Online Blood And Organ Transplant Management System

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ABSTRACT

This Application acts as an essential role in saving the lives of human beings and which is also its main aim is to help the user to get the required blood and organs at the correct time. And it is a mobile-based Application developed in the android platform. This Android application provides an easy and fast way to search for blood and organs. This app enables users to find blood and organs in emergency situations. Users need to register with the Application which is available on the app. And also, they can get brief information on the donor's contact details includes their location. The user can Contact them By making a call or message directly by using this BIO-Donation Application. The Objective of this Mobile Application is to design an Android Application to maintain necessary information of the Patients, Donors, and report details for any bio-related organization. Project Android Blood Bank Management system was developed so that users can view the information about registered Bio donors such as Name, Address, and other such personal details along with their details of blood group and other Medical Details of the donor. This Mobile Application also has a login page where the user is required to register and only then they can view the availability of blood and organ, and even register to donate blood if he/she wishes to. The main aim of developing this Android Application is to reduce the time to a great extent to avoid spending time in searching for the right donor and the availability of blood and organ required.

I. INTRODUCTION

The main aim of developing this Android Application is to provide blood to the people who require blood and organs. The numbers of persons who need blood are increasing in massive amounts day by day. Using this system user can search blood groups available in the city, and he can also get the contact number of the donor who has the same blood group he needs[1]. To help people who need blood, this   Android Application is used effectively for getting the details of available blood groups, and also to get the contact number of the donors with the same blood group and within the city. So if the blood group is Unavailable in the blood bank user can request the donor to donate the blood to him/her and save someone's life.

Using this   Blood and Organ bank management system Application people can register himself or herself who want to donate blood. To log in the Application, they have to enter their contact information like address mobile number, etc. This blood bank management system is a Mobile Application, so it is easily reachable to everybody. When a Human/Person wants to donate blood, he/she has to register in the Application. Donor registration is effortless; to get register to the system, he has to fill up the registration form. After submitting the registration form, he/she create a username and password. The donor has to give information like blood group, contact details, etc. [2]. The donor can also change his account information when he wants to use his username and password. People can search for blood groups available in which they were needed. They check it online using our blood bank management website. If in case the blood group is not open in blood bank they can also get contact numbers of the persons who have the

Same blood group, he needs. And he can request the person to donate the blood for saving someone's life.

Our system also allows user to search online the person who have the same blood group he needs and if he finds the If he find a donor in his city then we give him all the information of the donor, if he/she doesn't see any donor then he is given the contact numbers and addresses of the Life-Saving Contact Persons for big cities[3]. A blood donation is a process where a person voluntarily has blood donated to be used for future transfusions when in need of hospitals for treatment procedures that require them.

Donation may be of whole blood (blood is drawn directly from the body) or specific components of the blood, includes red blood cells, white blood cells, plasma, procedures such as managing stocks, approving blood requests, and updating donation information.

The inspiration for this project is to improve blood banks and to develop a blood bank information system that focuses on making an online Mobile Application that is accessible for both donors and administrators[4]. Donors can directly receive information regarding their previous blood donations, including their blood results and donation history, to easily schedule their next contributions. They can also update the personal information through the system, without having to contact the blood bank registry.

Organ donation is a process where a person allows an organ of their own to be transplanted to another person, legally, while the donor is alive or dead with the permission of the next of kin[5]. Donation may be for research or, for more commonly, healthy transplantable organs and tissues may be donated to be transplanted to another Human.

Common transplantations include bones, bone marrow, skin, and corneas, kidneys, heart, liver, pancreas, intestines, lungs. Some tissues and organs can be donated by donors, such as a kidney, part of the liver, part of the pancreas, part of the lungs or part

of the intestines, but most donations occur after the donor has died.

2. STATEMENT OF PROBLEM

The existing blood banking and Organ Banking system include a lot of manual work, which takes a lot of time and Man Power. So the user needs to connect to the internet/Network if they want to know the details of the BIO-donors. It takes more time and effort to collect information about B.I.O.- donors or receivers. Accurate information is not available to users.

There are two types of processes in the existing system: They are The blood donation process by donors and the blood request process by hospitals. In both methods, an administrator is in charge of managing the blood inventory in the blood bank.

Blood and Organ Donation Process by Donors when a new donor comes to donate blood, they are asked to fill out their personal details during the registration process before making a donation. After donation, the donor is given an E-donor identification card with their name, blood type, and a barcode to be used as a reference for future contributions. The barcode is used to retrieve the donor's record containing their personal details, medical history, and donation information, including blood results. Only B.I.O.- bank administrators have the authority to access the donor's records since the Android Application is only available for their use within the organization. This makes it difficult for donors to make changes to their personal information within the system. That is, for donors to update their personal information, such as their phone number, mailing address, or e-mail, they cannot update the data by themselves but have to contact the blood bank center to update their information. At the back the card is a table that contains number of donations, date, location, and the blood collector's signature. Existing donors can submit their donor I.D. cards to retrieve their personal information and donation records and start the blood donation process, and they will be given a new card after they have donated blood for More than eight times. They can Have a donor I.D. card may be a tangible reminder to people that they are helping others to survive in the world;

However, Having a Manual ID card Have some drawbacks such as loss or damage to the ID Card. To ensure donors, we can identify themselves with the Android Application, other credentials, such as username and password, can act as a safeguard if their donor ID. card is lost or damaged.

The Administrator then will deposit the blood into the inventory for future requests. The need for blood and organ is

increasing 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 of patients with diseases, for organ transplant recipients, and to save the lives of accident Patients. With the Advancement in medical procedures and treatments, blood and Organ transfusions and the demand for blood and organ

continue to increase [2]. In India, many people are losing their life because they are suffering from lack of blood& organ; they are unable to receive the blood and organ in time. The relatives and friends of the victims start searching for a donor to help, but there is no guarantee about the Donor's Presence and Health Condition. , and also, there are a lot of people who are willing to help and donate others to save their life. There is a number of existing systems that have become increasingly tried to activate the blood and organ donation process. However, this is still not efficient up today. We propose to use the latest technologies and the tools to find a system that fills the gap and provides an organized solution. Our policy has a quick means to find the donors easily by their nearest location, available time, and the same blood type, facilitate the search process for needy people, and make it easier than before. Increase the number of donors to increase the facilities provided to them and to increase the awareness about the importance of blood donation. Our system helps the donation process in our country.

Place of blood need	Amount of blood and its component require
1. Automobile Accident	50.00 unit of blood
2. Heart Surgery	6.00 unit of blood/6.00 unit of platelets
3. Organ Transplant	40.00 unit of blood/ 30.00 unit of platelets
4. 20 bags of Cryoprecipitate	25.00 unit of fresh frozen plasma
5. Bone Marrow Transplant	120.00 units of platelets / 20.00 unit of blood
6. Burn Victims	20.00 unit of platelets

3. LITERATURE SURVEY

Life Donor, Saudi Arabia is a system based on G.I.S. integrated with an android mobile application. In case of emergency rare blood group seeker can request for the blood[6]. The donor who is in the nearby location is tracked using G.I.S. It is based on G.I.S.; User login to a mobile application that stores his/her information. There is no security for personal details, which can lead to the misuse of information by third parties.

Web-based information system for blood donation is a system that maintains the record, analyzes various parameters for the research issue, and provides online information[7]. Patients receive the blood through contacting the donor through the internet or phone. It's an android only, and the donor cannot specify the available time to donate blood.

MPlus /Kerala Blood Bank is an Android application for Keralites with the feature of blood donor bank of Kerala, sending a request to MPlus users and respond directly send to needier[8]. This Application is only for blood donation, and there is no use of the G.P.S. system.

Blood and Organ Request Process by Hospitals:-

Hospitals can request for blood by calling in or e-mailing the blood banks the type of blood and the quantity that is in need. The Administrator is responsible for checking the availability of the blood.

Type according to the request[9]. If the requested blood available, the Administrator will withdraw the the inventory and transfer it to the hospital.

However, if the requested blood is unavailable, the Administrator will send an alert message to inform to the hospital.

American Red Cross Blood Bank. Through this Application, the user can schedule an appointment, track total donation, earn rewards, and invite others to join them on a life-saving team[10]. But there are some limitations of this Application: In this Application, there is no use of G.P.S.
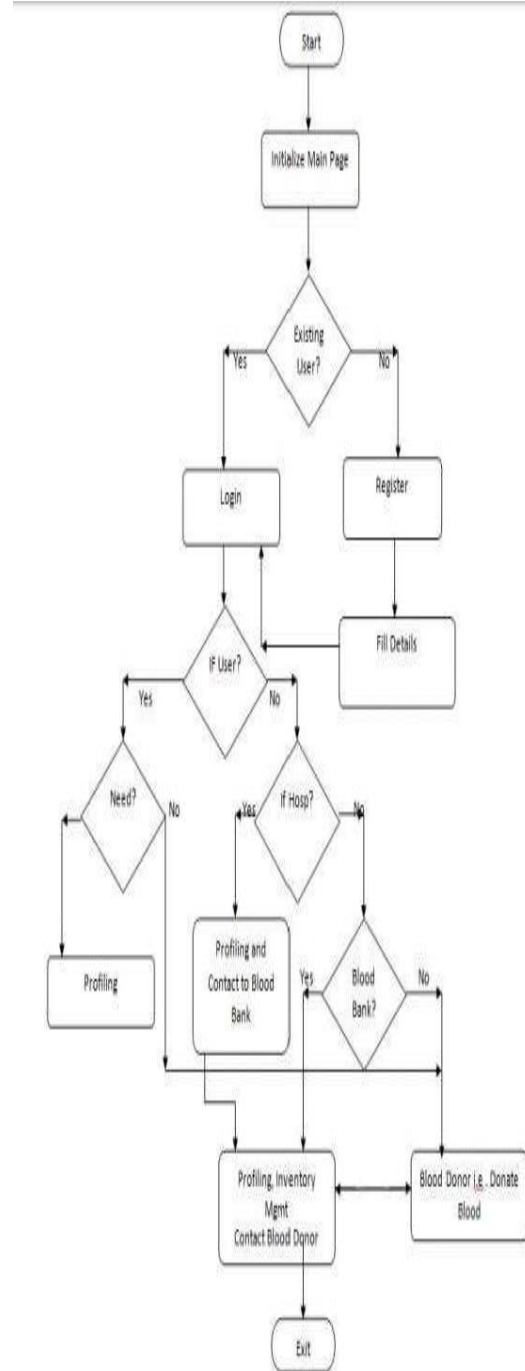
Apps/Parameter	Web Site	Android App	Tracking Location	Blood/Organ Donation	Search for BB,Hosp,MS	Verification & Validation
American Red Cross	yes	Yes	No	Blood	no	Email base OTP
MPlus/Kerela	yes	Yes	Yes	Blood	no	Email base OTP
Organ Donor ECard	yes	No	No	Organ	no	No
Life Donor, Saudi Arabia	yes	No	No	Blood	no	SMS base OTP
Web based information system for Blood & Organ	yes	No	No	Blood	no	No
B.O.P Using android app	yes	Yes	Yes	Blood & Organ	yes	Email base OTP & CAPTCHA

4. MODEL

In the proposed blood banking system, the information about donors can be found in a straightforward way that does not take any time or effort. This Application provides an easy way to search donors within less time. Users can search donors and can get their contact details, including the location. This Application enables users to communicate with donors directly through calls and messages, which avoids miscommunication.

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download was announced on May 16, 2013, at the Google I/O conference. It was in early access preview stage starting from version 0.1 in May 2013 and entered the next stage starting from version 0.8, which is produced in June 2014. On WindowsOS, macOS and Linux based operating systems.

Eclipse Android Development Tools (ADT) as the class is primary IDE for native Android application development blood from

4. SYSTEM REQUIREMENTS

Operating System: Windows 8 Web

Browser: Google Chrome Designing

Tool: Eclipse

5.   IMPLEMENTATION

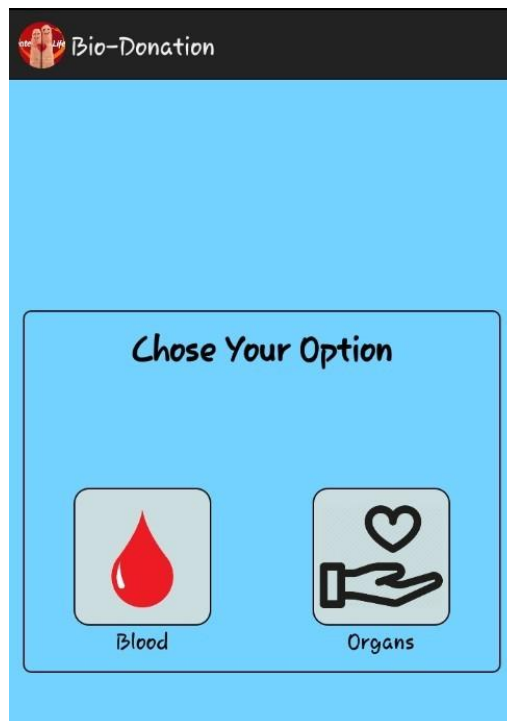Fig.1 Registration Page for User and Donor
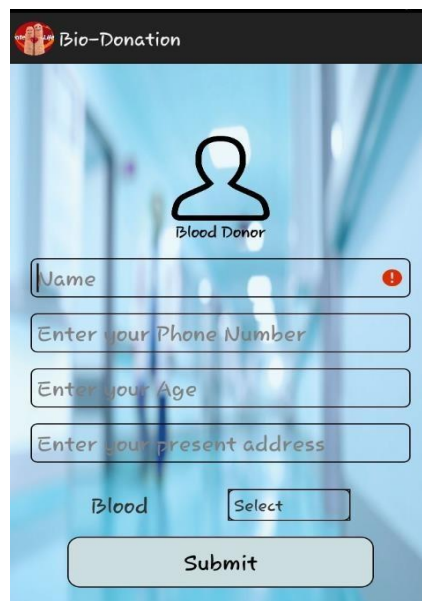

Fig.2 Page for selecting the option

Fig.3 Page to be filled by Blood Donor

Fig.4 Page displaying Blood Donor list and Also

provides a facility for a call.

Fig.5 Page Displaying Donor List

Fig.6 Page to be filled by Organ Donor

Fig.7 Page displaying the Details of Organ Donor and

It also provides the facility for Call and Message.

6. CONCLUSION

The system provides better, faster, and useful.

The Way for the citizens to communicate with the blood and organ donor for blood and organ requirement in times of medical emergency. The B.O.P. is a web base android application that helps to reduce the mistakes which are done in the existing systems. The B.O.P. is an efficient and reliable blood donor information and management system based on G.P.S. integrated into an android mobile application. Finding the nearest hospital and blood banks through android app helps in increasing the chance of saving the patient's life especially in rural areas, where

hospitals and blood banks are at a far distance.

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