

# FeedKind: Bridging Generosity and Need

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## Abstract

This project describes the FeedKind application which is designed to address the critical societal challenges of food waste and food insecurity by establishing an efficient system to redistribute surplus food from restaurants, caterers, and food providers to vulnerable populations such as elderly care homes and orphanages. The overarching goal is to create a structured framework that minimizes food wastage while simultaneously ensuring that nutritious meals reach those who face difficulties in accessing them. Through strategic coordination with food providers and recipient organizations, this initiative aims to streamline the collection, safe handling, and timely delivery of surplus food. It recognizes the logistical complexities involved in handling surplus food and emphasizes compliance with legal regulations, ensuring food safety and quality throughout the redistribution process. The project places a strong emphasis on collaboration and awareness-building within the community. By encouraging engagement from food providers and recipient organizations, this initiative seeks to establish a sustainable network that facilitates the transfer of surplus food to those in need.

**Keywords:** Android Application, Donors, Receivers, Oldage And Orphanage Homes.

## I. INTRODUCTION

India has become the most populous country in the world today. With increasing population, the amount of food wasted is increasing day-by-day at an alarming rate. Huge amounts of food is wasted in restaurants, mess, canteens and other food providers due to many unpredictable factors, consumer footfall being one of them. If food is being wasted on one side, there are many starving stomachs on the other side. There are many orphanages and oldage homes that totally rely on donations and struggle a lot to arrange three meals for a day. The NGOs also face a huge problem in finding some regular donors. Some organizations literally go door-to-door requesting for donations of meals. This resource gap can be bridged by redirecting this excess food from the restaurants to the needy organizations. The proposed android application connects the donors, which are the food providers or restaurants to the receivers, which comprises of the needy organizations. This application will facilitate prevention of food wastage, eradicate hunger, along with promotion of charity and oneness among the citizens of the country. The android application is designed with the aim to create a simple solution to wastage of excess food and help the needy people access this access food with dignity. This paper illustrates the motivation behind this application, insights from few potential research papers, development of the FeedKind application, system architecture and design of proposed system and the future scope of the project that elucidates the areas of improvement that can be worked upon. The absence of a systematic mechanism for redistributing surplus food results in tons of edible resources being discarded, contributing to environmental degradation and perpetuating the cycle of scarcity for those who could benefit from it. The project seeks to revolutionize this scenario by establishing an organized system that collects surplus food from providers and efficiently delivers it to institutions supporting vulnerable groups. By understanding the challenges in logistics, compliance, and awareness, this initiative aspires to create a sustainable solution that not only minimizes food wastage but also ensures that every plate of surplus food finds its way to those who need it the most. Through collaborative efforts with food providers, recipient organizations, and community stakeholders, this project endeavours to transform surplus food into a lifeline for those facing food insecurity.

### A. Background of the Project

The contemporary food industry witnesses a distressing paradox: while vast quantities of edible food are discarded daily by various food providers due to surplus or minor imperfections, marginalized communities, including elderly care homes and orphanages, grapple with food insecurity. This surplus food, still viable for consumption, contributes significantly to the pervasive issue of food waste, amplifying environmental concerns and exacerbating the struggles of vulnerable populations. The absence of a structured mechanism for redistributing surplus food perpetuates this disparity. It leads to tons of edible resources ending up in landfills, contributing to environmental degradation, while those in need face ongoing challenges in accessing consistent and nutritious meals. This project emerges from the urgent need to bridge this gap between surplus food availability and the unmet nutritional needs of underserved communities.

### B. Scope of The Project

This project is designed with an objective to solve two major problems in our society - resolve the problem of food wastage and help the needy fight with hunger with dignity.

- Engaging with restaurants, caterers, canteens, and other food providers to establish partnerships for the donation of surplus food.
- Establish partnerships with the recipient and needy organizations.

- Creating a systematic approach for the collection, transportation, and delivery of surplus food while adhering to food safety standards and legal regulations.
- Ensuring rigorous compliance with health and safety regulations throughout the redistribution process to maintain the quality of donated food.
- Implementing mechanisms for ongoing assessment of the project's impact, gathering feedback, and making necessary adjustments for optimization.

## II. PROBLEM DEFINITION

Food is the most essential resource required for the very survival of life. Unfortunately, huge amounts of food is wasted world-wide on a daily basis. According to recent research, nearly 40% of the food in India ends up in dustbin, which accounts for a whopping 92,000 Crore rupees a year. Although, food waste is contributed to by every household, it cannot be regulated and controlled. The major contributor and controllable factor of food waste is restaurants, food caterers, mess, etc., because the amount of food wasted here is often in significant quantity. Here, these food providers have excess food. On the other hand, there are a lot of oldage and orphanage homes in the country that are facing a resource crunch. There are many organizations that are completely dependent on charity and donations. They suffer a lot due to irregular or rare donors. This paper focuses on an android application, “FeedKind” aims at bridging this gap between the excess resource and the needy. The excess food from food providers can be mapped to the needy orphanage or old-age homes. The current landscape of food distribution and consumption within the restaurant, catering, and food service industry generates a significant amount of surplus food daily. This surplus, though edible and of reasonable quality, often goes to waste due to the lack of a systematic mechanism for its redistribution. Simultaneously, there exists a prevalent issue of food insecurity among marginalized groups such as elderly individuals in care homes and orphanages, who struggle to access regular, nutritious meals. The primary issue this project aims to address is the inefficient distribution of surplus food from various food providers—restaurants, caterers, canteens, and other establishments—to the underserved and vulnerable populations, including elderly care facilities and orphanages. The absence of a structured framework leads to food wastage, exacerbating environmental concerns and deepening the food scarcity faced by those in need.

### A. Key Challenges

The key challenges faced in creating a reliable and efficient system are as follows:

#### **Food Wastage:**

Current practices within the food service industry often result in surplus food being discarded due to expiration dates, excess orders, or minor imperfections. This wastage contributes significantly to environmental issues like greenhouse gas emissions and landfill accumulation.

#### **Food Insecurity:**

Vulnerable groups, such as the elderly in care homes and orphanages, struggle to access consistent and nutritious meals due to limited resources and support. This perpetuates health concerns and diminishes their quality of life.

#### **Logistical Hurdles:**

Establishing a streamlined process for collecting excess food from diverse providers, ensuring its safe handling, and timely delivery to recipient organizations poses logistical challenges. Coordinating schedules, maintaining food safety standards during transportation, and managing volunteer resources require careful planning.

#### **Regulatory Compliance:**

Compliance with legal and health regulations regarding food safety, handling, and donation is essential. Navigating these regulations while facilitating food redistribution can be complex and requires thorough understanding and adherence.

#### **Awareness and Participation:**

Encouraging participation from food providers and recipient organizations necessitates effective communication and awareness campaigns. Creating buy-in and commitment from these stakeholders

is crucial for sustained success.

To address these challenges, a structured system needs to be established that facilitates the efficient collection of surplus food from providers, ensures its safe transportation, and timely delivery to the needy organizations. This system should adhere to legal and health regulations, promote awareness among stakeholders, and continually assess its impact to optimize operations.

Overall, the project aims to bridge the gap between surplus food availability and the nutritional need of vulnerable populations while mitigating food wastage and fostering a more sustainable and compassionate food distribution network.

### III. LITERATURE SURVEY

Mrigank Mathur et al. [1] This paper highlights an android application built on Java and XML. There are 3 modules, namely Admin, Donor and Receiver modules. All modules have to sign up. The regions of each module is visible to all the other modules. After the approval of the Recipient, Admin collects food from the donor and notifies the recipient.

Prof. Sangita Jaybhaye et al. [2] This paper offers a valuable platform for connecting donors with NGOs, helping in the efficient distribution of food resources to those in need. Visualization of the impact of food donations positively influences users, promoting the reduction of food wastage and feeding the hungry simultaneously. Excess food produced during gatherings and events can be easily donated through this application, contributing to sustainability and poverty reduction.

S. Neelavathy Pari et al. [3] The paper presents an Android mobile application called "Food Donation App," designed to address the issue of food waste and facilitate the donation of excess food to those in need. The application serves as a bridge between donors, NGOs, and people requiring food. It enables businesses and individuals to contribute and share their surplus food, reducing food waste while aiding the needy. The application enhances the management of food waste by leveraging mobile technology, providing user-friendly features, and enabling the ranking of NGOs and donors based on their contributions.

Maria Biju et al. [4] This paper discusses an application called "Thrypthi" for food donation, aiming to connect donors, nongovernmental organizations (NGOs), and those in need. This application focuses on reducing food waste by linking NGOs with hotels, restaurants, and caterers, allowing donors to offer food through web and Android applications. The architecture of the system involves four key entities: Admin, Hotel/Restaurant/Cater, NGO, and Donor/User modules. Admins can manage registered restaurants and NGOs, and restaurants can update their profiles and notify NGOs of food donations. NGOs can raise requests for food supply, and donors can make food donation requests. The system promotes transparency, clarity, and speed in food donations and aims to connect those in need with donors through NGOs as intermediaries.

Kavita Shirsat et al. [5] The paper presents "Food Share," an internet-based Android application that facilitates food donation to needy individuals and organizations. It addresses the issue of food wastage in highly populated countries like India, where excess food is often discarded by restaurants and homes. The proposed application allows restaurants to upload images and descriptions of leftover food, while users (informers) can log in, select meals, share hunger spot locations, and request food. This app uses Firebase storage and real-time database for its functionality. With the increasing use of Android smartphones in India, this app aims to connect those with extra food to those in need, reducing food

wastage and helping feed hungry people.

#### IV. METHODOLOGY

FeedKind is a comprehensive Android application that addresses the challenge of surplus food wastage by creating a streamlined platform. It facilitates the connection between surplus food providers like restaurants, caterers, and event organizers with underserved communities such as elderly care homes and orphanages. The primary aim is to efficiently manage surplus food collection, transportation, and delivery to minimize wastage while ensuring that it reaches those in need. In the FeedKind application, we mainly have three components, namely the Donors which represents the food provider community, receivers symbolizing all the oldage and orphanage homes and the admin, who is responsible for smooth functioning and application, thus acting as a bridge between the donors and receivers.

- **Donor Module (Restaurants and Food Providers):**

This module enables restaurants and food providers to create listings of surplus food, specifying item details, quantities, and availability for donation. Donors have the role of managing their surplus listings, editing information, marking items as claimed, or removing listings based on availability. They ensure compliance with safety guidelines before listing items, maintaining a responsible approach toward surplus food donation.

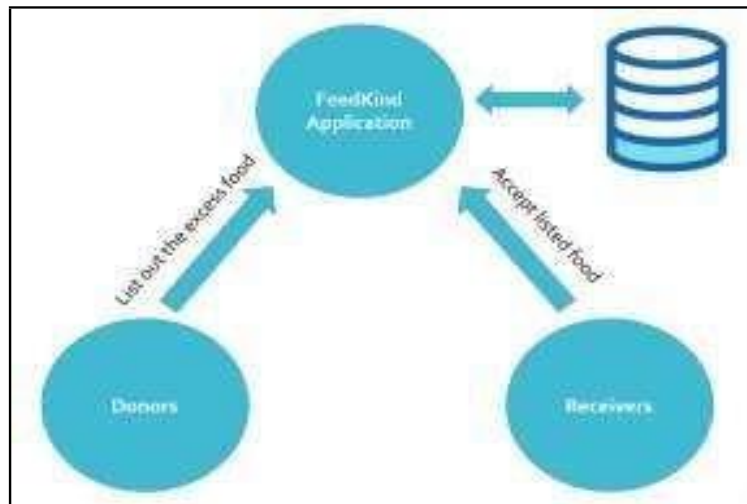
- **Recipient Module (Oldage Homes and Orphanages):**

Recipient organizations, such as old age homes and orphanages, utilize this module to search for available surplus food based on their specific needs, preferences, and location. They have access to a filtering system to refine search results, claim available items, and coordinate pickup/delivery schedules. The recipients play the role of selecting appropriate surplus food items to meet the nutritional requirements of their residents, ensuring they receive quality and timely donations.

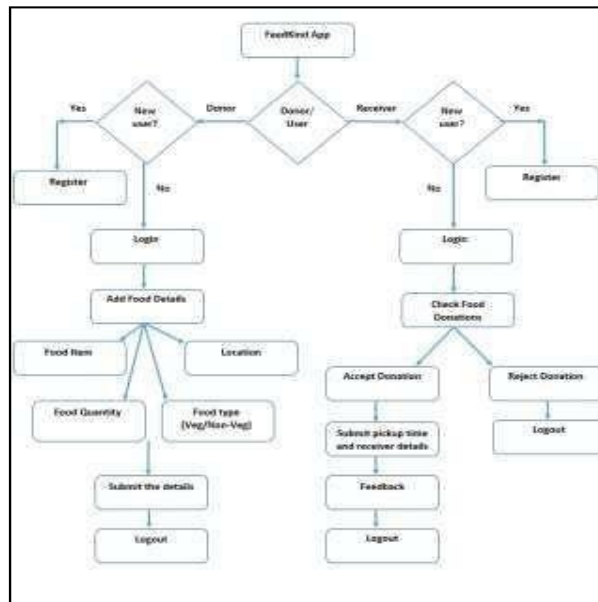
- **Admin Module (Platform Management):**

The Admin Module oversees the entire platform, managing user accounts, monitoring listings, and ensuring adherence to safety standards and regulations. Administrators have access to comprehensive reporting tools and analytics, allowing them to track metrics, user activities, successful exchanges, and the overall impact on reducing food waste. They play a crucial role in maintaining platform integrity, facilitating communication between users, resolving disputes, and continuously optimizing the platform's functionalities to enhance user experience and impact. This design fosters a collaborative ecosystem where donors and recipients efficiently interact, facilitated by the administrative oversight ensuring compliance, security, and the platform's effectiveness in addressing food waste and alleviating food insecurity among vulnerable populations.

The following figures, Fig 1 and Fig 2 show the workflow of the project and the flowchart for the entire application respectively. In the Fig 1., we can see the interconnection among the three modules – donor, receiver and the admin. The Fig 2., depicts the flowchart for the entire system and lists down sequential steps for a user logging in as both donor as well as receiver.



**Fig 1. Workflow of the Project**



**Fig 2. Flowchart of functioning of FeedKind Application**

**RESULTS AND DISCUSSION**

The screenshots of the practical implementation of the proposed application are



**Fig 3. Welcome Screen**



**Fig4. Login and Registration page**



**Fig5. Dashboard page**

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