

# Optimising Energy, Enhancing Mood

**APAT5342**

# Introduction

In a world where technology increasingly permeates our daily lives, the investigation of how digital tools impact our health and well-being takes on profound importance. This autoethnography project is a deep dive into the complex interplay between dietary choices, meal timing, physical activity, and their effects on an individual's physiological and psychological vitality using an application.

Autoethnography is a research method that combines personal reflection with ethnography. It can be valuable for investigating the interplay between dietary choices, meal timing, and physical activity on an individual's physiological and psychological vitality. Autoethnography offers unique insights into personal experiences, encourages self-reflection, and provides a subjective, holistic perspective on how these factors affect well-being within a broader cultural context. It's a powerful method for understanding the complex relationship between these factors.

First, autoethnography allows me to provide a deeply personal perspective, drawing on my own experiences and emotions while using MyFitnessPal. This approach ensures a unique and in-depth exploration of the subject. Second, the method emphasises self-reflection and self-examination, enabling a more nuanced understanding of the challenges, motivations, and outcomes related to my health and well-being journey. Third, autoethnography aligns with my goal of examining not only the individual aspects but also the societal and cultural influences that shape these experiences.

There has been research on how personal informatics tools and apps, similar to MyFitnessPal, have been effective in providing real-time feedback to individuals. These tools have shown promise in helping people make healthier dietary choices, optimise meal timing, and improve physical activity routines. Data has been analysed using machine learning to generate information which provides more sophisticated insights into patterns and trends which help in providing personalised recommendations for improving well-being.

## Aim

Using MyFitnessPal to investigate the interplay between dietary choices, meal timing, and physical activity on an individual's physiological and psychological vitality, encompassing factors such as physical energy, mental alertness, and overall well-being.

## Research Questions

### QUESTION 1

How does the breakdown of macronutrients (carbohydrates, proteins, fats) in my diet affect my energy levels?

### QUESTION 2

What is the relationship between the timing of meals and my mood and overall engagement during the day?

### QUESTION 3

What types of exercise or physical activity improve or decrease my energy levels?

My main goal for this is to find out how calorie intake affects all the factors in my aim. "Caloric restriction is the most studied dietary intervention known to extend life in many organisms, but recently the balance of macronutrients has been shown to play a critical role" (Solon-Biet et al., 2015). "Each of the macronutrients—carbohydrate, protein, and fat—has a unique set of properties that influences health, but all are a source of energy. The optimal balance of their contribution to the diet has been a long-standing matter of debate" ("The Macronutrients, Appetite, and Energy Intake," 2016).

My chosen platform for this exploration is MyFitnessPal, a popular mobile application tailored for health and fitness tracking. Integrating technology into personal health and wellness is a rapidly growing field that holds many implications for an individual's decision-making, behavior, and overall vitality. MyFitnessPal represents a popular type of self-tracking app that allows users to better understand their eating habits, exercise habits, and overall health.

Given the popularity and appeal of these tools, it is important to critically evaluate their impact on users' lives and consider the ethical aspects inherent in their use. One of their recent developments of the app is their customisable dashboard. The dashboard update helps the user in personalising tracking with setting goals and has new nutrient specific options (MyFitnessPal, 2023). They have also added in the feature where users can search by name or use the barcode scanning system (Moore, 2020).

The syncing feature has improved and so the users can have all of their data on one app (Moore, 2020). However, there are some ethical concerns about the app. The first one being that it makes eating disorders worse for some users (Emma Dvorkin '24, 2022). There also has been a data breach in the year 2018 (Baker, 2021).

MyFitnessPal promises the users the number of calories we consume from food and burned from exercise and lets us know how many calories we have left to eat for the day. This app primarily offers a descriptive reflection. It provides users with the basic information and data that is related to their diet and physical activities such as calorie counts, exercise that is synced from other apps and macronutrient content.

I haven't used any previous technologies to track calories before so I didn't have much experience with how this could help me with achieving my goals. I was always curious about how the act of tracking dietary choices and physical activity affects my awareness and mindfulness in making healthier decisions. I would like to start eating a more balanced ratio of macronutrients in the future.

One of the behaviours that I'm skeptical of developing while using the app is focusing only on calorie intake may lead to neglecting the quality of food that I consume. It is important to prioritise food that is high in its nutrient content to support my overall health. I'm expecting to cook and learn more dishes by the end of the autoethnography. I'm picking the reflective design lens for this autoethnography.



# Methods and Protocol

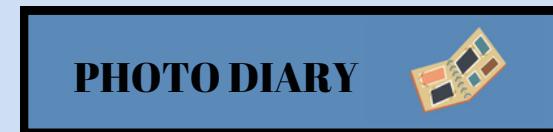
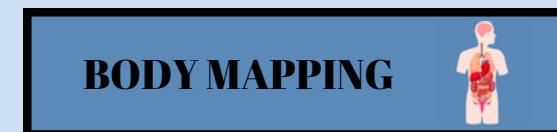
**Positionality:** I am a 21-year-old woman of South Asian descent, working as a teaching assistant. My positionality may influence my perspective on the impact of MyFitnessPal. I have been taught to eat healthy and on time back home, but I can't get myself to make it into a habit when I'm away. My perspective is informed by my cultural background, educational and socioeconomic status, and my ongoing quest for personal well-being and self-improvement. For this autoethnography I will be collecting and documenting data over the span of 5 days.

Data collection for my chosen topic, which focuses on investigating the interplay between dietary choices, meal timing, and physical activity on an individual's physiological and psychological vitality will be using MyFitnessPal, involves the systematic gathering of information related to these aspects of well-being.

**Dietary Choices:** To collect data on dietary choices, I will use MyFitnessPal to record the types and quantities of foods and beverages consumed over the five-day period. This data will include nutritional information, such as calories, macronutrients (carbohydrates, fats, proteins), vitamins, and minerals.

**Meal Timing:** I will document the timing of meals and snacks, noting when I eat throughout the day. MyFitnessPal allows me to input timestamps for each food entry, enabling me to analyze the impact of meal timing on my well-being.

**Physical Activity:** The app also allows me to record various physical activities, including exercise routines and daily steps. I will collect data on the type of activities, duration, and intensity, which can be analysed in relation to physiological and psychological well-being. This can be synced from the data on my phone.



**Emotional and Psychological Responses:** Alongside the quantitative data, I will collect qualitative data through journaling. These methods will help me document my emotional and psychological responses to dietary choices, meal timing, and physical activity. I will also be documenting my energy levels and alertness in the journal after every meal for analysis.

**Visual Data:** Using a photo diary, will help me capture images of my meals, snacks and any significant moments that provide a visual context for my experiences.

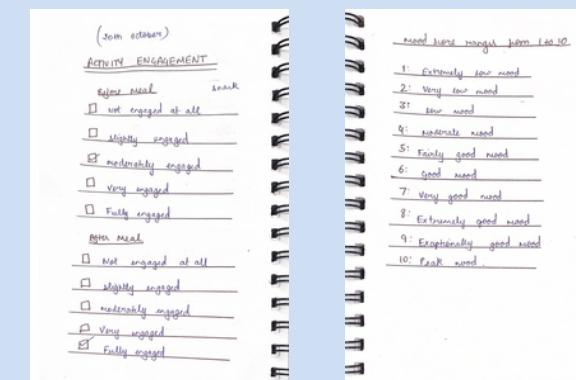
## PILOT TESTING:

Pilot was conducted for the autoethnography and I made some of these observations:

- There was no sure way of tracking energy after meals.
- There was no way of specifically tracking engagement after each meal.
- I did intermittent fasting, but it was not compatible with my schedule.

**Improvements** based on the observations:

- I added a activity engagement scale in the journal where I get to chose a number for energy and tick a checkbox for the activity.
- I also added in a mood tracker which can help track mood because there was no way of tracking mood in the app and so I decided to add it in the journal.



**Fig 1:** Activity Engagement (Left), Mood Tracker (Right)

# Data Documentation

**Journal:** The journal is a core element in autoethnography, acting as a repository for daily reflections and experiences tied to the interactions with the app. It offers a platform for self-reflection, self-analysis, and in-depth exploration of my experiences with the app. This helps me to provide detailed and moment by moment accounts of my experiences which allows for rich data. It also helps me in keeping a track of my experiences over time. I will document my experiences every time I use the app. This will also be used to track more information such as energy levels, mood and activity after meals.



**Photo Diary :** The photo diary is a dynamic tool that adds visual richness to the autoethnographic narrative. It uses photographs to create a vivid context for the subject. These images evoke emotions, memories, and a sensory connection for the researcher, making the subject come alive. Photo diaries provide a deeper and more immersive experience, allowing readers to see, feel, and relate to the subject through a sensory lens, fostering a profound connection between the researcher and their audience.



**Body Mapping:** This allows me to create a visual representation of my experiences with food and their connections to my body. The visual element can make this process more engaging. This is essential because in the journal I am only documenting my experiences with the app and not my emotions or mood after I have meals. This allows me to communicate my feelings and sensations that might be challenging to capture with writing and make it more visual. I will complete a body mapping after every meal.



**MyFitnessPal:** MyFitnessPal allows users to log their food intake, track exercise, monitor macronutrient consumption, and set personalised health goals. It provides a database of foods, nutritional information, and a barcode scanner for easy entry, making it a convenient tool for those seeking to manage their dietary choices, meal timing, and physical activity. I will be documenting my every meal and track calories through the app.

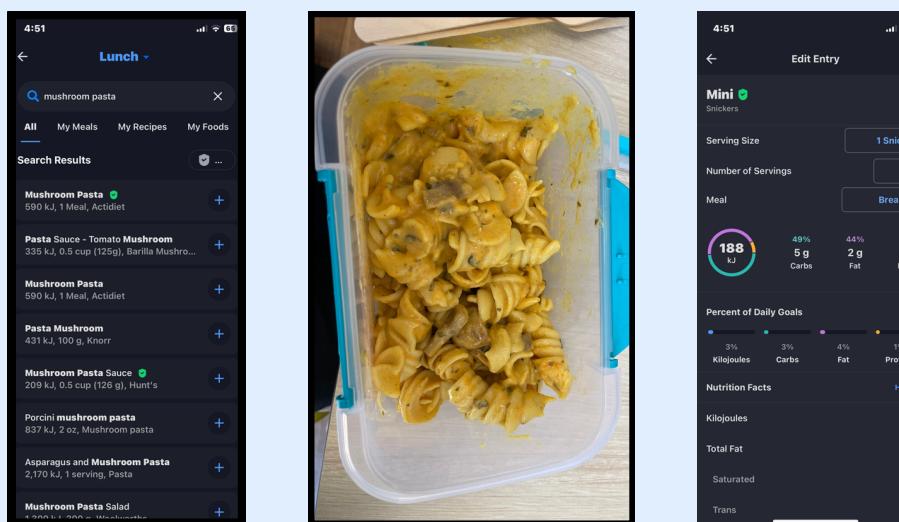


# Photo Journal

## Day 1: 20th October, 2023

### ● Breakfast : 10:00AM (campus)

I had a late start to the day because I woke up very late and didn't get time to buy or make breakfast as I had to rush to my class. I had a mini-snicker from the day before and I decided to have it as I was very hungry. This helped in satisfying my hunger for a while. I then decided to add that in the app. When I started documenting it in the app it showed me the percentage of carbohydrates it had. It wasn't a very healthy choice and it didn't make me very happy in documenting that. The app wasn't very helpful in providing good breakfast choices and that made me **disinterested** in the app.



**Fig 2:** Entry for breakfast (left), Pasta (middle), entry for Lunch (right).

### ● Lunch: 2:00PM (Campus)

I had two classes and a recording for a video so I didn't get time to have food. I had packed lunch. I hadn't cooked in a while and so I was excited to have it. I did not eat before classes and so I was very unfocused in class. By the time I had food it was too late and I wasn't hungry anymore. After having lunch at 2, I **craved** strawberry milkshake. It was a very hot day and I had seen one of my friends have strawberry milkshake some days ago and I liked it after I tried it and because it was hot I think I craved it. I used the app to document my food and write down some notes because I usually write down in my journal at the end of the day. I wanted to add in the mushroom pasta in for tracking the calories, but it wasn't the right one. There were many in their database, but all of them referred to a specific recipe and I didn't feel the best adding them as they wouldn't be able to track the right amount of calories that were included in the home cooked pasta. This made me **frustrated** because I had to look at all the factors and then add it in. This took a lot of time and **spoiled my mood** slightly. Because I was craving the milkshake I decided to get a different healthy drink on campus because macca's was too far, I liked the drink but wasn't satisfied because it wasn't what I wanted. After eating the food I was **more energised** than before and I could focus way better than I was in class.

### ● Dinner : 12:20AM (Clovely Beach)

I had to finish my assignment after getting back from my classes. I was highly demotivated but I had one question left so I decided to start doing it at 7 and then I continued doing it till 10:30. I was very drained and needed a break. I just wanted to go back to my room and sleep, but my friends decided to go for a drive. I was very hungry and we ended up getting dinner at around 12:00AM, and we had it in the car. I then decided to log my meal in on the app. This was a very **stress free** experience because the app has information on the menu of macca's and so I just had to search it up and I could add it to track calories. I also got strawberry milkshake which made my day. Overall, this was a very good experience not just because of the app but also due to external factors.



**Fig 3:** Strawberry milkshake (left), chocolate smoothie (right).

## Day 2: 21st October, 2023

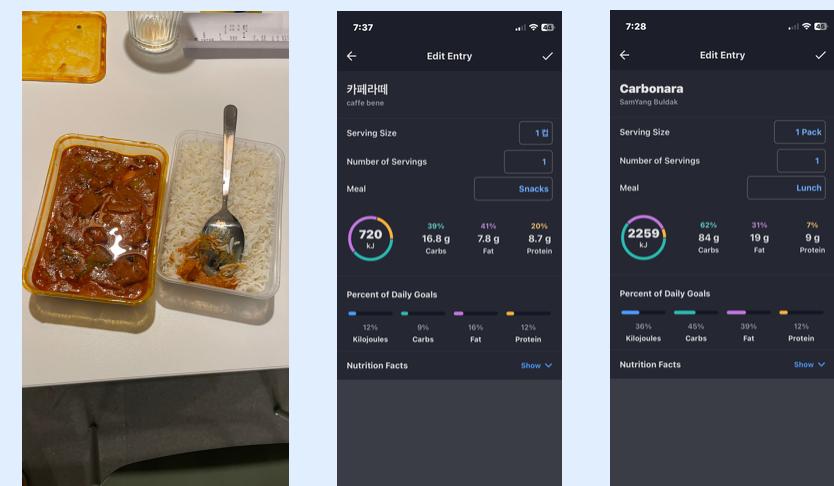
### Lunch : 1:34 PM (home)

I woke up motivated to finish an assignment and I had to do it with the rest of my group. I decided to finish my part before I left to meet them. I wasn't hungry for breakfast and so I decided to skip it. I immediately started working on the assignment. I got hungry around 1:30 and I decided to have the easiest meal I could have. Being a **uni student** I usually have ramen and eggs whenever I don't feel like cooking and don't want to waste time on cooking. I logged this information in the app. It was easy to find and I didn't have any difficulties. This also showed me a high percentage of carbs, and this made me question my food choices. I considered choosing different foods with a **consistent macronutrient content** throughout all the meals. My stomach was a bit warm after having the food. Im glad I had food because it was a good break from studying, but it was hot outside and my friend suggested to have the coffee from the nearest convenience store and this was really good because it was cool and it helped me get back to studying as I was a bit **unfocused** after eating the ramen and eggs.

### Dinner: 9:34PM (Friend's apartment)

I was at my friends accomodation from 2:30 and was working on the assignment. I didn't start working on the assignment we were supposed to

be working on till 6:00 PM, because thats when all the group members got there. I was at my friends accomodation from 2:30 and was working on the assignment. I didn't start working on the assignment we were supposed to be working on till 6:00 PM, because thats when all the group members got there. I was sitting on the same couch from 3 to 7 and thats why my back and feet were hurting a bit. This was making me loose focus in the assignment and my progress was too slow. At 7:30 I finally stoped studying and went out to get a snack. When I got back my friends were all hungry and we decided to order Indian food. When we ordered the food I didn't expect it to be good, because we don't get spicy Indian food here, but that was **exceptionally good**. This made my day. Along with that I met some friends who I hadn't seen in a while, and we all had dinner together, this uplifted my mood.



**Fig 4:** Dinner (Left), Korean Coffee app entry (middle), Lunch app entry (right)

I then documented this in the app. The same recipe or place was **not in the data** of the app and I ended up adding in another **inaccurate information** in the app. This made me annoyed because I wanted to track the right amount of my calories and this wasn't doing that.

### Snacks: 2:45 PM (Friend's Apartment)

The first snack I had was at my friends apartment and it was korean coffee. I'm not a fan of coffee and I usually avoid it, but then when I tried it, it was **really good**. I wasn't feeling very nice about lunch because it was already hot and I had warm food which didn't make me feel very good. The coffee was cool and I had it in a fancy mug which made it better. I logged in my entry for the coffee, and it showed me the korean name, I think this was nice but they should also have had the english name as not everyone understands all the languages. I was **surprised** by the number of carbs it had as compared to other foods. This **educated** me on the amount of carbs different types of coffee can have.



**Fig 5:** Korean Coffee

## Day 3: 22nd October, 2023

### Lunch : 1:34 PM (home)

I woke up late as usual. I wasn't hungry when I woke up and I decided to skip breakfast. I immediately started working on the assignment with not much motivation. I wasn't looking forward to proof reading the assessment and submitting it. I somehow tried to get some work done before leaving to meet my friends but didn't make much progress. I had the leftovers from the previous night and watched how I met your mother. The food was really good, but then again when I went in to log in the entry, I had to add an inaccurate entry as this wasn't in the app. One more thing that frustrated me was the portion sizes were hard to tell as the food was ordered and I don't usually check that when I'm getting food. This led me to fill in inaccurate entries. This was **annoying** but the food was really good so I didn't really care about this.



Fig 6: Taco Bell with friends (Left), Leftover food (Right)

I again stared working on the assignment and was more focused than before. The food uplifted my mood.

### Dinner: 9:34PM (Friend's apartment)

I was at my friend's apartment and we were all studying together since 3:00PM. We had all met to finalise and submit the assignment. Whenever we met we don't end up studying as much as all other times. We were talking and studying. I only had lunch the whole day and around 7:30 I suggested we get dinner and then we can start working again, because we were becoming very unproductive and needed energy to focus as the assignment was very draining. I was **excited** because we all had this tradition where we used to get taco bell every Sunday last semester, but we stopped doing that and I suggested the idea and everyone was excited as well. My friend and I walked there and we got food for everyone and we had it together and then we worked on the assignment again. We were more productive after the food than we had been before. After eating the food I logged it in and found the **correct entries** as the app had the details. The food was good and I worked on the assignment after. I tried to look at the summary of the nutrients and it left me surprised as I could see my macros goal and how much I had already completed. This was very interesting and I would like seeing more of these details on the app because they are very insightful into my food intake.

The food provided me with the energy to complete my tasks for the day. The widget that shows all the summarised information **demotivated** me as the calories intake from food was way more than my lost calories.

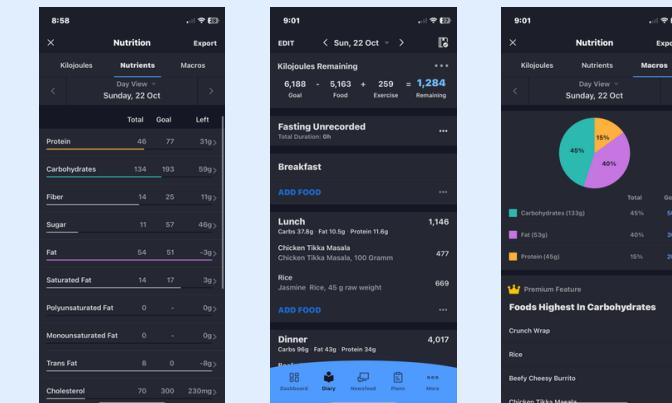


Fig 7: Nutrients information (Left), Calorie Widget (Middle), Macros Pie chart (Right)

## Day 4: 23rd October, 2023

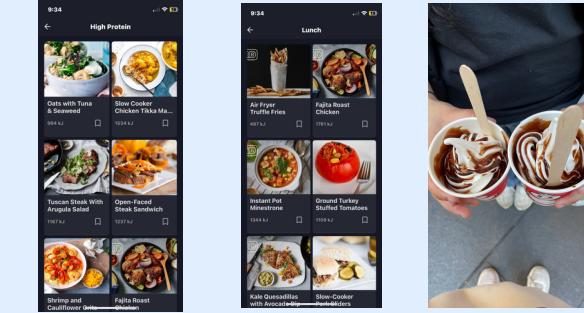
### Lunch : 12:00 PM (Home)

I woke up early and was excited for the day. I had work with my best friend. As I had work and I wasn't going to get to study for a few hours as I work far from where I live. I started working and aimed to get my work done by 2:00PM. I got hungry around 12:00PM and so I made a quick dish.

I first opened the app and tried looking for recipes, but the recipes that were there **weren't very easy to make** and they were very different than the type of food I usually have. I browsed for a while but realised that there wouldn't be any recipes that I like. The data was also not very wide, they had very few plans which had **repetitive recipes**. I gave up and made shin ramen with eggs. This was filling and gave me energy as I hadn't eaten anything since the morning. I also decided **not to rely on the app** at all for recipes because it didn't match my expectations. They have a health plan that I was following and I never agreed to any recipes. Even if there were recipes, they required ingredients that I don't own as I don't cook that often.

### ● **Snacks:** 5:40PM (Mixue at Town Hall)

I finished work and we decided to stop by at town hall to meet another one of our friends. We reached there before our friend and so we decided to visit typo. I didn't have any deadlines approaching so I decided to take a chill day and not study much. We walked around for a bit and then ended up getting a chocolate sundae. The weather was cool outside and the sundae was really good. I wasn't very surprised looking at the carbs percentage in the drink as it was pretty high and I had realised that a few days back.



**Fig 8:** Repetitive recipes (Left), Unfamiliar Recipes (Middle), Chocolate Sundae (Right)

### ● **Dinner:** 8:36PM (Friends Accommodation)

When I got back from the hangout with my friends, I was supposed to do a assignment for a very hard unit, and I was going to do it with my friends. They were already there when I got there. I got them food from town hall so that we could eat and study together. We got a family bundle and the new bubble drink was unexpectedly very good. I logged it in the app and it was **accurate** because it was available on the app. The percentage of all the carbs were surprising as they were not very different.

## Day 5: 24th October, 2023

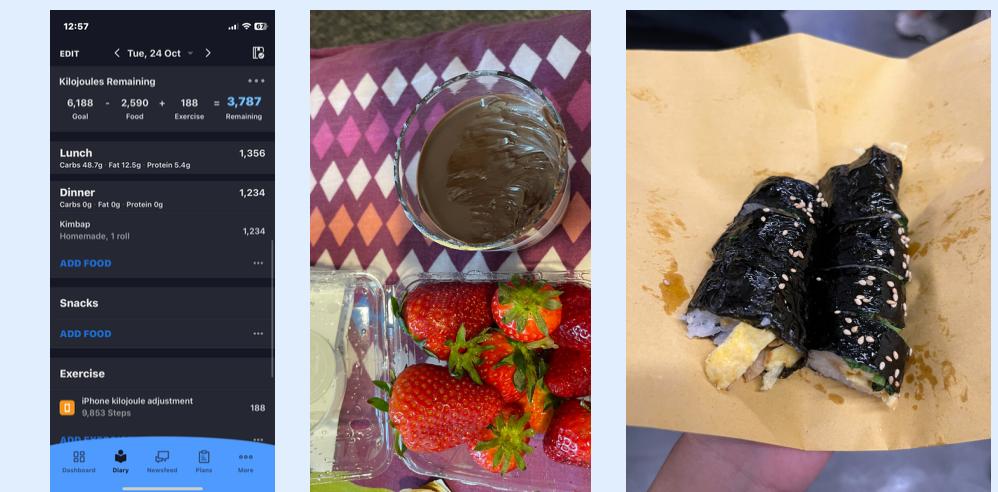
### ● **Lunch:** 2:21PM (Home)

I woke up late and didn't have any classes so I decided to cook food at home. I didn't have any recipe in mind so I thought I will just go to the grocery store and decide what to eat. I left at 1:30 and by the time I got back it was too late and I didn't have energy to cook, so I just had the strawberries that I got.

I opened the app and logged it in. This made me **worried** because the very first meal I had for the day was just fruits and this made me reflect on how I should have a fixed schedule for my meals. The rest of the day **wasn't very good** either because I didn't study much before this and didn't even eat properly, which reflected on mood the entire day.

### ● **Dinner:** 8:07PM (Friends accommodation.)

I started getting hungrier during 6:00PM, but I had a lot of work to complete so I thought of getting dinner later on. I also waited because there was kimpab at my friends accommodation and we were all going to get it together. My mood throughout the day wasn't the greatest, but meeting my friends did uplift my mood. While I was adding this in I saw my total intake for the day and it made me consider focusing more on eating **balanced meals** throughout the day. Adding in one roll of kimpab felt like a lot less, because I usually have two rolls.



**Fig 9:** Dinner Entry (Left), Strawberry with nutella dip (Middle), Kimpab (Right)

# Data Analysis

Using the app for tracking has enhanced the quality of my experience by promoting greater mindfulness and healthier dietary choices. The experience has also revealed the potential for improved user-friendliness and efficiency in tracking tools, addressing challenges like manual data entry frustration. The outcomes have included heightened awareness of dietary choices, more nutritious meal preparation, and a desire for holistic tracking approaches that consider emotional well-being and personalized dietary recommendations.

Overall, the app has positively influenced my well-being, but there is room for **further improvement** in enhancing user satisfaction and overall experience. I have been **more informed** about the distribution of calorie intake of macronutrients and the amount of calories each food consists of.

Tracking calories was much better with the help of an app. One of my previous findings (A2) was that meal timings are important, but they also depend on what food we have for the previous meals (as found in the). There was another finding that said that I should have a proper plan for my calorie intake which I was able to follow using the app. The app's visual graphs and charts helped me **visualise trends** in my dietary habits and physical activity over time, offering a clear snapshot of my progress.

The app's extensive food database and barcode scanner were beneficial for detailed data entry. However, MyFitnessPal's interface and features can sometimes be overwhelming . The complexity of the app may hinder user engagement, leading to frustration and **potential abandonment**. The app isn't easy to navigate and it takes quite a bit of time to familiarise with all the features.

The time-consuming nature and occasional frustration raise questions about its long-term sustainability. The app's meal planning and **recipe matching affected my mood and food choices**, emphasizing the need for personalization. My identity and research background inform my curiosity about tracking's impact on awareness and macronutrient ratios. To enhance this experience, addressing usability challenges and ethical concerns is crucial to maximize the positive influence of tracking on my well-being. Using tracking apps like MyFitnessPal carries potential risks, which include obsession, stress, and the development of eating disorders.

Privacy concerns arise from sharing personal health data, and continuous tracking can **diminish the enjoyment** of food and disrupt intuitive eating. A balanced and mindful approach is necessary to avoid these adverse effects on overall well-being.



## Tracking makes me more observant of what I eat.

The act of tracking has heightened my awareness of dietary choices, making me more mindful of what I consume and prompting healthier decision-making.

## Manual Data Entry challenges lead to frustration.

The frustration stemming from manual data entry challenges highlights the need for more user-friendly and efficient tracking tools to enhance the overall tracking experience.

## Unsatisfactory Recipe Matching in meal plans has an impact on my mood and food choices.

The impact of unsatisfactory recipe matching on mood and food choices emphasizes the interconnectedness of emotional well-being and meal planning, calling for improved meal plan customization in tracking tools.



## I would benefit from a food and mood tracker at the same time.

The desire for a combined food and mood tracker suggests the potential for a holistic approach to well-being, where emotional states are considered alongside dietary habits.

## Complex and Time-Consuming Recipes

Preparing complex and time-consuming recipes has been a notable aspect of my journey, requiring significant effort but potentially offering the benefit of more nutritious meals.



# Discussion

## Increased Awareness through Tracking

This suggests that tracking technology served as a powerful tool for fostering mindfulness and informed decision-making about dietary habits.

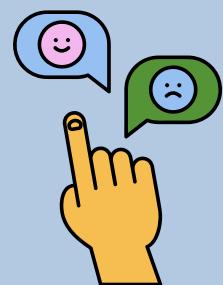


## Frustration with Manual Data Entry

Simplifying data input processes enhances user satisfaction and long-term engagement.

## Demand for Affordable and Healthy Recommendations

The need for affordable and healthy recommendations tied to diverse schedules indicates an opportunity for tracking apps to provide personalized, budget-friendly, and nutritious meal suggestions, which caters to users with varying routines.



## Impact of Recipe Matching on Mood and Choices

Unsatisfactory recipe matching's impact on mood and food choices highlights the emotional connection between meal planning and overall well-being.



## Benefit of a Food and Mood Tracker

Integrating mood tracking alongside dietary tracking can provide a holistic approach to well-being.



## Challenges with Complex Recipes

Streamlining cooking processes could enhance user satisfaction.

The analysis provided me with some valuable insights which helped me in designing a solution for the app.

## New Feature

The Nutrient Optimized Recipe Generator is a novel feature that consists of the user profiling, ingredient matching, and health considerations solutions. NORG takes a comprehensive approach to user well-being by generating recipes that not only align with the user's dietary preferences, mood, available ingredients, schedule, and location but also optimize the nutrient content of each meal. This feature is designed to empower users to make informed and health-conscious dietary choices by focusing on nutrient density, such as vitamins, minerals, and macronutrients, while also considering individual health goals and dietary restrictions.

The NORG feature aligns with the latest research in nutrition and health, emphasizing the importance of nutrient density in dietary choices. Nutrient optimized meals can support users in meeting their health goals and improving overall well-being. By optimizing recipes to provide essential nutrients and taking into account user profiles, NORG offers a holistic approach to healthy eating.

The ethical consequences of the NORG feature include concerns related to privacy and data security, as it involves analyzing user profiles and dietary preferences. To mitigate harm, MyFitnessPal can implement robust data protection measures and make the data anonymous wherever possible, following ethical guidelines outlined in the literature (Smith et al., 2020). Users will be provided with clear data usage policies, and an opt-in consent for using this feature will be emphasized.

# Design Proposal

## User Profiling



User profiling involves collecting and analyzing user data such as dietary preferences, dietary restrictions, health goals, activity level, and past behavior. The app creates a user profile that serves as the foundation for personalized recommendations.

## Ingredient Matching



Ingredient matching analyzes the ingredients a user has in their pantry or refrigerator. It cross-references these ingredients with a recipe database to suggest recipes that can be prepared using the available ingredients.

## Mood Detection



Mood detection employs user input or data analytics to gauge the user's emotional state. It considers factors like stress, happiness, or other moods to generate recipe suggestions.

## Time-Saving Recipes



Time-saving recipes focus on quick and easy meal preparation. The app suggests recipes that can be prepared in a short amount of time, factoring in the user's schedule.

## Health Considerations

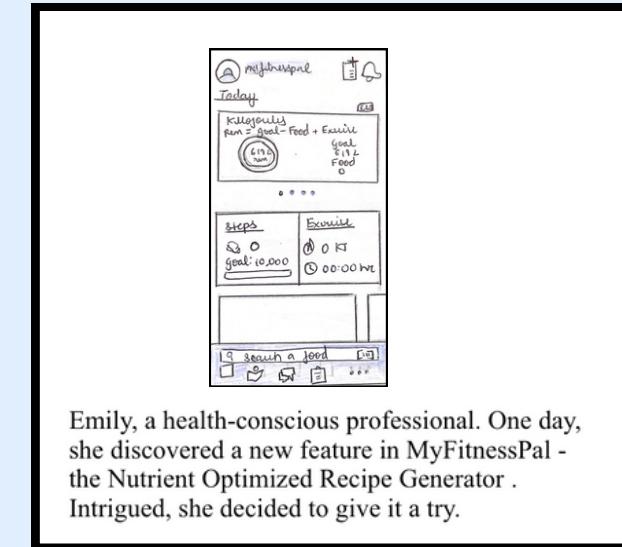


Health considerations involve assessing the user's health goals and dietary restrictions. The app tailors recipe suggestions to accommodate these factors, ensuring that users make choices that align with their well-being objectives. This also takes in factors such as allergies.

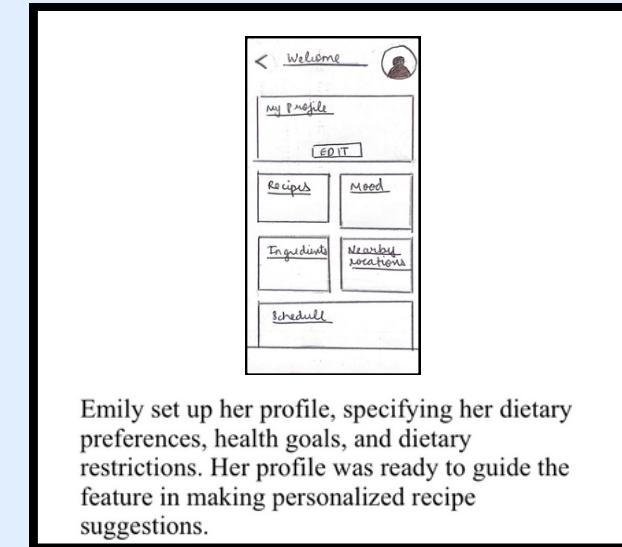
## Location-Based Recommendations



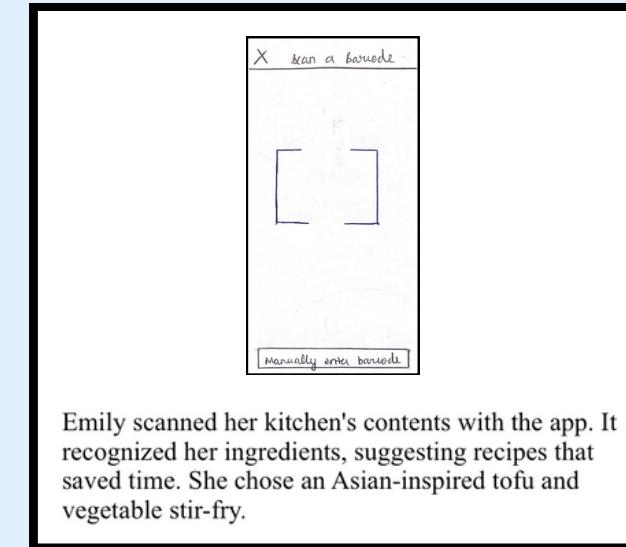
Users receive recommendations that align with their location, potentially promoting sustainability and connection to local food sources or to affordable restaurants nearby the users current location.



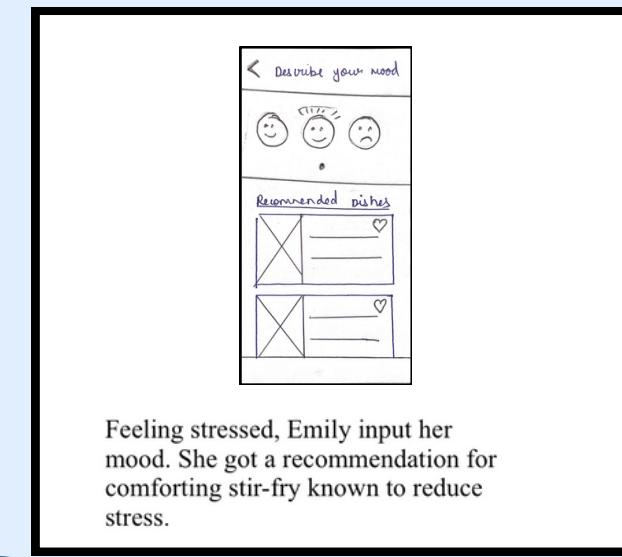
Emily, a health-conscious professional. One day, she discovered a new feature in MyFitnessPal - the Nutrient Optimized Recipe Generator. Intrigued, she decided to give it a try.



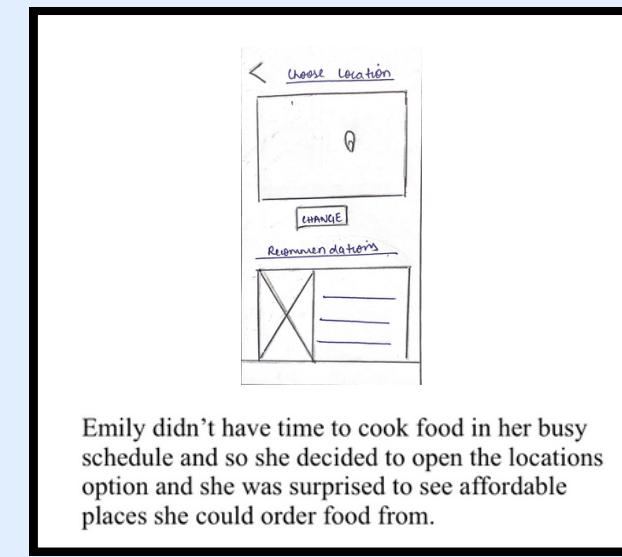
Emily set up her profile, specifying her dietary preferences, health goals, and dietary restrictions. Her profile was ready to guide the feature in making personalized recipe suggestions.



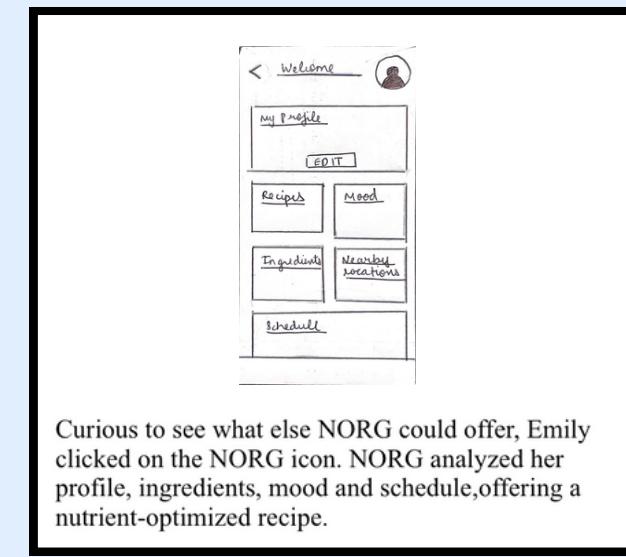
Emily scanned her kitchen's contents with the app. It recognized her ingredients, suggesting recipes that saved time. She chose an Asian-inspired tofu and vegetable stir-fry.



Feeling stressed, Emily input her mood. She got a recommendation for comforting stir-fry known to reduce stress.



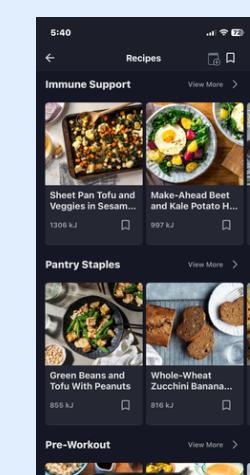
Emily didn't have time to cook food in her busy schedule and so she decided to open the locations option and she was surprised to see affordable places she could order food from.



Curious to see what else NORG could offer, Emily clicked on the NORG icon. NORG analyzed her profile, ingredients, mood and schedule, offering a nutrient-optimized recipe.



The implementation of the user profiling and ingredient matching are mandatory components to the feature whilst the rest are optional in regards to attaining the final output.



Users create profiles with their dietary preferences, available ingredients, location, and mood, and the app provides tailored recipe recommendations to enhance their meal planning experience and encourages them to eat healthier.

# Conclusion

The Self Determination Theory emphasizes the importance of autonomy, competence, and relatedness in motivating individuals to engage in health-related behaviors. As the feature offers personalized recipes, there is a risk that users might become very reliant on the app's suggestions, which could potentially lead to diminishing their **autonomy** in making independent food choices (2009 RyanWilliamsPatrickDeci HJOP, 2009).



The feature promotes nutrient optimized recipes, may enhance users **competence** in making informed and health-conscious dietary decisions. It's also essential to ensure that the app educates users about the nutritional value of these recommendations, empowering them to make competent choices beyond the app.

By offering personalized and emotionally aware recipe suggestions, this feature can help in creating a sense of relatedness with the app. Users may feel a stronger connection to MyFitnessPal as it caters to their emotional and dietary needs.



Conducting the autoethnography research with MyFitnessPal as the tracking device provided me with valuable insights into the intersection of technology, personal health, and well-being.

As a user, I was **surprised** by the extent to which tracking dietary choices and physical activity heightened my awareness and mindfulness. The process not only made me more conscious of what I eat but also highlighted the intricate relationship between mood and food choices. Having all the information integrated at one place made it easier for analysis.

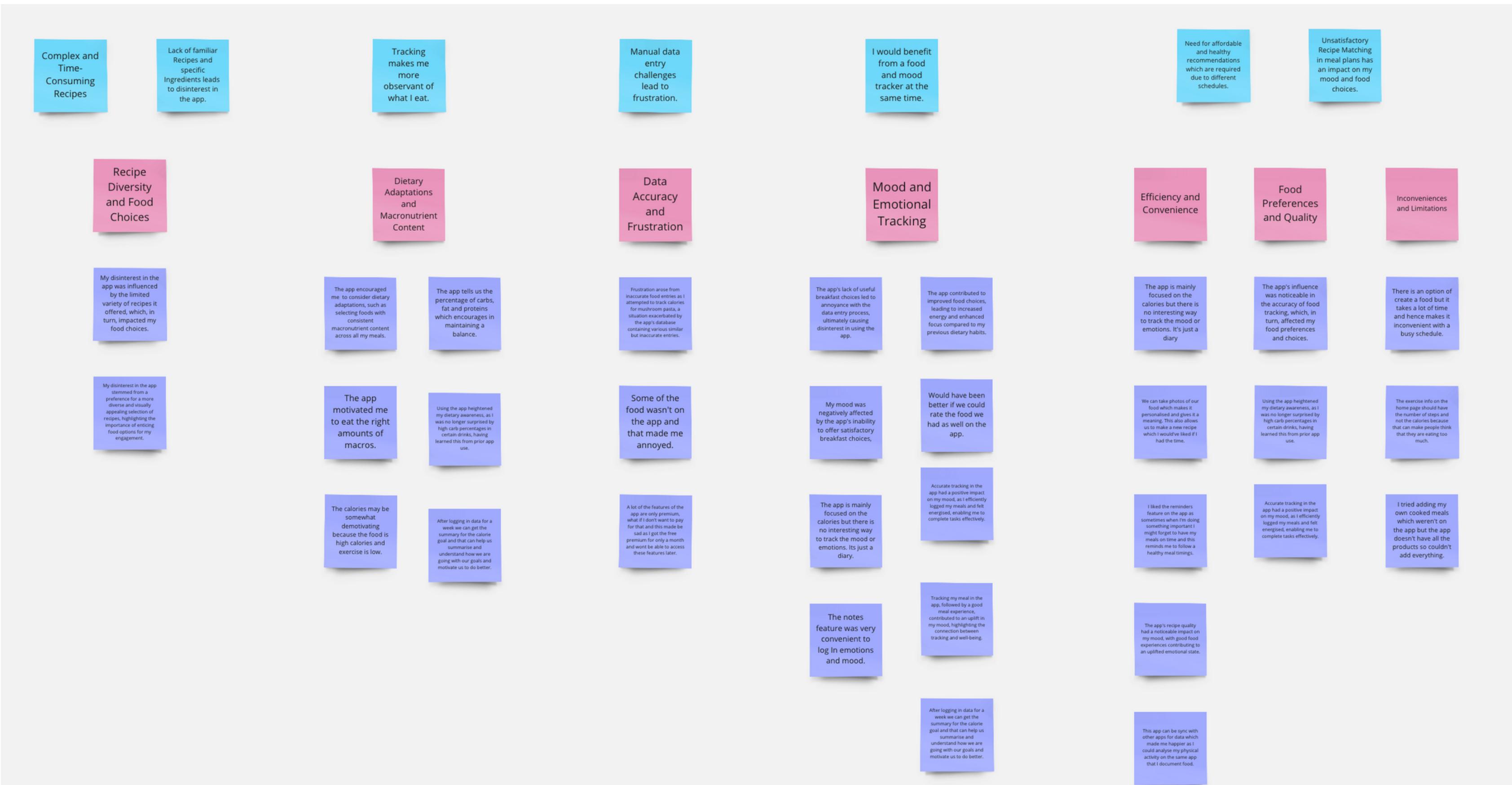
From a designer's perspective, I realized the importance of user-centered design in addressing usability challenges, such as manual data entry and complex recipes. It became evident that an app like MyFitnessPal could significantly enhance the user experience by incorporating features like nutrient-optimized recipes and mood-aware recommendations. These would offer a holistic approach to health management and foster healthier, more balanced dietary choices.

The indepth exploration of this can certainly provide a nuanced picture of real life health and well being behaviours. In this research, I found that well-being is not solely about nutrient intake but also about mood, convenience, and individual preferences. Such insights can help designers create technology that offers a more comprehensive, user-centric, and emotionally aware approach to supporting users in their health and well-being journeys.

# References

- Solon-Biet, S. M., Mitchell, S. J., Rafael de Cabo, Raubenheimer, D., Le, D. G., & Simpson, S. J. (2015). Macronutrients and caloric intake in health and longevity. *Journal of Endocrinology*, 226(1), R17-R28. <https://doi.org/10.1530/joe-15-0173>
- The Macronutrients, Appetite, and Energy Intake. (2016). Retrieved November 5, 2023, from Annual Reviews website: <https://www.annualreviews.org/doi/abs/10.1146/annurev-nutr-121415-112624>
- MyFitnessPal. (2023, May 22). MyFitnessPal Launches New Customizable Dashboard for an Instant Snapshot of What Matters Most. Retrieved November 5, 2023, from Prnewswire.com website: [https://www.prnewswire.com/news-releases/myfitnesspal-launches-new-customizable-dashboard-for-an-instant-snapshot-of-what-matters-most-301830189.html#:~:text=NEW%20YORK%2C%20May%202022%2C%202023, and new%20nutrient%2Dspecific%20options](https://www.prnewswire.com/news-releases/myfitnesspal-launches-new-customizable-dashboard-for-an-instant-snapshot-of-what-matters-most-301830189.html#:~:text=NEW%20YORK%2C%20May%202022%2C%202023,)
- Emma Dvorkin '24. (2022). The mental health impact of MyFitnessPal. Retrieved November 5, 2023, from The Catalyst website: <https://recatalyst.org/3499/showcase/the-mental-health-impact-of-myfitnesspal/#:~:text=In%20recent%20years%2C%20however%2C%20MyFitnessPal,eating%20disorders%20for%20some%20users>
- [http://www.facebook.com/carolinely3?ref=tn\\_tnmn](http://www.facebook.com/carolinely3?ref=tn_tnmn). (2013, September 19). MyFitnessPal Review: Pros & Cons Of Top Fitness App. Retrieved November 5, 2023, from BuiltLean website: <https://www.builtlean.com/myfitnesspal-review/>
- Moore, H. (2020, February 15). A Design Critique: myfitnesspal - Hayleigh Moore - Medium. Retrieved November 5, 2023, from Medium website: <https://hayleighmoore.medium.com/a-design-critique-myfitnesspal-9eec70a6e8ff>
- Jacobs, N. (2019). Two ethical concerns about the use of persuasive technology for vulnerable people. *Bioethics*, 34(5), 519-526. <https://doi.org/10.1111/bioe.12683>
- Baker, M. (2021, October). Everything You Need to Know About the MyFitnessPal Data Breach - UK Tech News. Retrieved November 5, 2023, from UK Tech News website: <https://uktechnews.co.uk/2021/10/01/everything-you-need-to-know-about-the-myfitnesspal-data-breach/>
- McCaig, D., Elliott, M. T., Katarina Prnjak, Walasek, L., & Meyer, C. (2019). Engagement with MyFitnessPal in eating disorders: Qualitative insights from online forums. *International Journal of Eating Disorders*, 53(3), 404-411. <https://doi.org/10.1002/eat.23205>
- Smith, J., Brown, A., & White, C. (2020). Ethical considerations in digital health. *Journal of Digital Health*, 2(1), 1-3. DOI: 10.1177/2055207619899564
- 2009 RyanWilliamsPatrickDeci HJOP. (2009). Retrieved from [https://selfdeterminationtheory.org/SDT/documents/2009\\_RyanWilliamsPatrickDeci\\_HJOP.pdf](https://selfdeterminationtheory.org/SDT/documents/2009_RyanWilliamsPatrickDeci_HJOP.pdf)

# Thematic Analysis



# Photo Diary

Pilot day



Day 1



Day 2

**Day 3**



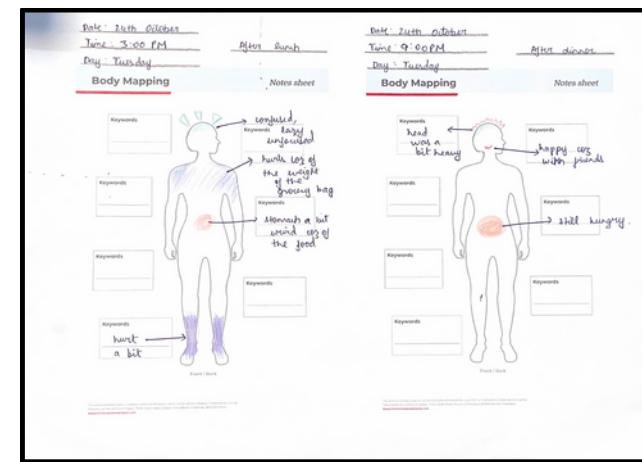
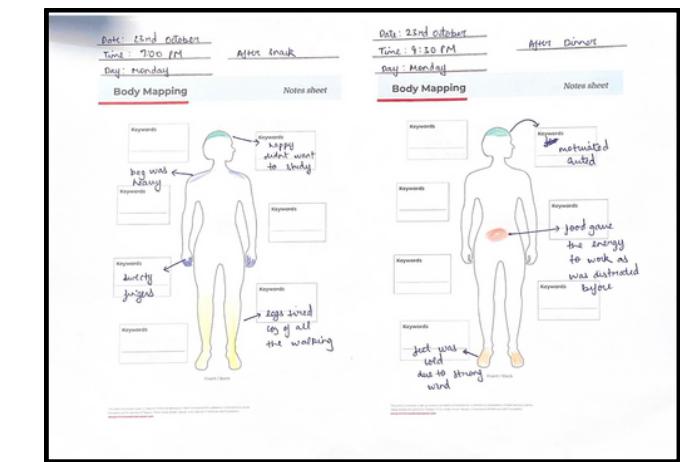
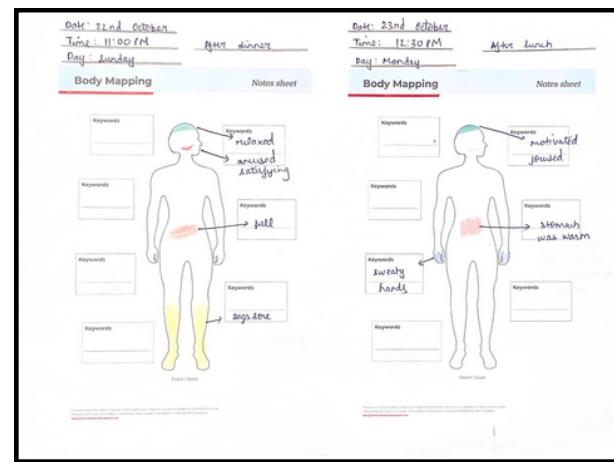
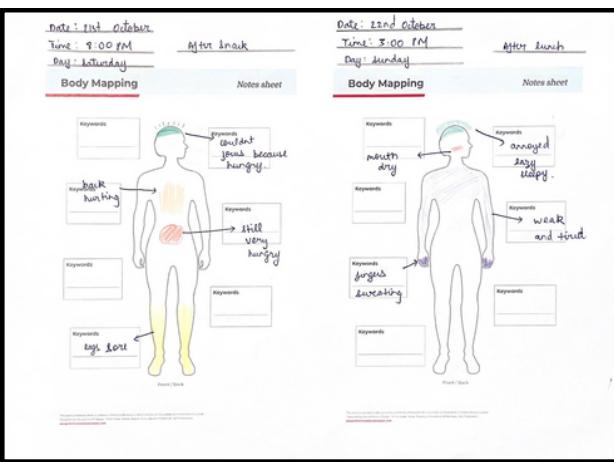
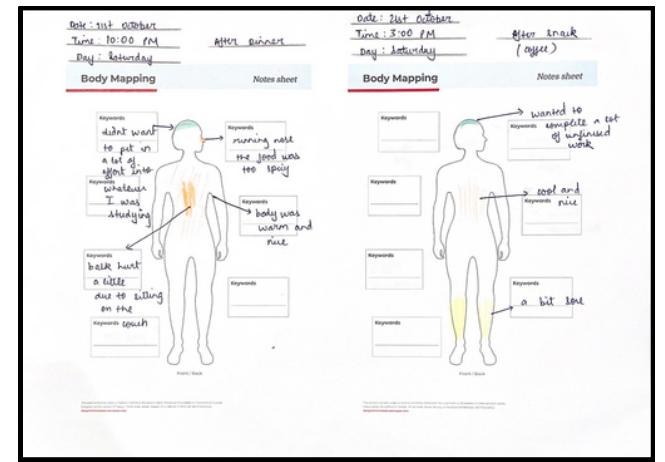
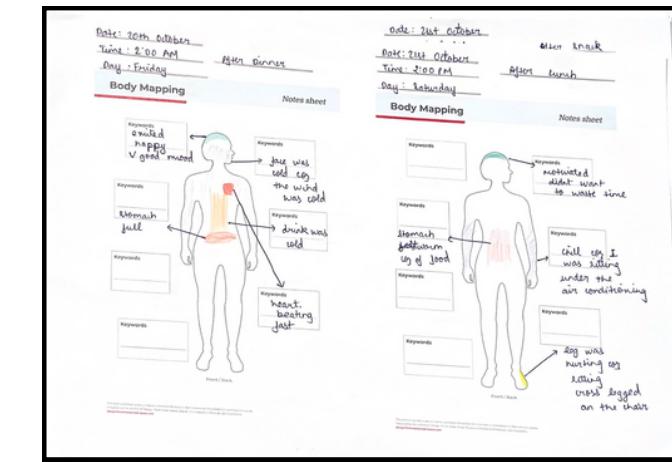
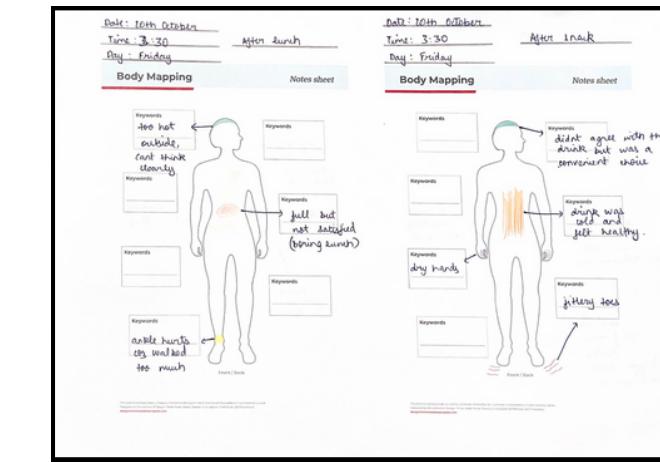
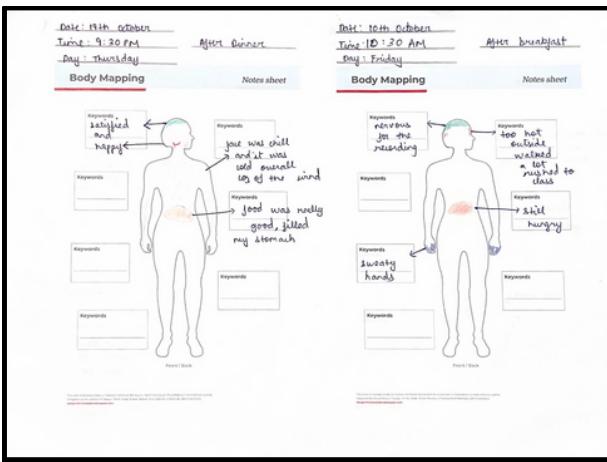
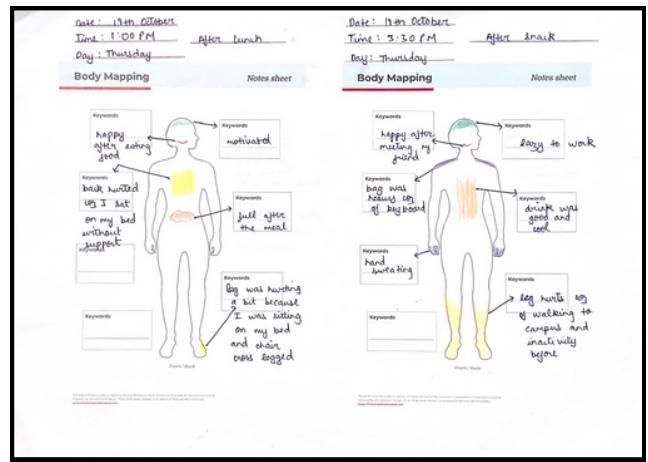
**Day 4**



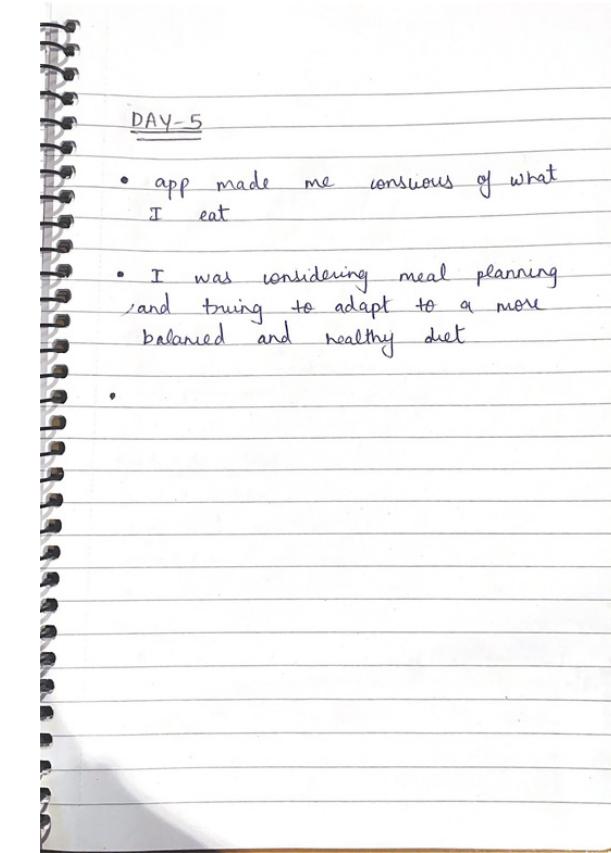
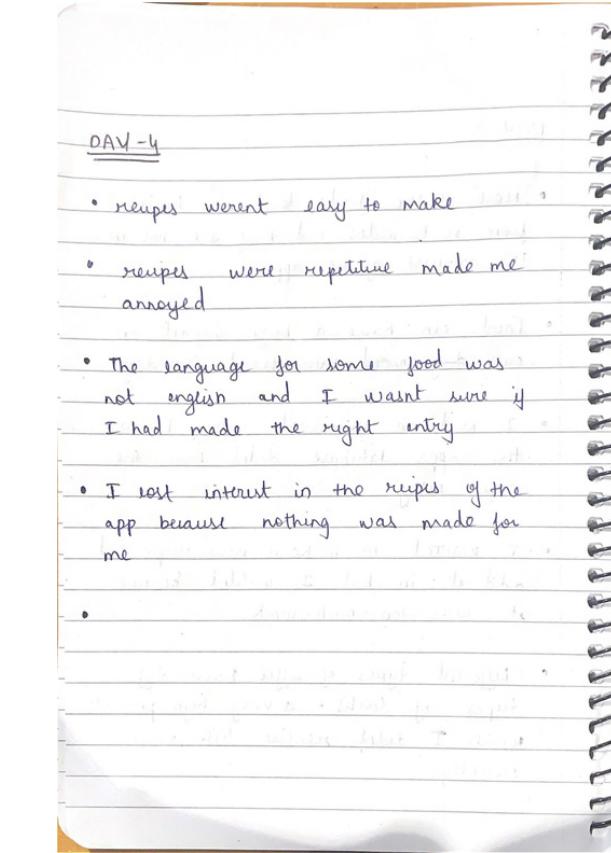
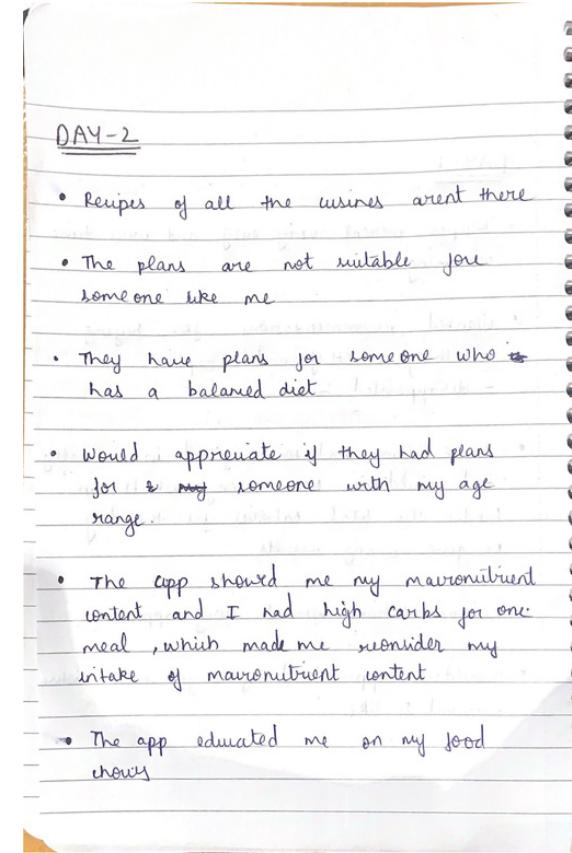
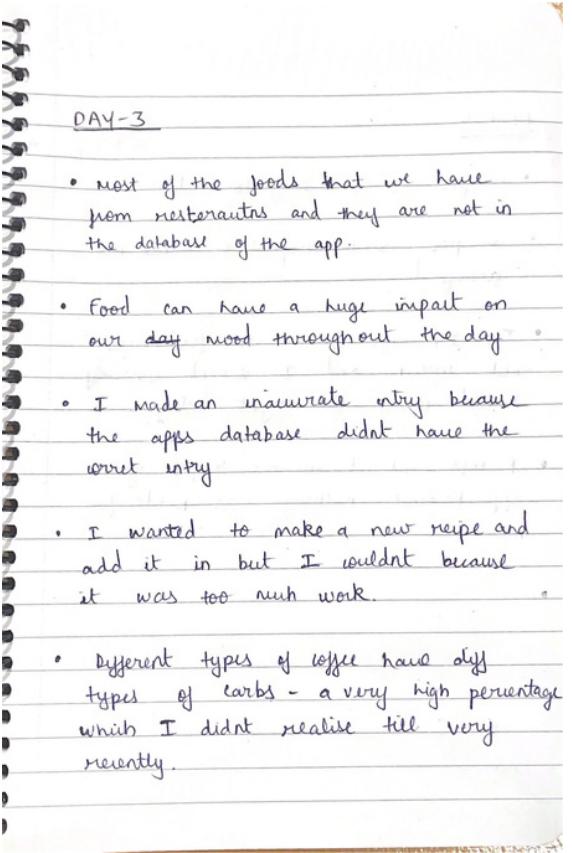
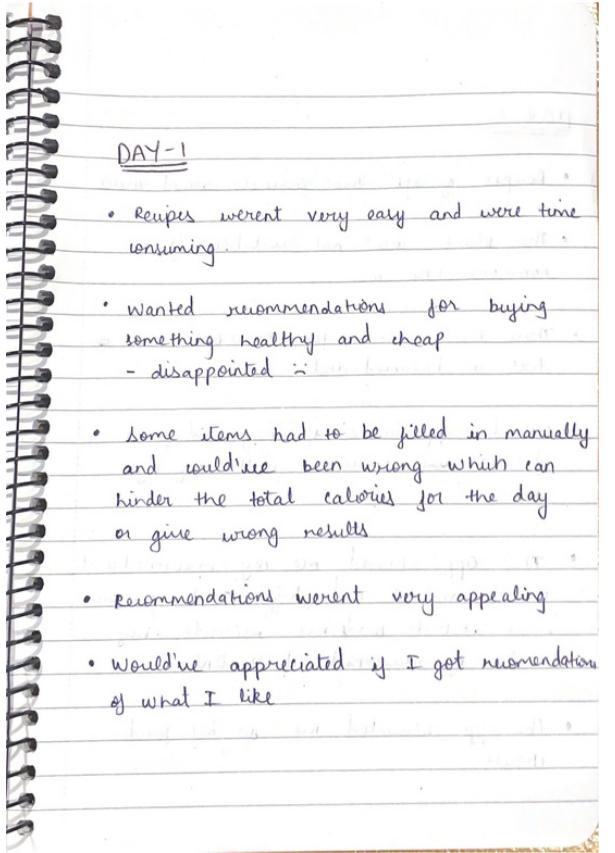
**Day 5**



# Body Mapping



# Journal



Journal entries for app interactions. Here is some more information from the journal.

# Journal

PILOT (19th October, 2023) Thursday

- woke up at around 10:00 AM. I slept late the earlier night.
- I was motivated to finish a coding assignment. I don't have any coding work this semester
- Its making a website :)
- Cooking Pasta (mushroom) at 11:00 AM so I went out and brought the groceries required for cooking.
- cooked and had pasta
- watched HIMYM while eating food with my roommate.
- my friend invited me to come study on campus so I went around 2:00 PM to SIT
- Stayed there till 7:00 PM and then headed to a BBQ event.
- All of my friends do a monthly BBQ together on the rooftop of my dormitory

DAY-1 (20th October, 2023) Friday

- The food was really good. I'm not sure if that was because I was very hungry by the time we actually ate the food.
- studied for a bit after that and then slept.

DAY-1 (20th October, 2023) Friday

- head was a bit heavy when I woke up.
- I'm assuming this was because I slept very late so I couldn't sleep well at night.
- didn't get time for breakfast because I had a class at 10 and had to get ready.
- my friends gave me a mini sneakers so I had that as my breakfast or snack
- had a class from 10:00-11:00 and then had a video recording at 11:30 so I packed food for lunch
- didn't get time to have lunch because I have another class 12-2.
- I was unfocused and couldn't pay attention
- was very sleepy and uninterested and even though I hadn't watched

the lecture

- I usually don't watch the lecture but I still end up participating but this time I was just sitting there unaware of what was being done.
- By the time I had lunch I wasn't very hungry but it was a very hot day and I wanted a drink.
- I'd seen a my friend have this drink (strawberry milkshake from Mauas) and had taken a sip and it was so good.
- so when I wanted a drink today I wanted it to be that but because we were on campus the nearest mucas was far and I settled on mango juice because it was healthier and better. but I still wanted the drink from mucas.
- had no more classes so walked back home with my friends.
- one of my friends wanted to browse

groceries (WE DIDN'T WANT TO STUDY) so we dropped our bags off and went grocery shopping.

- I had an assignment due that day and I worked on it after we got back.
- one of my friends recently learned how to drive and wanted to take us to the mucas drive thru for food. but because on my assignment we moved the drive to 10:30.
- I wasn't looking very forward to the drive because it was too late, but I was up for anything because I had just finished an deadly assignment :)
- we left and got the food after half an hour wait because it was midday right and the mucas there is right next to a bar.
- FINALLY GOT THE STRAWBERRY MILKSHAKE :) Highlight of the day.
- we also had food by clover beach.

DAY-2 (21st October, 2023) Saturday

- wake up motivated to finish a assignment that was due on Sunday
- the easiest unit I have and it was easy marks so I started it out with the group members.
- my group members consist of my friends so we met at one of our friends apartment.
- we planned to meet at 2, but ended up meeting at 6.
- I was hungry at like 1:30 PM so made the easiest thing I could (carbonara chicken noodles with an omelette).
- I went to the apartment after having lunch and there one we decided to get korean coffee.
- I was sitting at the couch since 2:30 till 7:30 after having the coffee

DAY-2 (21st October, 2023) Saturday

- I was very hungry and was a bit frustrated because I was trying to type on my keyboard but a lot of keys don't work and it made it hard to finish the assignment.
- I had to copy and paste a lot of things and I don't work on my keyboard.
- My back was hurting because I was sitting on the couch and was working on my laptop in a very cramped space.
- this did not let me focus on my work.
- I went out for a snack, I got two chocolates.
- I was still very hungry and then we decided to order indian food.
- Usually we don't get spicy food in Sydney but this time was different.

DAY-3 (22nd October) Sunday

- The food was the best Indian food I've had in Sydney.
- After that we didn't study but just ended up catching up with each other because we hadn't met in a while and chilled.

DAY-3 (22nd October) Sunday

- woke up late and wasn't hungry for breakfast.
- Immediately started working on the assignment
- I had to proof read it and add my part in and submit it for our group.
- It was a bit annoying because we had to do testing for the same code for different tables and it was the same thing over and over again.
- I got done with this and then watched a lecture that I wouldn't watch like so finished that and by the end of it, it was already time for dinner.
- I was with my friends and we usually end up getting TACO BELL and we hadn't done it in a while so I suggested it and everyone was up for it

my friend and I walked to central to get the food but we took the train back.

- we all ate food together and watched an episode of HIMYM.
- before I ate food I was low-key sleepy and didn't want to watch the lecture
- but after eating the food I was energized again and got back to studying with a fresh mind.
- This time I tried a new burrito and absolutely loved it
- I don't usually try new things but then I tried a new thing and it was really good.
- I was satisfied after having that.
- Then after a while I went to sleep.

DAY-4 (23rd October) monday

- woke up around 9 AM and was motivated for the day.
- I had work so I wanted to get a lot of studying done before I could leave, because it takes up a lot of time to get back from work.
- I had a goal to complete before 2 PM and I got most of it done by 1.
- I took a quick break at 12 to have lunch. I made the easiest dish (Skin ramen with a chicken nugget)
- It was my first day of work at a new school, but I was excited because I was working with my best friend.
- There were very cute children in my class, which literally made my day.
- After that we met another one of our friends at town hall and got dinner.

- But before that we got sundae for just the two of us.
- we were waiting for our friend and in that time we decided to do some shopping.
- we got back and got food for the rest of our friends because we were gonna work on an assignment together.
- I got back and we had food and worked on the assignment
- we cut the burgers in four parts because we were being dumb.

DAY-5 (24th October) Tuesday

- woke up on time and wanted to cook food because I was still contemplating if I should go for my tut.
- I hadn't watched the lecture for this unit and had a lot to catch up on
- I went out to get groceries because I had nothing at home to cook.
- I needed my HDMI connected as well so I dropped by my friend's accommodation to collect it.
- By the time I was back I was too tired to cook anything and so ended up having strawberries with nutella.
- I wasn't very hungry the rest of the day till the evening when I took a shower because I had to go out to study with my friends

- They had kimbap at their accommodation so I had dinner there.
- I studied for a bit more time and ended up just chilling with my friends after studying.
- we were talking about research and future opportunities in jobs.
- Then I went back home and played minecraft with my friends online.
- It was a tiring day so I ended up sleeping right after.