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# Foodrescue: Excess Food Donation Mobile Application

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**Abstract**
This project aims to develop an Excess Food Donation Mobile Application (Foodrescue) to provide an efficient application for users to reduce food waste and enable any outlets or restaurants to donate food or meals directly into the hands of needy people in their local communities. The main objective of this is to design and develop this FoodRescue mobile application. The Mobile Application Development Life Cycle (MADLC) was adapted to the study. The FoodRescue can become an alternative option to help in reducing food waste and hunger.
**Keywords:** Mobile Application, Sustainable Development Goals, Zero Hunger

## Introduction

There are growing studies related to supporting sustainable development goals (SDG) efforts for community IT-based projects in Malaysia (Isa et al., 2020; Isa et al., 2020). Research suggests that food waste has a tendency to take place on the end of the supply chain and takes place extra often in high-profit international locations because of poor consumer behaviour that possibly gives them the prerogative to devise poorly through over-purchasing, cooking extra than essential, and throwing away meals truly as it did now no longer match their short-term choice in comparison to low-earnings countries that mostly stay through a budget confined life (Jagau & Vyrastekova, 2017). This project aims to develop an Excess Food Donation Mobile Application to provide an efficient application for users to reduce food waste and enable any outlets or restaurant to donate foods or meals directly into the hands of needy people in their local communities. SDG 2 on Zero Hungers had become increasingly significant to undertake by research and studies (Cheo & Tapiwa, 2021). The main objective of this is to design and develop this FoodRescue mobile application that supports SDG 2 on Zero Hunger.

## Development Methodology

The Mobile Application Development Lifecycle model (MADLC) (Vithani & Kumar, 2014). was adapted to enable a systematic approach to the development of the mobile application for the prototype of food donation named Excess Food Donation Mobile Application.

## Results and Discussions

### A. Designing the application with a storyboard

A storyboard can be used to present the flow of the system interface visually and wholly. The storyboard below shows the main features of FoodRescue: Excess Food Donation mobile application. Fig. 1 shows the storyboard of the interface for the main functions of the FoodRescue mobile application.

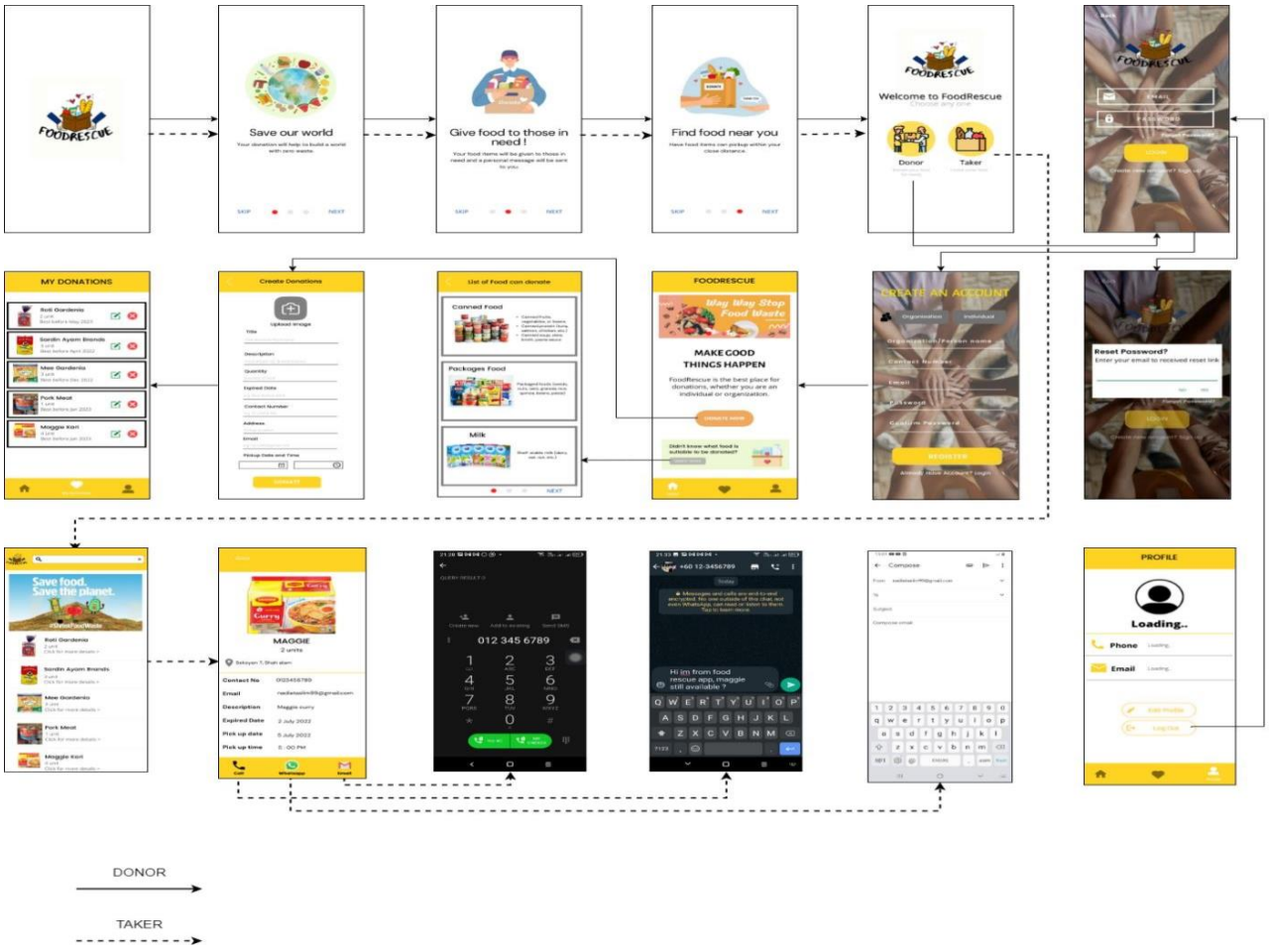


Figure 1 Storyboard of foodRescue: excess food donation mobile application

## B. Software Design & Development

The flowchart created can be seen in Fig. 2.

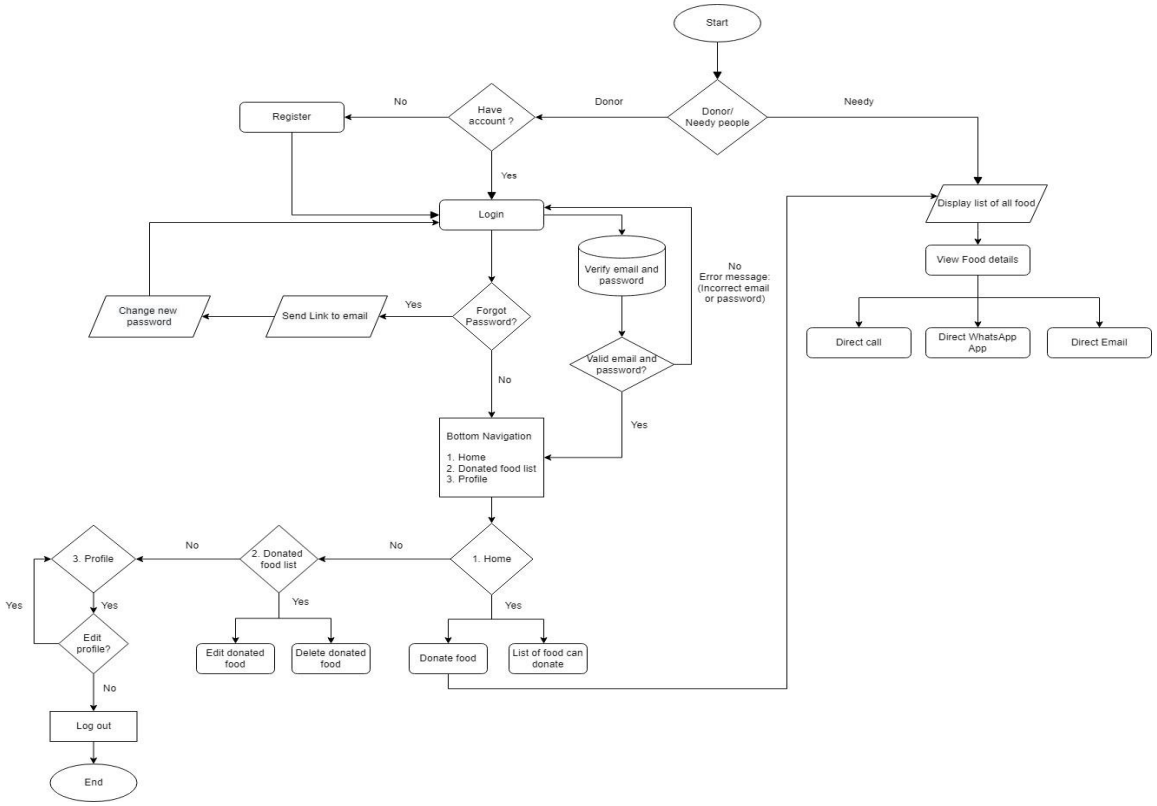


Fig. 2 Flowchart of foodRescue: excess food donation mobile application. The use case diagram is a visual representation of the interaction between the actor and the system as they interact with each other. Furthermore, this diagram illustrates the actors' possible actions as well as the responses they get. The use case diagram can be seen in Fig. 3.

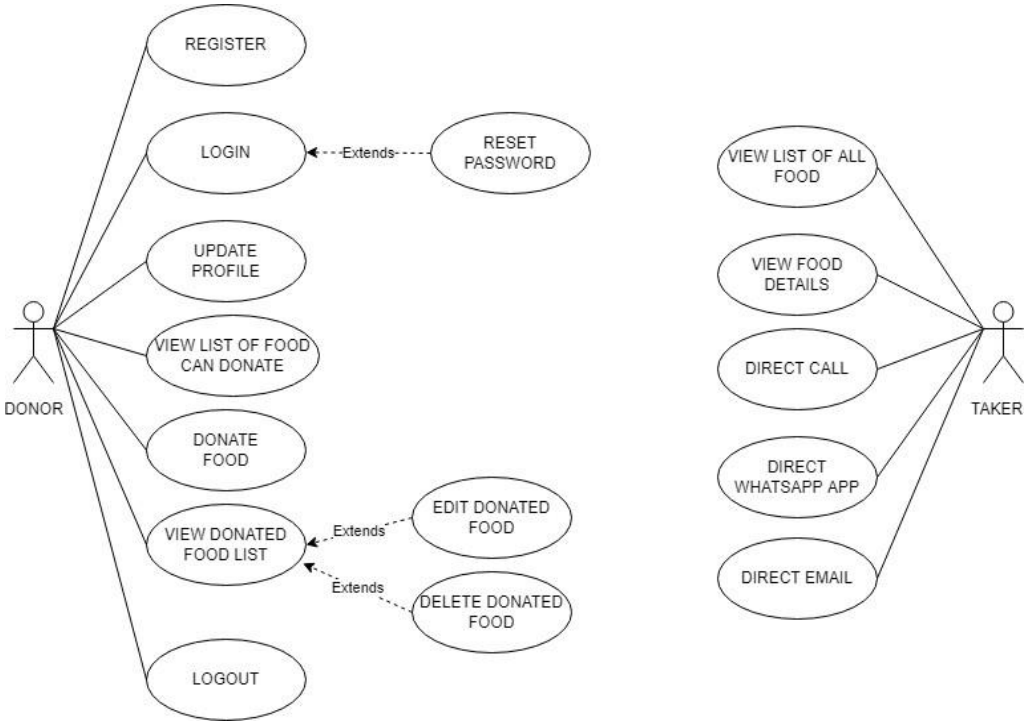


Fig. 3 Use case diagram of foodRescue: excess food donation mobile application

The loader page, shown in Fig. 4, is the first landing page.


Fig. 4 Welcome page

On the welcome page, users need to choose whether to become a donor or taker. If they click the button donor it will go to the donor's login page as shown in Fig. 5. If they click the button, the taker will go to the taker's homepage as shown in Fig. 6.

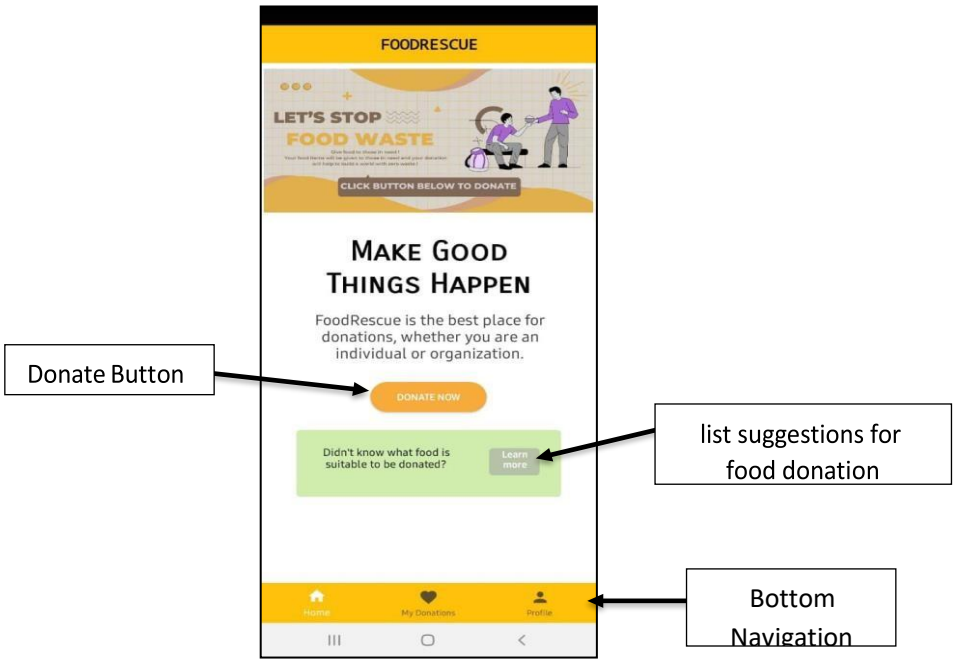


Fig. 5 Donor homepage

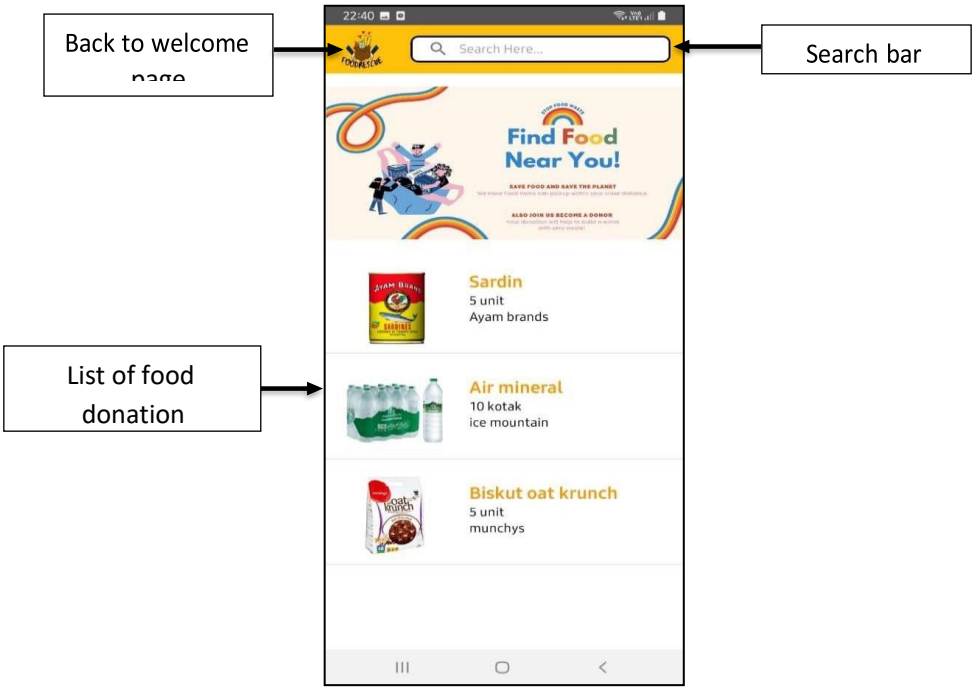


Fig. 6 Taker Homepage

The taker homepage is the first page when the user chooses the taker button on the Welcome page. Takers can search for what food they want by a search bar on the homepage. The list of food donations shows the title of the donation, the quantity of food, and the description of the food.

**C. System Testing**

For the testing phase, ten testers have been chosen to test the usability of the FoodRescue mobile application as shown in **Fig. 7**. The purpose of this testing is to get some feedback

from users based on their experience in using the mobile application. All the results from the user testing and interviews that have been conducted were recorded based on the test procedures provided to the testers.

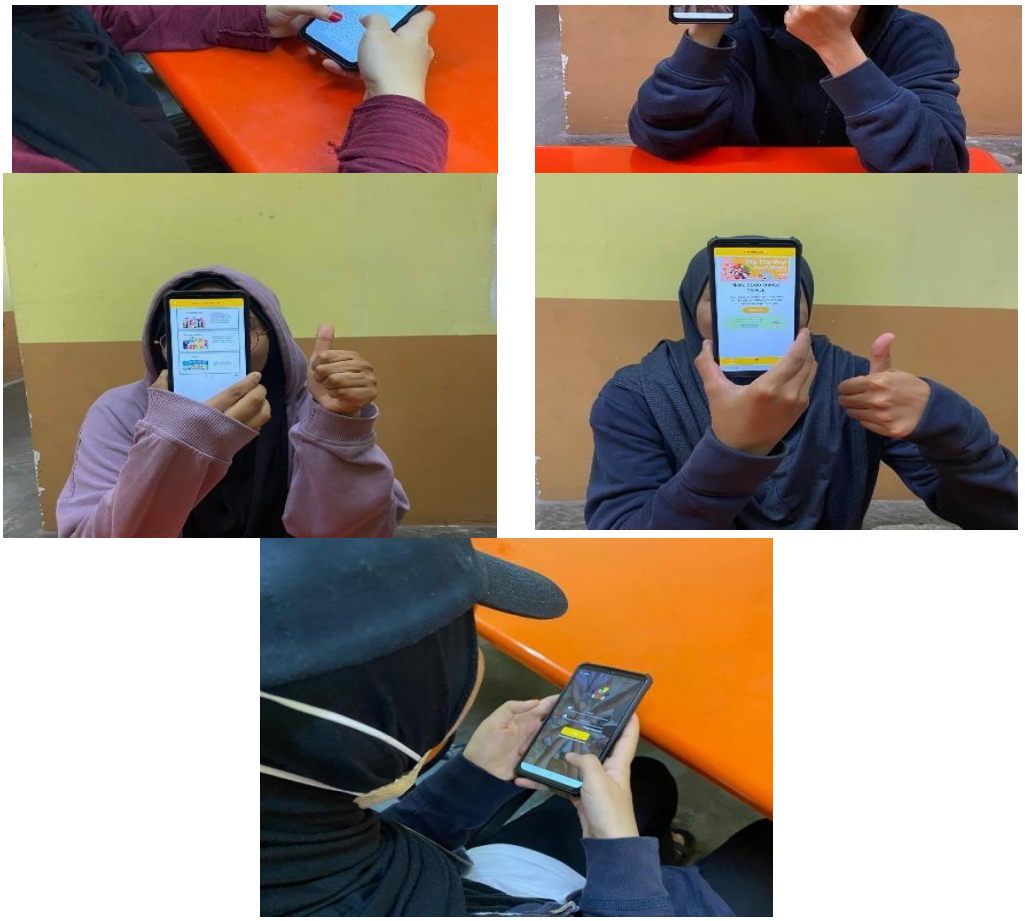

Fig. 7 Testers of foodRescue mobile application

Fig. 7 shows the testers that are involved in the testing phase. All the testers give good responses and feedback where the features of the FoodRescue application successfully function. Along the process, two testers have responded to improve the design interface of the FoodRescue app. On a side note, other testers asked the developer to provide their chat room to improve the complexity of the project.

**Conclusion**

In conclusion, the project to design and develop an excess food donation mobile application was completed by the project's aims, objectives, and methods. To address the issue of reducing food waste and hunger, the mobile application was successfully developed. Future work includes deployment in the google play store and improvement of the features in the applications.

**Acknowledgement**

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