Project Synopsis
on

Mobile Application For Diet Recall

Submitted as a part of course curriculum for

Bachelor of Technology
in
Computer Science

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Guide Name & Signature
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ABSTRACT

In today's modern world people all around the globe are becoming more interested in their health and lifestyle. But just avoiding junk food and doing exercise is not enough, we require a balanced diet. A balanced diet based on our height, weight and age can lead to a healthy life. Combined with physical activity, your diet can help you to reach and maintain a healthy weight, reduce your risk of chronic diseases (like heart disease and cancer), and promote your overall health. A balanced diet is one that gives your body the nutrients it needs to function correctly.'

Our aim is to make a system that helps users to make personalized diet plans and recall them from their mealtime to time and help them to create a balance in overall calorie intake throughout the day. The system would remind the user daily to have their meal and with many options to choose from for a personalized meal plan for a day.

Also, the user will be able to choose any type of healthy food they want as per their convenience out of the options that will be there to them by the system. Our body uses calories for basically everything like breathing, walking, running etc. On average a person needs 2000 calories per day but specifically the intake of calories depends upon a person's physical aspects like weight, height, age, and gender. So, your food choices each day affect your health — how you feel today, tomorrow, and in the future. Thus, a proposed system gives required calories for a diet plan based on your physical aspects and your end goal.

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CHAPTER 1: INTRODUCTION

1.1 Introduction

➢ We are developing a Mobile application for diet recall.

➢ People all around the world, including in India, are increasingly focusing on their health.

➢ This is seen in the growing interest in fitness and nutrition.

➢ More individuals are adopting healthier lifestyles, engaging in various physical activities, and being more mindful of
➢ what they eat.

➢ This trend indicates a global shift towards prioritizing well-being and making healthier choices in daily life.

➢ Diet tracking involves collecting and analyzing data about your nutritional intake.

➢ By monitoring your diet, you can tailor it to meet specific health and fitness goals. This includes weight management, muscle building, or addressing nutritional deficiencies.

➢ Diet tracking enables you to ensure you're getting the right balance of nutrients.

➢ Regularly tracking your diet can help identify potential health issues early on.

1.2 Problem Statement

The problem statement for this project is that many individuals struggle to maintain a healthy diet and exercise routine due to the lack of a comprehensive system that can help them track their food intake, analyze their nutritional content, set fitness goals, plan workouts, receive guidance and support, and access meal recommendations tailored to their dietary preferences and fitness goals. This project aims to address this issue by providing a user-friendly and efficient platform that can help users manage their diet and exercise routines effectively, ultimately leading to improved health outcomes.

In today's lifestyle, people often struggle to maintain a healthy routine due to poor diet choices and lack of effective fitness tracking.

Existing apps focus on either diet or exercise, but there's a need for a comprehensive solution.

Our project aims to create an easy-to-use app that helps users track their daily food intake, understand nutritional content, set and achieve fitness goals, plan workouts, receive reminders, and get personalized support.

Current apps often lack features like goal tracking, customized workout plans, and meal recommendations, leaving users without a complete solution for their health and fitness needs.

Our project aims to fill these gaps, providing a holistic tool to support individuals in adopting healthier lifestyles and reaching their fitness goals.

1.3 Objectives

Our 8 Major Objectives of our project are: -
1. **Diet Tracking:** Enable users to record and track their daily food intake, including meals, snacks, and beverages, in a user-friendly and efficient manner.
2. **Nutrient Analysis:** Provide users with detailed information about the nutritional content of their diet, including calories, macronutrients (carbohydrates, proteins, and fats), and micronutrients (vitamins and minerals).
3. **Reminder and Notification System:** Implement reminders and notifications to encourage users to log their meals regularly, stay on track with their goals, and provide feedback or suggestions based on their recorded data.
4. **Goal Setting and Tracking:** Allow users to set specific fitness goals (e.g., weight loss, muscle gain, improved cardiovascular endurance) and track their progress over time
5. **Workout Planning:** Facilitate the creation of customized workout plans by allowing users to schedule exercises, set rest intervals, and design routines tailored to their goals and time constraints.
6. **User Support and Guidance:** Offer access to educational resources, workout tips, and guidance on proper nutrition, recovery, and injury prevention to support users in their fitness journey.
7. **Meal Recommendations:** Provide users with meal recommendations based on their fitness goals, nutritional needs, and dietary preferences. These recommendations can take into account the user's workout schedule and the specific nutrient requirements for pre-workout and post-workout meals.

8. **Recipe Database:** Develop a robust and diverse recipe database that includes healthy meal options suitable for various dietary preference(e.g., vegetarian, vegan, gluten-free) and fitness goals (e.g., muscle building, weight loss).

CHAPTER 2. LITERATURE REVIEW

The proposed project focuses on developing a comprehensive health and fitness application with eight major objectives, ranging from diet tracking to workout planning and user support. To contextualize these objectives within existing literature, a literature review is presented below.

Diet Tracking:

Existing studies emphasize the importance of food tracking for effective weight management and nutritional awareness. Research by Burke et al. (2017) highlights that self-monitoring of food intake is a key component of successful weight loss interventions.

Nutrient Analysis:

Nutritional analysis and its impact on health have been extensively studied. The work of Mozaffarian et al. (2018) suggests that understanding the composition of macronutrients and micronutrients is crucial for developing dietary recommendations that promote overall well-being.

Reminder and Notification System:

Behavioral interventions utilizing reminders and notifications have shown positive effects on adherence to health-related activities. A study by Free et al. (2013) indicates that timely reminders can significantly enhance users' engagement with health behaviors.

Goal Setting and Tracking:

Goal setting is a well-established motivational technique in various domains, including fitness. Locke and Latham's (2002) goal-setting theory supports the idea that setting specific and challenging goals can lead to higher performance and sustained effort.

Workout Planning:

Customized workout plans align with research advocating personalized exercise programs. A study by Bouchard et al. (2012) highlights the significance of individualized training to optimize fitness outcomes and adherence.

User Support and Guidance:

Providing support and guidance in fitness applications aligns with behavioral change theories. The Social Cognitive Theory, as proposed by Bandura (1986), emphasizes the role of social support and observational learning in shaping behavior.

Meal Recommendations:

Tailored meal recommendations have gained attention in the context of personalized nutrition. A review by Celis-Morales et al. (2017) suggests that individualized dietary advice can lead to better adherence and improved health outcomes.

Recipe Database:

A diverse recipe database contributes to the appeal of a health and fitness application. Studies by Brown and Hermann (2005) indicate that incorporating variety in meal choices positively influences dietary adherence and satisfaction.

CHAPTER 3: METHODOLOGY (Proposed Algorithm / Implementation Activity)

System Architecture Design:

Define the database schema for storing user profiles, dietary information, and workout plans.

Front-end Development:

Develop an intuitive and user-friendly interface for seamless interaction.

Back-end Development:

Create a robust back-end system to handle user data securely.

Reminder and Notification System:

Integrate a notification system to remind users to log meals, complete workouts, and stay on track with their goals.

Goal Setting and Tracking:

Implement tracking mechanisms to monitor and display progress over time.

CHAPTER 4: TECHNOLOGY USED

The successful implementation of the outlined objectives in the project requires a careful selection of appropriate technologies. Below is a list of technologies that can be utilized for each objective:

Diet Tracking:

Mobile App Development: Use platforms like Flutter for cross-platform mobile app development to ensure accessibility across different devices.

Database: Employ a relational database like MySQL to store and manage user's dietary information securely.

Nutrient Analysis:

Nutritional API: Integrate with nutrition databases or APIs like USDA FoodData Central or Nutritionix to fetch accurate and up-to-date information on food items.

Reminder and Notification System:

Push Notification Services: Implement push notification services such as Firebase Cloud Messaging (FCM) or Apple Push Notification Service (APNs) to send timely reminders and notifications.

Goal Setting and Tracking:

Data Visualization Tools: Utilize visualization libraries like D3.js or Chart.js to create interactive charts and graphs for users to track their fitness goals and progress.

Workout Planning:

Calendar Integration: Use calendar APIs to allow users to schedule and plan their exercises, ensuring compatibility with popular calendar applications.

User Support and Guidance:

Content Management System (CMS): Employ a CMS like WordPress or custom-built CMS for managing and updating educational resources, workout tips, and guidance content.

Meal Recommendations:

Machine Learning Algorithms: Implement machine learning algorithms to analyze user preferences, dietary requirements, and workout schedules to provide personalized meal recommendations.

Recipe Database:

Cloud-based Database: Store a diverse recipe database on a cloud-based solution like AWS RDS or Google Cloud Firestore for scalability and accessibility.

CHAPTER 5: ER Diagram of Project
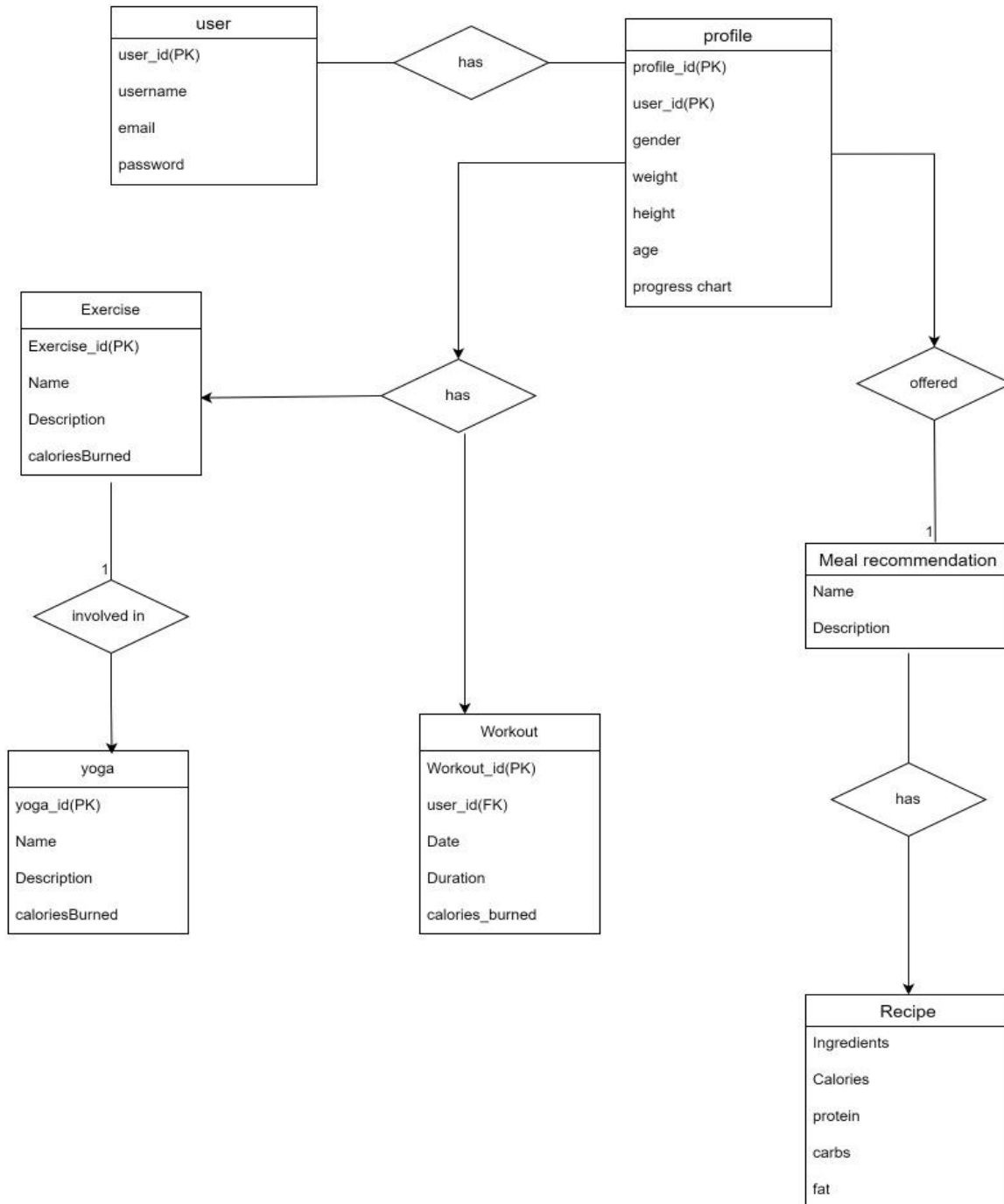
CHAPTER 6: Conclusion With Result

➢ In conclusion, our project is a success as it achieves its key objectives.

➢ Users can easily track their daily food intake, get detailed insights into nutrition, and receive timely reminders for consistency.

➢ Setting and tracking fitness goals are made simple, and customized workout plans cater to individual needs.

➢ The support and guidance feature, along with a diverse recipe database, enhances the user experience.

➢ It provides valuable information on nutrition, workouts, and offers meal recommendations, making it easier for users to adopt a healthier lifestyle.

➢ Overall, our project bridges technology with personal wellbeing, empowering users to make informed choices for a healthier and more balanced life.

➢ As we continue refining and improving these features, we aim to have a lasting positive impact on users' health and fitness journeys.

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