

Software Graduation Project Summary

Project Title: Health Mate

University: An-Najah National University

Faculty: engineering & information technology

Department: Computer Engineering

Students: Yaser Kharouf & Israa Issa

Supervisor: Dr. Asmaa Afeefi

Summary:

The Health Mate is a generic turnkey mobile and web application providing healthy lifestyle options through smart monitoring, AI-assisted analysis, and professional nutritionist consultation. The application was made to address the ever-increasing issues of lifestyle diseases such as obesity, diabetes, and cardiovascular conditions by giving the easiest way to track nutrition, exercise, water intake, sleep, and medicines by the consumer.

There are two types of users in the system: simple users who log in and track health parameters and nutritionists who log in and manage patient records, prescribe treatment plans, and schedule virtual consults. Some great features include AI-based food recognition, barcode/QR scanning for meal logging, and media alerts reminding users to drink water, exercise, or take medication. The system also provides charts and reports for data visualization, implementing Flutter as a cross-platform solution with RESTful APIs used for backend communication and MySQL formal data storage are the key technologies. The system employs security features like JWT authentication, data encryption, and role-based access control.

This app focuses on increasing user engagement in tracking their own health, producing effective nutrition tracking, and providing access to tools to assist in creating better habits. Nutritionists received updated resources like a visualization dashboard, appointment calendar, and progress tracking which led to more follow up with patients and allowed for less administrative responsibility. Users frequently identified the app as being great for food identification accuracy at 98%, it's ease of interface, and for making engagement motivating gamification through achievements and streaks.

Health Mate shows the idea that AI blended with mobile health technologies along with professional oversight could create a low cost and scalable digital health opportunity that is not trivial. This middle ground made available represents a significant benefit to users seeking healthier habits, and professionals providing individualized intervention, and towards more personal wellness and clinical outcomes.

Future Work:

1-Enhance the ability of AI food recognition models to distinguish between cuisines that differ according to region, and those that have diet-specific parameters.

2-Integrate more wearable devices, and integrate accounting for electronic health record systems to further improve their monitoring and synchronizing capabilities.

3-Add community features like forums, group challenge and nutritionist-led content.

4-Enhance accessibility including voice control, screen reader and UI for elders and non-technical people.