ISSN(Online): 2320-9801
ISSN (Print) : 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijircce.com

Vol. 6, Issue 2, February 2018

PANACEA – A Cloud based Decision Making System for Blood Donation Service

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ABSTRACT: In this paper, a new technique using Global Position System (GPS) based blood bank managing on android application is presented. For blood donation an android application was developed. The application is used by both the blood requester and blood donor.Blood requester can send query to server for specific blood via Google Cloud Messaging (GCM). Server process query and send notification to specific person whose data is satisfied for specific query. The application sendsGPS co-ordinates and contact no to sender, only if blood donor accepts to that notification. Else nothing is sends because of the proposed privacy concept. Thus one cannot get or access donor information without proper permission.

I. INTRODUCTION

Blood cannot be replenished and its sourced only from human beings, It is important to avail blood in time during emergency situations in order to maintain the quality and standards of the healthcare that is being provided. It is a major responsibility of the blood banks to identify donors who are willing to donate blood regularly and also to maintain the quality of blood. There are a set of guidelines that are framed by national accreditation board for hospitals and healthcare and National Aids control organization to identify the right professional donor, These guidelines which are being followed by blood banks also ensures the quality of blood. It is a very tedious task to identify professional donors manually and also to manually monitor the quality of blood. Hence, we have developed a system that meets all the standards and also ensures timely availability of blood, this system not only manages and ensures availability, but also supports decision making which analyses the data and formulates conclusions that are gathered from the data. This can be proposed to be implemented in blood banks and hospitals. This system will alter the work flow of blood banks and improves management and timely availability of blood in crucial situations.

II. EXISTING SYSTEM

We will have to manually enter the details about blood groups, members, their addresses, etc. Compared to other countries, the blood donation percentage annually in our country is very less. Further, the maintenance process has become very difficult and erroneous. The donors feed on their details, which can then be used to contact them when in emergency situation and immediately. However, these are not available immediately, even though there are a lot of blood banks. In some of the web-based blood donation platforms, the phone numbers of donors are not available, and the information is never updated there. This makes it un-reliable for a person to take action immediately in emergency situations. The existing systems consumes a lot of time for a user user to fetch relevant information and often leading to error prone results. There is no security for data as anyone can access any of the available open source information. There is very less amount of accuracy and time consuming.

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III. PROPOSED SYSTEM

In this online system, aby individual who is interested in donating blood can register themselves by giving all the basic details of the individual. Any organization that are interested can also register themselves in the portal by providing their required information. Requests for blood can be made through this system. In the admin console, the admin can delete, add or modify the information. The admin has the control over the entire system. This system is being developed in a distributed architecture where the centralized database storage is present. The database part has been built with MYSQL server and the user interfaces have been built using JAVA, The connectivity to the database will be provided using the method of SQL connection technique.
We have provided top priority for security and also to maintain the confidentiality of data. This proposed system also carries a secured push notification technology. Our system ensures that the contact details of the people registered in our system is not being misused by others. An android mobile application is also proposed to locate the nearest available donor. This feature will be helpful when there is aa immediate requirement of blood in emergency or unplanned situations such as the accidents. The data is transmitted between mobile app and web through a wireless Network called the Geographic information System.The web based android application is readily scalable, efficient and adaptable to meet the complex need of Blood bank who is key facilitators for the healthcare sector hence the life at threat can be saved by this optimization technique. The merits of the proposed system are the use of AES based data encryption scheme and the ease to get donor location through GPS. The block diagram of the proposed system is shown in figure 1.

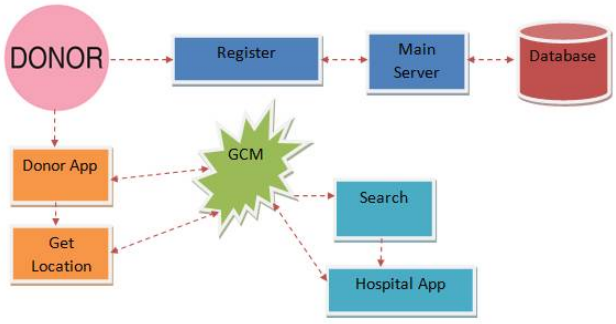

Figure 1

IV. PROJECT DESCRIPTON

The nearest blood owner is found based on the nearest location and collects his information. The important modules are User Details Update, Blood Request, Donor Alert, and Donor Tracking.
User Details Update - In this module the donor details are updated in the database. The donor details like name, address, contact number,blood group and other information are stored in the database. We implement classification algorithm to classify the donors. We do classification to retrieve the data faster from the database during emergency situation.
Blood Request - In this module the need of the blood group and the location of the place is updated through the app. The information is sent to the donor. The blood type and other information associated will be notified through the app.
Donor Alert - In this module when there is a need of blood the nearest donor is notified. In the hospital when there is requirement of the particular blood group the corresponding donor is notified who is having the same blood group .The nearest donor is alerted so that during the emergency situations nearest donor will be called for the blood donation.
Donor Tracking - After sending the alert to the user he will be notified for the blood donation. He will be notified whether he is willing to donate the blood during the emergency situation. If he is willing he will donate the blood otherwise the hospital will ask the next nearest donor for blood donation. We track latitude and longitude of the donor to find the accurate location.

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The encryption algorithm used is Advanced Encryption Standard (AES), where the selection process of this symmetric key algorithm is fully open to public scrutiny and comment and ensured through transparent analysis of the design submitted. The factors that decide the selection of AES algorithm are Security, Cost and Implementation.
The system designengineering deals with the various Unified Modeling Language (UML) diagrams for the implementation of project. Design is a meaningful engineering representation of a thing that is to be built. Software design is a process through which the requirements are translated into representation of the software. Design is the place where quality is rendered in software engineering. Design is the means to accurately translate customer requirements into finished product. The use case diagram for the proposed system is shown in figure 2.

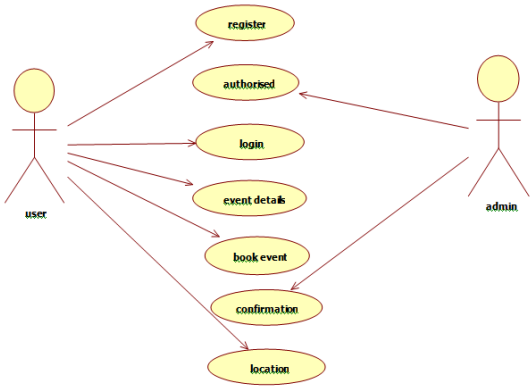

Figure 2 Use Case Diagram

The use case diagram shows that the registration is made by the user and is authorized by the administrator. The login and event details are given by the user, and he books the book event. The administrator further provides the confirmation and the user shares the location. Figure 3 shows the sequence diagram for the proposed system. The various sequences are user, event, location and admin.

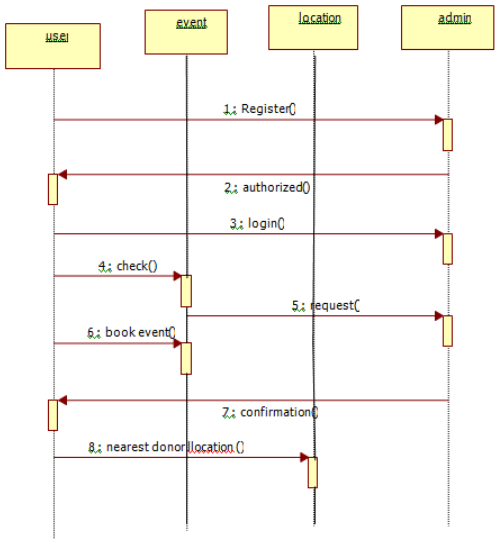

Figure 3 Sequence Diagram

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The activity diagram for the system is shown in figure 4. In the activity diagram after the registration and the login, options for finding the nearest blood donor are available. This is checked and verified by the admin, and the event details are issued. Finally the blood donation is confirmed.

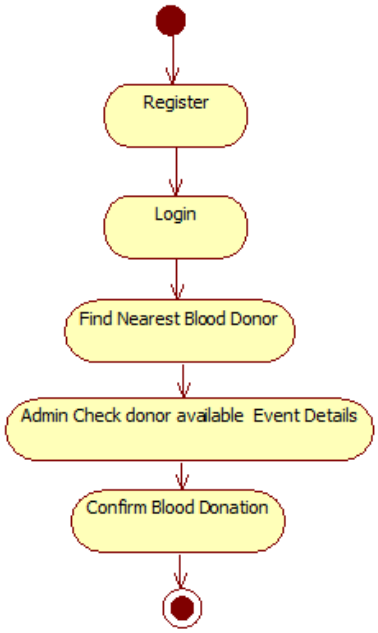

Figure 4 Activity Diagram

The data flow has three levels, level 0, level 1, and level 2. The diagram for level 0, level 1, and level 2 are shown in figure 5, 6, and 7 respectively.

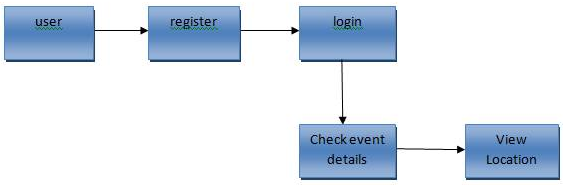

Figure 5 Level 0 Data Flow Diagram

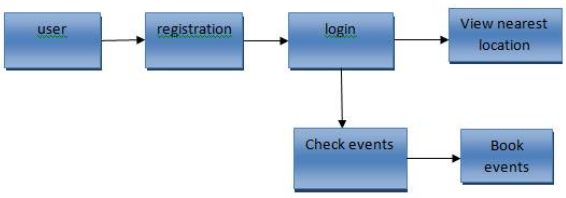

Figure 6 Level 1 Data Flow Diagram

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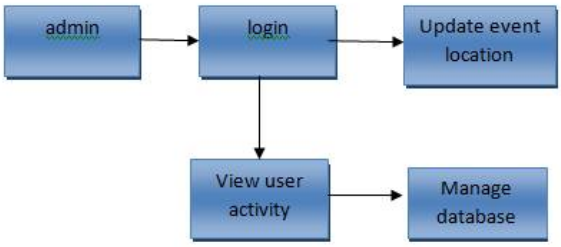

Figure 7 Level 2 Data Flow Diagram

V. RESULT

The system is implemented using JAVA. The implementation outputs are shown in the successive figures.

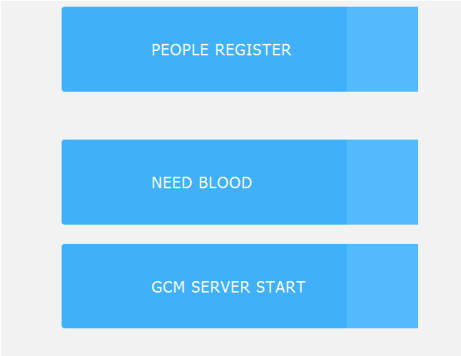

Figure 8 Login Screen

Figure 9 Registration Area

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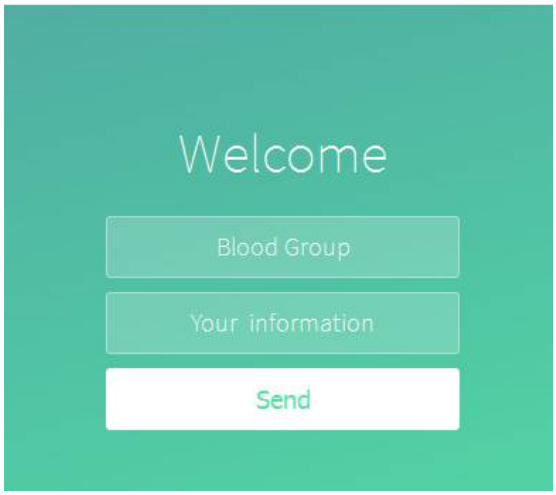

Figure 10 Welcome Screen

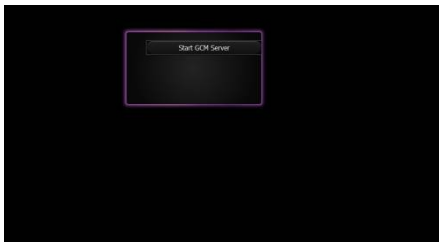

Figure 11 Implementation Screen

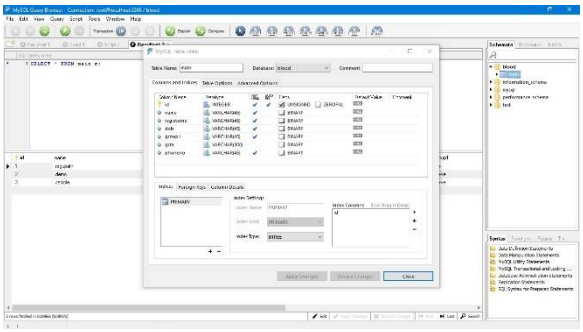

Figure 12 Database Design

This figure 12 gives a clear view of all the table headings and the datatype for each heading. This is the format in which the user inputs data and the information is stored, which can then be accessed when required.Figure 13 is a screenshot which shows the location tagging step, where the user can access the location and the contact details of the donor after the donor accepts the request for the blood requirement.

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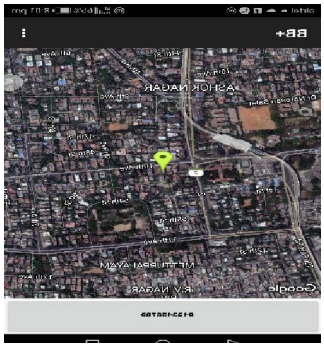

VI. CONCLUSION

Thus in this paper we find the nearest blood donor and track his details through the app and collect his blood during emergency situations and save lives.

REFERENCES

1. N. Adarshm, J. Arpitha, Md. Danish Ali,N. Mahesh Charan, Pramodini G Mahendrakar," Effective blood bank management based on RFID in real time systems", Embedded Systems (ICES), 2014 International Conference.
2. P. Mathiyalagan,"Use of fuzzy TOPSIS techniques for selection of best alternatives of blood bank Supply chain" ,Smart Technologies and Management for Computing, Communication, Controls, Energy and Materials (ICSTM), 2015 International Conference.
3. BalaSenthilMurugan L, AnithaJulian,"Design and implementation of Automated Blood Bank using embedded systems",Innovations in Information, Embedded and Communication Systems (ICIIECS), 2015 International Conference.
4. L BalaSenthilMurugan, AnithaJulian,"Design and implementation of automated blood bank using embedded systems",Circuit, Power and Computing Technologies (ICCPCT), 2015 International Conference.
5. W. Domfang, M. La Raja,F. Bellato,R. Musi,"Modeling medical equipment standards for blood banking at different levels of health care system in countries with limited resources: the case of Cameroon",Appropriate Healthcare Technologies for Low Resource Settings (AHT 2014).
6. Vigneshwari. S and Aramudhan. M (2015), "Personalized cross ontological framework for secured document retrieval in the cloud", National Academy Science Letters-India, Vol. 38 (5), pp. 421–424.
7. Kalpana, S., Vigneshwari, S, "Selecting multiview point similarity from different methods of similarity measure to perform document comparison", Indian Journal of Science and Technology-0974-5645, Vol 9(10),March 2016/1-6. **Scopus**
8. Archana Shree, S., Vigneshwari, S., "Enhancing access of archives and ranking in web search", ARPN Journal of Engineering and Applied Sciences-ISSN 1819-6608, VOL. 11, NO. 9, MAY 2016/5926-5932 **Scopus**
9. Harish, P., Vigneshwari, S., Ravi Teja, K.B.S.,Enhancing the security of cloud storage for medical data retrieval using double encryption with data anonymization,Pakistan Journal of Biotechnology,Vol. 14 (Special Issue II) Pp. 75- 78 (2017) **Scopus**