removed the laundry basket measurement device, as it was deemed to not be useful. Instead, we plan to show usage statistics for each washer so the customer can see when the machines tend to not be in use.

Original	Revised
	Custom schedules can be set based on user preferences

When creating a new notification, the app displays usage statistics for washers and dryers to help inform the best time to do laundry

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Issue: Help and Documentation
- Severity: 2
- Instructions on how to use Laundr is not clear
- What happens when the ball turns red?
- We removed this screen and moved it into a separate "help" section that can be accessed from the dashboard. The help section has detailed text explanation
- The ball no longer serves as a notification device, so this particular problem should no longer be an issue. But better help in using the app is offered in the "help" section.

Original	Revised

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Issue: Help and Documentation
- Severity: 2
- Unclear what the camera on dashboard will do
- We removed this feature because it does not solve our primary tasks. It was originally meant for users to take pictures of their clothes in order to sort their laundry but it was an extra task that we tacked on.

Original	Revised
	 Feature removed from dashboard

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Usability

Usability Test 1

The participant is a UW sophomore who lives in the student housing community and faces problems with doing laundry. The study was conducted in the laundry room where we could give a walk through of the app following the complete process which is followed while doing the participant does his laundry. This participant was chosen because he matches our participant criteria of students living in shared apartments with a shared laundry rooms. It was ensured that the test touches all of the functionalities we plan to implement and get an unbiased feedback from the user. Emily and Atharva conducted the test where Atharva gave a initial walk through to the participant. Emily addressed the concerns our participant had and noted the observations.

Based on the feedback from our usability tests, we plan to make changes to improve navigation in the app. We revised the functionality of the laundry ball 'Laundr' to a device which is put in the machines to communicate with the sensors which lets the app know which machine is being used.

Usability Test 2

The participant is a UW student living off-campus with other people he knows. The usability testing took place in the Nano Science building on campus. This student was chosen because he lives off-campus where the shared laundry room situation is common and fits our ideal target participants. We provided the prototypes for the participant to explore and we observed whether the participants are recognizing the functions in the prototype. In this usability test, Emily gave the initial introduction of the prototype to the participant and Atharva provided guidance for the participant to complete exploring the paper prototype.

According to our participant, there are two functionalities that are not addressing the problems we were trying to solve and the design for those features were not obvious at all. For example, the camera function in the first prototype was very confusing, our participant does not have a clear idea of what that button does, therefore they do not want to tap into it. We are aiming to remove the camera function entirely because we realized that is not one of our primary problems we are trying to solve.

Critical Incidents

Incident 1: Interaction and Navigation
- Severity: 4
- Purpose of the camera not clear: our users are not tapping on the camera button because they are unsure of what the camera button will do. We decided to remove this feature because it is not our primary task that we decide to address and it is becoming more confusing than it should have been.
- Current basket and machine status not visible: the participant tried to click on it when it is only a status notification of what is available. It is not clearly conveyed that it is not a button, but a status report.

Original	Revised
Dashboard Current Basket Status Next wash in 0 0 0 Days Last wash on JAN / 01 / 1999 Available Now 10 Washers 5 Dryers	Dashboard Laundry Status > Red Ball: Washer 1 ~23 min remaining Available Now > 2 washers 1 dryer Start Laundry > home machiny Schedule colored help settings 5

Incident 2: Labelling
- Severity: 2
- Laundry Status means Laundry Basket or the Laundry in the Washer/Dryer: our participant did not find a clear indication of whether this is a laundry status of dryer or washer, it is difficult to distinguish the difference because there is no obvious indication.
- Title of the page could be Current Status instead of Laundry: the inconsistency of the title becomes confusing to the participants and they were lost in the process of trying to navigate through this software

Original	Revised
	We have decided to remove this feature and added a notification scheduling service instead. Users will receive notifications according to their own preference.

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The software also provides flexibility to create their own notifications for laundry schedule, instead of being notified according to the status of the laundry basket.

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Revised Prototype
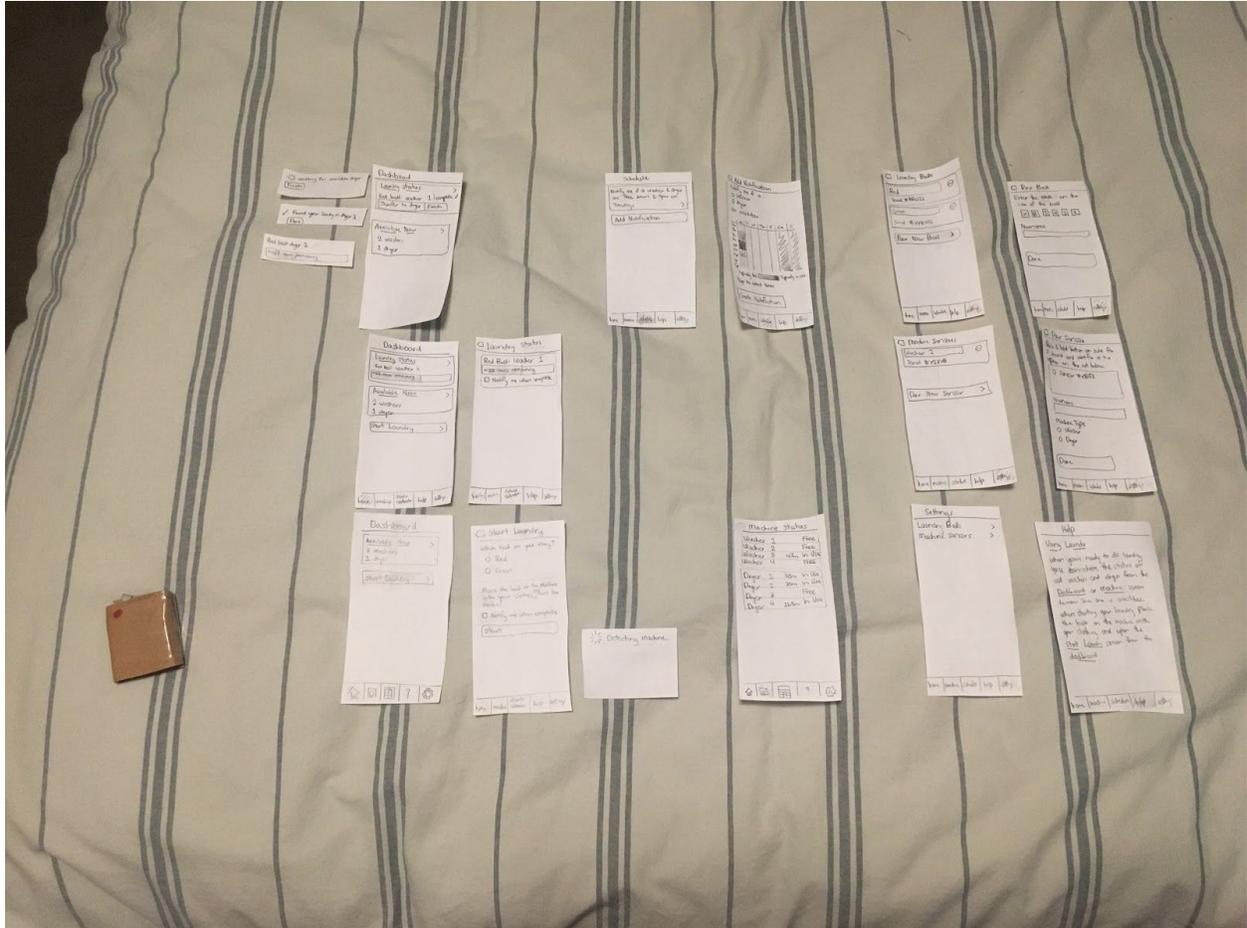
Overview Image: machine sensors (brown rectangle), app interface, ball (which communicates with the app and machine sensors, and also acts as an anti-static dryer ball)
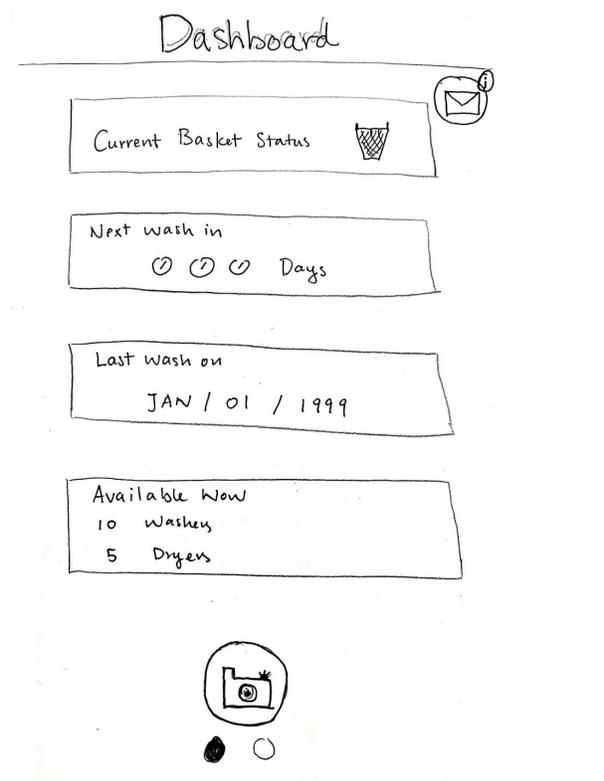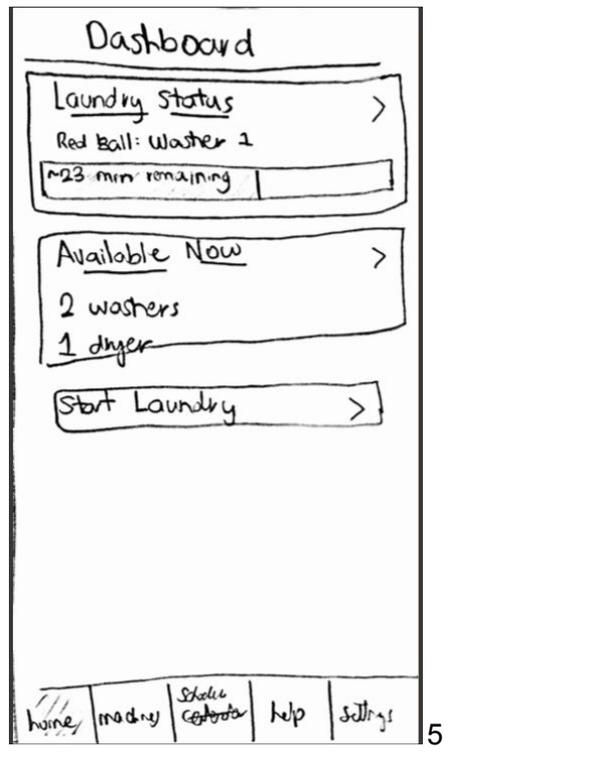
Assignment 3c: Usability Testing Check-in

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Task 1: Deciding when to do laundry
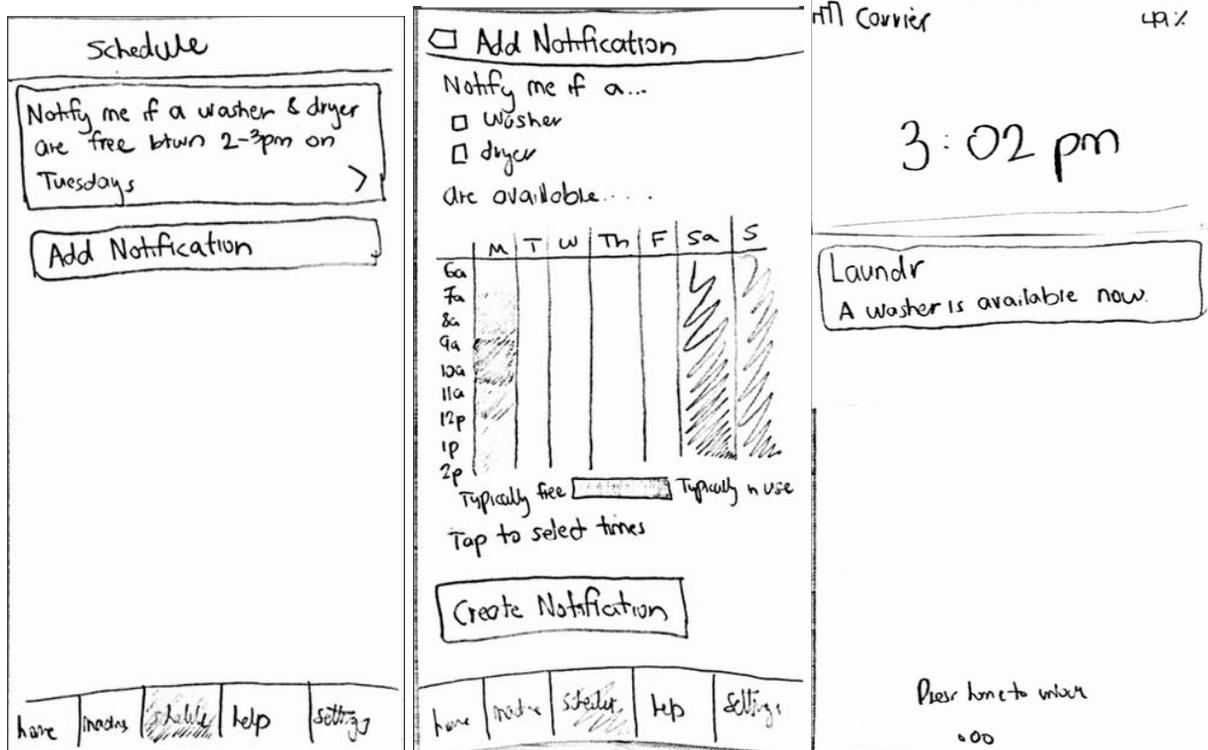
The user can set notifications on certain times based on their schedule, and the likely availability of machines. The app will suggest good times to do laundry based on typical usage of machines, and then it will send the user a notification if it detects free machines within the user's timing preferences.

Dashboard

Available Now   >
3 washers
1 dryer

Start Laundry   >

Machine Status

Washer 1	Free
Washer 2	Free
Washer 3	47m In Use
Washer 4	Free

Dryer 1	38m In Use
Dryer 2	20m In Use
Dryer 3	Free
Dryer 4	1h3m In Use
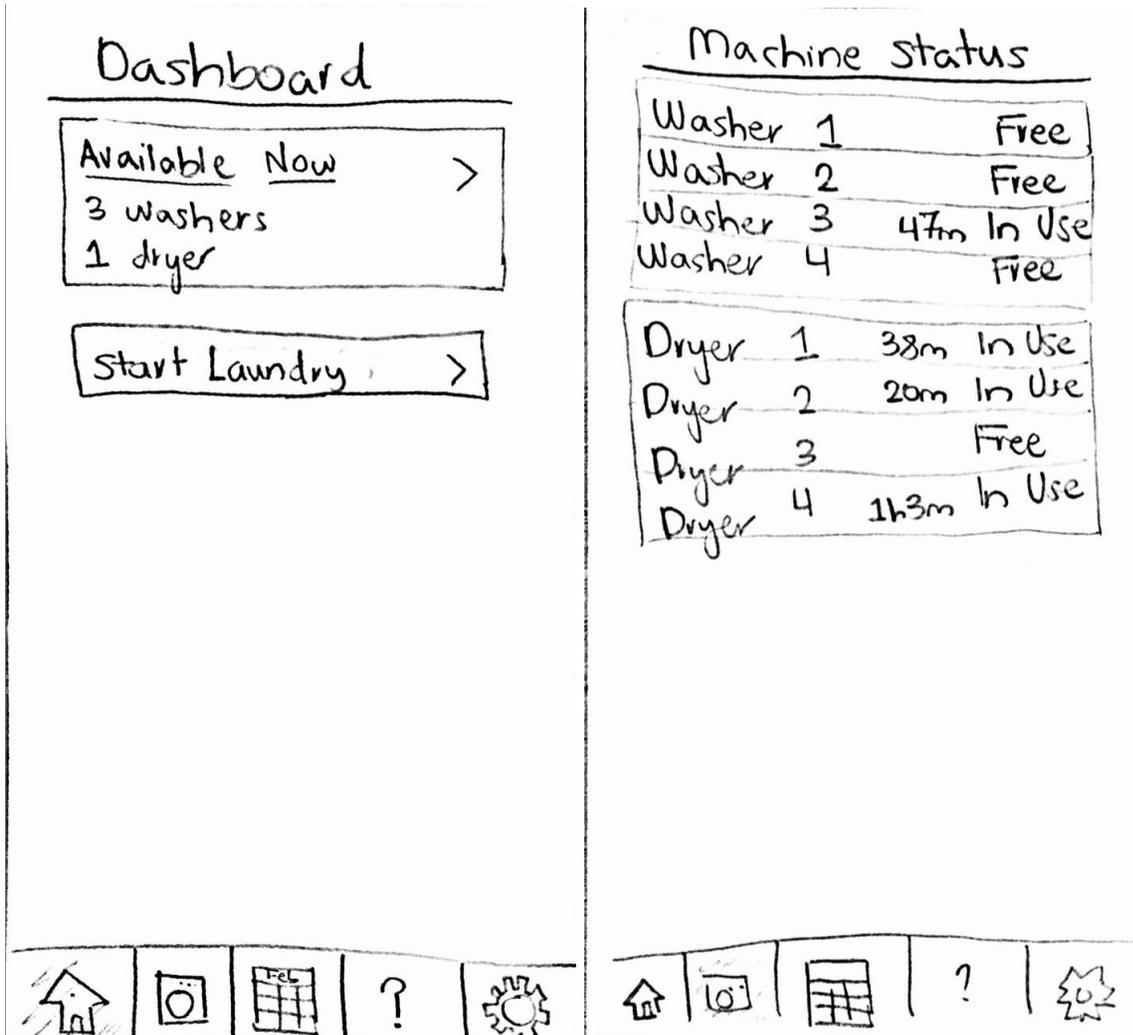
Alternately, the user can go into the app if they prefer to do laundry at an unscheduled time and can see both overall status of the machines from the Dashboard screen, and more detailed statistics from the Machine Status screen.

Task 2: Knowing when clothes are finished washing and drying

Dashboard

Available Now   >
3 washers
1 dryer

Start Laundry   >

🏠 | ⬜ | ▦ | ? | ⚙

◁ Start Laundry
_____

Which ball are you using?

○ Red

○ Green

Place the ball in the machine
with your clothes, and start the
machine.

☐ Notify me when complete

Start

home | machine | Schedule Calendar | help | settings

From the Dashboard screen, the user selects "Start Laundry" where they enter information about the laundry ball that they're using (if they have multiple). This allows Laundr to know which machine they're using (by communicating between the machine sensor and the ball when the machine starts).

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◁ **Start Laundry**

Which ball are you using?

○ Red

○ Green

Place the ball in the machine with your clothes, and start the machine.

☐ Notify me when complete

☼ Detecting machine...

| home | machine | Schedule Calendar | help | settings |

◁ **Start Laundry**

Which ball are you using?

○ Red

○ Green

Place the ball in the machine with your clothes, and start the machine.

☐ Notify me when complete

✓ Found your laundry in Washer 2.

[Done]

| home | machine | Schedule Calendar | help | settings |

The process of detecting a machine finishing the process of starting laundry.

Dashboard

Laundry Status >
Red Ball: Washer 1
~23 min remaining

Available Now >
2 washers
1 dryer

Start Laundry >

home | madnry | Status Calcota | help | Settings

◁ Laundry Status

Red Ball: Washer 1
~23 min remaining
☐ Notify me when complete

home | mdry | Schedul | help | Settings
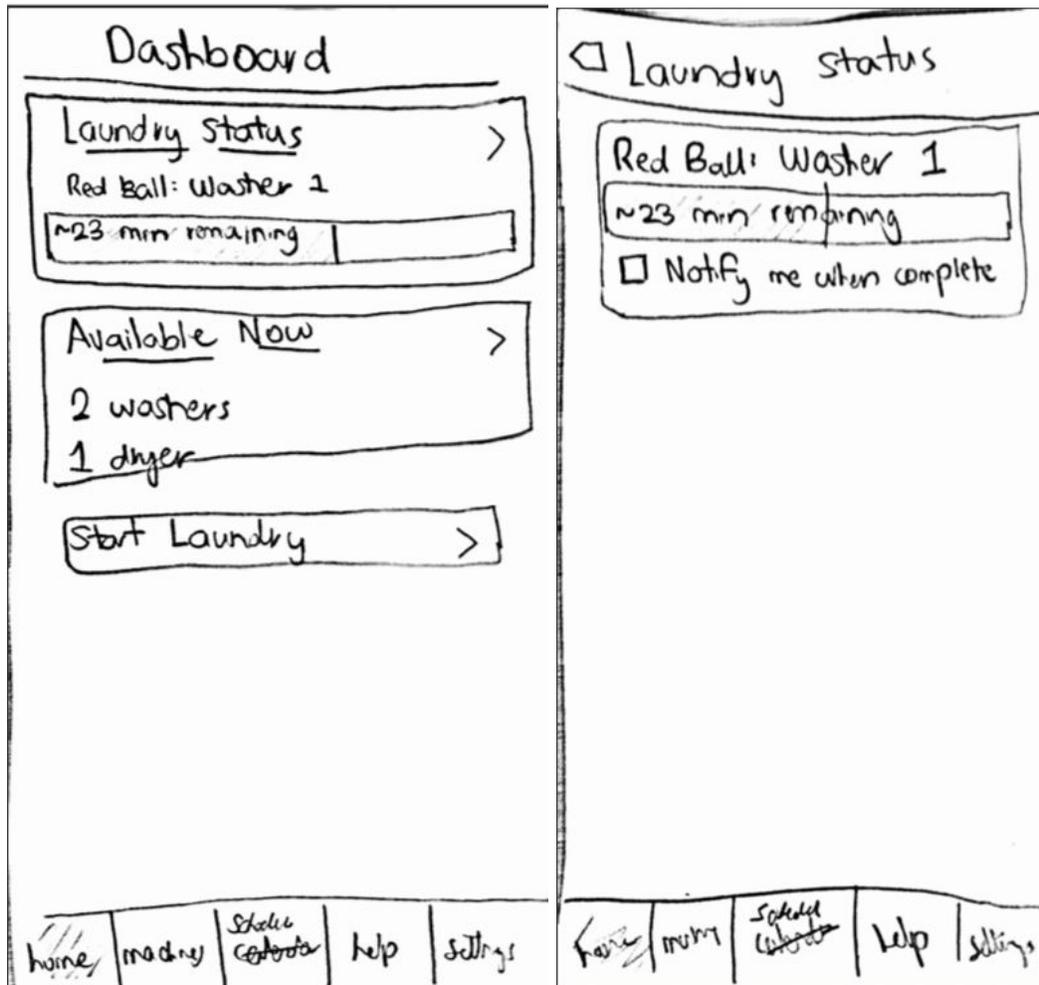
After beginning the process, the user can check on the status of the washer or dryer from the Dashboard, or view a more detailed status from the Laundry Status screen. An estimated time is provided based on the app learning how long past washer cycles tend to have taken.
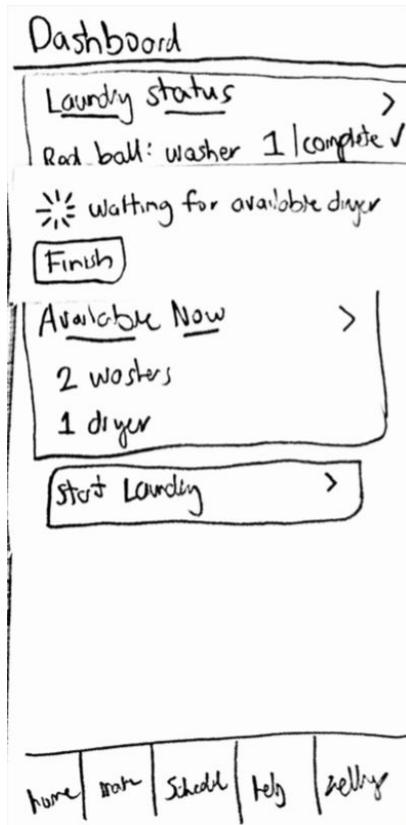
If the washer is finished but a dryer isn't yet available, the app will wait before notifying the user to transfer their clothing. An option to "finish" is given in case the user prefers not to dry their clothing in a dryer.

Assignment 3c: Usability Testing Check-in

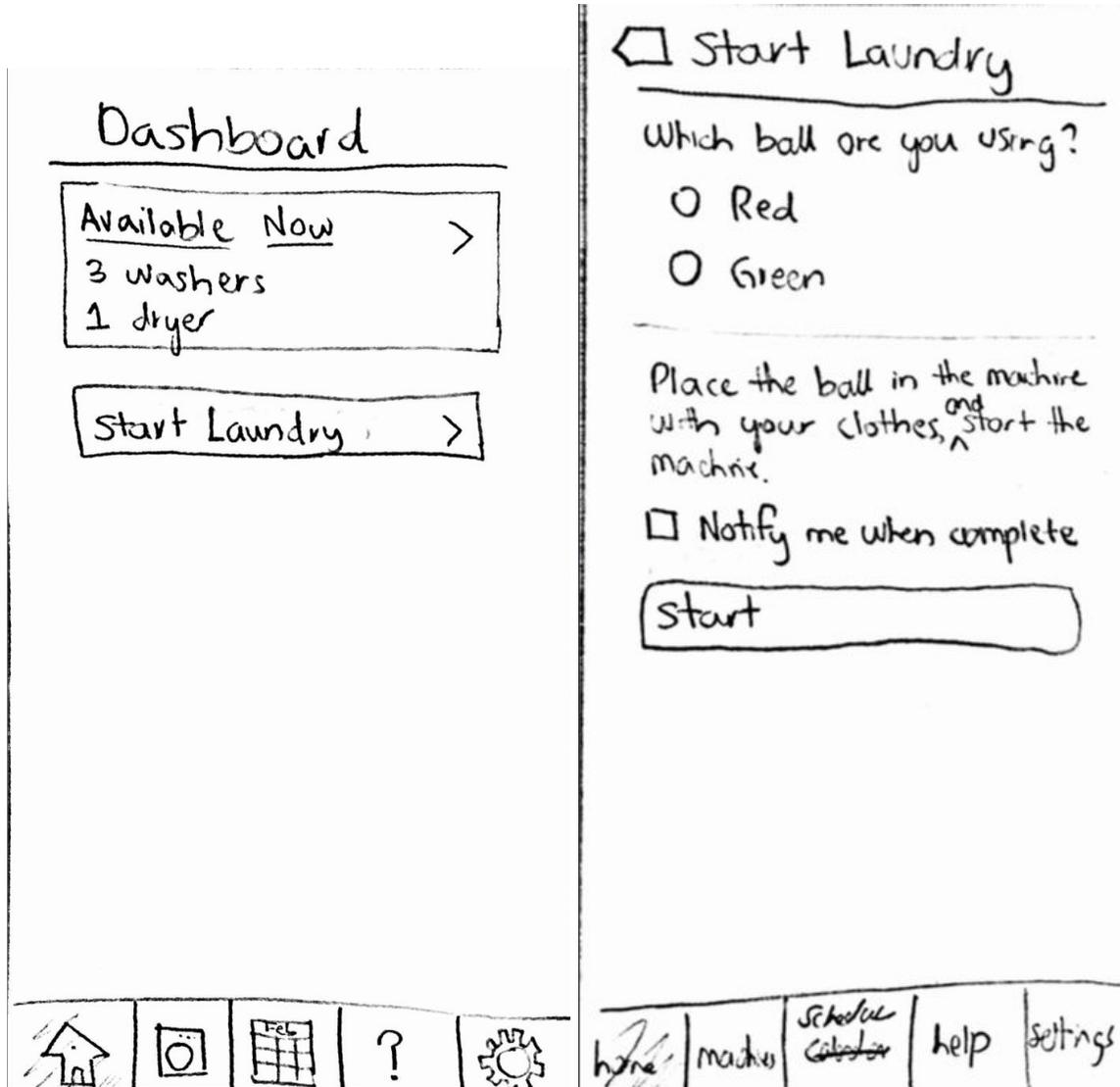Team members: Sam Wolfson, Emily Zhang, Hang Bui, Atharva Naik

M Courier   49%

3:02 pm

Laundr

Your clothes are washed and a dryer is available

Plese tone to unlock

•oo

Dashboard

Laundry status   >

Red ball: washer 1 / complete ✓

| Transfer to dryer | Finish |

Available Now   >

2 washers

1 dryer

| Start Laundry   > |

| home | more | Schedul | help | selly |
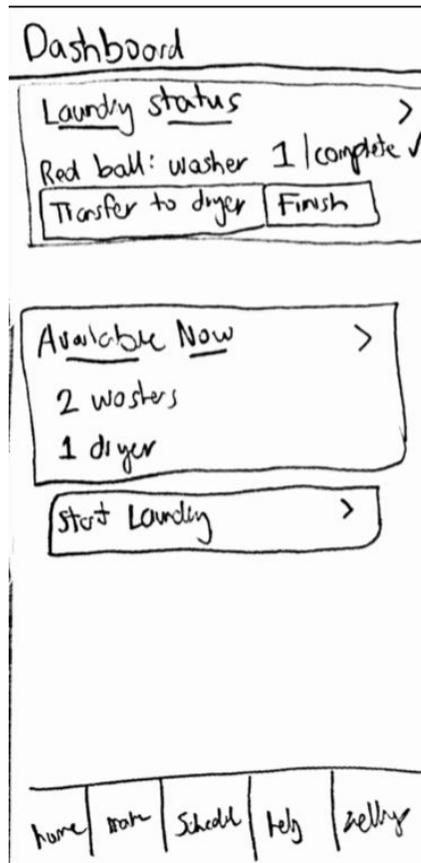
When a dryer is available, the app sends a notification and allows the user to select "Transfer to dryer."

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Dashboard

Laundry status >
Red ball: washer 1 | complete ✓

⋇ Detecting dryer...

Available Now >
2 washers
1 dryer

Start Laundry >

home | more | Schedule | help | settings

Dashboard

Laundry status >
Red ball: washer 1 | complete ✓

✓ Found your laundry in dryer 3
[Done]

Available Now >
2 washers
1 dryer

Start Laundry >

home | more | Schedule | help | settings

Dashboard

Laundry status >
Red ball: washer 1 | complete ✓
Red ball: dryer 3

~47 min remaining

Available Now >
2 washers
1 dryer

Start Laundry >
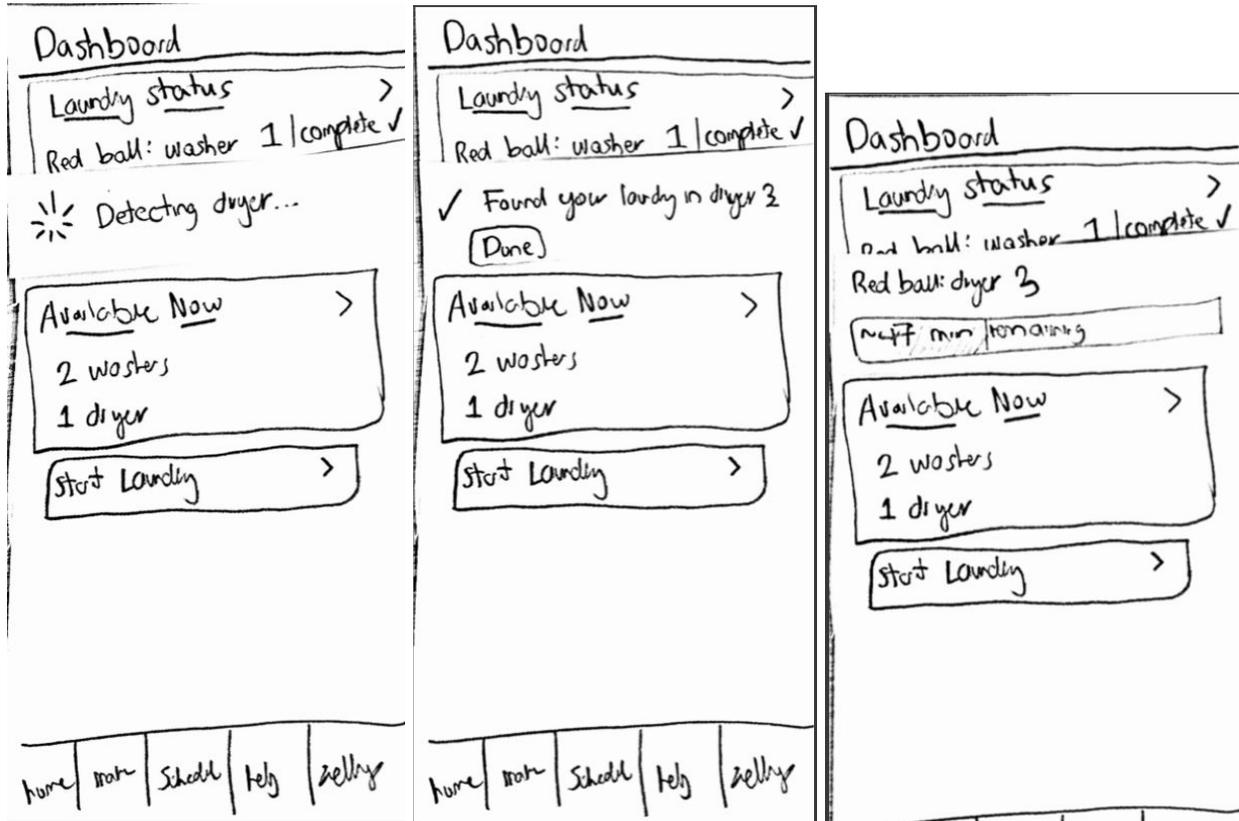
When the user selects "transfer to dryer" the app auto-discovers the dryer that they're using (in the same way as the washer) and the status screen displays estimated time remaining (which is detected using the ball's moisture sensor and past knowledge of how long the dryer ran).

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Once the clothing is finished drying, the app pushes another notification.

<div align="center">

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</div>

Plan For Future Testing

With our revised paper prototype, we will continue to target tenants in apartment building with shared laundry resources. The next steps of the testing should focus on completing the two primary tasks that we set out for this project: doing laundry based on machine availability and knowing when the laundry is finished. To conduct the usability tests, we will set out in teams of at least three members. The participant will be asked to do a walkthrough of doing his or her laundry using Laundr. One member will introduce the product to our participant and explain the problem we are trying to solve but will not demonstrate how to use our product (the goal is to see if the user could intuitively do so themselves via the help screen). That member will also ask questions and prompt the user to voice their thought process or confusions that come up during the usability testing. The second team member will be responsible for note taking. The third team member will be in charge of updating the prototype in response to user input. Overall, our goals will be specifically to test how easy it is for users to perform these primary tasks and navigate the app without assistance.