UNIVERSITY OF CALGARY

CPSC 481 HUMAN-COMPUTER INTERACTION

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Project Iteration 3

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1 Project Description

The WaitLess project idea revolves around improving the virtual academic advising experience for students by refining a virtual line up system. The current solution, QLess, has problems that will be addressed with our idea while also adding improvements to make lining up virtually easy and convenient. We expect our system to be used as a mobile application where students can virtually line up for drop-in advising at their university/school. This system will be used by the aforementioned students and **academic advisors** that will be conducting these line ups. The context at which we expect this system will be used under is in an academic environment between student and advisor. We don't expect the student to use this system daily, but we expect the advisors to use this system daily to provide guidance to students.

2 User Tasks

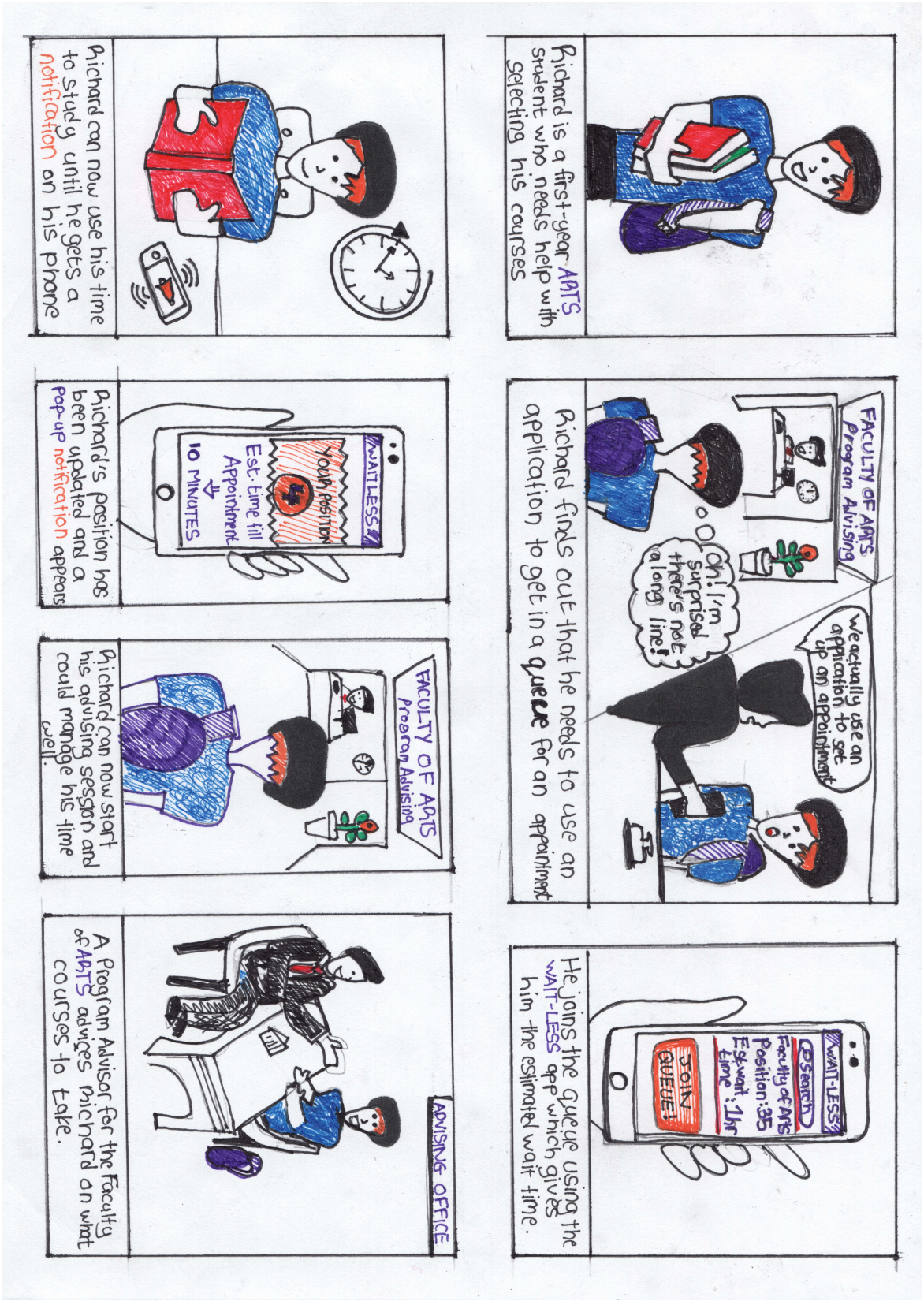
2.1 Prototyped Vertically

- The user will be able to search and browse for different queues to join. This task involves the user having an option to freely browse queues and also search for specific queues.
- The user will be able to access a FAQ page for queues and/or be able to access a chat system to be able to get information about the queue before joining it.
- The user will be notified by the app on their position in the queue. As they get closer to the front, notifications would become more frequent, however they may change this setting to meet their need.

2.2 Prototyped Horizontally

- The user will be able to sort the current lists on the screen in a variety of different ways. For example, from our research, we discovered that it is important for the user to sort information how they wish in order to quickly find what they need.
- The user will be able to log in once and join a queue without going through any additional steps. The process of joining a queue is the main task that the app performs, and going through unimportant steps before joining a queue can cause frustration for the user.
- The user will access a general "about" page that contains more information about the app. This task could provide a good baseline of information for the user.
- The user will access a history of queues they've joined in the past. This allows for better communication between the user, application provider, and the queue provider if support is ever needed for the user.

3 Storyboard



4 Cognitive Evaluation

Firstly, let us discuss the process of our Cognitive Walk-through Evaluation. From our discussion with the teaching assistant, we were able to determine three task that we implemented vertically on our low fidelity prototype. We then conducted the a Cognitive Walkthrough Evaluation for each of these tasks in the prototype using the template provided to us. Each task was broken down into sub-tasks that achieved the goal to complete that vertical task. Each cognitive evaluation on a vertical task was conducted through the perspective of our main user; the student.

During the cognitive evaluation, we discovered that the initial lo-fi prototype was able to perform the three vertical tasks with relative ease. These vertically implemented tasks included the ability to search and browse through queues, the ability to access each queue's FAQ page, and receiving notifications regarding your queue status. When looking from the perspective of a new student user of the app, most tasks were similar enough to other familiar tasks that can be seen in other apps such as logging in, searching using keywords, and receiving notifications. Since we assumed that the user executing these vertical tasks was a student, these sub-tasks are extremely familiar to the student as they are more inclined to be technologically advanced.

Moving on to the specifics of our findings; after logging in to the app, users are presented with clear options about joining a recent queue, or selecting a different queue via searching or browsing. This interface allows the user to complete the first vertical task of being able to access queues via a search or a browse function.

The task of visiting the FAQ page for each queue was not as clear as they could have been. What we mean by this is that icons were provided to give the user a sense of how to access the FAQ page, but there was no descriptive text to confirm these ideas. To fix this, we added some text which reads "need help?" to the updated version of the prototype to let users know where to click for assistance. In general, the user almost always had a motivation to complete their tasks, aside from browsing through more than a few queues. A possible fix to this lack of motivation would be to set the default sort of the queues to be the best guesses based on past joined queues and other characteristics.

For our third vertical task of receiving updates for queue status there was no noticeable impediment to completing it. Since this task can be broken down to the user wanting to be updated in their position, the ultimate role of the interface is to send notifications to the user once they have joined a line. However, there may be some uncertainty to the user whether or not the notifications are turned on and are being sent. Since the majority of users would not bother to change this setting and a minority of users might, we decided to fix this uncertainty by setting the notification setting to "ON" by default and allowing the user to turn it on depending on their needs.

Finally, using the information gained from the cognitive evaluation such as what tasks were easy to complete and what tasks required more guidance, we were able to develop another prototype to resolve some of these issues regarding task clarity and ease of completion.

5 Reflection

5.1 What went well

The brainstorming and sketching phase went well for us. We were all able to independently create a diverse set of sketches which ended up forming a larger set of sketches that covered most functionalities. This was done without having to delegate certain members to focus on different aspects of the app, which would've inhibited creativity.

5.2 What went poorly

Knowing the extent to which we should implement various iteration tasks was something that could've gone a bit more smoothly. It was difficult to know how much detail to include in many of the tasks such as the low fidelity prototype and cognitive evaluation walk-through. Since different

group members performed different tasks, feedback was usually only provided after a task was mostly complete.

5.3 What to do differently

If we were to complete this iteration again, we would probably take more time to identify all the tasks that need to be completed and construct a plan to complete steps sequentially to give us more time to reflect on our work and modify it as we see fit.

6 Appendix

6.1 Cognitive Walk-through

Task – Search and Browse Queues

Description of task step	Does user have training or knowledge to do this step?	Is it believable that they would do it?	Are they motivated?	Comments (including possible solutions)
1a) Create account	Yes, the user has likely registered for other apps before	Yes, there is text at the bottom of the screen to guide the user to create an account.	Yes, the user cannot access the app without an account	Very straightforward step. Account creation is common for many apps.
1b) Log in to account	Yes, if they already have an account then they have logged in before	Yes, logging in is essential to continuing the steps	Yes, logging in is essential to continuing the steps	Another very straightforward step, especially for users who have used the app before.
2c) Select search	Yes, there is clear text and a button with an icon	Yes, if the user wants to search they will easily find this search button	Yes, the user wants to find the queue that specifically fits their needs via searching	The user could possibly search and browse queues simultaneously instead of having to choose one or the other.
3c) Type keyword(s) into search bar	Yes, search bars are very common and have likely been encountered before	Yes, this is the only way to use the search feature	Yes, if they want to find the right queue they must use keywords	The user might not know exactly what they want to search for and could be guided towards browsing if their search terms show no results.
2d) Select browse	Yes, there is clear text and a button with an icon	Yes, if the user wants to see their options for queues at a glance	Yes, the user wants to locate their desired queue via browsing	Showing recent lines before having to browse provides the user with an alternative method of joining a queue
3d) Sort and scroll through queues	Yes, there is a dropdown menu with preset sorting options	Yes, if they want to find the best queue they will browse for it efficiently	No, the user probably wants the first result to be correct and doesn't want to scroll	Maybe have the default sort be set to best guesses based on recent queues
4) Join desired queue	Yes, the join button is the clear method to join a queue	Yes, joining a queue is the final task	Yes, joining a queue is the user's goal	Task complete

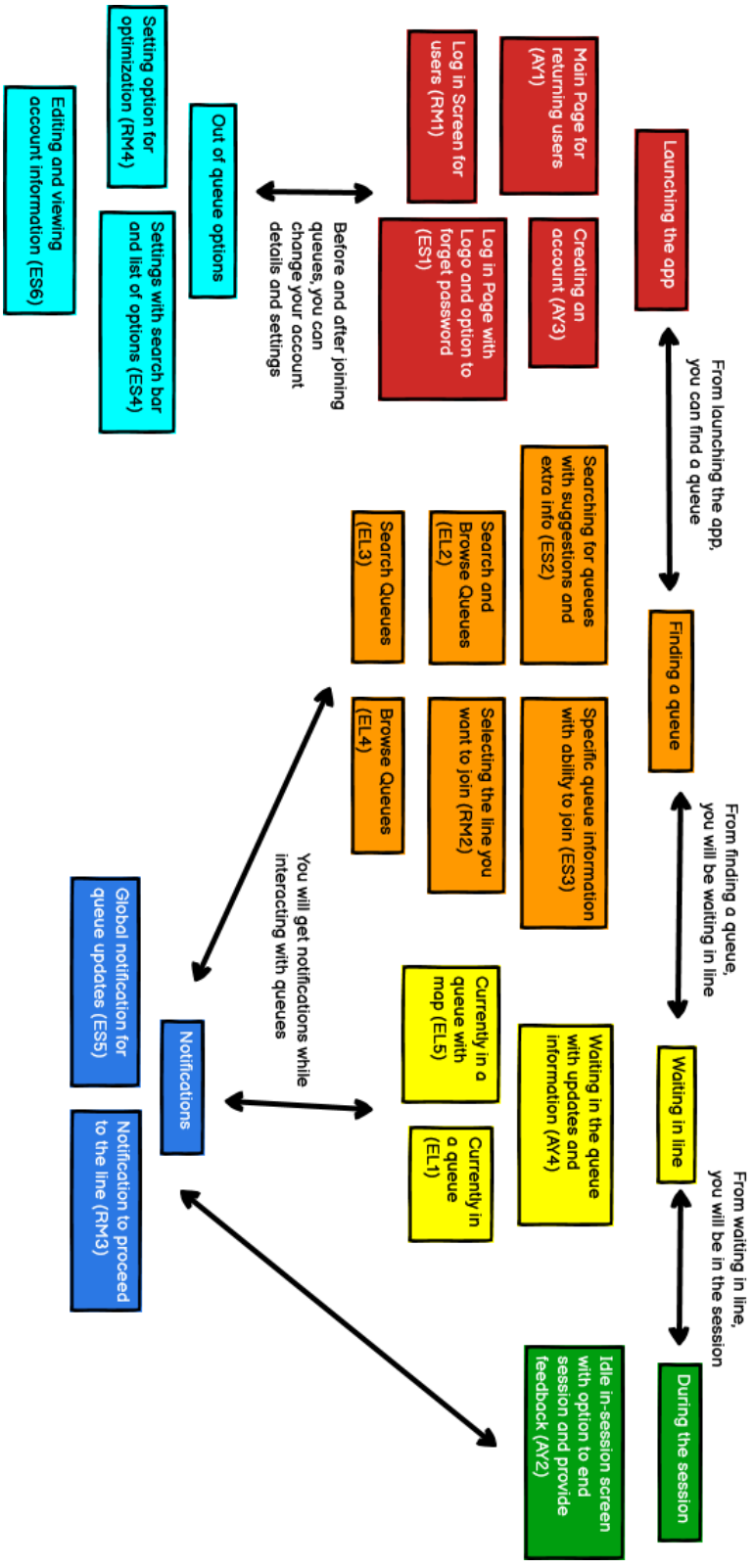
Task – Access FAQ Page or Chat System

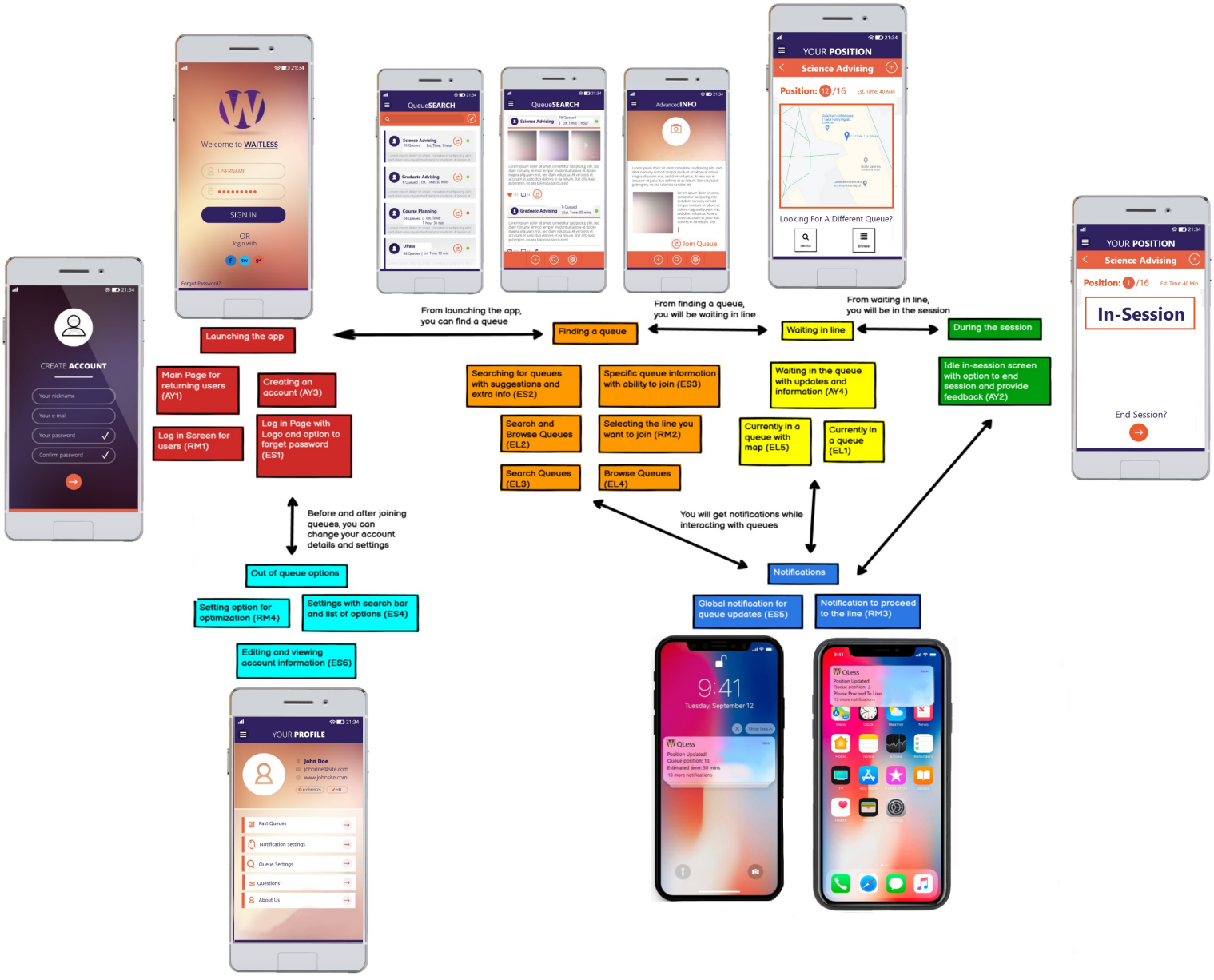
Description of task step	Does user have training or knowledge to do this step?	Is it believable that they would do it?	Are they motivated?	Comments (including possible solutions)
1a) Create account	Yes, the user has likely registered for other apps before	Yes, there is text at the bottom of the screen to guide the user to create an account.	Yes, the user cannot access the app without an account	Very straightforward step. Account creation is common for many apps.
1b) Log in to account	Yes, if they already have an account then they have logged in before	Yes, logging in is essential to continuing the steps	Yes, logging in is essential to continuing the steps	Another very straightforward step, especially for users who have used the app before.
2) Find the queue you want more information about	Yes, the user has done this before by searching or browsing for queues	Yes, finding the queue must be done to find a specific FAQ	Yes, if the user has a question about a queue they will want to find it first	A general FAQ page could be provided for some questions that aren't specific to any one queue so finding the queue doesn't have to occur
3) Tap the question mark next to the queue to access specific FAQ	No, the purpose of the question mark button is unknown until tapped	Yes, if they are looking for help a question mark is a promising lead	Yes, a user with a question will want to find a place with answers	A small label above or within the button might help users definitely know the purpose of the button before tapping it
4a) Read the FAQ	Yes, the page will be displayed as the FAQ page so the user will know to read it	Yes, it's possible that their question is immediately answered in the FAQ	Yes, the goal of the task was to find an answer to a question and reading the FAQ will help	For users that don't want to read the FAQ page, a chat will most likely be available to ask questions
4b) Chat to ask questions	Yes, the user most likely knows how to use a chat feature	Yes, if the FAQ doesn't answer their question they will need a more specific answer	Yes, if the chat feature is provided and is known to be trustworthy then the user will ask via chat	Some queues may not have the chat feature available depending on the type of queue

Task – Receive Notifications for Queue Status

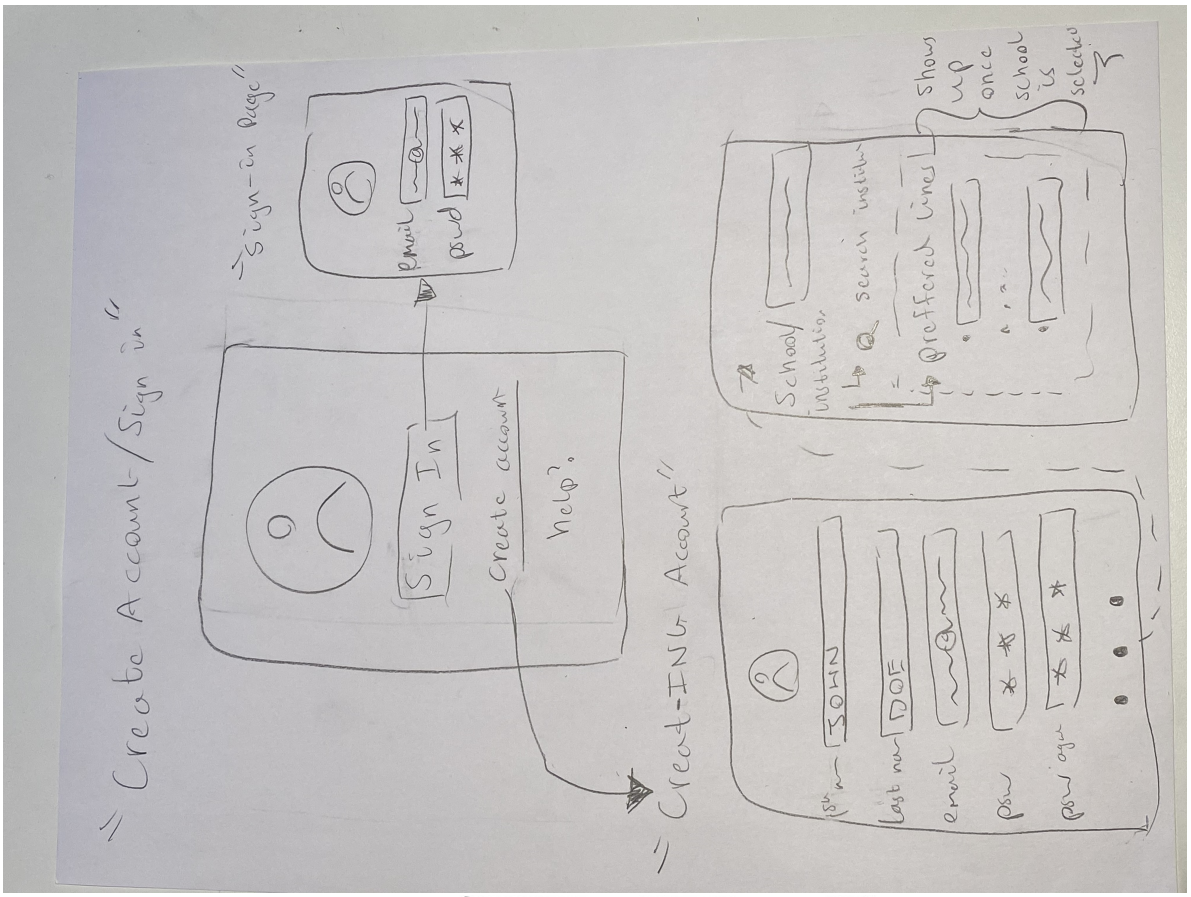
Description of task step	Does user have training or knowledge to do this step?	Is it believable that they would do it?	Are they motivated?	Comments (including possible solutions)
1a) Create account	Yes, the user has likely registered for other apps before	Yes, there is text at the bottom of the screen to guide the user to create an account.	Yes, the user cannot access the app without an account	Very straightforward step. Account creation is common for many apps.
1b) Log in to account	Yes, if they already have an account then they have logged in before	Yes, logging in is essential to continuing the steps	Yes, logging in is essential to continuing the steps	Another very straightforward step, especially for users who have used the app before.
2) Change notification settings to your desired frequency	No, the user is initially unaware that this setting can be changed	No, in the current state of the prototype notification settings don't exist	No, not all users are motivated to change settings like this away from the default	Having a reasonable default setting for notifications will most likely be the best option for most users
3) Join a queue	Yes, the user has most likely joined a queue before	Yes, in order to receive queue notifications the user must be in a queue	Yes, the user wants to join a queue and then be notified later about when to show up	An essential step to receive notifications. There is nothing to notify the user about if they never join a queue
4) Receive notifications depending on your queue position	Yes, receiving the notification requires no action by the user	Yes, the user will pay attention to the notification to not miss their queue	Yes, the user wants to know when they are approaching the front of the queue	Make the notifications informative so that the user doesn't have to unlock their phone and open the app to know more

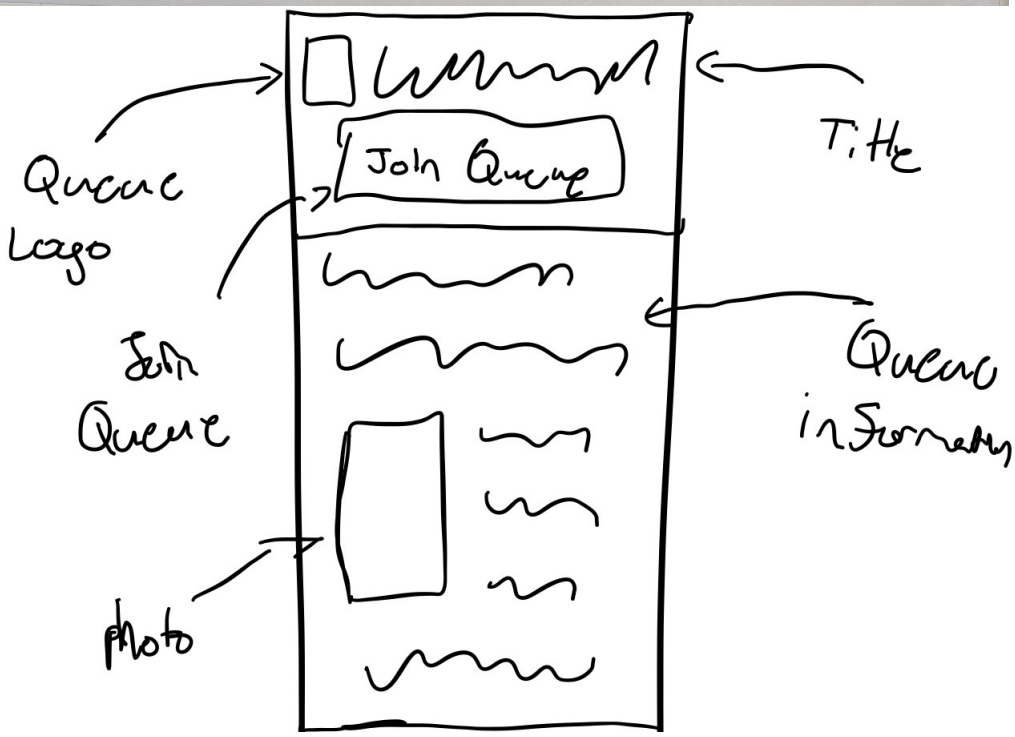
6.2 Affinity Diagrams

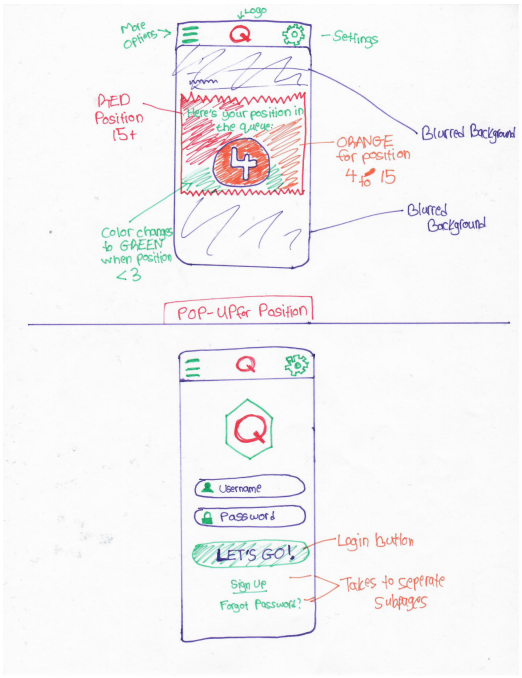


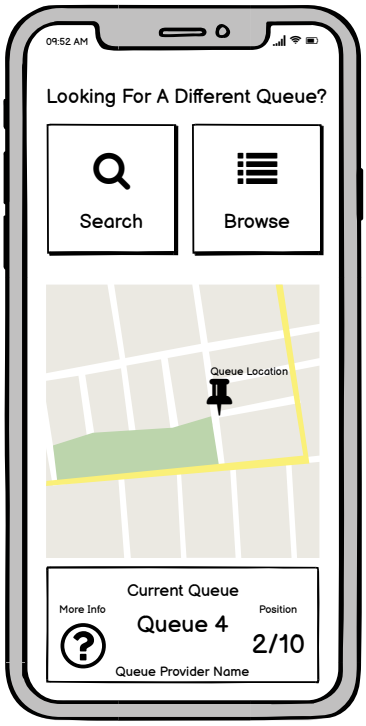

Welcome to WAITLESS
SIGN IN
Launching the app
From launching the app, you can find a queue
Finding a queue
From finding a queue, you will be waiting in line
Waiting in line
From waiting in line, you will be in the session
During the session
Main Page for returning users (AY1)
Creating an account (AY3)
Log in Page with Logo and option to forget password (ES1)
Log in Screen for users (RM1)
Searching for queues with suggestions and extra info (ES2)
Specific queue information with ability to join (ES3)
Search and Browse Queues (EL2)
Selecting the line you want to join (RM2)
Search Queues (EL3)
Browse Queues (EL4)
Waiting in the queue with updates and information (AY4)
Currently in a queue with map (EL5)
Currently in a queue (EL1)
Idle in-session screen with option to end session and provide feedback (AY2)
Before and after joining queues, you can change your account details and settings
Out of queue options
Setting option for optimization (RM4)
Settings with search bar and list of options (ES4)
Editing and viewing account information (ES6)
You will get notifications while interacting with queues
Notifications
Global notification for queue updates (ES5)
Notification to proceed to the line (RM3)
In-Session
End Session?

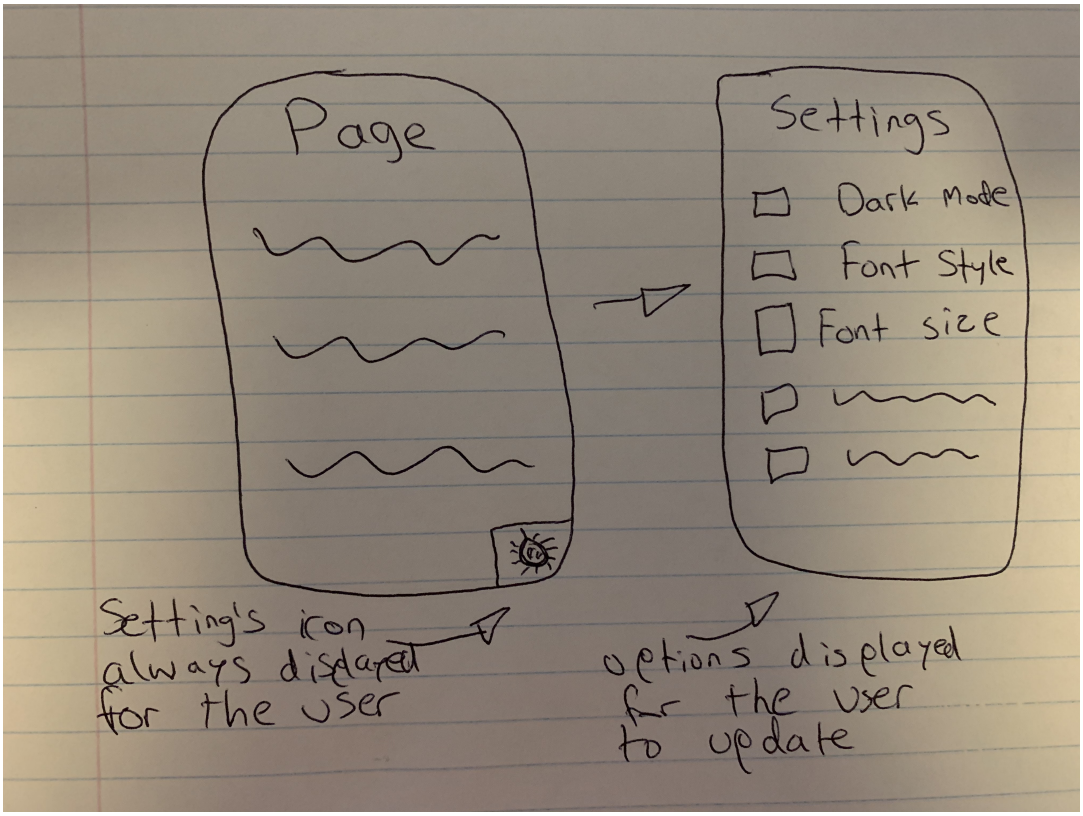
6.3 Sample Sketches






Logo
More options
Settings
RED Position 15+
Here's your position in the queue:
4
ORANGE for position 4 to 15
Blurred Background
Color changes to GREEN when position <3
Blurred Background
Pop-Upfor Position
Username
Password
LET'S GO!
Login button
Sign Up
Forgot Password?
Takes to seperate Subpages


09:52 AM
Looking For A Different Queue?
Search
Browse
Queue Location
Current Queue
More Info
Queue 4
Position
2/10
Queue Provider Name


Page
Settings
Dark Mode
Font Style
Font size
Setting's icon always displayed for the user
options displayed for the user to update

GitHub Repository, Portfolio, and Pages Links

Here is the link to our GitHub Repository: https://github.com/RMcCurdy/TeamS_Project

Here is the link to our GitHub Project Page: https://github.com/users/RMcCurdy/projects/1

Here is the link to our GitHub Pages Portfolio: https://rmccurdy.github.io/TeamS_Project/