

System to Reduce and Manage Waste Food

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Abstract - Food wastage is one of the major issues that need to draw the attention of society as this issue requires proper planning and steps to manage its consequences. Waste food can be managed based upon its quality. If the food is safe enough to consume then it can be donated to the NGOs which would further be donated to various hunger zones. If the food is not safe to consume then it may be given to the agriculturist who can use it to prepare compost. The android application will bridge the gap between these stakeholders and will provide a platform to communicate on time of requirement. The request-response mechanism allows the hotels and restaurants to send request messages to the NGOs which would respond to their request and collect the waste accumulated in the hotels.

Key Words: Food waste, Android, Web services, NGOS

1. INTRODUCTION

The prevention of food waste can be done by contributing to save resources to reduce environmental impact during all stages of the marketing system. People waste edible food as an accomplishment suggestive of our population. Food throwing is a disquieting issue everywhere. The street and trash bins depot have more food as a clue to prove it. The functions and party halls of hotels eject out so much food. The basic idea is to manage the Waste Food accumulated by various Restaurants. The food wastages may be a result of residual or maybe because of the extra food prepared by the units. The basic motive of the application is to connect the hotel with a third party such as NGOs that can accept the extra prepared food as Donation and provide food to the needy. The other alternative could be the process of providing the residual food to the agriculturist who can use it for compost purposes that would reduce the methane emission and would tackle food wastage.

2. LITERATURE SURVEY

Paper 1:" Sustainable Food Waste Prevention Strategies to Achieve Food Security in India "2013

Food security refers to the availability of food and one's access to it. The World Health Organization defines three facets of food security: food availability, food access, and food use. India faces a threefold challenge to achieve food security; to match the rapidly changing demand for food from a larger and more affluent population to its supply; do so in ways that are environmentally and socially sustainable, and ensure that the poorest people are no longer hungry.

This challenge requires changes in the way food is produced, stored, processed, distributed, and accessed. An increase in production will have an important part to play, but they will be considered as never before by the finite resources provided by Earth's land, oceans, and atmosphere. Prevention of postharvest loss is increasingly cited as a means to effectively contribute to available food supplies.

Annakshetra's vision [3] is to position India as a zero food wastage economy by mobilizing social change and efficiently redeploying food resources. Annakshetra makes use of the 3R model to minimize food waste at the post-consumer level:

Reduce

Annakshetra runs awareness campaigns to prevent food wastage. If food is effectively reduced at the first stage then not only is the food saved for a large part of the population but also harmful effects on the environment are prevented.

Reuse

Reuse is Annakshetra's recovery program. It collects leftover food from sources and distributes among the hungry and poor. Thus value is obtained from discarded food of immense importance which would otherwise have been wasted.

Recycle/Compost

If the tested food is not suitable for human consumption, it is sent for composting. By recycling, Annakshetra ensures that the bio-waste does not land into landfill sites thus preventing environmental damage and improving agricultural output by improving soil [3].

Rising food prices or the prevalent food inflation in India can be effectively evaded by good food waste management practices. If consumers have a fair idea or keep track of what percentage of food purchased gets discarded as pre-consumer waste, costs can be saved on various fronts like labor, disposal and goods purchased.

Paper 2:" A New Approach to Reduce Food Wastage using Ubiquitous Technique "2015

The developing issue by building a sustenance waste diminishment chain of importance with source lessening and nourishment recuperation as the real manifestations of activity. Source decrease alludes to diminishing the measure of nourishment waste created before it happens while

sustenance recuperation shows the preoccupation of produced sustenance squanders far from landfills. This proposes the most favored strategy for redirection as sustaining hungry individuals [1], or as it were, sustenance recuperation through gifts. NGO taking a shot at gift administration for humankind reason perceived that the redirection of nourishment waste through gifts, most outstandingly at the retail level, couldn't just lessening the measure of sustenance winding up in landfills additionally expand the sum going toward diminishing craving and enhancing sustenance security. In this approach connects these NGO and Donor [1] with a specific end goal to provide sustenance to the poor individuals. Contributors utilizing this approach have contact with NGOs of adjacent and giving about all data of sustenance waste like the quantity of nourishment, type of nourishment, serving time (in which food ought to be taken by NGO to convey to penniless people). This warning is gotten by NGO after that having Feedback with giver, NGO Track the area and acknowledge demand and gather the sustenance and give it to the destitute individuals The approach unite these two, in such a path, to the point that these NGOs can persuade the "sustenance to be squandered" without bother, and the inns/eateries/party-lobbies discover these nourishment seekers with no additional exertion then it serves a more prominent reason and that will be an enormous administration to mankind.

To decrease and utilize the boundless amount of food waste and food surplus produced in all restaurants and clubs, aims in two main outputs:

The approach makes the connection of Donors and NGOs that will help them to start a program for the contraction of food waste and the improvement of unsold food.

The approach enables the matching of Donor and NGO of leftover foodstuff through the internet.

Paper 3:" A Review of Empirical Applications on Food Waste Prevention & Management" 2016

Food waste happens at households, supermarkets, and restaurants. For instance, domestic food waste occurs during food purchasing and once food enters the home. To decrease this burden, countries have set regulations to force food suppliers and consumers to take preventive actions. For example, France has introduced taxation on food wasted at the supermarkets; Italy has offered tax breaks on supermarkets donating surplus food to charities [1]. Nonetheless, edible food is still often thrown away due to a lack of knowledge of food planning or donation regulation. Technology can promote changes and help make a difference in the habit of food waste. Existing literature provides insight into a range of applications intended for food waste management and prevention. These studies provide insights about the waste generated at different phases, namely production (e.g., farming and manufacturing), distribution

(e.g., food marketing, such as the selling process in a supermarket), and consumption (e.g., food consumption in restaurants and homes). Moreover, these applications use one or more techniques to create the necessary infrastructure for the services with which they contribute to food waste management.

The observation indicates the need to incorporate techniques that move users' focus beyond food waste management and create a sense of belonging and to harmonize the waste management through a set of activities. There is a need for an unobtrusive technique in food donation [1] and by considering all age groups. Current studies have considered a generic focus on the user's age and gender. For example, elderly (persons aged 65 years and above) are not adequately represented in many studies and they might be among the biggest contributors to food donation.

Paper 4:"Food donations using a forecasting-simulation model "2017

The streets, garbage bins, and landfills have ample proof to prove it. Marriages, canteens, restaurants, social and family get together and functions expel out so much food. Food wastage is not only an indication of hunger or pollution but also of many economic problems. The high standard of living has resulted in the wastage of food, clothes, etc. because of quick changes in habits and lifestyle. Instead of wasting these things we can put them in use by donating them to various organizations such as orphanages, old age homes, etc. The product is a web application that aims to establish a link between restaurants and charity homes/needy households to enable excess food donation. The food donation portal is an internet-based application that provides a platform for donating leftover food to all needy people/organizations [2]. The portal is shown to be an effective means of donating food to organizations, etc. over the internet. In highly populated countries like India, food wastage is a big issue. The garbage bins, streets, and landfills have ample proof to prove it. Canteens, marriages, restaurants, social and family get-togethers and functions expel out so much food. Food wastage is not only an indication of pollution or hunger but also of many economic problems. The high standard of living has resulted in the wastage of food. Because of quick changes in habits and lifestyle instead of wasting food, the system can put them in use by donating them to various organizations such as old age homes, orphanages, etc. The product is an internet-based website application that aims at charity [1] through donations.

The development of this product surely prompts many new areas of investigation. This product has a wide scope of implementation by making it live. Moreover, this product creates many benefits for the business and the community. By taking it online it will help many people throughout the city by donating food daily.

3. PROPOSED SYSTEM

The growing trouble by using constructing a sustenance waste diminishment chain of importance with source lessening and nourishment recovery as the actual manifestations of interest. Source lower alludes to diminishing the degree of nourishment waste created before it occurs even as sustenance healing shows the preoccupation of produced sustenance squanders a long way from landfills.

This proposes the most favored approach for redirection as sustaining hungry people, or because it had been, sustenance recuperation through gifts. NGO taking a shot at present management for humankind purpose perceived that the redirection of nourishment waste via gifts, maximum outstandingly on the retail level, could not just lessening the measure of sustenance completing in landfills moreover make bigger the sum going in the direction of diminishing yearning and enhancing sustenance safety.

This method connects those NGOs and donors with a particular end goal to provide the sustenance to the negative people. Contributors making use of this method have touch with NGOs of adjoining and giving about all statistics of sustenance waste like the amount of nourishment, type of nourishment, serving time (in which food ought to be taken through NGO to bring to penniless humans). This caution is gotten by NGO after that having Feedback with giver, NGO Track the place and acknowledge demand and accumulate the sustenance and provide it to the destitute individuals The method unite these two, in this sort of path, to the point that these NGOs can convince the "sustenance to be squandered" without bother, and the accommodations/eateries/birthday celebration-lobbies find out these nourishment seekers with no additional exertion then it serves a greater distinguished reason and that will be a tremendous administration to mankind.

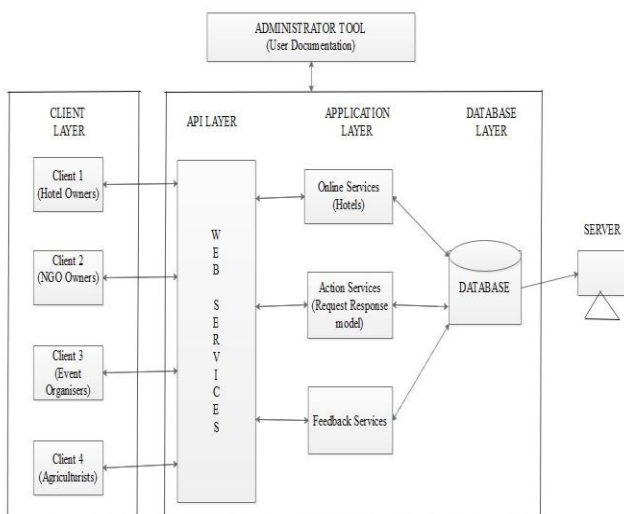


Figure 1: Architecture Diagram of Food Waste Reduction

4. IMPLEMENTATION

At user interface there will be four modules:

1. Hotel
2. NGOs
3. Event Halls
4. Agriculturists

Hotel

- To monitor the shelf life of the food products.
- To monitor collection of reusable food items.
- To monitor collection of non-reusable food items.
- To monitor the incoming requests from third party.
- To search for nearest available third party
- Provides facility to send requests to third party.
- Provide facility to update the third party about the food collection.
- To give feedback.

NGOs

- To search for the nearest hotel/event hall.
- To send requests to third party.
- To monitor hunger zones.
- To find nearest hunger zone to donate the food.
- To send additional requests/queries to third party.
- To give feedback to the third party.
- To monitor the proper collection and delivery of food.

Event Halls

- To monitor collection of reusable food items.
- To monitor collection of non-reusable food items.
- To monitor the incoming requests from third party.
- To search for nearest available third party
- Provides facility to send requests to third party.

- Provide facility to update the third party about the food collection.
- To give feedback.

Agriculturists

- To send requests to third party.
- To send additional requests/queries to third party.
- To give feedback to the third party.
- To monitor the proper collection and delivery of food.

CONCLUSION

The sustenance approach serves to stay away from the crevice between the Ngo and Donor. The approach serves to give the sustenance waste to the 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"[2] 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 approach serves to upgrade open pictures of inns, eateries who are giving sustenance and it serves to spare cash. It decreases the overbuying of nourishment and diminishes ecological effects [3]. On the distance, it helps penniless individuals to get sustenance with a specific end goal to survive life.

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