IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.67
Volume 5, Issue 7, March 2025

Automated Blood Bank Based On IOT

Saksham Yuvraj Patil [1], Shridhar Ajit Nalawade [2], Sarthak Arvind Kulkarni [3], Rushikesh Padmakar Kale [4] Guide: Kamble Poonam[5]

[1234]Final year Students, Electronics & Tele-communication Engineering,
JSPM'S Bhivrabai Sawant Polytechnic, Wagholi, Pune, Maharashtra, India

Abstract: *Every year the nation requires about 4 Crore units of blood, out of which only a meager 40 Lakh units of blood are available. Automated blood bank System is planned to bring direct communication between blood donors and co jointly the recipient. The aim of this method is to satisfy every blood request by exploitation Arduino UNO, GSM, inside the planned system, information about the donors are collected in nearby hospitals and different blood banks. There are multiple blood banks around the world, however none of them offer the capability for a direct contact between the donor and recipient. This is often a serious disadvantage notably in cases wherever there in associate degree pressing would like of blood. This project aims to beat this communication barrier by providing an immediate link between the donor and the recipient.*

Keywords: Message, Donor, Recipient, MicroSD card

I. INTRODUCTION

Need of blood is drastically increasing. Per year we have a requirement of four crore blood units, More than 38 thousand blood endowments domain unit required a day An amount to of thirty million blood parts zone units reinforced yearly. More than 1,000,000 new people are unit determined to have malignant growth every year. A few of them can would require blood, normally every day, all through their treatment. One auto crash casualty will require as a few as hundred units of blood. All the on beat of necessities is met by the orchestrated work. Motorized Blood Bank endeavors to help losses/patients/those requiring blood. The proposed work researches to find blood sponsors by using IOT based Smart framework Even though the technology is developed still we have a tendency to fail to bring blood donors and recipients on the common platform. So, the projected system is designed in such a way to provide higher service to satisfy each request. Arduino UNO is employed to store the donor details like name and mobile number. GSM module is employed to send and receive messages to fulfill the blood needs. In emergency situations system require less time for operation.

It is very easy to find rare blood groups. The current system that is using by the blood bank is manual system, With the manual system, there are problems in managing the records related with blood stock. There is no centralized database of volunteer donors. So, it becomes really tedious for a person to search blood in case of emergency.

II. LITERATURE SURVEY

Many peoples try to improve blood bank working in their own ways and these are In "Short message service (SMS) based blood bank" by G. Muddu Krishna & S. Nagaraju (2016) [1]. They proposed a system in which services of blood bank will be accessed via SMS. If someone needed blood then they have to request for blood via SMS and then packet count module of their system will check for availability of blood and response will be given by data processing module.

So, it becomes really tedious for a person to search blood in case of emergency. The only option is to manually search and match donors and then make phone calls to every donor. There is also no centralized database used to keep the donors' records. Each bank is having their own records of donors. If a donor makes donation in different hospital, no previous records can be traced except if the donor brings along the donation certificate.

Hence, the donor is considered to be a first timer if they make blood donation in a new place. Without an automated management system, there are also problems in keeping track of the actual amount of each and every blood type in the blood bank. In addition, there is also no alert available when the blood quantity is below its par level or when the blood in the bank has expired.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.67
Volume 5, Issue 7, March 2025

Automated online blood bank database" by Muhammad Arif, S. Sreevas; K. Nafseer, R. Rahul (2012) [2]. They come up with direct call routing technique by using asterisk. In this every blood bank consist of a database and that will be managed by central server. When someone in need of blood call on their tollfree no. they will directly get connected to a donor and after receiving blood from that donor name of that donor will be kept on hold for 8 weeks

In Benefits of management information system in blood bank by Dr. Sharad Maheshwari and Vikas Kulshreshtha [3]. They discuss about the be necessaries of the blood bank management information system. They show advantages and benefits of these systems.

Jin MBB: A life saving application" by Ramakant Gawande, Narendra Gupta, nikhil Thengadi [4]. They come up with a system to link all donors and help in controlling blood transfusion process. Their system will also maintain database which hold data of donors and blood according to their city and further by their locality.

ln Blood donation and life saver, blood donation app by Anish Hamlin M R, albert Mayan J[5]. They introduced a system where when someone wants blood, they login into their app and by GIS they can get details of nearby blood donors. They also can donate blood by registering themselves.

In A study blood bank management system" by A. Clemen Teena, k. Sankar, S. Kannan [7]. They made a system through which they can manage information about donors and patients. So that whenever blood is needed, they can this information as blood bank authorized officers have access to this information

III. METHODOLOGY

The proposed blood hank system in relies on the GSM module and an Arduino microcontroller. This system includes an Arduino UNO, GSM module, MicroSD card module, Power supply. Blood requirement is increasing drastically now days and to meet higher demand service this system is designed and enforced. This system is created to meet each and every blood request many lives. By using this system donor and recipient gets direct communication

through GSM. Arduino contains details of the donor's name, mobile number and the blood groups, A SV power supply in given in the proposed system.

All communication takes place via SMS (Short Messaging Service) which is compatible with almost all mobile types. Automated Blood Barik" proposes to bring voluntary blood donors and those in need of blood a common platform and he blood hank administrator update blood bag data in real time And the output will be show in LCD.

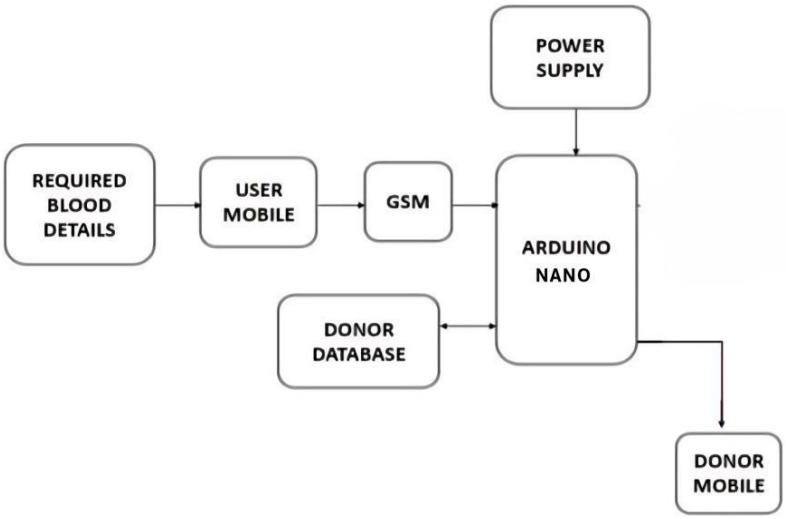

Fig. Block Diagram

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.67
Volume 5, Issue 7, March 2025

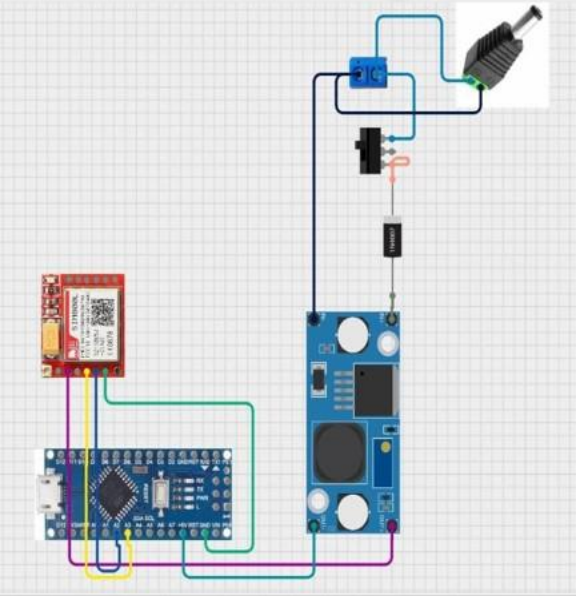

Fig. Circuit Diagram

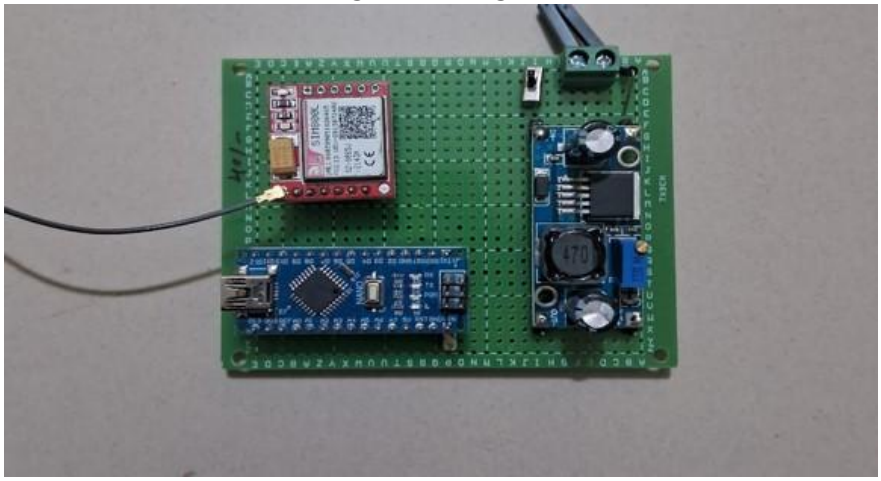

Fig. Output of Project

III. CONCLUSION

The Automated Blood Bank System plays an important role in saving many lives. The proposed system can be used to reduce time span between donor and recipient. Finding donors is made easy by this system. People from village areas could also access this easily as the proposed system is not n based on internet. By this proposed system we could search donors from our nearby areas easily. By this way there will be a direct communication between donor and recipient. Hence, by using limited sources we could fulfill every blood requirements without any delay.

REFERENCES

[1] PAJ Sandaruwan, UDI. Dolapihilla, D.W.N.R. Karunathilaka, WADIL. Wijayaweera "TOWARDS AN EFFICIENT AND SECURE BLOOD BANK MANAGEMENT SYSTEM, International Conference (20200)
[2] Manali Mange, Bilal N Shaikh Mohammad "ONLINE BLOOD BANK MANAGEMENT SYSTEM USING ANDROID APPLICATION", International Conference On Advances In Science & Technology (2000)

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.67
Volume 5, Issue 7, March 2025

[3] Vijay Sharma, Mohammad Hashmi "EFFECTIVE BLOOD BANK MANAGEMENT SYSTEM BASED ON FID, International Conference (2019) CHIPLESS RFID,
[4] Mitesh Sarode, Ayush Ghanekar, Sahil Krishnadas. "INTELLIGENT BLOOD MANAGEMENT SYSTEM", IEEE Bombay Section Signature Conference (2019)
[5] Mohammed Y Esmail, Youara Sayed Hammad Osman "COMPUTERIZED CENTRAL BLOOD HANK MANAGEMENT SYSTEM (CCBBMS), International Conference On Computer, Control, Electrical and Electronics Engineering (ICCCEEE) (2018)
[6] Shreyas Anil Chaudhari, Shrutika Subhash Walekar "A SECURE CLOUD COMPUTING BASED FRAMEWORK FOR THE BLOOD BANK", International Conference On Smart City And Emerging Technologies (2018)
[7] Ashlesha C Anil, V.K. Bhosale, R.M. Autee "AUTOMATED BLOOD BANK SYSTEM USING RASPBERRY International Conference (2018)
[8] M. R. Annah Bralin, Albert Mayan BLOOD DONATION AND LIFE SAVER APP", International Conference (2017)