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Mobile Application for Food Donation

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Abstract: ***This application is designed for any random user who's willing to donate and have no proper chance or time to donate the food to orphanages, old-age homes, foodless and even stray animals. This application includes the history, status of donation and profiles of the donor, receiver and volunteer. This android application uses the information given by the donors, like-food type, mobile no., etc. to locate and collect the food. Then our NGO's or volunteers distribute the food for the needed. This application mainly has 3 types of users: donor, receiver, volunteer. Donors log-in to their account and fill the details of food to be donated like- type, quantity and time at which food is prepared. Receivers (orphanages, old-age homes and foodless) log-in to their account using their credentials and mention their requirements like quantity of food and the type of food. Volunteers are mainly NGOs which can use the food for their purpose of feeding needy. Whenever there is a request from the donor, app notifies the volunteers of that city. All these details are stored in the main database.***
Keywords: Mobile application, Flutter, Firebase, Food Donation

I. INTRODUCTION

In the complete world of technology, mobile phones are playing a serious role in almost every corner. As new models of mobile phones are coming day-by-day, the technology and applications also are increasing. Android is an open source for developing new applications as people expect new technologies and applications within the mobile. This application shows the interactivity between three types of users- donor, receiver and volunteer, by linking donor to volunteer and receiver to volunteer and separating donor and receiver. This application includes the history, status of donation and profiles of the donor, receiver and volunteer. This android application uses the data given by the donors, like-food type, mobile no., etc. to locate and collect the food. Then our NGOs or volunteers collect and distribute the food for the needed. This application mainly has 3 forms of users: donor, receiver, volunteer. Donors should log-in to their account and fill the details of the food to be donated like- food type, quantity and time at which food is ready. Receivers (orphanages, old-age homes and foodless) should log-in to their account using their credentials. Then they will see a listing of volunteers within their city with available food and might request food by mentioning their requirements like quantity of food and also the type of food. Volunteers (which are mainly NGOs) should log-in to their account. Then they will see all the donations (from donors in the same city) to be collected and the food requests (from receivers within the same city) to be distributed. All details like- user details, food details, food requests, etc. are stored in the main database.

II. LITERATURE SURVEY

A. Food Waste Reduction Application from Netherlands (NoFoodWasted)

August de Vocht, a citizen of Netherlands developed this application to reduce the amount of food waste. This application makes collaboration with the supermarket so that people can be aware of the foods that will be expired very soon. According to [1], it helps the users to upload their grocery items, which will expire soon so that people who are in need of food can buy them at a reduced price and use them. It helps to stop the wastage of excessive foods. More than 20000 people have found this application useful, and it has reduced the amount of food wastage in the Netherlands [5].

B. Food waste Application of Singapore (11th floor)

Tan Jun Yuan who is a food stall hawker from Singapore felt very bad noticing that people waste so much food in every year. He saw many vendors with leftover foods in a day. The quantity was 10 to 15 bowl of pork ribs served including other foods that he served the customers per day. He also saw that more than 35 percent of food he made every day was left as extra. Therefore, he created the application named 11Th Hour. This application provides the left and unused foods at the half of their original price before the restaurants are closed. After the creation of this application, there were almost 20000 downloads of this application [4], [5].

III. PROPOSED METHODOLOGY

Previously the lots of food wastage accurse, the food which is remained is of no use and it is thrown because there are no such applications to donate the food. Now a day's people are busy in work and no one has time to donate the food to the needy people. We are proposing an android app. This application puts volunteers (mainly NGOs) in the driving seat and the food pickup from donors and food delivery to the receivers (foodless people, slum dwellers and orphanages, nursing homes as well as animals) is handled by them. The main aim is to develop an application to lessen the wastage of food and donate that food to the needy.

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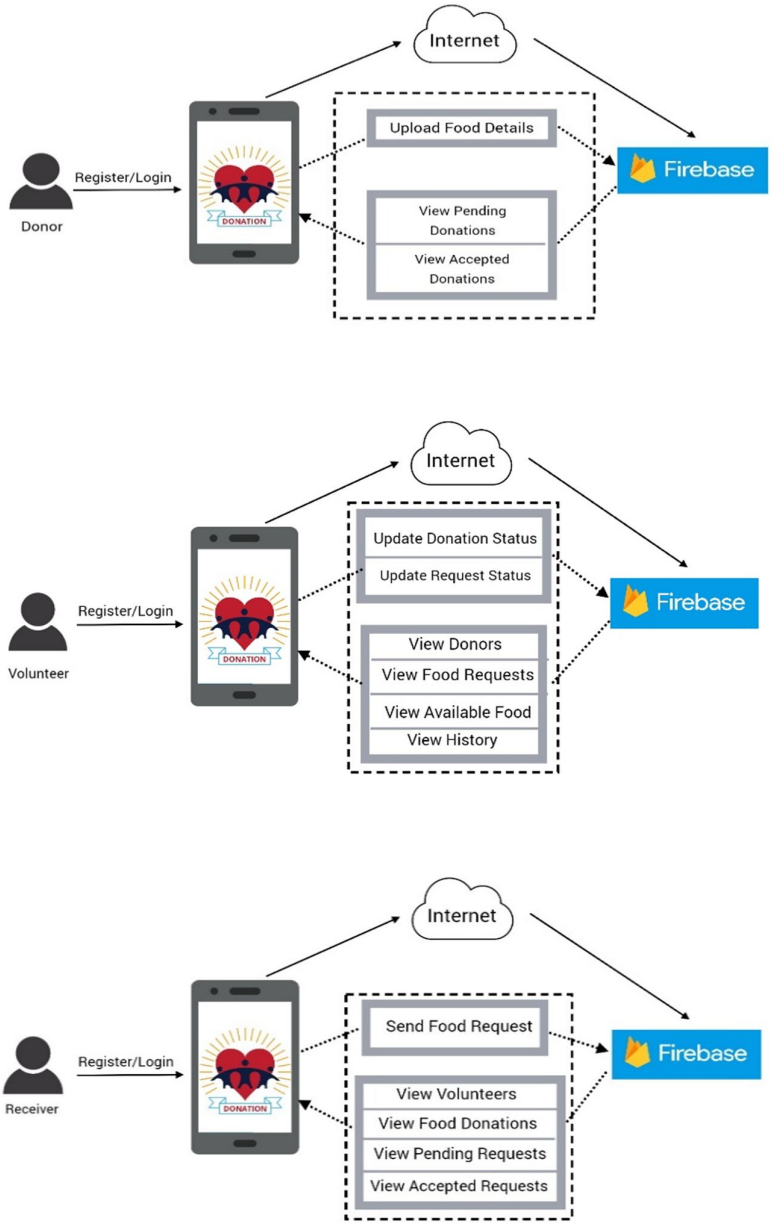
IV. PROJECT ARCHITECTURE MODEL



A. *Front End*

The front end for this app is built on Android Studio IDE using Flutter SDK. Flutter provides installation of this app on various android devices with different screen sizes and android versions. Flutter also provides beautiful UI to the app using powerful animations and beautiful designs [6].

B. *Back End*

This app is integrated with Firebase (It is a Backend-as-a-Service, developed by Google). Firebase provides 18 products or features [7]. Using firebase we can perform several functions like authenticating, searching, storing, deleting and security.
Firebase products which we have used in this app are:

1) *Authentication:* This provides user authentication to the app.
2) *Cloud Firestore:* This is where all the chat messages sent by user and user details provided by Google are stored.

V. MODULES

A. Donor Module

The donors must first register into this application. They can donate food by providing required details. They can also view pending donations history and accepted donations history. They can also contact admin using email provided in contact section for any issues.

B. Volunteer Module

The volunteers must first register into this application. They can view list of donations made by donors in their city and can accept donations. They can also view list of donation requests made by receivers in their city and can donate food. They can also view available quantity of food. They can also view accepted as well as donated food history. They can also contact admin using email provided in contact section for any issues.

C. Receiver Module

The receivers must first register into this application. They can view list of volunteers in their city and the details of food available with them. They can request food by selecting the quantity of food as per requirement. They can also view pending requests history (Requests which are not confirmed) and received history (Requests which are confirmed or delivered). They can also contact admin using email provided in contact section for any issues.

VI. CONCLUSION

The main objective of this project is to reduce food wastage by developing an application to donate food instead of throwing it. This application will be developed with a consideration that it does not take up significant time for the users to feed the food item details into the application. This application overcomes the problem of wastage of food by donating the food to the needy. It is designed for any random user who's willing to donate and have no proper chance or time to donate the food to orphanages, old-age homes, foodless and even stray animals.

Overall, this app tries to realize interactivity between the users- donor, volunteer and receiver. Donor interacts with Volunteer and Receiver interacts with Volunteer. And there is no direct interaction between Donor and Receiver.

VII. ACKNOWLEDGEMENT

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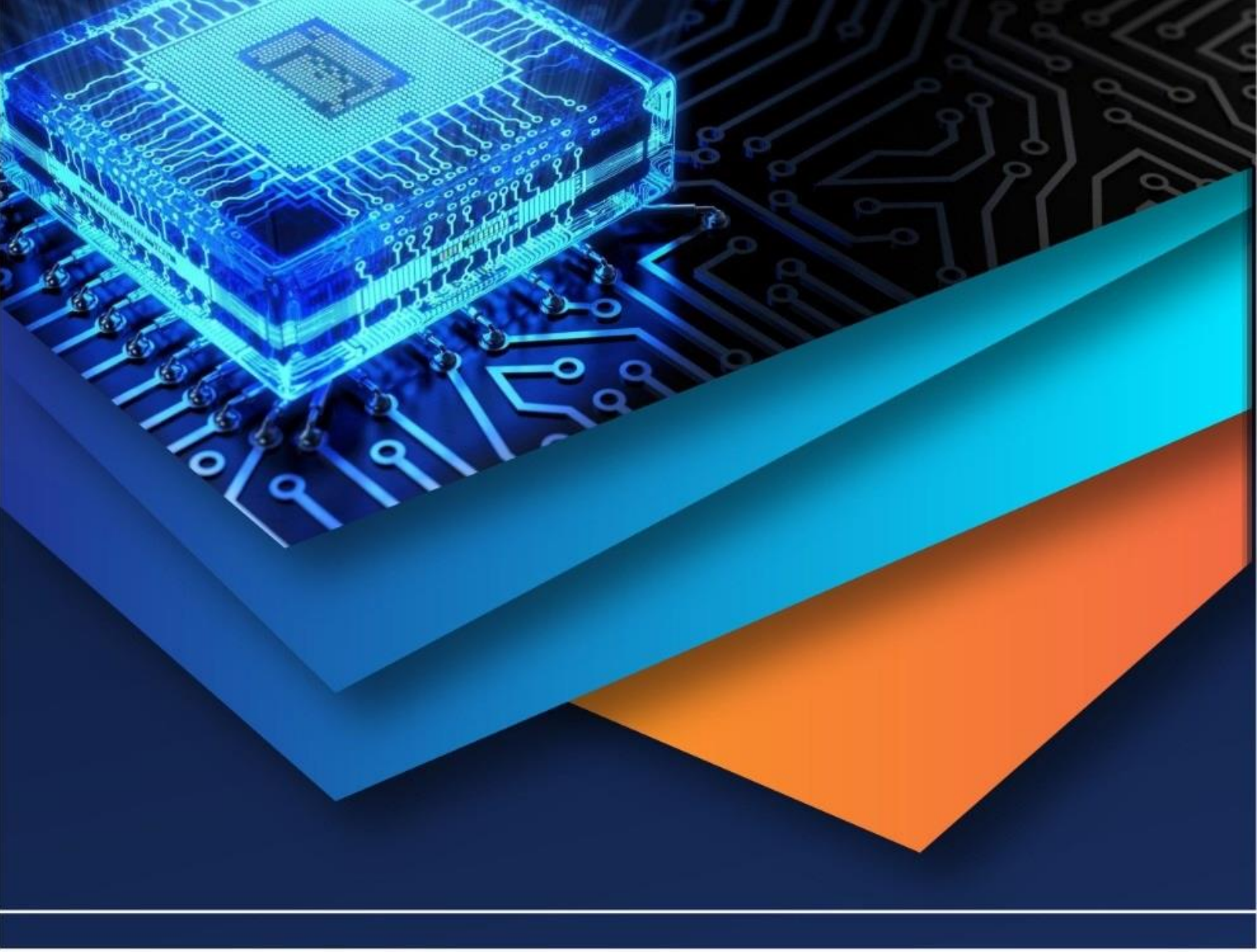

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