Blood Organ Donation Management System Using Android

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ABSTRACT: *Blood/Organ is an important aspectfor all living things. It proves to be a lifesaving component in case of emergency requirement. Blood/Organ services are very essential for it can save a person's life. The absence of a platform which can schedule blood donation appointment and requesting for blood/organ leads to spending too much time on searching for right donor of blood/organ. This study presents a framework for the development of an Android mobile application that will facilitate blood services between blood and organ banks, blood/organ donors and blood/organ requesters. The proposed system will allow blood banks to manage blood drives to encourage more people to donate, view updated reports of the current status of blood services and manage blood requests as well as blood donations. In this users can view all the information provided. The main aim of developing this application is to reduce the time to a great extent that is spent in searching for the right donor and the availability of blood required. As well as User can register himself for his/her organ donation after his/her death to the needed ones.*
Keywords: blood donation, organ donation,MySQL, Android Studio

I. INTRODUCTION

The need for blood and organ is great as it is life as there is no replacement for human blood and organ. Every day blood and organ is required in hospitals and emergency treatment facilities for patients with Cancer, Thalassemia and other diseases, for organ transplant recipients and to help save the lives of accident/trauma victims. With a growing population and advances in medical treatments and procedures requiring blood transfusions the demand for blood and organ continue to increase. In India many people are losing their lives every day in emergency situations because we are suffering from lack of blood and organ in blood and organ banks, and they do not receive the blood and organ timely

The Blood Donation Agent is to create an e-Information about the donor and organization that are related to donating the blood. Through this application any person who is interested in donating the blood can register himself in the same way if any organization wants to register itself with this site that can also register. Moreover if any general consumer wants to make request blood online he can also take the help of this site. Admin is the main authority who can do addition, deletion and modification if required.

The World Health Organization states that every country is facing a continuous challenge in collecting adequate blood from safe donors to achieve the national requirements donation of blood from unpaid donors (as in France) is acknowledged as being essential for safe and sustainable nation's blood supply. Blood is required by individuals amid crises – serious health problems, fires, earthquakes, typhoons, and accidents. With the available blood supply in Philippine Red Cross blood donation centers, these individuals are saved. The benefactors themselves may require blood at some point – blood they or we have given.

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Their relatives and friends start searching for a donor to help but there is no guarantee whether he will come or not. On the other hand there are a lot of people who are willing to help and donate. There are numbers of existing systems have become increasingly tried to activate the blood and organ donation process. However, this is still inefficient up to day. Besides we propose to use the latest technologies and the available tools to find a modern system which fills the gap and provides an organized solution. Our system has a quick mean to find the donors easily by their nearest location, available time, and same blood type facilitate the search process for needy people and make it easier than before. Increase number of donors by increasing the facilities provided to

them and to increase the awareness of the society about the importance of blood donation. Our system facilitates the donation process in our country.

II. LITERATURE SURVEY

In paper [1], Abigail Casabuena et al proposed a framework for an Android based application for the facilitation of blood services. The proposed system will bridge the gap among blood service facilities, blood donors, and people who need blood. The proposed Android mobile application will make blood services such as blood donation and requesting for blood easier and convenient. Blood donors and people who need blood can locate the nearest bank from their current location. People that will install the mobile application will be knowledgeable with the latest activities of Philippine Red Cross blood service facilities such as blood drives which can increase their willingness to donate and awareness that there is an immense need for blood, hence, will generate more donations. The proposed web system will be beneficial for blood service facilities with managing blood services and maintaining an updated blood donors and requesters database. Reports that will be generated will be essential for it will serve as a basis for conducting events such as blood drives. The proposed system also shows an updated blood supply inventory of all the blood service facilities. If the blood supply reaches the critical level, an announcement will be automatically posted to encourage blood donors to donate. In the future, the proponents plan to implement the proposed system in all of the Philippine Red Cross blood service facilities.

Online Blood Bank and Organ Transplant will be a website. The purpose of the system [2] is to simplify and automate the process of searching the blood in case of emergency and maintaining the records of blood donors, recipients, blood donation programs and blood stocks in the bank. Using this website blood seeker can search for blood donors and can call or message the donors through this app on android. This website can also be used by organ donor and seeker where person can register for organ donation. Proposed system will contain a Directory which includes details of all Blood Bank across India. User can search Blood Bank using PIN code and typing name of State or city.

In [3], Prof. Dhanashri Joshi proposed an efficient way to overcome problems in existing system. We are using Global Positioning System (GPS) for tracking of nearest blood banks and donors. It requires GPS supported android device with application installed on it for the user. Donor will be prompted to enter an individual's details, like name, phone number, and blood type. During the urgency of blood, you can quickly check for contacts matching a particular or related blood group and reach out to them via Phone Call/SMS through the app. Our app provides address of nearest blood banks and donors in your city/area by GPS tracking. A large number of people carry an android mobile phone, so we are developing an Android application which is low in cost, requires less time to find out blood banks and donors.

Medical emergencies arise at any time or anywhere. During medical emergencies blood transfusion may be required to treat patients. The hospitals and clinics especially in Indian rural areas find it difficult to obtain blood instantaneously, especially of negative or rare blood group types. The problem is more severe, when life is lost due to unavailability of blood supply. To solve this, several solutions have been proposed by various Authors; wherein the blood donor's static contact details is maintained by several agencies or blood banks. However these solutions' were not adequate, as it provides list of donors based on the static contact location of the donors, as provided during registration. Whereas in real scenario, the actual location of the donor could be far away from the patient's site. Paper [4] has proposed a system for dynamically locating and notifying the nearest donors for blood requirement. The system tracks the location of donors (volunteers) through GPS or Mobile Network Location and allows requestor to search nearest donors based on their actual location at the time of need. This proposed solution provides a reliable method of locating Blood donors especially in distant rural areas, where few blood banks are available.

Paper [5] presents a high-end system to bridge the gap between the blood donors and the people in need for blood. Application for Blood Bank Management System is a way to synchronize Blood banks and Hospitals with the help of Internet. It is a Web Application through which Registered Hospitals can check the availability of required Blood and can send Request for blood to the nearest blood bank or donor matching with blood requirement and can be ordered online as and when required. Blood bank can also send a request to another blood bank for unavailable blood. Person willing to donate blood can find out nearest blood banks using Blood Bank Management Android Application. The location of the blood bank can also be traced using maps. The Android application can be accessed only by the donors to search the blood donation centers and the requesting blood banks and hospitals to search the nearest blood banks and donors.

The need for blood is important for various treatments in medical field. For every second someone needs blood to save their life. The task of blood bank is to receive blood from various donors, to monitor the blood groups in the database and to send the required blood during need to the hospital in case of emergencies. In developing countries, especially like India, the blood resource lacks in quantity which is a barrier to the life of someone who is in need of blood. This project [6] is named "BLOOD SOLUTIONS". It is a GPS based

application available for android users. The application will aim at providing emergency blood facilities to the patient (requester) provided he/she has downloaded the application. Nearby location of hospitals and blood banks near the user can be located as well. Also blood donation record details are maintained on a different server which can be operable only by the admin.

Blood is an important constituent of the human body. Timely availability of quality blood is a crucial requirement for sustaining the healthcare services. In the hospital, in most of the cases, when blood is required, could not be provided on time causing unpleasant things. Though donor is available in the hospital, the patient is unaware of it, and so is a donor. To resolve this, a communication between hospital, blood bank, donor, and the receptor is important. The system

[7] listed following forecasting on price variations and stock handling, increase in number of blood type, increase in human accident Infrastructure, blood on a various category to be managed. So we solve the problem using the android application. The system will make sure that in case of need, the blood will be made available to the patient. There will be web portal as well as an android app to make this communication faster. It aims to create an e-Information about the donor and organization that are related to donating the blood. The Methodology used to build this system uses GPS. The Proposed system will be used in Blood banks, Hospitals, for Donors and Requesters whoever registers to the system.

Blood is main constituent of the human being and is one of the most necessities of life. The runtime availability of blood donors is less in India causing loss of life. The purpose of project [8] is to develop a blood request system and overcome the unsolved problems. In this Monika Mandale et al propose a Progressive Web Application (PWA) for the blood request system. The application makes possible an interaction between users and the blood banks all over the city. The system created will show the availability of blood units all over the city and will provide the service as soon as possible. The application will send request according to what type of blood group it is and as soon as possible the blood unit will be delivered to the needy. The system broadcasts the message to the registered donors and thereby fulfilling the request of blood unit by runtime available donor. Using this service we have made an attempt to make use of the capabilities of mobile phones and turn them into lifesaver mobile health care service which is convenient to users.

Smartphone's applications are a big help to increase the willingness and accessibility with the purpose of providing a continuous blood supply. The supply and quality of blood available for donation is still a major concern across the different countries. In order to maintain continuous blood recruitment, blood banks should encourage people and implement many campaigns for enhancing people's awareness in blood donation to become a registered volunteer donor. Also, they have to organize the blood donation process with the help of today's modern technology in order to increase the volunteer donors' inclination and convenience [9].

In a study about the development of blood donation mobile application [10] it is stated that there is a need to quickly reach blood donors whenever there is an urgent need for blood donation for the person in need to maintain a healthy life. The study aimed to provide communication to individuals who are willing to donate blood in emergency cases and individuals who need blood. The study examined three applications that allow blood donors and the ones who need blood to communicate and developed a relevant blood donation application that can run in mobile smartphones with an Android operating system, which is one of the most common mobile operating systems nowadays. The following enhancements are envisioned for the future versions of the developed application: providing communication through the application instead of providing the blood donor's phone number, searching blood donors by using the location service, and updating registration information. The study recommends the use of mobile applications with regards to blood donation since there is a possibility to reach a wide range of individuals in cases where the need for blood is not achieved.

III. PROPOSED SYSTEM

This project is aimed to developing an online Blood/Organ Donation Information. The entire project has been developed keeping in view of the distributed client server computing technology in mind. The Blood/Organ Donation Agent is to create an e-Information about the donor and organization that are related to donating the blood. Through this application any person who is interested in donating the blood/organ can register himself in the same way if any organization wants to register itself with this site that can also register. Moreover if any general consumer wants to make request online he can also take the help of this site. Admin is the main authority who can do addition, deletion and modification if required. The project has been planned to be having the view of distributed architecture, with centralized storage of the database. The application for the storage of the data has been planned. Using the constructs of MySQL Server and all the user interfaces have been designed using the Android Studio technologies.
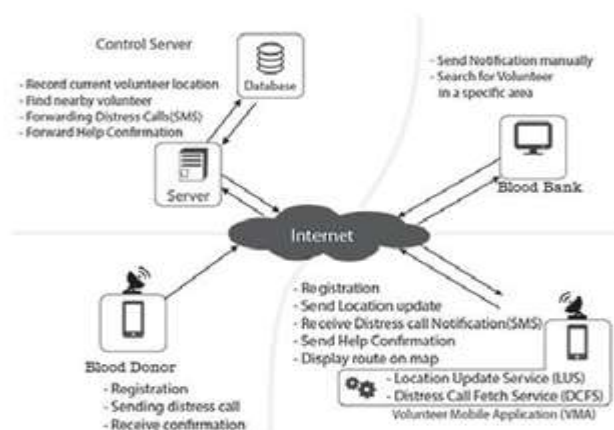
Fig system architecture

IV. CONCLUSION

When there is urgent need for blood/organ it may not be possible for people to communicate with the each and every hospital and blood bank. For that the application can fulfill their requirements in short time span so that it can overcome the death rate. Thus the proposed system can help everyone who is need of blood/organ anytime and anywhere.

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