

## FOOD WASTE REDUCTION SYSTEM

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### ABSTRACT

Food waste has become a major global issue, especially in urban areas where large amounts of edible food are discarded daily while many people still face hunger. Managing surplus food efficiently and connecting donors with organizations in need remains a significant challenge. This project proposes a Food Waste Reduction System, a web-based platform designed to minimize food wastage by facilitating easy food donation and distribution. The system allows users to register and donate excess food by providing details such as food type, quantity, location, contact information, and images. The donated food is stored in a database and displayed on a view page, making it accessible to NGOs. NGOs can browse available food, contact donors directly through phone or WhatsApp, and collect the food. Once collected, the system updates the status to ensure proper tracking of donations. The platform is developed using PHP and MySQL, providing a simple, user-friendly interface with smooth navigation between different modules such as registration, donation, viewing, and NGO management. The system ensures efficient data handling and easy communication between donors and receivers. The proposed system serves as a practical solution for reducing food waste and supporting food distribution. It demonstrates the effective use of web technologies in solving real-world problems and contributes to social welfare by connecting people in need with available food resources.

**Index Terms:** Food Waste Reduction System, Food Donation, PHP, MySQL, Web Application, NGO Management, Food Distribution, Waste Management, Online Donation System, Social Welfare

## I. INTRODUCTION

### 1.1 Context and Problem Statement

Food waste is one of the biggest global issues facing our society, mainly in cities where tons of food that can still be consumed is thrown away every day. Simultaneously many are dying of hunger, malnutrition and related diseases. The resulting imbalance points to the failings within food distribution systems. Although food insecurity remains rife with important shortages at homes, restaurants and events, there is no appropriate platform established to connect such excess foods with organizations in need of help. Methods that are unstructured, inefficient and huge task oriented communicate in post season vegetable designing consume a great deal of indispensable assets

**1.2 The Food Waste Reduction Solution:** The Food Waste Reduction System addresses this problem by providing a centralized web-based platform that connects food donors with NGOs. Instead of relying on informal or manual methods, the system enables users to donate excess food easily through a structured digital interface. By integrating donation, viewing, and collection functionalities into a single system, it reduces communication gaps and ensures efficient food distribution.

**1.3 Core System Functionalities** The application is designed with key functionalities that work together to achieve effective food management:

- **User Registration and Navigation:** Users can register and access different pages through a simple navigation system.
- **Food Donation Module:** Donors can enter food details such as name, quantity, location, contact number, and upload images to share available food. Our Food Tracking System keep track of all the food that's been donated by storing it in a database. This information is then shown on a special page where you can see the status of each donation, like whether it's "Available" for pickup or if it's already been "Collected".

• **NGO Interaction Module:** NGOs can view available food, contact donors through phone or WhatsApp, and collect food. Once collected, the system updates the status automatically.

The system has features that help manage data, like being able to delete records and update donation information correctly. This means you can easily remove old or incorrect data and make sure all the information about donations is up to date.

**1.4 Technological Foundation and Impact:** Our system is built using PHP for the backend, which handles all the behind-the-scenes work, and MySQL for managing the database, so we can store and get data quickly. The part that users see and interact with, the frontend, is made with HTML and CSS, making it easy to use and understand. This combination of technologies helps us create a smooth and efficient experience. Reducing food waste and improving how donors and NGOs talk to each other can really help people in need and make sure we use resources wisely. This system is a great digital tool that connects people who have extra food with those who need it, making the way we share food more responsible and efficient. By doing this, we can make a big difference in our communities and help make sure everyone has access to the food they need. It's a simple but powerful way to bring people together and make the world a better place, one meal at a time.

## II. SYSTEM MODULES

### A. User Registration Module

The User Registration Module is where people start when they use the Food Waste Reduction System. It's like a front door that lets users create an account by giving some basic information like their name, email and password. This helps keep the system safe and makes sure only people who have signed up can use the parts of the system that let them donate food. After someone signs up, they can go straight to the part of the system where they can donate food, which makes it easy for them to get started.

### B. Food Donation Module

The heart of our system is the Food Donation Module. This is where people can give away extra food they don't need. When someone wants to donate, we ask for a few details: their name, what kind of food it is, how much there is, where they are, their phone number, and a picture of the food. All this information gets stored in our database so others can see what's available. This way, we make sure everything is organized and easy to find, and food gets to those who need it.

### C. View and Data Management Module

This module is responsible for retrieving and displaying all donation records from the database. It shows details along with images and status indicators such as "Available" and "Collected." It also provides functionality to delete records when needed. This module ensures proper data management and helps in monitoring all food donations.

### D. NGO Interaction Module

The NGO Interaction Module enables NGOs to access available food donations. NGOs can view the list of available food, contact donors through phone or WhatsApp, and collect food. Once collected, the system updates the status and removes it from the available list. This module ensures smooth coordination and efficient food distribution.

## III. ADVANTAGES OF THE SYSTEM

- **Centralized Food Donation Platform:** Provides a single web-based system that connects food donors and NGOs, reducing dependency on manual coordination.
- **Efficient Food Distribution:** Ensures surplus food reaches needy people quickly by minimizing delays and communication gaps.
- **User-Friendly Interface:** Offers a simple and intuitive design that allows users to easily register, donate food, and navigate between pages.
- **Real-Time Data Management:** Displays available and collected food with updated status, improving transparency and tracking.
- **Direct Communication Feature:** Enables NGOs to contact donors instantly through phone and WhatsApp, ensuring quick response and coordination.

- **Reduces Food Wastage:** Helps in utilizing excess food effectively, contributing to social welfare and environmental sustainability.

#### IV. IMPLEMENTATION INSIGHTS

- **Database Management:** Proper handling of database operations is required to store, retrieve, update, and delete donation records efficiently without data loss.
- **Form Validation:** Input fields such as name, food, quantity, phone number, and location must be validated to ensure correct and complete data entry.
- **User Interface Design:** The system should provide a simple and responsive interface so users can easily navigate between registration, donation, view, and NGO pages.
- **Real-Time Status Update:** Implementation must ensure that food status changes Available to collected are updated instantly and reflected across all pages.
- **Communication Integration:** Phone number click and WhatsApp redirection must work properly to enable quick communication between donors and NGOs.

#### V. PROJECT VALUE

The Food Waste Reduction System represents a significant contribution toward addressing the real-world problems of food wastage and hunger. By integrating modern web technologies into a centralized platform, the system goes beyond simple data management and acts as an effective bridge between food donors and NGOs. Its primary value lies in promoting the efficient utilization of surplus food by ensuring that it reaches those in need in a timely manner. The system also encourages social responsibility by providing users with an easy and structured way to donate food through a digital interface. Additionally, features such as real-time status updates and direct communication improve coordination and reduce delays in food distribution. Overall, the project demonstrates the practical application of web development in solving social and environmental challenges, making it a meaningful and impactful solution.

#### VI. CONCLUSION

Reducing food waste is a big deal, and one way to do it is by connecting people who have extra food with those who need it. A new system has been tested, and it shows that making it easy for people to give and get food can really make a difference. This system uses a website to bring together people who want to donate food and organizations that help those in need. It makes it simple for donors to give food, for organizations to see what's available, and for everyone to pick up the food they need. This helps cut down on waste and gets food to people who really need it. To make it even better, the system could be updated to send reminders and track locations in real time, which would help everything run more smoothly.

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