

## Lifesaver E-Blood Donation App Using Cloud

Rishab Chakrabarti <sup>#1</sup>, Asha Darade <sup>#2</sup>, Neha Jadhav <sup>#3</sup>, Sandeep M. Chitalkar <sup>#4</sup>

Department of Computer Engineering  
Sinhgad Institute Of Technology And Science, Narhe, Pune

<sup>1</sup> rishabc2017@gmail.com

<sup>2</sup> ashadarade@gmail.com

<sup>3</sup> nraghunathjadhav98@gmail.com

<sup>4</sup> smchitalkar\_sits@sinhgad.edu

### Abstract

*Cloud communicating is an developing technology that can be combined with traditional health management system which used to provide better health related services. Old-fashioned healthcare systems mainly contain personal and public healthcare services. Many times, people are not satisfied with current system as people don't have faster access to blood so when emergency occurs blood doesn't reach on time and a person's life is at stake current system doesn't have GPS facility to locate donors and doesn't have proper user interface and has many communication issues. So, we propose a system where User will just open application. Then he will automatically be connected to the cloud and his location will be tracked by GPS. All evidence about the donors and blood bank is kept on the cloud. As per requirement of blood, user can quickly get notification from blood bank within the radius of 5-10 km. If requested blood group blood is available in the blood bank depository then it will send positive reply message to the users. If required stock does not exist in blood bank then blood bank send notification to all donors and blood donation camp can be conducted by hospitals. If anybody is able to donate the blood then he will respond to blood bank. Only a registered people, with enthusiasm to donate blood, will be able to access the service. In emergency situations cloud can prove to be important as it can connect easily to user and provide faster information which will help save a life.*

*Keywords— Cloud Computing, Global Positioning System, Web Application, Android Application, E-health, Blood bank database, Call routing.*

### I. INTRODUCTION

Understanding the factors that motivate donors to donate blood will facilitate improvements in the process of "Blood Donation". Donation incentives are often used to attract donors for donating blood. A cross-sectional study was designed to understand donors' attitudes towards blood donation. Many times people are interested in donating blood but are not satisfied with a current system like they donate blood free of cost to the blood banks or hospitals, but still, when one needs blood in emergencies they have to pay a lot of money for it. To motivate people for blood donation and to help patients receive blood in emergencies, we have designed an application to overcome all the problems which the current offline, as well as online systems, face. If in an emergency a patient requires blood, using this application we'll not just be able to contact Blood Bank and Hospitals but can also seek help from individual registered Donors. We developed an Android-based blood donation application that keeps the record of volunteer blood donors. In case of an emergency, the application can broadcast the message along with the blood group and hospital information to all the registered donors for donation. We utilized the cloud computing service for keeping the application data available anywhere and anytime. The superior feature of our application is to use it as a volunteer blood donor as well as the requester. The requester can broadcast the message along urgency sign of required blood to the

registered users and notification message will send to all the volunteer blood donors. Several online blood bank databases are available; however, none of them have the capability for direct contact between the donor and recipient. This is a major drawback particularly in cases where there is an urgent need for blood. This project aims to overcome this communication barrier by providing a direct call routing technique using Asterisk hardware. A blood bank database is created by a collection of details from various sources like Blood banks, NSS, NGO's, hospitals and through a web interface.

#### A. MOTIVATION

To build an android application that will help people to get blood in emergencies like natural disasters using features like geo-tagging, SMS Gateway, and payment gateway. A Lifesaver E-Blood Donation App using Cloud with advanced features that will help to overcome the barrier between blood bank, blood donor and patient.

#### B. Problem Statement

Design the E-Blood Donation app in natural disaster management by using live geographical tracking of the donor.

#### C. Objectives

- To find the Blood donor when required.
- To deliver the service at a minimum cost.
- To find the donors in the desired location through location preference.

## II. LITERATURE SURVEY

#### A. Literature Survey

The “mHealth: Blood Donation Application using Android Smartphone” approach used by Muhammad Fahim et al. [1] proposed that mHealth is one of the best possible concepts for the provision of healthcare services and improve quality of life. This paper presented the conceptual design and prototype development of mHealth application for blood donation. We investigate the requirements in terms of communication, storage, processing, and smartphone development platform to make it an acceptable solution.

The “Automated Online Blood Bank Database” approach was used by Muhhamad Ari et al. [2] in which Human health

is new horizons for health that offers healthcare services by utilizing the mobile devices and communication technologies. In health care services, blood donation is a difficult process, it consumes time to find particular donor who have similar blood group with the patient. The objective of this paper is to provide information about the requested blood and the number of available donors around those localities. It helps to the requester to broadcast the signal across the registered.

Javed Akhtar Khan et al. [3] suggested “Android Based Health Application in Cloud Computing For Blood Bank” which tells about blood bank application which will help to society in emergencies and will provide users requirement with the help of android mobile phone application

and blood will be easily made available to needy persons with the help of panic button. It works as a resolution for social issues like accident cases, medical surgical procedure, and various illnesses. This kind of system is more advantageous compared to present systems available as immediate contact with the donor is provided.

“The Optimization of Blood Donor Information and Management System by Technopedia” is propounded by P. Priya et al. [4] proposed an efficient and reliable blood donor information and management system based on GIS integrated into an android mobile application. The service provided by the proposed system is needed and valuable to the health sector where the quality of the blood is considered for the safety of the patient through a systematic procedure by the blood management system. This proposed system will be a solution for the problems such as wrong information of donors, misuse of blood or information by third parties and updating the donated blood by the donor which replaces the older systems.

Table 1 Showing Summary of Literature Review-

TABLE I  
LITERATURE REVIEW

Sr, No.	Paper Title	Paper Theme/Idea	Pros / Cons
1.	mHealth: Blood Donation Application Using Android Smartphone (2016)	They developed a mHealth blood donation application in an open-source development tool android studio. Our application has two modes (i.e., donor and requester) to interact with the proposed mHealth application.	<ol style="list-style-type: none"> <li>1. mHealth is one of the best possible concepts for the provision of healthcare services and improve the quality of life.</li> <li>2. Timely access to blood donors and requester to handle the emergency.</li> </ol>
2.	Android Based Health Application in Cloud Computing For Blood Bank (2015)	The proposed blood bank application which will help society in emergencies and will provide users requirement with the help of android application and blood will be easily made available to needy persons with the help of panic butt	<ol style="list-style-type: none"> <li>1. Accessibility and Availability on time</li> <li>2. Accurate details of the patient record and donor information</li> </ol>
3.	The Optimization of Blood Donor Information and Management System by Technopedia (2015)	The Proposed efficient and reliable blood donor information and management system based on GIS integrated into an android mobile application.	<ol style="list-style-type: none"> <li>1. Maintains details about blood group and availability.</li> <li>2. It solves the problem of misuse by third party mishandling.</li> </ol>
4.	Automated Online Blood Bank Database Management (2012)	They proposed a system which helps in storing information and managing the data of blood bank online.	<ol style="list-style-type: none"> <li>1. Easy finding a most eligible donor.</li> <li>2. Easy communication</li> </ol>

### III. CONCLUSIONS

We proposed a smartphone application that is used for increasing awareness of blood donation and this application help in emergency and provide service at minimum cost with features like Geo tagging, SMS gateway and notification system, Payment gateway etc.

### REFERENCES

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