



MOBILE APPLICATION FOR DONATION OF ITEMS

Shubham Belekar¹, Rahul Rajput², Karan Gharat³, Prof. Pallavi Raut⁴

1(Department of Computer Engineering, Mumbai University, India)

Email: 17305032shubhamj@viva-technology.org

2(Department of Computer Engineering, Mumbai University, India)

Email: 17301008rahul@viva-technology.org

3(Department of Computer Engineering, Mumbai University, India)

Email:17301086karan@viva-technology.org

4(Department of Computer Engineering, Mumbai University, India)

Email: pallavivartak@viva-technology.org

Abstract : *Development of NGO is also development of society prestige, which makes significance contribution to diverse areas. Since NGO are non-profit organization, they always lack resources. Thus, to fulfill the requirements “UNNATI SAMAJ “app will be a rescue. Using this app any donor can donate food, clothes, and other items which can be utilize by needy ones. For e.g. from big organized parties, often food gets wasted, so using the app’s Google API technology people can donate the food to nearest NGO without needed to search up for contact information. Thus, our app will be a direct bridge between all NGOs and donors.*

Keywords – *NGO, donor, food donation centre, web based application, API.*

I. INTRODUCTION

We have chosen a path to implement our innovative ideas in the form of this project named as Mobile Application for Donation of Items. The basic concept, which is emerged out from our project is to provide necessary items to the one in need. ‘UNNATI SAMAJ’ is an Android web based application that provides a platform for donation of useful items (food, clothes, etc.) to the nearest NGO. Many people, institutes wish to donate things to needy organizations. Also, many organizations wish to ask for various things required by them. But there is no source available through which they can satisfy their requirements. Thereby, a web based application through which people can donate items as per their capacity will be useful creating a bridge between Donor and NGO.

II. LITERATURE SURVEY

Sandro Rodriguez Garzon and Mustafa Elbeherly [1] have proposed the concept of cross-platform development has been around for many years, but recently it has taken off tremendously, offering writing codes and simplified working on multiple platforms, enabling a wider range of platforms to be targeted by developers without the need to write multiple copies of the code. So, to achieve this, they have created an application using the most popular cross-platform tools, such as Flutter, or developed web applications that retrieve data and processing from a server in the form of client and server. The proposed cargo tracking system uses Flutter and backend Firebase database in the mobile application that works on multiple platforms such as Android and iOS. It also uses Node.js as a back-end server and has a web-based application that can work on Windows, Linux and MacOS, providing services to transport companies and their clients to transport cargo in any country, enabling them to manage multiple branches as well as using GPS to take the current locations of the cargo and provide it to the transport company’s clients.

Sandro Rodriguez Garzon and Mustafa Elbeherly [2] has proposed how geofence technology can be used by mobile application developers using dedicated API. Geofence was implemented as a web service and evaluated with respect to whether the estimated probabilities are good approximations of the reliability. The web service is

of the practical use for various proactive LBS implementations since the estimations are calculated independently of the given architecture and are thus generally applicable. Although the prototypical web service shows good estimations, there is still room left for improvements. Other environmental conditions like recurring traffic jams, the population density or even the demographics of a district might not only improve the estimations in the first two cases but would also enable to calculate rating based on more detailed description of the envisioned application scenario. A future version of the web service might also be able to propose modified versions of a geofence's geometry, orientation or location for an improved configuration.

Yuda Dian Harja [3] proposed a method which gives various data from 20 experiments, so the results of this research are varied. By using the proposed method, there are more data can be obtained including radius, travel distance, and travel time. So, each data becomes deciding factor in best decision making. The small value of radius is not always indicating short travel distance to reach a particular location since the travel distance is calculated based on path traveled, not straight line drawn from two points. So, the value of travel distance gives a considerable influence in the decision-making process. The research showed that by using three factors including the value of radius, travel distance, and travel time, the results of the decision-making process will obtain better decision rather than only consider the value of radius. Furthermore, the proposed method by the researchers has 95 % similarity with human choice.

Pradnya Battin and Dr. S.D.Markande [4] proposed a mobile application which helps user to reach at exact location in its preferred time slot. In the modern life style people are often very busy & forgets to do the tasks to do. Many a times people remembers the task after they have passed by the location of interest. Going back to the specific location again is time consuming & tiring too. Timely reminder reduces chances of missing the location of interest & task to be performed can be reminded on desired time and at desired location. This reduces time loss and disappointment. Identifying desired nearby places is on finger tips of the user if current location is unknown to the user.

Noelia Salido-Andres et. al. [5] purposed a paper describing Non profit Organization at the crossroads of offline and online Fundraising in the digital era. In this paper the purpose was to explore the extent to which the volume of target beneficiaries also the influence of donationbased crowdfunding (DCF) campaigns promoted through digital platforms. explanatory capacity is analyzed through quantitative analysis based upon a database of 360 campaigns fostered by nonprofits via Microdonations, a donation-based crowdfunding digital platform, for the period 2012-2017. Result confirms that donation-based crowdfunding campaigns for charitable causes promoted through digital platforms which results in success, tend to be small and limited concerning the volume of potential beneficiaries intended to be assisted.

Yue Qui and Chunxian Liu [6] proposed a paper describing an in-kind charitable donation system app driven by social innovation design concept. In this paper Yue Qui and Chunxian Liu developed a mobile app named "Afu" enabling the public to help in need in China. It was developed in a way to promote the respect and collaboration for all charity participants, improve the efficiency of the civil donation and making charity an activity that anyone can get involved at any time. The design concept of "problem solving and meaning building" is applied to the design of AFU charity service which clearly combs the relationship between the chaotic design objectives such as lack of trust, poor information and building a better charity experience.

Kai Qian et. al. [7] proposed a paper regarding enhancement of smartphone security. As smartphones are getting smarter every day, its users are relying more on their phones for their tasks like banking, shopping etc. which holds their personal information like credit card information banking details etc. which needs to be secured. This paper helps us understand threat models and security vulnerabilities because that aid secure system design, secure development and testing by showing the threat risk analysis driven security requirements and its defensive major development's activities in secure SDLC including design principles, code implementation, and testing. This paper covers the following threats: 1. Improper Platform usage 2. Insecure Data Storage and Unintended Data Leakage 3. Insecure Communication. Insecure Authentication, Authorization 5. Insecure Mobile Input Injection 6. Reverse Engineering and Code Tampering.

Hridoy Deb Das et. al. [8] proposed a paper regarding Geo localized based blood donor management system Using mobile crowdsourcing. Blood donation is a noble act however during emergency times people rarely find blood donors. In this paper, we present an architecture for and prototype of a blood donation system using crowdsourcing for smartphones whereby anyone at the nearest location can search for their desired blood group. They developed this system with the idea of mobile crowdsourcing. This system will be helpful for the blood

VIVA Institute of Technology
9th National Conference on Role of Engineers in Nation Building – 2021 (NCRENB-2021)

requester to find the donors of requested blood groups in the nearby location. Location information will be sent to the system by using GPS. Requesters can search donors from their current or destination location. As they propose to find more than one donor parallelly and request for more than one blood group, our system will save time. This system will search for a donor within 5km, as a result, finding donors and arriving at the destination will be easier and in the most short time period.

Junho Jeong et. al. [9] proposed a paper on Private Donation System Based on Blockchain for Transparency and Privacy. Donations are one of the many ways to improve social inequality. Donation is largely divided into sponsorship by individuals such as corporations and public administration. Many people tend to avoid sponsorship because of the lack of transparency in the sponsoring organization. The purpose of this study is to enhance the transparency of sponsoring organizations by using blockchain that is a Hyperledger fabric. And to activate individual donation by protecting the privacy of sponsor and aid recipients. This proposed system consists of three processes. The first process is system user registration and login. Here, every user is a regular user at the time of membership, and the email, password, and membership status are stored in the database. The second is the aid recipient verification process where the transaction is recorded in the aid recipient & public administration channel. Third is the candidate recommendation process where the donation organization then provides a list of persons using de-identification data to the sponsor who requested the aid recipient recommendation.

Davide Scazzoli et. al. [10] proposed a system on Integrated system for the valorization of surplus food. Food waste is one among the key challenges of the agri-food sector: one third of the global food production is wasted yearly, while paradoxically 815 million people do not have access to sufficient and nutritious food. Food waste represents an economic loss for the agri-food supply chain and the whole society. Retailers contribute to the 14% of the overall food waste produced and the main cause relies on products reaching the expiration date. Food donations is increasing day by day, but in many cases the surplus food redistribution process to food-aid organizations is still occasional and not formalized leaving space for efficiency improvement. Surplus food which are near their expiration date, if not properly and timely handled, inevitably turns into waste. In this paper the have introduced SIVEQ: a systematic solution which relies on novel technologies such as IoT and big data analytics to tackle this issue.

A Pradhfita et. al. [11] proposed a system on rice donation using IOT. IOT can be used for a variety of daily tasks in everyday life. One of the best ways to exploit IOT is its application in the management of rice supplies in orphanages where the donor and the orphanage must be informed about the real-time rice supplies. This paper provides an easy way for both the donor and the orphanage about the availability of rice on their smartphones directly with use of IOT. Here, Raspberry-Pi will be used for the proposed system which will read the data generated by load cell sensor, this sensor detects the amount of rice in kilograms and that data will be sent to the database in real-time. Mobile application will be for three users namely donor, suppliers and providers. It works like this: donor can find out how much rice will be sent and its cost, the provider will know about the transaction from donor and will ask the supplier to send the rice to orphanage. Once the rice is filled the device, donor, provider and supplier will be notified that the transaction has been completed. This network is designed with blockchains with Ethereum so that all the transactions are recorded and protected by all the parties and to ensure that the data and information is not manipulated by anyone. This system has already been implemented in real world in Sakami, West Java in several orphanages where each place has its own IOT device where there is an indicator indicating rice shortage.

H saleh et. al. [12] proposed a system on Platform for Tracking Donations of Charitable Foundations. Blockchain technology allows you to make the process of donations and transactions of funds transparent and is implemented in different sectors. The proposed system in this paper offers transparent accounting of operations donors, charitable foundations and recipients based on blockchain technology, enable public users and donors to track and monitor where, when and to whom the resources of charity funds went. This project is implemented in the favor of government of the Russian Federation by subject "Digital economy of the Russian Federation" on the topic "Development of a platform for hosting and tracking donations of funds for charitable purposes using distributed registry technologies". This work is executed using one of the most significant technology -blockchain. The analysis has showed that the use of blockchain technology in domestic charitable organizations, both individually and at the state level, will make donations not only more effective and reliable. Ethereum currently used as blockchain platform. Smart contracts implemented using Solidity language. The server part was developed on Node.js platform using JavaScript.

VIVA Institute of Technology
9th National Conference on Role of Engineers in Nation Building – 2021 (NCRENB-2021)

Issac Nuamah et. al. [13] ‘ Development of a Sustainable Food Supply Chain by Post Harvest Program’ introduces The Post Harvest Project (PHP), which is a group of committed technology and capital partners dedicated to delivering technological solutions to food waste in the supply chain. Of the many technological solutions being pursued by PHP, an innovative food preservation technology called nanoICE is described in detail. An effort is underway in Ghana to build a series of small community food process plants based on improved cold storage on fishing boats and on-shore facilities for preserving fish, which in an important source of protein. The aim of PHP’s effort in Ghana is to engage local communities to feed people and create opportunities, and improve health through good nutrition.

Amir Saxena et. Al. [14] “ Food donations using a forecasting-simulation model’ published in 2016, presents a methodology to estimate donations for non-profit hunger relief organizations. These organizations are committed to alleviating hunger around the world and depend mainly on the benevolence of donors to achieve their goals. However, the quantity and frequency of donations they receive varies considerably over time which presents a challenge in their fight to end hunger. A simulation model is developed to determine the expected quantity of food donations received per month in a multiwarehouse distribution network. The simulation model is based on a state-space model for exponential smoothing. A numerical study is performed using data from a non-profit hunger relief organization. The results show that good estimation accuracies can be achieved with this approach. Furthermore, non-profit hunger relief organizations can use the approach discussed in this paper to predict donations for proactive planning.

Aaron Ciaght [15] ‘ Smartphone Based Waste Food Supply Chain For Aurangabad City Using GIS Location Based And Google Web Services’, published in 2014, describes the client-server GIS and Smartphone application for the hunger free city. At the client side App provide facility to donate food to the charity for the help of hungry people. Donors enter basic information like latitude and long quantity of waste food and type of waste along with value and contact number. Charities can pick up that waste food and deliver food to hungers. Completion of registration will placed onto server database where charities can store the entries of donor in table format and shows the optimal path between donor locations to nearest charity along with direction. So wastage food can easily deliver to hungry people within a time.

III. PROPOSED SYSTEM

The proposed application is android-based, developing using flutter which requires internet connection and will provide a platform for donors and NGO after they successfully register into the system. If a donor wishes to donate something, he/she can send a post in application. This message will be shown as feed to nearby NGO. Once the notification is sending the NGO who wish to claim can accept the request. After Ngo accepts, a chat box will open between donor and Ngo to contact them for delivery of items. The user interface of this system will be simple and user-friendly, and the targeted system is android.

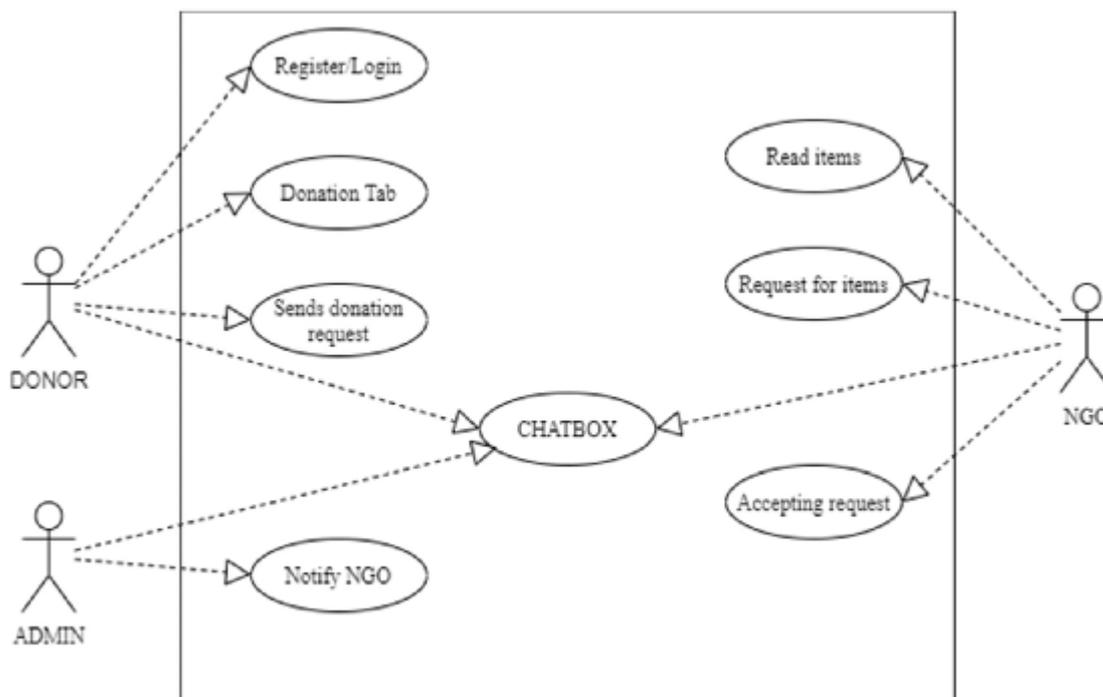


Figure 1 use case diagram

Fig. 1 depicts about the use case diagram of proposed system. There are three actors as shown in the figure. The first actor user which is donor performs tasks of login/register, donation and sending message after the acknowledgement. The second actor which is NGO will perform task of reading items which donor has listed and accepting it if required. While the Admin actor which is the app will perform task of notifying NGO and creating chat box between other two Actors.

IV. CONCLUSION

The proposed application shall reduce food wastage and also fulfil other requirements like clothes, etc. of needy organizations. Thus, it will further help the development of NGO with use of useful items through donation.

Acknowledgements

We would like to express a deep sense of gratitude towards our guide the Computer Engineering Department of VIVA Institute Of Technology for their constant encouragement and valuable suggestions. The work that we are able to present is possible because of her timely guidance. We would like to pay gratitude to the panel of examiners Prof. Sunita Naik, Dr. Tatwadarshi P. N., Prof. Dnyaneshwar Bhabad, & Prof. Vinit Raut for their time, effort they put to evaluate our work and their valuable suggestions time to time. We would like to thank Project Head of the Computer Engineering Department, Prof. Janhavi Sangoi for her support and coordination. We would like to thank Head of the Computer Engineering Department, Prof. Ashwini Save for her support and coordination.

REFERENCES

- [1] P.Lanerolle, S.Rathnayaka, H.Rupasinghe, S.Madhushanka, "Donate.lk: A Smart Donation Handling System", IEEE,2018.
- [2] P.Battin, S.D.Markande, "Location based reminder Android application using Google Maps API", IEEE,2017.
- [3] H.D.Das, R.Ahmed, N.Smrity, L.Islam," BDonor: A Geo-localised Blood Donor Management System Using Mobile Crowdsourcing", IEEE,2020.
- [4] A.M.Qadir, P.Cooper, "GPS-based Mobile Cross-platform Cargo Tracking System with Web-based Application", IEEE, 2020.
- [5] S.R.Garzon, M.Elbeher, B.Deva, A.Kupper, "Reliable Geofencing: Assisted Configuration of Proactive Location-based Services",IEEE, 2016.
- [6] Y.D.Harja, R.Samo, "Determine the best option for nearest medical services using Google maps API, Haversine and TOPSIS algorithm", IEEE, 2018.
- [7] N.S.Andres, M.R.Garcia, L.A.Gonzalez, R.V.Casielles, "Nonprofit organizations at the crossroads of offline and online fundraising in the digital era: The influence of the volume of target beneficiaries on the success of donation-based crowdfunding through digital platforms", IEEE, 2018.
- [8] K.Qian, R.M.Parizi, D.Lo, "OWASP Risk Analysis Driven Security Requirements Specification for Secure Android Mobile Software Development", IEEE, 2018.
- [9] J.Jeong, D.Kim, T.Lee, J.W.Jung, Y.Son,"A Study of Private Donation System Based on Blockchain for Transparency and Privacy", IEEE, 2020
- [10] D.Scazzoli, G.Bartezzaghi, A.Silvestro, M.Magarini, M.Malacini,"SIVEQ: An Integrated System for the Valorization of Surplus Food", IEEE, 2019.
- [11] A.Pradiftha, E.Liani, M.Suwono, D.Meldiana, "Rice Donation System in Orphanage Based on Internet of Things, Raspberry-Pi, and Blockchain", IEEE, 2018
- [12] H.Saleh, S.Avdoshin, A..Dzhonov, "Platform for Tracking Donations of Charitable Foundations Based on Blockchain Technology", IEEE, 2019
- [13]Issac Nuamah, Lauren Davis, Steven Jiang, " Predicting donations of forecasting simulation model" , IEEE 2015.
- [14] Amir Saxena. Khushi Verma, Aadit Patil, " Development of a food supply chain by PHP" IEEE,2016.
- [15] Aaron Ciaght, Adolfo Villafiorita," Beyond food sharing: Supporting food wastage reduction using ICT" IEEE 2014.