

GROUP NAME: Script Squad

APP NAME: Vital-Sync

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1. INTRODUCTION

The Vital-Sync mobile application is new, breakthrough application aimed at improving physical health. Due to the health and fitness space being already saturated with existing applications, this paper aims to thoroughly research these current occupiers of the space. The applications considered in the paper are MyFitnessPal, Samsung Health, and MyNetDiary. For each application an overview, list of strengths and weaknesses, and how the application was potentially developed. Furthermore, a comparison of the 3 applications will be made, followed by a list of the best features to be implemented.

2. MYFITNESSPAL

MyFitnessPal is a free calorie counter app that helps users reach weight loss and other health goals. The application provides food tracking tools, curated meals, and exercise plans that can be customized to better suit your lifestyle (Sprintis, 2024).

2.1 Strengths

Many MyFitnessPal users love using this application as it has many advantages that is provided to its users like:

- Integration with Fitness Apps: MyFitnessPal is able to seamlessly link with many fitness apps.
- Extensive Food Database: Has an extensive food database and prompts user to input data (Healthify).

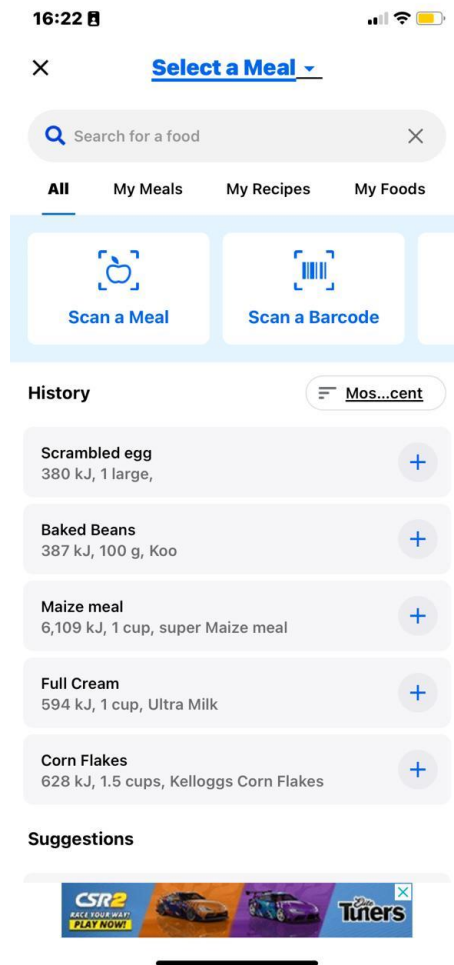


Figure 1: MyFitnessPal. 2024. Food Database. (MyFitnessPal, 2024)

- Diversity of Health Goals: Offers a wide range of health goals that the user can independently set.
- Tracking Nutrients: Tracks and analyses protein, carbohydrates, and fats in food (Sprintis, 2024)
- Insights Received from Data: The app provides insights based on the activity levels and calorie intake, which helps users make decisions that are informed. (Saye, 2023)
- Detailed Plans: There are plans available for the user to follow in order to stay motivated to achieving their goals, like meals and workout plans.

2.2 Weaknesses

- Calorie Counting: Constantly counting calories and weighing could potentially be triggers for eating disorder.
- Ads in Free Version: The free version has distracting ads when using the app (Sprintis, 2024).
- Premium Subscription Features: Scanning your meal by taking a picture of the food or the barcode is only available on the premium subscription (Healthify).

2.3 Implementation of app based on Android Studio

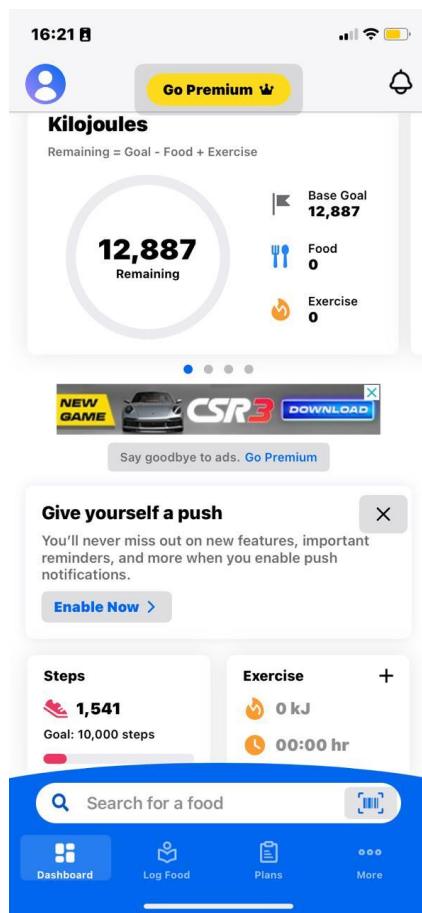


Figure 2: MyFitnessPal. 2024.
Dashboard. (MyFitnessPal, 2024)

There is a use of vector drawable assets for icons and images to enhance the design visually. With the use of XML layouts, such as ConstraintLayout for creating efficient user interface designs (AbhiAndroid, 2024). By connecting Application Programming Interface(API) you can fetch new food data and information from health apps. Use of

a database like Firebase in order to store different types of food data, like proteins, carbohydrate, fats, and sugars (Clark, 2024). Using Fragments and Bottom Navigation Bar, in order to use the app efficiently. Finally the use of ProgressBar and Graphs to display progress on remaining Kilojoules goals and steps taken in a day (bibeksah36, 2021).

3. SAMSUNG HEALTH

Samsung Health is a health and fitness application developed to provide users with insight into their physical wellbeing and provides an avenue to help develop healthy habits (Painter, 2023). The application is best to be used in conjunction with the Samsung wearables, which come in a variety of sizes (Cimino, 2024). The Samsung Health application allows the user to set personal goals, review statistics, track steps, sleep and water intake. These features make the Samsung Health application the go to fitness seeking to maintain a healthy lifestyle.

3.1 Strengths

The Samsung Health Application is loved by many users due to numerous advantages it provides its users. This section is going to show the strengths.



Figure 3: SamsungNewsroom. Track, Manage, Improve: Better Health with S Health App. (Samsung Newsroom, 2015)

- Detailed, and holistic tracking: According to Cimino (2024), the Samsung Health Application as shown in Figure 3 provides a wide variety of tracking options. It is not limited to exercising, but can also track body composition, stress and sleep in a single application.

- **Pleasurable User Experience:** The Samsung Health Application presents data in an easy-to-read manner (Fedewa, 2022). Making the entire application user friendly to any new users and does not require any pre required knowledge before the initial use.
- **Phone Compatibility:** According to Fedewa (2022), fitness application is not exclusively made to operate only on Samsung devices. The Samsung Health Application may be found on the IOS store and is not limited to android devices only (Fedewa, 2022).

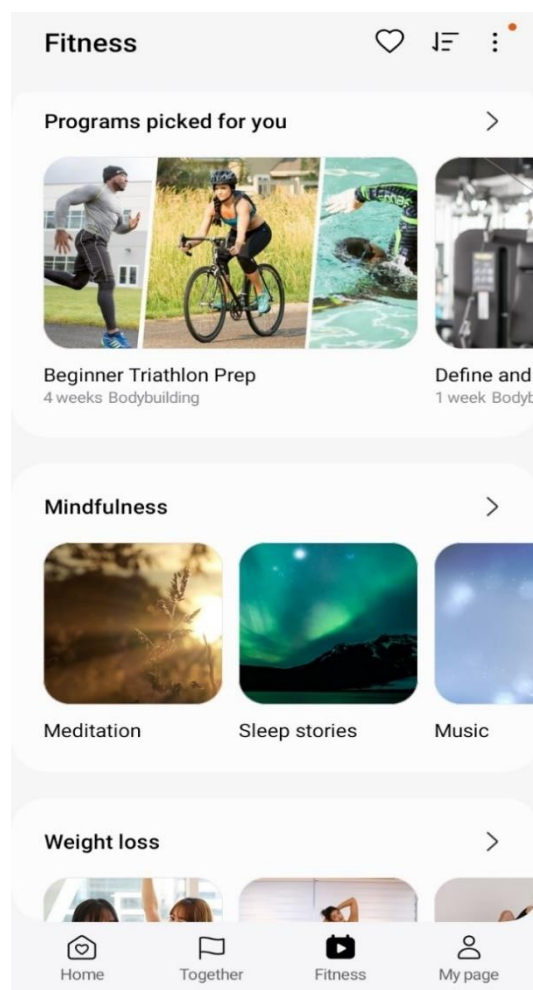


Figure 4: Samsung. Samsung Health App Fitness Coaching Program. (Samsung, 2024)

- **Personalised Coaching:** The Samsung Health Application provides users with tailored coaching plans and routines (Cimino, 2024). As per figure 4, the programs provided address a need the specific user has.

- Health Community: The Samsung Health App allows for users to form communities by befriending specific users, which allows the users to form fitness communities (Fedewa, 2022).

3.2 Weaknesses

- Limited Third-Party Integration: The app has limited support for third-party apps, which can be a drawback if you use multiple fitness platforms (Painter, 2023). According to Painter (2023), the most recent Samsung Health updates have made syncing with other applications much more difficult. Whereas in the past, the syncing was a simpler process.
- Data Accuracy: Some of the data gathered by the application tends to be inconsistent, or inaccurate, particularly the sleep and the user's heart rate (Cimino, 2024).
- Battery Usage: Due to the wide variety of features and data tracking, the application also uses more battery than regular fitness applications (Cimino, 2024).
- Complexity for Beginners: According to Cimino (2024), the variety of features may be overwhelming to new users, who may not be knowledgeable enough to understand how to use the application optimally.
- Compatibility Limitations: The Samsung Health Application can be used with other non-Samsung phones, however Cimino (2024), stated that the application does not contain all the features when used with non-Samsung devices.

3.3 Implementation of app based on Android Studio



Figure 5: Jeet. How to start using Samsung Health on your Galaxy smartphone. (Jeet, 2020)

According to Figure 5, the Samsung Health Application has a bottom navigation bar to go to the different screens. The different screens allow for large data sets to be scrolled through, therefore indicative of a recycler view model being used (ayushpandey3july, 2022). The application may also combine the use activities and fragments to show various screens in the application. According to Clark (2024), the database that was used may have been Firebase, which allows the user to store the user's information, friends, exercises and activities data.

4. MYNETDIARY

MyNetDiary was listed as the best calorie counting application by Forbes in 2022. The application is centred around tracking the user's diet to ensure that they meet their dietary health needs and goals (Roy, 2022). The application offers features such as food logging, meal planning, and a personalised coach, who offers advice on nutrition (Roy, 2022).

4.1 Strengths

- User-Friendly User Interface(UI): According to Roy (2022), MyNetDiary has an easy to use UI making it easy to traverse across the different screens to log nutritional data.

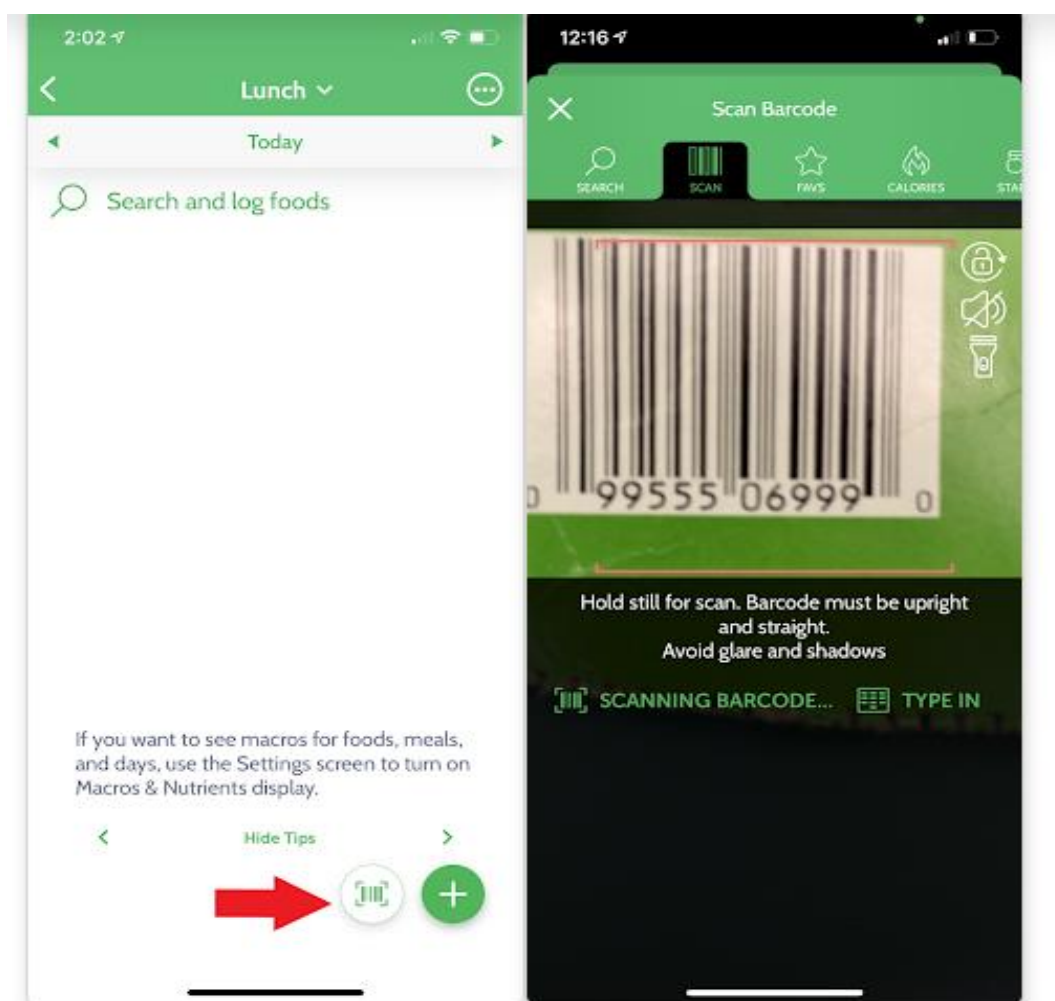


Figure 6: MyNetDiary. Barcode Food Scanner. (MyNetDiary, 2023)

- **Extensive Food Database:** The food database is so wide that it makes the food scanner feature shown in Figure 6 feasible (Quintero, 2023). The wide database has over 1, 250,000 food entries (Quintero, 2023).
- **Virtual Diet Coach:** The virtual coach is excellent and helps guide users who may not know necessarily where to begin with their fitness journeys (Roy, 2022).
- **MyNetDiary Community Support:** According to Quintero (2023), the MyNetDiary community offers users a community where they can be actively involved with where they can motivate one another along with registered dietitians.
- **Customizable Targets:** Users are allowed to set their own goals which may vary from user to user in the MyNetDiary application, for them to personalise their experience (Roy, 2022).

4.2 Weaknesses

- **Premium Wall:** Several great features found on the MyNetDiary application require the user to be a premium user, which requires payment (Roy, 2022).
- **Virtual Coaching Limitations:** According to Quintero (2023), the virtual coach is not an actual human being which makes the personalisation and customisation of the meals the users are given limited.
- **Potential Over-Reliance:** MyNetDiary users are at risk of not knowing how to watch their own nutrition without using the MyNetDiary application (Quintero, 2023).

4.3 Implementation of app based on Android Studio



Figure 7: Mr Free Tools. MyNetDiary. (Mr.Free tools, 2023)

Figure 7 shows that a variety of pictures are shown on the initial pages of the application. This can be implemented by using Recycler views to store and show the various images with the associated text (tanmay_patil, 2024). And the final frame of Figure 7 shows the food barcode scanner feature, which first requires permissions to use the phone camera. Then the barcode is to be with the wide food database, which could be like Firebase where all the records are stored to be used in the application (Google, 2024).

5. COMPARISON OF ALL THREE APPS

Similarities

All the three apps, MyFitnessPal, Samsung Health, and MyNetDiary provide users with features to be able to track different aspects of their health and wellness. They also all provide some tools for calorie counting and food tracking (Sprintis, 2024).

Differences

While the applications share a common ground of sharing health metrics, they all become unique when it comes to looking into their primary focus and the depth of the app's features. With MyFitnessPal, it specializes in managing weight and counting calories, with that information it offers a personalized insights and goals based on the user's data (Sprintis, 2024). Then with Samsung Health, it has a broader approach which incorporates sleep tracking, exercise, and stress tracking all while making sure the user experience is great (Healtha, 2024). Finally with MyNetDiary it is specifically tailored for diet management, while providing a comprehensive food database which is highly supported by dieticians (MyNetDiary).

6. BEST FEATURES TO INCLUDE IN VITAL-SYNC

After comparing MyFitnessPal, Samsung Health, and MyNetDiary we found the best features to include in our application is having a reminder notification bell. This bell will give the user reminders to help them stay on track with their dietary goals.

Next is having a content and community section, this is where the user is able to access articles about fitness and diet tips, participate in community challenges, and receive personalized meal and recipe suggestions based on the preferences and goals.

7. CONCLUSION

The Vital-Sync application is an application already stepping into a saturated market. This means that ideas and concepts can and should be adapted from existing applications such as MyFitnessPal, Samsung Health, and MyNetDiary. And once comparisons were made between these applications, the best features were chosen to be adapted to create the Vital-Sync application.

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