A Sustainable Solution to Excess Food Wastage by Android App

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ABSTRACT

This research paper emphasizes on providing the software solution (through the android mobile application) to the problem of food waste all over the country. The main intension of the application is to get the details on availability of food waste with in a location and deliver it to the people who really need it by taking the help of the volunteers who are registered in our application. This results in elimination of the appetite of those who are starving for food.

Keywords: Android, Donor, Volunteer, Needy, Firebase.

1. INTRODUCTION

In the emerging world of technology, Mobile applications are growing rapidly of the global mobile market. Mobile applications are evolving at a meteor pace to give users a rich and fast user experience.Android is an open-source mobile phone operating system with Linux-based platform released by Google. It consists of the operating system, middleware, and user interface and application software. Certainly, Android is about to become the most widely used OS on mobile phones, but with Android comes a security vulnerability that few users take into account [1]. There are a lot of android based mobile applications that are freely available in the play store that are accessed by the people for various purposes. Food wastage is a global problem. According to Food and Agriculture organization (FAO) of the UN, approximately one third of the food produced for the human consumption, which amounts to 1.3 billion tones, gets lost or wasted [2].Based on a survey, it is estimated by the UN that approximately 40% of the food produced in India is wasted or lost. Places like Weddings, events, restaurants, hostels and houses are a major source for food wastage of cooked food. There are a few organizations in the country who are working hard to help in reducing the food wastage by collecting the food and distributing it to the people in needy. But most of the times, the poor people in India still rely on their luck to be able to find a proper meal at right time.Majority of food wastage in India is caused due to events without proper planning on the quantity of food to be cooked. The government has to look into this and start finding investments to develop better technology to reduce this wastage.For minimizing the wastage of cooked food, the government can establish a service where they collect waste cooked food from the source, and set up a shelter where the hungry people can come there and take that food themselves for free or at an optimal rate. By this way they do not have to hunt for the hungry people, who might be staying at a remote place and wouldn't get an advantage of the service if not present at a particular time, or might not come out and stay undernourished for their pride from the government point of view.

2. LITERATURE SURVEY

India is second largest population in the world. In 2012, government had reported that about 22% of Indian population lives below poverty line. Based on the report of, 'The State of Food Security and Nutrition in the world, 2017' report, 190.7 million people are undernourished in India .It mentioned that 14.5% of the Indian population is undernourished.All the efforts by the government and organizations would not succeed until there is no individual involvement too. In order to participate in the movement to save food, there are certain things every individual has to do.

Food wastage and its stockpiling are becoming severe problems throughout the world due to continuous increase of the world's population. At present, various kinds of approaches are investigated in waste food processing and management for societal benefits and applications [3].

Before and after the food is thrown away, most of the people stop thinking about it. They never care or think that the food they are wasting might help to eliminating the appetite of those who are starving for food [4].

Globally, an approximate of one third of food produced for human consumptions is lost or wasted, equaling a total of 1.3 Billion tons of food per year [5].

Hotels are the massive producer of waste. So it is crucial to take action on the food waste management plan. As a result, the problem of food waste management has become even more complex. So it is the need of the hour to work in the concern area [6].

Hunger has a straight influence on those without food, obviously, however very few undernourished people die from outright starvation. They die from common illnesses such as malaria and diarrhea because their bodies that have been weakened by hunger cannot cope. Hunger increases the complexity of simple illnesses because it weakens the immune system [7]. Hunger, not only increases the vulnerability of a person to common illnesses, it increases the risk of infection**,** depicting the illness has a wide-spread effect.

Hunger can also be equated with chronic food insecurity, as both refer to a situation in which people consistently consume diets inadequate in calories and essential nutrients. This often happens as a result of the inability to „access" food because of lack of purchasing power [8].

By analyzing the results of the above specified problems, we questioned ourselves as, why should we waste food, instead we can give it to the people who are needy. As, a next step we have developed a mobile application for food waste management.

3. PROPOSED MOBILE APPLICATION

A. PROBLEM STATEMENT:

To prevent food wastage by creating an interactive mobile application that will allow people with surplus amount of excess foods from Weddings , Parties, and other events, to contact 'No Food Waste' to donate food, as well as for hungry individuals and institutions requiring food supplies to request help from 'No Food Waste'

1. Weddings
2. Parties, &
3. Other events can contact 'No Food Waste' for donating food to the individuals, institutions in need of food.

B. SOLUTION:

A mobile application on Android will enable the 3 parties to communicate in an effective manner, where

1. Donors - people with excess food should be able to post their food availability details via the App
2. Volunteers - Can accept the food donation, via the app and deliver the food
3. Volunteers - Can map the areas/places that are in need of food.

The food distribution is done for places like,

4. Orphanages
5. Homeless
6. Poor areas in the society
7. General Hospitals
8. Child care

These projects have been implemented in Android studio and below screenshots are obtained as a result of running the application.

After installing the application on to the mobile and by opening it, will get the first screen as shown in fig. 1, that asks to either login using individual credentials (if the user had been already registered).
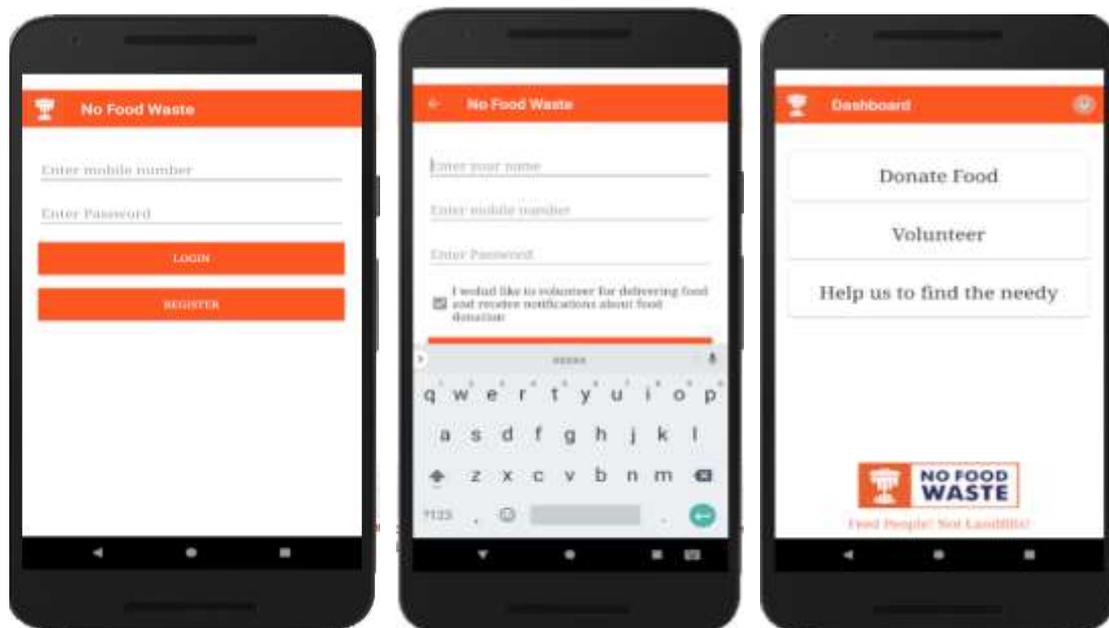

Fig. 1: Login   Fig. 2: Register   Fig. 3: Dashboard

If the user is new to the application, then it is must to get registered in the application by clicking on "Register" button and by providing the details like Name, Mobile Number and Password to individual account in the screen as shown in fig. 2.

After the user is successfully logged into the account, a "Dashboard" screen is displayed as shown in fig. 3.

If one desires to donate the food to the people starving for food, click on the "Donate Food" button and provide the details on the availability of the food along with the location as shown in fig. 4.

If one desires to serve the people as a volunteer, who is responsible to collect the food from the food available location and to deliver it to the people of orphanages, homeless, hospitals, child care and poor areas in the society, one should register as a volunteer, providing their details as shown in fig. 5.
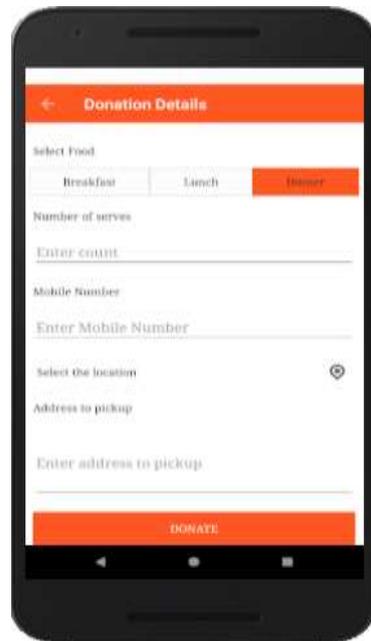

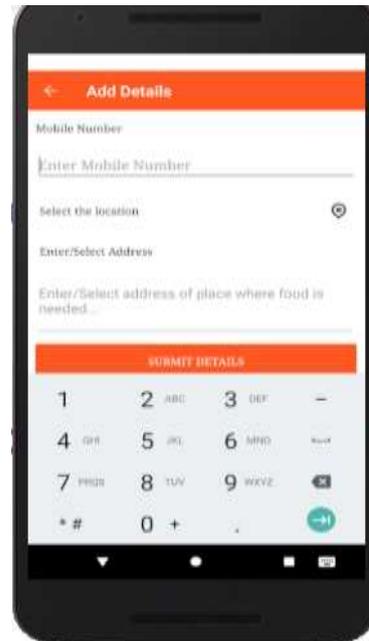Fig. 4: Donation Entry   Fig. 5: Posting Needy Location

This application provides the Google route map from the current location to the food donated location that is visible to the volunteer once committed to pick up the food from the available food donation locations. This helps the volunteer to pick up the food from the posted location easily.

4. FUTURE WORK

In this application, it is possible to add an Admin module, which is responsible for keep tracking the food necessity and food delivery count through the application. If, in the application, excess food is posted than required for the needy, it needs to be stored somewhere without spoilage. The decision to store the food is determined from the data displayed in the admin module.

5. CONCLUSION

In the ultimate analysis, the constraints on reducing hunger are rooted in bad policies, faulty design, lack of appropriate monitoring and evaluation, poor governance and lack of political will. Action is needed on all these fronts. Economic growth alone is insufficient to bring about significant reductions in the prevalence of malnourishment among children, or to an increase in food intake among the poor [9]. Without a major shakeup in policy and an improvement in the effectiveness of its implementation, attaining the MDGs in this regard looks extremely unlikely for India

By using this application, it is very easy to eliminate the appetite of people starving for food at different places and avoiding the habitat of throwing the leftover food uselessly at parties, wedding events, and other such events.

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