Problem Statement

In the post-pandemic era, people have become more conscious about health and mental health related issues due to the effects of COVID-19 on the body and also the effects of quarantine on the mind. However, even with more awareness towards health and mental health, people are still clueless on how to manage their health and mental health effectively. So, how can we tackle this problem?

With the prevalence of mobile phones in this digital age, the most effectively solution would be to make a mobile app as it gives people a way to monitor their health and mental health more easily. Due to the constraints of time, I have decided to mainly focus on two main aspect which are sleep and exercise. Sleep and exercise are both essential to the health of the body and state of the mind. So, why sleep and exercise specifically?

Without sleep, a person’s health will start to deteriorate as their immune system starts to weaken as they continue to forgo sleep. Health issues will soon follow a weakened immune system. This covers the health aspect of the issue. But, what about mental health? Without sleep, a person cannot function properly in their daily lives as they cannot focus and stay awake. This will correlate to a decreased productivity in their lives and this may lead to feelings of inadequacy and frustration to self and the scorn of others especially by your coworkers and employers. Hallucinations have also been known to follow prolonged lack of sleep and this may cause a person to be in a constant state of fear and paranoia. These issues directly affect a person’s mental health and must be handled carefully. So, sleep is particularly important to our health and mental health.

On the other hand, exercise is also important in maintaining a person’s health and mental health. Without exercise, the body will become out of shape as the excess fats in the body are not burned through rigorous exercise. This issue is particularly common in the modern era, where the conveniences of life are just a finger-click away. This can cause a multitude of issues such as high blood pressure, diabetes and etc. A large body size will also impede the movement of said person and inconvenience their daily lives. This covers the health aspect of exercise. Now, let us study the mental health aspect. In this conforming world, society will often mock what is different from them. This is an issue because humans are social creatures and require human interaction to survive. A large body size is looked down upon and will invite ridicule by our peers. This will have detrimental effects on our mental health. We might feel sad, stressed, depressed and even suicidal. We might even adopt unhealthy practices such as excessive dieting and bulimia to lose weight faster. So, even mental issues will snowball into health issues. So, it is clear to see that exercise is also important to our health and mental health.

Going back to the mobile app, the app solves these issues indirectly by raising awareness of the user towards unhealthy practices in their daily lives, thereby motivating them to promote positive change in their lives. The app achieves this by providing a platform to record the daily sleep and exercise schedule of the user, allowing them to review their sleep and exercise habits more easily. By allowing the user to see an accurate representation of their habits, they may more easily identify issues such as a lack of sleep or lack of exercise. They may then be motivated to amend these issues and this will have a positive effect on their health and mental health.

The mobile app allows its users to record information about their sleep schedule such as sleep time and wake time. The sleep duration is calculated automatically from the given information and is then saved into the app.

There are more options available for a user to record their exercise schedule. This is due to the fact that there are a multitude of different options for exercising while sleep generally means the same activity for everyone. So, instead of having the same set of exercises for everyone, the app allows the user to freely add their preferred exercise and delete unused exercises. The app will also allow the user to directly set the calories burned per minute for each exercise as each user may burn through different amounts of calories depending on their body weight and effort put into the exercise. Users can specify the type of exercise performed in a specific day and the duration of each exercise. The app will then calculate the calories burned in that day and record the data.

For users to accurately review their sleep and exercise schedules, the app provides options such as lists, charts and statistics to accurately present and analyze the results. Users can view their sleep and exercise schedules in list or chart form. In the list form, users are also able to sort their data according to different attributes and in both ascending and descending order. For the chart form, users are able to see their sleep and exercise schedules in temporal order and this will help the users to spot patterns or trends in their schedules which may be positive and negative and take appropriate action. For statistics, users are able to see results such as average sleep time, average exercise time and average calories burned. These results may be useful to the user as they may use these results to gauge their progression such as seeing if the average exercise time increases.

The app also comes equipped with a mp3 player. This addition increases the functions of the app and makes it more than just a health monitoring app. Music has also been proven to have a positive effect on mental health as it helps to relieve stress. An improved mental health will also have positive effects on our physical health. Users can freely listen to music before they sleep, during their exercise or any time they want. Users can also import their own songs to the app and also create their own playlists of their favorite songs.

So, it is clear that my app helps in improving and maintaining health and mental health of its users. My app achieves this by raising awareness of the user towards any unhealthy habits in their daily lives by providing a platform to record and display their daily sleep and exercise schedule.

Assumptions

The app assumes that its users have adequate deductive reasoning skills as no tutorial is provided. Users are expected to fumble their way around the app themselves and deduce the functions of each page through the words and images shown. So, the app is designed to be as intuitive as possible.

The app also assumes that the user is reasonable about the usage of the app. This means that the user will not input invalid values into the app such as a wake time earlier than their sleep time and an exercise schedule more than 24 hours long. The app provides some safeguards against these invalid attempts but it is much better if the user is reasonable.

The app also assumes a small amount of data. The app is not designed for large datasets numbering in the millions. A large dataset may cause lag in the app and may affect user experience.

The app also assumes that the user will give permission to read and write external storage data as it requires this permission to import new song files into the app and change song names.

Concern and Challenges

The main challenge of this app is time. The functions detailed in this app are numerous and are not simple to implement. With enough time, the app is expected to be able to be completed. However, I have to balance my time with other subjects and this may negatively impact the production of this app.

Other than that, some of the functions detailed in the app are also quite complex and may be quite difficult to implement and may negatively affect the production of the app.

Furthermore, the app also has to move files from the phone and the implementation of these functions may be difficult.

Finally, the app also has to create and maintain a database and it may be difficult to implement.

Resources and Implementation

The app requires github resources to implement the bar chart as the base functions in Android Studio do not provide bar chart functionality. The bar chart is used to display the user sleep and exercise schedule overtime so that a habit or trend may be more easily discerned.

The app also requires access to a database to store the results.

The app also uses list view, recycle view and expandible list views to display the data.

Motivation

My motivation to complete the app is so that I can make a difference in the world. I want to be able to help even a single person in improving and maintaining their health and mental health.

Other than that, I am also motivated to make the app because I can improve my programming skills.

Furthermore, this app also looks interesting.

Finally, I want to get a good mark.