

**Universiti Teknologi MARA**

**WholesomePlate: Healthy Meals Monitoring System  
for University Students**

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## **ABSTRACT**

This thesis titled WholesomePlate: Healthy Meals Monitoring System is a web-based system designed to assist university students in managing their meals for a healthier lifestyle. The project addresses the challenges faced by students, including lack of time and limited knowledge and understanding in preparing nutritious meals, by offering a system that enables users to create weekly meal plans with healthy recipes. This system also provides real-time email notifications to keep students on track with their meal schedules, offers recipes tailored to specific health conditions such as diabetes and heart problems and healthy tips. The objectives are to identify the requirements for a system in healthy meal planning tailored to university student's needs, develop a web-based application with a weekly meal planner and evaluate the Healthy Meals Monitoring System regarding the solution in improving university student's healthy meal planning. The study explores healthy food concepts, existing recipe platforms, relevant technologies, and software development methodologies. Developed using the waterfall model, the system successfully met its objectives by enhancing students' meal planning and promoting healthier eating habits. For future work and improvements of this system include implementing push notifications for better communication, students manually add meals that are eaten but not planned in the weekly planner, upgrading the chatbot with AI for more personalized support, expanding the nutritional information provided for each recipe and developing a mobile app for better accessibility.

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# CHAPTER 1

## INTRODUCTION

Maintaining good health is essential, yet university students often struggle with poor eating habits due to busy schedules and lack of knowledge about healthy food. University environments, peer pressure, and the convenience of unhealthy foods exacerbate this issue, leading to poor nutrition and increased risk of chronic diseases. To address these challenges, the project aims to develop a Healthy Meals Monitoring System called WholesomePlate. This system will help students plan nutritious meals with a weekly planner, provide various healthy recipes, and offer recipes tailored to specific health conditions. This chapter will cover background of study, problem statement, research questions, research objectives, scope, project significance and chapter summary.

### 1.1 Background Study

Maintaining good health is essential to living a comfortable life. It is therefore an unavoidable aspect of daily life and the most important aspect of our work in research for better living. Healthy eating is essential to good health (Aggon et al., 2021). However, a lot of people are suffering these days for a variety of reasons related to the food supply chain. Nabeel et al., (2020) was stated university students are more likely to engage in poor eating habits since they tend to be busy with their studies and spend a lot of time away from home. According to Li et al., (2024), University environments that encourage poor eating habits are commonplace for young adults. Taste and accessibility are the two components of the campus food environment that have an impact on students' impressions of it. Besides that, time constraints and inexperience with food preparation are frequently mentioned as reasons why students at universities do not eat healthier foods. Because of this, even though a lack of time was mentioned as an obstacle, time limits appeared to be connected to individual priorities in getting and accessing the food easier, taste good, save time and cheaper (Bach-Faig et al., 2024). Furthermore, it's possible that university students lack knowledge about healthy food and eating practices (Li et al., 2024). Ibrahim et al., (2023) observed that monitoring and controlling dietary intake is made extremely difficult by the lack of reliable