



Annapurna – Waste Food Management

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Abstract : *India, the second largest country in the world in terms of population. The food requirement is also rising exponentially with the population. Many factors like, bad weather , pandemic, natural calamities affect food production. If food production is less than only alternative to have enough food is utilization of food. The significant rise in food waste necessitates Charity in terms of donations. In the current scenario, the majority of food is lost daily at numerous restaurants, social gatherings, and other social activities. The current framework provides details about the inspiration for such an application by visiting each organization multiple times to reduce food waste. According to the Food and Agriculture Organization (FAO), nearly 1.3 billion tons of food each year which is one third of what is being produce for human consumption is wasted around the world. On the other hand, the World Health Organization (WHO) estimates that 20% of the world's population faces severe food shortage. The developed application portal will help society by providing food to those in need. It keeps track of restaurants and NGO in nearby locations by highlighting availability of food and need. The supporting features are also kept for communication and from future perspective.*

Keywords- DONATE ,FOOD MANAGEMENT, NGO, RESTAURANT, VOLUNTEER.

I. INTRODUCTION

Food waste is a major problem in nations with a lot of people, like India. There is ample evidence to support this claim in landfills and garbage cans on the street. Marriages, restaurants, social events, family get-togethers, and functions consume a lot of food. Food waste not only indicates hunger but also a variety of economic issues. Donating them to a variety of organizations, such as non-governmental organizations, is an alternative to wasting food.[3]

The primary goal is to ensure that restaurants do not discard their excess or leftover food and that no one is starving. Instead, restaurants can donate food to those in need through non-profit organizations, which will alleviate the problem of food waste and assist those who are struggling to obtain or purchase food. The application "Annapurna," is developed to manage food waste by collecting leftovers from donors like restaurants and giving them to people in need through non-profit organizations. Through this application, non-governmental organizations (NGOs) that are assisting impoverished communities in their fight against starvation, malnutrition, and practices may make a request to the restaurant for the supply of excess or leftover food.

II. LITERATURE REVIEW

The rigorous literature study is carried out over existing web based or mobile based applications. The application called SeVa focuses on creating an interesting mobile application that provides ubiquitous platform wherein users can visualize available food resource in their local area. In this they are tackling two major issues which is hunger and food waste. In this application they are lagging from Identifying potentially use cases and advertise the app in order to enhance its visibility [1]. A website called Hunger-map is an application that acts as the bridge between the places that have excess food and those who need food. This website consists of three main entities: The donor, the receiver and the hunger spot. One can use the website by logging in as donor or a receiver or as a Hunger spot photo up loader. They have undeveloped option of volunteer which can lead to a smoother management of initiative [2].

The Application “Sharing Food With LifeSaver App Using Smartphone App” allows donor to donate food by logging into app and donate the food. Donors can monitor the courier food donated from donors. Also, donor can select food category for donation and can also tracked the food but this application doesn't have a volunteer [3]. The “Food Waste Management Android App” is based on android application is to take care of donations and connecting the donators with those in need. It constructs a shared collaborations medium for hotels, hostels, restaurants and NGOs or volunteers. This system consists of four modules which are admins, NGOs, volunteer and the donator. In this application, volunteers are there to provide the service of distributing the food from donor to receiver. There is this disadvantage in this application that is that they need availability of internet to use the app [4].

The “Aahar- Food Donation” App establishes a shared communication platform for hotels, restaurants, charities and individuals. Donors can like wisely setup things for gifts and view all gift demand. The drawback over here is this that they don't display the availability of food and also, they don't have the option of contact us which may cause problems to the user to contact them [5]. The application “Food Waste Management within Sustainability Perspective” takes the initiative to research results showing the high volume of food waste mostly is due to inefficient customer awareness. The primary driver is the consumption patterns of the customers they should order according to how much food they actually need. In this application they have omitted to display the history which is about donor and receiver [6].

The “Web based application for food waste management” helps to collect the food from donors and distribute it to the people in need. This application also tell about the system Implementation of an app. There is scope of improvement in storing contact information [7]. The integrated platform is required which will help donors and receivers to properly communicate and keep track of related activities.

III. PROPOSED METHODOLOGY

The application “Annapurna” contains two different kinds of entities: A Restaurant and An NGO.

Before accessing the various content, the user of this application must register and select whether they are a restaurant or an NGO: Donate, receive, see the location on the food map, find out more about us, contact us, and log out. If the user has not registered themselves in the app it will directly send them to register page. Under the first tab, "Donate," there are three options: Availability, NGO Request, and List of NGO. The restaurant will list the meal's specifics under the Availability option. In Availability option there will be certain option which are Restaurant Name which will mention the name of the restaurant, in food item there will be the food which is available for the donation, in feed count it will mention the number of people that can consume the food, the another option is of phone number and in description option it will describe about the food whether it is spicy, medium spicy ,etc and the next option is of location where the restaurant will mention about their location. The last option will be submit in which the restaurant will submit all the details.

If a restaurant is able to serve food, it has the option of accepting or rejecting the NGO Request. The restaurant can call them if there isn't an NGO on the Request List of NGOs that can be reached to accept the food, and for the business's convenience, there will be NGO information available.

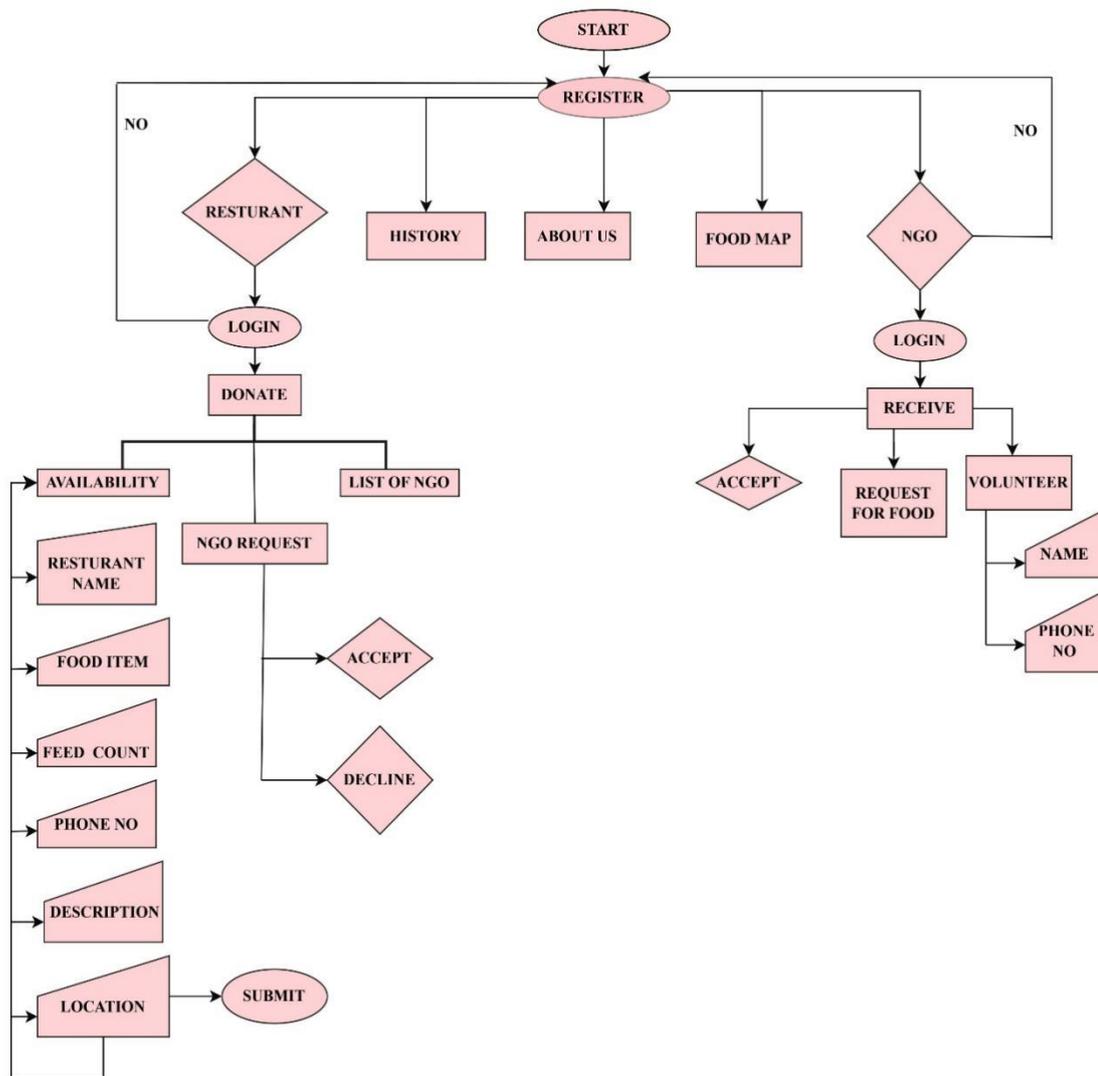


Figure 3.1. Home Screen

The Receive tab has two options available: Accept and Request for food. The NGO's can accept the restaurant food through accept option and can send their Volunteer to take the food from the Restaurant. The NGO can notify different restaurants for food through donate option. Food Map illustrates volunteer's location that can be tracked by NGO and restaurant. The information about the food donated and the food received can be viewed by anyone on history tab. Through this application, the donor will be able to help feed the hungry and poor people by reducing food waste. The splash screen and home screen of application are shown in figure 3.2 and 3.3.



Figure 3.2.Splash Screen



Figure 3.3.Home Screen

1. Register

This activity should be done first when the donor and receiver wants to use this mobile application and does not have an account. The User Interface (UI) can be seen in Figure 3.5. The new user should enter their data by entering their name, email, phone number, password and later have to choose if they belong to the restaurant or the NGO.

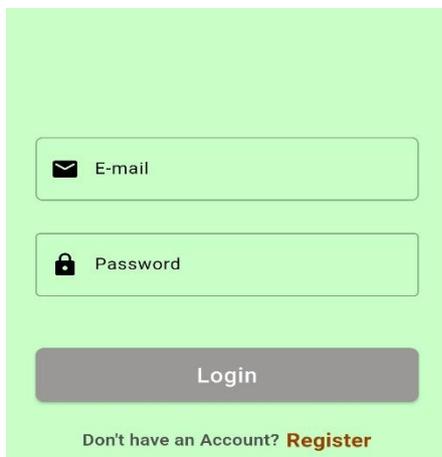


Figure 3.4.Login Screen

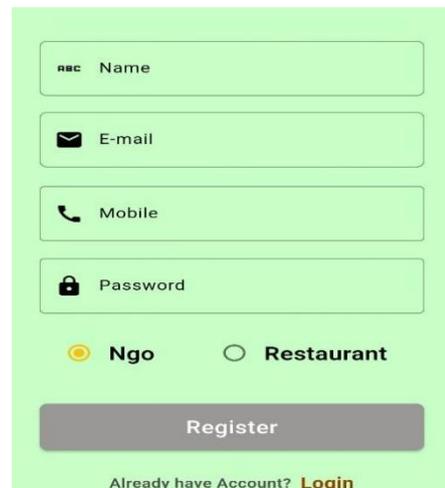


Figure 3.5.Register Screen

2. Login

This activity should be done when the user uses this mobile application and is already registered. The User Interface for login process can be seen in Fig 3.4. The user can enter the email address and password on the register page to continue using the application on the login page. The system will check the stored database if their email and password are the same as data in the database, then they can enter the system.

As depicted in the following graphic, the Dashboard Screen, which has several tabs, is what the User (Restaurant and Ngo) will be able to see after signing up:When a user, which is a restaurant, wishes to give food, they will choose donate on the dashboard screen, after which the restaurant will be presented with three alternatives.



Figure 3.6. About Us Screen



Figure 3.7. Dashboard Screen

3. Donate Tab

This activity can be done when the user has already login into mobile application. The User Interface for the Donate screen can be seen in Fig 3.8. The process starts from Donate category in which the restaurant will be represented with three alternative option which are Availability, NGO Request and List of NGO which will benefit the donor to donate food. This User Interface can only be seen to the restaurant.



Figure 3.8. Donate Screen



Figure 3.9. Receive Screen

3.1 Availability

Under this option the restaurant will mention the food which are available with them for the donation. It will also display what kind of food and how much quantity of food are available with the donor. The donor has to fill the details followed by their name, food items, contact number of the donor and description of the food.

3.2 NGO Request

Under this option there will be the request made by the NGO for the food. It includes the quantity of food the NGO has requested followed by the name of the NGO, their location and description for food. After this the restaurant will have the authority to accept or decline their request.

3.3 List of NGO

This option contains the different NGO who have enrolled themselves on the application.

4. Receive Tab

This activity can be done when the user has already login into mobile application after selecting NGO on the register page .The User Interface for the Receive screen can be seen in Fig 3.9. Receive tab contains two options Accept and Request for Food.The NGO will only have access on the Receive tab.

4.1 Accept

In this option, if Restaurant has leftover food they can raise a request to the NGO's and all the request made by the restaurant will be displayed on this option. The name of the restaurant , the amount and the description of the food will also be displayed in this option.The NGO will have the authority to accept the food raised by any restaurant.

4.2 Request for food

The use of this option is for making a request for food to the restaurant . Under this option the NGO will raise a request for food by mentioning all the details like the number of feed count , their location.

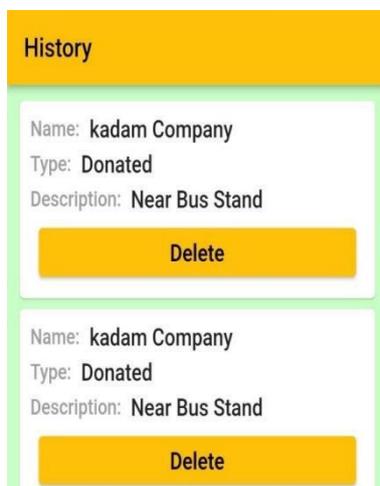


Figure 3.10. History Screen

5. History Tab

This tab will have the record of the donor as well as the receiver. The User Interface for this tab can be seen in the Figure 3.7. As shown in the Figure 3.10 the history tab contains the name of the donor/receiver, their type and the landmark.

6. Database Management of Users

The information of the donor and the receiver will be stored in the backend database followed by their name, type, e-mail id and contact number. The User Interface can be seen in the Figure 3.11.

| # | ^TYPE | ^NAME | ^E-MAIL | ^MOBILE | ^STATUS |
|---|-------|------------------|---------------------------|------------|-------------------------------------|
| 1 | NGO | Mihir Malhotra | mihirMalhotra@gmail.com | 9594914849 | <input checked="" type="checkbox"/> |
| 2 | HOTEL | Neha Khanna | nehaKhanna@gmail.com | 9769056784 | <input checked="" type="checkbox"/> |
| 3 | HOTEL | Siddharth Sharma | siddharthSharma@gmail.com | 9443253653 | <input checked="" type="checkbox"/> |
| 4 | NGO | Viann Arora | viannArora@gmail.com | 8879837361 | <input checked="" type="checkbox"/> |

Figure 3.11. Database Management of Users

7. Database Management of Donors

All the records of the donors will be stored in the backend database followed by their name, the food item, contact number, description of the food, location and the date when they have donated the food. The User Interface can be seen in the Figure 3.12.

| # | ^USER NAME | ^NAME | ^ITEM | ^MOBILE | ^DESCRIPTION | ^LOCATION | ^DATE |
|---|------------|---------------|---|------------|---|-----------|------------|
| 1 | 1 | Kadam company | Salad Sandwich Bread Steak Tuna Steak Fish Shrp | 1234567890 | Adyar Ananda Bhavan - Andy Capp's fries - Barcel - Brannigans - Bugles (General Mills) - Cape Cod Potato Chips - Cheetos - Cheez Doodles ... | Bhayander | 24/01/2023 |

Figure 3.12. Database Management Of Donate

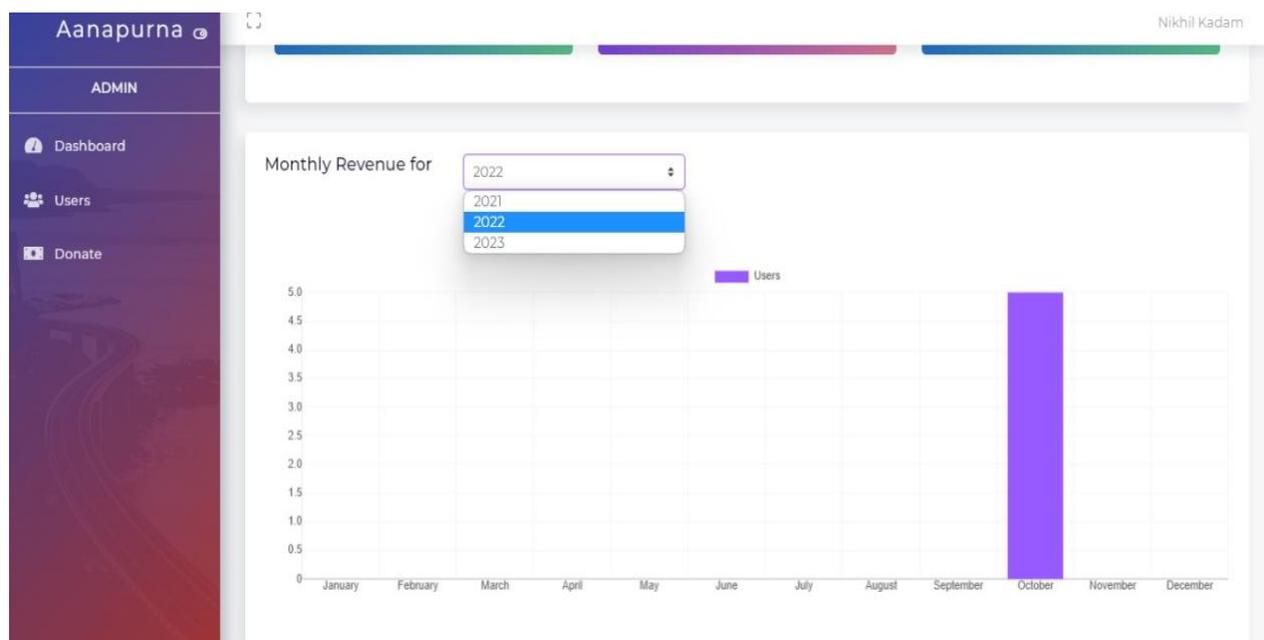


Figure 3.13. Database Management Of Monthly Revenue

IV. CONCLUSION

This “Annapurna- Waste Food Management” represents a complete overview of application that helps the restaurant and the NGO’s. The main goal is to make sure that donated food has been repurposed for those who are unable to purchase it and minimising food waste. With the help of various nonprofit organizations, food can be donated, and it is possible to combat food loss and waste through charity and donations. The hundreds of tons of food that weddings throw away can help those in need. In India and other nations, this kind of system has a lot of potential to beat food insecurity.

In the present application, only the restaurant will donate the food. Further the discarded food from the house can be also given to the NGO in the not-too-distant in future. As previously stated, individuals who wish to donate excess or leftover food from their homes an additional tab can be added if NGO grants their request, a volunteer will pickup the food from the one who helped.

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