Blood Management System Android Application

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Abstract— The mobile applications to solve problems for us is not new to us in today's world. One of the major problems in the field of medical today is to find a convenient way to look for blood donors and receivers in case of an emergency. This is an android application developed in order to solve this major problem. It helps you look for blood donors and receivers and track nearest hospital, fire station, ambulance and police station of the specific location in your city and connects you with them instantly in need. User can call to emergency numbers and call his home and his emergency contact person in single button click. In order to make sure the application is widely used even in remote areas the user interface has been kept extremely simple. This Application runs on the latest Android OS and has an extremely small size of 2.5Mb.

Keywords—Android, Blood Management, google map.

I.   INTRODUCTION

Mobile technology has been helping us to tackle almost every problem that humans face today. Evidently, since the start of mobile applications their usage has been tremendous. So much so that more than 78% of human activities on smart phones has been on applications. Mobile applications have been an integral part of our life in several ways starting from helping us to connect to people, making money transactions to keeping us healthy by exercising. The expanding use of the android-based smart phones makes the reach of a problem solving application easy even to people who cannot afford huge medical bills. Due to such boundless usage, mobile application technology definitely provides us with a platform to solve a major problem faced by everyone in the world and that is the need of blood. It may be required by a person suffering from anemia, or an accident it may also be required by a pregnant mother in case of emergency. In such situations, it is not always feasible to reach out to blood banks, as they need to maintain a stable supply, in some over populated countries like India the patient has to register in a waiting list for specific blood type even in cases of emergency. Surprisingly no such mobile applications have been developed on such a platform in order to solve such a major problem on a global scale.

Existing applications on Android provide such features locally within a country or a specific city. These applications allow you to call to emergency in one click and post an advertisement for the need of blood however, the need of blood is during an emergency and a patient cannot wait until a donor responds to the request. The main goal of this application is to the user can call the emergency numbers in one single click and send the blood request to the nearest hospital so that the hospital can arrange the blood before the arrival of the patient. If the user wants to donate blood, he can simply then enter his blood type and his location and send to nearest hospital.

User can update or edit his or her details like blood group contact number Emergency Numbers. User can track nearest Hospital, fire station, Police station and ambulance. This application uses the google map API.

II.   RELATED WORK

The system we present here is adequate for searching blood donors for available blood and thereby saving valuable time and money. This application provides necessary options to serve people on their emergency need making them free from worrying for blood by providing lot of donors at a single click.

Blood Management Android Application is a mobile-based application. This application is to create an e-Information about the Receiver and organization that are related to donating the blood. This software help to register all the donors, Blood collection details, blood issued details etc. When registration is completed, then the user no need to login it will open automatically on home page. They can modify their account information by updating username, mobile number, blood group and contact details. A user is able to send blood request from the home page. This application provides track facilities to hospital, fire station, police station and ambulance using google map API. It will

make easier to find and contact with donors when needed. There is add on facility of emergency calling available as an option. Interface with grouping and testing machine provides user-friendly communication. This application sends blood request to nearest hospital for reminding location and contact number. Donor can used this application through android-based mobile phone.

III. SYSTEM DESIGN

The system can be installed in any Android phone and required a machine with pentium IV processor, 512 MB ram, 1GB storage to implement the system. The system is implemented in JDK10.0.1, Android 4.4(Kit Kat), java, and Android Studio.

3.1 Use Case diagram:

The Use Case diagram is use to represent all the use cases along with their relationships. The use cases are Register with, Blood Request, Select Blood Type, Receiver Details, Enter personal Details and the include and extends relationship is as depicted in the figure below.
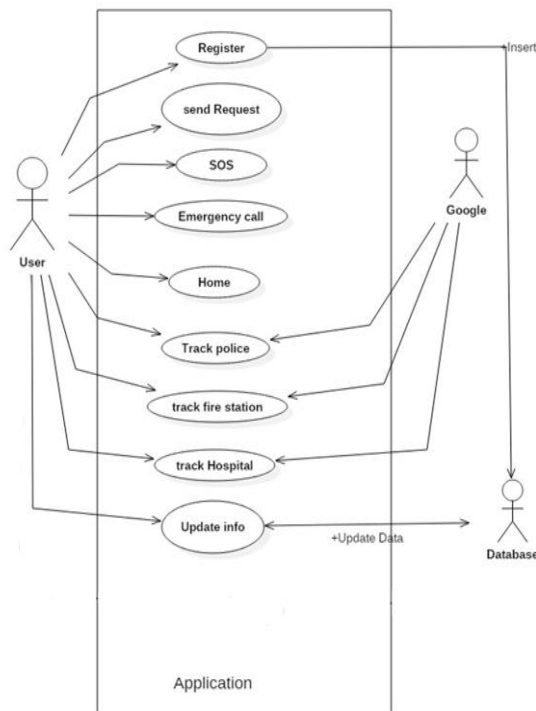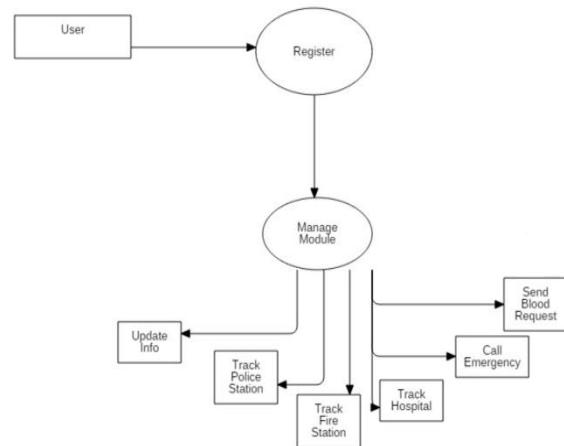

Figure 3.1 Use Case Diagram

Figure 3.2 Data Flow Diagram

IV. IMPLEMENTATION OF SYSTEM/ METHODOLOGY

The user has to first download the application. He/She will be register with the application. If the person has already registered, then he/she has to not need to login it will go to directly home page. If not, he/she has to register with application and fill basic details like name, address, contact, emergency contact person name and his number, blood group, email id etc. Once the user registers, he/she can access directly home page. The user will get various options on screen:

- Track nearby Hospital

- Track nearby Fire Station

- Track nearby Police Station

- Request for blood to nearby hospital

- Track nearby Ambulance

- View and Update his/her details

- One click call to emergency numbers

- One click call to Home number

The user can select any of the option and according to the selected option he/she will get the information. The user can also get the exact path from his/her location to Police Station, Fire Station and hospital by using Global Positioning System (GPS). The details of the user will be saved in database and only the admin will have access to database. Administrator can only view private and confidential data of the users. This system promises very less paperwork and provides help to blood recipient and donors. With help of our application the

user will not have to go to the blood bank and ask for the required blood, he/she can directly send the request after that hospital will arrange before arrival the patient.
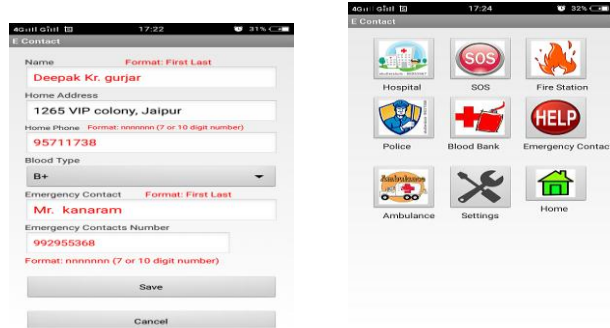
V.   RESULT AND DISCUSSION

Figure 5.1 Registration Page   Figure 5.2 Home Page

User can register through registration page. The user will not enter details until it enters data is the correct format. The information entered in this form will be saved in database. A user can register only once. Once the user register, the automated home page will come because the user will not have much time in the emergency so that he can login it repeatedly, from here the user can choose the option accordingly.
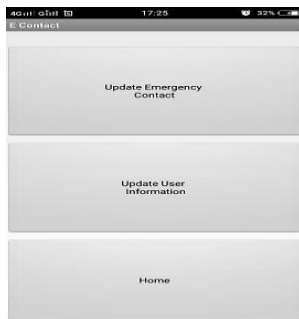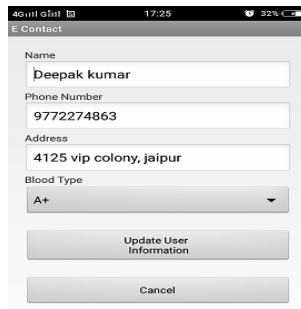

Figure 5.3 Setting Page   Figure 5.4 Update User Info
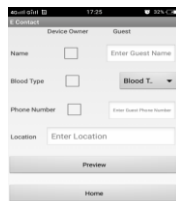

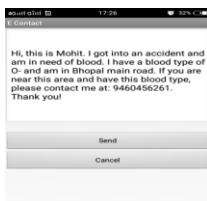Figure5.5 Update Emergency info   Figure5.6 Send blood request   Figure5.7 Preview Message

  If the user chooses an option with the setting, then he can update his information from it, and it will also update in the database.User can also update his emergency information,

which will help him in the emergency. It is attached to the database when you do some editing here, it gets edited in a straightforward database too.If the user select option with blood request, then he can send blood request to his nearest hospital with his current location. User can also send blood requests for himself and others like for his friend.
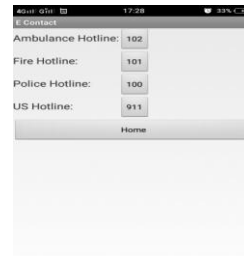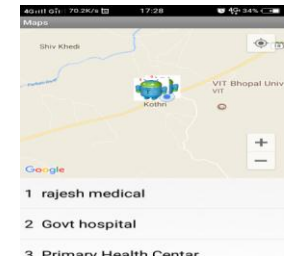

FIGURE 5.8 SOS CALL PAG   FIGURE 5.9 TRACK NEAREST HOSPITAL

If the user chooses the SOS Call option, he can contact the emergency numbers in one click from here. If the user chooses the option of a hospital with a hospital, then he can search his town hospital from here, which is built using Google's API.

VI.   CONCLUSION AND FUTURE WORK

We have proposed a novel technique of Blood Management. As far as we know, this is the first type of work in BMS domain that addresses all the key parameters of donor recruitment strategies like increasing public relations, effective communication methods, blood Donor Issues in disaster management, donor motivation, counselling as well as donor self-deferral opportunity. The Smart Blood Query Project facilitates its users both blood donors and recipients to access the service any time anywhere with no sophisticated hardware and software installation. Furthermore, we are working on extensive testing of our prototype in real world situation in conjunction with relevant health care professionals and domain experts in order to develop an understanding of complete blood management system for the monitoring of donors, patients and identifying what information is required from concerned group of people. We hope proper implementation of our project can bring a significant change in BMS situation of SEAR and developing countries.

Our Application has a vision towards solving the problem of blood need internationally and without boundaries. Applications like these can help promote blood donation by giving away rewards like coupons and gift cards to people who register for blood donations in their city. Applications like these can be made more useful by providing more relevant information about health issues and emergency

information and A donor's profile can be added and can be rated/rewarded thereby promoting the act of blood donation.

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