

The Campus Recreation Center Application



Fab Five

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Phase 01

Frame Your Design

1.) Take a stab at framing it as a design question.

How to make the campus recreation app more approachable and beneficial for users and to make the experience at the recreation center more efficient?

2.) Now, state the ultimate impact you're trying to have.

We would like to encourage students to live a healthy lifestyle by fostering an encouraging and comfortable fitness environment.

3.) What are some possible solutions to your problem?

- Make the app more approachable/intuitive for new users
- Make sign up process easier
- Develop a profile section that includes personal stats like weight, height, gender, etc. as well as membership, payment settings, and app preferences
- Incorporate an interactive map that shows how busy the recreation center is and what activities are going on and where, in real time
- Be able to register for group fitness classes, see which classes you previously attended, and which classes you are registered for in the future
- Push notification about closings, instructor changes in group fitness classes, and fitness class/court reservation reminders
- Include fitness tracker that is done by the individual user
- Improve the nutrition advising section by adding nutrition tips relevant for students, and making connecting to a nutrition advisor a more straightforward process.
- Add simple instructions for safety and proper usage of machines

4.) Write down some of the context and constraints that you're facing.

- Users who are not UMass students
- How often application is updated

- App may not always be accurate with how busy the recreation center is which may frustrate users
- Gyms being crowded and encouraging students to use the gym can make the issue bigger
- Connecting the sign in and out of gym to the application

5.) Does your original question need a tweak? Try it again.

How can we make the campus recreation app more approachable, applicative, and beneficial to encourage students with different levels of fitness knowledge to use the app and the recreation center?

Target Audience

When deciding on how the UMass recreation center can be turned into a convenient and efficient application for everyone, understanding the ideal market of people that would use the solution is imperative. The audience of potential users is very broad, so being able to classify each group of people into either an extreme or a mainstream is very beneficial to actually designing the new app. Audiences of this new application include, but are not limited to, UMass students, UMass faculty, and community members. Each market here can be its own extreme and mainstream. For example, UMass students can be separated into those that actively use the recreation center, and those who do not actively use the recreation center. By specifically classifying each market into these groups, we narrow down which groups would be the most helpful to interview through these varying points of views. Also, it is important to highlight that there is no discrimination in these audiences. It is imperative for our app to be applicable to those from varying demographics to ensure we meet everybody's needs.

Mainstreams

For the mainstreams of the target audience, they are the people who know the most about the recreation center. The mainstreams only include people **who do actively use the current app**, but with different backgrounds:

- UMass undergraduate students
- UMass graduate students
- Off-campus/community members
- Campus Recreation Center employees

The app and recreation center is actively used by all of these groups, so it is remarkable to hear exactly why they use it. This is clearly the mainstream audience because these are the people that are using the services provided in the recreation center the most often. Ideas will be given to us as to what they would like to see in the new application in order to maximize their time and become more efficient. It is important to highlight that workers will be important because they have the inside scoop on how the recreation center is operated. We will use their feedback to better understand what does not work as well as coming up with ideas for the potential new features. These perspectives are the key to the success of the new application.

Extremes

Most extremes of our target audience fall into similar categories yet are unique in that they will include people **who do not use the current app**. In that sense they are basically the opposite of our mainstreams. The extremes include:

- UMass undergraduate students
- UMass graduate students
- Off-campus/community members

They all share something in common, not using the current app, but for different reasons. It is important to hear what each of them have to say because we want to tailor the solution to everyone. By hearing from people who do not use the app or the recreation center, we can begin to understand what is stopping them and what could be done to get them to use it. From there, we can bring up our new ideas and receive feedback on how they would interact with the new application. These perspectives will be used to a large extent in the actual creation of the application. In this case, the views of the extremes will have about the same weight as the perspectives of the mainstream audience.

Interviews

Who

Interviews should be conducted with all types of people who could benefit from the app being improved, such as:

- People who don't use the app or go to the recreation center, but would with an improved app experience.
- People who do not use the app at all, but go to the recreation center.
- People who frequently go to the recreation center, regardless of app usage.

- People who have tried to use the app but are confused with its user interface or benefits.
- Current and former employees and managers of the recreation center.
- Anyone on campus who fills out the survey, to account for categories of people that might have been overlooked.

Why

- We should interview people who don't go to the recreation center but would with an improved app experience to see how our app could help them reach their goals, and what they would like to see in an app that would motivate them to go to the gym. For example, if someone avoids the gym because it is too busy, adding a meter that shows the business of the gym might intrigue them to attend the gym at a down time.
- We should interview people who attend the gym and don't use the app to see what they would look for in a gym app. They already attend the gym, but improving the app to add helpful features would benefit them.
- We would want to interview the frequent gym-goers because they are the people most familiar with the gym, and would likely have lots of input as to how an improved app could benefit them and others.
- Interviewing people who are confused with the app currently would provide great insight as to what issues they believe the app currently has, and what difficulties they have had in using it. Their input could help us make the app more intuitive and provide ideas for common sense features that could be of great benefit, such as an interactive map.
- Interviewing employees of the recreation center would be beneficial because they see all types of people while working at the gym, and probably are asked frequent questions about the gym, signing up for classes in the app, or other issues, so they would likely have strong insight.

How

- As students, we know of people who fall into each of these categories, and could easily ask them if they would sit for an interview with us. If there is a category of gym user that we do not personally know, we could ask people at the gym, if they are a category that will attend the gym, of course. We could ask people in classes or common areas if we are unable to find people that fall in a category that includes people who do not attend the gym.
- We could additionally create a google form survey that could be posted in a public area, such as the dining hall or library, to receive feedback from all types of users.

Possible Questions

General:

- General demographic questions (Grade, Gender, on/off campus, etc)
- How important is having a workout routine for you?
- How much time in a week do you spend exercising?
- How often do you use the campus recreation app?
- How often do you attend the campus recreation center?
- Do you have a good experience when using the campus recreation app?
- Do you feel like the campus recreation app benefits you and your experience at the recreation center?
- What improvements or features do you wish there were in the app?

More specific:

- Around what time do you usually go to the gym?
- How often do you go to the gym?
- How long do you usually stay at the gym for?
- Do you attend a gym in your hometown?
- What is your main purpose of going to the gym?
- Do you use any apps to track your gym usage or activities?

Plan for Conducting Card Sort

- Distill our goal statements into short descriptions of improvements that can be done to the app and make cards with them
- Also might include pictures of concepts of new features like: sample push notification reminders, fitness tracker, and machine usage instructions
- Show them cards with two different design principles that somewhat contradict each other. Ex: Simplicity of Design vs More detailed app
- We can have people do an association exercise with the cards. This way, we can understand what are some of the key features that people like grouped together and to see what people at both ends of the spectrum would like to see implemented
- We will conduct hybrid style card sorting to capture the best of both worlds of open card sorting and closed card sorting. We will still want the open card sorting style to get fresh ideas but also would like to get some aspects of the closed card sorting to get a quick evaluation of ideas
- Cards will be a half and half mix of word cards and pictures cards

Phase 02

Introduction

Through this project, we want to find how to make the campus recreation app more approachable, applicative, and beneficial to encourage students with different levels of fitness knowledge to use the app and the recreation center.

To get feedback about the current app associated with the recreation center and with the recreation center itself, we created a google form which served as our “interviews”. In this form we asked people to answer questions about their demographics, how often and which areas of the recreation center they use, their satisfaction towards the current recreation center app (IMLeagues), how important having a recreation center app is to them, and what features they would like to see on a newly-developed app.

We also conducted a card sort the following demographics

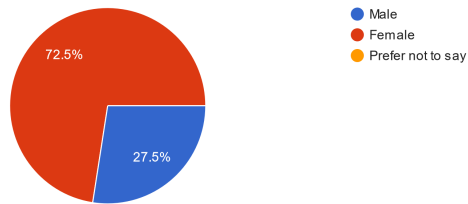
- (1) male undergrad student who had not used the IMLeagues app or recreation center
- (1) female recent graduate who often used the IMLeagues app and recreation center
- (1) male undergrad student who has never used the IMLeagues app but regularly attends the recreation center
- (1) female undergraduate student who uses the IMLeagues app and regularly attends the recreation center

From these responses, we were able to make conclusions about which features are most important for us to include in our app.

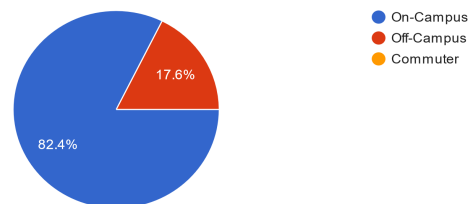
Data

We collected 51 responses from undergraduate students at UMass Amherst. 72.5% of responses were from females and 82.4% of responses were people living on-campus. We asked respondents how many days per week they go to the gym, what time they usually go to the gym, and what they usually do there (if they go at all). We delightfully received an array of responses from people who have never gone to the gym, to people who go to the gym once a week for exercise classes, to people who use the gym 5 days a week to lift weights, to people who use the gym 7 days a week for an array of activities like playing

Gender
51 responses



Living Situation
51 responses



basketball or using cardio machines. This abundance of responses gave us confidence in the validity of responses and how meaningful they are in making decisions for the app's design and layout.

Looking at the responses to the rest of the questions, we saw which features people would like to see most in an app, how important having a well-developed app is in general, and how we can cater, not only to the majority of people who use the recreation center, but to people that want to start taking advantage of the recreation center and its associated app.

We took a deep dive into the specifics of each individual response and were able to draw conclusions based on correlations we saw between certain demographics and what they wanted to see most in the app. To continue, we narrowed down which features are most important to include in the app, to appeal to various types of users and even features we thought would promote people to use the recreation center - features that would make them feel more comfortable.

Highlights

After analyzing the form responses and listening to what people had to say during the card sort, we were able to narrow down our proposed features for the application to the following (in no specific order):

- High-Quality App
- Crowd Meter
- Machine Instructions
- Minimalistic Layout
- Easy Sign-Up for Classes
- Ability to sign into Recreation Center with the App
- Notifications about Closings and Classes

Explanations

Below is the reasoning behind each of these features we deemed to be most important.

High quality app

For all individual responses, people rated the importance of high-quality recreation app by at least one point on a scale of 1-5 but an increase of 3 points was most common. Even individuals who rated the importance of current IMLeagues really low generally had high scores for a high quality app. That gives us an insight into how people are generally dissatisfied with the current app layout.

Crowd meter

Especially for people living off campus, a Crowd meter is very important as they can make a decision whether or not to come earlier to campus to work out. Since the crowd meter is likely going to show a long term steady pattern in differences in gym usage (hour by hour/ day by day), this will help them with long term decision making to schedule their other school activities around the Crowd meter. Since this feature is not something that can be replaced by any other device or apps such as the apple watch, (since it will require constant monitoring of the gym that belongs to the school), it will give people a critical reason to use the IMleagues app over other fitness apps.

While the gym has an overwhelming number of running machines, the vast majority of people go to the gym to lift weights (38 total responses/ranked 1 gym activity). With a limited number of weight lifting gym equipment such as benches or weight training machines, gym goers will greatly benefit from a crowd meter that will notify weight lifters when the weight lifting room is at a critical mass.

Machine Instructions

A highly rated response among people who are not frequent gym goers was the addition of machine instructions. 35 of the 51 responses gave this a 4 or 5 for importance. This could be accomplished by filming a video instruction on how each machine is used, and attaching a QR code to the machine that can be scanned in the app to pull up the video. There could also be a list of machines in the app where each instruction can be selected.

Minimalistic layout

The layout of the current app is very cluttered and fairly disorganized which makes navigating anything but intuitive. Something that stands out right away is how many sections in the app have a poor quality image as the background of the interface. Not only does it take away from the perception of the app's quality, but it also makes finding the desired option frustrating and straining for the eye. Currently, there is also a pixelated banner that links to an event that passed a long time ago. It takes away usable space on the screen and adds to the clutter. The card sort activity has shown that minimalistic layout is among top two priorities for most people. Cleaning up the layout and making the app more intuitive would lead to the app being perceived as high quality leading to a better satisfaction by users and potentially encourage new users to sign up.

Easy sign up for classes

While conducting the card sort amongst the interviewees, easy sign up for classes was ranked very high up in importance. Putting it into numbers, about 75% of people gave it a 4 or 5 on level of importance in the survey, with almost 80% of those people giving it a 5 out of 5 on importance. This was the second highest in importance of potential installments on the new application. This let us know not only how important this feature might be, but also how important classes are to people that use the recreation center. Maybe with easier sign-ups for classes, even more people would be open to taking advantage of the classes that are offered.

Ability to sign in with your phone

The current system screams inefficiency as people wait in long lines to check into the recreation center as UMass students fumble to find their UCard. Looking at the survey, around 76% of people gave a 4 or 5 on the importance of being able to sign in with your phone. After discussing this possible implementation with a worker at the recreation center, she highlighted how beneficial this installment would be on workers as well, as it would create less confusion due to how undemanding it is.

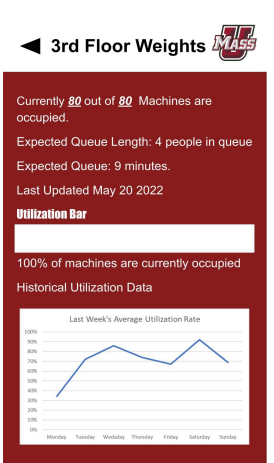
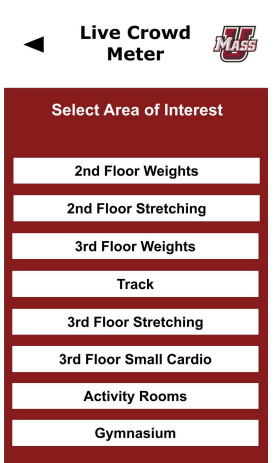
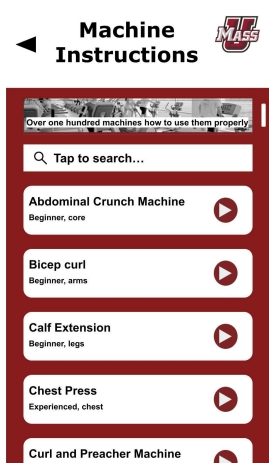
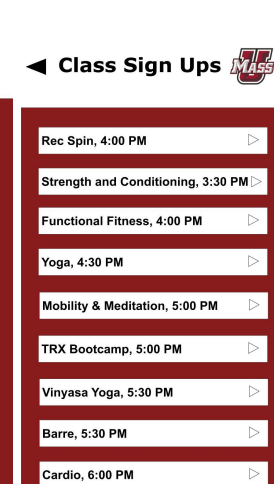
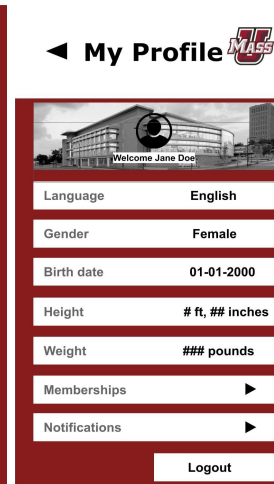
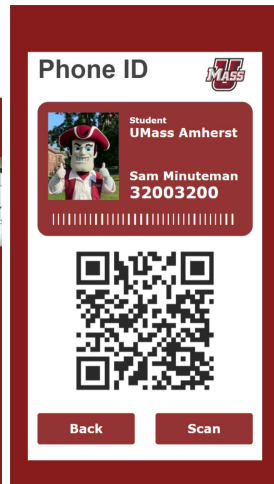
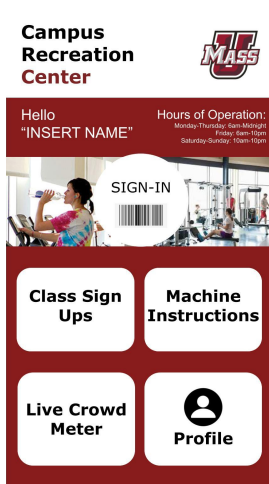
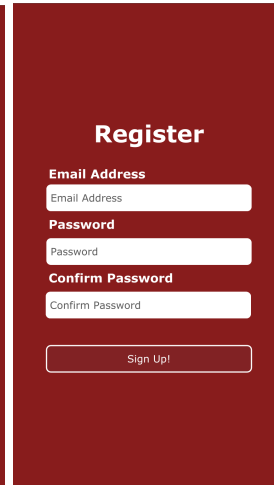
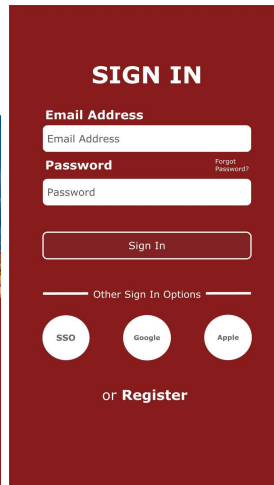
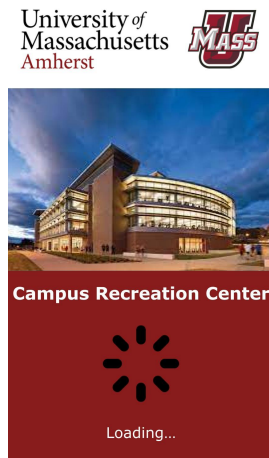
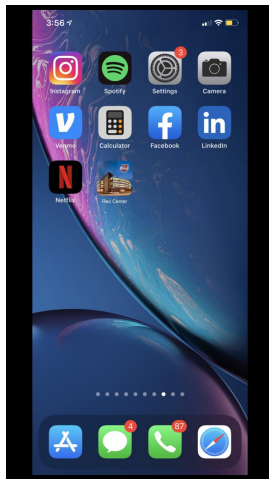
Notifications about closings/ classes

Out of the 51 responses, 41 indicated a 4 or 5 importance of notifications for closings and classes. This would be very helpful because getting all the way to the recreation center for a class you signed up for just to find out that it was canceled would be extremely frustrating. Also, the recreation center is closed

on snow days, and a notification reminding students of this could be helpful so that no one walks or drives all the way there just to find out they cannot use the recreation center.

Phase 03

Screenshots of Final Prototype

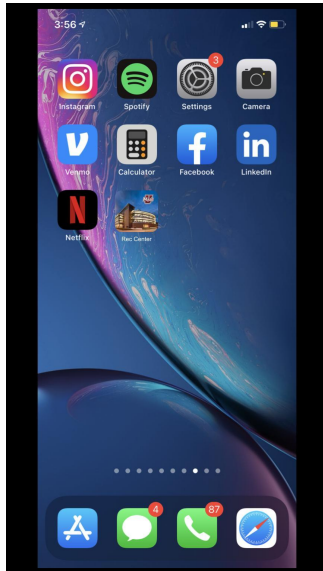


Through phases 1 & 2 of this project, we found users were asking for us to focus on making a high quality and minimalistic app that includes the following features: the capability to use your phone to sign into the recreation center, easy class sign-up, machine instructions, a crowd meter, and a profile where your stats, notifications, and settings are stored.

Style Choices

The design choices we made reflected that this was an app associated with UMass Amherst. We created a minimalistic design with fluidity through each page. Our color palette consisted of UMass's maroon(dark red berry #2), white(theme color white), and dark gray(dark gray 4). Backgrounds of each page are maroon with a white banner up top. Top banners include name of page, UMass logos, and back arrows for pages the user navigated to, from the home page. All titles, descriptions, and wording is on a plain background for easy navigation and visibility. We used font Verdana for titles and Arial for other text throughout the application's interface. Font size reflects levels of importance and tiers of pages. All main pages have a similar organization of horizontal white boxes with black lettering inside to help users recall the organization style. There are minimal graphics and pictures because they do not serve any purpose to the function of the application. We found that users wanted a minimalistic and high-quality application and that aesthetics were not a priority. Page titles and links to class sign-ups and machine instruction are clear which helps the user to efficiently navigate the application - without having to search through various pages for what they are looking for. On the home page, there are only (4) pages plus a sign-in for them to choose from so users can quickly see all of their options. The (4) main pages we have are split between "Class Sign Ups", "Machine Instructions", "Live Crowd Meter", and "Profile". These pages do not have overlapping information and split the application into its four main uses. Within those pages, all of the information is focused on one thing and organized from top to bottom.

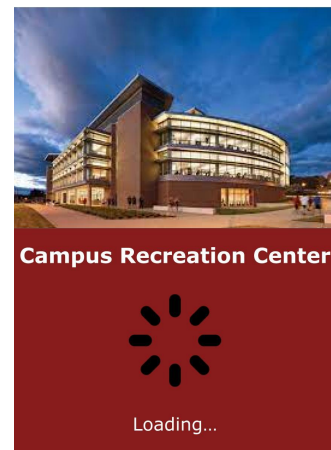
Screen Descriptions

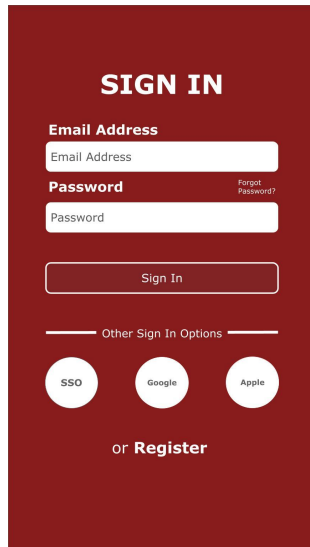


This screen shows the recreation center application icon among other typical application icons on an iPhone home screen. This screen displays the uniqueness and attractiveness of the icon. Compared to the other applications surrounding it, the application captures the user's attention with something other than just a capitalized letter. Clicking the icon will open the application.

The **loading screen** for our application is the first thing the user sees when opening it. We wanted the loading screen to be able to convey that the application being used belongs specifically to UMass Recreation Center. To achieve that, we have included the image of the center itself in the middle of the screen. We have also included the loading bar to provide users with the visual feedback that allows them to know the application is not frozen but is actively loading.

University of
Massachusetts
Amherst





SIGN IN

Email Address

Password [Forgot Password?](#)

Other Sign In Options

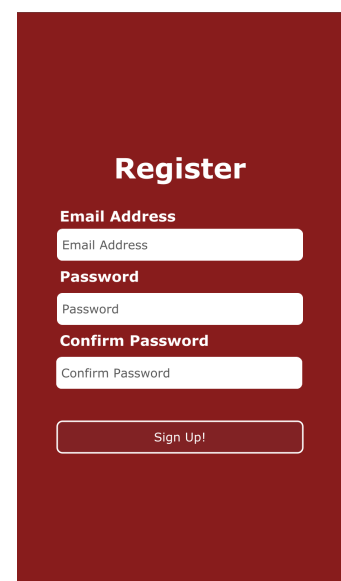
or Register

When we conducted our surveys, people being surveyed mentioned how unapproachable signing in to the current app can be. The situation seemed even worse with registering. In order to make the process easier on the user's eyes, we have simplified the look of the **Sign In** page as much as possible. Now there is a bold heading saying “Sign In” against a solid background. There are 2 fields that are to be filled in with the user's email and password. On top of each fillable field there is a heading for the sake of helpful redundancy, because if we had just the fields, some users might have gotten confused what those are for. This redundancy makes the sign in screen resemble the sign in screens the users are used to seeing in any other app they use.

Going down, the user sees the sign in button. It is in the same shape as the fillable fields but the white outline allows the user to intuitively assume it is something to be clicked. The “Sign In” text further confirms that. Then there are lines meant to create separation between the main fields to show that there are parallel options. Text in the middle of the line break once again reinforces that. The first alternative sign in option is the SSO which allows students that attend UMass to bypass having to sign up or speed up their sign in. Google and Apple buttons are alternatives that allow a faster sign in for Android or iPhone users. For aesthetic reasons, the buttons for other options are circles, as three circles in a row look better than three aligned rectangles.

Lastly, there is a bold “Register” button. Its location is at the very bottom as the user will only need to click it if they scanned all other options and none are useful. Another reason is people need to sign up for something less often than they sign in.

If the user chooses to register because they have not done so yet, it will bring them to this **Register** screen. Here they can enter their UMass email and create and confirm a password. Then, clicking “Sign Up!” will bring them to the next screen, the home screen. The only difference between the sign up and register screen is that the extra buttons are eliminated and there is an extra fillable field.



Register

Email Address

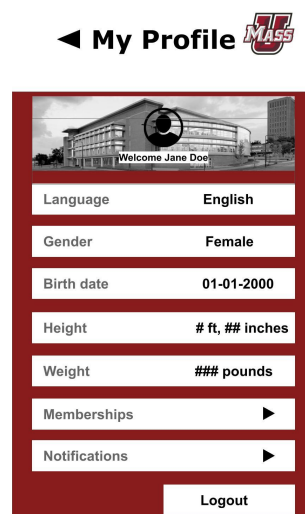
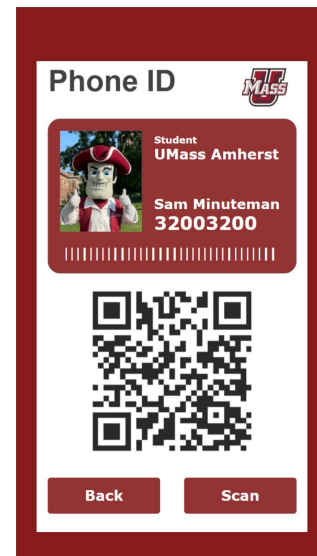
Password

Confirm Password



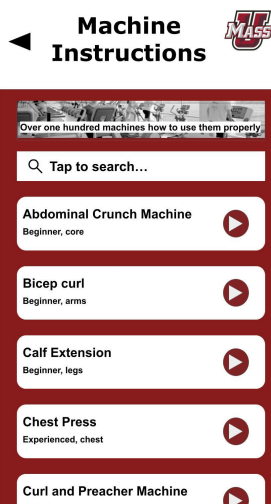
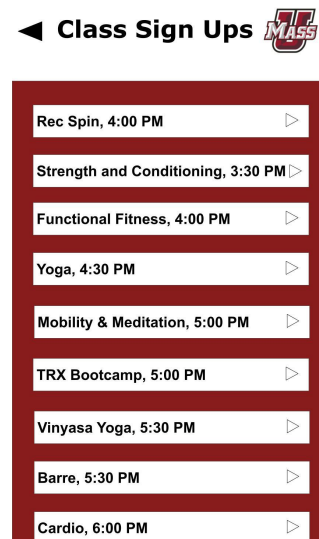
This screen is the **main screen** of the application, the home screen. When a user who has already registered or signed in in the past clicks on the app, this is the first screen they will be brought to, other than the loading screen. This screen contains five main buttons. The “Sign-In” button brings up the screen that can be used to scan into the gym. The “Class Sign Ups” button brings up the list of classes in order of time. The “Machine Instructions” button brings up the searchable list of machines with videos on how to use them properly. The “Live Crowd Meter” calls the screen where any area of the gym can be selected to see its most recent count of people. Finally, the “Profile” button brings up the customizable profile of the user. All five of these screens will be described in the following paragraphs.

This is the screen that pops up when the user hits the sign in button on the main screen. It contains a **digital UCard** with the photo so it is easy to verify when a student is scanning in. In the center, there is a QR code which employees can scan to let a student in. On the bottom there is a “back” button a student can click once scanned in. There is also a “scan” button for when a student is leaving the center. Now students can scan a QR code placed on their way out, which will provide the crowd meter with more useful information regarding business level in the Recreation Center.



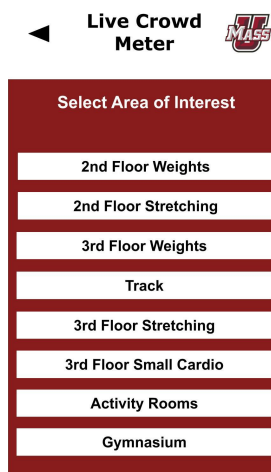
This is the **My Profile** screen that users navigate to after clicking “Profile” on the homescreen of the application. We found that having a page for administrative and personal information made sense for our organization. This page includes the user’s stats which they have the capability to edit, language settings, and a page for membership information and notifications. This page has (7) boxes of information, (2) of which bring the user to a lower tier page. The user can click right on the words in black in the first (5) horizontal boxes to edit that information at any time. The user can navigate to “Memberships” and “Notifications” pages by clicking on those black arrows. The user can log out of their accounts by clicking the “Logout” button.

This is the **Class Sign Ups** screen that the users navigate to after clicking “Class Sign Ups” on the homescreen of the application. This brings them to the schedule of classes of the day which are in chronological order. Each class (titled by their name and start time) can be accessed by clicking the arrow to the right of its name. This arrow brings users right to a page to register for the class they selected. This page will update everyday at 12:00am and automatically refresh with the classes for the upcoming day.



The **Machine Instruction** has a searchable bar that can be clicked, calling up a keyboard so that any machine can be searched for. The name of each machine is clearly displayed on the machine itself at the Recreation Center, allowing for easy search keywords. The triangular play button icon will call a pop-up video, showing how to use the machine.

This is the **Live Crowd Meter** screen that the users navigate to after clicking “Live Crowd Meter” on the homescreen of the application. This screen organizes the recreation center into different sections based on how people split their time at the recreation center and the main areas of interest. The user can click on any “area of interest” and will be brought to a page with the corresponding title that has information about its capacity along with a live crowd meter. All “areas of interest” can be seen from this screen and there is no scrolling necessary.



◀ 3rd Floor Weights

Currently 80 out of 80 Machines are occupied.

Expected Queue Length: 4 people in queue

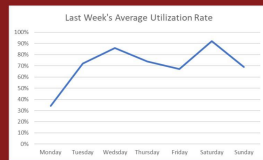
Expected Queue: 9 minutes.

Last Updated May 20 2022

Utilization Bar

100% of machines are currently occupied

Historical Utilization Data



The layout of the **Crowd Meter** was specifically designed to minimize information access cost. This was achieved by displaying information in order of most importance to the least. People are most interested in how many exercise machines in a given area are occupied. This is therefore the first line of information displayed with numbers underlined to make it easier for people to notice. The expected queue length, and expected queue are other important information that people could utilize if current occupancy is at maximum. However, since this would only be utilized if the area is full, thus given a lower importance. Historical Utilization Data was displayed last since, although useful in making long term decisions, it has no impact on people who are already at the Recreation Center who are just trying to see if a certain area is available. All information is compacted into a screen making scrolling unnecessary.

Phase 04

Prototype Testing Procedure

In order to properly assess the features of the new prototype, we conducted 5 interviews where various people would be asked to perform 4 separate tasks using the new interface. Each one of the 5 participants were asked to complete the same 4 tasks. In order to determine how efficient each of the participants were in achieving their tasks, we outlined the most efficient steps to see if the participants would mimic it. The tasks and the outline for perfection are listed below.

1. Update your weight
 - a. Sign into your account (Takes you to home screen once completed)
 - b. Click on “Profile” in bottom right corner
 - c. Click on “Weight”
 - d. Update new number for weight
2. Sign up for Yoga at 4:30
 - a. Sign into your account (Takes you to home screen once completed)
 - b. Click on “Class Sign Ups” in middle left of home screen
 - c. Choose and click on “Yoga, 4:30pm” to confirm class
3. Find machine instructions for the abdominal crunch machine
 - a. Sign into your account (Takes you to home screen once completed)
 - b. Click on “Machine Instructions” in middle right of home screen
 - c. Choose and click on “abdominal crunch machine” (Search if necessary)
4. Navigate to the sign-up page from the crowd meter for 3rd floor weight.
 - a. Click on back-arrow in the top left corner of the “3rd Floor Weights” screen
 - b. Click on back-arrow in the top left corner of the “Crowd Meter” screen
 - c. Now at home screen click on “Class Sign Ups” in the middle left of screen

With this outline in mind, each member measured how successful the participants were, as well as the quality of the prototype interface, through the collection of qualitative and quantitative data. Before each task was conducted, a timer was set up to time how long each task took to complete. During the tasks, the interviewers took notes on the participants' actions. After each task was completed, a mini interview was performed to hear what went well and what could be improved. All of this allowed for massive amounts of data to be collected and then eventually reviewed.

Prototype Testing Results

Quantitative: The main source of quantitative data that was collected during these tasks was duration. We recorded how long it took each of the participants to complete each of the tasks. The table below displays the average amount of time it took for the participants to complete each task.

	Task 1	Task 2	Task 3	Task 4
Time (Seconds)	21.8	19.4	17.8	14.8

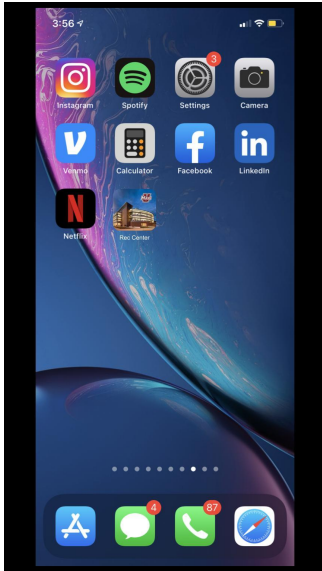
The major trend of this table is that each task was conducted faster than the previous one. That goes to show how familiar the interface was to the participants because they were able to easily adapt and manipulate the system to complete the following tasks.

Qualitative: To ensure a balance of both qualitative and quantitative data, each participant received a post-task interview following the conduction of each task. This was to receive feedback on how they perceived the prototype interface. A common theme from the responses was that the interface was super straightforward and simple. This allowed for them to quickly manipulate the system to their liking and navigate from different pages effortlessly if they ever made a mistake. None of the tasks ever seemed difficult to the participants, the hardest part was fully understanding all of the features, which was super easy to adapt to. After hearing this amazing feedback from the participants, the conversation shifted towards potential additions in features to the prototype. It was very rare to see a suggestion that changed one of the new features, as it was mostly just possible new features to add to the prototype that seemed to be missing. These ideas included a navigation bar, notifications, and a discover page.

After collaborating with other members of the group with the data we received from our interviews, we reviewed what went well and what possible suggestions might want to make it to the final version.

Overall, this step in our design process was crucial as it gave us outside perspectives on what ideas we were confident on, and what ideas we were just missing.

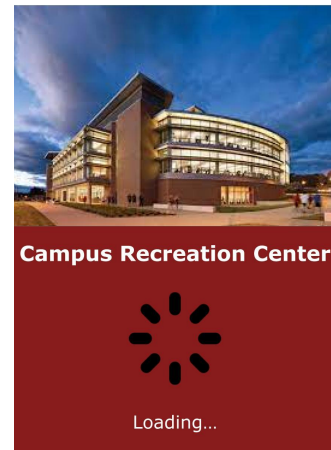
Screen Descriptions

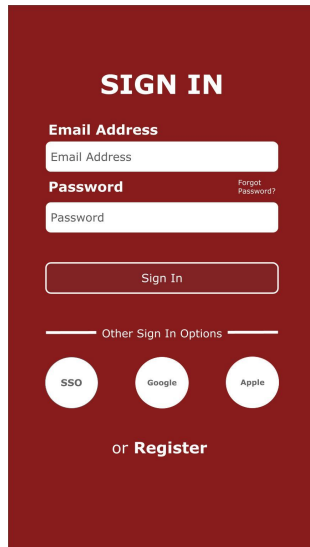


This screen shows the recreation center application icon among other typical application icons on an iPhone home screen. This screen displays the uniqueness and attractiveness of the icon. Compared to the other applications surrounding it, the application captures the user's attention with something other than just a capitalized letter. Clicking the icon will open the application.

The **loading screen** for our application is the first thing the user sees when opening it. We wanted the loading screen to be able to convey that the application being used belongs specifically to UMass Recreation Center. To achieve that, we have included the image of the center itself in the middle of the screen. We have also included the loading bar to provide users with the visual feedback that allows them to know the application is not frozen but is actively loading.

University of
Massachusetts
Amherst





SIGN IN

Email Address

Password Forgot Password?

Other Sign In Options

SSO Google Apple

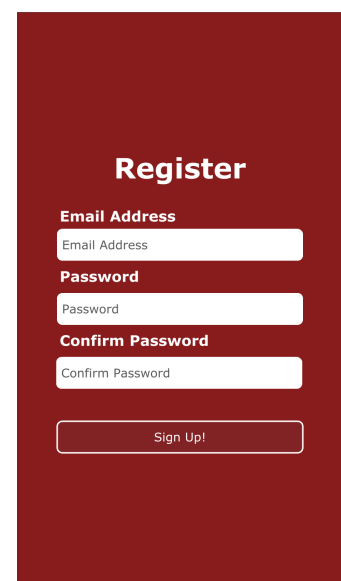
or Register

When we conducted our surveys, people being surveyed mentioned how unapproachable signing in to the current app can be. The situation seemed even worse with registering. In order to make the process easier on the user's eyes, we have simplified the look of the **Sign In** page as much as possible. Now there is a bold heading saying “Sign In” against a solid background. There are 2 fields that are to be filled in with the user's email and password. On top of each fillable field there is a heading for the sake of helpful redundancy, because if we had just the fields, some users might have gotten confused what those are for. This redundancy makes the sign in screen resemble the sign in screens the users are used to seeing in any other app they use.

Going down, the user sees the sign in button. It is in the same shape as the fillable fields but the white outline allows the user to intuitively assume it is something to be clicked. The “Sign In” text further confirms that. Then there are lines meant to create separation between the main fields to show that there are parallel options. Text in the middle of the line break once again reinforces that. The first alternative sign in option is the SSO which allows students that attend UMass to bypass having to sign up or speed up their sign in. Google and Apple buttons are alternatives that allow a faster sign in for Android or iPhone users. For aesthetic reasons, the buttons for other options are circles, as three circles in a row look better than three aligned rectangles.

Lastly, there is a bold “Register” button. Its location is at the very bottom as the user will only need to click it if they scanned all other options and none are useful. Another reason is people need to sign up for something less often than they sign in.

If the user chooses to register because they have not done so yet, it will bring them to this **Register** screen. Here they can enter their UMass email and create and confirm a password. Then, clicking “Sign Up!” will bring them to the next screen, the home screen. The only difference between the sign up and register screen is that the extra buttons are eliminated and there is an extra fillable field.

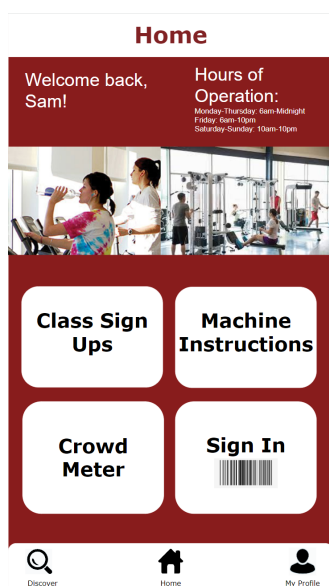


Register

Email Address

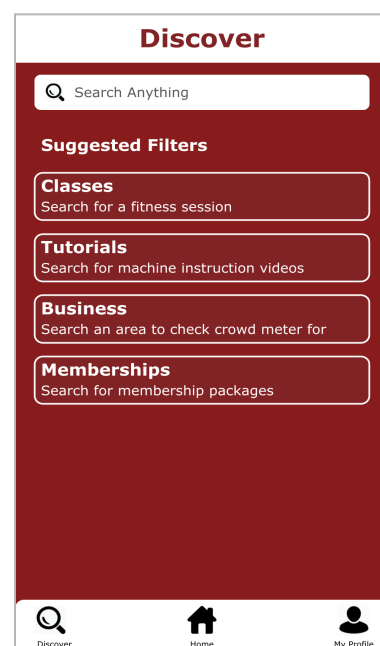
Password

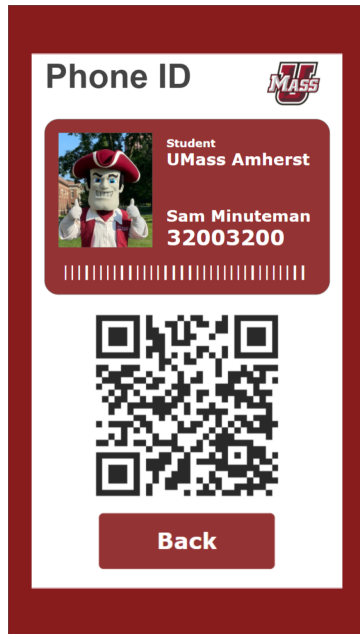
Confirm Password



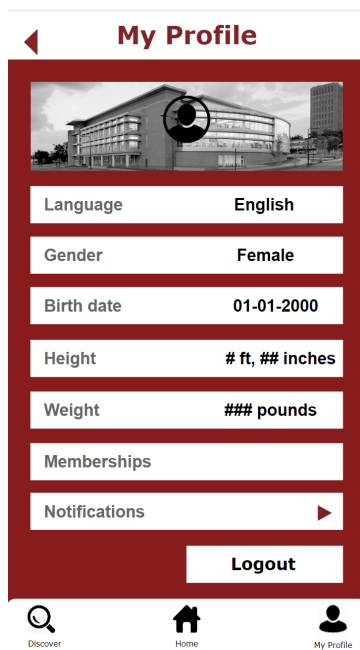
This screen is the **main screen** of the application, the home screen. When a user who has already registered or signed in in the past clicks on the app, this is the first screen they will be brought to, other than the loading screen. This screen contains four main buttons. The “Class Sign Ups” button brings up the list of classes in order of time. The “Machine Instructions” button brings up the searchable list of machines with videos on how to use them properly. The “Live Crowd Meter” calls the screen where any area of the gym can be selected to see its most recent count of people. Finally, the “Sign-In” button brings up the screen that can be used to scan into the gym. The bottom navigation bar appears on this screen and is then visible on every page after. There are three options on this bar. The “Discover” button brings the user to a page where they can search for actions and items throughout the application, the “Home” always brings the user back to this home screen, and the “My Profile” button brings up the customizable profile of the user. All of these screens will be detailed in the following descriptions.

The **discover** tab is located at the bottom left corner of each screen for the user to use at any time no matter where in the app they are. It was specifically placed on the bottom left corner with ‘Fitts law’ in mind, to reduce response time. Another reason it was placed at the bottom left was due to familiarity that it would share with other systems such as windows where the windows search tab is always placed on the bottom left corner. The discover page offers easy navigation through the system via search of “keywords” in the search tab located at the top of the screen. Suggested filters are displayed to inform users of the most commonly searched keywords. It also gives the user an idea of the search capabilities. Each suggested filter is clickable and will directly take the user to the appropriate screen. As the user starts typing in keywords the suggested filter will get updated to better match what the user is looking for.

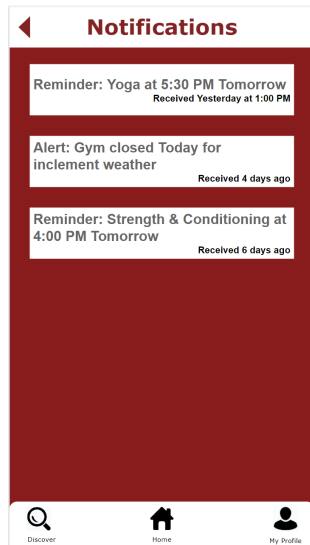




This is the screen that pops up when the user hits the sign in button on the main screen. It contains a **digital UCard** with the photo so it is easy to verify when a student is scanning in. In the center, there is a QR code which employees can scan to let a student in. On the bottom there is a “back” button a student can click once scanned in.

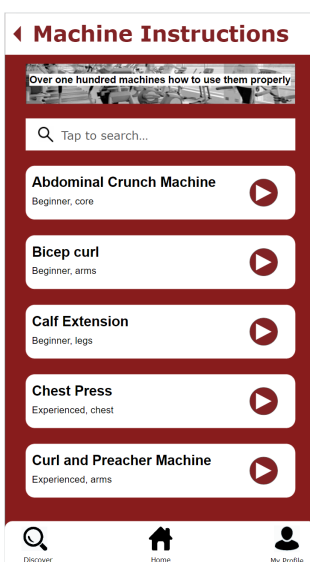
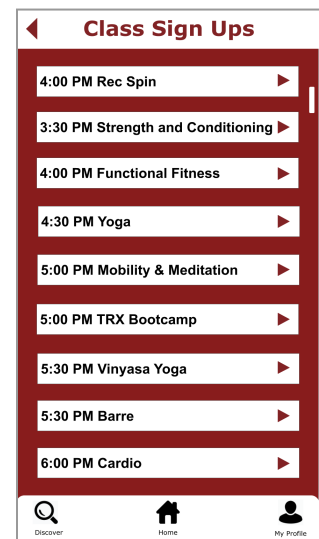


This is the **My Profile** screen that users navigate to after clicking “My Profile” on the navigation bar of the application. We found that having a page for administrative and personal information made sense for our organization. This page includes the user’s stats which they have the capability to edit, language settings, and a page for membership information and notifications. This page has (7) boxes of information, (2) of which bring the user to a lower tier page. The user can click right on the words in black in the first (5) horizontal boxes to edit that information at any time. The user can navigate to “Memberships” and “Notifications” pages by clicking on those black arrows. The user can log out of their accounts by clicking the “Logout” button.



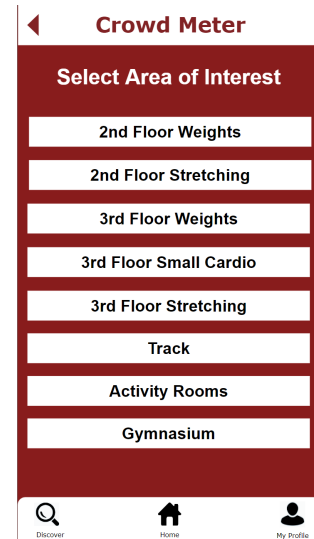
From the profile page, a user can access their **notifications** page. On this page all of the notifications the user has received about cancellations, class reminders, gym closings, and anything else important that the user is notified about. If the user feels they may have missed a notification they can go to this screen to see a recap of all the notifications they have received.

This is the **Class Sign Ups** screen that the users navigate to after clicking “Class Sign Ups” on the homescreen of the application. This brings them to the schedule of classes of the day which are in chronological order. Each class (titled by their name and start time) can be accessed by clicking the arrow to the right of its name. This arrow brings users right to a page to register for the class they selected. This page will update everyday at 12:00am and automatically refresh with the classes for the upcoming day.



The **Machine Instruction** has a searchable bar that can be clicked, calling up a keyboard so that any machine can be searched for. The name of each machine is clearly displayed on the machine itself at the Recreation Center, allowing for easy search keywords. The triangular play button icon will call a pop-up video, showing how to use the machine.

This is the **Live Crowd Meter** screen that the users navigate to after clicking “Live Crowd Meter” on the homescreen of the application. This screen organizes the recreation center into different sections based on how people split their time at the recreation center and the main areas of interest. The user can click on any “area of interest” and will be brought to a page with the corresponding title that has information about its capacity along with a live crowd meter. All “areas of interest” can be seen from this screen and there is no scrolling necessary.



The layout of the **Crowd Meter** was specifically designed to minimize information access cost. This was achieved by displaying information in order of most importance to the least. People are most interested in how many exercise machines in a given area are occupied. This is therefore the first line of information displayed with numbers underlined to make it easier for people to notice. The expected queue length, and expected queue are other important information that people could utilize if current occupancy is at maximum. However, since this would only be utilized if the area is full, thus given a lower importance. Historical Utilization Data was displayed last since, although useful in making long term decisions, it has no impact on people who are already at the Recreation Center who are just trying to see if a certain area is available. All information is compacted into a screen making scrolling unnecessary.

Changes Made

Before conducting the interviews, we decided to implement a navigation bar at the bottom of the screen that helps users easily navigate to (3) important pages no matter where they are in the application. This is a common feature on smart devices and within applications. Our navigation bar includes an icon for the homepage, the discover page, and the profile. Users can always make it back to the home screen where the most of their options are, they can always edit their profile information, and they can always go to the discover page to search anything in the application.

With the implementation of the navigation bar, we also made changes to the header of each page. They are now simpler and have a simple title. We removed the UMass logo on each page because there was no function of that logo. This also balanced the page better and gave more room for actual information as opposed to headers and footers.

After conducting interviews and evaluating our findings we realized we were missing two critical pages. We then created “Notifications” and “Discover” pages. Before, it was clear to users how to navigate to these places but then once they got there, there was no functioning page. Our Discover page simply included a search bar for users to search for a class, machine instructions, or anything else in the application. With this, they no longer have to scroll through each page to find what they are looking for. The Notifications page we included contains recent notifications from the application administration whether about recreation center closings, change in instructor for a class, etc. Users may have notifications turned off on their phones or may have swiped a notification away and we wanted to ensure users could still access this important kind of information regardless.

We also rearranged our homepage a bit. Once we implemented the navigation bar, there was redundancy on the homepage and there were two places for users to click to navigate to their profiles. There was also no fluidity between the options - one said “Me” while the other said “Profile”. We kept the profile icon on the navigation bar to create uniformity and familiarity between the rest of the pages. We removed the “Profile” from the four main options on the homepage and replaced where “Profile” was with “Sign-In”. This also simplified the page and cleared up space on the homepage. We minimized the pages on the homescreen while still giving the user the same number of options to navigate to.

Additionally, we removed the top bar on the page with the UMass logo and the title because it was not uniform with the remaining slides and we did not have a good reason for it being there. We appended it to have a simple title “Home” in the same size and font as the other pages’ headings.

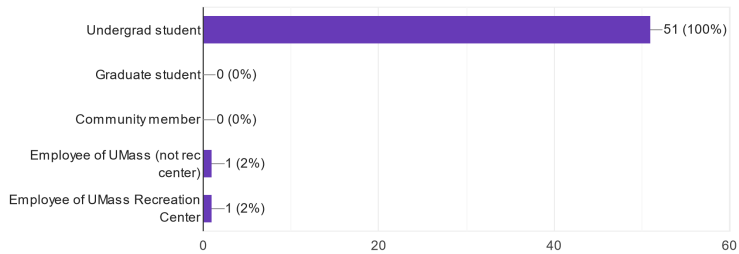
While the Class Sign Ups page was always organized by time, we put the time first on the list instead of the class name because it is easier for users to navigate through the times of classes if they are all lined up and the first thing the user reads from left to right.

Appendix

Google Form Data

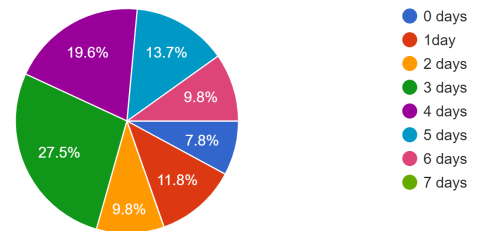
Select the following options that best describe you

51 responses



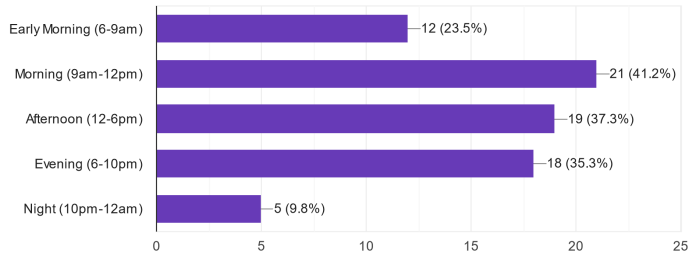
How many days on average per week do you spend at the gym.

51 responses



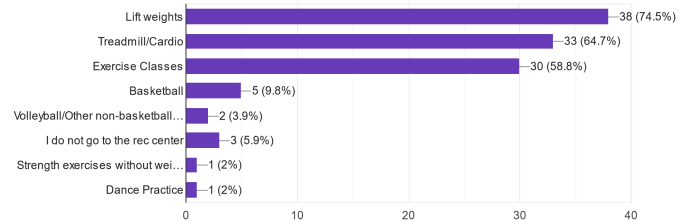
Around what time do you usually go to the gym?

51 responses



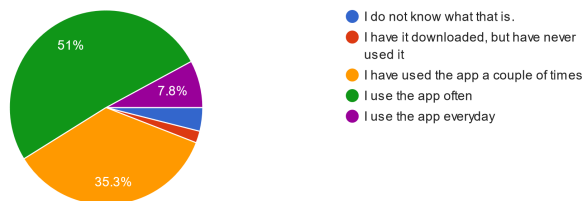
What do you typically do at the rec center? (select all that apply)

51 responses



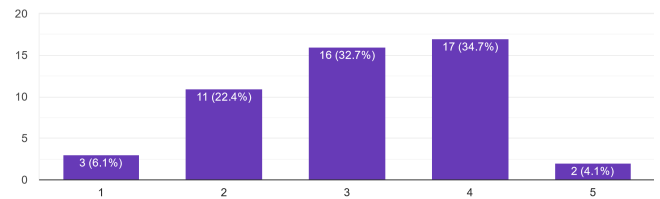
Have you ever used the IMLeagues app? Select the best fit answer

51 responses

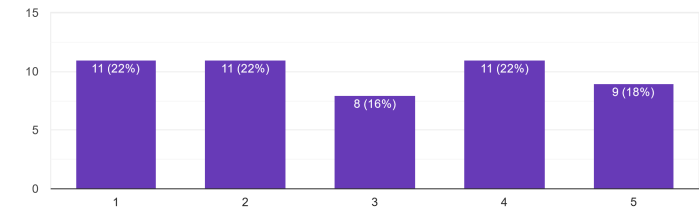


On a scale of 1 to 5 how would you rate the current IMLeague app.

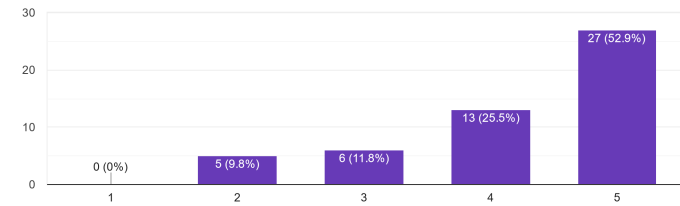
49 responses



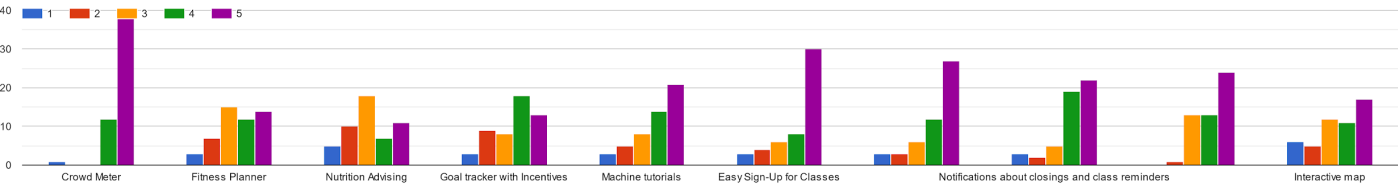
On a scale of 1 to 5 how important is the IMLeague app, in terms of your fitness experience?
50 responses



How important would a high-quality recreation center app be to you?
51 responses



How useful or important would each of these features be to you (1 = not useful/unimportant, 5 = very useful/important) if added to the rec center app?Please take your time when considering these responses.



Do you use any apps to track your gym usage or progress? If so, which app(s) do you use? Why do you like these apps?
21 responses

No
no
None
whoop app, i like it
Apple Fitness
N/A
I use the fitness app that is connected to my Apple Watch . I like this app to track my workouts and keep me accountable.
Yes, Strong because it let's me do templates for my workouts!

I use the fitness app that is connected to my Apple Watch . I like this app to track my workouts and keep me accountable.

Yes, Strong because it let's me do templates for my workouts!

Apple Watch

Samsung Health provides many features without sacrificing the simple, clean layout.

Apple Watch app

none

Strava, it tracks all types of activities, has a social component, and is especially good for gps centric activities (i.e. running, hiking, biking)

Google docs. Use to write down weights, reps, etc.

Please share with us at least (1) thing you would like to see on a campus recreation center app?
51 responses

Crowd meter
Crowd meter
crowd meter
crowd meter and fitness tracking
live usage
Definitely how many people are there.
Easier user interface
Crowd meter and ability to sign in on your phone

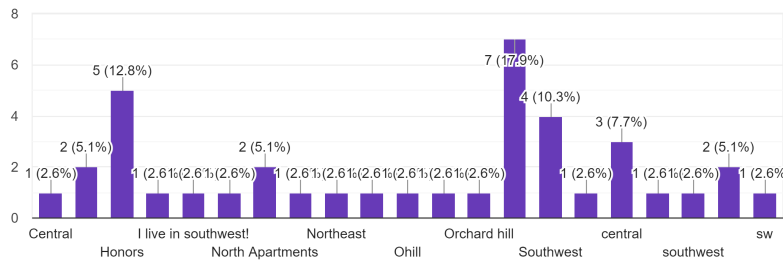
How busy it is
Activity level, maybe a livestream of the weight room, just something to say how crowded it is at any given time
Crowd Meter
The scan in feature! That would be so helpful
I would like to see how busy it is
Crowd meter/fitness planner
The ability to be able to check in on your phone
A crowd meter and a list of the instructors to be able to pick fitness classes based on a preferred instructor's schedule

I really like the crowd meter idea. I always struggle on deciding when to go to the rec because I don't want to have to sit forever waiting for a machine.
I would love to see a crowd meter because the gym is always busy!!
Empty Studio openings
live business
Number of people playing basketball

literally a better interface with more features
I definitely like the idea of a gym meter to see how busy the rec is at each time
Routine planners
A crowd meter that was frequently updated/ showed an average of busy times through the day
No
an indicator of how busy it is
A simpler, easier layout with less/no ads. I keep getting stuck every time I try to register for a class on my phone and it is incredibly inconvenient
Correct times and rooms for fitness classes

Accurate people count
Easy user interface
Crowe meter
tutorials
Number on the waitlist for a class
easier design to navigate
Tips on how to use equipment provided by the rec for members - locks, towels, balls, etc.
Class sign up notifications
More about each fitness class

If you live on-campus, in what residential area do you reside in? (Central, southwest, honors, etc.)
39 responses



Card Sort Data

Person #1

Context: undergraduate male, app not installed, regularly attends recreation center

Card order:

1. Minimalistic Layout
2. Crowd Meter
3. Machine Instructions
4. Easy Signup Process
5. Nutrition Advising
6. Push Notifications
7. Scan Ucard Feature
8. Class Details
9. Goal Tracker
10. Fitness Planner
11. Interactive Map
12. Detailed User Interface

Person #2

Context: female, graduated, app installed, frequently went to recreation center

Card order:

1. Minimalistic Layout
2. Crowd Meter
3. Scan Ucard Feature
4. Nutrition Advising
5. Push Notifications
6. Class Details
7. Machine Instructions
8. Fitness Planner
9. Easy Signup Process
10. Goal Tracker
11. Detailed User Interface
12. Interactive Map

Person #3

Context: undergraduate female, app installed, regularly goes to recreation center

Most Important:

- Easy signup process
- Minimalistic layout
- Push notifications
- Crowd meter

Somewhat Important:

- Class details
- Interactive map
- Nutrition advising
- Goal tracker

Least Important:

- Detailed multi-layered user interface
- Fitness planner
- Machine instructions

Person 4

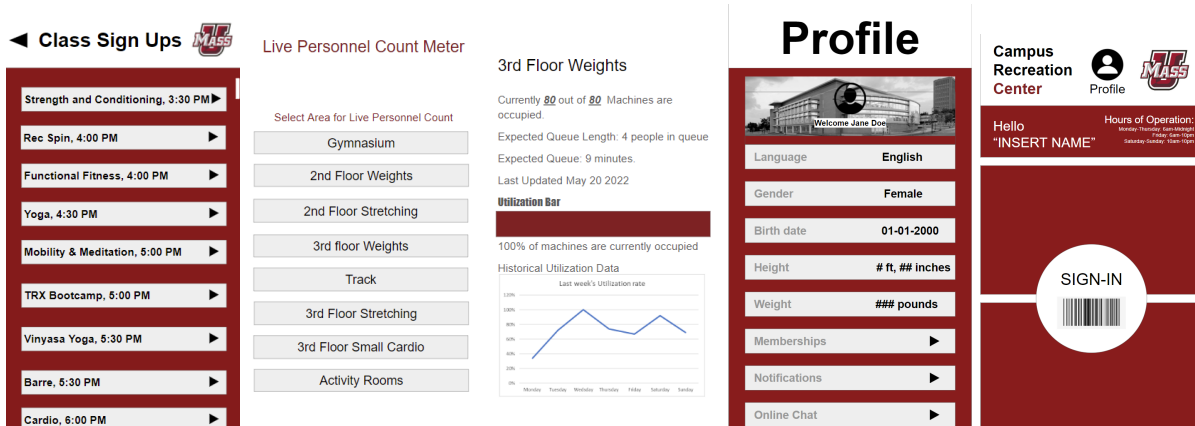
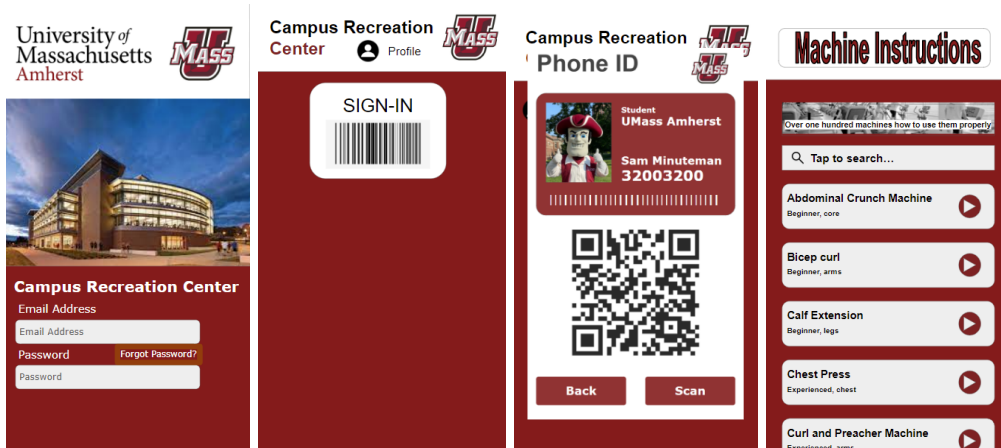
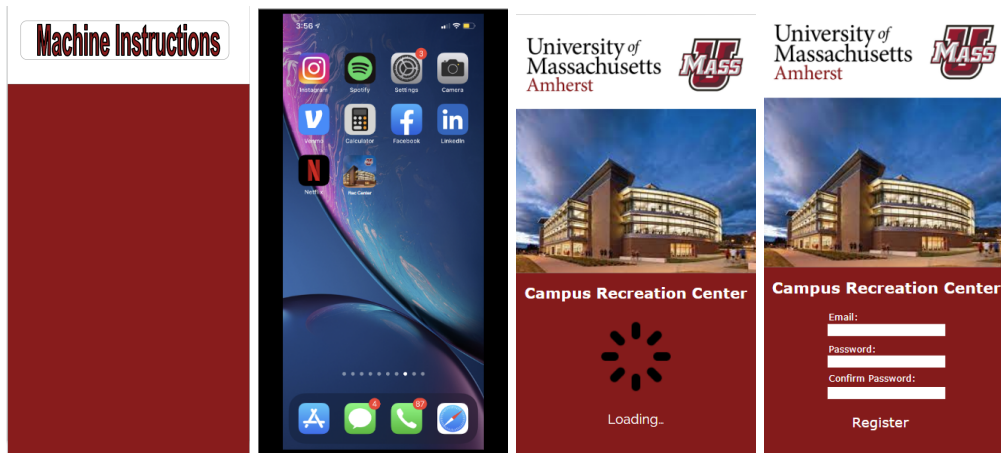
Context: undergraduate male, app not installed, never attended campus recreation center

Card Order:

1. Minimalistic Layout
2. Crowd Meter
3. Goals Tracker
4. Nutrition Advising
5. Fitness Planner
6. Machine Instructions
7. Class Details
8. Push Notifications
9. Easy Signup Process
10. Scan UCard feature
11. Detailed User Interface
12. Interactive Map

His Priorities: As a person with no gym experience, He would like minimalistic design as first priority, otherwise he would not bother downloading the app, his top picks were all features that had to do with features that helps him get started on a fitness regime and helps me stay on it.

Interface Revisions



[◀ My Profile](#)
[▶ Class Sign Ups](#)
[▶ Machine Instructions](#)
[▶ Live Crowd Meter](#)

3rd Floor Weights



Currently **80** out of **80** Machines are occupied.

Expected Queue Length: 3 people in queue

Expected Queue: 9 minutes.

Last Updated May 20 2022

Utilization Bar

100% of machines are currently occupied

Historical Utilization Data

Last Week's Average Utilization Rate



Day	Utilization Rate (%)
Monday	20
Tuesday	50
Wednesday	70
Thursday	60
Friday	80
Saturday	60

Phase 04 Interviews

Participant #	Task 1 (seconds till completion)	Task 2 (seconds till completion)	Task 3 (seconds till completion)	Task 4 (seconds till completion)
1 (female undergrad)	20	20	15	20
(by Lorelei)	<u>Order/Notes</u> Task 1: Easy Task 2: Click arrow on right side of sign up to navigate to next page Task 3: Click play button to right of “abdominal crunch machine” Task 4: Back arrow to live crowd meter→back arrow to home→class sign-up			
2 (male undergrad)	25	15	20	10
(by Zach)	<u>Order/Notes</u> Task 1: > Very simple/easy overall Task 2: > After looking at it the system as a whole it become much easier to navigate > Proves system is very simple and easy to comprehend Task 3: >Accidentally said class sign ups but found back button effortlessly quick >Machine page was super simple to operate Task 4: > “I’m gonna guess I hit a lot of back arrows” > proceeded to hit many back arrows <u>Interview notes</u> >Believed the interface was overall super simple which made it very easy to complete each task >Did not feel that any task was harder than the other, as it was super easy and quick to recover from any possible mistakes >He felt it was super easy to gain control of the interface it and use it the way he wanted			

3 (male undergrad)	29	27	19	9
(by Angelina)	<u>Order</u> Task 1: Loading→Sign In→Home→Me/Profile→Weight Button Task 2: Home→Class Sign Ups→Yoga Button Task 3: Home→Machine Instructions→Abdominal Crunch Play Button Task 4: 3rd Floor Weights→Bottom Home→Class Sign Ups <u>Comments</u> > Layout feels familiar, easy to get going > Tasks got progressively easier <u>Suggestions</u> > Declutter Home page / where possible			
4 (male undergrad)	15	15 sec	15 sec	15
By John	<u>Order/Notes</u> All four tasks were able to be completed in approximately 15 seconds with ease. He noted that the structure of the app was very straightforward. The addition of the bottom bar with the home bar made navigation very easy. Avoided hitting back arrows in exchange for clicking the bar at the bottom.			
5 (male undergrad)	20	20	20	20
By Il.	<u>Order/Notes</u> All tasks completed in under 20 seconds. Interview conducted prior to the addition of the navigation bar. User was still able to navigate through the system fairly simply. The user had to utilize the back button a good amount of times for task 4, and a navigation bar that takes the user straight back to the homepage would have been very helpful.			