International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 02, 2020
ISSN: 1475-7192

Design and implementation of Lifesaving Virtual Blood Bank

[1]B.Satish Kumar Reddy, [2]Y.Bhaskar Rao

ABSTRACT-- *Computerized Blood Bank is an affiliate function that puts into a shared forum volunteer blood donors disabled and elderly who are in need of blood.The aim is to fulfill every nation-wide blood demand with good mobile apps and motivated people who wish to donate blood.The suggested study intends to overcome such hurdle of communication by using the minimal cost & economic power Raspberry Pi B+ kit to provide a direct connection between the sponsor and the customer.Only Micro USB of5V and 2A power supply are required. Full interaction is via SMS (Short Messaging Service) and is compatible with all cellular types. "Unmanned Blood Bank" is a project that places the blood donations & others in need of blood on a shared forum.The goal of this project is to help the people who need donors who are interested in donating blood and to provide it within the appropriate time frame.Unmanned Blood Bank is seeking to support the victims those who need blood. The suggested work investigates the use of GSM based Smart Card CPU-Raspberry Pi B+ Package to find blood donors. The dream is to be "Every Citizen's hope in finding a willing blood donor"*

Keywords*: Unmanned Blood Bank, Raspberry, mobile application.*

I INTRODUCTION

The country needs approximately 4 Crore blood units per year, even though only a small 40 Lakh blood units are accessible [1].There are many donation banks in the planet, but neither of them provide the opportunity to provide direct interaction between donor & recipient. [2-3].This is always a big disadvantage, especially in cases where there is a need for blood pressure in related degrees [4].This device is designed to resolve this contact obstacle by providing an instant connection between the sender & therefore the beneficiary through cheap price & low power victimisation Raspberry Pi B+ package [5]. It only needs 5V & 2A Micro USB power supply. All contact occurs via Text messaging, that is associated with nearly all smartphone groups.[6-8]. "Automated Blood Bank" aims to put on a shared forum volunteer organ donors who are in need of blood[9]..

The work implied aims at helping those in need of volunteers who are interested in donating blood and also to provide it within the correct deadlines. [10-11]. The government needs 4 Crore blood units a year, out of which only a mere 40 Lakh blood square units calculate out there. Anybody wants blood every two seconds. Local unit needed more than 38 thousand blood transfusions a day. A total of 30 million area units of blood components transfused annually[12]. More than one million new people are diagnosed with cancer each year by unit. The suggested work investigates the use of GSM derived Smart Card CPU-Raspberry Pi B+ Package to find blood donors.

[1]*UG Scholar, Department of ECE, Saveetha school of Engineering, SIMATS Chennai, TN, India, Email:satishbusireddy@gmail.com*

[2] *UG Scholar, Department of ECE, Saveetha school of Engineering, SIMATS Chennai, TN, India,*

Received: 23 Dec 2019 | Revised: 05 Jan 2020 | Accepted: 27 Feb 2020

II PROPOSED SYSTEM

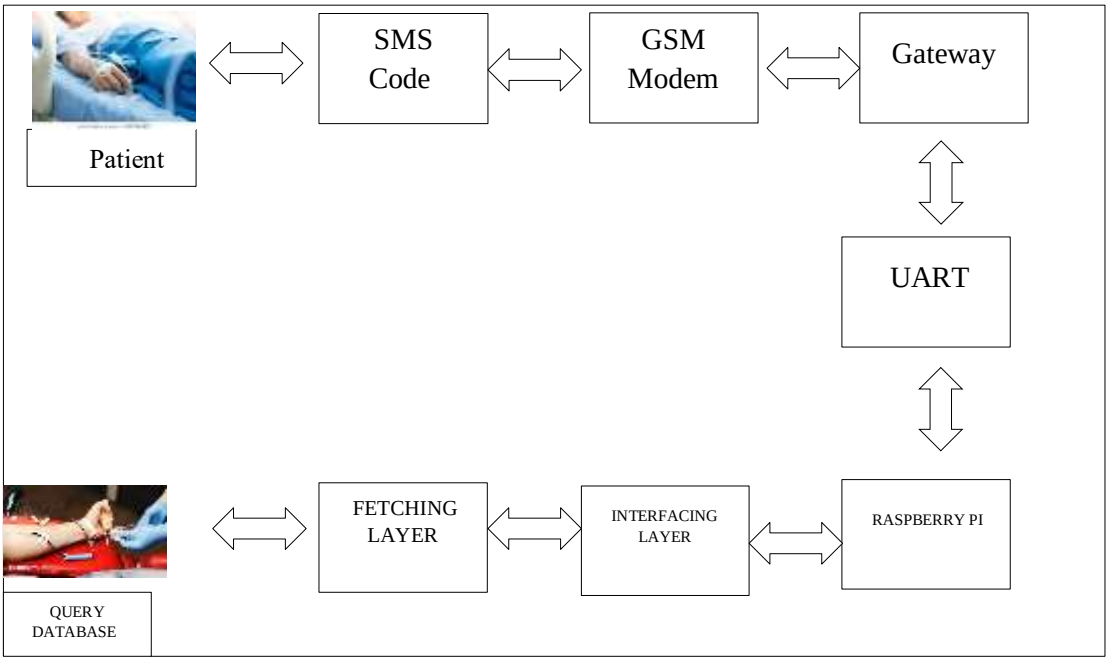

Figure 1.0 Block diagram

Digital Blood Bank provides a shared forum for volunteer blood donors who are in need of blood. With this proposal, individuals are looking for donors willing to donate blood, as well as offering the most urgent assistance to those in frenzied need for it. With a promising web service and driven people happy to donate blood, the goal is to fulfill every blood demand in the world.

Raspbian Wheezy: It's a open source OS based on Debian for every raspberry hardware. Its ARM based architecture and Linux based OS which makes it as a typical Broadcom processor to understand.Apache HTTP Server which enables database service to be distributed online using the Hyper Text Transfer Protocol.This database server is widely used for various operating systems, such as Linux, Unix, Windows etc.WFor this proposed model, used Apache2 edition to provide a database. PHP5 is a query language that is used to build a network.PHP software is integrated with a PHP processor module via a web server that builds the respective web page.PHP is mainly used to build largely network-based computer programs, and collectively handle databases, interactive features, client chase, & even entire e-commerce sites.In this proposed system PHP5 version was used. It supports regular SQL & compiles on platform variety.MySQL is a readily available free open source content. Using a File Transfer Protocol we can transfer or shift a website from a device to a raspberry pi. Proftpd-is one of its kind which is used in this proposed project. which is a open source application compatible with several OS.

Received: 23 Dec 2019 | Revised: 05 Jan 2020 | Accepted: 27 Feb 2020

Figure 1.1 **Image of Raspberry Pi**

III RESULTS

When there are extreme blood needs, people may not be able to connect to the internet or search at already existing online health databases.If individuals follow this pattern the caller is automatically connected to the donor.Find a Text messaging-based database system that is based on the demand when a Text message is sent to aspiring senders.Here the receiver side will face a substantial pause in processing the SMS and then responding to it. When the proposed program is set up, then only the most qualified.Another major advantage is that the algorithm takes into account the location specifics of the eventual donors. It means that the closest donor is instantly contacted and the blood requirement is met immediately. And in other similar systems, there is no such arrangement that leads to the delay of getting a donor.

Figure 1.2 Homepage of the Application

Above figure shows the home page of the application which we have created. Here it asks for some of the important information such us whether one is looking for donor or receptor etc.

Figure 1.3 Page to choose the blood group

Received: 23 Dec 2019 | Revised: 05 Jan 2020 | Accepted: 27 Feb 2020

Above image shows the collection of blood groups which user is searching for, it consists of much number of blood groups.

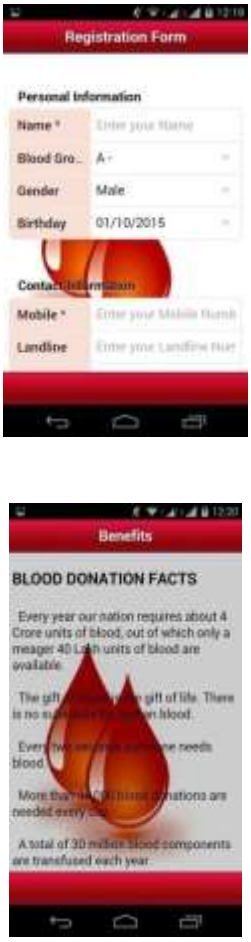

Figure 1.4 Registration Form&Benefits page

Above fig shows the Registration form for a donor/receiver who is in need of blood and other fig shows some of the benefits of blood donation.

IV CONCLUSION

The Currently suggested method is quite friendly and eases of use when compared with all the other existing blood bank applications. It shows all the classification of blood groups with the available amount of volume, which makes the user to predict whether they can receive blood based on the priority list too.Once if the blood which they are searching for is available they can register it through the registration page. And user has to give some of his details such as Name, Mobile number and some other detailsto enroll as a new donor.Thus this work may abruptly rise the usefulness of the existing blood banks by eliminating the transportation, human to human communication and time delays or time lapse.Thus, it will save many lives which are deprived due to lack of communication happened so far.

Received: 23 Dec 2019 | Revised: 05 Jan 2020 | Accepted: 27 Feb 2020

REFERENCES

1. Alex Varshavsky. M. Y. Chen. E. de Lara. J. Froehlich. D. Haehnel. J. Hightower. A. LaMarca. F. Potter. T. Sohn. K. Tang. and I. Smith (2006), " Are GSM Phones The Solution for Localization?", WMCSA Proceedings of the Seventh IEEE Workshop on Mobile Computing Systems & Applications, IEEE Computer Society Washington, DC USA. ISSN :1550-6193 , Print ISBN:0-7695-2439-7, pp. 20-28.
2. Spyropoulos. B., Botsivaly. M., Tzavaras. A., and Spyropoulou, P (2009), "Towards digital blood-banking", ITU-T Kaleidoscope: Innovations for Digital Inclusions, .K-IDI. E-ISBN:978-92-61-12891-3, Print ISBN:978-92-61-12891-3,pp.I- 8.
3. Neetesh Saxena, and Narendra S. Chaudhari, (2014), "EasySMS: A Protocol for End-to-End Secure Transmission of SMS", IEEE Transactions on information forensics and security, VOL. 9, NO. 7, ISSN: 1556-6013, pp. 1157 - 1168.
4. Arif. M. Sreevas. S. Nafseer. K. and Rahul. R. (2012), "Automated online Blood bank database", India Conference (INDICON), Annual IEEE, Print ISBN:978-1-4673-2270-6, pp. 012 - 017.
5. Bing-Nan Li, Taipa Ming-Chui Dong, and Vai, M.1. From Codabar to ISBT 128:"Implementing Barcode Technology in Blood Bank Automation System", 27th Annual International Conference of the Engineering in Medicine and Biology Society, IEEE-EMBS, (2006), pp. 542-545.
6. Ibrahim. M. and Youssef, M. (2013), "Enabling wide deployment of GSM localization over heterogeneous phones", Communications (ICC), IEEE International Conference, ISSN: 1550-3607, pp. 6396 - 6400.
7. Ying-Wen Bai, Wen-Tai Li, You-Wei Chen"Design and Implementation of an Embedded Monitor System for Detection of a Patient's Breath by Double Webcams"(2010)978-1-4244-6290-2/10/IEEE.
8. Mohamed Ibrahim and Moustafa Youssef (2011), "A Hidden Markov Model for Localization using Low-End GSM Cell Phone", Communications (ICC), IEEE International Conference, ISSN: 1550-3607, E-ISBN: 978-1-61284-231-8, Print ISBN: 978-1-61284-232-5, pp. 1 - 5.
9. Karan Punjabi, Pooja Bolaj, Pratibha Mantur, and Sneha Wali (2014), 'Bus Locator via SMS Using Android Application', (IJCSIT) International Journal of Computer Science and Information Technologies, ISSN: 0975-9646, Vol. 5 (2), pp. 1603-1606.
10. Quyen B. Dam, Linh T. Nguyen, Son T. Nguyen, Nam H. Vu, Cuong Pham" e-Breath: Breath Detection and Monitoring Using Frequency Cepstral Feature Fusion"978-1-7281-1829-1/19/©2019 IEEE.
11. S.Ravichandran," INTERNET CONNECTED HIGH TECH STREET LIGHTING SYSTEM USING RTOS" IJMSR – ISSN-NO: 0975-0932.
12. Shermin Shamsudheen1 , Azath mubarakali2" SMART AGRICULTURE USING IOT" International Journal of MC Square Scientific Research Vol.11, No.4,2019.

Received: 23 Dec 2019 | Revised: 05 Jan 2020 | Accepted: 27 Feb 2020