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FOOD WASTE MANAGEMENT USING ANDROID

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ABSTRACT

An intelligent logistics system is an important branch of intelligent transport systems. It is a great challenge to develop efficient technologies and methods that improve their performance in meeting customer needs, as it is highly related to people's quality of life. Its high efficiency can reduce food waste, improve food quality and safety, and increase the competitiveness of food companies. In this article, we examine a new integrated planning problem for intelligent food logistics systems A key goal in our world today is the elimination of food waste by utilizing available food sources within local communities: leftovers in restaurants, stores, and food distribution centers may be close to expiration; and any perishable items that have not been fully used within the requested period. This is very important, especially in times of crisis like the COVID-19 pandemic. This paper focuses on creating an interesting mobile application (app) that provides a ubiquitous platform that allows users to visualize the food resources available in their surroundings and consequently gain access to food, thereby addressing two problems. i.e hunger and food waste.

Keywords: Android, Food, Food Waste, Ngos, Hunger, Waste Management.

I. INTRODUCTION

A key goal in our world today is to eliminate food waste by reusing available food sources in local communities: leftovers from restaurants, stores, and food distribution centers that may be close to their sell-by dates; and any perishable items that are not fully used within the requested period. This is particularly important in times of crisis like the COVID-19 pandemic. This paper focuses on the creation of an interesting mobile application (app) called Seva, which provides a ubiquitous platform that allows users to visualize the food resources available in their surroundings and consequently gain access to food, thereby addressing two main problems viz Hunger and food waste. This app is relevant to the UN SDGs (United Nations Sustainable Development Goals) and fits within the general scope of AI for smart living in smart cities. In addition to incorporating IoT (Internet of Things) and ubiquitous computing, this work positively impacts healthcare and the environment by reducing hunger and food waste respectively. We describe the development of our Seva app using AI principles, in particular HCI (Human-Computer Interaction), together with its evaluation of user surveys. We also list some open issues with room for future work.

II. LITERATURE SURVEY

In this base paper, Associate in Nursing instrumentation is formed with the assistance of 4 modules to connect people who want to share their further food and the NGOs, who will decide on it up and distribute it to the needy. within the projected application, the donator will be able to post their food details information which they require to share. The registered Ng will be notified concerning the on-the-market food. supported the literature findings, we tend to propose an approach to improve the provision chain, resource management, and delivery. The paper “Beyond food sharing: Supporting food waste reduction with ICTs”, revealed in the year2016, to ensure the standard of food to voters of all levels despite of a growing awareness of the importance of reduction in food wastage among people and managing the additional unwanted food, the role of ICTs during this sphere remains not cleaned hardly tabulate the paper „Food donation portal“, published within the year 2015, sums up briefly the hang the changed in food donation activities and connectivity of food donors to the NGOs and social work teams. one in every of the main disadvantage of this paper was that it's no GPS is

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available. Therefore, the donor can have to be compelled to look for the nearest social groups or NGOs manually.

III. MOTIVATION

Consumers are actuated to scale back food waste, it's going to end in less food waste. in line with this study, the foremost motivating issue was the chance to save lots of money (66 percent). Customers are motivated to alter their behavior and facilitate improved settings if they will economize at constant times.

IV. EXISTING SYSTEM

People now exchange their belongings physically by visiting each organization or support group several times. To help reduce food waste, a few websites and campaigns, such as "Offer me Dabba," have made efforts to aid people in sharing their leftover food. Currently, volunteers or members of social support groups must visit and hunt for these eateries and individual donors. They are having severe issues with communication, discovering locations, missing potential contribution spots, and much more. All volunteers must communicate well and understand the logistics of distribution and pick-ups.

V. PROPOSED SYSTEM

The proposed system is an Android application that represents or provides a platform for people to donate and distribute their leftovers to those in need. This application can be an effective way for people in a country like India to donate their extra food conveniently. This system consists of four modules: administrator, NGO, volunteer, and user. NGOs, volunteers, and users must register in the application and offer their data. The administrator has access to all data and is responsible for accepting and refusing all requests. The admin can approve all registrations and log in along with the collection of donor items. The proposed Android-based application is developed with Android Studio 4.0.3 using Java and XML. This application also uses Firebase technology for authentication and a real-time database. Furthermore, we use Google Map API to get the user's current location in the backend and find that location on Google Maps. Whenever a person If you register as a user and wants to donate or receive, this is stored in real-time in a database. This information is retrieved anytime the other person wants to donate or receive something. The user is then directed to Google Maps to locate the delivery or collection. The interface of this app is kept user-friendly and simple.

A. ADMIN:

The Administrator has full official authority to control the flow of data from one segment of the system to another. The administrator is responsible for accepting and rejecting all requests related to the donation. Each time an application is submitted, the Administrator will accept and approve the application, or the Administrator may cancel the application depending on the circumstances.

B. NGO:

This module accepts the donor request or generates a donation request for donors. The NGO module is responsible for the assignment of volunteers for collections and deliveries. They are responsible for the entire supply chain and manage the flow of leftovers.

C. USER:

The user registers first and then logs in to the application. They will then request a pick-up for the items they wish to donate. If the admin approves the request, a volunteer will contact the user and retrieve the item. Volunteer: Volunteers must also register. Volunteers will accept the management's request. They will arrive at the user's location and grab the item. Following the collection of items, volunteers will travel to the area designated by the NGO or social support organizations for delivery.

VI. SYSTEM ARCHITECTURE

The suggested system's device structure refers to the MVC model version, which utilizes the concept of concern dissociation. The 3-tier architecture has a standard operating procedure: Client tier, Server tier, and Data tier. The Server layer contains the business logic, which also makes use of a web service: Google Maps Web Services using the Google Maps Distance Matrix API. The Data layer is where we keep all of the data that we use in the application. The Client tier includes ways for building out connections to the server side. Furthermore, by the

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requirements, it is responsible for locating the device through GPS or the internet. It is written in Java and uses XML for layouts.

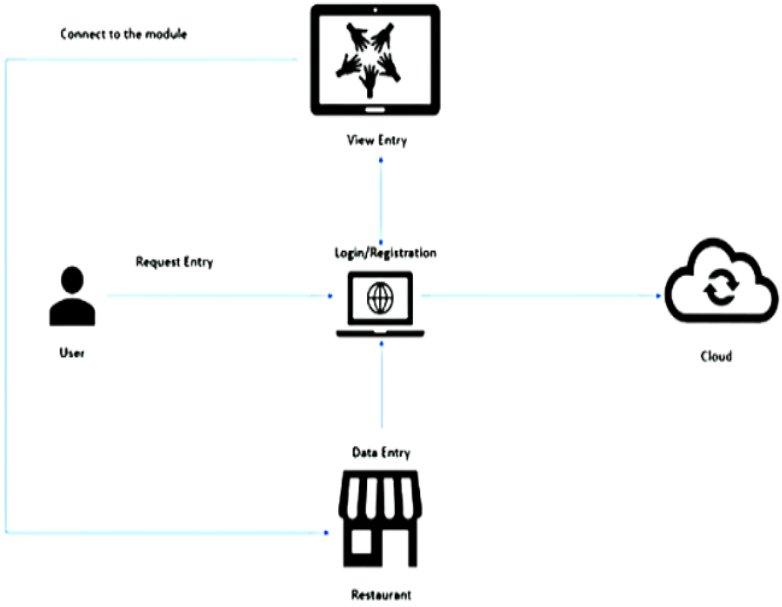

Fig 1: System workflow

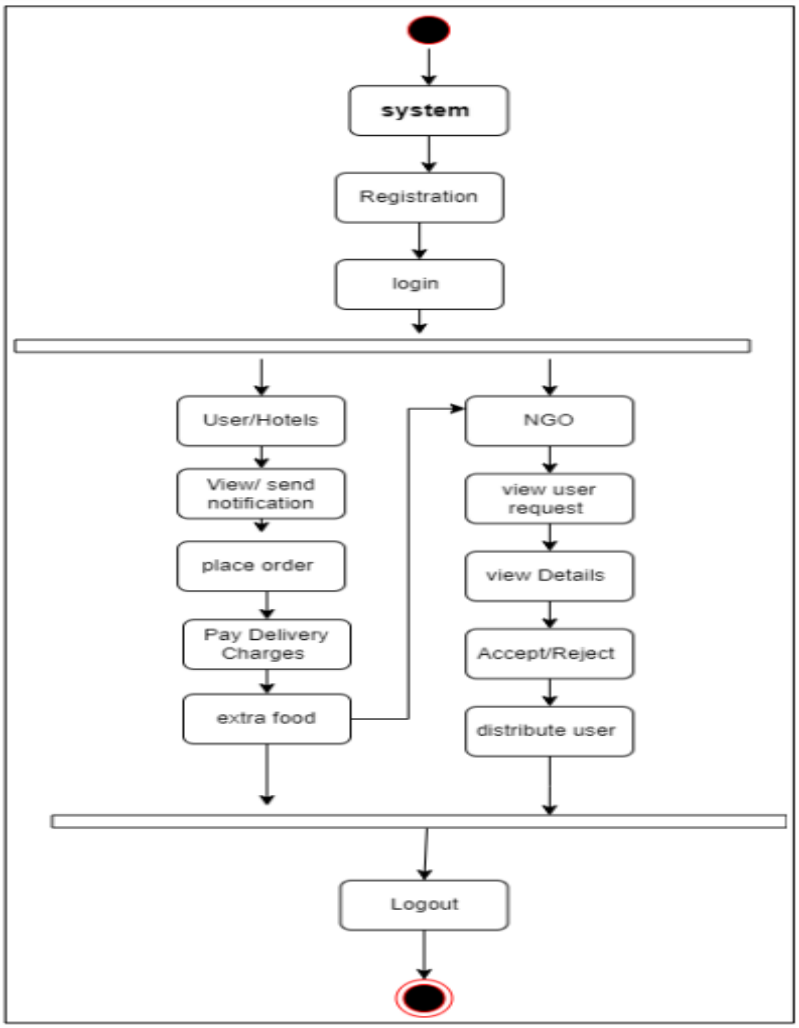

Fig 2: Activity Diagram

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VII. SYSTEM LIMITATIONS

For Android device users, the suggested application is incredibly efficient and user pleasant. However, this method has several drawbacks. One significant restriction of this prog is that it does not operate on iOS devices.

VIII. FUTURE SCOPE AND IMPROVEMENTS

This application has enormous potential in a country like India. This project's solution is worthy of combating food waste and loss through charity and donation. Furthermore, this application can be extremely useful in the event of a natural disaster, such as an epidemic spread. Hundreds of tons of food wasted during weddings may be repurposed to meet the needs of the impoverished. A system like this has a lot of potential for addressing India's and other nations' food crises. This system application also has a lot of room for development. For example, the QR code, a sort of two-dimensional bar code, may be used to record contact information, standardized resource location, product data, and so on.

IX. CONCLUSION

The sustenance approach serves to stay away from the crevice between the NGO and Donor. The approach serves to give sustenance waste to penniless individuals who are battling for nourishment. The approach unites these two, in such a route, to the point that these NGOs can persuade the ”nourishment to be squandered” without bother, and the inns/eateries/party-lobbies discover these sustenance seekers with no additional exertion then it will serve a more noteworthy cause and will be an enormous administration to mankind. This application has the potential to be extremely useful in combating issues such as malnutrition, hunger, and famine. Along with reducing food waste, it may also assist with the loss of natural resources such as freshwater, fuel, and environmental deterioration. This suggested base article describes a revolutionary decision support tool that enables a variety of additional food management possibilities and the most sustainable approach. The primary goal of designing this method was to reduce food waste and allocate extra food to persons in need. The connection between various modules has been described, and the usefulness of this approach in a software-based guide tool is addressed in this study.

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