*International Journal of Research in Engineering and Science (IJRES)*
*ISSN (Online): 2320-9364, ISSN (Print): 2320-9356*
*www.ijres.org Volume 10 Issue 12 ǁ December 2022 ǁ PP. 263-267*

# "Online Blood Bank"'

Prof. Abhishek Nachankar[1]
Nitesh Vairagade[2], Utkarsh Harshe[3], Yash Nishankar[4], Abhinav Dahule[5],
[1]*Professor, Department of Computer science & Engineering, Karmaveer Dadasaheb Kannamawar College of Engineering, Nagpur, Maharashtra, India*
[2,3,4,5]*Student, Department of Computer science & Engineering, Karmaveer Dadasaheb Kannamawar College ofEngineering, Nagpur, Maharashtra, India*

***Abstract*** *--Various databases of online blood donation centers are accessible, but none of them offer the capacity for immediate donor-recipient contact. This is a notable disadvantage especially in situations where there is an urgent need for blood. Our business is to conquer this frontier of correspondence by providing an instant call management system utilizing Asterisk equipment. The blood donation center database is created by accumulating fine elements from various sources such as blood banks, NSS, NGOs, medical facilities and through web interface. This paper proposes a blood bank management system (BMMS) that can be used by laboratories, clinics, hospitals or anyone who needs blood. The proposed system would be able to connect applicants and donors through a secure web platform with a simple registration process. This mismanagement of blood results in a waste of the available blood supply. The methodology that was chosen for the development of BMMS is the Rational Unified Process (RUP). The methodology consists of four phases, namely Inception, Elaboration, Construction and Transition. Some important modifications to this methodology include administrator access to registered user data and a personal notification system. This study found that this system ends the fear caused during the emergency period and reduces the hassle of manual data entry on paper. GPS tracking through registration and Cloud Storage for scalability can further improve the feasibility and data processing of the presented system.*

***Key Words: Rational Unified Process (RUP), AngularJS, Donor, Recipient.***

---

Date of Submission: 02-12-2022 Date of acceptance: 13-12-2022

---

## I. INTRODUCTION

India suffers an annual deficit of two million units as only 1% of the Indian population donates blood, as reported by the World Health Organization (WHO).

Due to inadequate medical facilities and practice in cases have occurred in many parts of the country transmission of infectious diseases such as AIDS. Need

blood increases along with its value for healing various medical conditions. There are three main ones blood components; plasma, platelets and RBC/WBC. Especially during this covid pandemic, we are witnessing a huge a jump in the need for blood plasma from patients who have recovered from covid-19 as theirs Convalescent plasma now contains covid-19 antibodies.

There is an urgent need for software controlling tool for synchronization between blood donors, hospital administrators and blood banks. Inappropriate communication, lack of synchronization in the blood banks leads to a waste of available blood and loss life. From registration to donation, cutting-edge, efficient a highly available and scalable system must be developed for easy registration of donors, recipients etc. automated management system for blood bank counter admins. This reduces the effort required to search blood donors and also the management of their data automated management system for blood bank desk admins. Thus, reducing the efforts required to search for blood donors as well as their data management.

## II. LITERATURE REVIEW

For hospitals, the blood bank known as the blood collection center is also the collection area blood bags are stored and preserved for future use in transfusion services. Blood transfusion is a medical operation where a patient needs blood or blood products as a life-saving measure. In a report from the Ministry of Health (MOH) on its website, it said that the total amount of blood approximately 25,084 units are donated annually in Muscat. The Ministry of Health further stated.

The Blood Services Department is operating at full capacity to meet the requirements in the Sultanate. Most blood banks still use a manual system in their processes. As such there is a shortage efficiency because it is

still paper-based in collecting information about donors, inventories blood bags and blood transfusion services. The lack of proper documentation can endanger the health of patients due to the possibility of contamination of blood bags. Contamination has occurred when there is an incomplete medical record of the donor and the shelf life of the blood bags is not properly monitored. Therefore, a web-based blood bank management system maybe needed address these problems and issues to ensure the safety of blood transfusion.

According to Teena, C.A., Sankar, K. and Kannan, S. (2014) in their study titled "Study on Blood Bank Management", defined the Blood Bank Information System as an information management system which contributes to for researchers to visualize their application. Without discussion also for their respondents, samples and sampling techniques used. Subsequently, the researchers planned 12 provide images to explain the system, screenshots of system prototypes and other diagrams that may help you other researchers to visualize the development of a web-based blood bank management system. Also the researchers will explicitly discuss his research methods, samplingprocedures, and statistical treatment used to analyze the collected

In a study titled "A blood bank management system using a rule-based method".Liyana, F. (2017), found that it is important for every hospital to use an information system manage data in the blood bank. The manual system was also found to have disadvantages for users and users HOSPITAL. One of the drawbacks found was that the blood bank staff had to enter the donor's details into each one the time when he donates blood, in which there are duplicate donor data and also there may be lost or missing data after a certain time. So the author developed a web based system to help the blood bank record donor information quickly and easily. The system used rule-based decisions to ensure the correct decision was made time. The system can also send messages to donors if a particular blood type is needed. She developed blood a banking system based on an incremental model. She chose this model because the system can be developed through the cycle of phases and also because of the advantages of this model such as:

I. Easy-to-understand sequence of phases.

II. Changes are possible in the middle of any phase.

III. A system can be developed even if there is a bug in the middle and it can be fixed during testing phase.

In this study, the researchers found that the developer failed to include a feature in the system check the availability of blood bags and check the shelf life or expiration of blood bags or products. As so the researchers include them in their developed system to increase the safety of blood transfusion. for researchers to visualize their application. Without discussion also for their respondents, samples and sampling techniques used. Subsequently, the researchers planned 12

provide images to explain the system, screenshots of system prototypes and other diagrams that may help you other researchers to visualize the development of a web-based blood bank management system. Also the researchers will explicitly discuss his research methods, samplingprocedures, and statistical treatment used to analyze the collected.

## III. Proposed System

The proposed blood bank management system helps the blood bank administrator to track the blood easily request and user database. The proposed system requires a systematic approach to bridging the gap between Recipients, donors and blood banks. It makes it better existing system by providing a common basis for facilitation the process of donating and receiving blood.

The blood bank administrator uses Registered Donors Phone number and email id to verify the request so that confirm the reservation. When requesting blood, the registered recipient can also check availability required blood type displayed by admin. Direct A messaging feature for queries is also available Registered User.

The database consists mainly of registered donor information and inquiries managed by an administrator. It also contains records of available blood types Samples. The database is currently hosted on localhost server using using 'AngularJS.

## IV. METHODOLOGY

1. The Blood Bank web application: This module contains data about how the application works. Administration of the blood donation center framework is an electronic web application [5]. A blood donor can enlist on framework and provide a contributor id when registering via email management. Provided that the misleading request was sent from the blood donation center both the administrator and the blood donation center have full authority to delete the request. On

It is excluded that if the request is sent from a blood donation center for an explicit amount of blood the client and its inclusion id subsequently created, however the client tragically does not come the framework subsequently cancels his registration ID and updates the blood donation center information using continuous

refreshing [6]. The framework illuminates each of the relevant contributors with a request. A blood donation center can add or remove donors from framework. It can also add blood stock to the appropriate blood donation center. Blood The donation center management framework has a separate administration board [7]. The administrator has a cell privileges to add various blood donation centers and terminate. Admin can also check whether the blood donation center is dynamic or not [8]. The frame has separate blood donation center board in which blood donation centers can have their easy to understand a dashboard where they can monitor blood, satisfy requests and monitor the blood being dispensed. The methodology chosen for the development of the blood bank system is the Rational Unified Process (RUP) from IBM developers. RUP is a multi-layer adaptive process designed for a software project teams that leverage their process elements as they scale. It involves four stages methodology. we are Beginning, Elaboration, Construction and Transition. we follow some techniques used to create this project:

Database: In this framework, the data file is used to record and resolve blood exchanges donated and dispensed blood. The main reason for this framework is to stay in place 20 together records the blood panel. Data such as donor data, blood collection, blood demand and The dispensed blood is preserved. Monthly measurement records are deferred using Overall, these phases mainly include important use cases, project scope, initial costing, development process including depth and breadth of prototype success factors, risk coding, testing and debugging. So the primary goal is to create software system and later "transition" the system from development to production or application systematic. Maintenance and beta testing are also key aspects of this system.

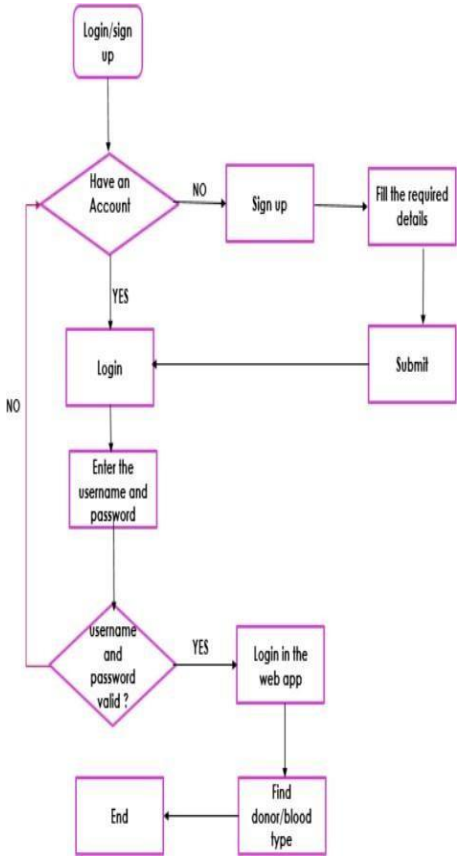


Fig 1: Login/Signup

When the user already have an account the he will successfully move forward for login after entering ID and password. If the user do not have account then it will move forward for signup then he have to fill the required some basic details such as email, username, password, contact number, etc and submit it .

After submission he will successfully login into her account. If her username and password are valid he will successfully login and can use our application easily. If the username and password is not valid then he will jump to the signup page.

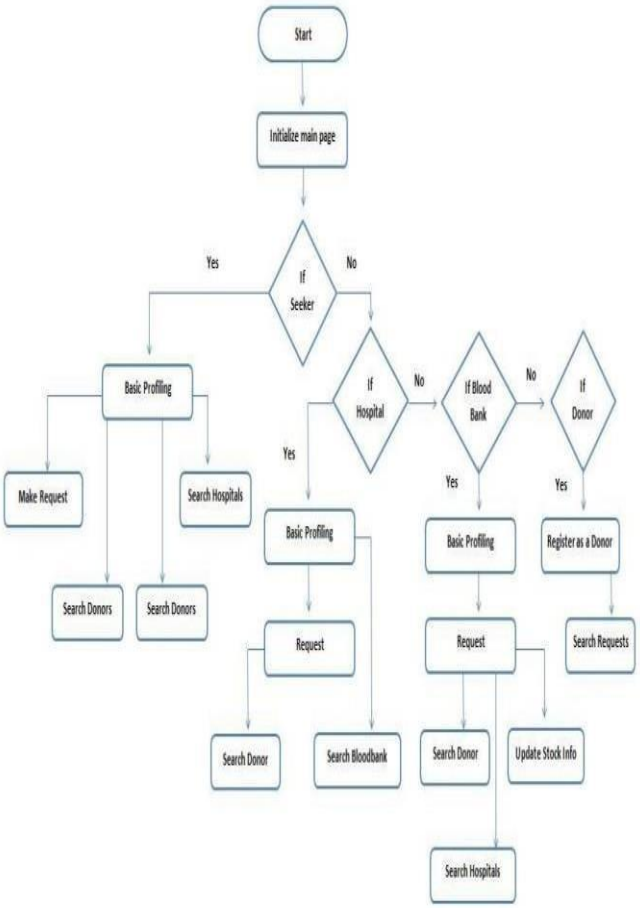


Fig 2 : Data Flow

When the user has login successfully, it comes in the home page of website where it shows some tabs and ask user aboutthe if he/she is seeker or not, if he/she is a seeker he/she hasto go for basic profiling where the blood related information is ask and it is necessary to fill this information, after providing basic details user have to make request for blood ifhe/she required specific blood group. Donor has to register and provide some info related to donation of blood. Donor search for hospital or blood camps where he/she can donate the blood to needy.

If the user is not from donor or receiver then it goes with hospital or blood banks where it maintain and store the blood records. It send email notifications to user about blood camps and if any rare blood group is needed it directly contact with user and donor or hospital.

## V. CONCLUSION & FUTURE SCOPE:

This proposed online blood bank system provides a reliable platform for both donors and donors acceptors. BMMS is a web application that helps minimize human error and data redundancy issues. It is a fast and efficient way of communication without any security threats as the entered data will be verified and updated frequently increasing the likelihood of saving a life. In addition, the availability of a location-based system where to find the nearest blood bankvia Google Maps is more accessible.

## REFERENCES:

[1]. Vikas Kulshreshtha, Dr. Sharad Maheshwari, "BloodBank Management Information System in India," in International Journal of Engineering Research and Applications (IJERA) ISSN: 2248-9622, Vol. 1, Issue 2, pp.260-263

[2]. BalaSenthilMurugan L, Anitha Julian, "Design and Implementation of Automated Blood Bank using Embedded Systems" 2015 InternationalConference on Circuit.

[3]. A. Clemen Teena, K. Sankar, and S. Kannan, "A Study on Blood Bank Management," in Middle-East Journal of Scientific Research 19 (8): 1123-1126, 2014, ISSN 1990-9233

[4]. Anish Hamlin M R, Albert Mayan J "Blood Donation And Life Saver-Blood Donation App". 2016 International Conference on Control,Instrumentation, Communication andComputational Technologies (ICCICCT).

[5]. Aswin Rupsanth, Dr.P.Marikkannu "Automated Blood Bank Management System Using Direct Call Routing Technique" International Journal of Novel Research in Computer Science and Software Engineering Vol. 3.

[6]. He Hui1, He Yan-Ping , Wang Bai-Ling, Yao Yu-Feng "Design of the Control System of Automatic Blood Component Fractionation Machine†" Supported by the National Science Nature Foundation of China under Grant.

[7]. Ravi Kumar, Shubham Singh, V Anu Ragavi, " Blood Bank Management System," IJARIIE-ISSN(O)- 2395-4396, Vol-3 Issue-5 201.
[8]. Alexander Horsch and Thomas Balbach," Telemedical Information Systems", IEEE Transactions On Information Technology In Biomedicine, Vol. 3, NO. 3, September 1999.
[9]. Blood donor selection Guidelines on assessing donor suitability for blood donation. Annex 3. Geneva: World Health Organization:2012[17 August 2012].
[10]. Teena, C.A, Sankar, K. and Kannan, S. (2014). A Study on Blood Bank Management.