GIFTWINGS: A Donation Hub for Community Support

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ABSTRACT

Food, clothing, and books are among the most essential and critical provisions for human well-being. Unfortunately, the issue of food insecurity, characterized by the absence of safe, nutritious, and sufficient food, persists as a significant problem in our society, especially in low-income communities. The three essentials such as food, cloth and book represent the most basic requirements of humanity, and it is imperative that they are met as swiftly as possible. Regrettably, in today's society, a significant number of individuals struggle to afford or access these fundamental necessities for survival. This Android application offers a solution to these challenges, enabling users to contribute food, clothing, and books free of charge, while allowing those in need to collect these donations when required. A noteworthy feature of this application is its ability to connect donors with recipients who seek the same type of donation. Unlike other donation platforms that often focus on one specific need, such as food, cloth and book.

Key Words: donation platform, secondhand market, wastage reduction, donation catalog, affluent society, NGO's.

1. INTRODUCTION

In 2020, hunger statistics in India were reported at 16.30%, marking a 1.7% increase from 2019. Additionally, it is disheartening to note that approximately 25% of donated clothing items are discarded in landfills, while an additional 40 to 50% are shipped overseas to the second-hand market. Only 25% to 35% of these donations find their way to stores, further highlighting the wastage. Access to books, a vital source of knowledge and enlightenment, is often taken for granted, yet not everyone enjoys this privilege. Food, clothing, and education are undeniably the three most fundamental and critical necessities for human beings. Ensuring access to these essentials is of paramount importance and should be addressed urgently. Regrettably, contemporary society witnesses many individuals who are unable to afford or access these fundamental requisites for survival, while, conversely, we observe a considerable wastage of resources, including food, clothing, and literature, by affluent and educated individuals.

Our generation's heavy dependence on smartphones for managing our daily activities is evident. These devices have transitioned from their initial role as basic communication tools to becoming indispensable personal assistants in our lives. With this transformation in mind, we've developed an innovative Android application that taps into the smartphone's potential as a personal assistant, offering users a comprehensive solution for a variety of tasks, including donating and borrowing items. This platform caters to a wide audience, providing the means to facilitate exchanges, borrowing, and sales of pre-owned items, thereby promoting a more connected and sustainable community. This application serves as a solution to this issue by allowing users to donate food, cloth, and books for free, and enabling other users to collect these donations when the need arises.

A distinctive feature of our application is its ability to connect donors with recipients who require the same type of donation. In contrast to existing donation platforms that often focus on

a specific need, be it food, clothing, or books, our application is uniquely designed to provide all three essential needs within a *single platform*.

2. LITERATURE REVIEW

The research paper titled "An Examination on Food, Clothes and Books Donation Based Android Application" [1] highlights the fundamental goal of the application is to associate those with surplus assets and liabilities who are anxious to reward the local area with other people who are out of luck and able to acknowledge. With the assistance of our program, clients can uninhibitedly give things like food, attire, and books, and different clients can openly gather the merchandise on a case-by-case basis. The research paper "Virtualizing Food Donation Distribution through Mobile Application and Cloud-Based Supply Chain Management" [2] introduces an infrastructure, DOVIR, which enables precise food donation through a virtualization infrastructure implemented via a smartphone application and cloud-based services. DOVIR incorporates analytics and smart sensors to automate the prediction of donation requirements, representing a groundbreaking food donation system that virtualizes the entire supply chain and maintains donor engagement throughout the process. "FoodX, a System to Reduce Food Waste"
[3] aims to create an application model that connects food donors, humanitarian communities, and individuals experiencing food scarcity in Jakarta. The paper discusses existing social community business processes, the application's design, and offers further research recommendations. "SeVa: A Food Donation App for Smart Living" [4] focuses on the design, implementation, and evaluation of the SeVa food donation app. The paper highlights the app's integration with other useful apps, its impact on AI for Smart Cities, its deployment on the Android platform, and positive user feedback. "Predicting Farms' Donations to Food Banks using the Analytic Hierarchical Process and Dempster Shafer Theory" [5] analyzes factors contributing to annual sweet potato donations to Feeding the
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Android application for food, clothing, and book

Carolinas from 2010 to 2016. "Forecast and Analysis of Food Donations Using Support Vector Regression" [6] explores the use of Support Vector Regression for predicting monthly food donation quantities, showcasing its potential in addressing food donation supply uncertainty.

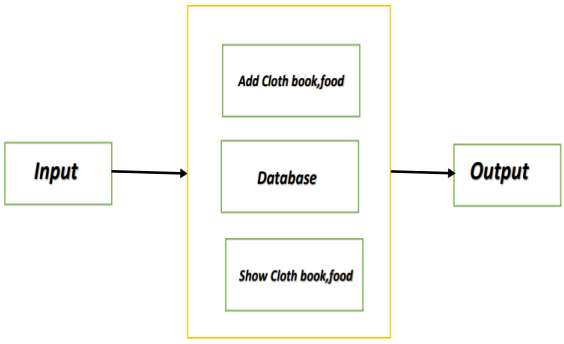

Fig.1 System Design

"Implement Android Application For Book Donation" [7] discusses the revolutionary potential of a book donation application, acting as a bridge between donors and those in need, particularly in countries like India. "Developing a Reliable Service System of Charity Donation during the Covid-19 Outbreak" [8] aims to create a blockchain-supported solution that integrates traditional web services and blockchain technology, ensuring a swift response to users' needs during the Covid-19 outbreak. “An Android Application Development for Food Donation: A Geographical Location Based Approach” [9] highlights the truth is that every year, close to one third of the world's food is wasted. Due to the support it provides to both consumers and developers, Android are one of the most popular mobile operating systems in the world. "Donatify" is the name of the app, which aims to link the community of hungry people with food donors. “A Blockchain-based Material Donation Platform”
[10] This paper highlights the propose a blockchain-based material donation platform designed and implemented through the Ethereum platform. We solve the difficulty of demand acquisition and improve the transparency of the donation process through blockchain.

In summary, these referenced papers offer valuable insights and methodologies that contribute to our

donation" project.

3. DESIGN AND DEVELOPMENT OF THE APPLICATION

i. Architecture and Framework

The framework of an Android application for book, food, and cloth donation is a multifaceted structure that combines the front-end UI, back-end server, user management, geolocation, and various other components to create a platform that facilitates charitable donations and connects donors with recipients. It must prioritize user experience, security, and scalability to fulfill its missioneffectively.

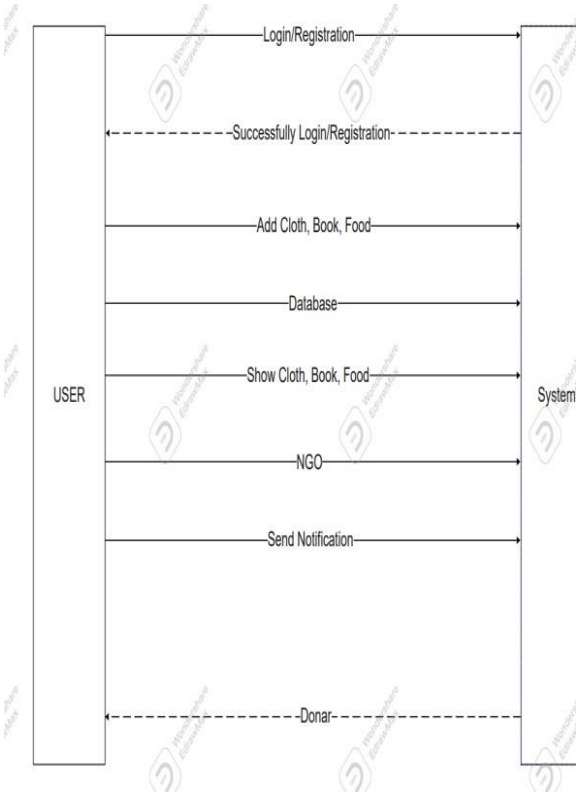

Fig.2 Architecture and Framework

ii. Feature and Functionality

Application is designed to facilitate the charitable exchange process. Users can create detailed listings for items they wish to donate, search for specific donations, and communicate with other users through messaging and notification systems. The app includes features for requesting donations, reserving items, and scheduling pickups, promoting efficient interactions. User feedback and ratings enhance transparency and trust within the community, while robust security measures ensure data protection and privacy. Geolocation services assist in locating nearby donation centers and recipients, and the app can be developed for multiple platforms if needed. Detailed documentation and feedback mechanisms contribute to continuous improvement and usability. This feature-rich app strives to connect donors with those in need, promoting acts of kindness and charitable giving.

iii. User Interface and User Experience (UI/UX) Design:

The UI/UX design of an Android application for book, food, and cloth donation is a critical component in ensuring a successful and engaging user experience. In the UI design, careful attention is given to the visual elements, layout, navigation, and accessibility to create an appealing and user- friendly interface. Consistency in design elements and imagery is maintained for brand cohesion. In the realm of UX design, considerations include user onboarding, information architecture, user flow, feedback mechanisms, and usability testing to optimize the overall user experience. The app's performance, offline mode capabilities, and cross-device compatibility are essential factors, and user feedback integration is encouraged for continuous improvement. The ultimate goal is to provide users with a platform that is not only visually pleasing but also highly functional and intuitive, facilitating charitable donations and user engagement.

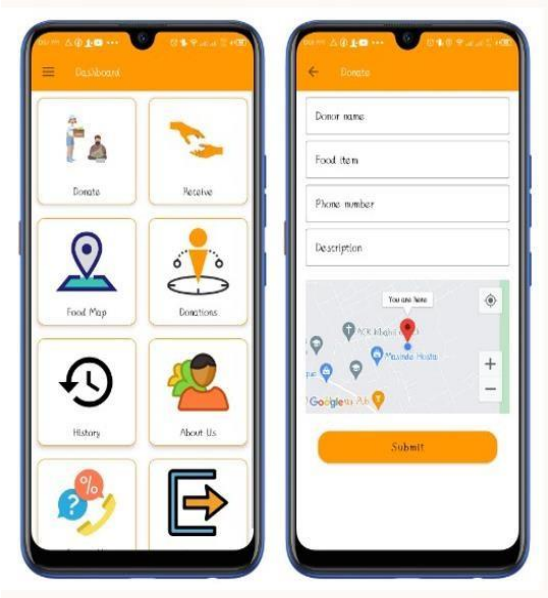

Fig.3A.UI Design

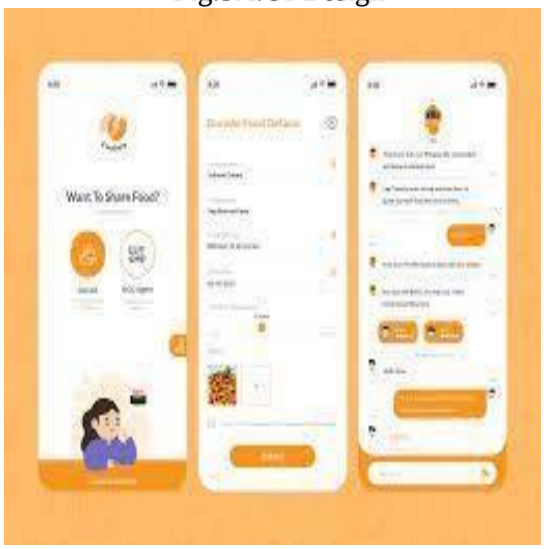

Fig.3B.UI Design (2)

iv. Push notification and Mapping

Push notifications in your Android donation app provide timely updates about new donation listings, chat messages, and important reminders, enhancing user engagement and communication.

Firebase Cloud Messaging (FCM) is a versatile Google service that enables app developers to send real-time push notifications to users on multiple platforms, allowing for user segmentation, customization, and analytics while maintaining reliability and cross-platform support, ensuring that important updates and information are efficiently delivered to users' devices.

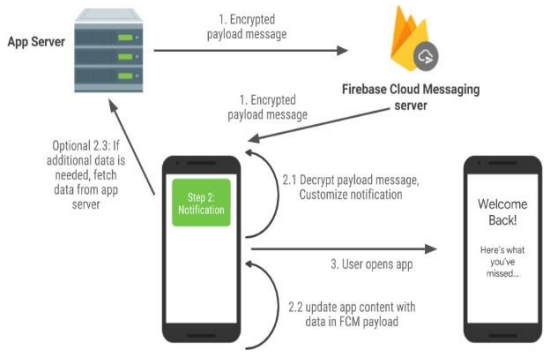

Fig.4.Push Notification

Mapping in an Android application for food, cloth, and book donation involves integrating interactive maps (e.g., Google Maps) to help users discover nearby donation centers, pickup locations, and recipients in need. Users can search based on location, get directions to their chosen destinations, and receive geolocation-triggered notifications for added convenience. This feature streamlines the donation process, making it easier for donors and recipients to connect and facilitate donations effectively while promoting acts of kindness and charitable giving.

4. SYSTEM ARCHITECTURE

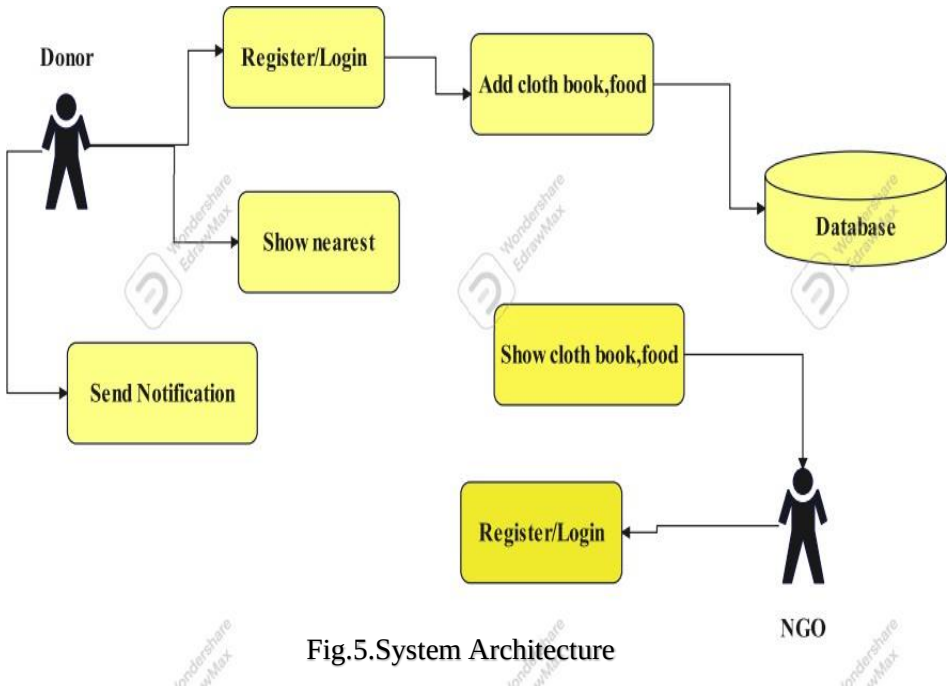

Fig.5.System Architecture

5. CONCLUSION AND FUTURE SCOPE

In conclusion, the Android application for food, clothing, and book donations provides a vital solution to addressing the immediate needs of underprivileged communities, reducing wastage, and fostering a culture of giving. Its future scope includes potential expansion to cover a wider range of essential items, partnerships with local entities, user engagement strategies, data-driven optimization, and a focus on sustainability and inclusivity. This application has the potential to make a lasting, positive impact on society by connecting donors with recipients and addressing fundamental necessities while adapting to evolving community needs and priorities.

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