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Care+ A FITNESS APPLICATION

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ABSTRACT:

Smartphones and tablets are gently but surely altering our health and exercise habits. Many high-quality mobile apps are now accessible for users and health-care professionals, and they cover the entire health-care chain, including data gathering, prevention, diagnosis, treatment, and monitoring. Care + is a mobile health and fitness app developed by our team. A Workout App End-user acceptance of health apps is discussed. We talk about how mobile health apps will be delivered in the near future, the use of Personal Health Record (PHR) platforms like Microsoft HealthVault, and the FDA's impact on the future of mobile health apps.

I.INTRODUCTION

A. Introduction

We have smartphone applications for everything in today's digital environment.

The popularity of health and fitness applications has exploded in recent years.

Because of its simple functionality upgrades, these applications are a significant instrument for all fitness enthusiasts and those who don't attend to the gym or exercise often. They support them in exercising consistently.

Wellbeing and fitness application improvement has gone quite far toward shutting the hole by giving connecting with and innovative answers for human worries..

B. Aim & Objective

- The goal of my app is to create something useful for gym goers and individuals who exercise in general who want to keep track of their exercises and achieve their fitness goals.
- The app's graphical user interface should be appealing to the user in order to entice them to utilise it.
- It should be easy to use regardless of the user's previous experience with programmes.

C. Motivation

Everyone wants to live a healthy life. However, not everyone finds it easy to stick to a training routine. An app that can assist individuals achieve their fitness goals could be a solution for them. These kinds of apps have made fitness and nutrition solutions accessible to everyone. People lose interest after a while since it is too time consuming to use many apps and keep track of everything. People are becoming more health-conscious, yet many do not have the time to dedicate to going to the exercise center consistently.

II. LITERATURE SURVEY

M-Health application frameworks are being developed in China to deal with the country's ageing population and rising number of chronic patients, according to pool and Zhang.

Mobile device-based development of a four-layer application.

They described wearable intelligent sensors and a personal health care information system using blood pressure as an example.

The framework's purpose was to provide a set of core classes that could be used to accomplish fundamental functionality in M-Health apps.

A.   *Existing System*

To locate your niche in the massive health and fitness sector, it makes sense to conduct extensive competitor research. To get you started, here are four of the most popular fitness apps, as well as why we love them.

Fit:

Google's fantastic fitness app is a terrific place to start if you're looking for some motivation. This software is likely to have all you'll require.

Runtastic:

Among the most popular among runners and athletes. This software contains everything an athlete may desire for their exercises (unless you have a better idea?).

Lifesum:

An app for everyone, whether you're trying to lose or gain weight. To live a better life and achieve your fitness objectives, you can use the app to track your food and activity.

B.   *Problem Definition*

The majority of users must use multiple applications to track their physical activity, perform workouts, exercises, and diet planning. People lose interest after a while since it is too time consuming to use many apps and keep track of everything. People are becoming more health-conscious, yet many do not have the time to dedicate to going to the exercise center consistently. Working people all around the world use health and fitness tracking applications for this reason. Your body activity is analysed by the fitness app, which then recommends the workout and duration of your next session.

III. DESIGN AND IMPLEMENTATION

A.   *Proposed System*

1.   Water Tracker

Dehydration is a prevalent problem among the elderly, and it can result in significant consequences and even death. Patients admitted to the hospital for dehydration have a 17 percent mortality rate after 30 days and a 48 percent mortality rate after one year. Even after controlling for confounders, elderly dehydrated hospital patients are six times more likely to die than those with normal hydration. Hypertonic dehydration (water loss caused by insufficient intake, sweating/evaporation, or vomiting), isotonic dehydration (salt and water lost equally, typically caused by diarrhoea), and hypotonic dehydration (salt loss caused by diuretics) are the three types of dehydration. Seniors are more susceptible to hypertonic dehydration due to a variety of factors including decreased fluid intake and increased output. In seniors, the total amount of water in the body decreases by 10–15 percent, making them vulnerable to slight volume variations. Seniors' thirst reduces as they age, and they have more trouble concentrating pee in the bladder. When a healthy young person restricts their fluid consumption, their urine production decreases as well; however, this is not the situation for the elderly. Chronic renal difficulties, which cause electrolyte abnormalities, are more common in older persons; however, these abnormalities can also develop without renal problems. Dehydration can cause dizziness, seizures, and even death. Excessive urination can be caused by medications like diuretics, which are widely recommended for heart failure and some kidney problems. This can result in fluid and salt loss. Furthermore, some dementia patients forget to drink, while others decline to drink since they fear becoming incontinent or urinating too frequently. Drying out in seniors can likewise be brought about by other causes such as swallowing difficulty, ambulation issues, and dexterity.

2.   Workout Plan

Most existing fitness and nutrition applications for kids, teens, and adults only include a few effective behaviours change approaches, limiting their ability to help people modify their habits. Nonetheless, these apps are popular, and users consider them to be useful and effective. There is a need for further information obtained through population-based studies on app usage patterns, perceived utility and advantages, and connections with health behaviours and BMI.

The mechanism via which nutrition and fitness apps influence behaviour should also be investigated in order to better understand the potential effects of such apps on health behaviour. Although most fitness and nutrition apps do not explicitly alert users to their behaviour, they do include features that focus on key behavioural variables. The attitude to eat healthy, behavioural control, social norm, and social support are all important intermediary drivers of healthy eating habits in teenagers. Adolescents' eating habits are largely influenced by their health, taste, appearance, and health concerns. In a study of intermediate determinants in adults, it was discovered that using fitness apps was linked to a lower BMI via better self-efficacy and exercise levels.

The essential objective of this study was to investigate the usage of fitness and/or nutrition apps in adolescents, as well as the relationships between fitness and/or nutrition app use frequency and BMI, healthy snacking, and drinking behaviours (healthy snacking or beverage ratio). App use frequency was thought to be linked to a lower BMI and a greater healthy snack and/or beverage ratio. Adolescents may use both exercise and nutrition apps, though not always to the same extent, therefore the combined impact of fitness and nutrition applications was taken into account. Second, the goal of this study was to see if major behavioural factors of healthy eating mediated the relationships between fitness and/or nutrition app use and BMI, as well as the healthy snack or beverage ratio. In this study, perceived behavioural control to eat healthy, attitudes to eat smart for the great taste of quality food

varieties, general health, and appearance, social norms on smart dieting, and social help to practice good eating habits were investigated. It was expected that more regular usage of these applications would be linked to higher scores for the variables indicated above, which would lead to a lower BMI and healthier snacking and drinking habits.

3. Gesture recognition

Physical workouts at home, such as weight training and physiotherapy stretching exercises, necessitate proper execution and knowledge of the exercises. Because of the absence of an actual mentor, one of the biggest issues with doing workouts at home is that there is no sufficient supervision and feedback to align the exercises to the correct movements. This study examines how a system, Fitness Mate, was developed and implemented to allow users to perform physical workouts without the assistance of a personal trainer. The system was created using Visual C#, Matlab programming language, and the Unity game engine. The major goal is to create a home-based setting where people can engage in physical activity without the assistance of a personal trainer while avoiding serious injuries.

Due to the COVID-19 pandemic and stay-at-home directives, at-home fitness has exploded recently. This resulted in a huge number of first-time gym members and structured training programmes. It's becoming increasingly difficult to find skilled fitness trainers who can guide beginners through good exercise form. According to the National Safety Council (NSC), exercise-related injuries caused roughly 468,000 injuries in 2019 before the pandemic. This number is only going to rise without competent guidance. As a result, technologies to track exercise performance are required for both short- and long-term injury prevention. We propose Verum Fitness, a revolutionary mobile app that uses the camera on a smartphone to record a user conducting an activity. We can utilise the FIS to offer a detailed description of each repetition conducted in order to identify whether it is likely to cause harm and how to improve. The goblet squat has a training and test accuracy of 80.42 percent and 71.67 percent, respectively, as well as good sensitivity and specificity, according to our synthetically generated data.

4. Voice assistance

Digital voice assistants offer a novel way to browse and engage with the internet. We may now speak and listen to our electronics as if they were human assistants. The convenience of using our voice, on the other hand, comes at a cost: audio of our speech is sent to the cloud of the service providers on demand, where it is stored and processed at their discretion. These speech data contain more information about us than plain text, including aspects of our voice that can be used to identify us, as well as features of our mood and energy level that can be used to profile us in ways that may not be justified by the convenience we receive in return. The General Data Protection Regulation (GDPR) gives users control over their personal data to mediate between their interests and those of service providers. We show in this study that speech data qualifies as personal data under the GDPR; yet, service providers can work around the legislation in practise, making it appear ineffectual. This is problematic, considering how aggressively voice assistants are pushed to market by firms that, according to many reports, are driven by surveillance capitalism goals to control user behaviour.

VAs such as Siri, Alexa, Google Assistant, Cortana, and Bixby are growing increasingly popular among the general public. They are used by a vast group of people who speak English as their first language (native speakers) as well as the individuals who utilize English as a subsequent language (secondary English speakers) (non-native speakers). However, very little is known regarding the usability, acceptability, satisfaction, and usage pattern of the VAs between these two groups of users from the end-user perspective. The objective of this study is to check whether there are any differences in general usability and satisfaction with VAs between these two groups of users. A mixed methodology approach is used to address the study questions, which includes an online questionnaire survey as well as real-world testing of the VAs. The experiment is being undertaken in Thailand with 275 participants from 7 different nations for the questionnaire phase and 52 users for the testing phase. Because Siri and Alexa are the two most popular virtual assistants in Thailand, they are used as VA representatives. The outcomes demonstrate that there are no critical differences in usability between the two user groups, but there are considerable variances in satisfaction levels.

Data Flow Diagram for Fitness App

DATA FLOW DIAGRAM
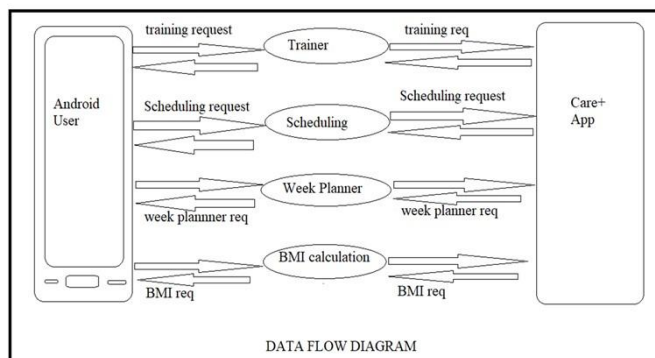
Block Diagram

Block diagrams are frequently used for high-level, less-detailed descriptions that are intended to illustrate basic concepts while ignoring implementation details. Schematic diagrams and layout diagrams, on the other hand, are used in electrical engineering to represent the implementation details of electrical components and physical construction.
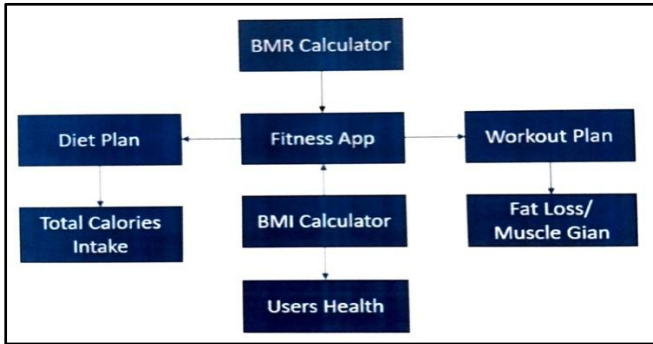
Flow Chart

Flowcharts are diagrams for creating and documenting simple processes and programmes. They, like other types of diagrams, help visualise what is happening and hence aid in the comprehension of a process, as well as possibly identifying less evident features such as flaws and bottlenecks.
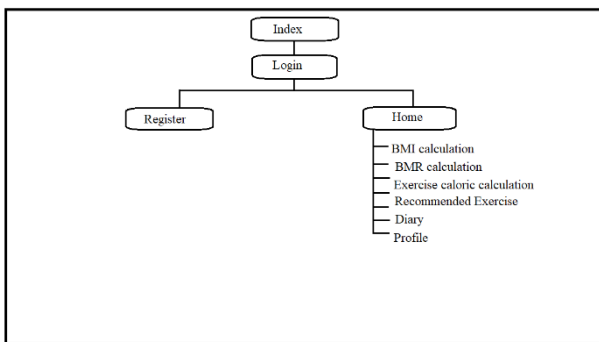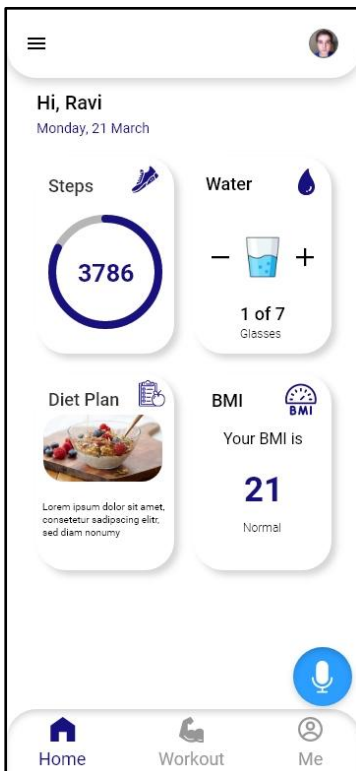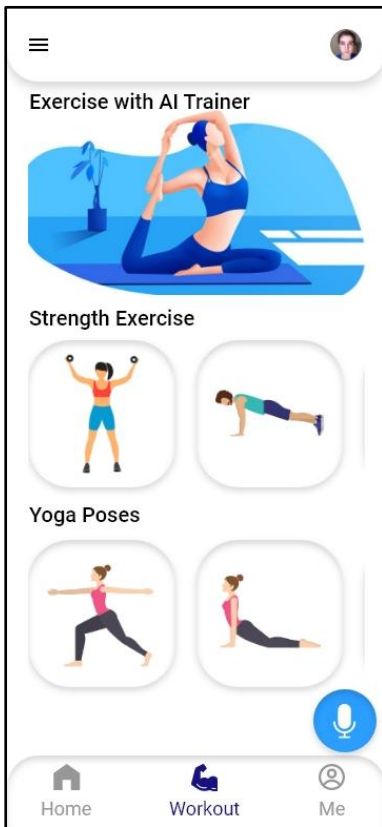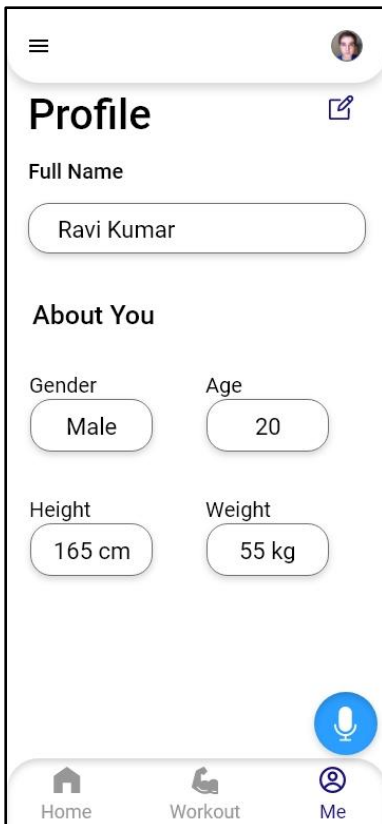

IV. RESULTS

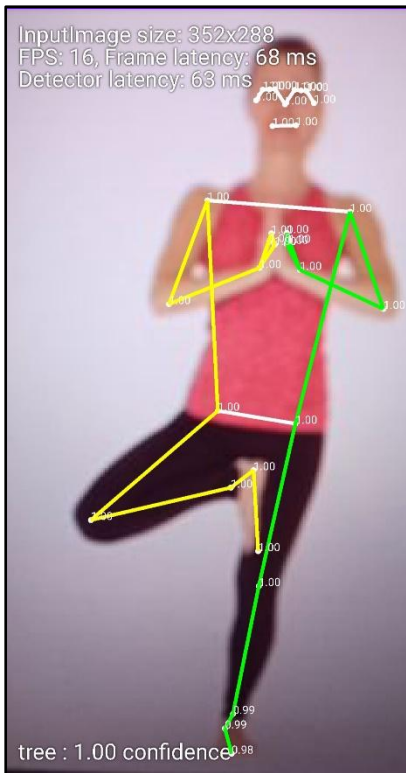
Fig 4.1

Fig 4.2

Fig 4.3

Fig 4.4

V. FUTURE SCOPE

This project can be improved to provide more flexibility and performance by making minor changes as needed.

- Water drink reminder
- Diet plan
- Workout plan – beginners, intermediate, and advanced
- Voice aid
- Calorie intake count

VI. CONCLUSION

App use and efficacy appear to be linked to the utility of the app and the perceived difficulty of exercising. Health behaviour theories may help to guide app development and make it more valuable and easier to use.

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