

LifeSync

Final Deliverable

Course: ITEC3230 M

Team: Byte Busters

Product Task: Health & Wellness App

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1. Requirements

1.1 Overview

LifeSync is a comprehensive solution tailored for individuals leading busy lives, whether you're a student managing classes or a professional with a hectic schedule. The problem we are addressing is the need for a single platform that combines task lists and health metrics. Seamlessly integrating into your daily routine, LifeSync delivers personalized guidance and tracking across various wellness dimensions. The system allows you to offload computation when tracking vital health metrics like weight, blood pressure, heart rate, and BMI, reducing memory load for tasks. The wellness dashboard empowers you to establish and visualize daily goals, track your overall wellness progress, and access visual charts illustrating your achievements. This aids in monitoring and offering insights into health trends while effortlessly blending productivity with wellness.

1.2 User Characteristics

Primary users: People who are in the process of transitioning to a healthier and more productive lifestyle, and are actively interested in monitoring their progress. Our age demographic would be users between 12-65 years old, with a main focus on users in the age range of 18-35 years old.

Secondary users: People who prefer to monitor their progress but may also turn to Professionals for guidance.

Tertiary users: Regulatory Compliance Officers ensure LifeSync meets data security standards, competitors, and users who do not have the application.

Stakeholders	Primary Users	Secondary Users	Tertiary Users
Users:	<ul style="list-style-type: none">Students, Senior, Professionals, Fitness Enthusiasts, Caregivers	<ul style="list-style-type: none">Support/Developer Team, Health Professionals, Family Physicians, Fitness Trainers	<ul style="list-style-type: none">Regulatory Compliance OfficersCompetitors & users who do not have the application
Characteristic of User:	<ul style="list-style-type: none">Education Level: High School +Computer Expertise: Basic: Student, Senior Expert: Professional, Fitness Enthusiasts & CaregiversAge Range: 12+Frequency: Frequent Users	<ul style="list-style-type: none">Education Level: Post Secondary +Computer Expertise: Moderate: Fitness Trainers Expert: Family Physicians, Health Professionals, Support/Developer TeamAge Range: 22+Frequency: Casual Users	<ul style="list-style-type: none">Education Level: BachelorComputer Expertise: ModerateAge Range: 22+Frequency: Casual User
Context of Use	<ul style="list-style-type: none">The system should be accessible on various devices (Mobile Phones, Laptops, Desktops, Tablets)Connectivity issues should be considered concerning users who may have limited access to a stable internet connection.Ease of reviewing user data to make modifications or improvements.		

1.3 User Requirements

Use Case Name:	Create Task List					
Scenario:	The user wants to create tasks inside the app.					
Triggering Event:	The user presses the Create task button.					
Brief Description:	If a user wants to improve their productivity and estimate the completion of tasks, they can create and add tasks with various functions, so the algorithm can complete estimations and provide you guidance with completing their tasks and configuring their productivity.					
Actors:	User					
Stakeholders:	User: creates a task for monitoring productivity.					
Preconditions:	The user is logged in.					
Postconditions:	The app saves the created tasks in a list and organizes them based on the user's preferences. These tasks can be manipulated once they are created.					
Flow of Activities:	<table><tr><th>Actor</th><th>System</th></tr><tr><td>1. The user presses the button to edit the task 2. Task name, description, priority, and due date must be filled in so the Create the Task button can be pressed.</td><td>1. System changes to create a task page where users must enter information. 2. The system will return to the task homepage and show tasks created.</td></tr></table>		Actor	System	1. The user presses the button to edit the task 2. Task name, description, priority, and due date must be filled in so the Create the Task button can be pressed.	1. System changes to create a task page where users must enter information. 2. The system will return to the task homepage and show tasks created.
Actor	System					
1. The user presses the button to edit the task 2. Task name, description, priority, and due date must be filled in so the Create the Task button can be pressed.	1. System changes to create a task page where users must enter information. 2. The system will return to the task homepage and show tasks created.					
Alternative Flows:	The priority button will be highlighted based on what the user presses. (ex. High, Medium, or Low).					

Use Case Name:	Manipulate Task
Scenario:	Users want to edit or change a task inside their task list, filled with existing tasks.
Triggering Event:	The user presses on the task to enable the pop-up menu to edit the task.
Brief Description:	If a user wants to fix an error in one of the tasks they created, do not worry!

	The task can be edited and fixed properly, allowing for the algorithm to decide which tasks should be completed first, and improve your productivity.					
Actors:	User					
Stakeholders:	User: edits a task for monitoring productivity.					
Preconditions:	The user is logged in and has existing tasks created.					
Postconditions:	The app saves the created tasks in a list and organizes them based on the user's preferences. These tasks can be manipulated once they are created.					
Flow of Activities:	<table><tr><th>Actor</th><th>System</th></tr><tr><td>1. The user presses the task they want to edit. 2. Task name, description, priority, and due date can be changed once you have clicked the edit task button in the pop-up menu.</td><td>1. The system opens a UI that gives options for the user to click. 2. The system will allow you to edit the task and you can submit the changes when completed.</td></tr></table>		Actor	System	1. The user presses the task they want to edit. 2. Task name, description, priority, and due date can be changed once you have clicked the edit task button in the pop-up menu.	1. The system opens a UI that gives options for the user to click. 2. The system will allow you to edit the task and you can submit the changes when completed.
Actor	System					
1. The user presses the task they want to edit. 2. Task name, description, priority, and due date can be changed once you have clicked the edit task button in the pop-up menu.	1. The system opens a UI that gives options for the user to click. 2. The system will allow you to edit the task and you can submit the changes when completed.					
Alternative Flows:						

Use Case Name:	Create Health Log
Scenario:	The user wants to log health metrics for the day.
Triggering Event:	The user clicks on the blue plus button in the health log dashboard.
Brief Description:	If the user wants to record their health metrics for a specific day. Users can input data such as heart rate, blood pressure, weight, height, and BMI. This feature helps users track their health trends and monitor their well-being.
Actors:	User
Stakeholders:	User: creates health logs
Preconditions:	<ul style="list-style-type: none"> - The user should be logged in to LifeSync - User must navigate to the Health Log dashboard via the navigation bar - The user knows their height, weight, heart rate, and blood pressure

Postconditions:	<ul style="list-style-type: none">- The app must save the entered data- Must calculate BMI from the given information- The app must only allow for edits to be made once the report is saved- The app must allow the user to view all their created reports					
Flow of Activities:	<table><tr><th>Actor</th><th>System</th></tr><tr><td>1. The user presses the button to create a report. 2. Heart rate, blood pressure, weight, and height must be filled in before the “Create Report” 3. The user presses the “Create Report” button.</td><td>1. System changes to create a report page where users must enter information. 2. The system will use the user’s input to calculate the BMI 3. System stores the given information and returns the user to the health log dashboard.</td></tr></table>		Actor	System	1. The user presses the button to create a report. 2. Heart rate, blood pressure, weight, and height must be filled in before the “Create Report” 3. The user presses the “Create Report” button.	1. System changes to create a report page where users must enter information. 2. The system will use the user’s input to calculate the BMI 3. System stores the given information and returns the user to the health log dashboard.
Actor	System					
1. The user presses the button to create a report. 2. Heart rate, blood pressure, weight, and height must be filled in before the “Create Report” 3. The user presses the “Create Report” button.	1. System changes to create a report page where users must enter information. 2. The system will use the user’s input to calculate the BMI 3. System stores the given information and returns the user to the health log dashboard.					
Alternative Flows:	Users can select existing report logs to view and edit health logs					

2. High-Fidelity Prototype

Walkthrough Demo: <https://youtu.be/mSvlpwu3vtY>

HiFi- Prototype:

<https://www.figma.com/file/VLd86DWxRKrzjp7OA5MZIy/Hi-Fi-LifeSync?type=design&node-id=0%3A1&mode=design&t=UZfzPShm9IgH5I8S-1>

LoFi-Prototype:

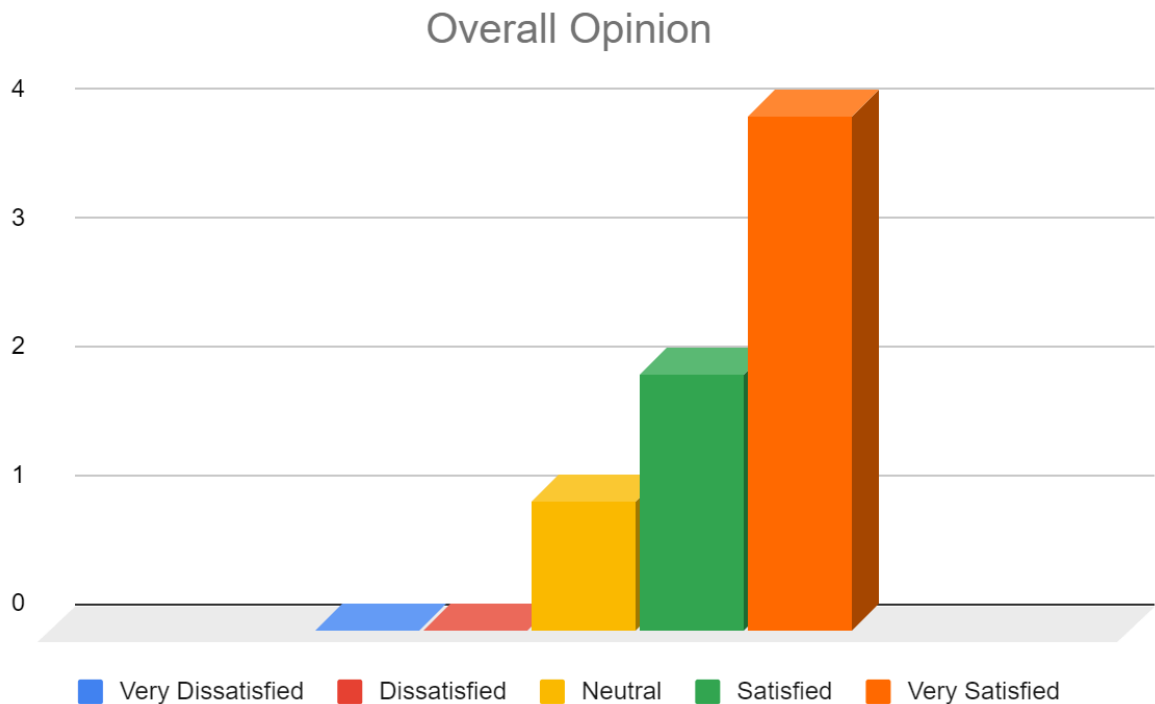
<https://www.figma.com/file/rBeqVR1bnc79wIuvic1kKr/LoFi---LifeSync?type=design&node-id=0%3A1&mode=design&t=17VHq8UGTil7jdtN-1>

3. Phase I Evaluation

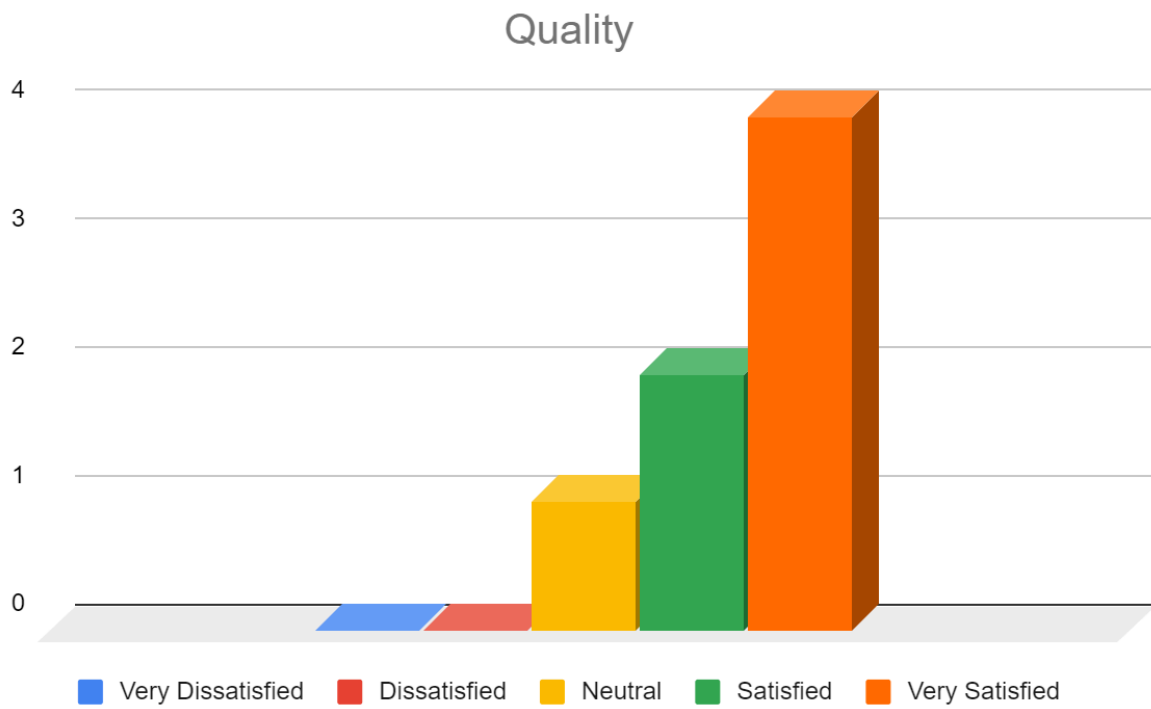
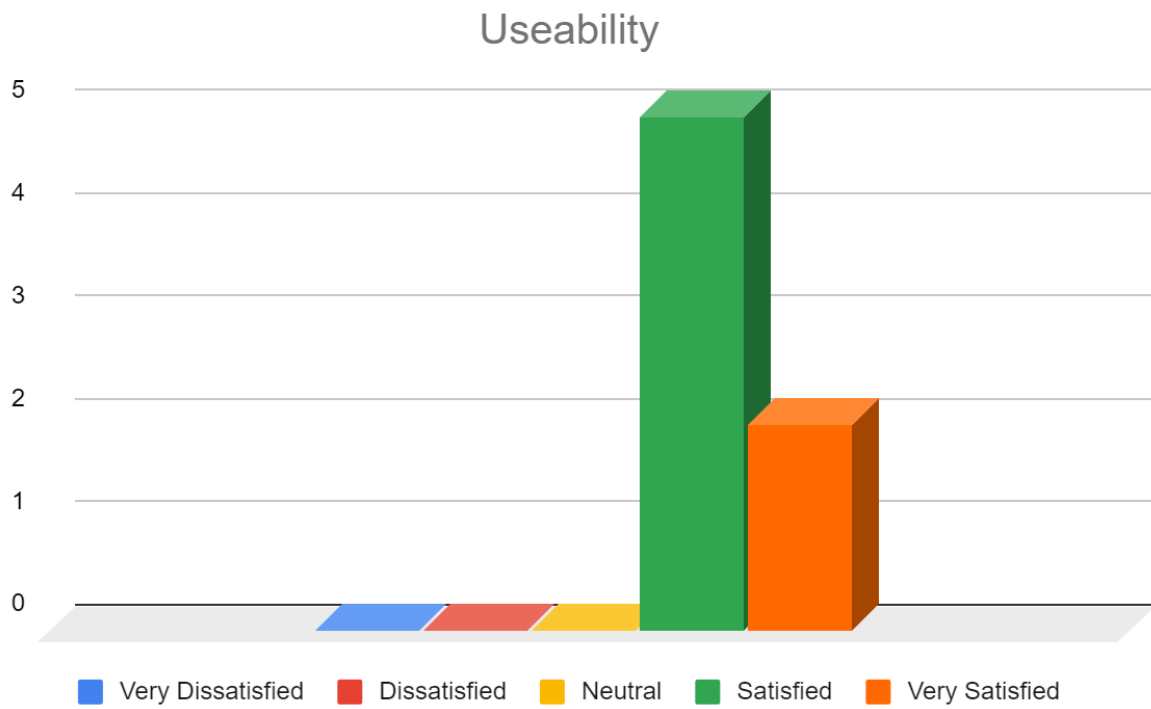
Q&A Comments From Audience	
Reported Issue:	Response:
“Less button presses to check mark a task”	Removed the confirmation page for confirmation of task completion Added live update and check box to mark the task as complete.
“Faster way to remove a task instead of pressing settings, remove a task, then press x on the task”	Removed the configure button allowing users to simply click the task for the option to edit, delete, duplicate, or complete the task. This removes the confusion and makes it more intuitive
“Improve the aesthetic of the app in the high fidelity models by adding color”	Increased the fonts, attribute sizes, and visibility of the overall app for ease of use. Added color in high fidelity to distinguish key features like priority.
“Adding metrics so data is easily understandable”	Added a display for enhanced visuals of metrics of the latest report. Metrics for all data collected from users were enhanced in size and using scales that are commonly used so they can be identified easily.
“Option to connect with their doctors through the app to share these metrics”	Added a feature that allows you to download the content to your device to send to a health care provider, but also allows you to view the data if you visit in person.
“Show trends and other common occurrences in someone’s life if the functionality is something you want to go for”	Added an analytical dashboard that deals with the analysis of the data collected, this allows users to view their productivity and health performance.
“Does the person calculate BMI separately?”	Added the BMI calculation which is now an offloaded computation that is calculated automatically once height and weight are entered.

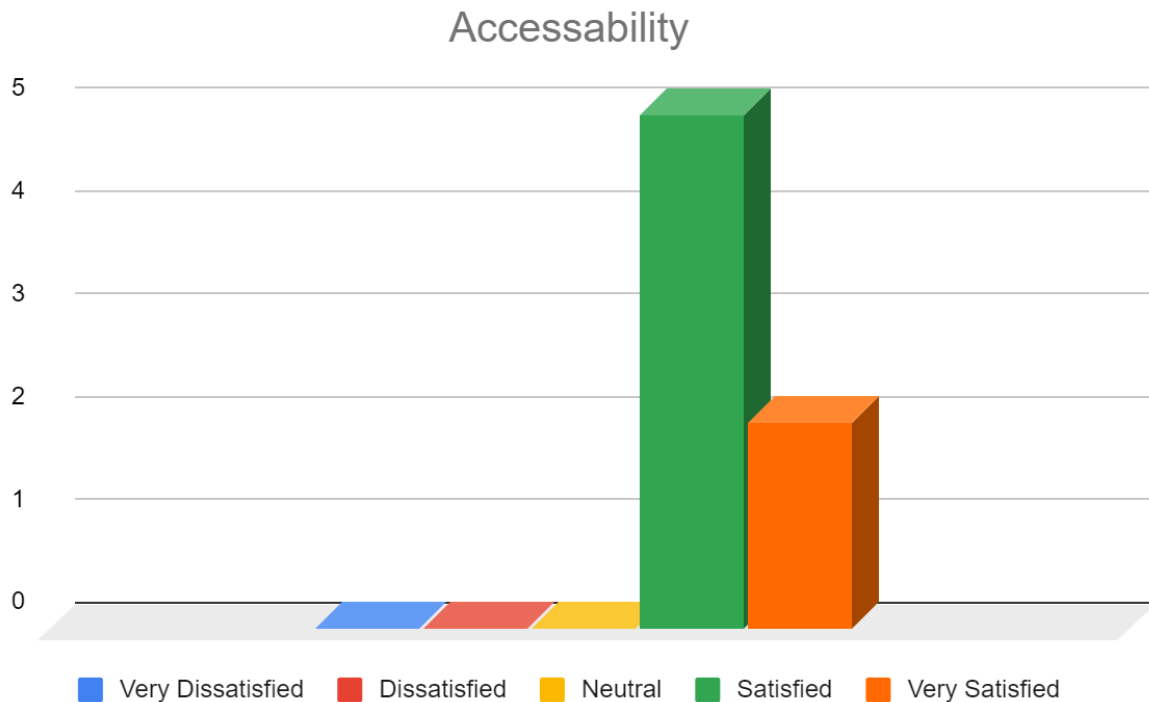
“Make confirmation messages as nudge/dialog/modal window for health metrics”	Removed confirmation pages and introduced a dialog that shows that an action has occurred and allows you to undo it.
“How do you use level of effort and what do you do with this data?”	Removed as it was closely related to priority and felt it would not help with the usability of the app.

3.1 Quantitative Data:



Despite the limited responses, the insights from the evaluation show a generally positive reception of the application with most users finding it satisfactory. However, there are areas for improvement including refining button locations for usability, improving the visual aspect for quality, and improving navigation across the app for accessibility. The graphs below illustrate the responses to our questionnaire covering the nonfunctional goals through 3 key metrics usability, quality, and accessibility.



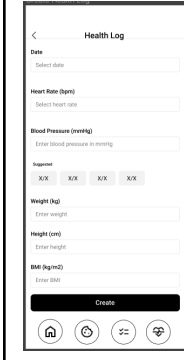
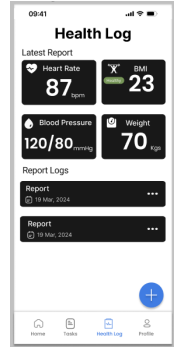
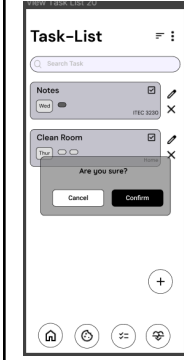
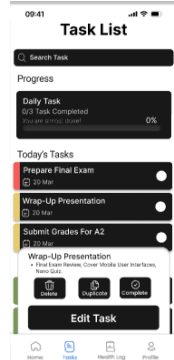


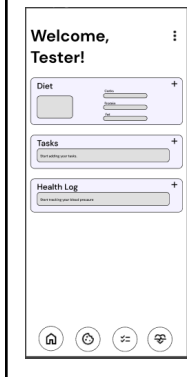

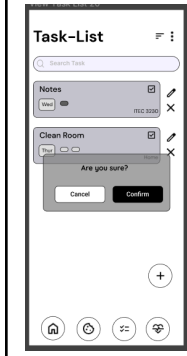
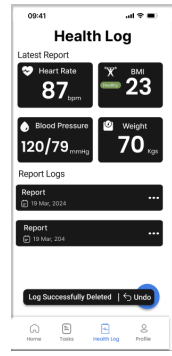
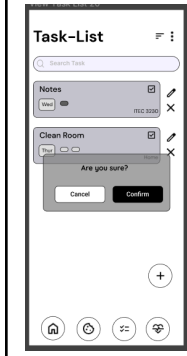
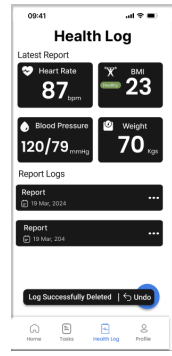
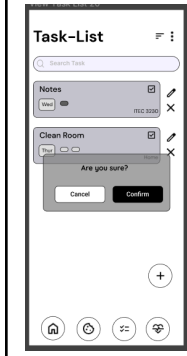
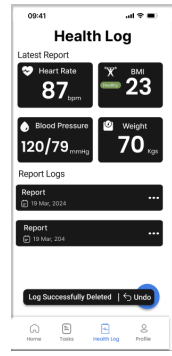
3.2 Qualitative Data: Comments/Verbal Feedback

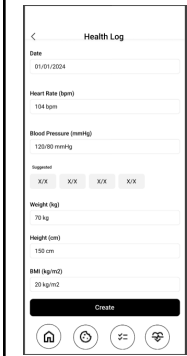
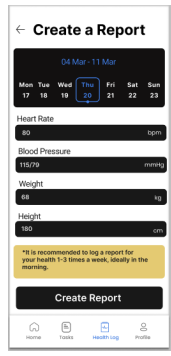
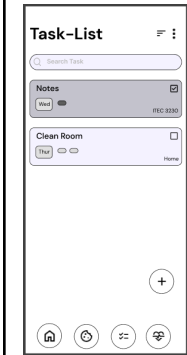
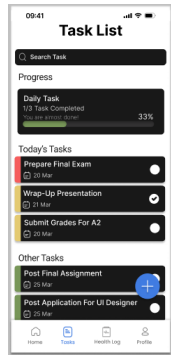
Comments from Questionnaire / Verbal Feedback		
Quote	Nielsen Category	Response
“Are the dates scrollable or choosable in the health log similar to the task list? Make this difference known.”	Visibility of system status	<p>Fixed the health log date display to show that reports can only be created currently so the system does not confuse the user.</p> <div> <div>Low-Fidelity</div> </div> <div> <div>High-Fidelity</div> </div>

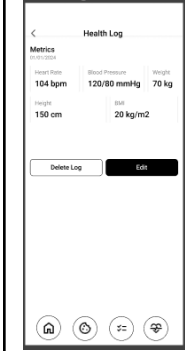
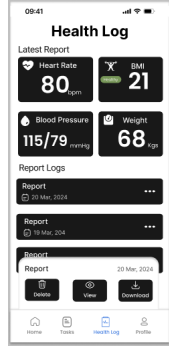
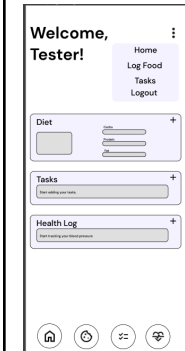
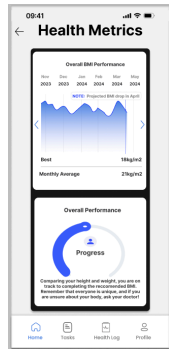
<p>“Adding metrics so data is easily understandable”</p>	<p>Match between system and real-world</p>	<p>Added a display for enhanced visuals of metrics of the latest report.</p> <p>Metrics for all data collected from users were enhanced in size and using scales that are commonly used so they can be identified easily</p> <table><tr><th>Low-Fidelity</th><th>High-Fidelity</th></tr><tr><td></td><td></td></tr></table>	Low-Fidelity	High-Fidelity		
Low-Fidelity	High-Fidelity					
<p>Make confirmation messages as nudge/dialog/modal window for health metrics”</p>	<p>User control and freedom</p>	<p>Removed confirmation pages and introduced a dialog that shows that an action has occurred and allows you to undo it.</p> <table><tr><th>Low-Fidelity</th><th>High-Fidelity</th></tr><tr><td></td><td></td></tr></table>	Low-Fidelity	High-Fidelity		
Low-Fidelity	High-Fidelity					
<p>“Make sure your buttons for progressing and going back are</p>	<p>Consistency and standards</p>	<p>Changed certain icons such as the back button on each page</p>				


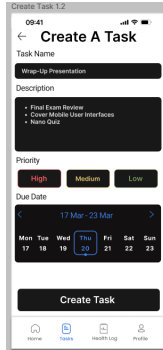

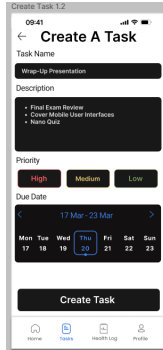

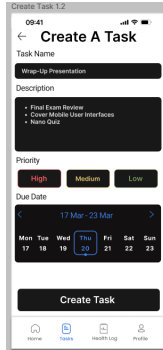
similar to the usage of icons instead of words.”		using an arrow pointing backward. <div><div>Low-Fidelity</div><div>High-Fidelity</div></div>
“A better method of steps for tasks (example: removing a task feature) so the user avoids confusion and errors.”	Error prevention	Added constraints to certain steps such as the reports page and allowed for ease of use, with a small, pop-up menu that has further instructions and expands from the bottom of the page. <div><div>Low-Fidelity</div><div>High-Fidelity</div></div>
“Does the person calculate BMI separately?”	Recognition rather than recall	Added the BMI calculation which is now an offloaded computation that is calculated automatically once height and weight are entered. <div><div>Low-Fidelity</div><div>High-Fidelity</div></div>

		<div><div>A low-fidelity wireframe of a 'Health Log' screen. It features input fields for 'Date', 'Heart Rate (bpm)', 'Blood Pressure (mmHg)', 'Weight (kg)', 'Height (cm)', and 'BMI (kg/m²)'. There are checkboxes for 'Report' and a 'Create' button at the bottom. A bottom navigation bar contains icons for Home, Tasks, Health Log, and Profile.</div><div>A high-fidelity mockup of the 'Health Log' screen. It displays a 'Latest Report' with heart rate (87 bpm), blood pressure (120/80 mmHg), and weight (70 kg). It also shows a 'Report Logs' section with two report entries. The bottom navigation bar is more detailed with labels.</div></div>
<p>“Faster way to remove a task instead of pressing settings, remove a task, then press x on the task”</p>	<p>Flexibility and efficiency of use</p>	<p>Removed the configure button allowing users to simply click the task for the option to edit, delete, duplicate, or complete the task. This removes the confusion and makes it more intuitive.</p> <div><div>Low-Fidelity</div><div>A low-fidelity wireframe of a 'Task-List' screen. It shows a search bar, a list of tasks (Notes, Clean Room), and a confirmation dialog 'Are you sure?' with 'Cancel' and 'Confirm' buttons. A bottom navigation bar is present.</div><div>High-Fidelity</div><div>A high-fidelity mockup of the 'Task List' screen. It features a search bar, a 'Progress' section, and a 'Today's Tasks' section with tasks like 'Prepare Final Exam', 'Wrap-Up Presentation', and 'Submit Grades For A2'. Each task has a progress indicator. A bottom navigation bar is at the bottom.</div></div>
<p>“Improve the aesthetic of the app in the high fidelity models by adding color”</p>	<p>Aesthetic and minimalist design</p>	<p>Increased the fonts, attribute sizes, and visibility of the overall app for ease of use. Added color in high fidelity to distinguish key features like priority.</p> <div><div>Low-Fidelity</div><div>High-Fidelity</div></div>

		<div><div></div><div></div></div>				
<p>“Once a task or report is deleted, what if the user did not mean to perform this action? Perhaps adding an undo button of some sort.”</p>	<p>Help users recognize, diagnose, and recover from errors</p>	<p>Implemented a small toast prompt that will appear once one of the tasks is completed, you can undo or confirm changes.</p> <table><tr><th>Low-Fidelity</th><th>High-Fidelity</th></tr><tr><td></td><td></td></tr></table>	Low-Fidelity	High-Fidelity		
Low-Fidelity	High-Fidelity					
						
<p>“How often are we supposed to log our health information, in order to get a stronger output on the BMI calculation?”</p>	<p>Help and documentation</p>	<p>During the high-fidelity creation, an added note explaining the recommended procedure for logging health reports was created.</p> <table><tr><th>Low-Fidelity</th><th>High-Fidelity</th></tr></table>	Low-Fidelity	High-Fidelity		
Low-Fidelity	High-Fidelity					

		<div><div></div><div></div></div>
“Less button presses to check mark a task”	Flexibility and Efficiency of Use	<p>Removed the confirmation page for confirmation of task completion</p> <p>Added live update and check box to mark the task as complete.</p> <div><div>Low-Fidelity</div><div></div><div>High-Fidelity</div><div></div></div>
“Option to connect with their doctors through the app to share these metrics”	Recognition rather than recall	<p>Added a feature that allows you to download the content to your device to send to a health care provider but also allows you to view the data if you visit in person.</p> <div><div>Low-Fidelity</div><div>High-Fidelity</div></div>

		<div><div></div><div></div></div>
<p>“Show trends and other common occurrences in someone’s life if the functionality is something you want to go for”</p>	<p>Match between system and real world.</p>	<p>Added an analytical dashboard that deals with the analysis of the data collected, this allows users to view their productivity and health performance.</p> <div><div><p>Low-Fidelity</p><div></div></div><div><p>High-Fidelity</p><div></div></div></div>

<p>“How do you use your level of effort and what do you do with this data?”</p>	<p>Match between the system and the real world</p>	<p>Removed as it was closely related to priority and felt it would not help with the usability of the app.</p>				
		<table><tr><th>Low-Fidelity</th><th>High-Fidelity</th></tr><tr><td></td><td></td></tr></table>	Low-Fidelity	High-Fidelity		
Low-Fidelity	High-Fidelity					
						

4. Phase II Evaluation

4.1 Overall Evaluation Design

Goals of your Evaluation:

1. **Learnability:** The amount of time needed for users to become knowledgeable with basic tasks and ease of learning reported by users.
2. **Efficiency:** The amount of time taken to complete a task and the number of clicks or keystrokes required to complete the task.
3. **Satisfaction:** To see how satisfied the users are with the visual design of the application and how they perceive the level of interaction and engagement when using the application.

Example Techniques: Lab usability tests, Questionnaires, Observations.

4.2 (Hypothetical) Field Study

i. What are you evaluating:

1. **Learnability:** The amount of time needed for users to become knowledgeable with basic tasks and ease of learning reported by users.
2. **Efficiency:** The amount of time taken to complete a task and the number of clicks or keystrokes required to complete the task.

3. **Satisfaction:** To see how satisfied the users are with the visual design of the application and how they perceive the level of interaction and engagement when using the application.

ii. Where/How it would be conducted:

The field study would be conducted remotely using a combination of usability testing sessions and questionnaires. To ensure real-world application, participants will use the LifeSync app on their own devices in their natural surroundings.

iii. Who would participate:

Participants will be chosen at random from a pool of individuals who fit our primary user demography. Depending on availability and time constraints, we hope to collect feedback from a sample size of over 20 users in order to ensure a comprehensive understanding of user experiences and preferences.

iv. How long would it take:

Each usability testing session is estimated to last approximately 10-15 minutes as we do not wish to take too much of their time. Participants will also be asked to complete a post-test questionnaire, which will take an additional 5-10 minutes. In total, the evaluation process for each participant is expected to take about 20 minutes.

v. What data would you collect and how:

The data collected will include the number of user errors, time taken to find the correct path to goals, the number of clicks to perform actions, task completion times, satisfaction with the visual design, and the level of interaction and engagement. This data will be collected after usability testing or during downtime to minimize disruptions to the users' routines. Each participant will receive a phone pre-loaded with the application for seamless data collection, including click tracking. An observer will record user behavior, such as articulated questions, body language, and facial expressions, which will be added to the database. Additionally, participants will complete a questionnaire to provide subjective feedback on the usability and satisfaction of the application.

vi. What analysis would you do with the data:

Our approach involves an in-depth comparison of the data gathered from all participants in our field study with that of the competing system that employs similar yet distinct measurements. The objective is to improve our design significantly, aiming to produce the best wellness app manager in the market. In addition, the instructor's feedback will play a crucial role in guiding our design enhancements for optimal functionality and user satisfaction.

4.3 Usability Experiment

4.3.1 Experimental Design

i. Goals of your Evaluation:

1. **Learnability:** The amount of time needed for users to become knowledgeable with basic tasks and ease of learning reported by users.

2. **Efficiency:** The amount of time taken to complete a task and the number of clicks or keystrokes required to complete the task.
3. **Satisfaction:** To see how satisfied the users are with the visual design of the application and how they perceive the level of interaction and engagement when using the application.

ii. What are the independent variables:

- Number of clicks to perform actions
- Changes to the application
- Number of user errors
- Time spent looking for the correct path to complete the task
- Time spent to complete the task

iii. What are the dependent variables of your experiment:

- Satisfaction with the visual design depends on the time spent looking for the correct path to complete the task.
- The level of interaction and engagement with the design depends on the number of clicks to complete the task

iv. What experimental design are you considering among within-subjects, between-subjects or matched participants?

For our LifeSync study, a within-subject design would be ideal because it would allow us to compare participants' performance to the same flow of tasks, and we will be able to capture their reactions. This design helps reduce the impact of individual differences due to counterbalancing, providing more statistical accuracy with a smaller sample size. Furthermore, it lets us see how every user engages with LifeSync both before and after possible design changes, providing insightful data on learnability, effectiveness, and satisfaction.

v. What is a drawback (a confounding factor) that comes with your choice in (iv) and how do you deal with it?

A confounding factor would be the learning effect, i.e., participants are accustomed to a secondary interface because of their experience using the first interface. To counteract this factor, we will implement counterbalancing, which will split participants into two groups, each performing tasks in a different order.

vi. What is the procedure/treatment i.e. what are your subjects supposed to do based on the design of choice?

The procedure for our analysis would have each participant access the exact same tasks. They may resort to memory of other similar applications that use existing designs similar to ours to enhance efficiency and memory. By performing a procedure similarly, we will receive similarities in the data and hopefully derive positive conclusions from the results.

vii. What shall be measured (times, self-report, etc). Data must include both quantitative and qualitative.

- Number of user errors (integer)
- Time taken to find the correct path to goals (seconds)
- Number of clicks to perform actions (integer)
- Time taken to complete the task (seconds)
- Satisfaction with the overall app (feedback rating)
- Satisfaction with the visual design (feedback rating)
- Level of interaction and engagement (feedback)

4.3.2 Results and Analysis

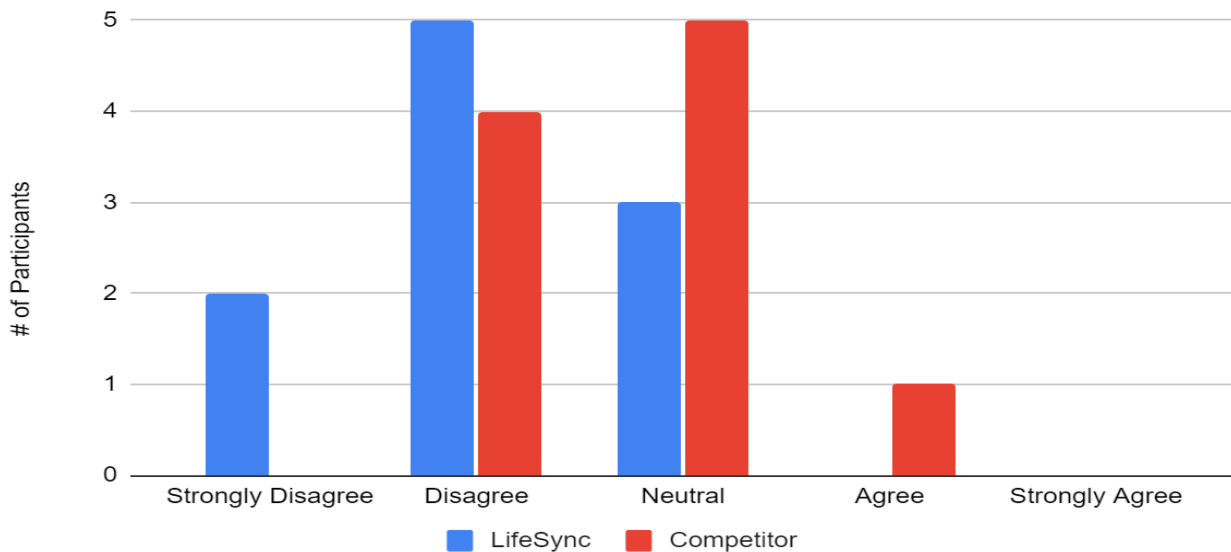
For this analysis, we will gather our results and compare them against each other, between the professor, and 9 fake participants (simulated).

Augment Quantitative Data:

	Sus Q1	Sus Q2	Sus Q3	Sus Q4	Sus Q5	Sus Q6	Sus Q7	Sus Q8	Sus Q9	Sus Q10	SUS SCORE
Instructor	2	3	3	5	4	4	3	4	4	3	57.5
P1	1	2	1	5	2	3	2	5	5	5	72.5
P2	1	4	3	4	4	4	1	1	2	4	65
P3	2	4	3	4	5	2	4	5	3	3	52.5
P4	3	5	3	4	5	4	5	5	4	3	52.5
P5	3	3	5	2	1	5	4	2	5	3	42.5
P6	2	1	1	5	3	3	2	4	5	4	60
P7	2	4	5	5	1	2	4	1	5	4	47.5
P8	3	2	2	3	4	2	1	4	5	5	52.5
P9	2	4	4	4	5	5	5	5	2	4	60
	2	3.5	3	4	4	3.5	3.5	4	4.5	4	56.25
	2	2.25	2.25	4	2.25	2.25	2	2.5	3.25	3	8.68027777
	2.75	4	3.75	5	4.75	4	4	5	5	4	
	0.75	1.75	1.5	1	2.5	1.75	2	2.5	1.75	1	
	Sus Q1	Sus Q2	Sus Q3	Sus Q4	Sus Q5	Sus Q6	Sus Q7	Sus Q8	Sus Q9	Sus Q10	SUS SCORE
P1	3	3	3	3	3	3	3	3	3	3	50
P2	3	4	3	1	4	3	3	3	3	3	45
P3	2	3	2	4	5	3	2	3	4	4	55
P4	3	4	3	2	4	2	4	2	2	3	42.5
P5	2	2	3	3	5	4	3	2	3	3	45
P6	2	4	4	3	3	3	4	2	4	1	40
P7	2	4	2	3	3	4	3	3	4	4	60
P8	3	3	4	3	5	3	2	4	3	1	42.5
P9	3	4	2	3	3	3	4	2	4	3	47.5
P10	4	2	2	3	3	4	2	4	3	3	55
	3	3.5	3	3	3.5	3	3	3	3	3	48.25
	2	3	2	3	3	3	2.25	2	3	3	6.56696277
	3	4	3	3	4.75	3.75	3.75	3	4	3	
	1	1	1	0	1.75	0.75	1.5	1	1	0	

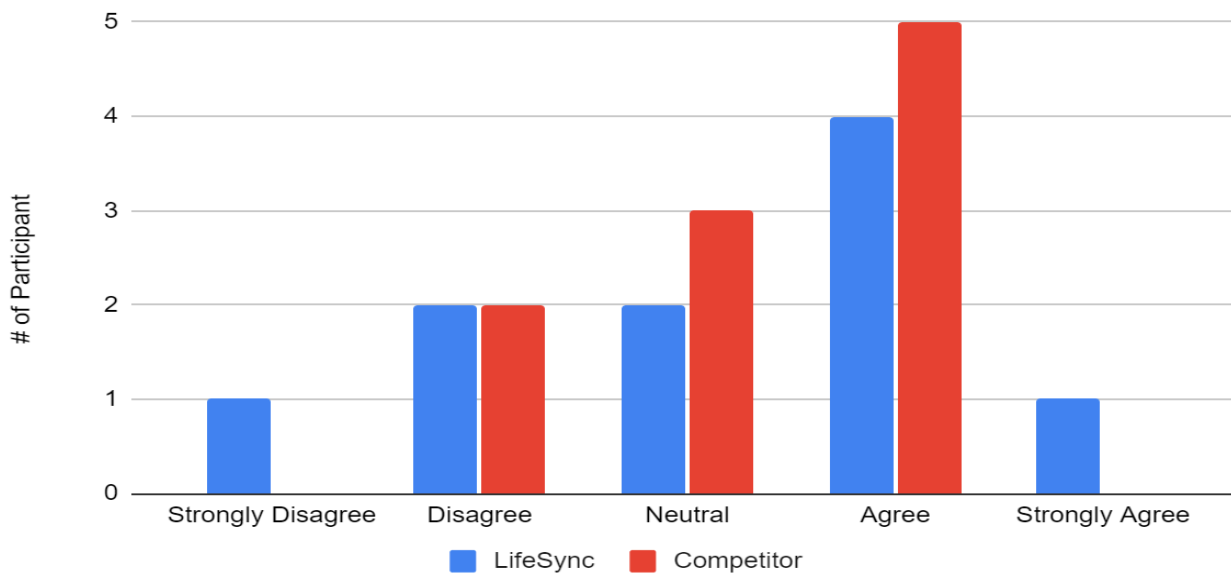
Based on the overall SUS score comparison, it seems that our system interface provides a higher usability score (Mean: 56.25, STD: 8.68) than the competing system (Mean: 48.25, STD: 6.57).

Q1. I think that I would like to use this system frequently



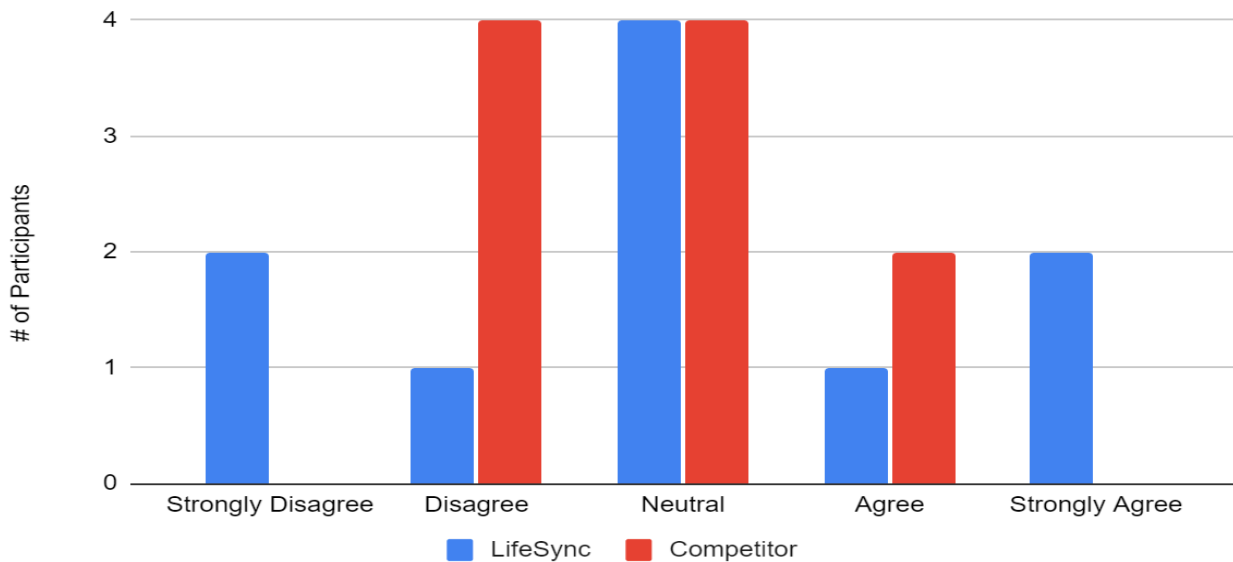
The descriptive analytics results suggest that the users were not satisfied with the LifeSync system for everyday use and would prefer a competitor system with 70% of our system (Median: 2, IQR: 0.75) falling into the Disagree/Strongly Disagree category while only 40% for our competitor (Median: 3, IQR: 1).

Q2. I found the system unnecessarily complex.



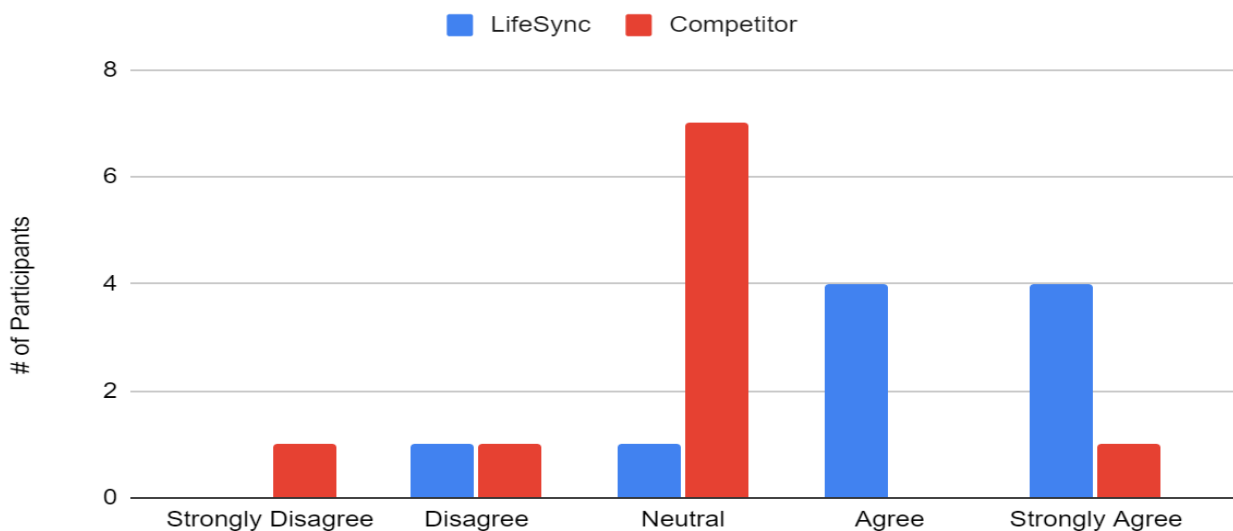
The descriptive analytics results suggest that the users found LifeSync less complex, with 30% of our system (Median: 2, IQR: 0.75) falling into Disagree/Strongly Disagree category while only 20% for our competitor (Median: 3, IQR: 1).

Q3.I thought the system was easy to use



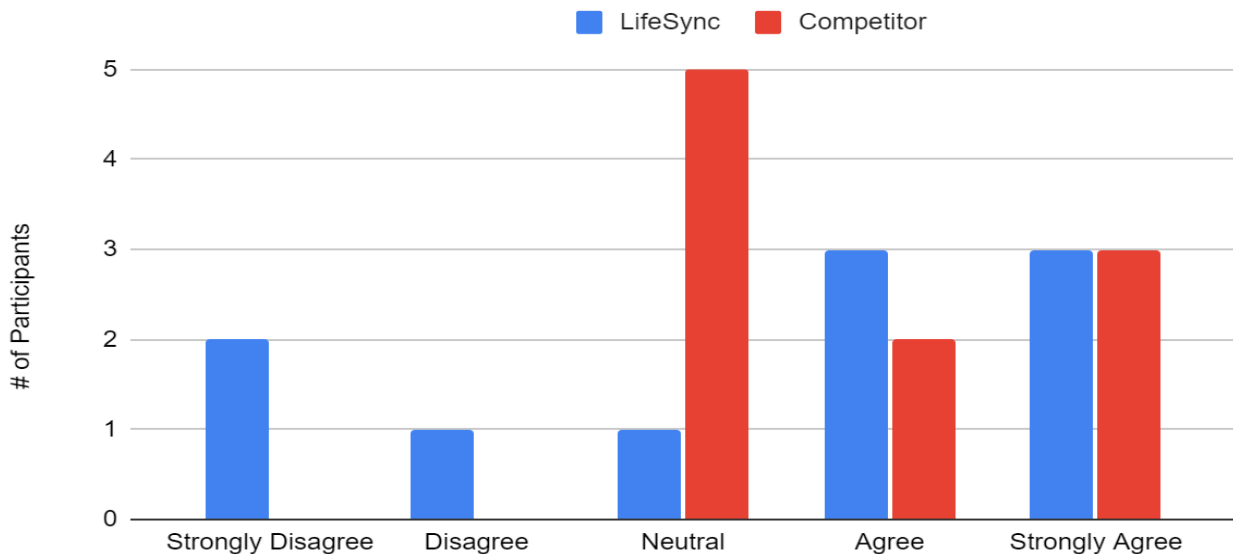
The descriptive analytics results suggest that LifeSync users felt strongly about them not needing the assistance of a technical person while operating the system, with 80% of respondents in the Agree/Strongly Agree category for our system (Median:4, IQR:1) compared to 10% of the respondents for competitor's system (Median:3, IQR: 0) for Q3.

Q4. I would not need the support of a technical person to be able to use this system



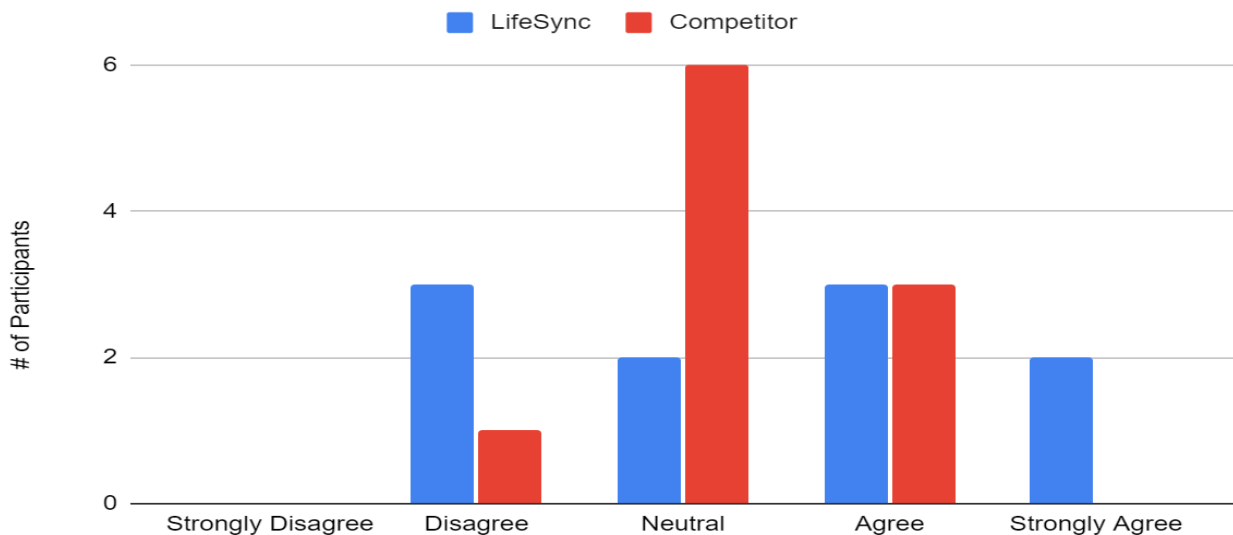
The descriptive analytics results suggest that LifeSync users felt strongly about not needing the assistance of a technical person while operating the system. For Q4, 80% of respondents were in the Agree/Strongly Agree category for our system (Median:4, IQR:1) compared to 10% of the respondents for the competitor's system (Median:3, IQR: 0).

Q5. I found the various functions in this system were well integrated



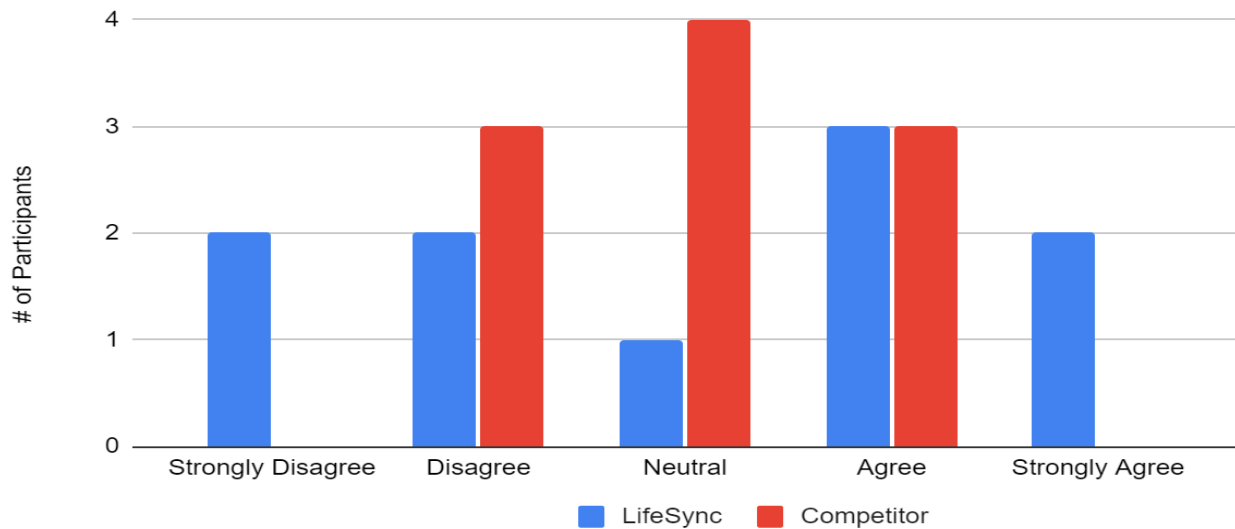
The descriptive analytics results suggest that users of LifeSync found the functions of the system well integrated slightly over its competitors with 60% of respondents in the Agree/Strongly Agree category for our system (Median:4, IQR:2.5) compared to 50% of the respondents for competitor's system (Median: 3.5, IQR: 1.75) for Q5.

Q6.I thought there wasn't much inconsistency in this system



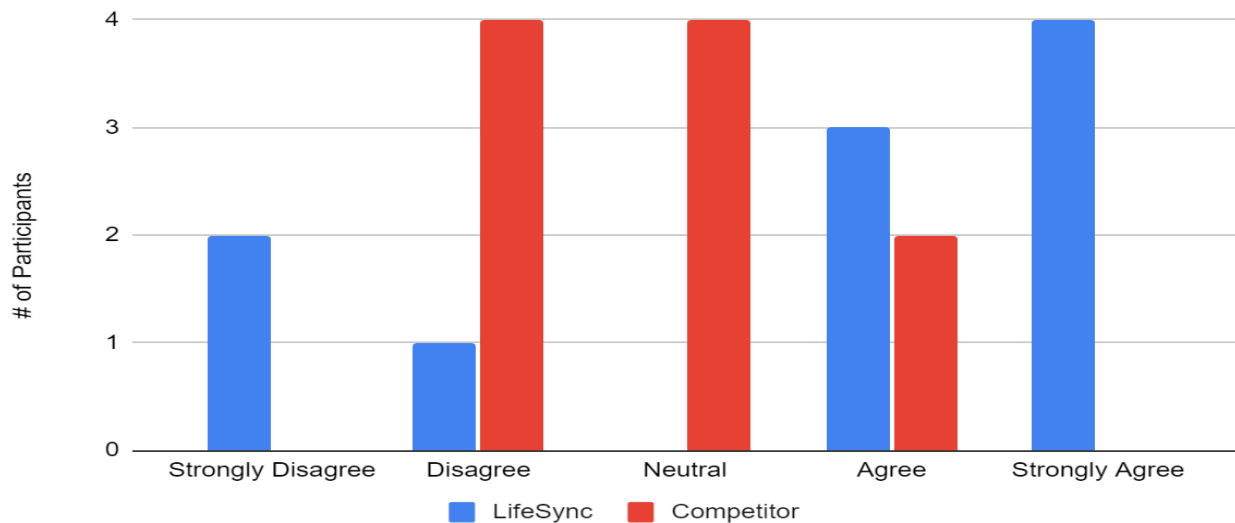
The descriptive analytics results suggest that users of LifeSync performed slightly better when finding inconsistencies within the system with 50% of respondents in the Agree/Strongly Agree category for our system (Median: 3.5, IQR: 1.75) compared to 30% of the respondents for competitor's system (Median: 3, IQR: 0.75) for Q6.

Q7. I would imagine that most people would learn to use this system very quickly



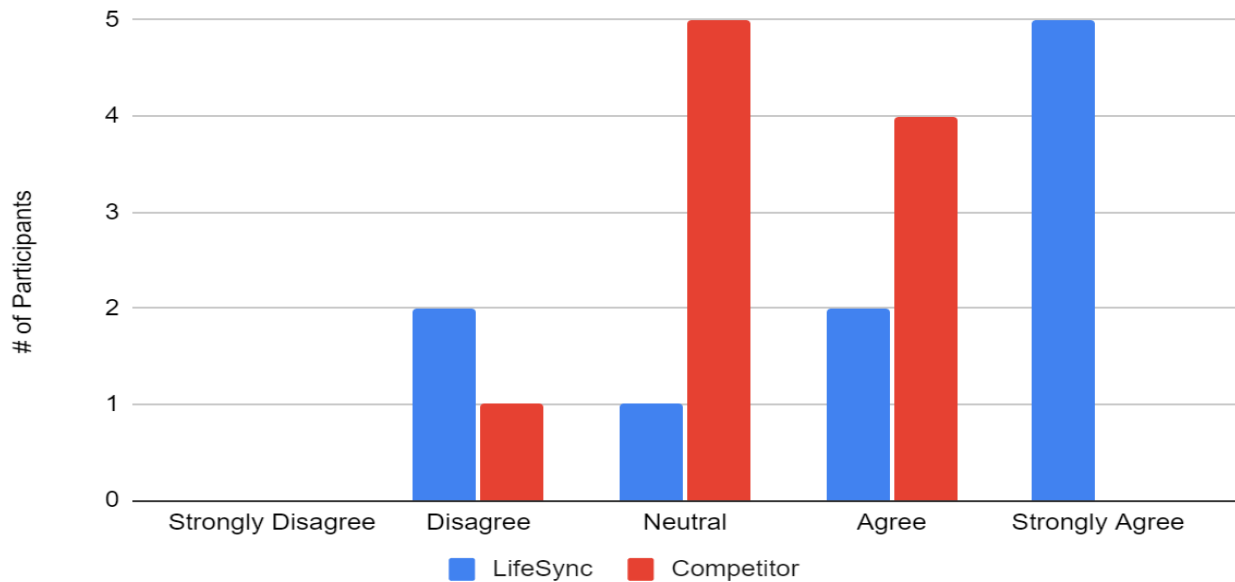
The descriptive analytics results suggest that users of LifeSync learnability are satisfied with our system, with 50% of respondents in the Agree/Strongly Agree category (Median: 3.5, IQR: 2) compared to 30% of the respondents for the competitor's system (Median: 3, IQR: 1.5) for Q7.

Q8. I did not find this system difficult to use



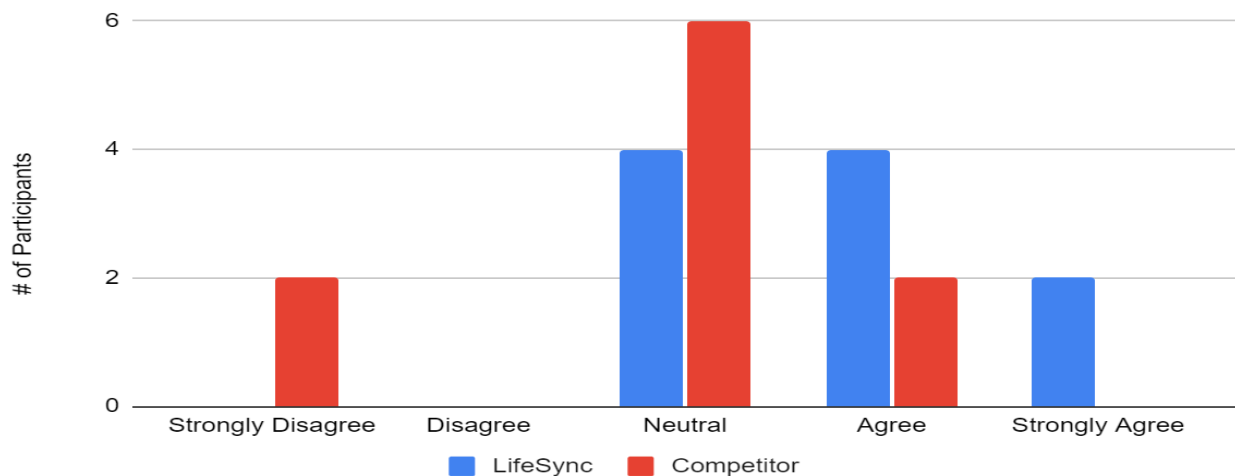
The descriptive analytics results suggest that LifeSync users are satisfied with the ease of use. For Q8, 70% of respondents were in the Agree/Strongly Agree category for our system (Median: 4, IQR: 2.5) compared to 20% of the respondents for the competitor's system (Median: 3, IQR: 1).

Q9. I felt very confident using this system



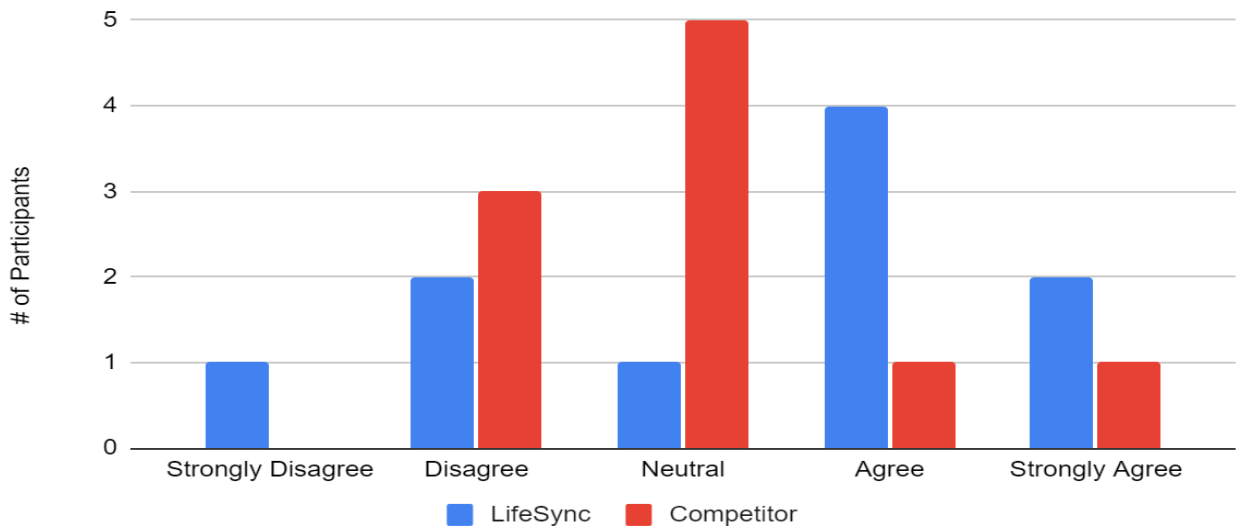
The descriptive analytics results suggest that users of LifeSync felt very confident using this system, with 70% of respondents in the Agree/Strongly Agree category for our system (Median:4.5, IQR: 1.75) compared to 40% of the respondents for competitor's system (Median:3, IQR: 1) for Q9.

Q10. I needed to learn a lot of things before I could get going with this system.



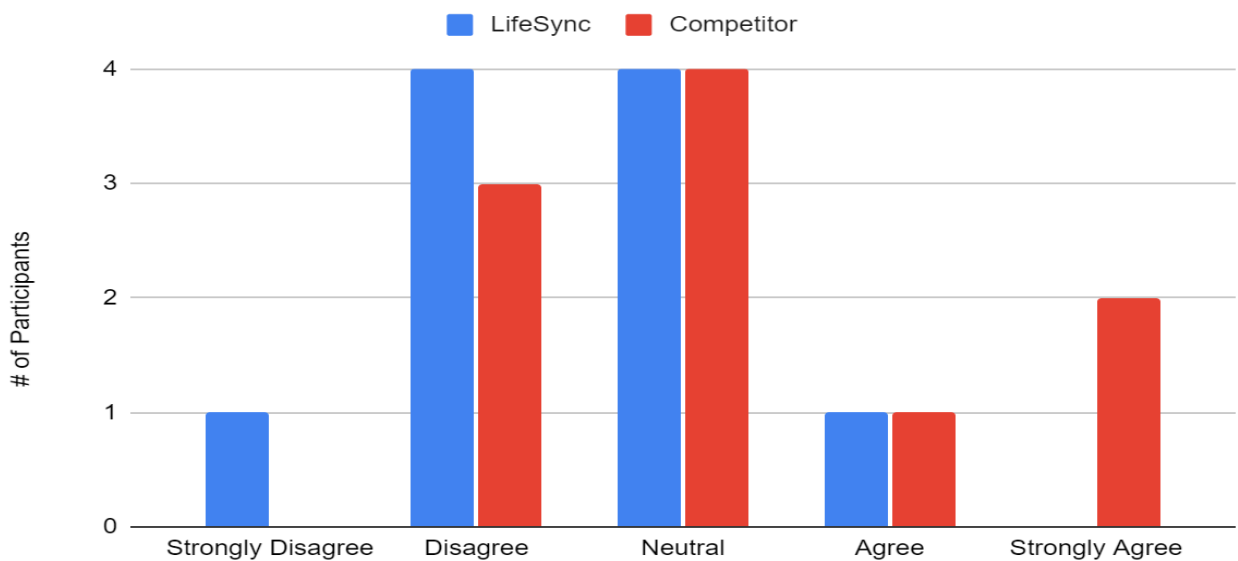
The descriptive analytics results suggest that users of LifeSync are required to learn more things before they can get started with the system, with 60% of respondents in the Agree/Strongly Agree category for our system (Median: 4, IQR: 1) compared to 20% of the respondents for competitor's system (Median: 3, IQR: 0) for Q10.

ADQ1. I felt motivated to input my health metrics into this system



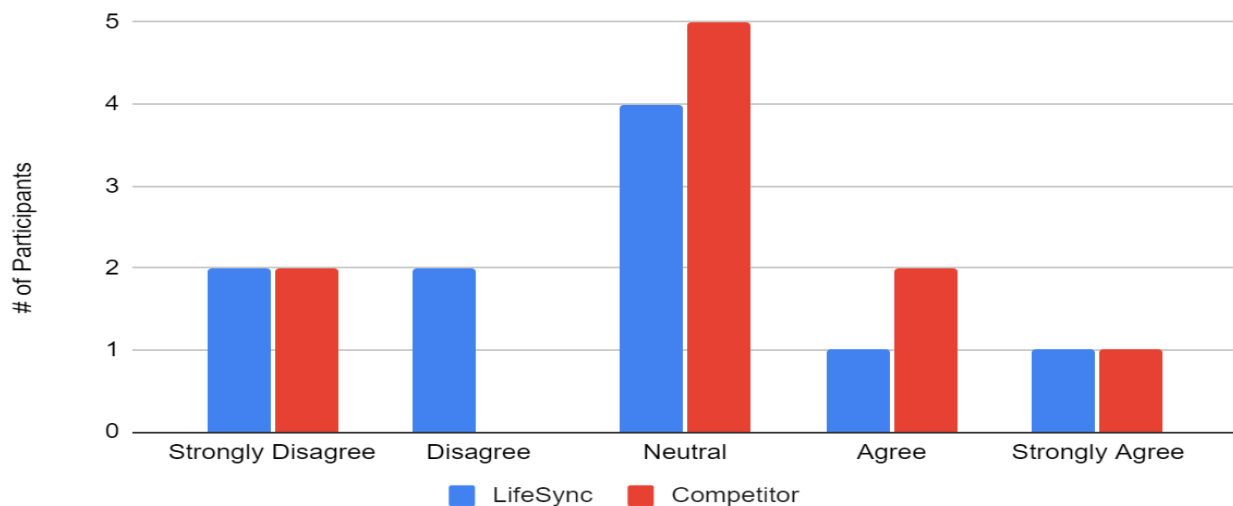
The descriptive analytics results suggest that users of LifeSync are motivated to update their health metrics, with 60% of respondents in the Agree/Strongly Agree category for our system (Median: 4, IQR: 1.75) compared to 20% of the respondents for competitor's system (Median:3, IQR: 0.75) for ADQ1.

ADQ2. I felt motivated to update my task list in this system



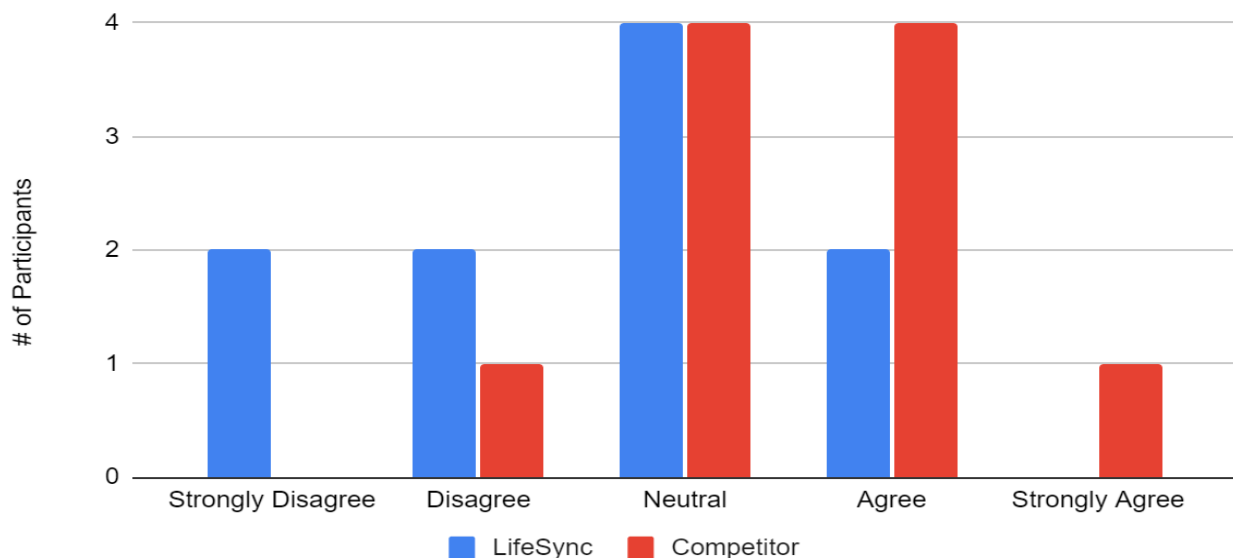
The descriptive analytics results suggest that users of LifeSync are less motivated to update their tasks 10% of respondents in the Agree/Strongly Agree category for our system (Median:2.5, IQR: 1) compared to 30 % of the respondents for competitor's system (Median: 3, IQR: 1) for ADQ2.

ADQ3. I found the resulting task and health metrics to be informative



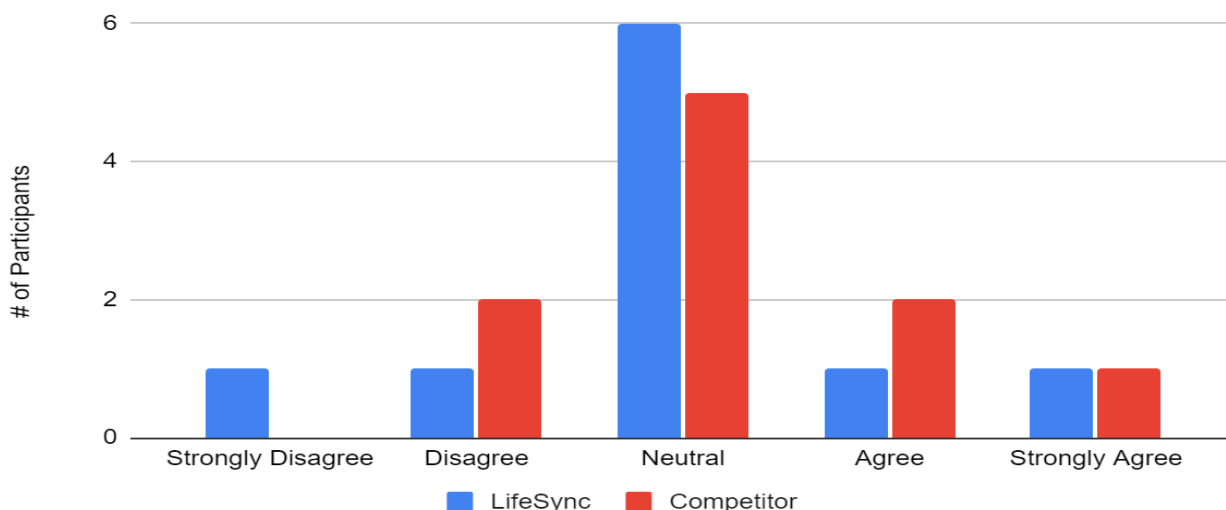
The descriptive analytics results suggest that users of LifeSync are less satisfied with the task and health metrics to be informative, with 20% of respondents in the Agree/Strongly Agree category for our system (Median: 3, IQR: 1) compared to 30% of the respondents for competitor's system (Median: 3.75, IQR: 0.75) for ADQ3.

ADQ4. I think the system was pleasing to look at and easy on the eyes



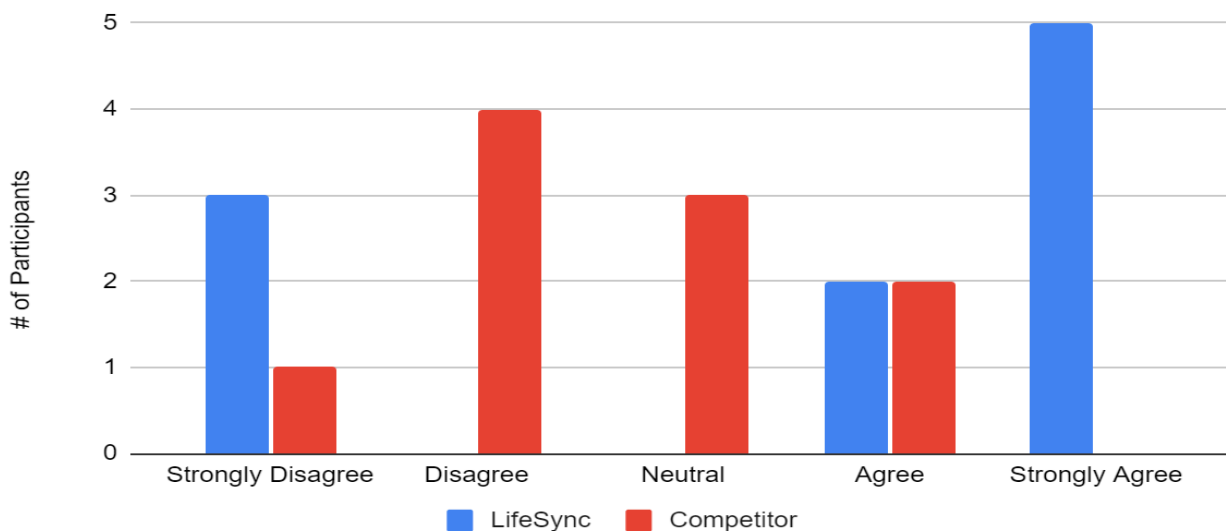
The descriptive analytics results suggest that users of LifeSync are slightly less satisfied with the overall look, with 20% of respondents in the Agree/Strongly Agree category for our system (Median:3, IQR: 1) compared to 50 % of the respondents for competitor's system (Median:3.5, IQR: 1).

ADQ5. I found the dashboard/health log/task page quick to read.

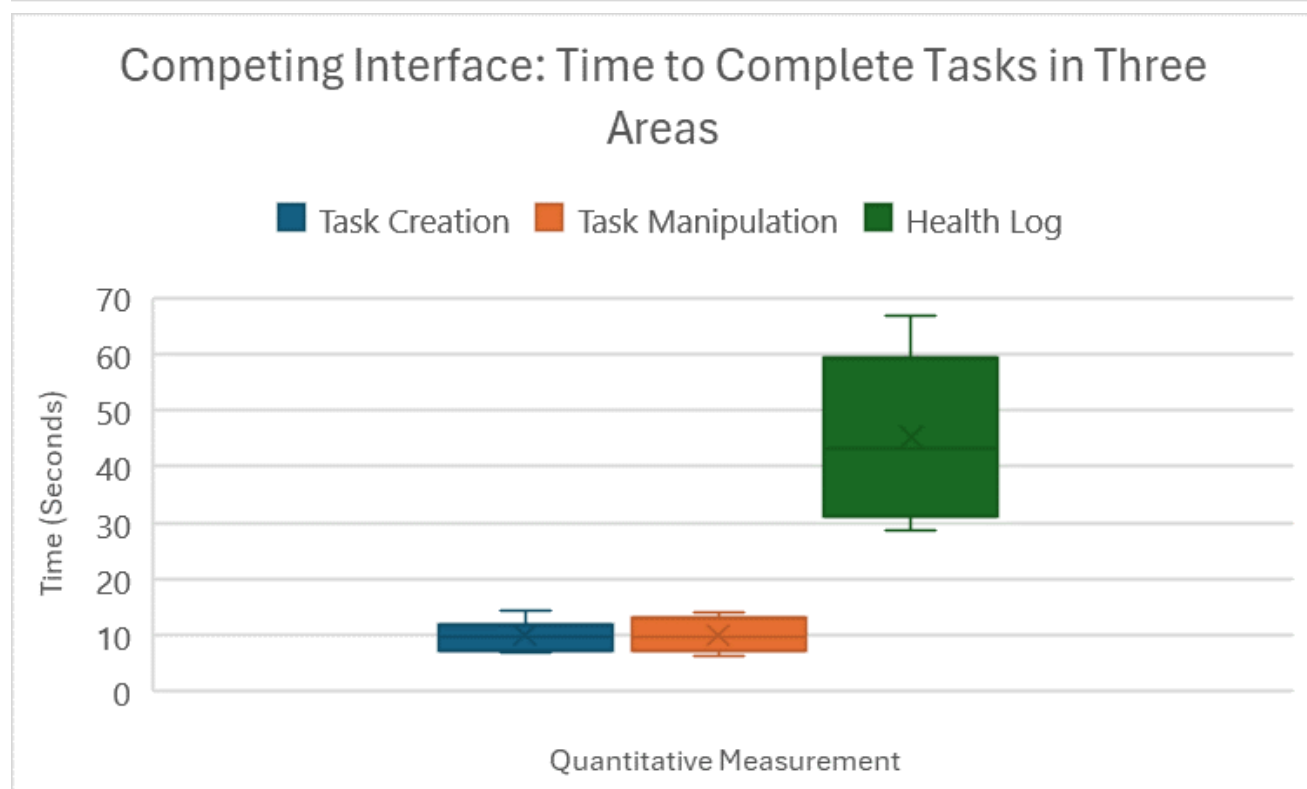
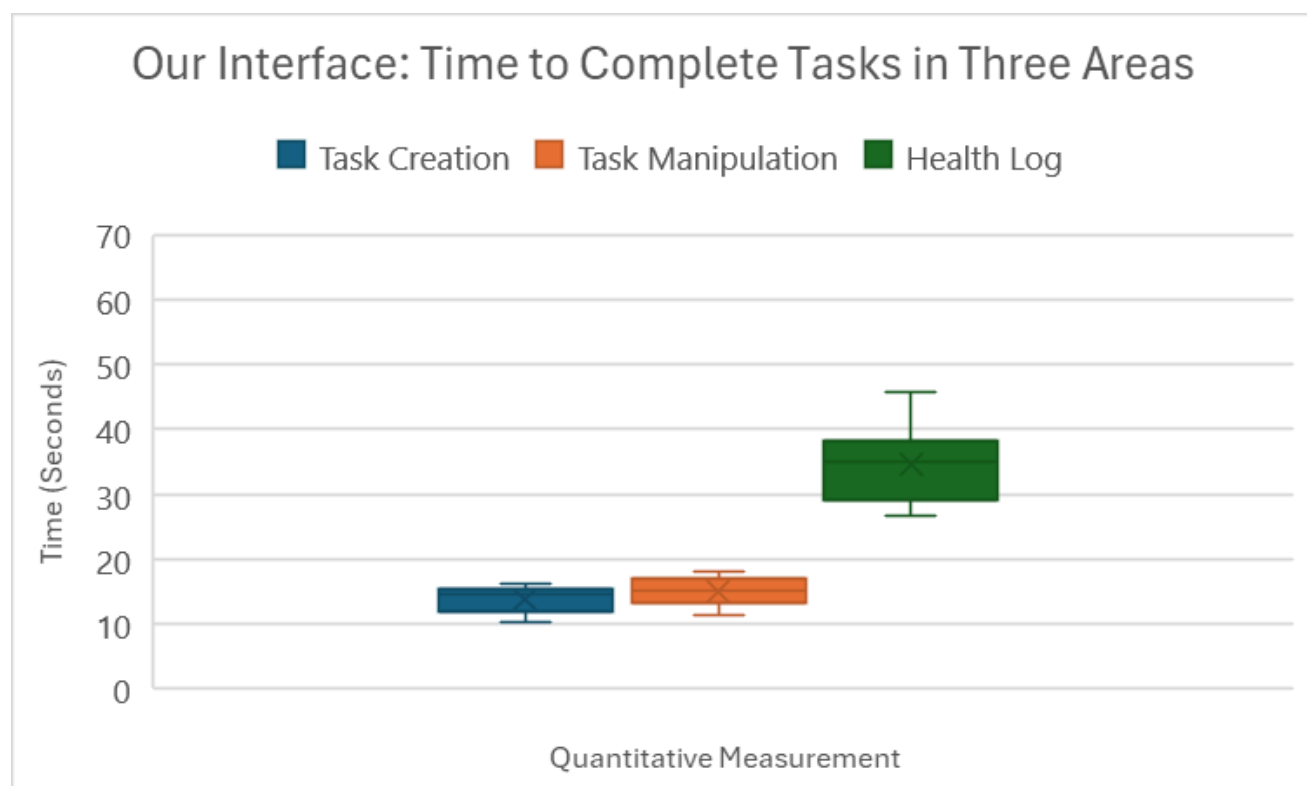


The descriptive analytics results suggest that users of LifeSync and the competitor's system are equally satisfied with both systems readability with our system (Median 3, IQR: 0) compared to the competitor system (Median: 3, IQR: 0.75) for ADQ5.

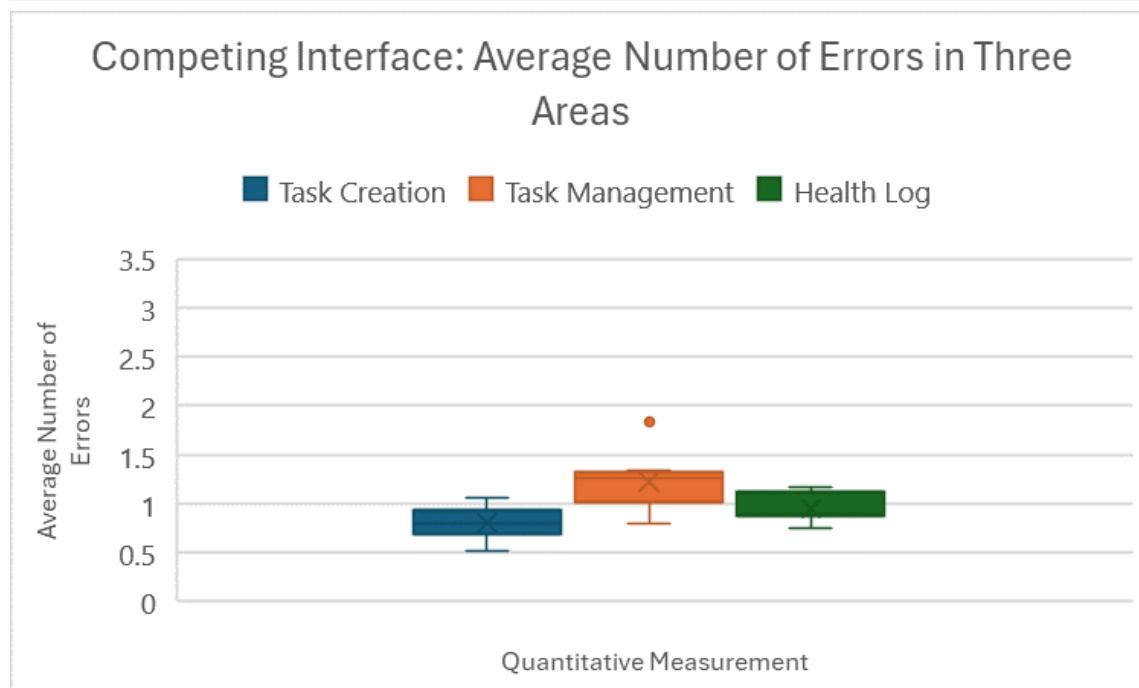
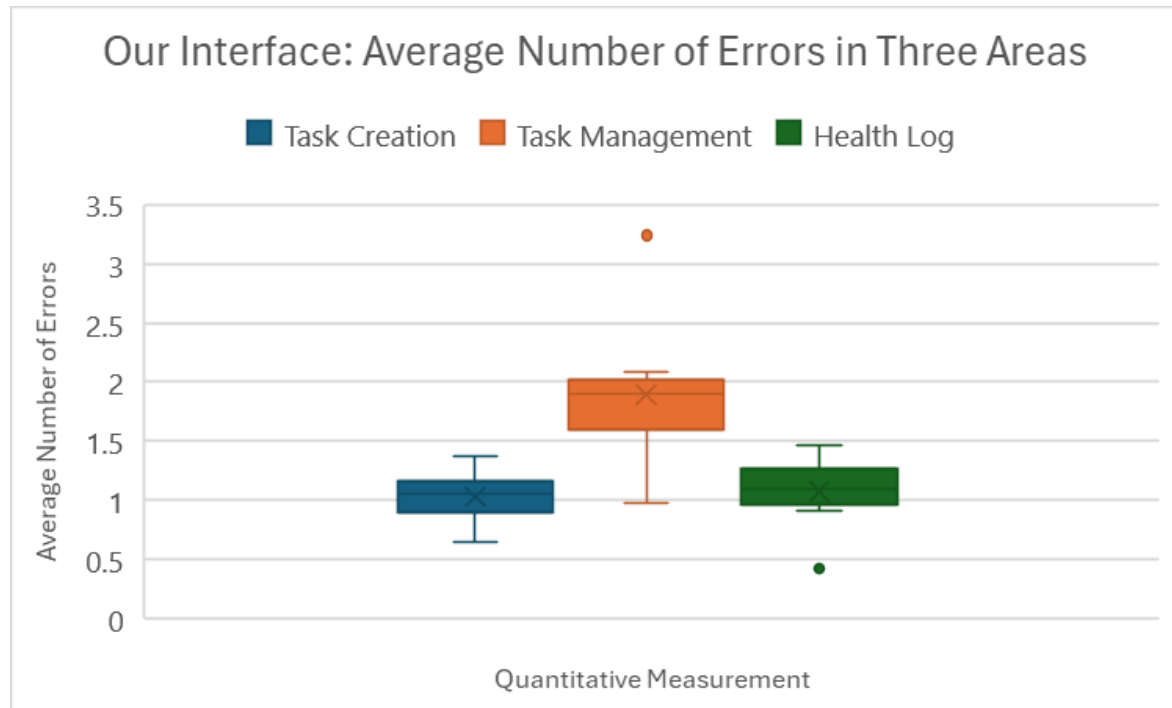
ADQ6. I felt confident navigating through each section of this system and knew where I was at all times.



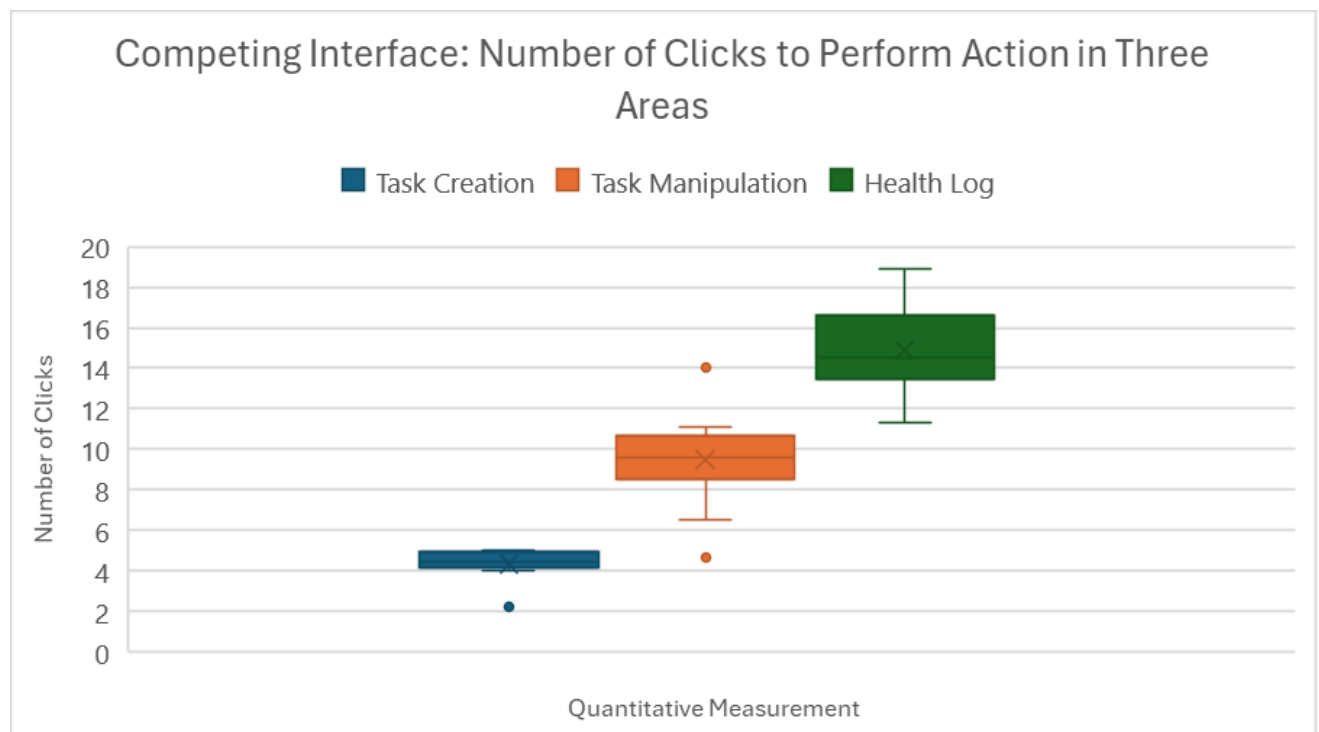
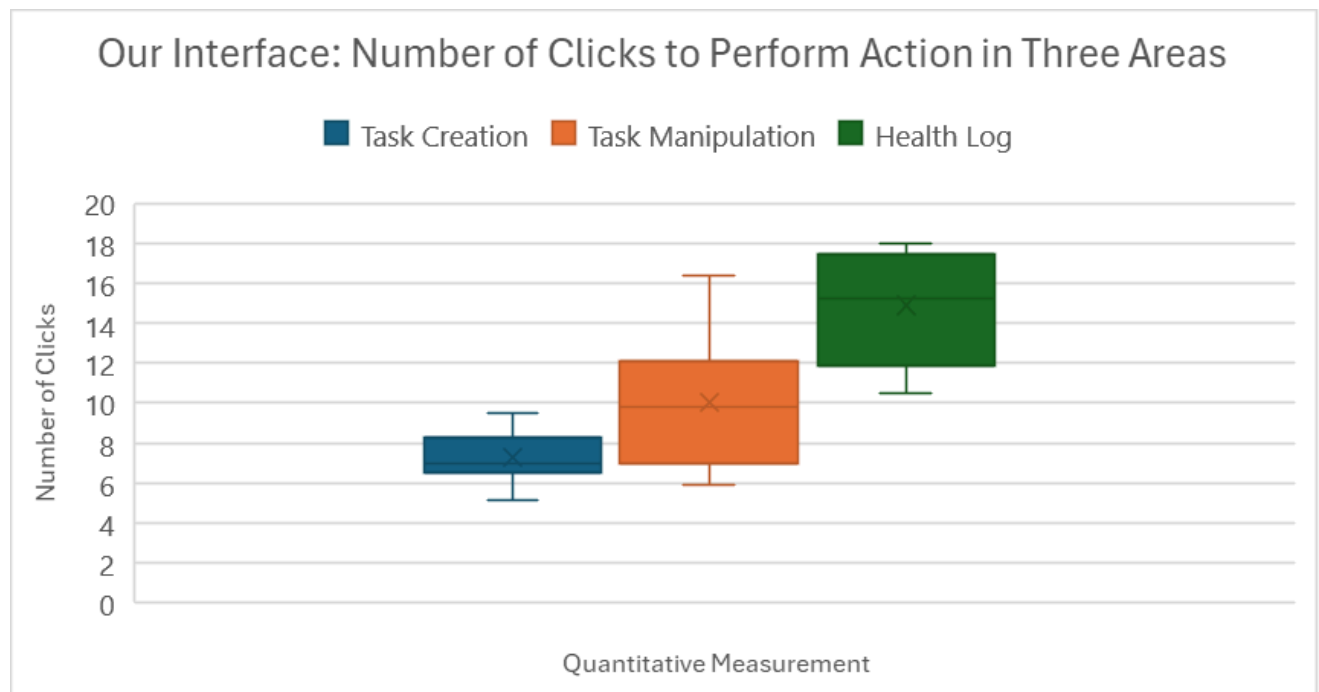
The descriptive analytics results suggest that LifeSync users are more satisfied, with 70% of respondents in the Agree/Strongly Agree category feeling confident navigating through our system (Median: 4.5, IQR: 3.25) compared to our competitor's 20% (Median: 2.5, IQR: 1).



The descriptive analytics results suggest that the average time to complete tasks on Lifesync (Mean:21.159, STD:3.5716) is slightly higher compared to that of its competitors (Mean:21.73, STD:6.8584).

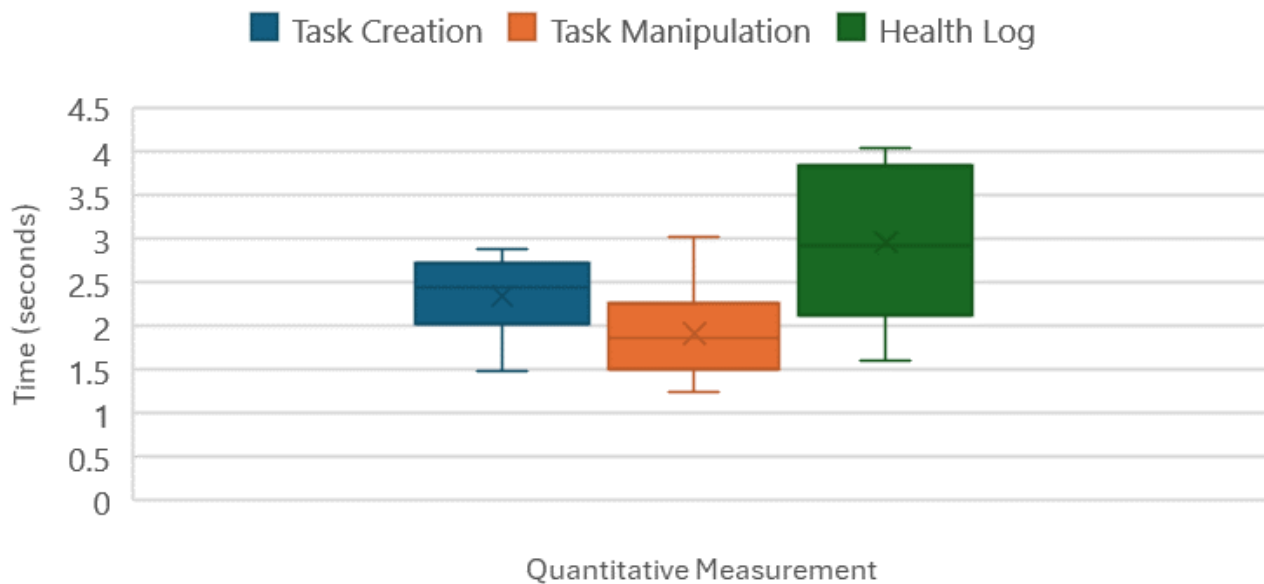


The descriptive analytics results suggest that the average number of errors on Lifesync (Mean:1.33, STD:0.3897) is higher compared to that of its competitors (Mean:1, STD:0.2057).

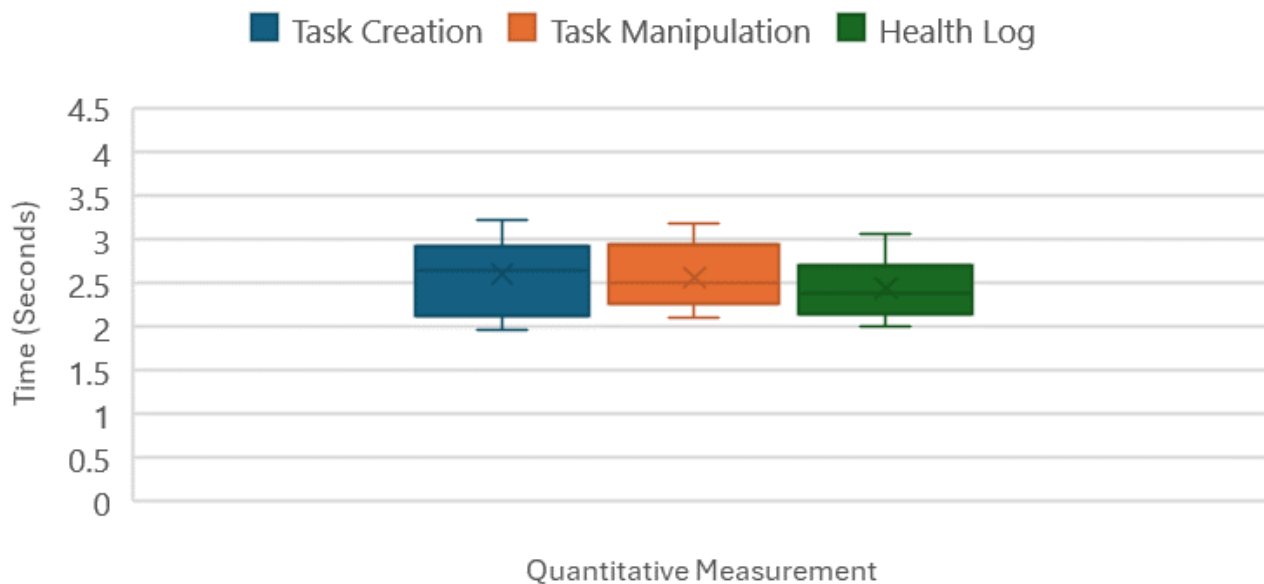


The descriptive analytics results suggest that the average number of clicks to perform an action on Lifesync (Mean:10.73, STD:2.4103) is higher compared to that of its competitors (Mean:9.56, STD:1.8873).

Our Interface: Average Time to Correct Goal Path in Three Areas



Competing Interface: Time to Correct Goal Path in Three Areas



The descriptive analytics results suggest that the time required to find the correct path on Lifesync (Mean: 2.41, STD:0.6431) is slightly lower compared to that of its competitors (Mean:2.54, STD:0.3999).

Quantitative Observation:

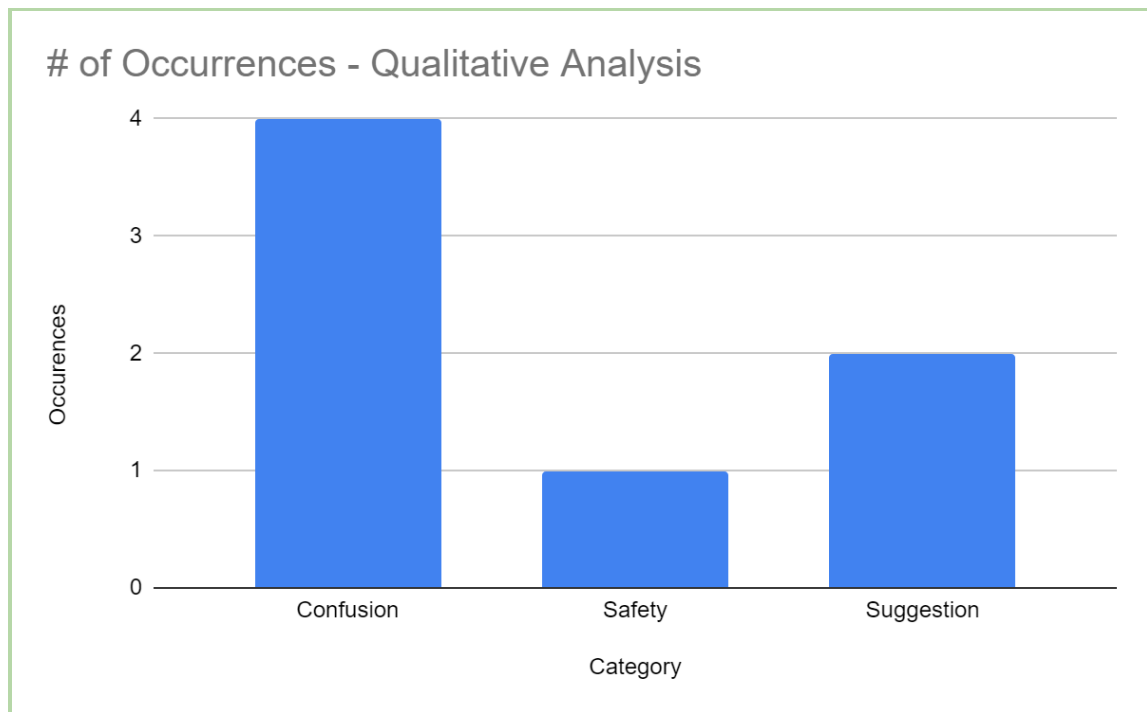
Based on the overall SUS score comparison, our interface for LifeSync appears to provide a higher usability score (Mean: 56.25) than the competing system (Mean: 48.25). Despite that, the users expressed less satisfaction with LifeSync for everyday use as responses mostly fell into the Disagree/Strongly Disagree category compared to the competitor, where it was spread out more evenly. Through user ratings, LifeSync was also perceived as less complex, with more responses indicating disagreement with complexity than our competitors. In addition, LifeSync required far less technical assistance, with most responses in agreement, in contrast with the competitors, where more users expressed a need for assistance. Furthermore, users felt LifeSync functions were well-integrated and had fewer inconsistencies within the system than our competitors. The data shows that LifeSync users had a higher satisfaction level with learnability, ease of use, and confidence in usage and felt more motivated to add health metrics to our interface.

Overall, the analysis highlights the areas for improvement regarding navigation, visual display, and optimizing task flows to increase completion time. The average time to complete tasks on LifeSync is slightly higher compared to its competitors, indicating a potential opportunity to streamline user workflows and reduce task lengths. Furthermore, compared to its competitors, LifeSync has a larger average number of errors, indicating the need for error reduction measures such as clear error messages or validation checks. Users also are required to click more to perform actions on LifeSync compared to the competitor's system, indicating a potential need for improvement in interface efficiency and simplification of user interactions. However, the time required to find the correct path on LifeSync is slightly lower compared to its competitors, suggesting that while navigation improvements are needed, users may find it slightly easier to navigate through the system once on the correct path. These insights collectively point towards areas we make improvements on and implement for future field tests and usability lab sessions before launching our application for public use.

Qualitative Analysis:

Instructor Input for Each Category:

Category	Quote
Confusion	<ol style="list-style-type: none">1. "I think it was pretty simple in terms of the idea, I saw inconsistency in terms of data showing, especially for the dates, we talked about that one"2. "I didn't understand how to change the different metrics when the task was to check for other graphs"3. "...still, some of the actions were not easily noticeable, selecting something needed more highlighting"4. "...I did not see how those are connected, and how they are correlated"
Safety	<ol style="list-style-type: none">1. "... for dates and times need to be displayed properly, I can't build trust to use this app"
Suggestion	<ol style="list-style-type: none">1. "I want to see more on linking the two tasks that were most important for tracking"2. "...The text label didn't tell us if it had changed or not. Prominent change needed"



Qualitative Observation:

In our usability study, several issues were brought forward that suggest areas for improvement in our app's usability. Our participants noticed inconsistencies in the display of data, particularly the dates that were being displayed, which posed a significant issue and suggested that we need to resolve that issue to improve user confidence. Ensuring consistent formatting and clear labels for dates are a few improvements that we can make to combat those issues. In addition, visibility was a large concern throughout the app's design. Our participants also struggled with changing between the different graph metrics on our dashboard, suggesting that the navigation arrows between graphs should be more visible and larger for the user to see. Further, our participants also struggled to understand how our metrics were connected or correlated, which indicated that we needed to provide explanations within the app to clarify relationships between the different metrics. Regarding safety, our participant expressed concern about the correct display of dates and times. We noted this need for improvement, as it is essential for building user trust and confidence in the app.

Additionally, our participants recommended that we have better integration between our tasks. We will strive to link the two most important tasks for tracking to achieve an improved task flow and integration within the interface. The suggestions provided by our participants gave us valuable insight into the improvements that we must make to satisfy our users and improve our app. Overall, the participant feedback highlights several areas for improvement in the interface, including more consistent data presentation, improved navigation and interaction design, accurate display of dates and times, better integration between tasks, and clearer visual feedback for changes. Implementing these suggestions could enhance the usability and user experience of the interface, ultimately improving user satisfaction and trust in LifeSync.

5. Appendix

Instructor Questionnaire:

1. I think that I would like to use this system frequently	Strongly Disagree		<input checked="" type="checkbox"/>				Strongly Agree
		1	2	3	4	5	
2. I found the system unnecessarily complex	Strongly Disagree			<input checked="" type="checkbox"/>			Strongly Agree
		1	2	3	4	5	
3. I thought the system was easy to use	Strongly Disagree			<input checked="" type="checkbox"/>			Strongly Agree
		1	2	3	4	5	
4. I would not need the support of a technical person to be able to use this system	Strongly Disagree					<input checked="" type="checkbox"/>	Strongly Agree
		1	2	3	4	5	
5. I found the various functions in this system were well integrated	Strongly Disagree				<input checked="" type="checkbox"/>		Strongly Agree
		1	2	3	4	5	
6. I thought there wasn't much inconsistency in this system	Strongly Disagree				<input checked="" type="checkbox"/>		Strongly Agree
		1	2	3	4	5	
7. I would imagine that most people would learn to use this system very quickly	Strongly Disagree			<input checked="" type="checkbox"/>			Strongly Agree
		1	2	3	4	5	
8. I did not find this system difficult to use	Strongly Disagree				<input checked="" type="checkbox"/>		Strongly Agree
		1	2	3	4	5	
9. I felt very confident using this system	Strongly Disagree				<input checked="" type="checkbox"/>		Strongly Agree
		1	2	3	4	5	
10. I needed to learn a lot of things before I could get going with this system	Strongly Disagree			<input checked="" type="checkbox"/>			Strongly Agree
		1	2	3	4	5	

<u>Additional Question 1:</u> I felt motivated to input my health metrics into this system	Strongly Disagree				<input checked="" type="checkbox"/>		Strongly Agree
		1	2	3	4	5	
<u>Additional Question 2:</u> I felt motivated to update my task list in this system	Strongly Disagree		<input checked="" type="checkbox"/>				Strongly Agree
		1	2	3	4	5	
<u>Additional Question 3:</u> I found the resulting task and health metrics to be informative	Strongly Disagree			<input checked="" type="checkbox"/>			Strongly Agree
		1	2	3	4	5	
<u>Additional Question 4:</u> I think the system was pleasing to look at and easy on the eyes	Strongly Disagree			<input checked="" type="checkbox"/>			Strongly Agree
		1	2	3	4	5	
<u>Additional Question 5:</u> I found the dashboard/health log/task page quick to read.	Strongly Disagree			<input checked="" type="checkbox"/>			Strongly Agree
		1	2	3	4	5	
<u>Additional Question 6:</u> I felt confident navigating through each section of this system and knew where I was at all times.	Strongly Disagree				<input checked="" type="checkbox"/>		Strongly Agree

3. Open Ended Questions.

- a. Overall, what was your impression of the app? How would you describe your experience using it?
 - overall ummmmm, I think it was pretty simple in terms of the idea, i saw inconsistency in terms of data showing, especially for the dates, we talked about that one, also, I didn't understand how to change the different metrics, when the task was to check for other graphs, I didn't know at first, the arrow didn't work and tried again, the visualization didn't really change. The text label didn't tell us if it had changed or not. Prominent change needed. I thought it was a little small, because it seemed to be taking only half the screen, something scrollable, and added features. Overall it was intuitive, the task list was my favorite, again still, some of the actions were not easily noticeable, selecting something needed more highlighting or.
 - My experience was good, but my apple health app is better. For the past 10 years, it's been simpler to use.
 -
- b. What aspects of the app do you think we should improve or change to make it better?
 - Overall visualization could have been better, Aesthetics were not to my taste, that could be another. Again, I think the data should be displaying the correct things, for dates and times need to be displayed properly, I can't build trust to use this app.
- c. From your perspective, what features do you think are the most important or valuable in this app?
 - I think it's quite interesting to track my task and leak it into the same location with my health metrics, I did not see how those are connected, and how they are correlated.
 -
- d. Are there any features in the app that you find less useful or unnecessary? If so, which ones and why?
 - Hmm, I didn't see any unnecessary functions, but no. I want to see more on linking the two tasks that were most important for tracking.