



Reducing the Wait Times for Equipment at UNC Student Recreation Center (SRC)

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1. Executive Summary

Description of Old System and Problem

The UNC Student Recreation Center (SRC) faces increased equipment wait times and overcrowding, especially during peak hours. Over recent years, wait times for machines have risen by 8 minutes, limiting students' access to necessary resources for a consistent exercise routine vital for both physical and mental health. A prompt solution is needed to ensure efficient access and balanced facility use.

Methodology of Investigation and Design

Objective:

In response to increased wait times and overcrowding at the UNC Student Recreation Center (SRC), our team conducted a detailed assessment, aiming to (1) identify the primary challenges contributing to wait times, (2) capture feedback from students and staff to understand their perspectives, and (3) develop data-driven recommendations to enhance the efficiency and accessibility of SRC facilities.

Methodology:

Our team engaged in interviews with the Associate Director of Facilities and Operations, front desk staff, and students to gain a comprehensive view of current operational challenges. These discussions highlighted significant space constraints, particularly during peak hours, that hinder the ability to accommodate student demand. Leveraging Systems Analysis methodologies, we employed tools such as cultural, artifact, physical, and affinity diagrams, as well as decision point models. These frameworks enabled us to systematically assess the facility's current state and identify structural limitations affecting equipment accessibility and student experience.

Key Findings:

- 1. Space Constraints:** Severe limitations in physical space restrict the SRC's capacity, impeding efficient accommodation of students during high-demand periods.
- 2. Peak Hour Demand:** High student turnout during specific peak hours creates bottlenecks, further exacerbating wait times.
- 3. Equipment Accessibility:** Students frequently encounter extended wait times for high-demand equipment, impacting their ability to maintain consistent workout routines.

Findings and Recommendations

Findings and Analysis:

Following in-depth interviews with front desk staff, the Director of Facilities and Operations, and insights gathered from a student survey, we identified several key observations:

1. Existing Tracking System: Students widely utilize an app called *Waitz* to monitor equipment wait times, allowing them to track peak and non-peak hours effectively.
2. Optimized Space Use: The current space and equipment are being maximally utilized under existing constraints, effectively managing student demand within the facility's limitations.

Recommendations:

To address the identified gaps and enhance the SRC's capacity to meet user needs, we propose the following recommendations focused on expanding physical space and optimizing resource availability:

1. Expand Gym Space: Increase the facility's usable area through one of the following options:
 - Horizontal Expansion: Extend the gym into the adjacent unused space.
 - Vertical Expansion: Construct an additional floor above the existing facility.
 - Relocation: Consider moving the SRC to a larger location to accommodate anticipated demand growth.
2. Strategic Equipment Placement and Scheduling: Introduce specific equipment that could attract students to use the gym during non-peak hours, balancing the flow of users and alleviating peak-hour congestion.

Cost and Benefits Analysis:

We estimate the cost of implementing these expansion and optimization strategies at approximately 10 to 15 billion dollars. While initial investment is substantial, the projected long-term benefits include:

- Improved equipment accessibility and reduced wait times for all students,
- Enhanced management of student flow throughout operational hours,
- A more accommodating environment that supports consistent exercise routines, essential for students' physical and mental well-being.

These improvements will result in a sustainable, high-capacity recreation center that better serves the UNC student community for years to come.

2. Description of the Current System

2.1 Problem Definition

The UNC Student Recreation Center (SRC) has been facing increasing challenges with overcrowding and extended wait times for exercise equipment, which significantly affect students' ability to access and use the facilities. Over the past few years, wait times for individual pieces of equipment—particularly weight-lifting and cardio machines—have grown by an average of 8 minutes during peak hours. This delay disrupts students' exercise routines, limiting the benefits they gain from physical activity, which is known to play a crucial role in supporting both physical and mental health.

This growing issue can lead to several adverse impacts:

1. **Reduced Access to Exercise Resources:** Prolonged wait times discourage students from maintaining a consistent exercise regimen. Students with limited availability may struggle to fit in workouts within their schedules, potentially leading to reduced attendance and disengagement from regular exercise.
2. **Overcrowding and Space Constraints:** With the rising student population, the SRC's current space allocation and equipment capacity are unable to accommodate peak demand effectively. The lack of space makes it difficult for SRC staff to manage student flow, particularly during high-demand hours, contributing to a congested and less enjoyable environment for users.
3. **Impact on Student Well-being:** Regular physical activity is critical to student health and wellness, impacting academic performance, stress management, and overall mental well-being. By making exercise less accessible, the SRC's limitations inadvertently affect students' health and wellness, ultimately impacting the broader UNC community.

Given the critical role that the SRC plays in supporting student health, it is imperative to address these challenges to ensure efficient access to equipment and a balanced utilization of gym resources. An effective solution will need to address not only the physical space constraints but also explore ways to manage peak-hour traffic and distribute demand throughout the day.

2.2 Problem Objective

The objective of this project is to enhance the accessibility and efficiency of the UNC Student Recreation Center (SRC) by reducing equipment wait times and alleviating overcrowding, particularly during peak hours. Achieving this will ensure that students can maintain consistent and effective exercise routines, supporting their physical and mental health.

To meet this objective, the project will focus on the following key goals:

1. Optimize Equipment Availability: By increasing the number of high-demand machines, we aim to reduce the average wait time per piece of equipment by at least 4 minutes. This will make it easier for students to complete their workouts efficiently, encouraging regular SRC use and improving overall user satisfaction.
2. Balance Facility Usage: By managing and potentially limiting access during peak hours, we aim to create a more balanced flow of students using the facility. This approach will reduce congestion, providing a more comfortable and accessible environment for users throughout the day.
3. Support a Healthier Student Community: By improving access to the SRC, we aim to encourage consistent exercise habits among students, which can positively impact both physical and mental well-being. This project seeks to make the SRC a supportive and reliable resource for all students, contributing to a healthier and more active campus culture.

A successful outcome will be measured by achieving a 50% reduction in average equipment wait times, creating a more enjoyable and accessible facility for UNC students.

2.3 Project Scope

This project will focus on improving the accessibility and operational efficiency of the UNC Student Recreation Center (SRC) to address current issues with equipment wait times and facility overcrowding. Key components of the project scope include:

1. Data Collection and Analysis
 - Student Usage Patterns: Collect and analyze data on student check-ins, entry and exit times, and equipment usage to identify peak hours, high-demand equipment, and usage trends.
 - Wait Time Monitoring: Evaluate current wait times for different types of equipment, using data from systems such as the Waitz app and feedback from students to understand usage patterns and congestion points.
2. Infrastructure and Space Evaluation
 - Space Utilization Assessment: Evaluate the SRC's current space layout and utilization, identifying underused areas and potential for expansion or rearrangement to accommodate additional equipment.
 - Expansion Feasibility: Assess the feasibility of expanding the SRC, including potential options for adjacent space use, building a second floor, or relocating to a larger facility.

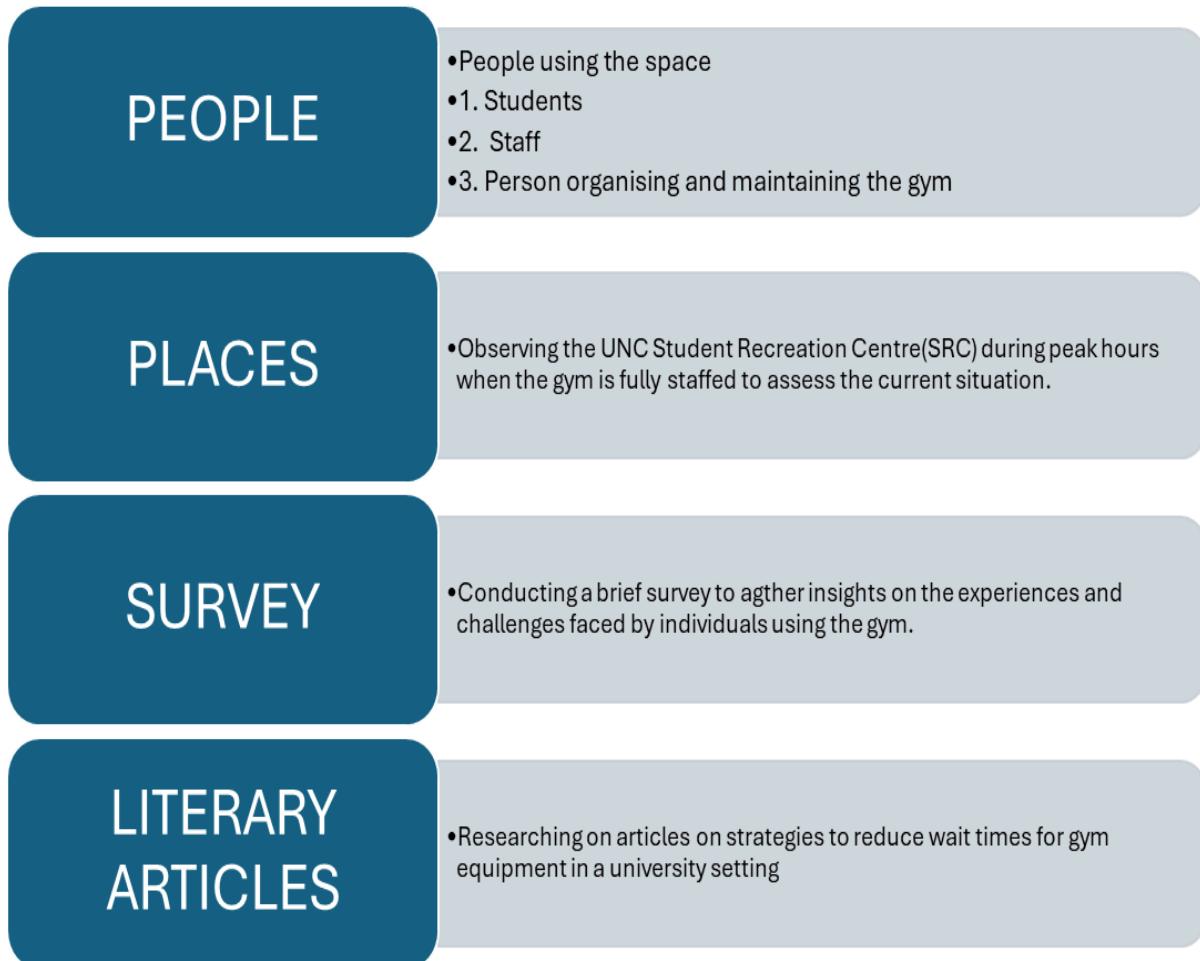
3. Equipment and Resource Allocation
 - Equipment Addition and Distribution: Determine high-demand equipment needs and strategically add machines to alleviate congestion.
 - Alternative Solutions for Non-Peak Hours: Develop strategies to encourage student usage during non-peak hours, including potential incentives, new equipment, or programming that attracts students outside of peak times.
4. System Development and Integration
 - Peak-Hour Management System: Create or integrate a system to monitor real-time occupancy and equipment usage, which will assist SRC staff in managing peak hours and controlling facility access.
 - User Tracking and Data Management: Implement or improve a system for tracking student presence in the SRC, noting check-in and check-out times and correlating them with equipment usage.
5. Stakeholder Engagement and Feedback
 - Staff and Student Feedback Collection: Conduct ongoing feedback sessions with SRC staff, students, and key stakeholders to ensure solutions align with user needs and operational goals.
 - Collaboration with Facilities and Campus Planning: Work closely with university facilities management and campus planning departments to assess space availability, infrastructure changes, and potential building modifications.
6. Out-of-Scope Elements
 - Community Users Without UNC One Cards: This project will exclude members of the local Chapel Hill-Carrboro community who use the SRC on a pay-per-visit basis and are tracked separately.
 - Non-Facility-Related Wellness Programs: The project will not address non-equipment-based wellness programs or services offered by other UNC recreational facilities.

Timeline and Resources:

The project will require a team of five analysts working over approximately four months to complete data collection, analysis, system development, and testing. Collaboration with SRC staff and facilities management will be critical for successful implementation.

This scope is designed to enhance the SRC's efficiency and usability, directly improving student access to exercise resources while supporting a healthier and more active student body.

2.4 Information Gathering



2.5 Methodology

After conducting multiple interviews with UNC Recreation staff member William and Facility and Operations Director Will Rickman, we gathered insights on several key areas of interest. Our discussions focused on understanding the primary challenges they encounter, their long-term solutions and strategic plans, equipment management processes, maintenance practices, and any issues they face with the current app tracker system.

2.5.1 Interviewees

Below is a comprehensive questionnaire detailing the topics we explored with the staff.

Questions for Recreation Center Staff - William

1. What are the most common operational challenges you face during peak times?
2. Are there particular pieces of equipment that require more attention (e.g., cleaning, repairs)?
3. How do you manage situations where users are waiting for equipment?
4. What measures are in place to encourage users to follow time limits on equipment?
5. Do you believe the current staffing levels are adequate to handle peak demand?
6. Would changing the layout (e.g., moving equipment or creating designated zones) help improve user flow?
7. How do users typically provide feedback on wait times or equipment issues?
8. What strategies have you implemented (or could be implemented) to improve user experience and reduce frustration?
9. From your perspective, what are the key areas for improvement in reducing equipment wait times?
10. Are there any tools or technologies you think would be helpful for better managing user flow and equipment availability?

Questions for Facility Managers - Will Rickman

1. How do you track and manage the availability and maintenance of equipment?
2. What percentage of equipment is typically out of service at any given time?
3. How often is equipment inspected for potential repairs or replacements?
4. Do you think the current layout of the facility is optimized for user flow and reducing congestion?
5. Are there any plans to rearrange or expand equipment areas to better accommodate peak usage?
6. How often do you review the layout to ensure it's meeting user needs?
7. Do you use any systems or data to monitor equipment usage and downtime?
8. Would the facility benefit from digital tools that track equipment availability and wait times in real-time?
9. What operational changes could be made to improve the user experience and reduce wait times?
10. Are there any long-term plans for equipment upgrades or expanding the facility to reduce wait times?

11. How do you prioritize equipment purchases or expansions based on user demand?
12. What feedback have you received from users regarding wait times and equipment availability?
13. What do you see as the biggest challenge in managing the recreation center's efficiency, and how could it be improved?

People	Roles
William	UNC Recreation Front Desk Staff
Will Rickman	Associate Director of Facilities and Operations
Students	Feedback from Student Surveys

2.5.2 Interview Statistics, Student Feedbacks and Metrics

Number of people interviewed: Total of 3 people interviewed in 4 interview sessions

Main Concern Raised : Restricted Space. The national average workout space was 8-10 sq ft and the space of the UNC Recreation center was just over 2 sq ft. They mentioned that they have increased enrollment but haven't increased footprint.

Trends of workout times, but how can we make our areas more attractive in off times so we can pull people in during those slow times and needing a bigger space to house the amount of people wanting to workout.



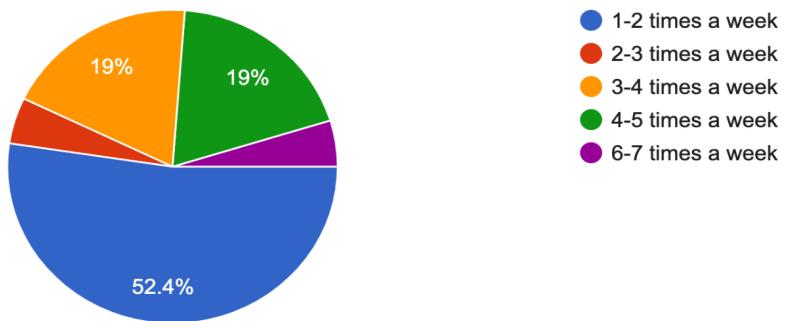
Questions for the Student Survey:

1. The following questions were asked as a part of the student survey:
2. How often do you use the recreation center?
3. Which equipment or areas do you use most frequently?
4. How long do you typically wait to use equipment during peak times?
5. Are there specific pieces of equipment that you often have to wait for?
6. How do you feel about the current equipment availability during busy periods?
7. Do long wait times affect your decision to work out or return to the center?
8. Do you find the layout of the recreation center easy to navigate?
9. Are there any areas that are frequently crowded or congested? (i.e. weight room, studio A, studio B, cardio, stairs, etc.)
10. Do you think most users follow time limits and share equipment appropriately?
11. How satisfied are you with the overall experience at the recreation center?
12. Would you use a system to reserve equipment in advance or check availability online?

Statistics Obtained from the Student Responses:

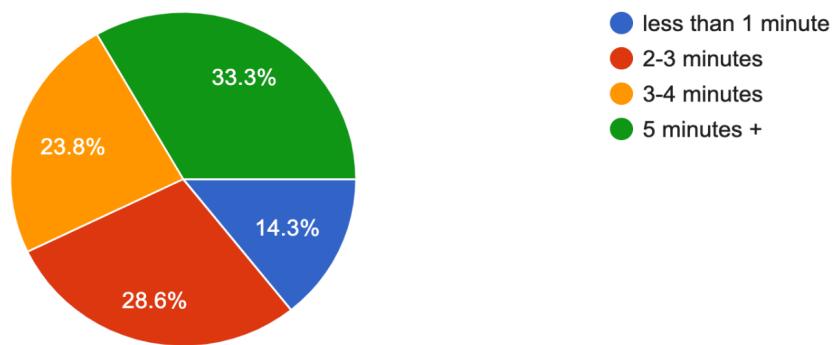
How often do you use the recreation center?

21 responses



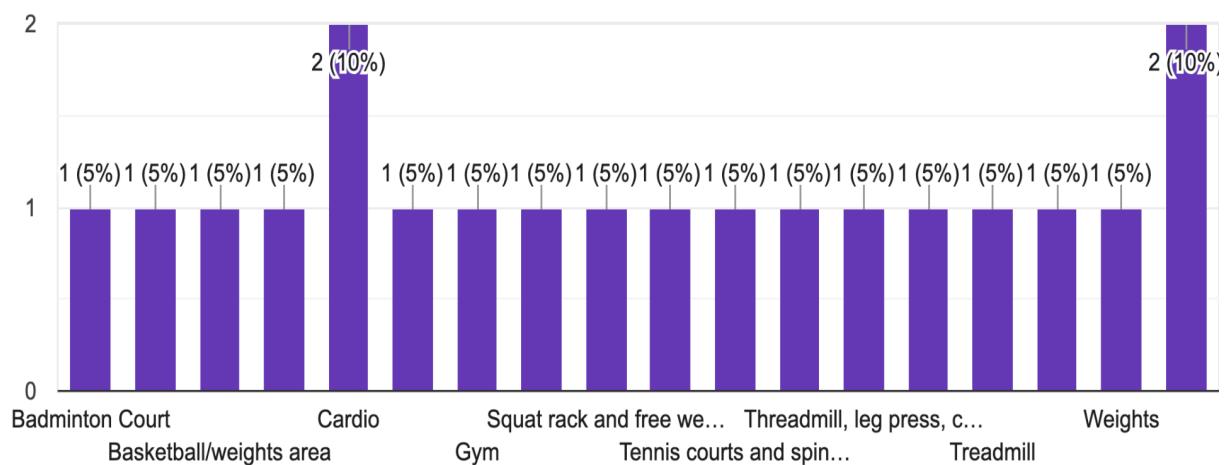
How long do you typically wait to use equipment during peak times?

21 responses



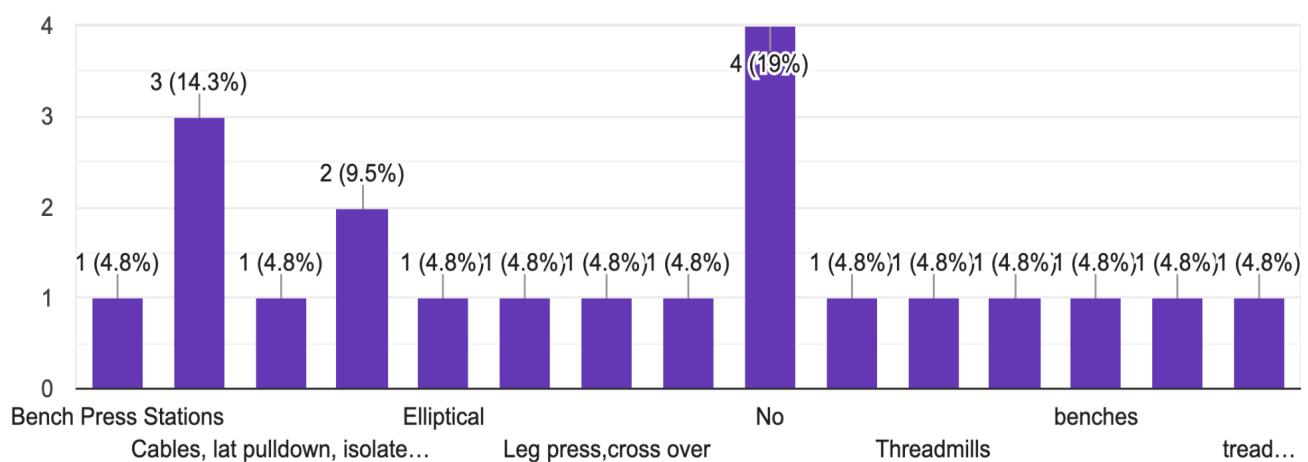
Which equipment or areas do you use most frequently?

20 responses



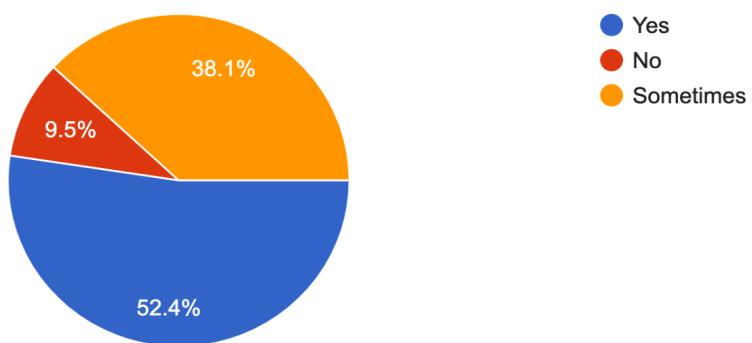
Are there specific pieces of equipment that you often have to wait for?

21 responses



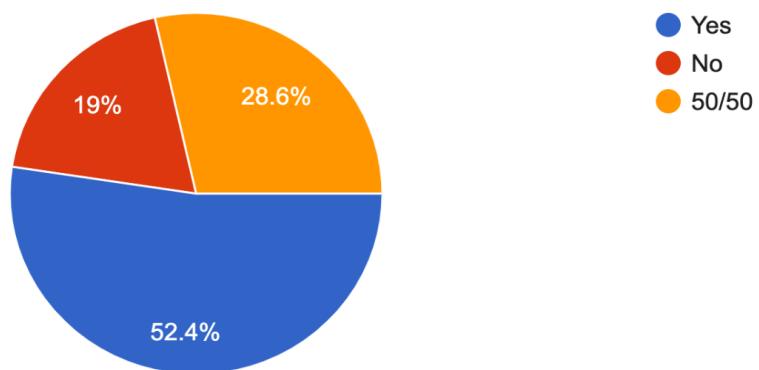
Do long wait times affect your decision to work out or return to the center?

21 responses



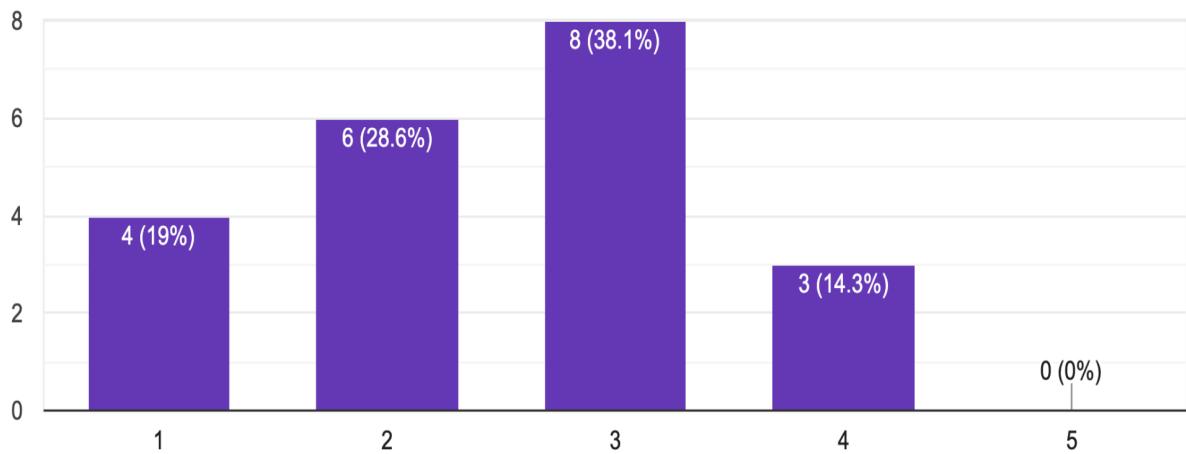
Do you find the layout of the recreation center easy to navigate?

21 responses



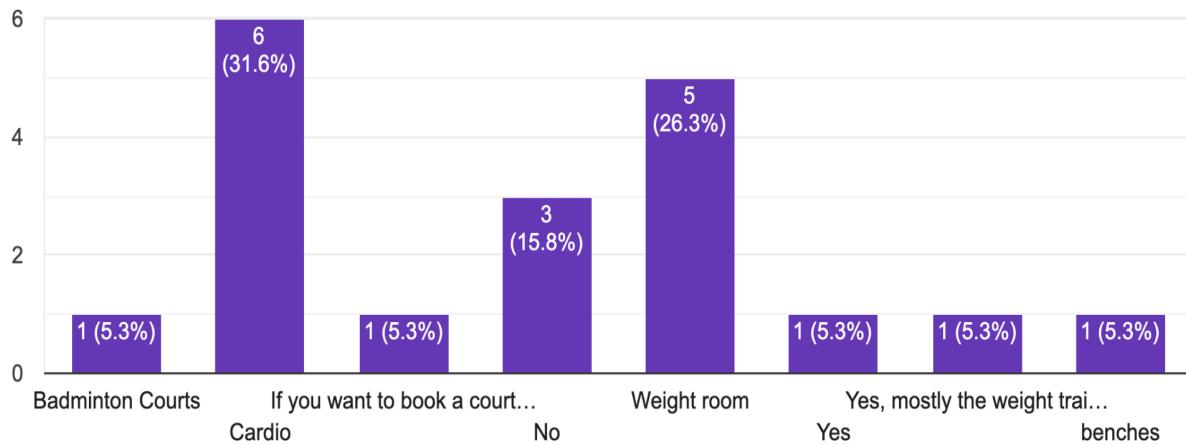
How do you feel about the current equipment availability during busy periods?

21 responses



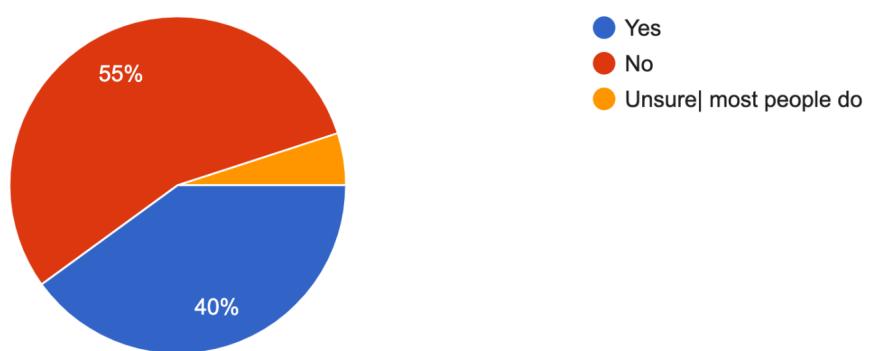
Are there any areas that are frequently crowded or congested? (ie weight room, studio A, studio B, cardio, stairs, etc.)

19 responses



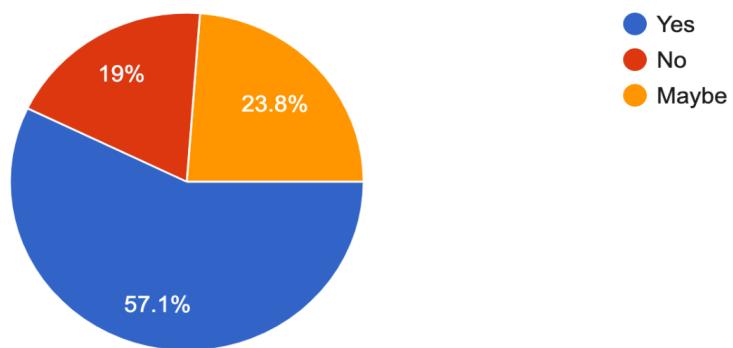
Do you think most users follow time limits and share equipment appropriately?

20 responses



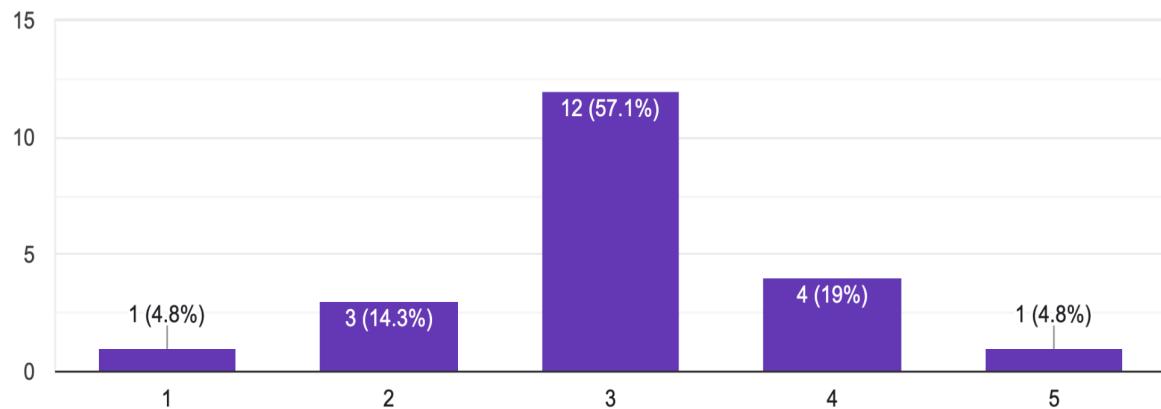
Would you use a system to reserve equipment in advance or check availability online?

21 responses



How satisfied are you with the overall experience at the recreation center?

21 responses



Timestamp	How often do you use the recreation center?	Which equipment or areas do you use most frequently?	How long do you typically wait to use equipment during peak times?	Are there specific pieces of equipment that you often have to wait for?	How do you feel about the current equipment availability during busy periods?	Do long wait times affect your decision to work out or return to the center?
10/31/2024 10:45:37	2-3 times a week	free weights	5 minutes +	benches	1	Yes
10/31/2024 10:47:03	1-2 times a week		less than 1 minute	no	2	Sometimes
10/31/2024 10:48:04	1-2 times a week	Elliptical	2-3 minutes	Elliptical	3	Yes
10/31/2024 10:52:44	1-2 times a week	Threadmills	3-4 minutes	Threadmills	3	Yes
10/31/2024 10:55:05	4-5 times a week	free weights	3-4 minutes	Cables, lat pulldown, isolated machines	1	Yes
10/31/2024 10:55:56	1-2 times a week	Tennis courts and spin classes	less than 1 minute	No	2	Sometimes
10/31/2024 10:58:54	3-4 times a week	Weights	5 minutes +	Bench press	3	Sometimes
10/31/2024 11:08:20	1-2 times a week	Strength training	2-3 minutes	Treadmill	2	Yes
10/31/2024 11:21:41	3-4 times a week	Squat rack and free weights	3-4 minutes	Leg extension machines	3	Yes
10/31/2024 11:30:56	1-2 times a week	Threadmill, leg press, cross over	5 minutes +	Leg press,cross over	2	Sometimes
11/3/2024 18:29:55	1-2 times a week	Basketball court	2-3 minutes	None	4	No
11/9/2024 14:59:59	4-5 times a week	Treadmill	2-3 minutes	Bench press	4	No
11/9/2024 15:02:55	1-2 times a week	Cardio	2-3 minutes	Bench press	3	Sometimes
11/9/2024 16:27:46	3-4 times a week	Row machine, weights	3-4 minutes	No	4	Sometimes
11/9/2024 16:34:35	4-5 times a week	Basketball/weights area	5 minutes +	Mat	3	Sometimes
11/9/2024 20:42:07	1-2 times a week	Cardio	5 minutes +	No	2	Yes
11/9/2024 21:02:07	6-7 times a week	Bench Press	5 minutes +	Bench Press Stations	1	Yes
11/10/2024 0:10:22	1-2 times a week	Gym	2-3 minutes	treadmill	3	Yes
11/10/2024 0:28:18	1-2 times a week	Badminton Court	5 minutes +	No	2	Yes
11/11/2024 12:32:46	4-5 times a week	Tredmill	less than 1 minute	Cardio	1	Yes
11/11/2024 12:32:46	3-4 times a week	Thread mill	3-4 minutes	Cardio	3	Sometimes

Do you find the layout of the recreation center easy to navigate?	Are there any areas that are frequently crowded or congested? (ie weight room, studio A, studio B, cardio, stairs, etc.)	Do you think most users follow time limits and share equipment appropriately?	How satisfied are you with the overall experience at the recreation center?	Would you use a system to reserve equipment in advance or check availability online?
Yes			3	Yes
No		Yes	2	No
50/50	Cardio	Yes	3	Yes
Yes	Yes, mostly the weight training and cardio	No	3	Yes
Yes	benches	No	4	Yes
No	If you want to book a court like pickleball no good	No	2	Maybe
50/50	Weight room	No	3	Yes
50/50	Cardio	No	3	Yes
Yes	Weight room	No	3	Maybe
No	Cardio	No	2	Maybe
Yes	Weight room	Yes	5	Yes
50/50	Weight room	Yes	4	No
Yes	Cardio	Yes	3	Maybe
50/50	Weight room	No	3	Yes
Yes	No	Unsure most people do	4	No
Yes	No	No	3	Yes
No	Cardio	No	3	No
Yes	Cardio	Yes	3	Maybe
50/50	Badminton Courts	Yes	3	Yes
Yes	No	No	1	Yes
Yes	Yes	Yes	4	Yes

2.6 Observations

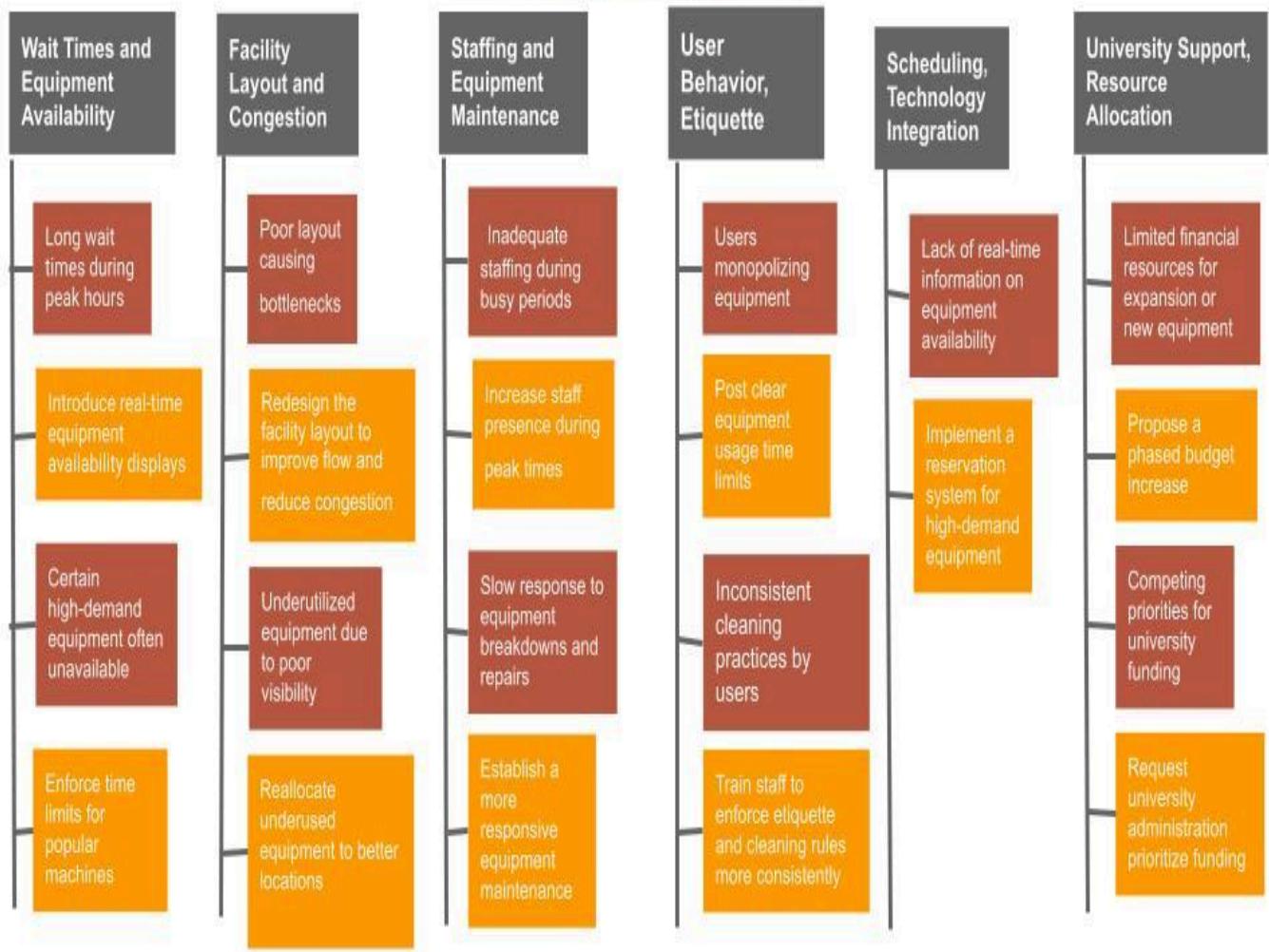
All four members of our project team participated in conducting contextual inquiries, observations, and interviews. We individually scheduled each session with members of the UNC Recreation Center, with each session lasting approximately 40 minutes. We were provided designated spaces within the gym facility to conduct our interviews, allowing us to engage directly with UNC front desk staff member Will, as well as the Associate Director, who met with us separately. Our in-person presence enabled us to better understand the facility's challenges and develop well-informed solutions.

During each session, two team members worked together: one conducted the interview, asking questions and observing tasks and processes, while the other took detailed notes and recorded the session for documentation. Through these observations, we gathered data to inform our artifact and physical models, creating initial sketches based on our findings. All observational data were documented and subsequently organized into notes that we used to build Affinity Diagrams, providing us with a clear structure for analyzing and synthesizing our insights.

2.7 Consolidated Models

2.7.1 Affinity Model

Affinity Diagram



In the current SRC system, inefficiencies become evident when the workflows are mapped and analyzed. Here's how the model highlights challenges:

1. Arrival Process

Current System: Students arrive and scan their ID but face no guidance about equipment availability or expected wait times.

Insight: The lack of real-time information creates confusion and delays at entry points.

2. Equipment Selection

Current System: Students rely on trial and error to find available equipment. Staff manually monitor usage, which is inefficient.

Insight: This step lacks any technological support (e.g., tracking tools), leading to poor resource allocation.

3. Equipment Usage

Current System: Time limits are inconsistently enforced, and equipment usage is not tracked comprehensively.

Insight: Staff are unable to optimize usage patterns or intervene effectively to reduce wait times.

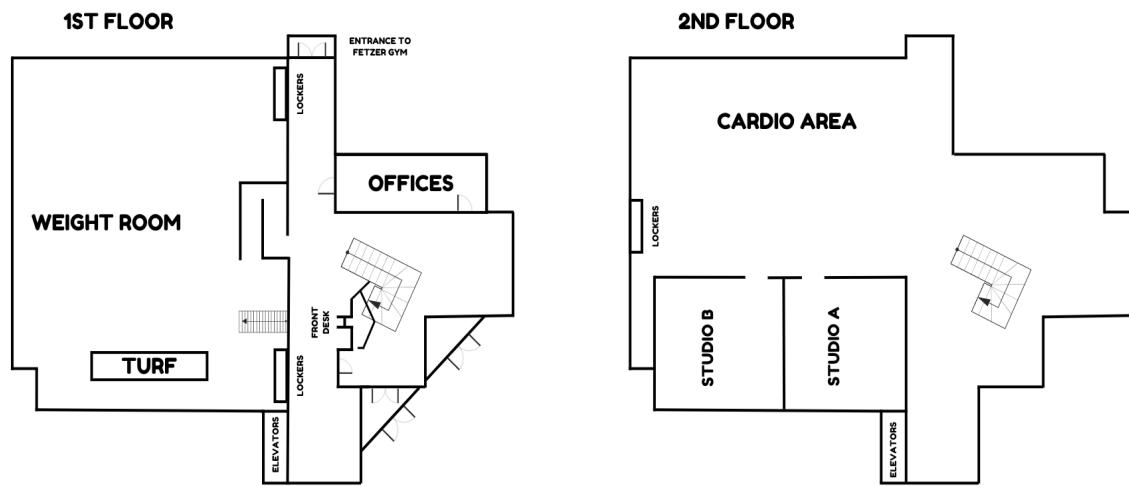
4. Feedback Collection

Current System: Feedback is collected sporadically, with no standardized mechanism for gathering student input.

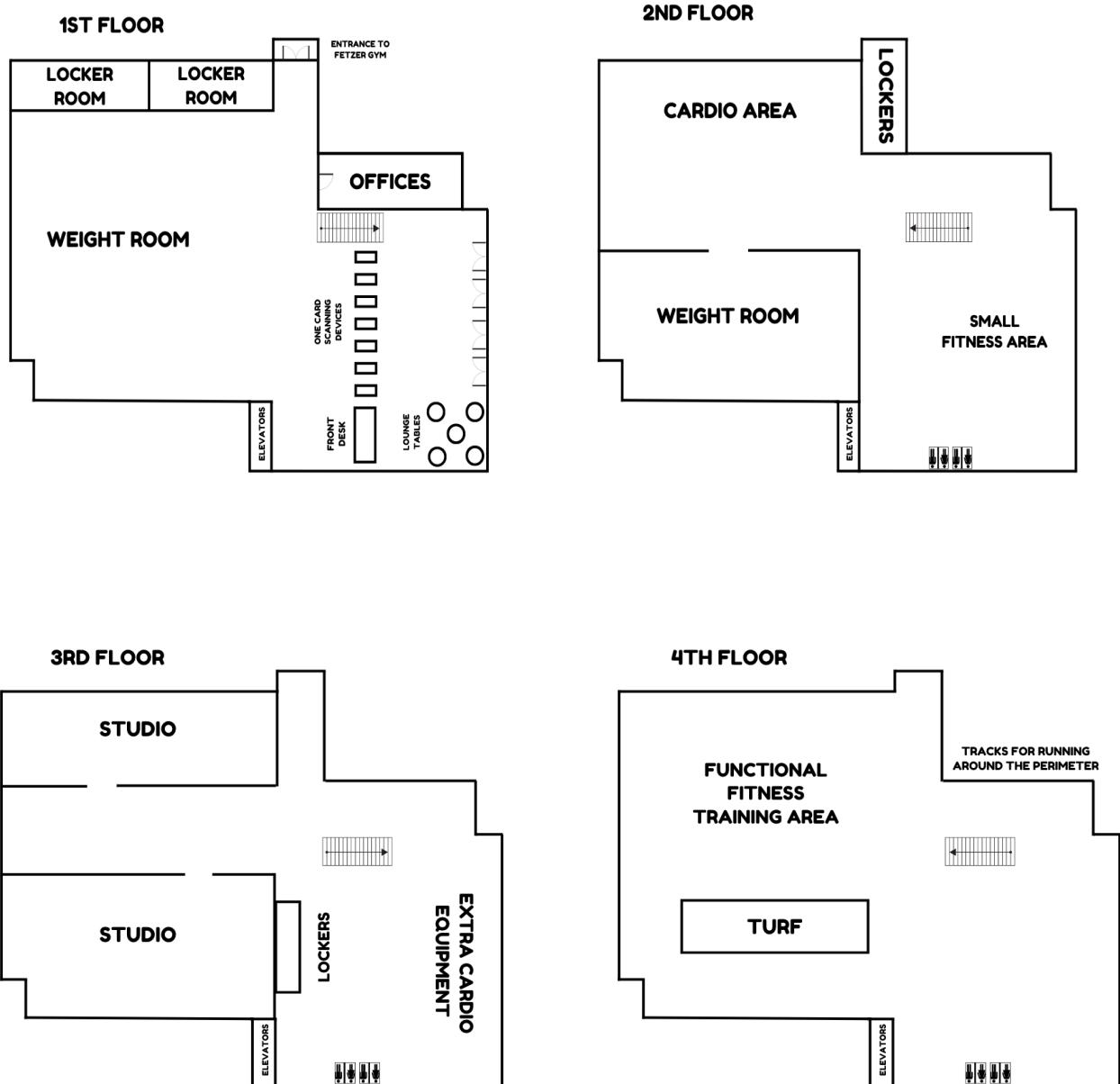
Insight: Missing feedback leads to a lack of actionable insights for improving user experience.

2.7.2 Physical model

Current Model:



Proposed Model:

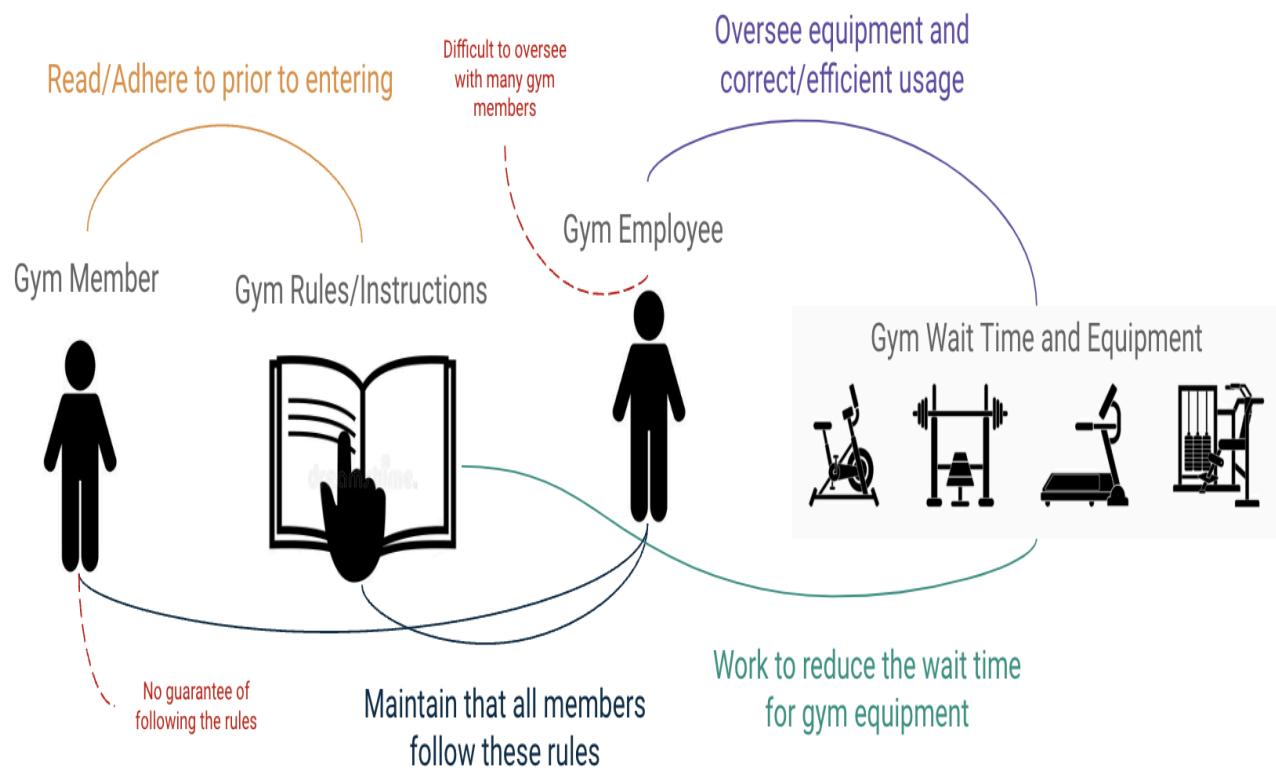


The current physical model highlights the space and layout of the student recreation center and is used to help us examine what areas could be expanded to help optimize the spacing better. The proposed model expands on the current model by adding more floors and expanding the entrance area to make more space for dedicated workout areas, lockers, and equipment. Expanding the gym by adding more floors is an effective way to address space limitations and meet the high demand for popular equipment like cable machines and multifunctional benches. Increasing

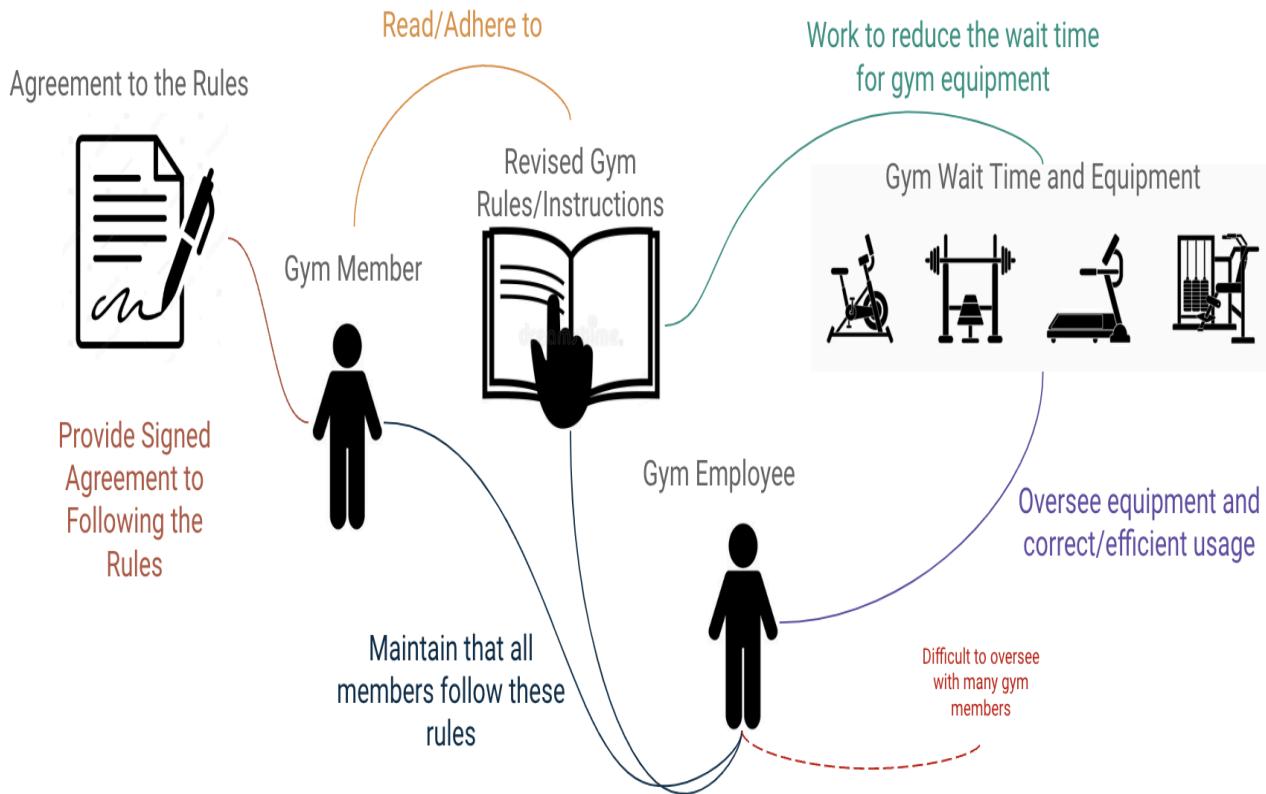
equipment availability reduces competition among users, ensuring that more students can access their preferred machines without long waits. Additional workout space also helps alleviate crowding by distributing users across multiple areas, making the gym feel less congested and improving overall flow. Reorganizing the layout of the Student Recreation Center (SRC) to optimize existing space further enhances usability. Creating two separate studios for stretching or group fitness classes like yoga or HIIT prevents these activities from occupying equipment in the higher demand areas of the gym, freeing up resources for other users. Additionally, dedicating specific spaces for functional training reduces the demand on multi-purpose equipment, allowing students to focus on their workouts without interruptions. Together, these strategies create a more efficient and enjoyable gym experience, minimizing wait times and maximizing the utility of available resources.

2.7.3 Artifact model

Current Model:



Proposed Model:



The Artifact Model was chosen to explain the current system as it effectively highlighted the workflow of the SRC. By using an artifact model, we were able to effectively capture the interactions between those within the system such as the gym members/students and gym employees/faculty.

The current model centers around the main artifact of the set of gym instructions and rules that are written down in the SRC. These rules define how long a person can spend working with a specific piece of equipment and help reduce wait times. Every member is expected to uphold these from the moment they enter the facility. In the current model, an entering gym member is not made explicitly aware of these rules. This results in there being little to no guarantee of them following these rules. The gym employee is then expected to maintain that all gym members follow the stated rules as well as oversee the correct and efficient usage of gym equipment.

In our proposed system, we maintain many of the intricacies and relationships of the current system, but added in a secondary artifact to help facilitate the workflow. This second artifact would be a simple recognition of the rules that each new member would have to sign and state that they agree to. In doing so, members would have a more direct encounter with the gym rules and have them stated more clearly. The other components of the system would work as they are, with the hopes of the gym members keeping the rules in mind more.

2.7.4 Sequence Model

Step	Student Workflow	Staff Workflow	Interaction Points
Step 1: Arrival	<ul style="list-style-type: none"> - Arrives at the recreation center - Scans ID for access or uses pre-reservation system for equipment (if implemented) 	<ul style="list-style-type: none"> - Prepares the facility for user entry - Ensures equipment is clean, operational, and ready - Monitors reservation system for high-demand equipment 	<ul style="list-style-type: none"> - Staff monitors access control, ensuring smooth entry - Assists students with reservation check-ins
Step 2: Equipment Selection	<ul style="list-style-type: none"> - Checks real-time equipment availability display or reservation system - Reserves equipment if necessary or finds available alternative 	<ul style="list-style-type: none"> - Monitors equipment availability through tracking tools - Manages congestion by adjusting equipment flow or redirecting users 	<ul style="list-style-type: none"> - Staff helps students find available equipment or confirm reservations - Proactively manages wait times
Step 3: Equipment Usage	<ul style="list-style-type: none"> - Uses equipment within enforced time limits (monitored by a tracking system or staff) - Adheres to equipment etiquette and sharing protocols 	<ul style="list-style-type: none"> - Observes user behaviour and enforces time limits - Assists users with any issues or questions about equipment 	<ul style="list-style-type: none"> - Staff interacts with users to ensure fair equipment usage - Provides reminders or assistance if needed
Step 4: Equipment Maintenance	<ul style="list-style-type: none"> - Cleans equipment after use - Reports any issues with equipment (using an app or QR code if available) 	<ul style="list-style-type: none"> - Conducts regular equipment checks and logs any issues - Prioritizes maintenance for high-demand equipment 	<ul style="list-style-type: none"> - Staff ensures cleanliness and readiness of equipment between uses - Responds promptly to repair or cleaning requests
Step 5: Exit	<ul style="list-style-type: none"> - Completes workout and exits facility - Leaves feedback (if a convenient feedback option is provided) 	<ul style="list-style-type: none"> - Logs any remaining maintenance needs - Prepares equipment for the next set of users - Review feedback for improvements 	<ul style="list-style-type: none"> - Staff checks equipment readiness and notes any feedback from students upon exit
Step 6: Feedback	<ul style="list-style-type: none"> - Provides feedback via survey link, QR code, or app on issues such as wait times, equipment availability, or facility experience 	<ul style="list-style-type: none"> - Regularly reviews student feedback - Implements adjustments to improve operations and facility layout 	<ul style="list-style-type: none"> - Staff uses feedback loop to influence future planning and prioritize improvements based on user experiences

The Sequence Model provides a linear breakdown of the student and staff workflows, allowing us to evaluate each step of the process. Here's how it helps:

1. Complementary Perspectives:

The Sequence Model organizes qualitative data into themes, showing the relationships between workflows and highlighting broader issues like inefficient interaction points or missing tools.

The Sequence Model provides a step-by-step process analysis, making it easier to spot where delays or inefficiencies occur in the flow.

2. Ease of Communication:

These models provide clear and structured visuals, making it easier to explain complex workflows and inefficiencies to stakeholders and decision-makers.

3. Actionable Insights:

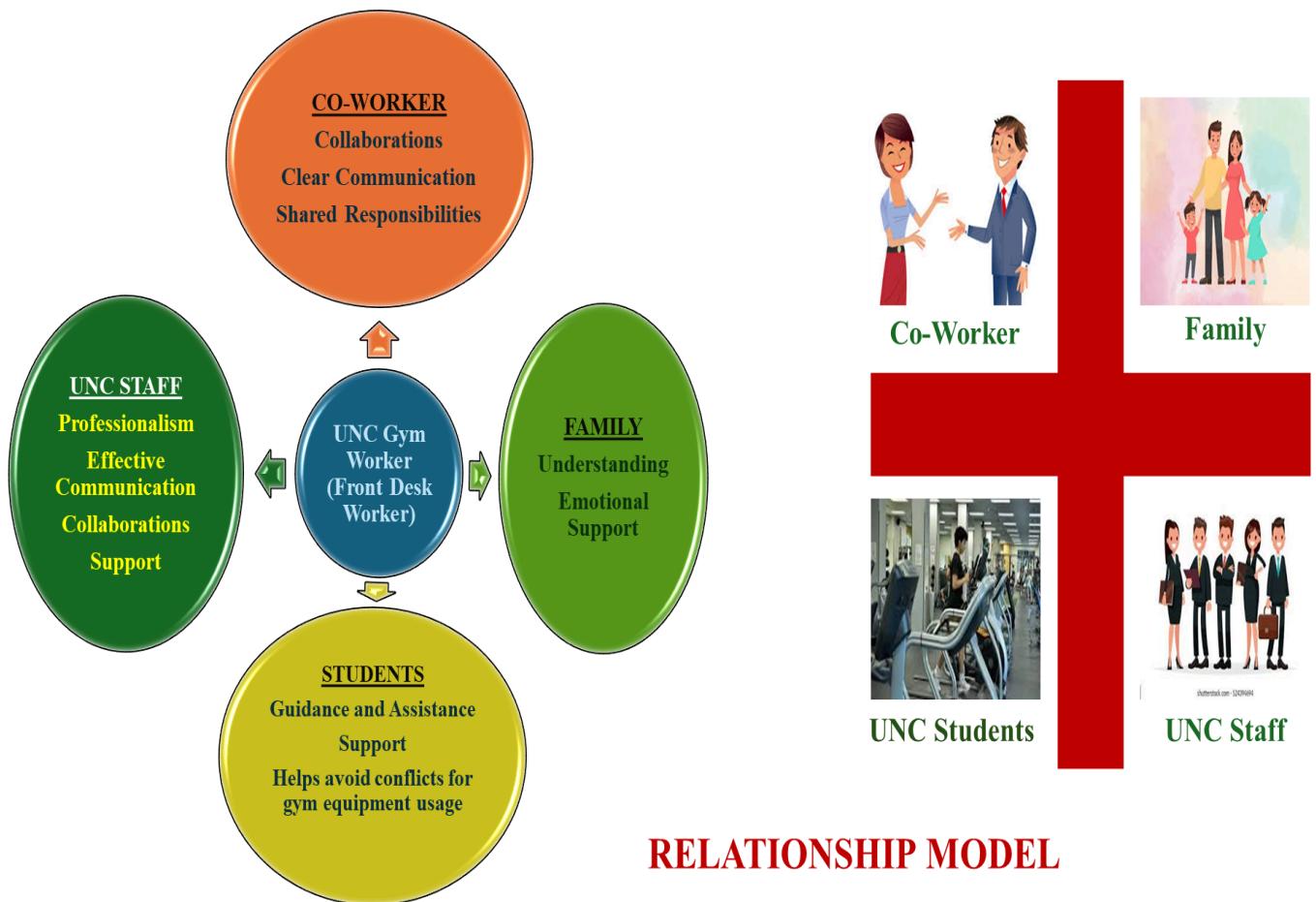
models direct attention to actionable solutions, such as optimizing specific steps and addressing key themes like feedback or equipment tracking.

4. System-Wide Understanding:

The Sequence Model breaks down the details of the workflow, giving a complete understanding of the SRC's current system.

2.8 Additional Models

2.8.1 Relationship And Collaboration Model



The Relationship and Collaboration model illustrates how Will manages his interactions and relationships with various individuals in both his personal and professional life. It highlights the emotional and social dynamics that contribute to his role at the UNC Recreation Center. Will fosters strong communication and collaboration with his co-workers, ensuring that tasks are discussed in advance, responsibilities are shared, and there is clarity in their work interactions.

At home, Will benefits from the emotional support of his family, who provide understanding and encouragement. This support plays a key role in his ability to maintain balance and perform his duties effectively.

Within the UNC Recreation staff, Will maintains effective collaboration with both his colleagues and higher-level officials, ensuring open and efficient communication. He plays an active role in supporting his team and resolving conflicts, particularly concerning equipment usage.

Students often approach Will for guidance on how to use the gym equipment, and he assists them by explaining the app, providing suggestions, and mediating any disputes over equipment availability.

Overall, this model underscores the importance of clear communication, mutual support, and effective collaboration in achieving team goals and ensuring a smooth operation within the gym.

2.8.2 Persona Model



The Persona Model of Will Rickman would represent how his role contributes to the project. Here's how his Persona supports the project and its goals:

1. Understanding Operational Challenges

As an administrator, Will Rickman's Persona highlights the operational pain points and challenges faced by the SRC, such as:

- Managing peak-hour crowding and resource allocation.
- Ensuring fair access to equipment for all students.
- Balancing the needs of staff and users while maintaining a high-quality experience.

This perspective allows the project team to focus on solutions that not only improve the user experience but also streamline SRC operations.

2. Supporting Change Management and Implementation

As a leader, Will Rickman is a critical figure in implementing changes and ensuring buy-in from staff. His Persona informs:

- Staff training requirements: He understands how staff can assist students and enforce time limits.
- Communication strategies: Will ensures that both staff and users are aware of new tools like real-time equipment tracking or reservation systems.
- Phased implementation: He advocates for gradual rollouts of proposed solutions to minimize disruptions.

3. Measuring Success and Continuous Improvement

Will Rickman's administrative role emphasizes the need for:

- Metrics to evaluate success: Such as reduced wait times, better feedback from students, and improved equipment usage patterns.
- Continuous improvement: Using data from tracking systems and student feedback to refine operations over time.

3. Recommendations for New System

3.1 Narrative Summary of the New System

Based on our observations, model analyses, interviews, student survey feedback, and literature on reducing wait times at recreation centers, we concluded that implementing a sustainable solution for the UNC Recreation Center (SRC) will require a collaborative, multi-sector approach and is largely dependent on university-level approvals.

The primary constraint identified is the limited physical space available for additional equipment. The Waitz app effectively tracks wait times and student usage, but even if new equipment were added, there is currently no space to accommodate it. One potential solution is to encourage students to utilize the gym during non-peak hours. However, this option poses challenges, as most students are engaged in classes or other commitments during these times. According to our interviews, peak hours typically occur from 7-9 a.m., lunchtime (around noon), and 4-8 p.m., while non-peak times are generally between 2-4 p.m. when fewer students are available to visit the gym.

Will Rickman, the Facility and Operations Director, mentioned ongoing feasibility studies to assess the recreation center's expansion needs, and he expressed a strong interest in advocating for a larger space. Expansion possibilities being considered include adding an additional floor, extending the center toward South Road or Stadium Drive, or even relocating to another campus area better suited to recreation. While discussions on expansion are in the preliminary stages, they emphasize the university's recognition of recreation and wellness as essential campus needs.

To manage current equipment usage and maintenance, staff members perform hourly headcounts and leverage a program called Ocuspace, which tracks facility occupancy by monitoring Bluetooth signals, although this system does not capture data for specific equipment usage. Additionally, treadmills are tracked by mileage, and a major maintenance check is conducted bi-annually. Equipment within the initial three-year warranty window is regularly repaired as needed, ensuring functionality and safety.

An alternative solution to alleviate peak-time overcrowding is to bring in new, appealing equipment that could attract students to the gym during non-peak hours. This could help divert usage and potentially reduce wait times in the short term, but it remains a temporary measure.

A long-term, more sustainable solution would be to expand the center's physical footprint. Options for expansion, either vertically or horizontally, would offer the most effective means of accommodating the growing demand, though this requires additional budget and further

university approvals. While relocating to a new facility might address space issues comprehensively, it would also require significant funding and extensive inter-departmental coordination.

In summary, while immediate solutions could include strategically scheduling equipment usage and promoting non-peak hours, the most impactful and lasting solution would involve expanding the SRC to better serve the university community's recreational needs.

3.2 Risk Assessments

Solutions/Risks	Description of the Solution	Cost Effectiveness	Risk of Adoption	Time Assessment	Sustainability
Ideal Solution	Encouraging students to visit during non-peak hours by introducing new, appealing equipment to make the gym more attractive during these times	Bringing new equipment is cost effective solution	There is minimal risk in adopting this solution, as a few additional pieces of equipment can be accommodated within the current available space and capacity	Easier and effective solution to implement	There would be no long term sustainability with this as this could be an ideal solution
High-Impact Solution	Based on feedback and our observations, the most impactful solution would be to expand the current facility's space and capacity either by adding a vertical extension or expanding horizontally into the available open area adjacent to the gym	This would be a high budget project which requires approvals and acceptances from several sectors	There would be some moderate risks for the implementation as approvals, involvement of multiple sectors	It is a long run project	A highly sustainable, long-term solution that would improve and optimize the current system for greater efficiency and effectiveness

3.3 Ideal Solution

Based on insights gathered from interviews, student surveys, and supporting data from relevant articles, the proposed solution aims to alleviate high wait times at the UNC SRC by encouraging students to utilize the facility during non-peak hours. By introducing additional, appealing equipment strategically during these less crowded times, the gym experience becomes more attractive outside of peak hours, helping to distribute gym usage more evenly throughout the day.

This approach addresses the crowding issue without requiring extensive renovations or expansions, as it does not face space constraints in the immediate term. Utilizing available space to add just a few pieces of new, appealing equipment is not only cost-effective but also avoids the high costs and extensive timelines associated with a major overhaul of the facility.

Additionally, since the equipment only requires minor setup in existing areas, implementation is quick and minimally disruptive.

This solution has minimal risk because it utilizes available space and requires only a modest budget for a small amount of new equipment. Faculty and staff can more effectively manage crowd flow and equipment usage with this straightforward enhancement.

While this solution is ideal for short- to medium-term improvements, it does have a potential drawback. It may not fully resolve the underlying issue of limited gym space if student demand continues to grow. However, by strategically diverting some students to non-peak times, it can reduce wait times and improve the gym experience in a way that is cost-effective, quick to implement, and low-risk, providing immediate relief to students facing lengthy waits.

3.4 High-Impact Solution

Based on insights gathered from interviews and student feedback, we observed that space and capacity constraints are key factors contributing to the increased wait times at the UNC SRC. To address this effectively, the most impactful and sustainable solution would involve expanding the current facility's physical space and capacity. This could be accomplished either through a vertical extension adding an additional floor to the existing structure or by expanding horizontally into the adjacent open area. By increasing the gym's space, this solution offers a permanent remedy that would significantly reduce wait times, creating a more accommodating and accessible environment for students.

The advantages of expanding the facility's space include the ability to support a greater volume of users, leading to better distribution of gym resources and, consequently, shorter wait times. This expansion would serve as a long-term solution that optimizes the gym's usability and improves the student experience for years to come. However, this approach does come with a

few significant limitations. Space expansion is a costly endeavor, with high upfront expenses associated with construction, design, and planning. Furthermore, this solution requires approvals and collaboration from multiple university sectors and external organizations, given the complexities of campus building regulations and budgeting. As a result, the decision-making process would largely rest on the university's prioritization of recreation facilities.

In terms of feasibility, the expansion could involve either adding an additional floor to the existing gym structure or utilizing the adjacent open area to extend the current facility. This flexibility allows for the best possible use of available campus space and maximizes functionality while maintaining a familiar environment for students. While the solution presents some moderate risks such as dependence on interdepartmental approvals, budget allocations, and potential construction timelines the impact on reducing wait times is expected to be substantial.

In terms of sustainability, expanding the gym's space and capacity provides a high-impact, long-term improvement that aligns with the needs of a growing student body. It optimizes the current system to function more efficiently and meet increased demand, making it a forward-thinking solution with enduring benefits. Although there are both advantages and challenges associated with this proposal, the long-term positive outcomes for students make it a worthwhile investment in the facility's future and one that directly addresses the primary need for increased space.

Overall, while the project involves a considerable initial investment, it offers a highly sustainable and effective way to alleviate crowding at the SRC and support students' health and wellness needs on campus.

3.5 Advantages and Disadvantages of the Solutions

SOLUTION	ADVANTAGES	DISADVANTAGES
Expanding Facility Space (Vertical or Horizontal Expansion)	<ul style="list-style-type: none"> 1. Permanent, long-term solution 2. Increases capacity and reduces wait times 3. Enhances student experience by providing more space and resources 	<ul style="list-style-type: none"> 1. High cost and budget requirements 2. Requires approvals from multiple university sectors 3. Lengthy construction timeline
Encouraging Off-Peak Usage with New Equipment	<ul style="list-style-type: none"> 1. Cost-effective, as only minimal new equipment is needed 2. Redirects traffic to non-peak hours 3. Shorter implementation time 	<ul style="list-style-type: none"> 1. Limited long-term impact on space issue 2. May not attract significant usage during off-peak hours 3. Temporary solution
Space Optimization Using Existing Resources (e.g., rearranging layout)	<ul style="list-style-type: none"> 1. No additional cost 2. Quick to implement 3. Improves space utilization 	<ul style="list-style-type: none"> 1. Limited impact on overall capacity 2. May not fully address wait-time issue if demand increases 3. Temporary improvement
Collaborative Scheduling and Awareness Campaign (Educating students on peak hours)	<ul style="list-style-type: none"> 1. Low cost and easy to implement 2. Encourages efficient gym usage 3. Increases awareness of peak and off-peak hours 	<ul style="list-style-type: none"> 1. Dependent on student participation 2. Limited impact on physical space constraints 3. May only have minor effect on wait times

4. Implementation Plan for New System

To implement the proposed solutions for alleviating wait times and improving student access at the UNC Student Recreation Center (SRC), a comprehensive, phased approach is essential. Below is a detailed implementation plan that addresses both immediate and long-term strategies, aimed at informing managers of feasibility, prioritization, resources, and timelines.

4.1 Short-Term Implementation: Immediate Demand Management

Objective: Temporarily manage peak-hour overcrowding while working toward long-term expansion goals.

Activities:

- **Promote Non-Peak Hours:** Launch a communication campaign, using digital signage, email, and social media, to encourage students to visit during less crowded times (2-4 p.m.). Collaborate with campus organizations to reach a broad audience.
- **Introduce New Equipment for Off-Peak Times:** Purchase and install versatile, compact equipment that requires less space and offers popular workout options (e.g., resistance bands, compact weight machines). Equipment selection will aim to attract students during non-peak hours to help balance usage.
- **Optimize Equipment Use Monitoring with Ocuspace and Waitz App:** Refine usage data from Ocuspace and Waitz to understand traffic patterns more accurately and adjust promotional efforts or staff schedules accordingly.

Resources Needed:

- **People:** Facilities management staff for communication rollout; equipment maintenance team for setup and monitoring.
- **Timeframe:** 1-3 months for planning, communication rollout, and new equipment setup.
- **Costs:** ~\$10,000 - \$20,000 for equipment purchases and promotion costs.

Outcome: This phase should help alleviate crowding during peak hours and provide actionable insights for the next phase.

4.2 Medium-Term Implementation: Enhanced Usage Data Collection and Feasibility Studies

Objective: Collect more comprehensive usage data and assess expansion needs more accurately.

Activities:

- **Upgrade Tracking System:** Partner with Ocuspace to improve tracking capabilities for specific equipment usage, allowing for more granular data on peak times and heavily used machines.
- **Conduct Detailed Feasibility Studies for Expansion Options:** Engage an architectural consultant to assess expansion alternatives, including the feasibility of adding floors, extending toward South Road or Stadium Drive, or relocating. This will involve reviewing structural limitations, preliminary designs, and cost estimates.
- **Seek Student Feedback:** Conduct student surveys or focus groups to understand preferred facilities and activities, which will help justify expansion priorities and shape future proposals.

Resources Needed:

- **People:** Project manager to coordinate Ocuspace upgrades, consultants for feasibility studies, student feedback coordinators.
- **Timeframe:** 6-9 months for system upgrades and feasibility assessments.
- **Costs:** ~\$50,000 - \$75,000, including consultation fees and tracking upgrades.

Outcome: Enhanced data and feasibility findings will provide a strong foundation for decision-making regarding expansion, highlighting usage needs and potential design solutions.

4.3 Long-Term Implementation: Physical Expansion of the Recreation Center

Objective: Execute a sustainable, structural expansion of the SRC to accommodate long-term student demand.

Activities:

- **Secure University and Budget Approval:** Submit a proposal with feasibility study results, a student impact analysis, and a budget request. Engage with university administrators, including those in finance, planning, and campus services, to review the plan.
- **Detailed Design and Construction Planning:** Upon approval, collaborate with architects and engineers to create final designs and construction timelines for expansion (e.g., adding a floor or extending toward South Road or Stadium Drive).

- **Plan Temporary Facility Adjustments:** Develop a strategy for interim measures during construction, including alternative workout spaces or mobile equipment stations.
- **Marketing and Community Engagement:** Keep the student body informed and engaged with regular updates to ensure transparency and maintain enthusiasm for the project.

Resources Needed:

- **People:** Project manager, architect, construction team, communications team.
- **Timeframe:** 12-24 months for approval, design finalization, and construction.
- **Costs:** Estimated \$1 million - \$3 million, depending on the expansion design and scope.

Outcome: A physically expanded SRC will meet current and future demands, providing students with ample resources, improved equipment availability, and reduced wait times.

4.4 Implementation Plan Summary

Phase	Activities	Timeline	Estimated Cost	Key Resources
Short-Term	Promote non-peak hours, add new equipment, optimize Ocupspace tracking	1-3 months	\$10,000 - \$20,000	Facilities staff, maintenance team
Medium-Term	Upgrade tracking, conduct feasibility studies, collect student feedback	6-9 months	\$50,000 - \$75,000	Project manager, consultants
Long-Term	Secure approvals, design and plan expansion, execute construction, community engagement	12-24 months	\$1 million - \$3 million	Architect, construction, comms team

This phased approach balances short-term crowd management with long-term capacity building, enabling UNC SRC to offer a well-rounded, sustainable recreational environment.

5. Appendix

5.1 Client appendix

5.1.1 Glossary of Terms

SRC: Student Recreation Center.

Peak Hours: Times when the facility experiences the highest user demand.

Ocuspace/Waitz: Real-time occupancy tracking tools to monitor space and equipment usage.

Real-Time Equipment Tracking: Systems that monitor availability and usage of gym equipment in real-time.

Reservation System: A system allowing students to book gym equipment or spaces in advance.

Feedback Loop: A process for collecting, analyzing, and acting on feedback from users and staff.

5.1.2. Detailed Product Specifications

Proposed Systems and Tools

Ocuspace/Waitz System:

Purpose: Track equipment usage and space occupancy in real time.

Key Features:

Live display of equipment availability.

Data analytics on peak hours and usage trends.

Cost: Approx. \$10,000–\$20,000 for initial implementation.

Maintenance: Requires periodic software updates and calibration.

Reservation System:

Purpose: Allow users to reserve high-demand equipment.

Key Features:

Mobile app integration for easy booking.

Push notifications to remind users of reservations.

Example: QR code-based or app-based systems.

Feedback Mechanisms:

Purpose: Collect feedback on wait times, equipment availability, and user satisfaction.

Key Features:

Anonymous survey links or QR codes posted at exits.

Simple forms with structured questions.

5.2.3. Implementation Roadmap

For reference, here's a summary of the phases of implementation:

Short-Term (1–3 months):

Promote gym usage during non-peak hours.
Implement real-time tracking tools like Ocuspace or Waitz.
Introduce compact equipment for off-peak times.

Medium-Term (6–9 months):

Upgrade tracking tools for detailed data on equipment usage.
Conduct surveys to gather student and staff feedback.
Explore feasibility for SRC expansion.

Long-Term (12–24 months):

Secure university and budget approvals for expansion.
Begin phased construction to expand SRC capacity.
Monitor and improve based on continuous feedback.

5.1.4. Technical Insights

Current Challenges in the System:

Crowding and Wait Times:

Peak usage during 5–9 PM leading to student dissatisfaction.
Lack of real-time equipment availability data.

Staff Workload:

Difficulty managing equipment distribution and cleaning during peak hours.
Inefficient feedback collection process.

Proposed Solutions:

Automated tracking to reduce manual workload.
Improved reservation and feedback systems to balance demand.

5.1.5. Sample Feedback Survey Questions

To collect structured feedback from students, the following sample questions are recommended:

- How satisfied are you with the availability of equipment during your visit?
Scale: 1 (Very Dissatisfied) to 5 (Very Satisfied).
- Did you experience delays or long wait times? If yes, how long?
- What time do you usually visit the SRC?
- What additional features or changes would you like to see?

5.2 Team Appendix

5.2.1 Team Roles



Project Lead:
Sai Vyshnavi Charugulla



Communication Manager:
Advait kulkarni



Document Manager:
Mounika Metta



Client Manager and Interviewer:
Hlim Ksor

We began the project by assigning the roles depicted in the images above. As the project progressed, some responsibilities naturally overlapped, and we occasionally exchanged roles when a team member was unavailable. However, these roles remained our primary responsibilities. Additionally, each team member reviewed the documents one final time before submission to ensure accuracy and consistency.

TEAM MEMBERS	ROLES OF EACH MEMBER
Advait Kulkarni	<p>UNC SRC Contact and Meeting Management:</p> <p>Responsible for coordinating interview schedules with the front desk team and serving as the main point of contact for gym members. Also tasked with scheduling team meetings as needed and managing communication between team members to ensure everyone stays informed.</p>
Mounika Metta	<p>Data Analyst and Document Management:</p> <p>Responsible for organizing and storing data collected from interviews and surveys, and conducting detailed analysis to identify potential solutions to the problem.</p>
Hlim Ksor	<p>Interviewer and Quality Assurance:</p> <p>Responsible for conducting interviews with the UNC SRC Recreation Center and reviewing all documents to ensure quality and consistency, ensuring that project deliverables are successfully met.</p>
Sai Vyshnavi Charugulla	<p>Project Lead Team management:</p> <p>Responsible for recording the interview process, taking notes during interviews, managing the team by assigning tasks, ensuring tasks are completed before deadlines, tracking project progress, and submitting team assignments.</p>

5.2.2 Project Timeline

Task	Date	Group Member
<u>Pre-Interview Phase</u>		
Team Meeting: Deciding on project topic and determining team roles	9/12/24	All Members
Team Meeting: Revisit topic and discuss presentation	9/19/24	All Members
Team Meeting: Group discussion and identifying section	9/22/24	All Members
Drafting: Information Gathering Plan	9/12/24-9/23/24	All Members
Client Meeting: Reaching out to Client (SRC Front Desk) + Reviewing Project Goal	9/23/24	Advait
Team Meeting: Review first draft of Information Gathering Plan and practice presentation	9/25/24	All Members
Information Gathering Plan Due Date + Presentation	9/26/24	Submitted by Vyshnavi
<u>Models Selection Phase</u>		
Team Meeting: Determine Draft Model(s)	10/3/24	All Members
Team Meeting: Review Draft Models and make adjustments as needed	10/7/24	All Members
Class Deadline: Tentative Models Presentation	10/10/24	All Members
<u>Interviewing + Solution Formation Phase</u>		
Faculty and Front Desk Interviews	10/14/2024-10/16/2024	Hlim and Advait
Faculty and Front Desk Interviews Debrief + Interviewing style adjustments	10/16/24	All Members
Student Interviews	10/22/2024-10/24/2024	Vyshnavi and Mounika
Student Interviews Debrief	10/25/24	All Members
Team Meeting: Review potential ideas and generate actionable solutions	10/26/2024-10/27/2024	All Members
Client Meeting: Address list of actionable solutions with SRC contact	10/30/24	All Members
Team Meeting: Potential Solution Implementation based on SRC feedback	11/1/2024 - 11/3/2024	All Members
<u>Final Report + Presentation Creation Phase</u>		
Drafting: Begin Final Report First Draft	11/4/2024 - 11/10/2024	All Members
Team Meeting: Final Report First Draft Updates	11/8/24	All Members
Internal Deadline: First Draft Due	11/11/24	All Members
Drafting: Begin Final Presentation	11/12/2024-11/17/2024	All Members
Team Meeting: Final Presentation Updates	11/15/24	All Members
Internal Deadline: Final Presentation Due	11/18/24	All Members
Team Meeting: Rehearse Final Presentation	11/19/2024-11/20/2024	All Members
Class Deadline: Final Presentation	11/21/24	All Members
Drafting: Begin Final Report Final Draft	11/22/2024-11/26/2024	All Members
Team Meeting: Final Report Final Draft Updates	11/24/24	All Members
Internal Deadline: First Draft Due	11/27/24	All Members
Team Meeting: Final Report Review	12/1/24	All Members
Submission: Final Report + Team Evaluations	12/2/24	Mounika + Evals by Team

We utilized a structured-agile methodology, developing a structured time-line to stay on track with project deliverables while employing weekly agile sprints so that we could remain flexible.

5.2.3 Meeting Summaries

We structured our project through regular weekly meetings, held at least once a week, usually after class on Thursdays. In addition, we conducted multiple interview sessions with the gym staff. Advait managed communication with the gym staff, arranging interviews based on the availability of both parties.

Hlim led the interview sessions, conducting discussions with staff members Will and William Rickmann, while recording and documenting the conversations. These recordings were stored in a shared Google Drive, where all team assignments and interview materials were organized. Vyshnavi and Mounika observed the gym environment closely during interviews, taking detailed notes that were later uploaded to the shared drive. Mounika took responsibility for managing and documenting all notes, ensuring they were well-organized for reference and analysis.

Vyshnavi coordinated task assignments and organized project activities to meet deliverables. She prepared initial drafts, monitored progress, and ensured timely submission of assignments. Mounika further organized and analyzed the data collected, focusing on identifying potential solutions based on our findings.

Our team communicated primarily through scheduled Zoom meetings, aligning them with everyone's availability. We also created a WhatsApp group for quick updates and convenient communication. A designated team member coordinated and scheduled all meetings, with tasks distributed equally based on individual skill sets. Open communication was encouraged, and each member had the right to voice opinions and concerns.

Roles were assigned according to individual strengths, allowing everyone to contribute effectively. We embraced diverse perspectives and constructive feedback, leveraging our varied backgrounds and expertise to bring unique insights to the project. Throughout, we remained committed to meeting deadlines, with a designated team member overseeing timely submission of assignments.

Overall, responsibilities were shared equitably, and we supported each other as needed to complete the project successfully.

5.2.4 Team Expectations

Work Styles:

Our team comprises individuals with diverse academic backgrounds and work styles, each bringing a unique approach to assignments. We value these differences and recognize that multiple strategies can lead to successful outcomes. Team members are encouraged to leverage their strengths and support each other in areas where they may need assistance. Any concerns regarding a team member's work style or effectiveness should be addressed promptly, professionally, and respectfully to maintain a productive and positive environment.

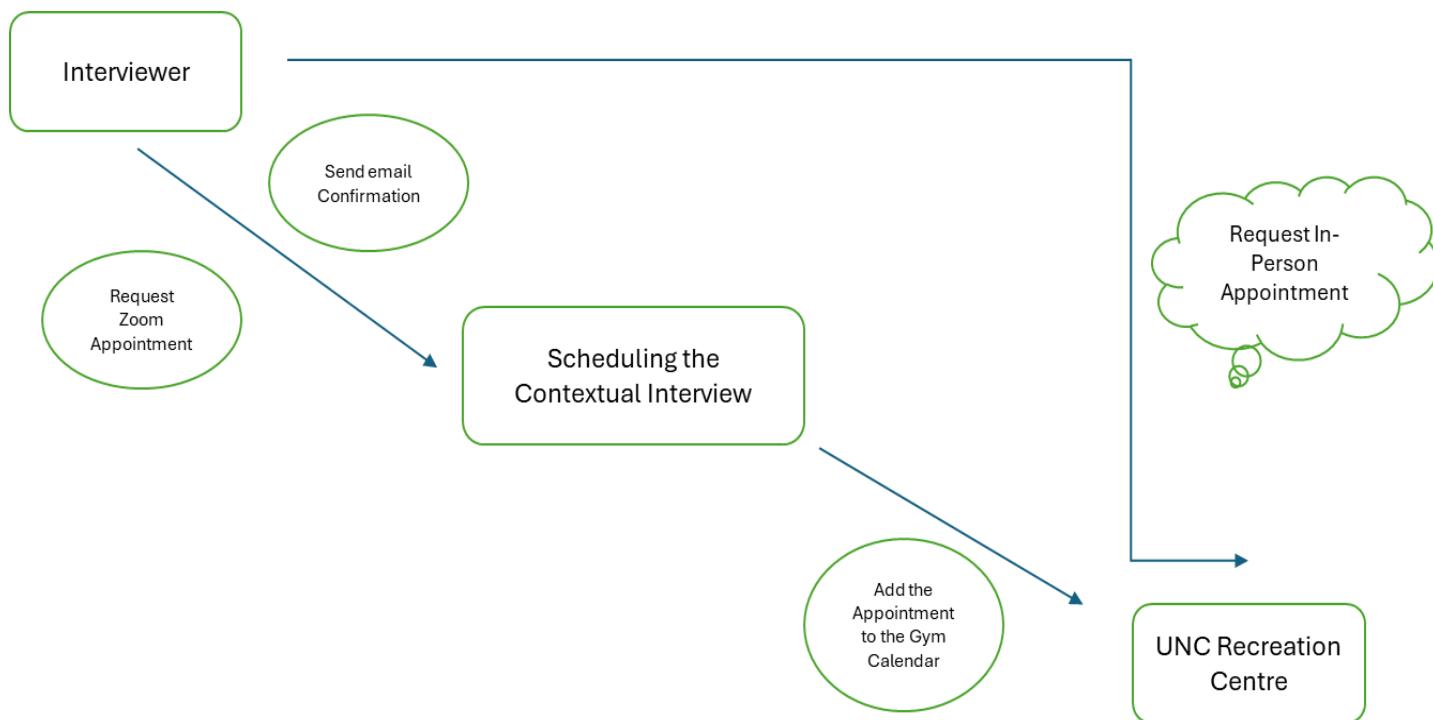
Participation:

Regular attendance at class and group meetings is expected from all team members. Workloads will be divided equitably, and everyone is encouraged to participate actively in discussions and collaborative sessions. If a team member is unable to attend a meeting, they should inform the group in advance via the group chat to keep everyone updated and prepared.

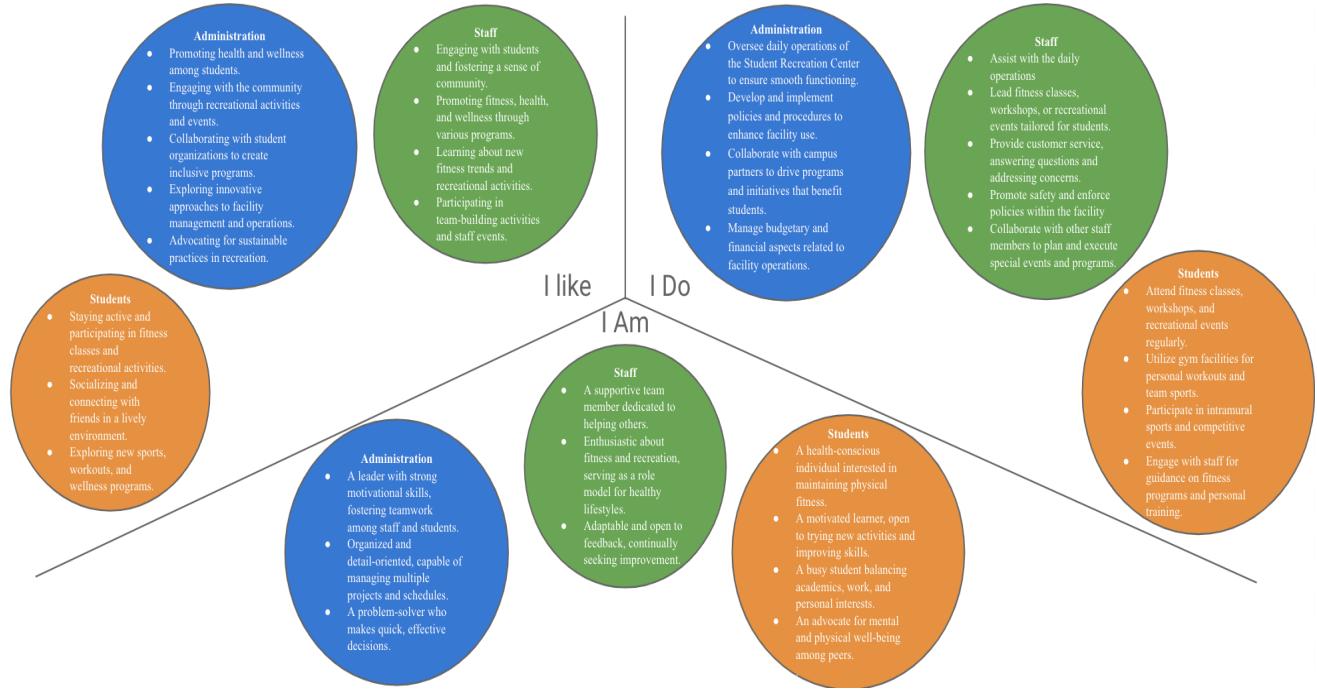
Leadership and Collaboration:

Our team operates in a collaborative manner, with no designated leader. Every member's ideas will be equally considered, valued, and respected. In the event of any issues—such as a member speaking over others, not contributing, or displaying disrespectful behavior—it is the collective responsibility of all team members to address these matters respectfully and promptly. By fostering open communication and mutual respect, we ensure a supportive and inclusive environment for everyone.

5.2.5 Scheduling Process of the Interviews:



5.2.6 Identity Model



An identity model for staff, administration, and students in a student recreation center serves as a cohesive framework that defines roles, responsibilities, and shared values, fostering an inclusive and effective environment. By establishing a unified vision, the model aligns the goals of all stakeholders, ensuring that everyone works toward shared objectives, such as promoting health, wellness, and community engagement. It also clarifies expectations by outlining specific roles, such as staff focusing on operations and service delivery, administrators handling strategic planning and resource management, and students participating as users, contributors, and potential leaders. This clarity promotes accountability and operational efficiency.

Additionally, the identity model fosters a sense of community by creating a welcoming space where everyone feels valued and connected. By emphasizing collaboration and mutual respect, it encourages active participation from all groups, strengthening the center's role as a hub for campus life. It also enhances communication by creating a shared understanding of the center's mission, allowing staff and administration to better address student needs while providing students with a clear framework for offering feedback.

5.2.7 Decision-Point Model



The draft model we utilized is the Decision Point Model, which serves as a framework to analyze both the positive and negative aspects of the current system, focusing specifically on the issue of extended wait times at the SRC Recreation Centre. This model effectively evaluates the existing challenges and highlights the potential improvements we aim to achieve through our proposed solutions.

Negative Aspects:

The analysis began by identifying the key drawbacks of the current system, with an emphasis on the prolonged wait times experienced by gym users. These delays are symptomatic of inefficiencies within the current setup, leading to user dissatisfaction and decreased utilization of available resources. By focusing on these issues, the model provides a comprehensive understanding of the obstacles hindering the gym's operational effectiveness and overall user experience.

Positive Aspects:

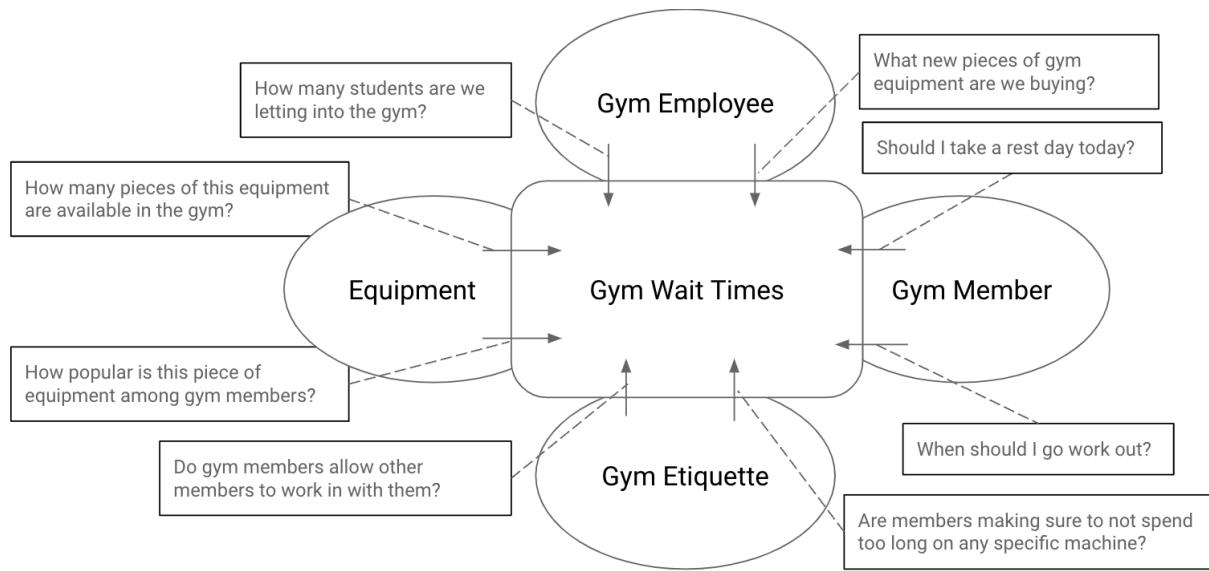
Conversely, the model also examines the anticipated outcomes of our project designed to reduce wait times. These positive aspects include improved user satisfaction, better resource allocation, and enhanced overall efficiency at the SRC Recreation Centre. By envisioning the benefits of an optimized system, we were able to define clear objectives, such as reducing congestion, increasing accessibility, and creating a more enjoyable experience for gym-goers.

Purpose of the Decision Point Model:

This approach allowed us to systematically juxtapose the limitations of the current system against the desired future state. By clearly delineating the negative and positive aspects, the Decision Point Model facilitated an informed evaluation of the situation. It also provided valuable insights into how addressing the current problem could lead to meaningful improvements, aligning with the project's goals.

In summary, the Decision Point Model serves as a critical tool to understand the current inefficiencies and to visualize the transformative impact of implementing the proposed solutions. By balancing the negative aspects with the achievable positive outcomes, the model offers a strategic pathway to achieving a more efficient and user-friendly gym environment at the SRC Recreation Centre.

5.2.8 Cultural Model



This is a draft model of the current system at the SRC. The cultural model was used to better understand the underlying level of gym etiquette present at the SRC as well as the interactions between various actors within it. We wished to understand the socio-cultural dynamic present within the facility to get a better gauge of how important gym wait times are seen by the actors in this space. By understanding the behavioral reasons behind using the SRC, we were able to discern why students work at certain peak hours or prefer to share a machine with someone.

The main reason the cultural model was used is due to the fact that the SRC is a collegiate gym. This suggests that the relative workings of the area, such as peak hours, can be determined by factors different from members of a regular gym. For example, college students may prefer to work on different muscle groups than other, older gym members which could explain why certain pieces of equipment tend to have higher wait times.

5.2.9 Issues And Concerns

When encouraging non-peak gym usage, a key concern is whether students have the flexibility to adjust their schedules. Many may struggle to attend during non-peak times due to class, work, or other commitments. Additionally, while incentives or perks can attract some users, they may not appeal to those whose main barrier is time. Another challenge is ensuring students are aware of the benefits of non-peak hours and promotions for new equipment. Without effective outreach, such efforts may go unnoticed. Using social media, campus apps, and in-person engagement can maximize visibility. However, there is also the risk of overcrowding during non-peak times if too many students shift their schedules simultaneously.

Expanding the gym comes with its own set of challenges. The most significant hurdle is the financial burden, as construction and new equipment require substantial funding. Delays in construction could also exacerbate overcrowding in the short term. Space constraints on campus may further limit the scope of the expansion. Additionally, while larger facilities reduce wait times, they also increase energy costs and maintenance needs, which could lead to higher operational expenses. Incorporating energy-efficient designs and budgeting for regular maintenance can help manage these long-term costs. Another concern is that expansion may initially alleviate congestion but could attract more users, creating new peak-time bottlenecks. Finally, the construction phase itself can disrupt gym access and deter users.

5.2.10 Plans for presenting the proposal to the client

Given the nature of this project, we are not planning to conduct an in-person presentation at the SRC. Instead, we will be sharing the report and accompanying presentation via email to ensure accessibility and convenience for the stakeholders.

This approach allows the SRC team, including Will Rickman and other decision-makers, to review the findings and recommendations at their own pace. To support their understanding, we have ensured the report is comprehensive and easy to navigate, with visuals and clear explanations of our proposed solutions.

We are also open to scheduling a follow-up meeting or addressing any specific questions or feedback they may have after reviewing the materials. This way, we can provide further clarification or make adjustments to better align with their goals.

5.2.11 Lessons Learned As A Team

As a team, we learned the nuances of running the Student Recreation Center and insights into what regular members and staff feel would improve the space. By interviewing various students who attend and work at the SRC, our team achieved multi-faceted results that informed potential improvements to the space based on various diverse perspectives.

Valuable lessons were learned regarding the manner in which to conduct interviews and what types of interviews are more suitable for different sub-populations. For example, after some trial and error, we learned that in-person one-on-one interviews function better for faculty compared to students. This may have been due to the type of information we wished to obtain from each population; since from faculty, we wanted more open-ended responses to their experiences working in the gym. On the other hand, a survey worked better for the student population as we wished to gain more quantitative information from them such as the average amount of time they spend waiting for machines.

Our strengths throughout this project were effective communication among members and the ability to adapt to various setbacks. As a group, we effectively split up the work required to complete the interviews and analysis of the obtained data. This allowed us to derive meaningful results that were interpreted by multiple members of the group. A weakness present in our performance was our ability to obtain a large sample of faculty interviewing data. Most of the group was only able to conduct interviews at the same time of the day, so we were unable to get faculty interviews from those working drastically different shifts.

If we had to complete this project again, our group would consider interviewing a wider array of faculty and gaining more responses for our member survey. One way through which this could be obtained is by including the Rams Head Recreation Center as well. Rams Head is the second gym on campus and is mainly used by underclassmen, but it would be interesting to see how their faculties' experiences and gym equipments' wait times differ from that of the SRC.

In terms of carrying lessons forward onto future projects, we've learned the importance of setting set schedules and how they can impact the path of a task. At the very beginning of the project, we were asked to create a schedule detailing the progression of each task we sought to complete. At first, we were hesitant on the viability of such a schedule and whether we could stick to commitments made for many weeks into the semester. However, this schedule was a great tool that helped us meet weekly and divide our work evenly. The importance of scheduling is something that we will be sure to take with us into all of our future projects.