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A Food Wastage Reduction Using Mobile Technology

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Abstract - This study introduce solution to reduce food wastage management with the help of mobile technology. wasting food is a common problem in India. Food waste management is important since it increases economic health. We have identified the use of mobile technology to reduce food waste management and develop an android mobile application that allows donor to donate and share their foods and leftovers with NGO. This app will provide three login admin donor and NGO. Admin provides authorization to the NGO and donor. This app is using the firebase storage and real-time database. Any user in need can see all the food images donated by different users and add it to cart. This app also provides the login, publish food on portal, book this food by nearby NGO, they can collect this food with the help of shortest path provided by app, and also gives feedback.

***Key Words*:** food wastage reduction app, firebase database storage, authentication, tracking.

1. INTRODUCTION

In India Android is most usable platform and uses of mobile technology increases day by day[1,2]. There are over 800 million mobile phone users in India[3]. Hence we decided to develop an android application " go hungry" for reducing food wastage. Android is the important part of mobile technology. Recently, 236 countries are uses android platform on the mobile phone. Mobile Phones are responsible for providing a communication between peoples.

In highly populated countries like India, food wastage is a disturbing issue. According to United Nation Development programme, up to 40% of food wasted in india[4]. Weddings, Canteen, Hotel and family functions waste a lot amount of food. The streets, garbage bins and land fills have sample proof to prove it. 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. The product is an android application which is responsible for connecting donors and NGO to provide the leftover food to the needy people. And this app also provides a shortest path for reach destination as soon as possible[5].

The purpose of this development is reduce the wastage of food in the India. Many Hotels/peoples throw the excess food at the end of the day even though the food is perfectly fine to be eaten, which means that huge amounts of food are wasted. Therefore, we decided to create android application to link the donor with the people in need, so instead of throwing the food, the unfortunate will be able to pick it up from the donor at the end of the day.

2. LITERATURE SURVEY

Food waste is very big issue around the world. In Betz A., Buchli J., Gobel C. and Mulle C., "Food waste in the Swiss food service industry–Magnitude and potential for reduction," Waste Management, pp. 218-226, January 2015 this survey more than 58 percent food that people produce for Daily life usage is waste every day [6]. Where about, more than 60 percent of people are dying in the world because of starvation they have not proper food for a living. Therefore, the digitally developed countries are focuses more on this issue. Therefore, a wasted food distributed to the needy people.

In Leejiah J. Dorward, "Where are the best opportunities for reducing greenhouse gas emissions in the food system (including the food chain) in the modern society, people are more dependent on the smartphone. There are various applications, which are developed to control a lots of wastage of food, and it provides the facility to send that extra food to the people who need it. There are no of applications which reduce food waste [7]. The most useful app for food wastage reduction in different countries are described below:

1. Winnow (Europe, UAE, Asia, Australia)

Similar to MintScraps, the Winnow app helps commercial kitchens track, monitor and analyse their food waste, and then implement strategies to reduce waste and save money. Winnow says that kitchens typically save 3-8% on food costs. It currently operates in 18 countries [8].

2.Too Good To Go (Europe and the US)

Just like 11th Hour, Too Good To Go finds a home for unsold food from vendors and restaurants before they shut down for the day. Customers can browse through current offerings and pay via the app. To collect the food, they just need to show their receipt. Too Good To Go has been downloaded 1.2m times since launching in 2015[9]. The company believes it prevented 10,000 meals being sent to landfill by November last year.

3.Wise up on Waste (Europe)

Unilever's app is aimed at economic kitchens wanting to reduce the amount of food they throw out. As well as tracking

how much is wasted at each meal and how the volume of food waste changes according to time, Wise Up on Waste also tells kitchens how much they could save if they were to cut waste by 20% [10]. The third version of the app is scheduled out this month.

4.Yo No Desperdicio (Spain)

Yo No Desperdicio, which converted as "I do not waste", has created a community committed to tackling household food waste through local food exchange. Its 750-odd users can post a photo of the food item they wish to dispose of, as well as the quantity, location and expiry date and can then link up with others to swap items [11]. Members can also share payment recipes and some tips or suggestions to prevent food waste in the first plac.

5.Cheetah (West Africa)

Poor road conditions, inadequate refrigeration and other obstacles cause up to half of all fruit and veg produced in promoting countries to spoil before it can get to market, say experts. Researchers at the University of Twente have introduce an app to tackle the problem, with backing from the Dutch Ministry of Foreign Affairs. The Cheetah app, which is currently being trialled by around 80 users in Ghana, shows farmers, food transporters and traders the fastest path to market, and even how to avoid ad hoc roadblocks set up to take bribes from drivers [12].

6.NoFoodWasted (The Netherlands)

NoFoodWasted partners with supermarkets to check food waste by alerting shoppers when items that are about to expire get marked down. Its users, around 20,000 per day, according to app developer August de Vocht, can also upload their shopping lists to the app and receive push notifications when those particular items go on sale [13]. Participating retailers have cut monthly food waste by 18 to 25%, an amount cost up to €2,500, says de Vocht.

3. METHODOLOGY

3.1. Architecture

The proposed solution "Go Hungry" has of three logins; admin login, ngo login and donor login. The user can register, login, logout, view food with image, and description, add food to the cart, and empty the cart. Both the donor and Ngo need to register and create a profile through the admin.at the time of registration user's detail such as name, age, contact no, gender address will be saved to the database. Then they can use the donor and ngo login. For login donor and ngo need use their register email id and password. This app saves the details to the real time firebase database. After login donor can publish food then app will notify nearby ngo's then ngo can check the food images, Quantity, time and they can book food and reach the destination using the shortest path provided by app then collect their food and gives feedback.

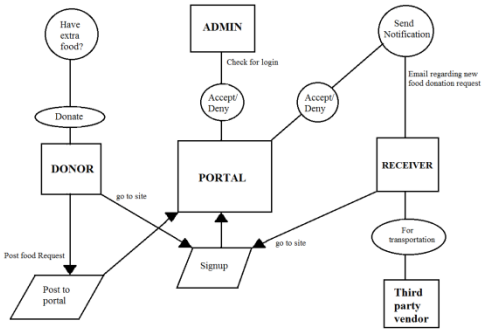

Fig.3.1 Architecture

4. CONCLUSION

Our study has examined the problem of food wastage in India. it has many defects such as it aects environment and economic sustainability. Through the mobile technology food wastage are easily reduced. So We propose a solution to solve a food wastage problem. We develop a mobile application to reduce food wastage. This work is an first step towards food wastage reduction. It provides motivation food management.

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