

Power Plus

A Fitness/Yoga and Diet Software System to Improve the Health of the People

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Abstract—Nowadays, there is a downward trend for physical health. People are getting weaker and/or more obese as time goes by due to the lack of physical activity and growing technology. This can cause body pain, less stamina and weakening of muscle. Thus, Exercise and proper diet is essential now more than ever to maintain proper health. This software system aims to improve health by offering a comprehensive fitness and diet solution for individuals seeking to improve their health.

Keywords—yoga, physical health, dart, flutter, firebase, SQLite,

Maintaining a healthy lifestyle is increasingly becoming a common aspiration in the modern world, but finding personalized guidance can often be challenging. Our mini-project, "Power Plus," is a user-oriented diet and fitness application that is designed to bridge this gap. The app empowers users by utilizing their input on health goals, dietary preferences, and fitness aspirations to curate tailored workout routines.

I. INTRODUCTION

Overweight and obesity is found to be a global epidemic, mentioned by World Health Organization (WHO). It is also depicted as the "New World Syndrome" [1]. Obesity and overweight are the common cause of high blood pressure, high cholesterol, type 2 diabetes, breathing problems, joint problems, and gallstones and gallbladder disease [4][5]. Exercise and physical activity trends to reduce weight and improve health.

II. AWARENESS/PURPOSE

Statistically, the problem of obesity has increased from 12–20% in men and from 16–25% in women over the last ten years [2]. People spending more time on their phone or on the internet and ordering junk food which can cause increase in weight and laziness. Current fitness and diet apps often focus on a single aspect of health, lacking holistic integration. Users can become overwhelmed with conflicting information and limited guidance. [4]

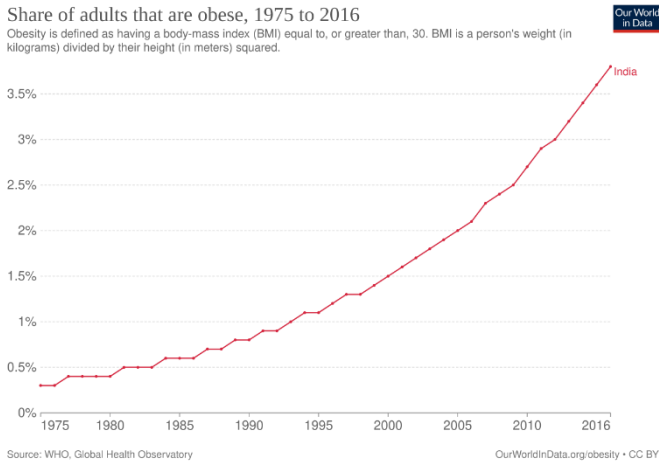


Fig 1. Chart on the obese from 1975 to 2016 by WHO, Global Health Observatory [3]

Many apps rely on static routines and lack adaptable features, making them unsuitable for varying needs and progress. Data privacy concerns and limited accessibility are additional challenges.

III. PROPOSED SYSTEM

Power Plus system will address these shortcomings by providing a platform for fitness, yoga and diet management. This platform will simplify the decision-making process for individuals with limited knowledge on where to begin by taking the user height, weight, BMI and experience to calculate a buff value for the user based on which the reps and durations of every exercise is changed to give user a customized experiences for every individual user. The application is developed utilizing such as Dart and its framework Flutter to make cross-platform apps for android and iOS. Firebase with firebase auth package is used for authentication, and cloud storage. SQLite is used with Sqfliter package for flutter as a local data storage using getDatabasePath function to get the default path of the database which enables smooth functionality even without an active internet connection. Android Studio is used as the integrated development environment (IDE), for coding, debugging, and testing, for developing, optimizing, and deploying the app. It uses google nav bar for to switch between exercise, yoga, diet and user profile. The exercise part contains a class each exercise is define with the exercise class then a nested list of exercise is the used to show different exercise plans that gets progressively difficult. This list used for daily plans and each exercise dynamically create its exercise view based on the properties of the exercise objects. User class object is used for tracking the progress of the user along with its

information taken from user the properties of the user along with their progress is store in the local database in ‘UserProfile’ table.

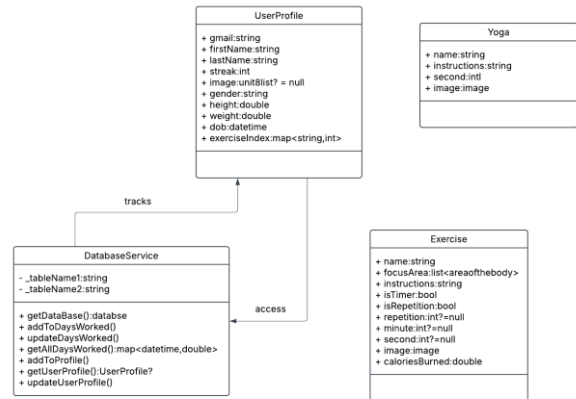


Fig 2. Class Diagram

The dishes in the diet app are fetched using spoonacular API which has a database of dishes and your can sort the dish based on calories, allergens, proteins, and other diet requirement this information is then send using spooacular API and dishes received accordingly. The user can select the dish they want and it also shows the health score of each dish you picked so the user need not require full understanding of diet to select the right dishes. Based on the user profile, the app will generate personalized workout plans that adjust according to user progress. The system will account for user experience level, body type, and fitness goals. Users can log their daily workouts and daily calories burned based on the calories burned values on each exercise it is stored in a map of data and double to accurately monitor the users progress and is store in ‘DaysWorked’ table. Calories burned chart is based on the highest value in that week and the other are adjusted accordingly. Users can select specific yoga styles like Hatha, Vinyasa, Ashtanga, or restorative. Users can choose monthly plains and go between them. The app allows users to select which part of the body they want to focus on like

- Arm
- Leg
- Abs
- Back
- Full body

The app offers healthy, easy-to-follow recipes that align with the user's diet plan and preferences like vegetarian, gluten-free, keto, etc. Recipes will also provide nutritional information for better tracking. Based on the user's fitness

goals, preferences, and dietary restrictions, the app generates a meal plan. Options could include:

- Weight Loss (caloric deficit)
- Muscle Gain (high protein, calorie surplus)
- General Health (balanced diet)

The Mobile app will have an intuitive interface with easy navigation. It will include:

- User-friendly dashboards for workouts progress, and lists grocery item along with the amount of those item for this dish.
- Recommend top recipe.

A cloud-based database to store user profiles, and a local device database to store workout logs, progress data, and grocery lists. Spoonacular API for finding recipes. Ensure all personal data is encrypted, and users have full control over their data. Flutter for cross-platform development (Android and iOS). Firebase for cloud database storage and SQLite for local data storage.

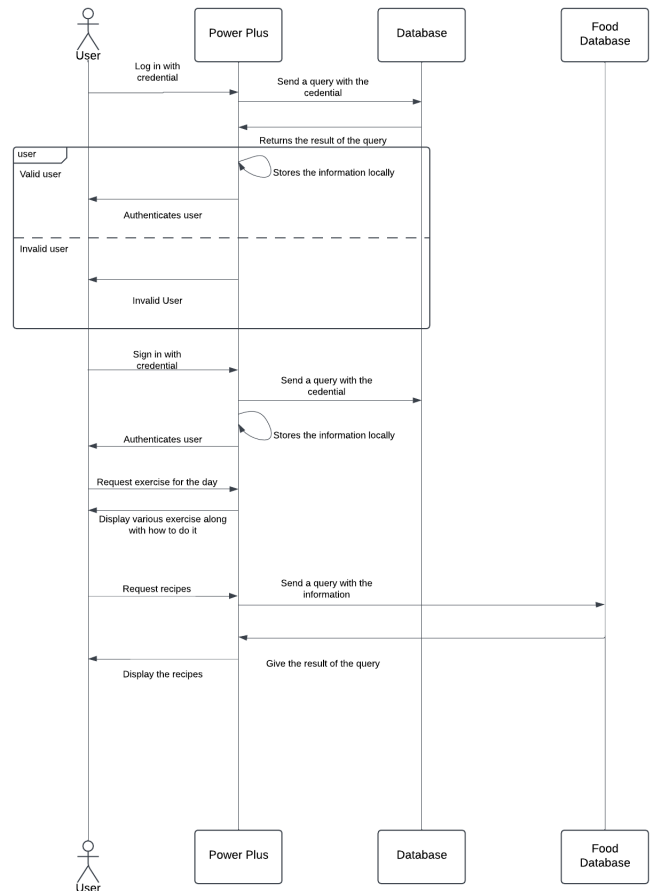


Fig 4. Sequence Diagram



Fig 3. Activity Diagram

IV. PROTOTYPE

The power plus app is designed to offer personalized workout plans by analysing the user's height, weight, gender and experience level. Whether the user aims to build strength, increase flexibility, or lose weight, the system provides a balanced combination of workouts. The Login/Sign Up system is used to store user data on the cloud and the rest of the information is stored in the local database and is used to customize the user exercise plain. Once the user does there daily plain that information along with the calories burned are stored and displayed

Yoga page that displays different yoga poses based on a list objects of yoga class, All the yoga poses in a scrollable format. Each item in the list can include an image, title, and description, allowing users to explore various poses effectively in the app. The on pressing the widget a page the show all the description on how to perform it is taken along with a timer to tell and keep track for how long the pose must be held.

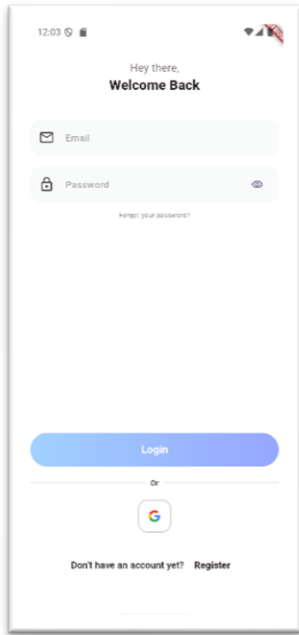


Fig 5. Login Page

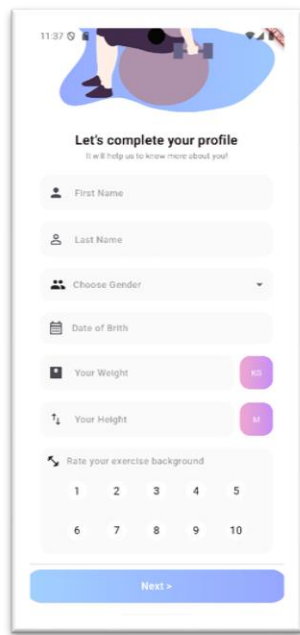


Fig 6. User Information and experience

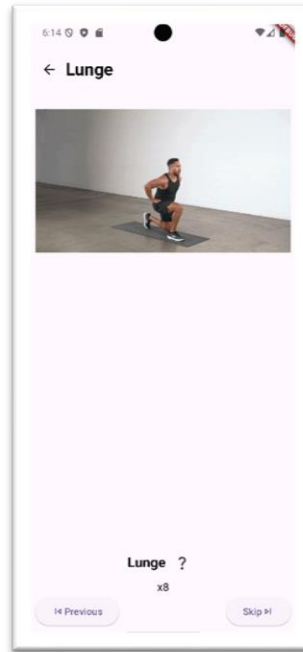


Fig 9. Doing Exercise View

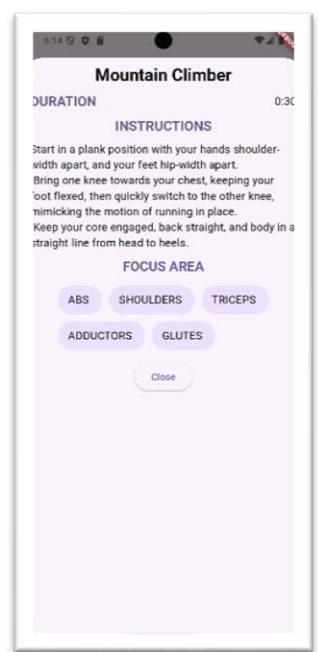


Fig 10. Exercise Description View



Fig 7. Exercise View

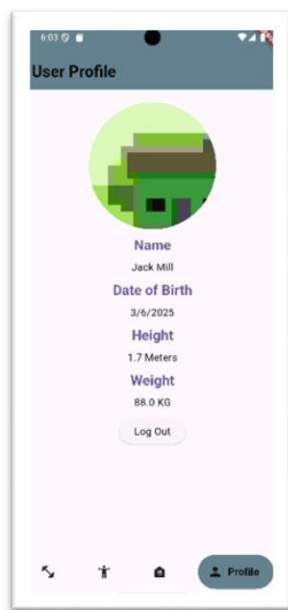


Fig 8. User Profile

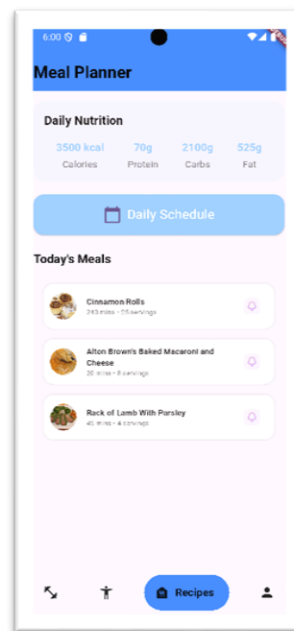


Fig 11. Meal Planner

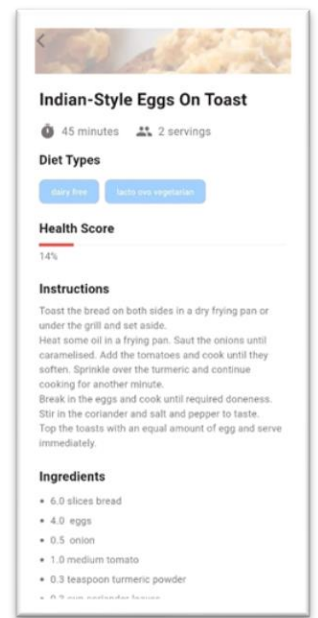


Fig 2. Meal Recipe

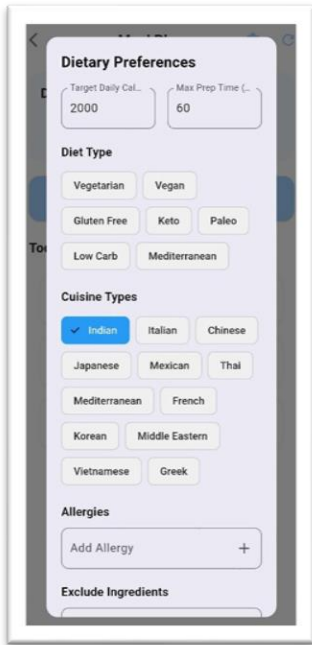


Fig 12. User Preferences

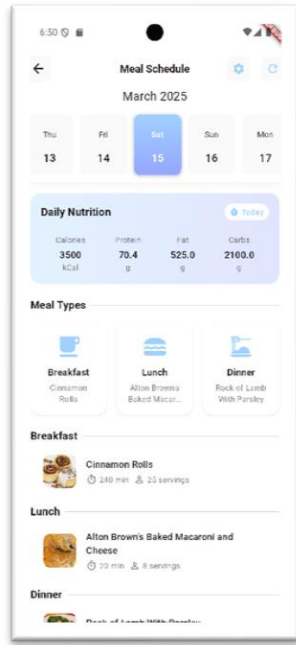


Fig 13. Meal Planner

A balanced diet is essential for maintaining good health and well-being. Therefore, diet feature of the software application is designed to provide users with personalized meal recommendations based on their individual goals, preferences, allergies, and nutritional needs. A healthy diet supports energy levels, strengthens the immune system, and helps with maintaining a healthy weight. Thus, the software also scores each dish based on their nutritional contents such as proteins, carbs, fats, etc...

V. CONCLUSION

This paper presents a solution to empower the user in achieving their health and wellness goals using a comprehensive fitness and diet app. The presented system helps the user by gathering essential user information during the login process, the app customizes a tailored fitness plan that adapts to individual needs, preferences, and health goals. It provides users with valuable insights to stay motivated and on track. This app also offers meal recommendations, ensuring that users receive balanced nutrition to complement their workouts and there by giving a almost perfect tool for anyone seeking to improve their fitness, diet, and overall health.



Fig 14. Yoga Selection

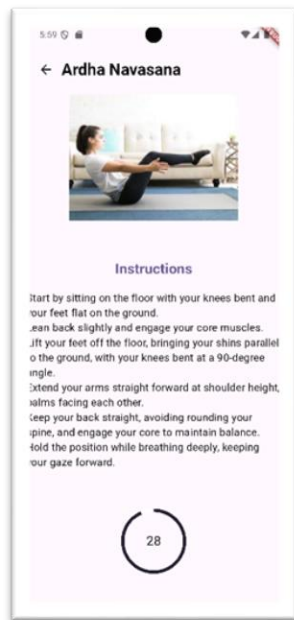


Fig 15. Yoga View

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