

Android Blood Bank

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Abstract— The most precious and valuable gift to a person is life. It is very important that a person suffering from any kind of health issues gets the required aid on time. The purpose of this project is to fulfill the blood requests of people in need of it by time. To achieve this we will be having a promising Android application in which one can easily request for blood. One can even donate blood through it. A person in need of blood can easily search for voluntary blood donors near him as well as locate and contact nearby hospitals, blood banks, healthcare centers and NGOs to check for availability of the same. Here both, the donor and the recipient are brought on to a common platform. There will be no communication barrier between them. The recipient can easily get to know the details and can contact directly the required donor. This will help in improving speed and efficiency of the service. If somebody wants to request for blood beforehand even that option is available. How much quantity is required, of which blood group, etc. all this can be specified. Moreover one can post their requests in public and can also share others posts. This feature will help in publishing one's request to a big crowd. Anybody who is in need of blood should be able to use this service anytime without any need for sophisticated hardware.

Key words: Health, Blood, Android, Donors, Hospitals, Blood Banks, Recipients, Speed, Efficiency, Blood Group

I. INTRODUCTION

A. About Android

Android is a mobile operating system developed by Google, based on the Linux kernel and designed primarily for touchscreen mobile devices such as smartphones and tablets. In addition to touchscreen devices, Android is also used for television, cars, wrist watches, game consoles, digital cameras, PCs etc.

Developed by Android Inc, Android was unveiled in 2007. Beginning with the first commercial Android device in September 2008, the operating system has gone through multiple major releases, with the current version being 8.0 "Oreo", released in August 2017. Android applications ("apps") can be downloaded from the Google Play store, which features over 2.7 million apps as of February 2017. Android has been the best-selling OS on tablets since 2013, and runs on the vast majority of smartphones. As of May 2017, Android has two billion monthly active users, and it has the largest installed base of any operating system.

B. Blood Bank

Blood is a fluid found in humans and other animals that delivers necessary substances such as nutrients and oxygen to the cells and transports metabolic waste products away from those same cells.

Blood transfusion is generally the process of receiving blood or blood products into one's circulation intravenously. Transfusions are used for various medical conditions to replace lost components of the blood. Early transfusions used whole blood, but modern medical practice commonly uses only components of the blood, such as red blood cells, white blood cells, plasma, clotting factors, and platelets.

A blood bank is a center where blood gathered as a result of blood donation is stored and preserved for later use in blood transfusion. Proper testing of blood is performed to reduce the risk of transfusion related adverse events. It sometimes refers to a collection center, and indeed some hospitals also perform collection.

C. Android Blood Bank

The Android Project can be used in emergency situations. Through mobile user can get whole information regarding blood donors. Person who need to donate blood may register in our mobile app. They can modify their details by logging in with their user name and password. The person who need blood can search and find blood donors by using our application. User can get details like their contact number including their location. The user can make a call or message directly by using our application.

The proposed work fulfill the need of the blood to the victims/patients those in need of blood by providing communication platform among blood bank, blood donor and the victims who require blood. The aim of this system is to serve the blood request within a geographical area in a time frame required.

II. LITERATURE SURVEY

A. Design & Implementation of Automated Blood Bank using Embedded Systems

This project brings voluntary blood donors and those in need of blood on to a common platform. The mission is to fulfill every blood request in the country with the help of an android application and motivated individuals who are willing to donate blood. It aims to overcome this communication barrier by providing a direct link between the donor and the recipient by using low cost and low power Raspberry Pi B+ kit. Communication takes place via SMS (Short Messaging Service) which is compatible among all mobile types. The proposed work explores to find blood donors by using GSM based Smart Card CPU Raspberry Pi B+ Kit [1].

B. Domain Specific Search of Nearest Hospital and Healthcare Management System

The proposed work is primarily designed for emergency situations. During an emergency a person with the help of this application can search for nearest hospital in a much faster

way with accurate results. The system is developed basically by health conscious personnel. In the Authentication module, user authentication is done according to the role based access control. A new user has to register for accessing the content of our system. Registered user logins with the registered username and password. The user will be required to fill personal information like name, address, age, gender and so on and medical information like blood group, medical history etc. This Information can be useful for doctors.

The Blood Bank and Clinic paper will maintain data of clinic and blood bank over the server. This will be used as a extra service to find clinic in city for particular specialty (for example: Gynecologist, Eye Specialist, Dentist) and also find blood bank [2].

C. Implementation of a Medical Information Service on Android Mobile Devices

This study focuses on implementation: to provide users with a basic Google map features, to show where the major general hospitals are located and provide the Health Department approved pharmacy information, so that the user can directly go to the website to look for a doctor appointment time or peg. It is easier to use, more comfortable and quick to obtain the required information especially for those who are not good at using modern technology products [3]. User can access via cell phone to the basic Google map feature, readily available around the show. Also one can use the plan to find the shortest path distance in order to reduce the time for medical treatment [4].

D. Health Care Application for Android Smartphones using Internet of Things (IoT)

This project acts as an important role in many aspects of human beings relating to their life. The primary goal for this project is to eliminate the suffering of patients who finds it difficult to get blood at the time of emergency. This project is an optimal solution to the society such as, to find the availability of the blood and nearest Blood Bank Centre's based on the user's current location using GPS Tracker, Emergency message Notification to registered mobile number, Polio Vaccine/Dose Reminder based on Child's Age [5].

The main objective of this application is to perform complete operations of various Blood Bank Centers automatically, Emergency notifications and the polio vaccination reminder. The application would help in searching the required details instantly.

The different Objectives are stated below:

- 1) Making Time Consumption less for searching for blood in many blood bank centers as user can login and see the various blood bank centers on this application.
- 2) Customer won't have to wait for long queue to get blood as they have many other options for collecting blood at various Blood Bank Centers.
- 3) To make everything fast, that is from searching for blood bank centers to polio vaccine reminder and Emergency Notifications.
- 4) To properly manage detail of each and every customers.
- 5) Not a single child should miss immunization, leaving no chance of polio occurrence.

- 6) To encourage new people to donate their blood on a voluntary unpaid basis.
- 7) To ensure that the citizen can access the availability of blood units by using our applications.
- 8) To make every children diseases free and make the future of our nation bright and wonderful.
The mobile device which user uses should be GPS enabled handset and there should be Internet Connectivity [6].

E. Design & Implementation of Short Message Service (SMS) Based Blood Bank

Short Message Service (SMS) blood bank provides the communication platform among the blood bank, blood donor and the person who require blood. The main purpose of the project is to fulfill the blood request of the receptor with less hardship. The existing system will provide a direct communication link in between the voluntary blood donor and the person who requires blood with an android application. The communication between the user and the system was established with the help of SMS, there is some specific format of message was defined to communicate with the system [7].

III. PROPOSED SYSTEM

Firstly one has to install our application. On the starting page there will be two options provided, Registration and Login. If a person is new to the application he should first create an account by registering. User will be asked to enter details such as Name, Age, Gender, Blood Group, Address, Contact Number, etc. On successful registration an email will be sent to the user acknowledging him about his new account created. After this the user will be able to login with the username and password they chose. If the user is an existing one he can directly go to the login page and login. Once the user has logged in he can either request for blood or donate blood for which proper options will be provided.

A. Work Flow

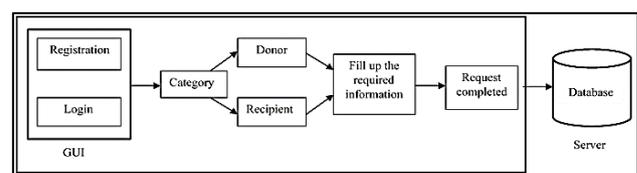


Fig. 1:

If a user wants to donate blood then he can select the Blood Donate option. In this he will be asked for some details to check if he is eligible to donate. And also nearby hospitals, blood banks will be shown to him/her to visit and donate.

For a user who requires blood, he/she should select the Blood Request option. In this the user has to provide some necessary details such as Blood Group, Quantity, etc. After this details of nearby hospitals, blood banks and even donors will be displayed. The user can then easily contact the required hospital or donor for blood transfusion.

In order to know the location of the user our application will use GPS. All of the data will be stored and managed by a server along with a database.

IV. CONCLUSION

Thus the proposed application will help users to get the data of available blood near them in time. Also any person who wants to donate blood can do the same with the help of this application. Anybody who is in need of blood should be able to use this service anytime without any need for sophisticated hardware.

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