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Professor Lenis Hernandez CEN4010 Fall 2022

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1. Introduction

1.1. Description of the customer/setting for the project

This application provides a platform in which users can create their own personalized meal plans along with their own personalized workout plan to tackle their metabolic syndrome. It also provides a forum where users can share best practices for losing weight, eating healthily, and creating a healthier lifestyle. There is also a shop feature that allows users to buy a meal prep subscription in which they would get personalized meal prep meals to cook based on their personalized data. Having easy access to clear, concise, and useful information about the user's data metrics can be very empowering to the user. This app will empower the user with data specific to their body metrics. The user will be able to correlate what activities or habits are having a positive impact on mitigating the effects of Metabolic Syndrome and choose whether to adopt these activities or habits into a long-term change in lifestyle.

1.1.1. Main characteristics of the customer or sponsoring organization

Metabolic syndrome has a cluster of varied factors which include:

- Anyone that has abdominal obesity.
- Anyone that has high blood pressure
- Anyone that has impaired fasting glucose
- Individuals with high triglyceride levels
- Individuals with low HDL cholesterol levels.

But within our project we will be focusing on the main key factors of Metabolic Syndrome which are

- Abnormal obesity,
- High blood pressure,
- Elevated blood sugar levels
- Low HDL cholesterol levels

• People of all ages but particularly an older demographic between 25 - 65. Anyone with the other Symptoms of metabolic Syndrome can also use the app to create their personalized plan.

1.1.2. Description of the main characteristics of the application

In the main page, the app will provide the user with a summary of their daily progress in the four major areas the app will be tracking: Caloric intake, Exercise activity, Fasting Time, and Weight. Further details in these four areas will be accessible when the user taps any of the four links. The information will be provided to the user in a simplified way that will empower the user to correlate results to activities and changes to eating habits and positive lifestyle changes. This in turn will empower the user to tackle their Metabolic Syndrome.

Diving into more detailed progress from the main page, the app provides users with a weekly progression of their weight, the calories burned week to date from their exercise activities as well as active hours spent exercising. From the main page the user will also have access to their fasting hours, and sleep patterns.

All the data will be gathered through APIs (Application Programming Interface) from existing apps the user already subscribes to in combination with wearables for the heart rate monitoring data. These apps are Apple Health, Strava, Zero, and Fit Index.

1.1.2.1. What is the background of the project idea? What is the problem?

This idea started when some of us noticed that there was a slim market for software based around helping people with Metabolic Syndrome. And with one of our teammates having personal experience with Metabolic Syndrome, we believe we can integrate the right features to make a real impact in the market. While there were apps that did help with this condition, we believe that we can offer more functionality in our app. The problem that the app was developed to solve was the lack of support for people with Metabolic Syndrome as said before. While there is medicine to help people with this condition, this only solves the problems in the body instead of the lifestyle. And this app is meant to help clients adjust their lifestyle to lessen the effects of their Metabolic Syndrome.

1.1.2.2. How is your application different from what already exists?

As said before, this market is not completely void; there are other apps that aim to help people with trying to live a healthier lifestyle. However, analyzing these apps has helped us realize that they do not offer as much functionality as we would have expected. For example, one is an app to give information about Metabolic Syndrome but offers no functionality past that. And another does appear to offer services, they were locked behind very tedious logins that asked for too much information, which would still not work for some users. We believe that, unlike the other apps in the current market, our app can offer better functionality without requiring information unnecessary to their condition.

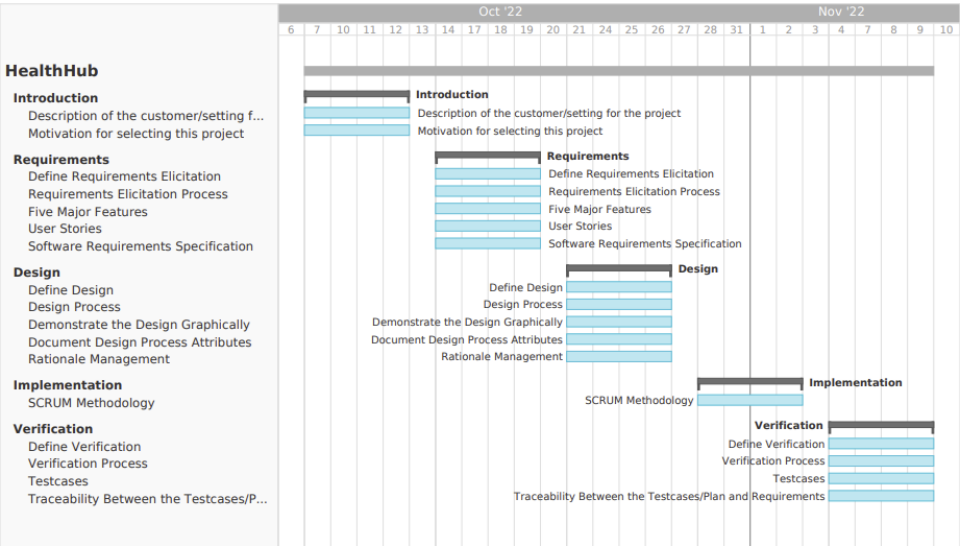
1.1.2.3. What are the implications of the tool you develop?

This app will provide much need support in tackling a health issue that affects 1 in three adults in the United States. If left unaddressed Metabolic Syndrome has profoundly serious and costly health implications. The good news is that it is highly preventable, and many people have been able to reverse the adverse effects of Metabolic Syndrome by making positive lifestyle changes in exercise and eating habits. The implications of this tool are as profound as having a multimillion-dollar impact on healthcare costs nationwide and at the very least will empower users with the knowledge needed to make better decisions about lifestyles that impact their health.

1.1.3. Other important contextual issues placed on the application

- Integrating information from four different existing apps.
- The API (Application Programming Interface) for Fit Index is not well documented.
- Security vulnerabilities related

1.1.4. Visually outline a proposed schedule for your project



1.1.5. Describe your team and the proposed roles and responsibilities for your teammates:

Ulysses- Team Leader/ Developer/Product Owner
Michelle- Developer/ UI Designer
Tyler- Developer / Graphic Designer
Sebastian- Developer/ UI Designer
Kenrick- Developer/ QA Tester
Nathalie- Developer/ QA Tester

1.2. The motivation for selecting this project

The motivation we had for selecting this project was the firsthand experience of one of our group members. The aim in the app is to make Metabolic syndrome easier to manage. The app can be used in a way that will help the user achieve a healthy lifestyle. Also, we can calculate the recommended information necessary to achieve their goals like diet, exercise, and sleep schedule needed to achieve the goal of the user. The app's goal is to motivate the user to work on changing their lifestyle to accomplish the goal of lessening the effect of Metabolic syndrome.

1.2.1. Our expertise in the area

None of the members in our team have any medical background. However, each one of us is profoundly aware of how consistent healthy lifestyle decisions can have a long-term impact on our health. We are also aware of how difficult it is to consistently make the right decisions. One of our team members had first-hand experience of how much misinformation there is out there in this topic and trying to sift through it all and turning data collected from existing apps into data that is useful and easy to understand is a challenge. Managing four different apps from which to gather useful data and information was a challenge.

1.2.2. How this might be useful to us

Teamwork is highly required in any team project. This project will allow useful experience when it comes to developing software in a team setting. Assigning tasks and assuming responsibility to deliver expected outcomes in the expected timeframe is critical. This will be a useful experience that we can learn from. Aside from working on our segments individually, we will also have to collaborate with each other and provide support for each other where needed. The communication skills required to carry out the project successfully will be especially useful. The project will also require us to implement many of the software design methods we have studied in class.

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2. Requirements

2.1 Define requirements elicitation

By Outlining the required functionalities for all the features within the metabolic syndrome app, the team will be able to gain a better look and understanding of how the users will interact with the app.

- Users must be able to sign up
- Users must be able to create a profile

- When said user logs in, they must have a password or face ID to access their account.
- When logged in the user will be taken directly to the home screen of the app.

Will have tab bar at the top right of the mobile version:

- Home button
- Add button
- Exercise button
- Recipe button

Home page requirements:

- The user will be able to click on the home screen button to track their fitness progress.
- Users will be to add different workout regimens to their performance section of the app.
- The user will also be able to browse and explore different recipes to add to their plan.

Search Requirements:

- Users can browse different recipes
- Users can search for specific exercise to focus on based on their body type

Profile Feature:

- Users should see their username and profile picture they selected
- Users can see all the posts they have made over the course of using the App to track their progress.

2.2. Elicitation Process for the app

Preliminary Stage:

Step one is our requirements; we have outlined our purpose for this project. We decided for the health Hub, it should be followed as a fitness app. This app also tracks the user's height, weight, macros, exercise routine is used to help the user track their progress to reach their goals. It can also be used as some sort of a social media app as they can follow each other and help each other out so the users can feel uplifted and motivated to get after their health goals.

Identification Stage:

The next stage of the app, after outlining the purpose of the app, was identifying the key features that were going to be on this app. 1. The Home Page Requirements are listed in this app. The user should be able to click on the home screen button. It should also be used to track the progress of the user. 2. The Home Screen will be listed on the app. There is listed a home button, add button, exercise button, and a recipe button so the user can implement anything that they need to implement into the app's system. 3.The Profile feature will be on this app. The profile feature can be used to track the user's progress. The later versions of Health Hub can include the sleep schedule of the user and the water intake.

Prioritization and Negotiation:
Due to the time crunch situation, we have decided to create a mockup of the app displaying the settings of each feature mentioned.

Requirements specification:
The features can also be used to track the diet of each user. Based on the app, there are different recipes that can be made available to every user. Also, the app can be used to browse each exercise plan based on the user's body type. In their profiles, the users can see the posts that they posted from the app to track their progress. The user can also use the home screen button to add recipes and workouts. There is also a support button that has the user ask questions so the user can get the appropriate question answered.

2.3. Five Major features of the app

1. Login/ Sign in page which allows the user to create an account and log into their Account.
2. Heart Button which allows for the user to track all the progress they have made within that day and previous days as well.
3. Tab button which will allow users to get a drop-down list that will lead them to different pages Ex. Caloric Intake, Caloric Output, fasting, user weight etc.) Which will be the Statistic page.
4. The Add button feature which allows for the user to add different exercises and recipes.
5. Support button which allows for the user to ask questions if they are having trouble with the application.

2.4. Stories for the app

1. (Login/Profile)

Story ID: HH-01
Title: Signing up or logging up to the app

Description: As a user, I should be able to sign up and log into the app.

AC#	Given	When	Then
1	I am a user	My first time going into the app	There will be a signup feature to be able to make their account.
2	I am a user	I sign up	I will be able to log in to my newly created account.
3	I am a user	I log in	I will be able to post or enter the app under the name they gave themselves
4	I am a user	I am about to log in	Should have the option to stay logged in

2. (Inputting height and weight)
Story ID: HH-02
Title: Signing up or logging up to the app
Description: As a user, I should be able to implement my height/weight into the system.

AC#	Given	When	Then
1	I am a user	Telling the app my height and weight	There will be a feature to input the user's height and weight
2	I am a user	I want the choice of what my height and weight are being measured in	There is an option to see the units of measurement using the imperial or metric system
3	I am a user	I want to re-input my height and weight due to my body changing	There will be an option in the settings tab under the "body" options to change those numbers after inputting them

3. (Inputting water intake)
Story ID: HH-03
Title: Seeing my water intake

Description: As a user, I want to be able to implement and input my current water intake.

AC#	Given	When	Then
1	I am a user	I want to see my water intake	There is a feature to show me my water intake for the day
2	I am a user	I want to input or increment my water intake	There is an option to add a number representing how much water I drank today
3	I am a user	I want to see my history of water intake	There will be an option to show how much water intake I had in the last week or month

4. (Various work outs)
Story ID: HH-04
Title: Selecting workouts
Description: As a user, I want to select specific and various workouts.

AC#	Given	When	Then
1	I am a user	I want to select an exercise	There is a feature select from various exercises
2	I am a user	I want to select multiple exercises	There is an option for me to select multiple exercises by check boxing them then clicking 'okay'
3	I am a user	I want to make my own regimen	There will be an option to create an exercising regimen, where you drag and drop (or add from a search) into certain days

5. (Tracking calories)
Story ID: HH-05
Title: Tracking the calories I have burnt

Description: As a user, I should be able to track how many calories the user has burned.

AC#	Given	When	Then
1	I am a user	I want to know how many calories I have burned today	There is a feature tracking how many calories have been burned today from the fitness app
2	I am a user	I want to select a goal of how many calories I should burn to day	There is an option for me to set a goal of how many calories I want to burn
3	I am a user	I want to know what exercises contribute the most towards calories burnt	There will be a grading next to every exercise listed towards how effective they are at burning calories

6. (Tracking heartrate)
Story ID: HH-06
Title: Tracking my heartrate
Description: As a user, I should be able to track my heartrate.

AC#	Given	When	Then
1	I am a user	I want to know how my heartrate is	There is a feature tracking my heartrate through one of the apps
2	I am a user	I want to know what the target heartrate is for certain exercises	There is a value next to most exercises that show what the target heartrate is
3	I am a user	I want to know what my limit should be on my heartrate for exercises	There will be a feature to warn when my heartrate exceeded a certain threshold

7. (Tracking user activity)
Story ID: HH-07
Title: Tracking my user activity

Description: As a user, I should be able to track my exercise activity.

AC#	Given	When	Then
1	I am a user	I want to see my past activity	There is a feature showing my history of activity in the app
2	I am a user	I want to select a specific past day in the history	There is an option to set to a past date up to a month ago
3	I am a user	I want to filter through certain past activities	There will be a feature to select days when I did certain activities

8. (Tracking blood pressure levels)
Story ID: HH-08
Title: Tracking my blood pressure levels
Description: As a user, I should be able to track my blood pressure levels.

AC#	Given	When	Then
1	I am a user	I want to see my blood pressure levels	There is a feature showing my current blood pressure levels through one of the apps
2	I am a user	I want to see my past blood pressure levels in my history	There is a value in the history feature to show your average blood pressure level by the month, week, or day
3	I am a user	I want to see what a healthy blood pressure range is	The feature is expanded to show a healthy blood pressure range along with my blood pressure value on the range

9. (Tracking blood sugar levels)
Story ID: HH-09
Title: Tracking my blood sugar levels
Description: As a user, I should be able to track my blood sugar levels.

AC#	Given	When	Then
1	I am a user	I want to see my blood sugar levels	There is a feature showing my current blood sugar levels through one of the apps
2	I am a user	I want to see my past blood sugar levels in my history	There is a value in the history feature to show your average blood sugar level by the month, week, or day
3	I am a user	I want to see what a healthy blood sugar range is	The feature is expanded to show a healthy blood sugar range along with my blood sugar value on the range

10. (Tracking cholesterol levels)
Story ID: HH-10
Title: Tracking my cholesterol levels
Description: As a user, I should be able to track my cholesterol levels.

AC#	Given	When	Then
1	I am a user	I want to see my cholesterol levels	There is a feature showing my current cholesterol levels through one of the apps
2	I am a user	I want to see my past cholesterol levels in my history	There is a value in the history feature to show your average cholesterol level by the month, week, or day
3	I am a user	I want to see what is healthy cholesterol range	The feature is expanded to show a healthy cholesterol range along with my

			cholesterol value on the range

11. (Home, back, and settings buttons)
Story ID: HH-11
Title: Having buttons to take me to certain pages
Description: As a user, I should be able to go straight back, to the home page, or to the settings page.

AC#	Given	When	Then
1	I am a user	I want to go straight to the home page	There is a home button at the top of the app that will always take me to the home page
2	I am a user	I want to go straight back from a page	There is a back button around the left corner of the menu I am looking at to go back
3	I am a user	I want to go straight to the settings page	There is a settings button on the home page that takes me to the settings page

2.5. Detailed Specific Requirements

2.5.1. Functional Requirements

User Sign-up / Login:

- Users will input their email and password to create an account, they will be asked to confirm their password and remain logged in until they have either logged out or deleted the app.
- Users will have to agree to the Terms & Conditions to use the app.
- Users will then be asked if they want to allow notifications.

User Profiles:

- Input/edit first and last name, date of birth, gender, weight, height, weight goal.
- Input/Track Blood Pressure & Cholesterol levels.

Food Interface:

- Type and search food in the food inventory to track nutrition.
- Scan barcodes on food products to quickly track nutrition of the scanned item.
- Create and edit meals.
- Track daily water intake and set notification reminders with the user's permission.

History Interface:

- Show previously tracked food along with their nutrition info (calories, protein, carbohydrates, fats, etc.).
- Display previously tracked blood pressure & cholesterol levels.
- Display a chart with the daily breakdown of the user's macronutrients.
- Calculate and display how much more needs to be consumed to meet the user's daily goals.

Exercise Activity:

- Display exercise options with an estimate of how many calories can be burned.
- Users can create their own exercise and input the number of calories burned.
- Ability to connect with Fitbit and Apple Health to import data.

Setting:

- Include the Terms & Conditions, Privacy, About, and FAQ's.
- App Preferences: Notification, Unit of Measurement, Track My Activity.
- Change email and password.
- Display connected apps.
- Help Center: Open FAQ's and display the support number and email within hours of operation.
- Rate the app: Should open and redirect the user to the app store.
- Delete Account/ Delete All Data.

2.5.2. External Interface Requirements

- The user interface would be like other exercise and health apps for familiarity
- There will be a sign-up process for new users that will take them to the home page if the inputted info is valid and unique (no duplicates)
- There will be a log in process for those that already have an account set up, and there will be an option to recover their password if they forgot it
- On the top right, the settings button will provide display options, unlink options, a sign out option, and a manual sync option
- On the top left, users can set up and add activities that they wish to do, and can set them to repeat on certain days
- In the middle of the screen the user will see a general view of their favorited stats as they advance, and if they press on the general view button (the heart), then they will see more details on their favorited stats
- On the bottom of the screen, the user can take a deep dive on all their stats acquired from all the linked health apps
- No matter what, every menu spoken of above is an extension of the home page

2.5.3. Functional Requirements

* User should be able to sign up/ sign into the app by creating a username (email) and password.
* User should be able to implement their height/weight into the system.
* User should be able to implement water intake into the system.
* User should be able to select various workouts.
* User should be able to track how many calories the user has burned.
* User should be able to track the heart rate.
* Should be able to track the user activity.
* User should be able to track their blood pressure levels.
* User should be able to track their blood sugar.
* User should be able to track their cholesterol levels.
* The app should have a home, settings, and back function.

2.5.4. Nonfunctional Requirements

- The app loads in less than 2 seconds and has an optimal performance of 100 ms
- The app has security features which protect user data against unauthorized access.
- The app is compatible with iOS 13 or later and android 10 or later.
- The app works in the background gathering data for integration 95% reliability
- The app will be revised quarterly to ensure compatibility with future OS versions.

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3. Design

3.1. Our design definition

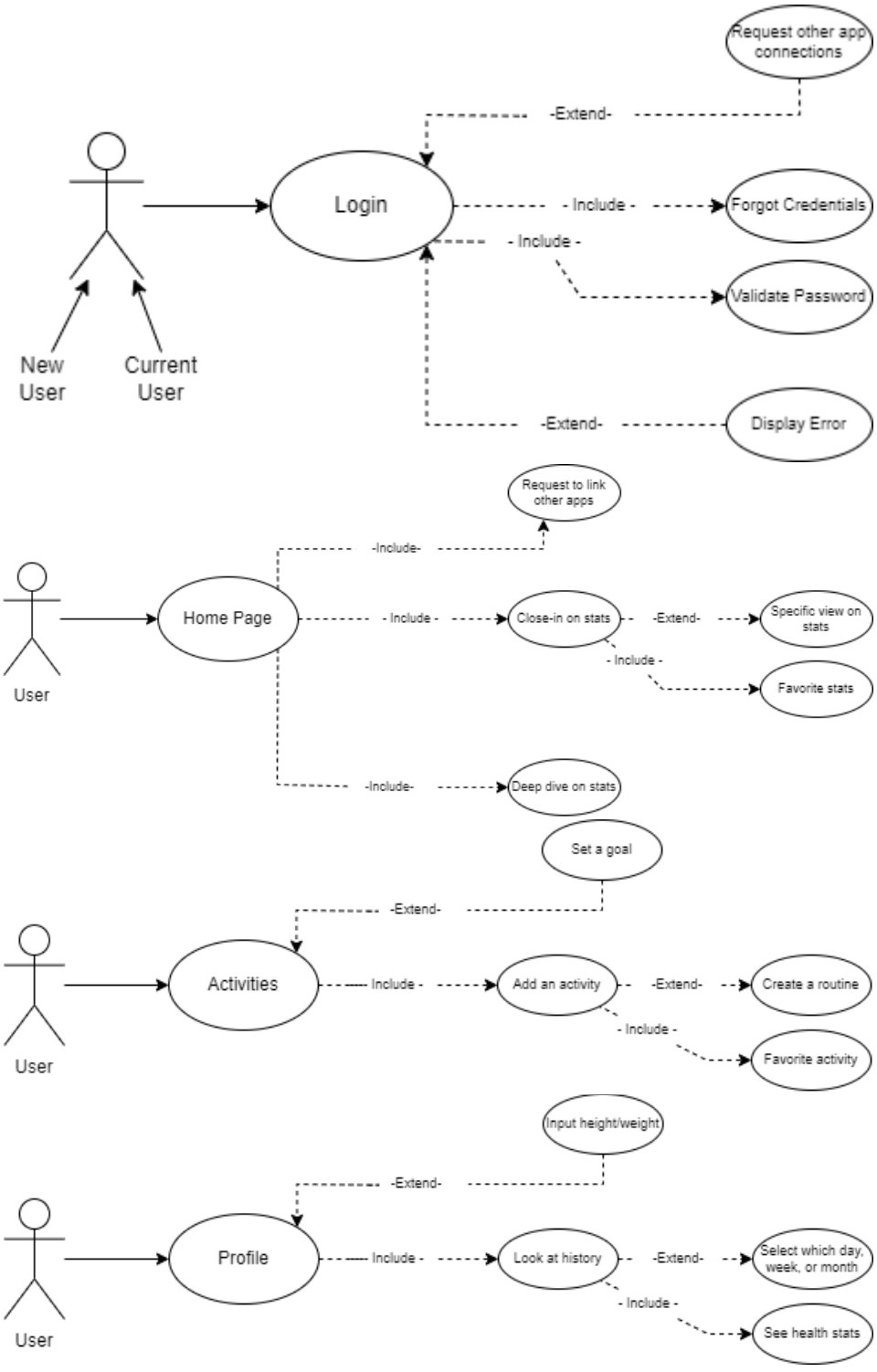
Software design is used to create an interface understandable by users that allows them to use the technical functions of the software in a far easier manner. The simplicity allows for a proficient level of user-friendliness, allowing the users to solve their problems through the app easier.

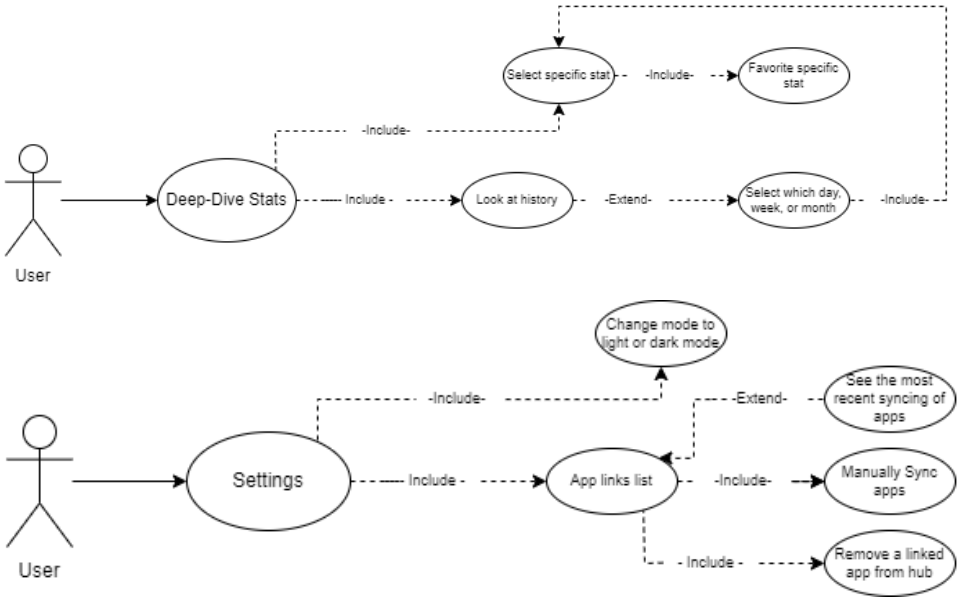
3.2. Our design processes

The design process that my team has chosen for this project is the Model-View Controller. This architectural design pattern is divided into three categories: Model, View, and Controller. The Model is the category that does contain both the functionality and the data. The view category puts the information on display for the user that also more than one view can be defined as well. The controller category is known for handling the user input into the system.

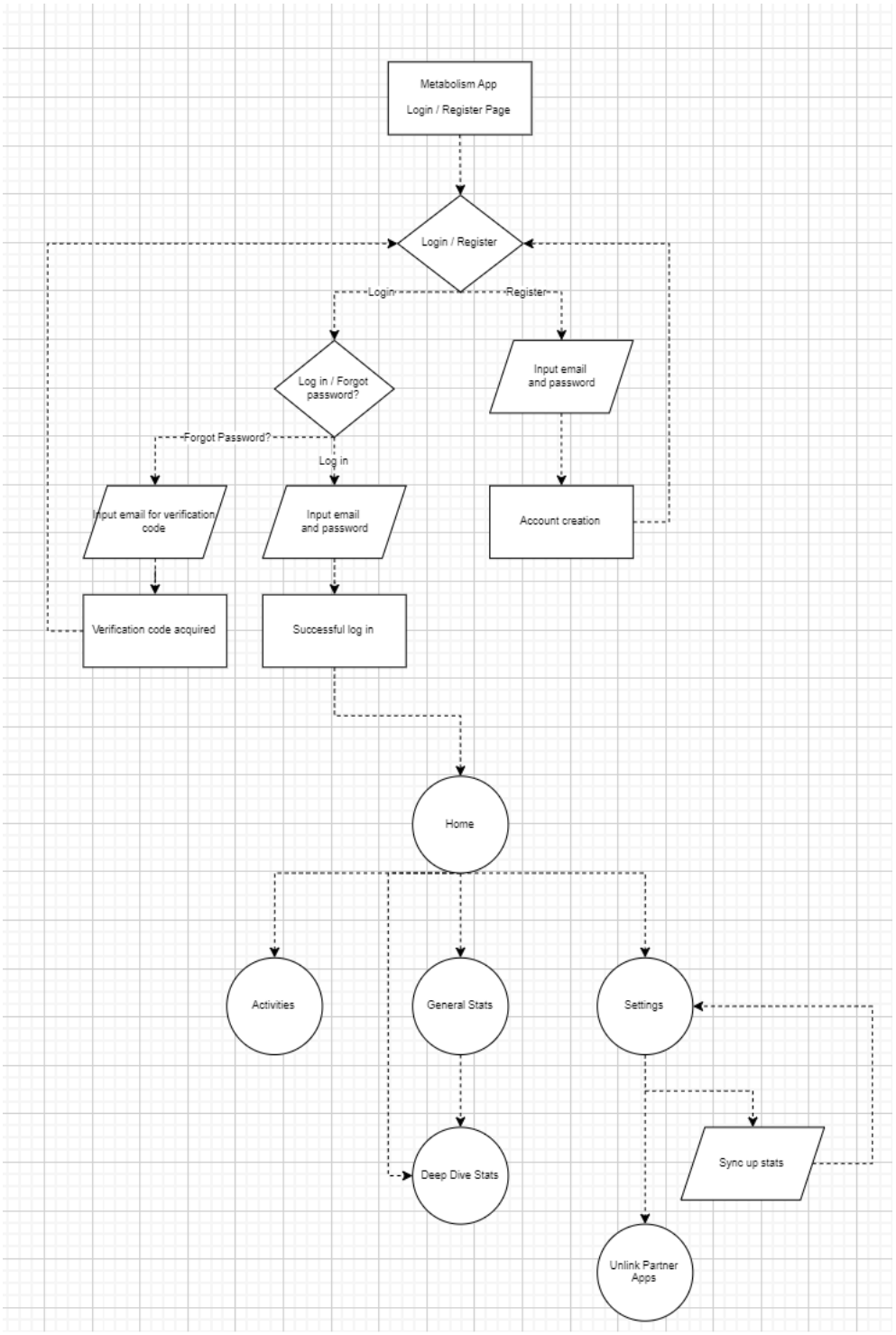
3.3. Demonstrate the design graphically

3.3.1. Use cases

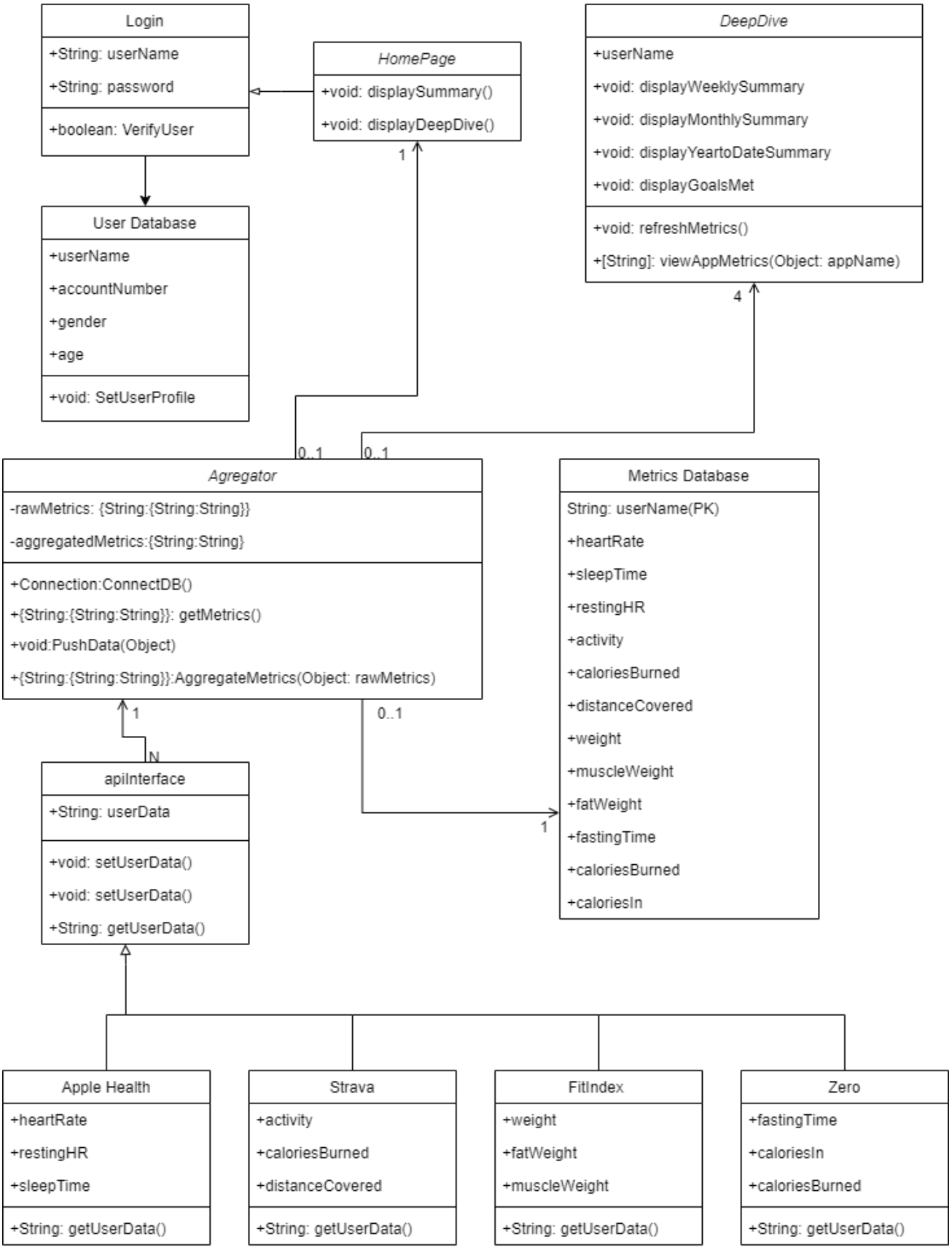



Select specific stat
-Include-
Favorite specific stat
-Include-
Deep-Dive Stats
Include -
Look at history
-Extend-
Select which day, week, or month
-Include-
User
Change mode to light or dark mode
-Include-
Extend-
See the most recent syncing of apps
Settings
Include -
App links list
-Include-
Manually Sync apps
- Include -
Remove a linked app from hub
User

3.3.2. Flow Charts



3.3.3. UML Sequence diagrams


Login
+String: userName
+String: password
+boolean: VerifyUser
HomePage
+void: displaySummary()
+void: displayDeepDive()
1
DeepDive
+userName
+void: displayWeeklySummary
+void: displayMonthlySummary
+void: displayYeartoDateSummary
+void: displayGoalsMet
+void: refreshMetrics()
+[String]: viewAppMetrics(Object: appName)
4
User Database
+userName
+accountNumber
+gender
+age
+void: SetUserProfile
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0..1
Agregator
-rawMetrics: {String:{String:String}}
-aggregatedMetrics:{String:String}
+Connection:ConnectDB()
+{String:{String:String}}: getMetrics()
+void:PushData(Object)
+{String:{String:String}}:AggregateMetrics(Object: rawMetrics)
Metrics Database
String: userName(PK)
+heartRate
+sleepTime
+restingHR
+activity
+caloriesBurned
+distanceCovered
+weight
+muscleWeight
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Apple Health
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+String: getUserData()
Strava
+activity
+caloriesBurned
+distanceCovered
+String: getUserData()
FitIndex
+weight
+fatWeight
+muscleWeight
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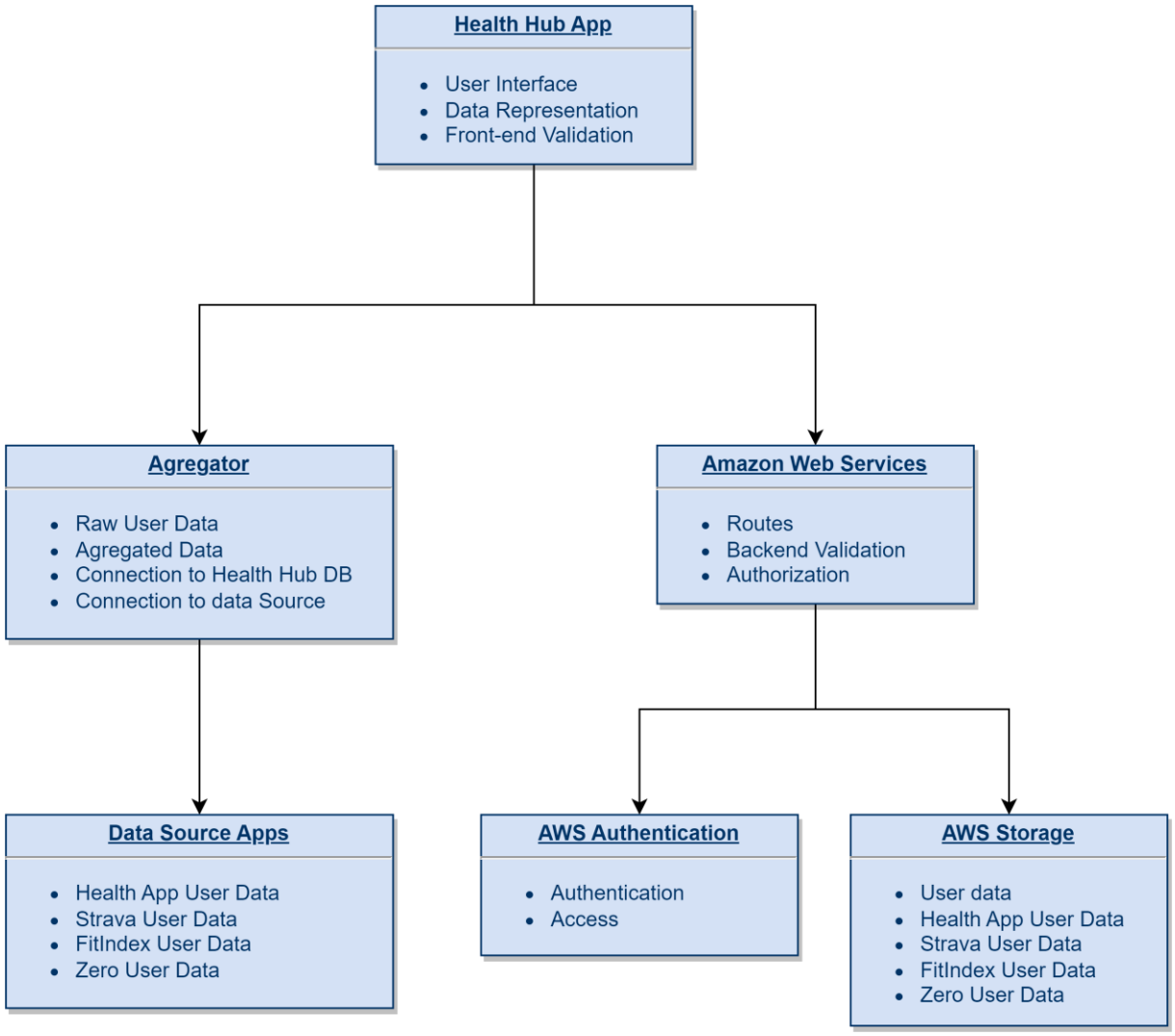
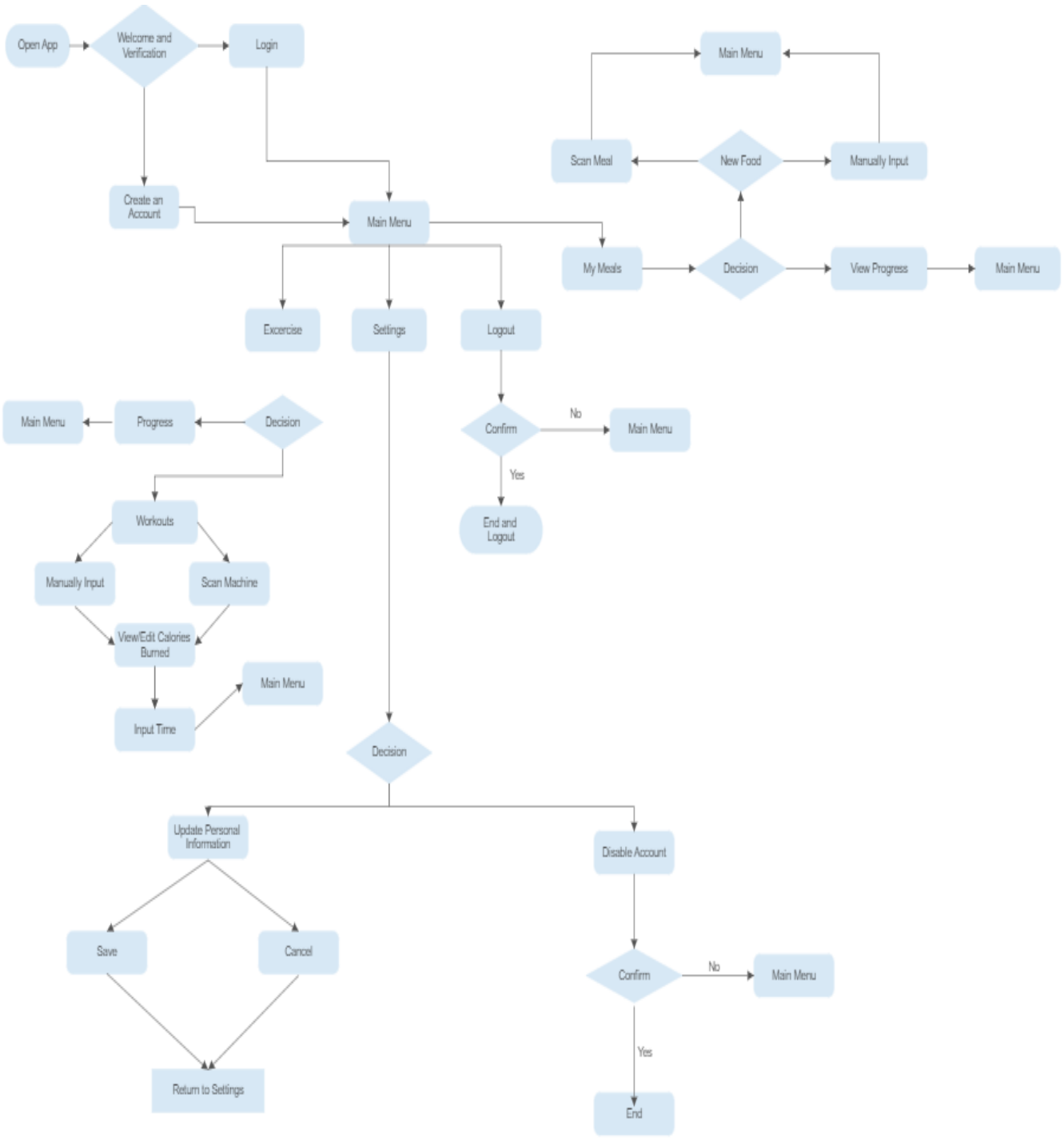
3.4. Document design process attributes

3.4.1. Architectual Design

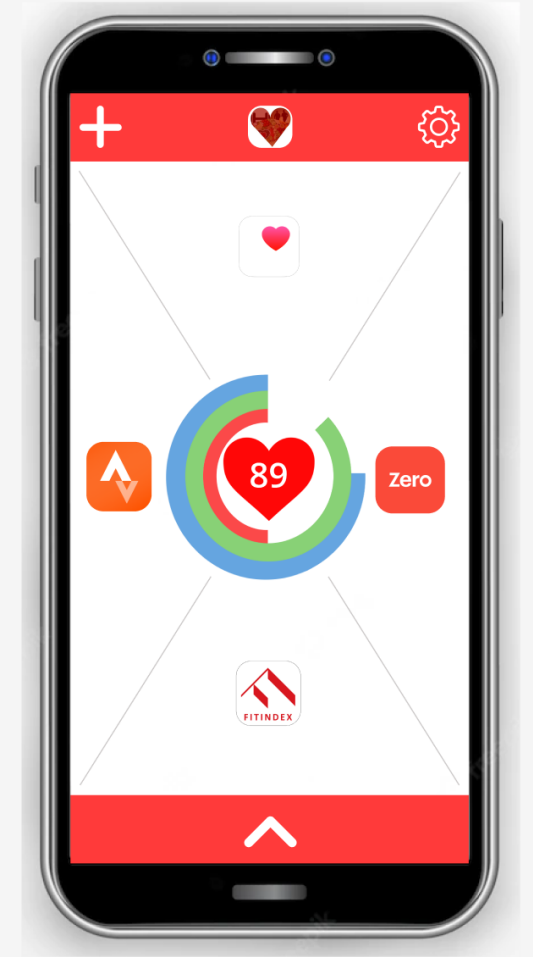


3.4.2. Interface Design (i.e., interface between the units/classes)



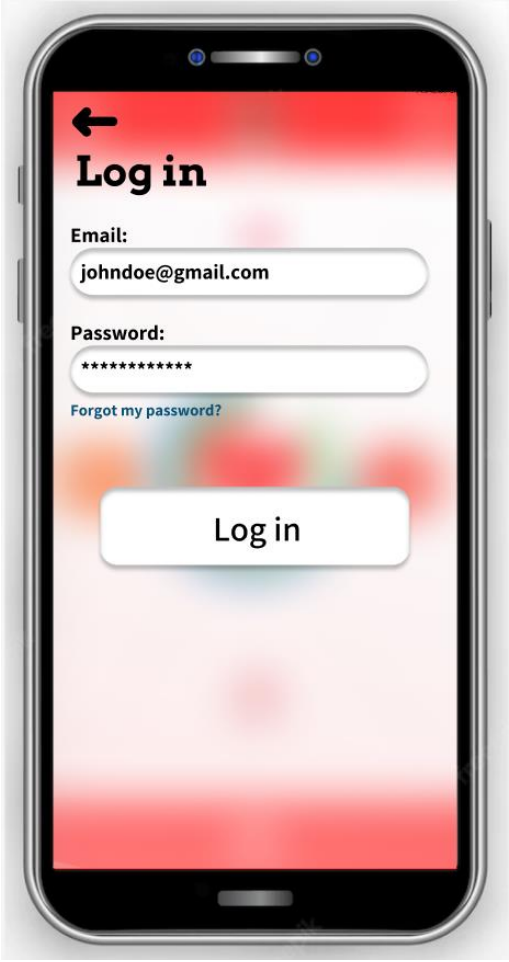
3.4.3. Screen mockups.

Home Page:

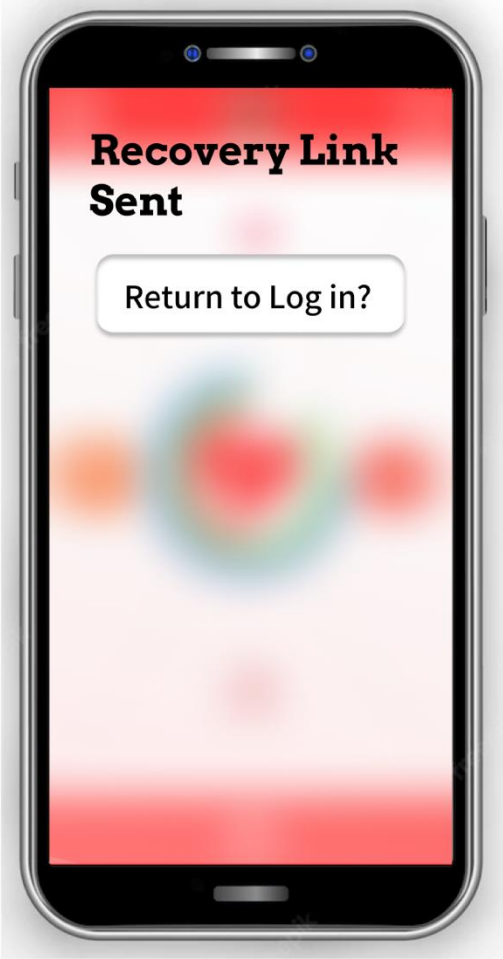


Log in/Register Page:

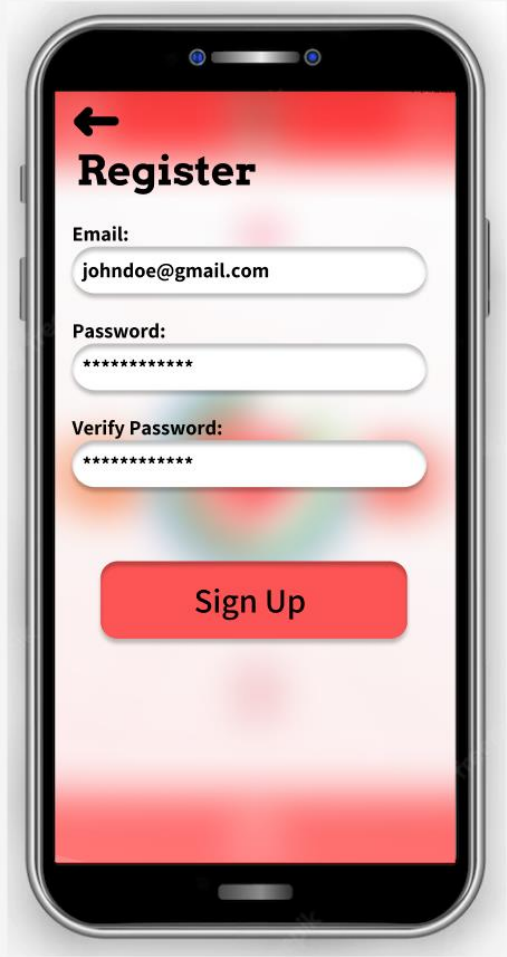
Log in Page:



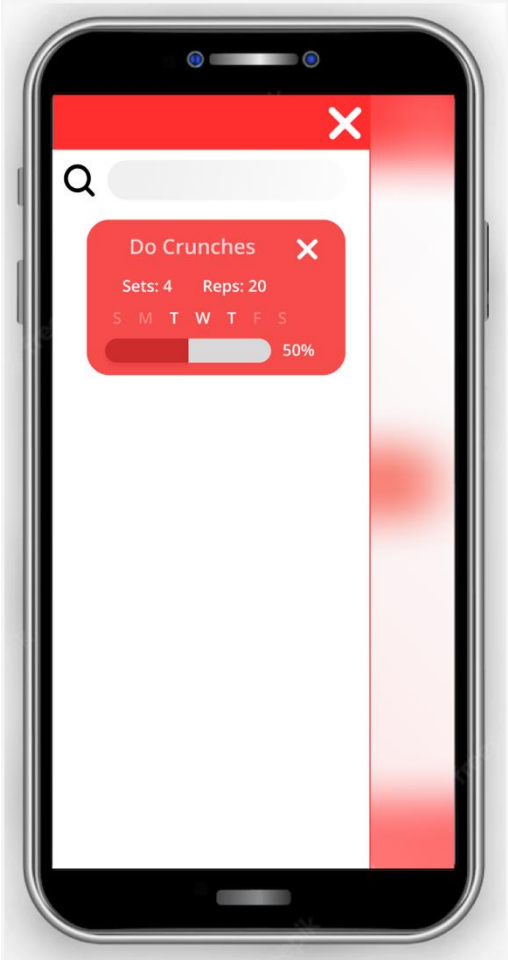
Forgot Password Page:



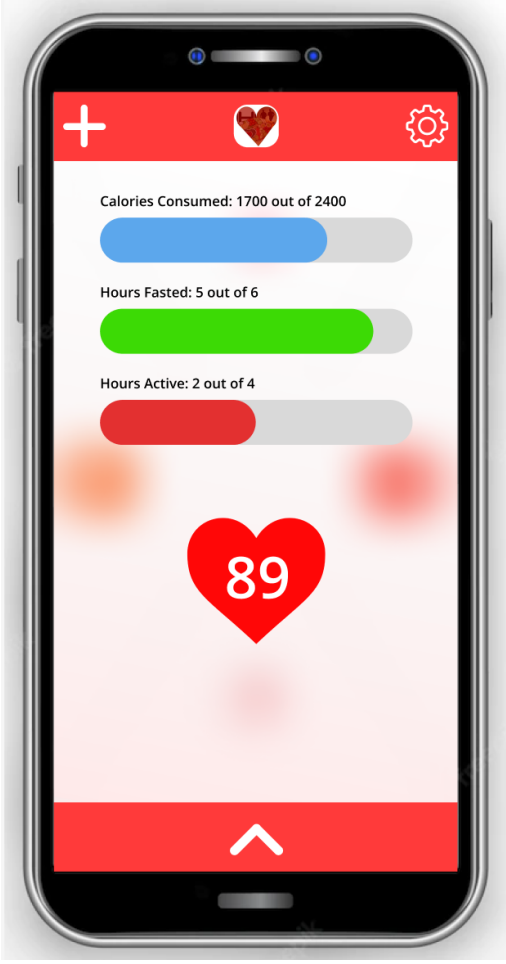
Register Page:



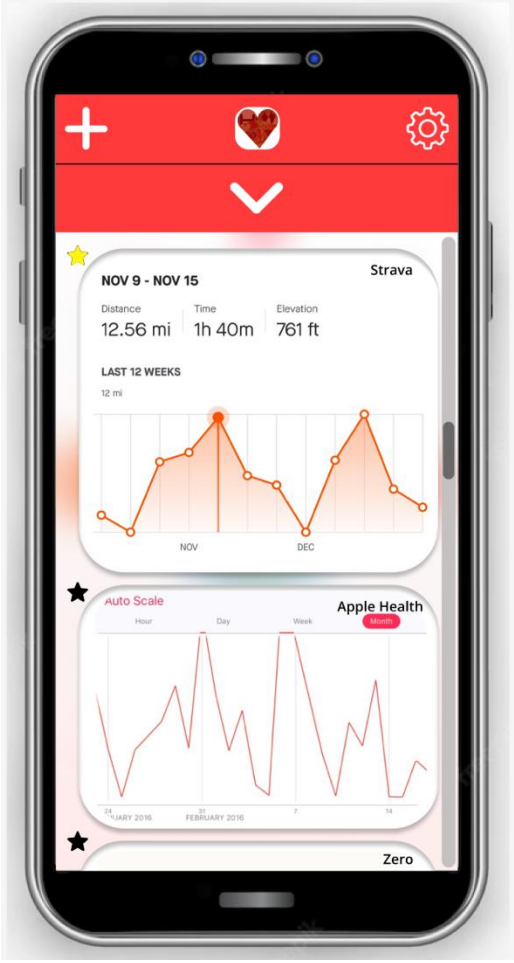
Activities Page:



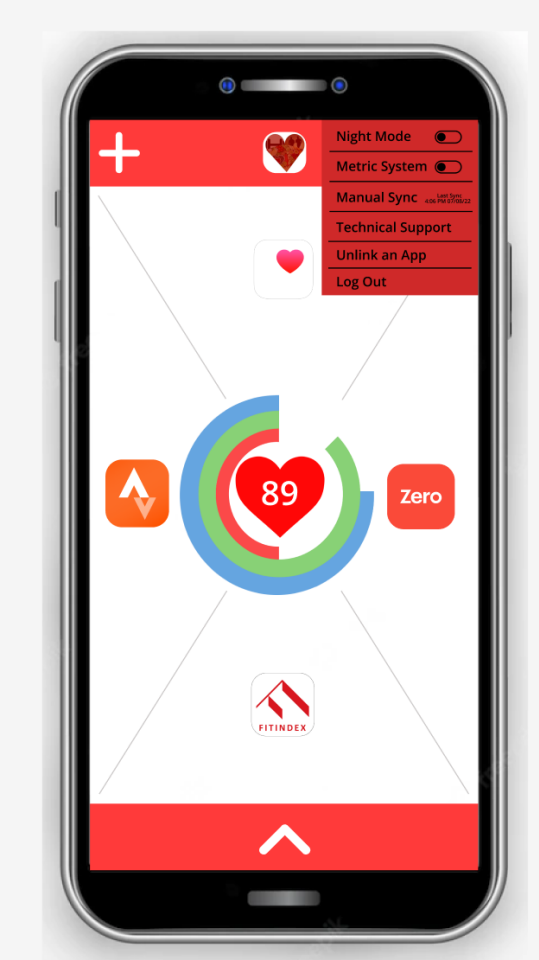
Focus Page:



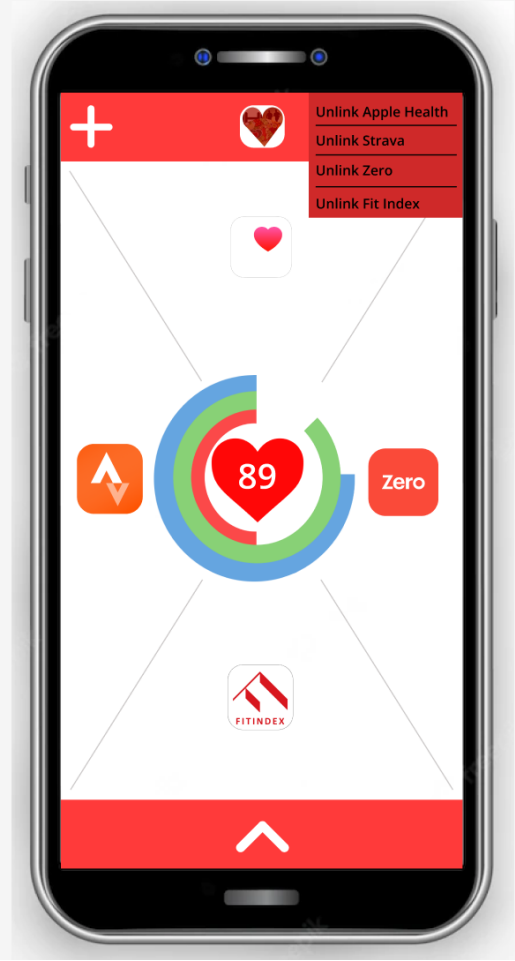
Deep Dive Page:



Settings Page:


Night Mode
Metric System
Manual Sync
Technical Support
Unlink an App
Log Out
89
Zero
FITINDEX

Unlink Page:



Night mode example:

3.5. Rationale Management – be sure to provide a justification for design decisions made during the project

Simplicity: all pages are based off the home page to ensure user simplicity and clarity. This minimalist design will reduce clutter and look more pleasing to the user.

Home Page Heart: The heart in the middle of the home page serves a purpose in giving a general view of the progress of the user. If they wish to see the actual numbers, all they must do is press the heart. It will track some favorite statistics that the user wants to always see.

Deep Dive: The deep dive page was made with the sole purpose of giving full access of all the accumulated information of all four linked apps to the user, and even favoring some of them depending on how important the user perceives it as.

Activities: This allows activities to be added with vast variety. From exercises to timers for fasting. It can be customized (example: how many sets and reps for an exercise) and can be set up on specific days.

Settings: like all other pages, it is a part of the home page. It is also the most minimalistic due to the few necessary options offered. Some options are more cosmetic, some are for preference, and some will serve to sign out or unlink linked apps if necessary.

Log in: log in is made simple with no need for a name, but the option to recover a password for if a user has forgotten their password.

3.5.1. The issues that were addressed

- Login / signup: When logging in to the app we want to make sure that the users have a secure and safe app experience. This is a huge component of the app and was heavily discussed since we wanted the best for the user experience and security.

- Heart Button: Since the Heart Button is supposed to be filled with the information for the user's day-to-day activity bar. There was a lot of discussion between the ideas of using certain APIs (Application Programming Interface) to help solve this issue with the information to help the information functionality aspect.

- Add Button: One of the important functionalities that the app has is the fact that the users were able to add different functionalities such as (New meals and workouts) to their workout regime or day to day life. This was a question of discussion since people wanted to be able to know what type of workouts and meal prepping, they needed to do based on the severity of their metabolic syndrome.

- Support Button: We wanted a way for people to be able to have access to useful information that does not come from a source but from other people using the app along with being able to ask questions based on their regime or just any question they have

3.5.2. The alternatives that were considered

- Login/ Sign Up: Having someone add whether they wanted to add extra security to their accounts by face ID and sending a code to their email. That was an alternative solution that we saw happening to gain that extra security as well.

- Heart Button: There were multiple diverse types of APIs that we thought about adding since the heart button's main feature is to be filled with the user's information based on their day-to-day activity.

- Add Button: There were multiple diverse types of APIs that could have helped solve the issue of getting the add button working but we found one that was working better than the others.

- Support button: The support button is a big part of telling the user experience and how we could better fix the user's experience based on the problems presented and the user's feedback. We felt like even though something has a lot of feedback sometimes the comments could be helpful in guiding us the developers to something misunderstanding so a lot of comments does not mean it is helpful.

3.5.3. The decisions that were made to resolve the issues

The decisions that were used to resolve the issues were the following:

- Logging/signup: We used security like the email used to track where the user was attempting to sign in as well as using something like the two-step verification used by Google. Our top priority is to make sure the user is as safe and secure as possible.

- Heart Button: We wanted to make sure that the user was able to implement their activity into the system so we can be able to track their activities meanwhile using multiple different APIs necessary to make sure this button is working properly.

- Add Button: The team went over one of the important functionalities because we need to be able to make sure the user can add many different functionalities like the new meals and workouts that can be implemented into the system for the user's everyday workout program.

- Support Button: To make sure that we gave the users access to good help to find the answers to any questions that the user may ask, we created the support button and got experts needed to be able to answer the very questions needed to help the user out. We add

3.5.4. The criteria used to guide decisions

The criteria used to guide the decisions was making the app as user-friendly as possible. We found that we needed to help benefit the user experience by helping the development of the app go as beneficial to the user to help them have a wonderful experience when using the app. We decided on having some security needed so the user can feel the benefit of being treated well and the developers want to make sure the user is safe, and they would like to have the best experience possible. We also wanted to make sure that we used the best APIs possible so the user can have the app perform to the best of its abilities.

v. The debate developers went through to reach a decision (Sebastian)

One debate was about asking for permission to use the other necessary apps for the hub app. One developer says that the user should be asked to connect all apps just after signing into the hub app, while another developer says it would be better and less overwhelming to allow the users to connect to those apps on their own time (particularly when trying to use the features tied to those apps).

Another debate was about how the data would be accessed. One developer says that the data should be accessed through the APIs of the apps, while another says that the data should be accessed through the apps themselves. The first option would have required a deal with the app developers and get historical data faster, while the other method would only ask for permission to connect to the apps and would get immediate data faster.

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4. Implementation

4.1. Use SCRUM methodology

Our schedule was to meet two days a week, commonly working together for 2-3 hours standard. Though we could not make it in some weeks due to tests and weather, our pace was steady. Around the end of the due date, we put in an extra hour in each meeting to further refine our presentation. The most notable weeks of work will be noted below:

Sprint A

Planning

Date(s): 09/20/22 and 09/22/22

Scrum Master: Ulysses Echeverria

Daily Scrum

Team member 1: Ulysses Echeverria

- What did this member do on Tuesday?

        - I collaborated with the team to confirm the main objectives of the app.
    - What did this member do on Thursday?
        - I collaborated on design for the app with the team and answered questions regarding the app's main objectives.
    - Are there any obstacles in the way?
        - There are no obstacles.

Team member 2: Nathalie Pacheco

- What did this member do on Tuesday?
    - I confirmed with the team their roles and responsibilities.
- What did this member do on Thursday?
    - I outlined a schedule for the project
- Are there any obstacles in the way?
    - There were no obstacles

Team member 3: Sebastian Menendez

- What did this member do on Tuesday?
    - I produced the idea of the centered-heart function that shows the favorite stats.
- What did this member do on Thursday?
    - I drew up the centered-heart concept on the home page.
- Are there any obstacles in the way?
    - No obstacles

Team member 4: Kenrick Brown

- What did this member do on Tuesday?
    - I also collaborated with the team to confirm the main objectives of the app.
- What did this member do on Thursday?
    - I worked with the team to get a timeline going for when we should be done with certain parts of the project. I also sent out a doc in which we all could work on each other.
- Are there any obstacles in the way?
    - There were no obstacles.

Team member 5: Michelle Carreras

- What did this member do on Tuesday?
    - I made sure that I was on the same objectives for the product.
- What did this member do on Thursday?
    - I evaluated competitors' similar products to get a better idea of some excellent features.
- Are there any obstacles in the way?
    - There are no obstacles.

Team member 6: Tyler Chadwick

- What did this member do on Tuesday?
    - I drew up some logo ideas to find a logo for the app.
- What did this member do on Thursday?
    - I sent the logo design ideas to the group for their opinions on the logos.
- Are there any obstacles in the way?
    - There were no obstacles.

Sprint Retrospective

What went well?

Tasks were delegated to the right people.

What did not go well?

Some miscommunications have caused some of us to not meet up at the same time.

What can be improved?

We will use our WhatsApp group chat more to better set up meeting times.

Sprint B

Planning

Date(s): 10/04/22 and 10/06/22

Scrum Master: Ulysses Echeverria

Daily Scrum

Team member 1: Ulysses Echeverria

- What did this member do on Tuesday?
    - I worked on stories describing the user experience.
- What did this member do on Thursday?
    - I revised the stories to prioritize functionalities.
- Are there any obstacles in the way?
    - There were no obstacles.

Team member 2: Nathalie Pacheco

- What did this member do on Tuesday?
    - I worked on the Functional Requirements
- What did this member do on Thursday?
    - I continued working on the functional requirements.
- Are there any obstacles in the way?
    - There were no obstacles.

Team member 3: Sebastian Menendez

- What did this member do on Tuesday?
    - Worked on parts of sections 1 and 2 of our paper
- What did this member do on Thursday?

        - Worked further on the heart function to give each favorite stat its own color
    - Are there any obstacles in the way?
        - No obstacles

Team member 4: Kenrick Brown

- What did this member do on Tuesday?
    - I created the PowerPoint link for the team to work on together.
- What did this member do on Thursday?
    - The team met together, and we worked on our parts of the assignment.
- Are there any obstacles in the way?
    - The lack of communication with some individuals within the group was the only obstacle.

Team member 5: Michelle Carreras

- What did this member do on Tuesday?
    - I voted on some user stories and requirements for the product.
- What did this member do on Thursday?
    - I researched contextual issues about the product.
- Are there any obstacles in the way?
    - There were no obstacles in the way.

Team member 6: Tyler Chadwick

- What did this member do on Tuesday?
    - I detailed the functional requirements for the system necessary for the app to run smoothly.
- What did this member do on Thursday?
    - I helped revise what was needed to make sure the requirements were good in the process of creating the app.
- Are there any obstacles in the way?
    - There were no obstacles in the way.

Sprint Retrospective

What went well?

The progress of the project is going as planned.

What did not go well?

The zoom meeting did not go as planned. Communication was less than optimal.

What can be improved?

Better communication for meeting times.

Sprint C

Planning

Date(s): 10/11/22 and 10/13/22

Scrum Master: Ulysses Echeverria

Daily Scrum

Team member 1: Ulysses Echeverria

- What did this member do on Tuesday?
  - I worked on finalizing the four major functionalities and prioritizing them. Also worked on the design of the home page with Sebastian and other team members.
- What did this member do on Thursday?
  - I revised the design of the home page with Sebastian.
- Are there any obstacles in the way?
  - There are no obstacles.

Team member 2: Nathalie Pacheco

- What did this member do on Tuesday?
  - I researched and created an outline of the interface design.
- What did this member do on Thursday?
  - I revised and created a rough draft of the interface design.
- Are there any obstacles in the way?
  - There were no obstacles.

Team member 3: Sebastian Menendez

- What did this member do on Tuesday?
  - I worked on a manual sync option for added responsiveness and integrated access to the four major app functionalities into the home page
- What did this member do on Thursday?
  - Refining on the formatting of the paper
- Are there any obstacles in the way?
  - There was a test that took up time

Team member 4: Kenrick Brown

- What did this member do on Tuesday?
  - I worked on fixing and editing my parts and some parts of the presentation and final project.
- What did this member do on Thursday?
  - I completed my part of the verification process and worked on the PowerPoint presentation.
- Are there any obstacles in the way?
  - There were no obstacles.

Team member 5: Michelle Carreras

- What did this member do on Tuesday?
  - I evaluated whether the product complied with features/ requirements.

- What did this member do on Thursday?
    - I completed the verification process.
- Are there any obstacles in the way?
    - There were no obstacles.

Team member 6: Tyler Chadwick

- What did this member do on Tuesday?
    - I implemented the solutions necessary for the app to be able to run smoothly.
- What did this member do on Thursday?
    - I helped address the issues that the app had dealt with.
- Are there any obstacles in the way?
    - There were no obstacles.

Sprint Retrospective

What went well?

There was good collaboration between the team members and progress was made.

What did not go well?

Some team members did not show up.

What can be improved?

Better communication to improve participation.

Sprint D

Planning

Date(s): 10/25/22 and 10/27/22

Scrum Master: Ulysses Echeverria

Daily Scrum

Team member 1: Ulysses Echeverria

- What did this member do on Tuesday?
    - I communicated with team members regarding their delegated responsibilities pertaining to the four major objectives.
- What did this member do on Thursday?
    - I worked with Sebastian on the functionality of the pages that stem from the home page.
- Are there any obstacles in the way?
    - There were no obstacles.

Team member 2: Nathalie Pacheco

- What did this member do on Tuesday?
    - I revised the interface design.
- What did this member do on Thursday?

    - I completed the rest of the design.
- Are there any obstacles in the way?
    - I had a family emergency and did not have enough time to focus on my tasks.

Team member 3: Sebastian Menendez

- What did this member do on Tuesday?
    - Tried out a few color schemes for the concept until landing on white and red
- What did this member do on Thursday?
    - Created the concept so that all the pages are extensions of the home page
- Are there any obstacles in the way?
    - There were no obstacles.

Team member 4: Kenrick Brown

- What did this member do on Tuesday?
    - I looked over the final paper and collaborated with the team as well.
- What did this member do on Thursday?
    - I worked on certain parts of the presentation and worked on fixing up the look of the final presentation.
- Are there any obstacles in the way?
    - There were no obstacles.

Team member 5: Michelle Carreras

- What did this member do on Tuesday?
    - I verified traceability between features and test cases.
- I What did this member do on Thursday?
    - I completed the traceability matrix for the requirements.
- Are there any obstacles in the way?
    - There were no obstacles.

Team member 6: Tyler Chadwick

- What did this member do on Tuesday?
    - I described my testcases for the app.
- What did this member do on Thursday?
    - I demonstrated the testcases on the app.
- Are there any obstacles in the way?
    - No obstacles.

Sprint Retrospective

What went well?

Everything went well.

What did not go well?

We did not find much time to practice our PowerPoint presentation on Tuesday or Thursday.

What can be improved?

We can delegate one day on the weekend to practice for the PowerPoint presentation.

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5. Verification

5.1. Define verification

Software Verification is an essential step in software development, also known as software quality control. It involves determining whether the produced software satisfies the customer's requirements and specifications. The goal of software verification is to ensure the program does not have bugs or problems. To accomplish that objective, the group needs to continually report everything during the entire programming process.

5.2. Introduce your verification process

A quality control process where we are determining if the product meets the requirements. As we are implementing the requirements, the test cases are being used to determine if there are any corresponding bugs. We are using a traceability table/matrix to track the status of tested use cases and whether they pass the test with no bugs.

5.3. Describe/demonstrate your testcases

Login button: The login button test is to make sure that the user can log in and have a secure experience with the app and make sure the login button works well and the username and password information is encrypted correctly so we can ensure the user has the best security possible.

Add button: The add button is to ensure that the user can add the different functionalities necessary to track in the system each day. We are trying to ensure that the user can implement the different workouts and meal plans that they are using daily.

Heart button: The heart button test is to make sure that the heart button is to be filled with information as for the user’s daily activity bar. While discussing using certain APIs to help solve the issue, we decided to use the information to help with the app's functionality.

Support button: The support button is to ensure that users have access to valuable information and can get questions answered directly from the app based on their workout regime or just any question users may have.

5.4. Demonstrate (preferably a table) traceability between the testcases/plan and requirements

Traceability:

Requirement No	Requirements description	Test Case Id	Status
1	User Sign-up / Login: Users will input their email and password to create an account, they will be asked to confirm their password and remain logged in until they have either logged out or deleted the app.	TC01 TC02	TC01- Passed
2	Users will have to agree to the Terms & Conditions to use the app.	TC03 TC04 TCO5	Passed
3	Users will then be asked if they want to allow notifications.	TC06 TC07	Passed
4	Input/edit first and last name, date of birth, gender, weight, height, weight goal.	TC08	Passed
5	Input/Track Blood Pressure & Cholesterol levels.	TC09	Passed
6	Food Interface:		Passed
7	Type and search food in the food inventory to track nutrition.	TC10 TC11 TC12	Passed
8	Scan barcodes on food products to quickly track nutrition of the scanned item.	TC13 TC14 TC15	Passed

9	Create and edit meals.	TC16	Passed
10	Track daily water intake and set notification reminders with the user's permission.	TC17 TC18	Passed
11	History Interface:		Passed
12	Show previously tracked food along with their nutrition info (calories, protein, carbohydrates, fats, etc.).	TC19 TC20 TC21	Passed
13	Display previously tracked blood pressure & cholesterol levels.	TC22 TC23	Passed
14	Display a chart with the daily breakdown of the user's macronutrients.	TC24 TC25 TC26	Passed
15	Calculate and display how much more needs to be consumed to meet the user's daily goals.	TC27 TC28	Passed
16	Exercise Activity:		Passed
17	Display exercise options with an estimate of how many calories can be burned.	TC29 TC30	Passed
18	Users can create their own exercise and input the number of calories burned.	TC31 TC32	Passed

19	Ability to connect with Fitbit and Apple Health to import data.	TC34 TC35	Passed
20	Setting:		Passed
21	Include the Terms & Conditions, Privacy, About, and FAQ's.	TC36 TC37 TC38	Passed
22	App Preferences: Notification, Unit of Measurement, Track My Activity.	TC39 TC40 TC41	Passed
23	Change email and password.	TC42	Passed
24	Display connected apps.	TC43	Passed
25	Help Center: Open FAQ' s and display the support number and email within hours of operation.	TC45 TC46	Passed
26	Rate the app: Should open and redirect the user to the app store.	TC47 TC48	Passed
27	Delete Account/ Delete All Data.	TC50 TC51 TC52	Passed

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6. Lessons learned

6.1. The lessons learned during this project

We learned valuable lessons from this project. Primarily, we underestimated the amount of work involved in carrying out this project. We also underestimated the amount of teamwork that is necessary. Better planning in these areas in the future will help the cohesiveness of the project. It is not enough to delegate sections of the project and complete them individually. Before this is done each team member should have an unobstructed vision of what the project aims to accomplish. We found that a clear roadmap detailing how we will get to a completed project is also necessary. This roadmap should include deliverables at each meeting and the ability to adjust the roadmap as the project progresses. Although having two meetings per week was certainly helpful, we found that meeting more often would improve communication regarding clarifications and obstacles we each encountered. Sometimes, the obstacles met were simply that we found it difficult to balance work demands and other constraints from our personal lives, but most of the time we encountered obstacles due to not having a clear understanding of what was expected from each sprint. Overall, the

main lesson learned was that better communication will improve cohesiveness and henceforth, the productivity of the team.