# Universiti Teknologi MARA

# Quick Track: Food Nutrition Analyzer

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**Thesis submitted in fulfilment of the requirements
for Bachelor of Information Technology (Hons.)
Faculty of Computer and Mathematical Sciences**

**July 2025**

# ACKNOWLEDGEMENT

# ABSTRACT

The mobile application project, *"Quick Track: Food Nutrition Analyzer",* was created to assist individuals in making healthier dietary decisions by providing swift and easy access to precise nutritional data via Quick Response (QR) code scanning. It was developed with three primary goals: (1) to identify the requirements for improving users' dietary habits through effective nutritional information; (2) to develop a mobile application that enabled consumers to quickly obtain calories and nutritional data by scanning food items; and (3) to evaluate how well the *"Quick Track: Food Nutrition Analyzer"* application satisfied users' needs for accurate tracking, engagement, and making healthier food choices. The mobile application was developed using Android Studio (Java/XML), while the admin site for managing food items and QR codes was created using Visual Studio Code with HTML, CSS, and JavaScript. The project utilized Firebase for backend services, incorporating Authentication for secure logins, Cloud Firestore for managing real-time databases, and Firebase Storage for saving food images. Following Agile development methodology, the project progressed through phases such as requirement elicitation, design, development, testing, and deployment. Initial studies and literature reviews guided the application's feature design by identifying key user needs, including quick access to nutritional information, simplified food logging, and visual progress tracking. The second objective was achieved by developing *"Quick Track"*, a mobile application that enabled users to scan food on QR codes to instantly access calorie counts and nutrition information, record their food consumption, and track dietary progress on a daily and weekly basis. The third objective was evaluated using the System Usability Scale (SUS), which revealed that all users found the application user-friendly, and 80% of 10 participants reported improved awareness and healthier eating habits after using the application. The average SUS score from ten users came out to be 82.5%, placing it within the "Excellent" usability category and at the extreme end of the SUS scale termed the "Best Imaginable". *"Quick Track"* is particularly beneficial for health-conscious individuals, fitness enthusiasts, and users with specific dietary needs, as it provides fast, personalized, and easily accessible information directly from food packaging's. While the current version is fully operational, future enhancements include offline functionality, multi-language support, AI-powered meal recommendations, and integration with third-party health and fitness platforms. Through the integration of mobile technology, QR scanning, and user-centred design, *"Quick Track"* offers a modern and effective approach to promoting better nutrition habits and increasing food awareness.

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# CHAPTER 1

## INTRODUCTION

This chapter overviewed the "*Quick Track: Food Nutrition Analyzer*" mobile application by describing its relevance to the solution of nutrition-related problems. The problem highlighted includes eating habits and access to nutritional information, and how this application contributes towards healthy living. The research questions, objectives, scope, and expected outcomes were also defined in the chapter, emphasizing the expected impacts of the application on better improvements of dietary habits through an innovative QR code scanning solution. Issues about platform and database limitations were discussed as well and opened ground to delve further into this within later chapters.

## 1.1    Background of Study

The fast-growing numbers of obesity, especially in children and adolescents, makes clear that we urgently need nutrition education and easily accessible tools and ways to help eating healthier. That's why *"Quick Track"* application is set up: it serves as an easily accessible means for users to obtain the specific nutritional contents of foods simply by scanning QR Code on food packages. Users acquire instant insight into calories, macronutrients, and essential vitamins of foods to promote healthier eating practices and better nutrition management. All of this should be achieved using modern technology when it comes to, most importantly, QR code scanning. By doing this, it makes nutritional information easier to access for individuals, especially those with busy lives. In fact, people involved in fitness, weight management, or anyone who is looking after himself in terms of diet benefit from this application by making them more health conscious about their choices and lifestyle. This chapter is a brief introduction to the project and its objectives, scope, limitations, and significance,