PREFACE

The prevalence of food allergies has significantly increased in recent years, affecting millions of people worldwide. Managing food allergies is a critical aspect of daily life for those impacted, requiring constant vigilance in identifying potential allergens in food products. With advancements in mobile technology and artificial intelligence, the potential to offer accessible solutions for allergy management has never been more promising.

This project, Food Allergy Detection and Analysis Application stems from the growing need for a comprehensive tool that helps users identify food allergens and provides an educational platform for awareness and prevention. The primary motivation behind this application is to enhance the safety and well-being of individuals with food allergies by leveraging image recognition and barcode scanning technologies. Through this innovative approach, users will receive instant feedback on allergens in their food, making it easier to make informed decisions.

In addition, the educational component of the app aims to raise awareness about allergies, particularly among children, through interactive learning tools and games. This project is not only a technical endeavor but also a personal commitment to contribute to the overall health and education of allergy sufferers and their families.

The development of this application has been guided by a dedication to improving public health, and I hope it serves as a valuable resource for users seeking to manage their allergies with confidence and knowledge.

Abstract

The Food Allergy Detection and Analysis Application is a mobile solution designed to help users identify potential food allergens through image recognition and barcode scanning. By utilizing the device's camera, the application analyzes food items and compares them against a comprehensive allergen database to provide real-time feedback on potential risks. The app is particularly beneficial for individuals with known allergies, helping them avoid unsafe foods quickly and efficiently. In addition to allergen detection, the application includes an educational module designed to raise awareness about food allergies. This module offers guidelines, tips, and interactive content, including game-based learning aimed at children, helping them understand food safety and allergy management in a fun, engaging manner. The project utilizes technologies like Flutter for cross-platform development, Mysql for backend services, and image recognition APIs, ensuring a robust and responsive user experience.

Keywords: Food allergy detection, image recognition, barcode scanning, mobile application, allergen database, real-time analysis, educational games, Flutter, food safety, allergy management.