International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

A View on a PHP-Based Project for A Donation and Waste Food Management System

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ABSTRACT

Food waste is a problem that affects everyone. People are impacted anywhere it is present, including in our homes, schools, restaurants, grocery stores, places of business, and even in transportation. With the help of this software, hotels can give leftover food to those in need while reducing food waste. With the help of this software, users may sign up, log in, see, add, and remove products from their carts, and then log out of the system. Additionally, this software contained a real-time database. Through this app, food donors may enter information about their donations, and NGO volunteers can see the photographs of the food that each donor has contributed.

Food waste is a widespread issue in our culture. Management of food waste is essential since it may increase our sustainability both economically and environmentally. We have determined how mobile technology may be used to minimize food waste management, and we have developed an android mobile application that enables restaurants or individual users to share and donate their leftover food with those in need. We intended to complete this project in order to use an Android application to lessen food waste. The visitor may log in and input the kind, quantity, and location of food that is offered in this project. The agent is then sent a brief notice. The agent at that location may log in and get the donor's data after receiving the notice. The software allows the donor to create an account, and he may log in to add the location and food data anytime there is food waste. The agent is also capable of retrieving the data and holding an account. Once the information has been retrieved, the agent may go get food from the donor and provide it to the orphans or other needy people. Food redistribution is an incredibly effective social innovation initiative that addresses food poverty and waste. Because it has a distinct account for every user, the user's information is kept private.

Keywords: Surplus Food Donation, Web-based application, Reduce Food Wastage, PHP based application, Web Development, Donation Tracking, Food Redistribution.

I. INTRODUCTION

“In today's world, food waste has emerged as a significant global challenge with far-reaching consequences for the environment, society, and economy. As surplus food continues to go to waste while millions go hungry, the need for efficient waste food management and donation systems becomes increasingly urgent. This report delves into the complexities of food waste and explores the potential of computer systems, particularly PHP based platforms, in revolutionizing the way we manage and

redistribute surplus food. Through a comprehensive analysis of the current landscape, proposed solutions, and implementation strategies, this report aims to shed light on this critical issue and inspire action towards a more sustainable and equitable food system."

We created a fascinating and user-friendly website by using programming languages like PHP, MySQL, JavaScript, HTML. There will be 4 modules 1. Donor, 2. Admin, 3. Needy/NGO 4. Delivery partner. The idea behind over project can be used by many people who wish to donate things to needy organization.

The concept behind this initiative can be used by many people who want to give stuff to needy organizations. Furthermore, many groups prefer to request various items they require, such as clothing, food grains, books, and utensils. On this website, we have attempted to prevent food waste by distributing leftover food to people or organizations in need. The needy will contribute to a request if the donor has any leftover food. This request is routed to a list of donors. The Available Donor then accepts the request. We will handle the distribution system by hiring a delivery person to collect food from donors and distribute it to those in need. The second option for the delivery method is for volunteers who want to help donate food to join us for distribution in nearby communities. For example, they can donate meals to government schools, hospitals, orphanages, and old age homes.

II. OBJECTIVES

The Food Assistance Program's goal is to eradicate food waste in order to eliminate hunger and usher in a world without it. A recent research estimates that 1.3 billion tons of food are wasted annually. In addition, leftovers make about one-third of the food eaten. The project's main goals are to feed the underprivileged and reduce trash. Because of this, it was developed by experts in PHP-based website creation, and the program lets companies submit requests in whatever way they see fit. A smartphone is required in order to use the Free Food Project app. Effective communication optimization and transparent solutions

III. MODULES OF WASTE FOOD MANAGEMENT AND DONATION SYSTEM USING PHP

Module for User Management:

- enables users to create accounts, log in, and control their profiles.
- includes tools for managing passwords, modifying profiles, and authenticating users.
- distinguishes between administrators, volunteers, donors, and beneficiaries.

Module for Donation Management:

- allows food givers to publish information about their excess food gifts, such as the amount, kind, date of expiry, and preferred pickup or delivery.
- enables recipients to look for and request contributions according to their choices and requirements.
- helps arrange contribution pickups or delivery by facilitating contact between donors and recipients.

Module for Inventory Management:

- keeps track of the available amounts, expiry dates, and storage locations of donated food in real-time.
- gives access to tools for managing inventory, including the ability to add, modify, and remove goods, change amounts, and update statuses.
- produces statistics and reports on distribution patterns, contribution trends, and inventory levels.

Module for Scheduling and Logistics:

- oversees the planning, scheduling, and transportation of donations.
- both donors and recipients the option to choose preferred places and times for collection and delivery.

- maximizes efficiency and reduces transportation costs via optimized scheduling and routing.

Module of Communication:

- helps users—donors, recipients, volunteers, and administrators—to communicate with one another.
- supports alerts, notifications, and messaging to notify users of critical developments, such as pickup and delivery times and contribution requests.
- Offers avenues for comments, questions, and requests for assistance.

Module for Analytics and Reporting:

- Produces data and analysis on effect evaluations, distribution metrics, inventory levels, and donation actions.
- uses dashboards, graphs, and charts to visualize data and provide insights on performance indicators and donation patterns.
- allows for the customization of reporting choices to satisfy the requirements of various stakeholders, such as administrators, volunteers, funders, and receivers.

The following are the features of the Python project on sign language recognition:

- **Registration of Users and Management of Profiles**: Permit users to register and maintain their profiles with preferences and personal data.
- **Food Donation Submission**: Permit contributors to provide information on excess food products, such as kind, amount, and expiration date.
- **Assist with volunteer registration and work assignment**: Assign duties, including gathering and distributing food, according to availability and location.
- **Geolocation Integration:** Make the most of route planning by matching volunteers with local contribution collections by using geolocation services.
- **Real-time Tracking and Notifications**: Keep track of donated food items in real-time and inform volunteers and donors about delivery status and pickup times.
- **Feedback and Rating mechanism**: Put in place a mechanism that allows volunteers, donors, and recipients to score their experiences and provide recommendations for improvements.
- **Analytics and Reporting**: To improve operations and gauge efficacy, generate reports and analytics to monitor trends in donations, volunteer activities, and impact indicators.
- **Simple, easy-to-use interface**: intuitive design for seamless communication.
- **Privacy protection**: guarantees the security of user data and upholds their privacy at all times.
- **Unlimited Users**: The server's performance won't suffer if "N" users join at once.

System requirement:

Taking Care of Food Insecurity: Food insecurity affects millions of individuals worldwide who do not have access to a consistent supply of wholesome food. In order to aid needy people and families, a waste food management and donation system helps close the gap between extra food and those in need.

Cutting Down on Food Waste: Food waste accounts for billions of tons of food wasted annually, making it a major worldwide problem. Through the system, excess food from restaurants, stores, and homes can be easily donated to food banks and charitable organizations, therefore preventing edible food from ending up in landfills and fostering sustainability.

Encouraging Fairness in Society: It is a fundamental human right for everyone to have access to wholesome food, yet many people and communities encounter obstacles in getting enough food resources. Social justice is promoted by a waste food management and donation system that makes sure excess food is given to those who need it most, regardless of their geography or socioeconomic standing.

Encouragement of Community Resilience Access to food becomes even more important during crises and catastrophes, such as natural disasters, economic downturns, or public health issues. In order to help communities overcome hardship and recover from it, a waste food management and donation system is essential to fostering community resilience.

Promoting Cooperation and Involvement: To combat food poverty and minimize food waste, the system brings together organizations, volunteers, donors, and receivers. Through the development of partnerships and participation among stakeholders, the system strengthens and fortifies communities while encouraging group action toward a shared objective.

Encouraging People and Families: It is crucial for economic stability, health, and well-being to have access to wholesome food. The scheme enables people and families to get excess food contributions, enabling them to fulfill their fundamental requirements, relieve financial hardship and concentrate on other facets of their existence, such work, education, and personal growth.

IV. REQUIREMENT ANALYSIS

4.1 Problem Definition

Because there is currently no method to share food with others while someone is eating a lot of it subtly, any additional food that someone has, whether from an event or just around the house, will be wasted. Even if they would want to donate the surplus food to an orphanage or other impoverished people, they don't really have the time or knowledge to do so, or so they specifically believed. Thus, we essentially need to prepare an application to sponsor the additional food that is donated to a local orphanage or impoverished individuals, which is usually quite noteworthy.

4.2 The specification of requirements

In order to really accomplish the project's goals in a significant manner, the suggested application must essentially satisfy a few prerequisites. The client-side criteria are as follows: It must particularly have an interface; it must specifically be substantially compatible with the majority of Android devices. It ought to be able to keep data on the server.

1. Functional specifications:

The server-side requirements are as follows: the database physically needs a user table; furthermore, the database has to have food tables specifically designated for users, which is really very important. Contrary to common opinion, the database in particular has to be able to interact with the client-side application in all respects.

User: Every software user will be able to register for an account, which will be used to store user information and link user activity to a user alias. Login and user registration are required. Create an Account: To make it easier for users to create accounts, the system should provide a user-friendly graphical user interface. The email address and password will be requested by the system. If the user enters the wrong characters in the email address or password box, the system will alert them. If the user's email address has previously been used, the system ought to alert them. If the user leaves any mandatory fields blank, the system ought to alert them. The user shouldn't be able to generate weak or unsafe passwords on the system. The system need to provide an explanation of the password's lack of security. If the necessary

information has not been agreed to in the terms of service, the system ought to stop the user from finishing the registration process. With his special email password, the ab-Admin User will be able to log in and get the necessary, restricted access to the system. The program should open with a user-friendly graphical user interface (GUI) that enables the user to log in. The user should be prompted by the system to enter their password and email address.

View Existing Programs: After a user selects a program, the system will pull all user-submitted programs from the Google Firebase database and present them to the user. The system should have easy-to-use navigation that makes it possible for users to find the current list of user-submitted donation camp locations. The system will provide all relevant information about the location of the food donation camp. It should also make it simple and fast to navigate between the various routes in the list.

Manage Users: The Admin just has to click once to manage every Member and their data. Manage in this context refers to ADD, UPDATE, VIEW, and DELETE records.

Manage Transactions: With simply a unique ID, the admin may add, remove, change, and examine any member's transaction. The status of each member will be updated explicitly by the system.

Handle expenditures: The MANAGE EXPENSE module of the system, which includes all potential system expenditures, allows the system to handle daily, weekly, and monthly contribution expenses.

Handle equipment: The system will be able to examine, edit, and delete records of machinery. It will also be able to keep a comprehensive record of food donations.

Send Message: An interface for messaging other users will be provided by the system. There should be no delays in the sending of messages.

Non-functioning prerequisites:

Safety: Secure socket layer, or SSL, is used by the system for all transactions involving private client data. All users must be automatically logged out of the system after a certain amount of inactivity. The customer's PC shouldn't have any cookies from the system that hold their password. Only authorized administrators will be able to access the back-end servers of the system. Before being sent over unsecure networks like the internet, sensitive data will be encrypted.

Dependability: All databases are stored by the system on redundant machines that automatically swap between them. The dependability of each component determines the dependability of the program as a whole. The primary foundation of the system's dependability is the database backup, which is updated and maintained on a regular basis to reflect the latest modifications. Therefore, the stability of the container and the operating system that powers it determines the overall stability of the system.

Accessible: The user should always be able to access the system using a web browser, with the only limitations being periods when the server hosting the system is unavailable. If there is a hardware malfunction or database corruption, an alternate page will appear. The administrator should also obtain and save database backups from the server in case of hardware failure or damage. The service will then be started again. It denotes availability around-the-clock.

Sustainability: The application server manages the website, while a commercial database is utilized to maintain the database. The program will be re-initialized in the event of a failure. Additionally, modularity is taken into consideration during software design to facilitate effective maintainability.

Mobility: The program is built using HTML and programming languages. Because the end-user program is totally portable, its functionality should work with any machine running any web browser, regardless of the hardware platform that is or will be available in the future. The end user may utilize this system on

any operating system, including Linux and Windows. The PDA, laptops, and PCs will all run the system. **Interface specifications:** Easy-to-follow navigation, little visual content, no hidden buttons, and appropriate error messages are all desirable in an interface. In its entirety, we are required to develop a web application that supports every feature of a service-oriented business.

V. SYSTEM DESIGN

Basic Module

Module for Donor/User Management:

- enables users to create accounts, log in, and control their profiles.
- contains tools for adjusting preferences, examining contribution history, and updating personal data.
- makes it easier to publish food contributions and to provide information about the donations, including the kind, amount, and expiry date.
- gives beneficiaries access to tools for following the progress of contribution requests and for communicating.

Module for Administration and Management:

- gives administrators the ability to control rights, user accounts, and system settings.
- includes tools for granting roles and permissions, removing, amending, and creating user accounts.
- provide resources for keeping an eye on contribution activity, settling conflicts, and enforcing system regulations.
- makes it easier to communicate with people and respond to their questions or grievances.

Module for Delivery Management:

- oversees the planning, scheduling, and logistics of contribution pickups and delivery.
- gives delivery staff the ability to see and handle contribution requests, which includes planning pickups, checking delivery progress, and verifying delivery.
- offers resources for controlling merchandise while it's in transit, monitoring delivery trucks, and planning the best routes for deliveries.
- facilitates coordination of pickup and delivery operations by facilitating communication between donors, beneficiaries, and delivery staff.

Module for Management of Needy NGO:

- permits NGOs or charity organizations with registration to see and handle contribution requests.
- permits NGOs to solicit food contributions on behalf of underprivileged clients.
- includes functions for confirming contribution pickups, examining donation offers, and validating recipient eligibility.
- gives access to tools for recording recipient feedback, keeping an eye on gift distributions, and providing impact data.

Data Base Design Schema Design

ER Diagram

Admin		
PK	Aid	Int
	Name	varchar
	Email	varchar
	Password	varchar
	Location	text
	address	text

Food Donation		
PK	Fid	Int
	Name	varchar
	Email	varchar
	Food	varchar
	Type	text
	Category	text
	Quantity	text
	Date	date time
	Address	text
	Location	varchar
	Phoneno	varchar
	Assigned_to	int
	Delivery_by	int

User Feedback		
PK	Feedback_id	Int
	Name	Varchar
	Email	Varchar
	Message	Varchar

Login Table		
PK	Aid	Int
	Name	varchar
	Email	varchar
	Password	varchar
	Gender	varchar

Delivery Person		
PK	Did	Int
	Name	varchar
	Email	varchar
	Password	varchar
	City	varchar

VI. CONCLUSION

To sum up, the system for managing and donating leftover food offers a strong way to tackle the urgent problem of food waste while also helping underprivileged people. By means of this system's application, a multitude of stakeholders, such as administrators, delivery staff, NGOs, and donors, may effectively cooperate to guarantee the efficient collecting, distribution, and usage of donations.

The waste food management and donation system is essentially an example of how technology may be used to solve humanitarian issues and promote good social change. Through the combined efforts of people, institutions, and technology, we can build a more just and sustainable future for all.

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