

A View on Surplus Food Donation App

**Prof. Rupali Maske¹, Rohit Wagh², Akash Verma³, Omkar Thopate⁴,
Basant Bhagat⁵**

¹Professor, Trinity College Engineering and Research, Pune, Maharashtra

^{2,3,4,5}B.E Computer Department, Trinity College Engineering and Research, Pune, Maharashtra

Abstract:

The enormous development in the amount of food waste has prompted a need for charity donations. Food is significantly wasted every day at numerous institutions, including restaurants, parties, social gatherings, university canteens, and many of the other social events in the existing circumstances. Currently, individuals contribute food manually by visiting each agency numerous times to alleviate the concerns with food waste. Although some mechanisms currently in place have made an attempt to aid with food donations, the new web application that is part of the proposed framework offers a platform for recycling extra food to help people who are in need on an individual and group level. This technique has shown to be an effective manner of giving things online to charities, solving the significant problem of food waste. The article includes insights into the aim behind such an application, highlighting the existing process of contributions and how the product operates to serve the community. Under this framework, hotels, restaurants, charities, and individuals would all have access to a single platform for communication. Charities and individuals could then connect with restaurants that have excess food available for immediate donation, and the framework would track the quantity of food donated by each restaurant, awarding food donors with points. The fundamental modules in this design are "Food Donor," which may be any company, organization, or institution eager to provide food and submit new food donation requests, and "Food Receiver," representing meal-seeking charity groups. A new food donation request may be produced on the website, and a message will be issued to the third-party agency responsible for conveying food from the donor to the receiver once the request is allowed.

Keywords: Surplus Food Donation, Web-based application, Reduce Food Wastage.

I. INTRODUCTION

Food contributions are important since food waste has grown dramatically lately. Food wastage is a significant issue in India, a country with a huge population. Food waste is an overwhelming issue because there is a paucity of food. We can see that many individuals discard food in the garbage even when it is still palatable. There is not simply an issue with food waste; there is also a problem with capital waste. It contributes to a broad variety of environmental crises, such as pollution, global warming, and changes in the climate. Food waste is not symptom an indication of pollution or poverty, but it is also an indicator of other economic concerns. A platform for non-profit enterprises to give surplus food to individuals in need, this product is a Web-based application.

The primary idea behind this project, dubbed "Surplus Food Donation Application," is to gather

excess/leftover food from donors such as hotels, restaurants, and other food service establishments, wedding venues, etc., and provide to underprivileged individuals via NGOs. NGOs will collect the surplus or excess goods from above specified venues for the distribution to the destitute people. This Surplus Food Donation Application can assist in retrieving the surplus food from hotels, restaurants, wedding venues, social and political gatherings and religious gatherings with the purpose of distributing goods to people in need. NGOs, that are assisting impoverished communities to combat against Hunger and malnutrition can prompt a request for supplies.

Using this app, you can get excess/leftover food from eateries. Once the request is approved, the NGOs can acquire the supplies from the venue for distribution. In this manner this Surplus Food Donation Application will enable the donors to reduce food waste and aid in sustaining the impoverished and helpless persons.

In a similar vein, several organizations are trying to reserve the different devices they want, such as garments, food grains, books, silverware, and so forth, although there may not be an open source. In the end, a React framework was developed to satisfy their requirements. It allows users to contribute content based on their abilities, and it often enables organizations to install their requests—for example, items they need. Nowadays, a lot of individuals utilize elegant smartphones with intricate internet access, which is a must for this item to function as intended

II. LITERATURE SURVEY

According to [1], it is a smartphone application with a user interface for contributors. Contributors of food may describe the nature, amount, condition, and expiry date of their offerings in this app. Some of the functions of the system include updating the food distribution process, finding volunteers close to contributors, and tracking volunteer and beneficiary information. Because not every community has a volunteer community that could organize the process of food distribution using a third party, it also has features like accepting and declining to pick up donations, reporting to the community about the quality of the donation, and providing a visual representation of the distribution process in the location.

Food waste is an important global concern, according to [2]. A report is expected to indicate that over 58% of the food produced for human consumption is wasted daily. That means that without enough food to sustain them, almost 60% of people in third-world countries are starving to death.

As a result, nations with advanced technology are more vocal about this problem. Thus, scarce food supplies may be wasted and given to the weaker members of society. In the modern world, where artificial intelligence has advanced humanity, people depend more on their cellphones. Numerous apps are available that are designed to reduce food waste and provide the opportunity to distribute excess food to those in need. Numerous applications exist that minimize food waste.

Food Wasted in Aurangabad's Supply Chain Predicted on Cell Phones In order to construct a city devoid of desire, it integrates the client-server GIS and mobile application using Google Web Services' GIS Location Based, which was published in 2014. The client-side application allows users to provide food donations to those in need. Donors include contact details and basic details like the kind and quantity of

food they are donating. Such food may be gathered by any non-governmental or social work group and given to hungry individuals. Once the registration process is complete, the information will be stored on a server-side database, which will allow organizations to save donor data and provide directions and the best path from the donor's location to any local NGOs or institutions. in order for those who are starving to get food on time [3].

After successful enrollment into the system, the [4] suggested operation, which is Android-based, would offer a platform for funders and campaigners. However, he or she can discharge a communication in the operation, If a stoner desires to contribute commodity. This communication will be displayed as a notification in the donations menu to other druggies. Once an announcement is made, the beneficiary who wishes to claim the donations can reply to the benefactor and communicate with him. This system is aimed for Android users and will have an easy-to-use interface specially designed for stoners. The procedures conducted by the donor are Registration and Login into the System. He can also set up particulars for donations and examine all donation requests. The Administrator and Contributor both can observe the Receiver's position. The system administrator can also encompass and streamline the database.

Hunger" is an Android software for mobile devices. Donors and consumers with forums for donations and retrieval of food after successfully registering into the system. The system comprises of two main sections donors and receivers. Dispensers execute jobs such as: Register/Login to add things to your contribution request submitted and displayed. Recipients are responsible for responsibilities such as making a request for an item, presenting the desired item, and Soliciting donations. Administrators and contributors can see the recipient's status. Goods donated by benefactors will be displayed to others. Donation categories and communications are stored in the backend server.

By donating surplus food to NGOs, the [5] tried to diminish restaurant food waste. An administrator can ascertain if leftover food has ever been served in a restaurant or by an NGO. An old dwelling owner at an orphanage may grade food products, supporting other individuals in their meal decision.

A new online platform for distributing extra food to everyone or some groups or individuals in need [6]. It provides details on why this kind of application was developed, describing the current contribution structure and how the recommended product works to improve the community. The present recession has led to an increase in the number of individuals facing food poverty, especially in developed regions. The client-side app offers the option to donate food to a charitable organization in order to help feed the hungry.

There are four parts in this web-based application for managing food waste: Admin, Donor, NGO, and Transportation (delivery system). Every module has a login and registration section. The administrator will confirm donor and NGO credentials in order to prevent fraud, phony requests, and phony supply.[7] Following verification, everyone will make a gift and need request. In order to facilitate communication between the NGOs and the donor on the kind, amount, and availability of food, the administrator may examine the requests and supplies. If NGOs need to handle their excess/leftover food, they may see the restaurants' past and submit requests to them.

The suggested system is an entirely Android-based application that works as a platform for users to donate and distribute their leftover food to those in need. This application may be an excellent means for individuals living in countries such as [8] India to give their excess food in an easy manner. This system is made up of four modules: admin, NGOs, volunteers, and users. NGOs, volunteers, and users will be required to register on the app by providing their contact information. The administrator will have accessibility to all data and will be in charge of approving and refusing any requests. The admin may authorize all registrations and logins, as well as pick up stuff from the donator. The suggested Android-based application was created using Android Studio 4.0.3, Java, and Xml. This application also makes use of Firebase technology to provide authentication and real-time database access. In addition, we utilized the Google Maps API to acquire the user's current position in the server side and discover that place in Google Map. When a user registers as a user and wishes to contribute or receive, the information is saved in a real-time database. This information is obtained if the other person chooses to contribute or receive items. The user is then routed to Google Maps to locate the delivery or pick up location. This application's user interface shall be maintained basic and user pleasant.

This is an Android app that was created using Java and XML in [9] Android Studio 3.3.36. To save data in the database, the application has to be connected to the internet and hosted locally. The donor and the volunteer from an NGO are the primary parts of the application. In order to input the specifics of the food that is available for donation, the donor must first register or log in to the system. The food kind, cooking method, expiration date, location (where the food is accessible), and the donor's availability data may all be entered by the donor. The volunteer will get updates about the food specifics when the donor completes the form and submits it. The volunteer may sign up or log in to the system to verify the food's availability and kind, which has been modified by the donor. The volunteer takes the food contribution and makes an effort to get in touch with the giver if they want to claim it. The volunteer has the option to decline the food gift if they so want or if they are unable to serve at the designated location. On the entries for approved and refused food donations, the specifics of the food that was accepted and refused are shown separately. Once the food donation entry's date and time limits have passed, the food's availability is removed.

People utilize mobile applications for a variety of reasons, and this tendency is growing yearly. As a result, the [10]F4U mobile application has the possibility of helping attract a large user base, which will help address the worldwide problems of hunger, poverty, and food waste. Additionally, various improvements to expand the functionality of the F4U application are available using the Firebase software framework, which was utilized to develop it. Various of these improvements include the addition of campaigns, bulletin news, and Google Analytics for all users. The concepts discussed in this study on system architecture, testing, and design are helpful for researchers looking to create different sorts of mobile apps.

III. PROBLEM STATEMENT

The fast development of urban populations combined with changing lifestyles has led to a large increase in food waste output, offering severe environmental, economic, and social concerns. The existing methods of food waste disposal are typically inefficient and contribute to environmental deterioration, greenhouse gas emissions, and resource depletion. There is an urgent need for an innovative and

comprehensive Food Waste Management System (FWMS) that handles the whole lifecycle of food waste, from creation to disposal, with an emphasis on sustainability and resource efficiency.

A surplus of food is thrown away at weddings, canteens, bars, and other social and family gatherings. By giving the items to remarkable organizations like old age homes, orphanages, and many more, the plan will put them to use instead of discarding them. Certain individuals and organizations must donate electronics to facilities that are in need. Many businesses often ask for certain products they need, such as clothing, food grains, books, cutlery, and so on, but there isn't a supply that can satisfy their needs. Therefore, a smartphone application has been developed where people may give food items depending on their capacity. The program also often allows businesses to submit their demands, such as devices that they may need, if any.

The application for meal donations acts as a conduit for customers wishing to give without throwing away extra meals. By making local users aware of the food records that are accessible, it motivates us to give the excess food. The users who have asked for it demand it. The machine distributes food items based on priority.

The suggested application eliminates food waste and for that reason meets additional requirements, such as food goods from prone enterprises. The planned program is now geared at disposing of the enormous trash that usually occurs in India, that is meals. The framework is necessary to develop and optimize the same machine, so one may similarly add to the software's stability and usefulness. association and might supply a degree for members and searchers when they sign up effectively within the device. He/she need to detail anything explicit inside the paper at the unusual chance that a patron desires to provide something. This statement will display as a notice to many shoppers during the offers page. This message could be included into the statistics base on the backend. The shelters who want to ensure the presents might react to the contributor and approach him/her when a be aware is received.

IV. PROPOSED SYSTEM

This paper discusses reducing food waste by using the suggested machine's functionality (proposed machine). The feature of shifting meals is a very beneficial social development that deals with food waste and hunger. At that point, the administrator gathers meals from the donor and delivers them to nearby shelters or negative individuals via their local expert. After acquiring the food from the professional using the method of the administrator and delivering the donor a prepared letter, we're capable of lessening the bother of food waste.

The technological stack of choice has been enhanced to the MERN stack, containing MongoDB, Express.js, React, and Node.js for front-end and back-end development. This stack was chosen for its development efficiency and performance excellence. React helps construct spectacular UIs for both web and mobile platforms via a single code base, simplifying the entire building process. Node.js remains in the framework to provide speedier communication and rapid data retrieval, reducing the server burden. MongoDB, a NoSQL database, enhances data storage and retrieval capabilities.

Security remains a top concern in this application. Upon enrollment, a JWT token is generated and

retained on the device, permitting asynchronous user authentication when the user accesses the app again. This assures a comprehensive user experience. The JWT token can only be decoded by the server to extract data, ensuring the token's contents stay safe.

In the MERN stack, the flow of different entities would stay identical, with MongoDB acting as the database to store and retrieve data, Express.js handling the server-side functionality, React for the front-end, and Node.js for the server runtime.

4.1] Implementation

Donor Side:

- Step 1: Using personal information, the user may register.
- Step 2: Using his ID and password, the user may access his personal account.
- Step 3: Add a new recipe item to the list, including the amount, location, and contact information.
- Step 4: Give the food products pictures.
- Step 5: Fill the cart with a variety of food products to make a reservation.
- Step 6: The user may disable the device after providing information about the cuisine.

Volunteer side:

- Step 1: Using personal information, the user may register.
- Step 2: The user may use his ID and password to access his personal account.
- Step 3: Make a location-based search and schedule the food in advance.
- Step 4: Following the donor's approval of the proposal
- Step 5: Following acceptance, the food volunteer will provide feedback on the taste and caliber of the meal.
- Step 6: The system may be disabled (logged out) by volunteers.

V. DESGIN DETAILS

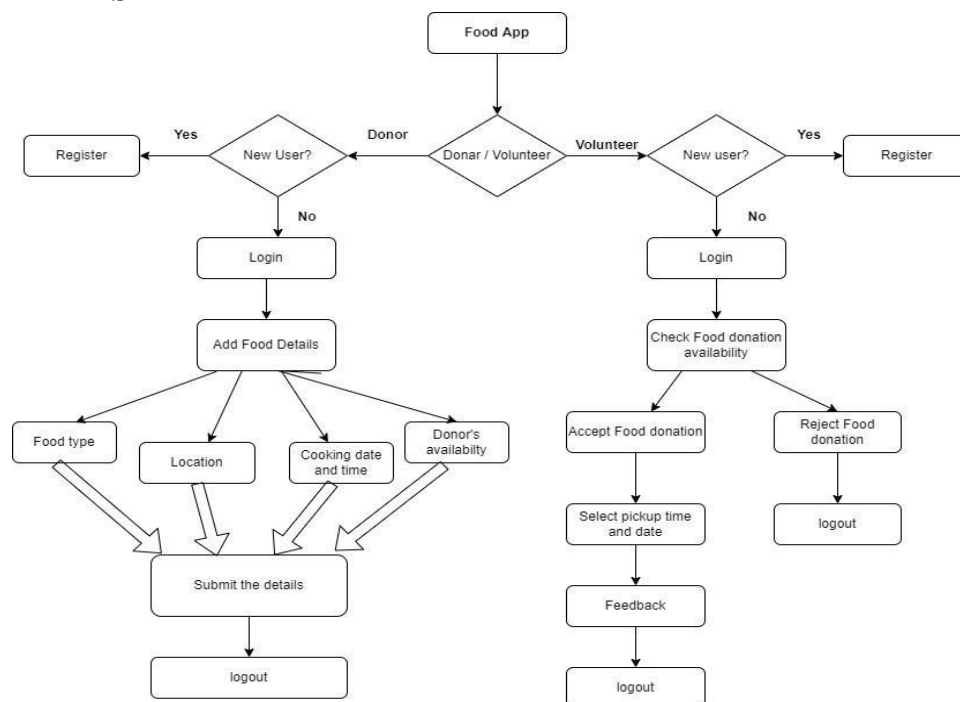


Fig 5.1: Flow Chart

VI. CONCLUSION

Our research looked into the issue of food waste, which has numerous negative economic and social consequences. However, the waste of the food may be stopped or at least lowered utilizing governmental restrictions and technology.

Web-based and smartphone application technologies may help with food waste control. The application's goal is to support better diet management. We suggest using mobile or web technologies to reduce food waste by promoting group meal sharing. This work is a first step toward developing a superior way to reduce common food waste.

There was no standard food data system on food packages that supplied the client with details on both the name of the food package as well as its expiry date, so both eateries/bistros (reduced carbon footprint and garbage) and the impoverished would benefit in terms of employment. The goal update will be to read the expiry date and obtain the name of the product from the general identify of the item using OCR technology.

VII. REFERENCES

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