

ZeroHunger: A Smart Food Donation System

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ABSTRACT:

The increasing problem of food waste and food insecurity has led to a growing need for effective food donation efforts by non-government organizations (NGOs). In recent years, technology has emerged as a potential solution for improving the food donation process. This study aims to explore the impact of food donation apps on the efforts of NGOs to reduce food waste and address food insecurity. A mixed-methods research design was used to gather data from both primary and secondary sources. User satisfaction with food donation apps was found to be high, and the apps were found to have a positive impact on food waste and food insecurity. The findings of this study provide insights into the potential for technology to improve the food donation process and provide recommendations for improving food donation apps and their impact on food waste and food insecurity. So, by this application a lot of food which is wasted in restaurants is get utilized for good purpose and the users competitively will come to donate the food

KEYWORDS: food wastage, food donation, non-government organizations, restaurants.

INTRODUCTION:

Food waste and food insecurity are growing problems in many countries around the world. The increasing amount of food that goes to waste while so many people struggle to access enough food to meet their basic needs is a significant issue. Non-government organizations (NGOs) play an important role in addressing food waste and food insecurity through food donation efforts. However, traditional food donation methods can be time-consuming, inefficient, and prone to waste.

In recent years, technology has emerged as a potential solution for improving the food donation process. Food donation apps are designed to connect food surplus with those in need, making the food donation process more

efficient and reducing food waste. The apps allow NGOs to quickly and easily connect with potential food donors and recipients, reducing the time and effort required to coordinate food donation efforts.

This study aims to explore the impact of food donation apps on the efforts of NGOs to reduce food waste and address food insecurity. The study will examine the potential benefits and challenges of using food donation apps and the impact of these apps on the food donation process. By gaining a better understanding of the role that food donation apps can play in improving food donation efforts, this study will provide insights into the potential for technology to make a positive impact on food waste and food insecurity.

LITERATURE REVIEW:

These are some existing systems.

"Reduction of Food Wastage through Android Application" [1], paper published in October 2019 is an android mobile application which came up with a lateral ideology. That is in all other journals they all are focusing on different NGO's and for that NGO's the food is being donated. In contrast, in this case, everyone in need—whether they are an NGO or an individual—is directly registered. As a result, when a user wishes to contribute food, he can choose to donate to a specific user or organisation. NGOs will find it simpler to keep track of the food they provide and its effects on the communities they serve as a result of their efforts.

"Food waste reduction through donation" [2] new online-based application that provide a medium for donation of leftover food to everybody or any needy people/society. It gives details about the motivation to return up with such an application, thereby describing the prevailing donation system and the way the proposed product works for the improvement of society. The recent depression has grown the number of individuals living in conditions of food poverty, especially in developed regions. At the client-side

App give us the option to donate food to the charity for the assistance of needy people

Aahar - Food Donation App [3], paper published in June-2021, is a platform is provided by an android mobile application that allows users to give food, as well as other items like clothing, books, kitchenware, and other necessities.. It contains 3 different modules. User Module is used for users after successful login for users they are allowed to donate food and then they submit the request and In NGO's module those particular Donation details will be highlighted and then the NGO's will collect that food and if they don't want food means they simply reject and logout.

ANALYSIS OF EXISTING SYSTEM

Here, the available system for the food wastage reduction app is a system in which there are only two features the NGO and the Restaurants or User and Donor respectively. But in our system any person who has good quality food can donate food to any needy who can be any person or organization.

PROPOSED SYSTEM

Technology Used

The proposed application is completely android-based, as android applications are widely used by the people compare to online websites as mobile phones are available with everyone. It is developed on Android Studio 3.1 Dolphin as it provides a unified environment for developing android apps. Java here used to write the back-end logic which the database and for UI (User Interface) xml is used which is an object oriented language. Both Java and xml requires internet connection and will provide a platform for restaurants and NGOs after they successfully register into the system.

Methodology

The basic methodology is stated as when the donor here which is the restaurant sends a message in the application which contains every detail of the food including product name, description, address, contact number, amount of food, expiry date, etc. with the image of the food.

The NGOs on the other side can view this message sent by the restaurant containing all the details mentioned above based on that it can accept or reject the request. After accepting the request the NGO employee sent to that particular restaurant to collect the food. Later that food is given to the needy by NGO.

Once the request is accepted that request is automatically deleted from the list. NGO can also reject the request based

on the parameters like location, quantity, etc. and this request is now visible to other NGOs.

The Admin module also plays an important role here by keeping track of this entire system. It has the right to add or delete new restaurants and NGO and can also delete the requests if there are any issues. Here not only restaurants but NGO too can sent the request in the application for if there is excess food left from there side and other NGOs can respond to this request.

Implementation Donor Side:

Step 1: User can register with personal information. Step2: Registered users are provided with id and password which can help them log in.

Step 3: Add a new food item with all necessary details including quantity, location, address, phone.

Step 4: Add photos/pictures of the food items.

Step 5: After entering food-related information, users can log out of the system.

Implementation NGO side:

Step 1: User can register using personal information.

Step 2: Registered users are provided with id and password which can help them log in.

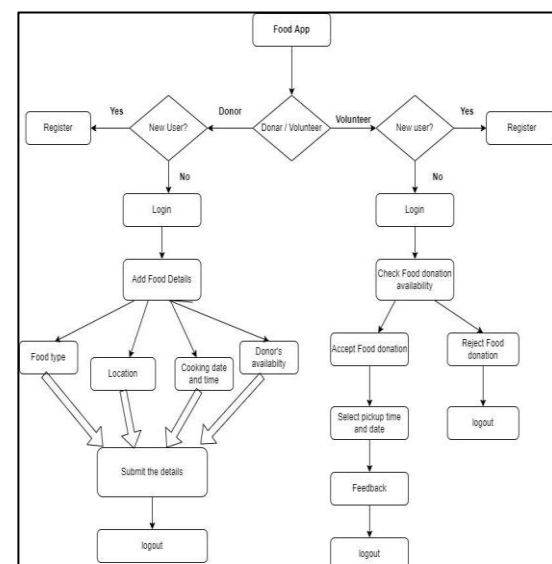
Step 3: Search in the records for food requests.

Step 4: Either Accept or reject the request from restaurant side.

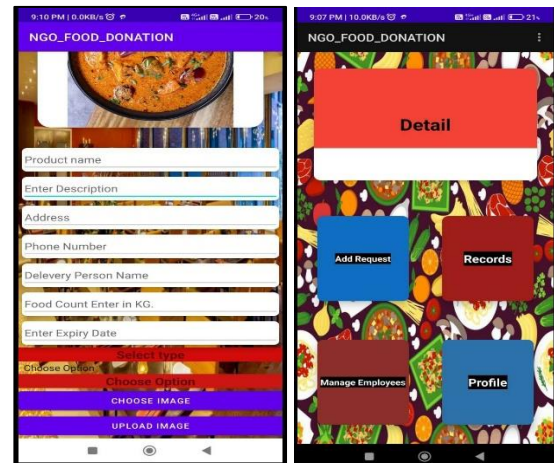
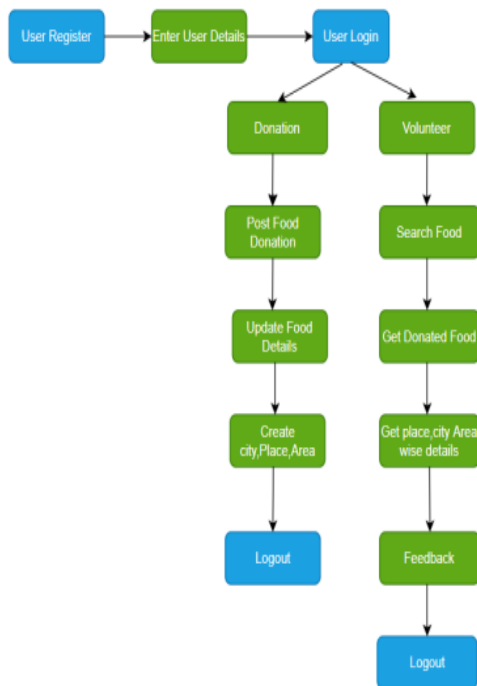
Step 5: After accepting the request NGO can sent an employee to that restaurant to collect the food.

Step 6: After delivering it to the needy NGO sends a message "Delivered". Later the NGO can logout of the system.

FLOWCHART



SYSTEM MODULE



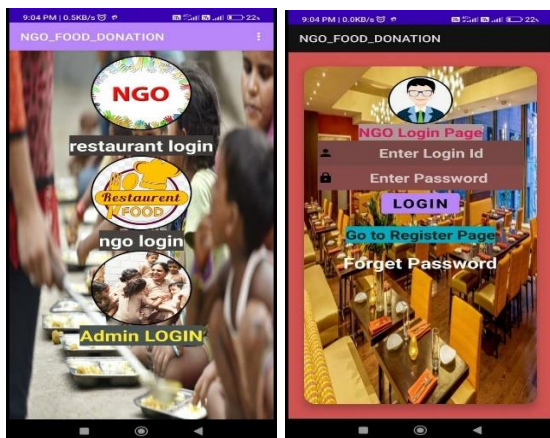
ADVANTAGES

- Advantage to both the restaurant and the needy (by reducing food wastage).
- For restaurant can keep track of waste food.
- User can take on a role in preventing food waste and aiding the less fortunate.
- Convenient and user friendly.
- Food wastage can be decreased.

FUTURE SCOPE

Also, we expand our app to include a variety of donors, including businesses like restaurants and families. Including a location feature in our apps. The user who is donating should specify where the shared food is located. Make the software compatible with many platforms Include the time and date for each snack shared by users.

IMPLEMENTATION



DISCUSSION

The use of food donation applications by NGOs has the potential to greatly impact the efforts to reduce food waste and address food insecurity. By connecting food donors with those in need, food donation apps can help to ensure that surplus food is not thrown away and is instead put to good use.

One of the main benefits of using a food donation app is that it streamlines the food donation process. With the ability to request food donations in real-time and receive feedback from food donors, NGOs can more effectively manage their food donations and ensure that the food received is of good quality and suitable for distribution.

However, while the use of food donation apps has the potential to be a positive solution, there are also challenges associated with their use. For example, the app may only be accessible to those who have access to technology and the internet, limiting the reach of the app and the potential impact on food insecurity.

Another challenge is that food donation apps may not be widely known or used, leading to a limited pool of food donors and a reduced impact on food waste and food insecurity. It is important for NGOs to work to raise awareness of the app and encourage more food donors to register and participate in the food donation process.

Overall, while there are challenges associated with the use of food donation apps by NGOs, the potential benefits make it a promising solution in the effort to reduce food waste and address food insecurity. Further research is needed to better understand the impact of these apps and to identify ways to overcome the challenges and maximize their potential impact.

CONCLUSION:

In conclusion, NGOs' use of food donation apps has the potential to have a significant influence on efforts to combat food insecurity and minimize food waste. By speeding up the food donation process and creating links between food givers and those in need, food donation apps have the potential to be an effective tool for addressing these pressing issues.

It is essential to consider both these apps' benefits and drawbacks, such as low awareness and restricted accessibility, in order to fully realize their potential. More research and collaboration between NGOs, tech companies, and stakeholders are needed to fully understand the consequences of food donation applications, develop answers to the issues they present, and improve the food donation process.

Overall, the use of food donation applications has the potential to be a useful tactic in the struggle against food waste and food poverty, so further study and development of this tactic are necessary.

ACKNOWLEDGEMENT

We owe sincere thanks to our college Datta Meghe College Of Engineering, Airoli for giving us a platform to prepared a project on the topic "ZEROHUNGER: A Smart Food Donation System" and we are sincerely grateful for Prof. Sujata Kolhe as our guide Head of Department IT , and our other guide Prof. Ashwini Rahude for providing help during our research, which would have seemed difficult without their motivation, constant support and valuable suggestion.

Moreover, the completion of this research paper would have been impossible without the suggestions and help of our friends and family.

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