



## CLOUD BASED ONLINE BLOOD BANK MANAGEMENT SYSTEM

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**Abstract:** The Blood Bank Management System is a web based application that is related to administrative and inventory management in a blood bank which maintains, organizes, retrieves, and analyses data. We developed an application to make the procedure of requesting blood and increase the availability. When a specific blood group is required urgently, you can utilize the app to contact only those who have that blood group. This system is made up of various modules that keep track of blood and blood requests, hospitals. Our web application will attract a huge number of blood donors. Cloud-based systems can be useful in emergency blood supply since they allow for central and fast access to donor data and location from nearly any place and device. Because practically everyone has a cell phone, it allows for real time location tracking and communication. As a result, the 'Online Blood Bank' could be a lifesaver for blood donors.

**IndexTerms - Blood Bank, Blood Bank management, Cloud-based, Web Application.**

### I. INTRODUCTION

Blood bank is an amenity that ensures the safe collection of blood from blood donation camps and its apt storage. The term "blood bank" also refers to a laboratory where blood is stored properly, its proper maintenance is ensured with proper testing to make sure that the transfusion related complications can be avoided. Blood bank in hospitals takes care of proper storage and retrieval of the blood, but the process isn't as easy, it first requires the hospital to check on both the patient receiving the blood and the blood itself to go through a few compulsory tests to ensure a smoother transfusion.

The "Blood Bank Management System", also known as BBMS is a web application that can be of great help for the blood bank inventory management. In most cases an urgent requirement of blood can occur at any time. Mostly in accident cases etc. so at this time, what does one do? How do you find out the blood group that you are looking for is available at which blood bank? Or how do you find out if your nearest blood bank has the required quantity? Or how do you even find out which is the nearest blood bank to you? All of this would consume a significant amount of your time which becomes a disaster during emergency situations. Hence, to avoid all of this Secured Integration of Online Blood Bank Systems plays a vital role. It helps with the information such as which is your nearest blood bank, what blood group is available and if it is available as per the required amount, so it become easier for the one who's looking for it. The three possible system users that are involved in this application include the hospital, the Administrator (us who owns the product) and the blood recipient. The three basic activities of blood banks that are covered in this research are: - Donor registration, Inventory monitoring, and blood bag or product issuance monitoring.

### II. PROBLEM DEFINITION

Cloud computing is a technique that helps an organization or an individual to achieve high levels of IT developments by making the data accessible by anyone around the globe. Because the public use of banking (blood bank) transactions is increasing every day, cloud computing is finding its way into the banking sector. One of the key reasons for cloud computing's rapid expansion in the banking sector is the decrease of time. Cloud computing in banking has been thoroughly examined in this paper, including the scope of cloud banking, benefits of cloud banking, drawbacks of cloud banking, and a comparison of cloud banking to traditional banking. Despite technological advancements, today's blood bank system is still manual. As a result, there is a widespread problem with the availability of needed blood types in hospitals. As a result, family members send messages to those who can donate blood to them via social media, and this procedure takes longer than life about blood donors and their medical history. This could lead to blood contamination and compromise the safety of blood transfusions. In general, the goal of this research is to see how the usage of an online bank management system improves blood transfusion safety.

As a result, this research aims to address the following specific issues: -

- Who will be the intended users?
- What system architecture should be used?
- To what extent may an online bank management information system improve the safety of blood transfusions?
- Is there a substantial difference in blood transfusion risk between manual bloods and online blood bank systems?

### III. LITERATURE REVIEW

According to [1] in his paper he has put forth the idea of making a cloud based blood bank management system that will be helpful in times of emergency. It provides an elegant management of blood, list of hospitals, blood banks and donors online. In their project the central objective is to connect all blood bank hospitals, donors, and blood bank clinics into a single network in order to collect, archive, and analyze various information regarding blood and health of the individual. They have created a system where an individual can access information stored in this database only if he or she is logged into the system all the process of submission of registration form is quite simple as it is an easy to use mobile application. In one of the paper [2] Automating the complete blood bank operations is the main objective of this application. Thousands of records must be kept by the application. Moreover, search should be fast so users can quickly locate the information they need. [3] This paper includes a brief description of cloud computing, the android application, web technology and other technologies used in the blood bank management system. According to [4] article presently, each hospital has its own blood bank. Blood banks do not interact with each other. There is no standard operating procedure or organization behind the management. It is not possible for donors to obtain blood from a blood bank other than the one where they have donated blood. so these types of online system makes it easier for all. A similar research by [5] provides a platform for the development of information about a donor, its location, nearby blood banks, and much more, which is accessible by the requester. This is done by using GPS technology. The paper provides a brief overview of the blood bank management system, its services, and various technologies, such as cloud computing, Android, and Web applications. Another research on how cloud computing can be useful [6]. Both software and hardware systems in data centers support cloud computing. Applications are delivered over the Internet as services, and these systems run on the cloud. Software as a Service (SaaS) is the term most vendors use to describe their service offerings. Some vendors' product classifications include IaaS (Infrastructure as a Service) and PaaS (Platform as a Service), but we do not adopt these terms since their definitions still vary widely.

### IV. RESEARCH METHODOLOGY

#### Online blood bank management

The main goal of this paper study includes development creation and implementation of an online blood management system using cloud computing. This program based on web checks the availability and records of sufficient quantity of blood bags with the hospitals to ensure smooth functioning of the portal. Major objectives includes: -

1. To make sure the availability of blood bags at any point of time.
2. To maintain a detailed report of all its blood donors. It is not possible for donors to obtain blood from a blood bank other than the one where they have donated blood, so these types of online system makes it easier for all.
3. Enable accurate recording of the donor and their blood donation activities.
4. To identify and locate the appropriate blood bags quickly for the concerned person.

The working of the system starts with the creation of an account. Both hospital and receiver needs to register on the portal first and then login with their given credentials on the login screen. The hospitals can add the blood available in their inventory on the portal and can accept or reject the blood requests paced by the user/receiver. The user can only request for the blood which the hospital has entered in the portal as available. The login details are must for any user to enter the portal and make changes. The login details are maintained inside the MySQL database with other details of the Receiver and the Hospital such as name, city, phone number, email. Admin (we who created this system) maintains and manage the entire database, delete user, manage the security of the system. If the hospital or the blood bank is facing any issue the admin can hide them from the database to avoid unwanted requests.

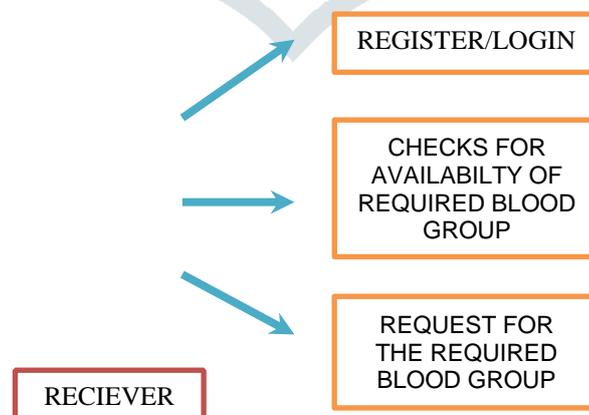


Fig1. receiver's interface

The Receiver does the following activities:-

1. Register/Login

2. Checks for availability of required blood group.
3. Request for required blood group.

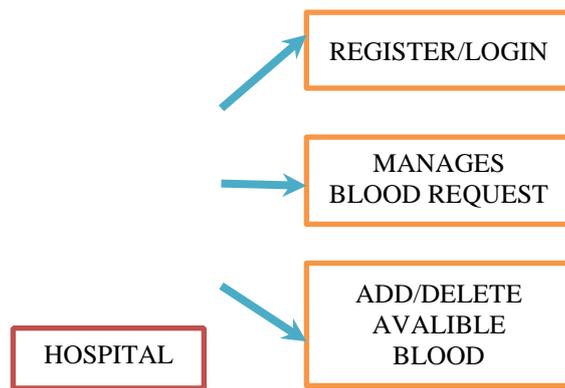


Fig 2. hospital's interface

The Hospital does the following activities:-

1. Register/Login
2. Manages blood requests
3. Add/delete available blood

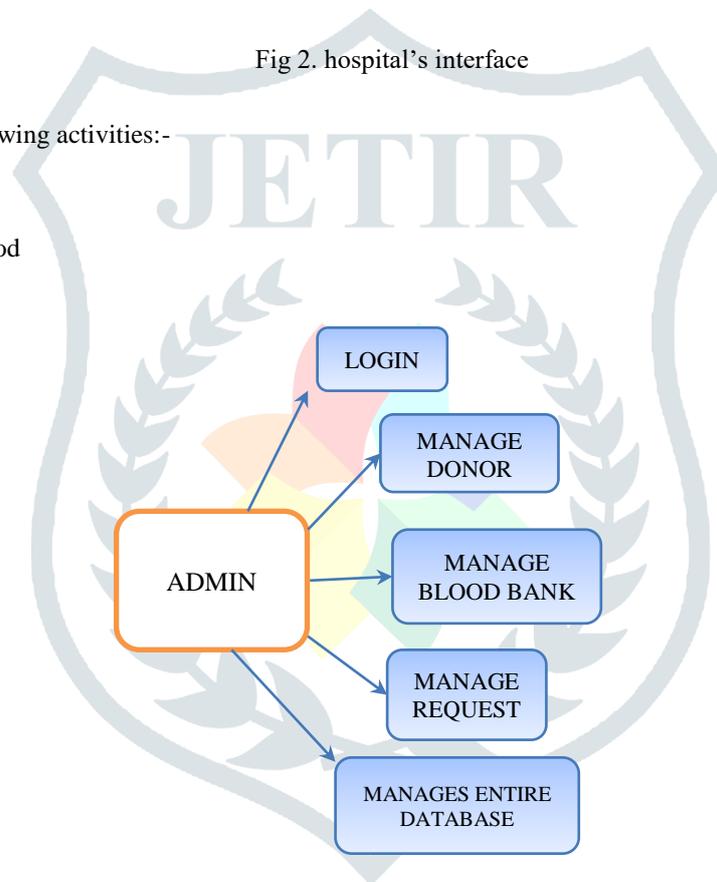


Fig 3. admin interface

The Admin performs the following activities:-

1. Login/Logout
2. Manage blood bank
3. Manage donor/hospitals
4. Manage requests for users
5. Maintain the entire database

### V. RESULTS AND DISCUSSIONS

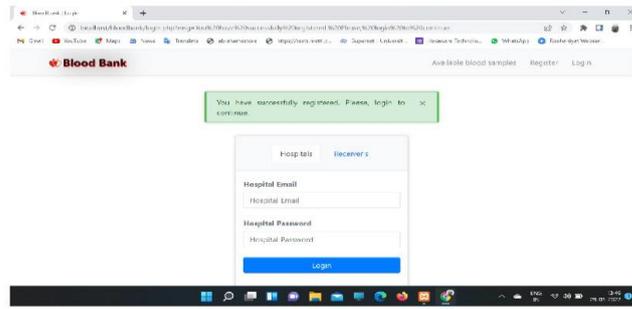


Fig 4. hospital login page

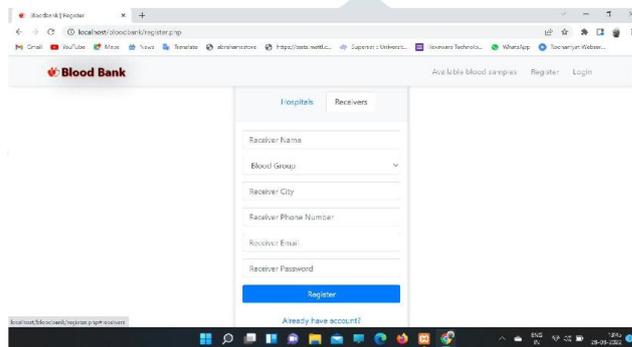


Fig 5. receiver registration

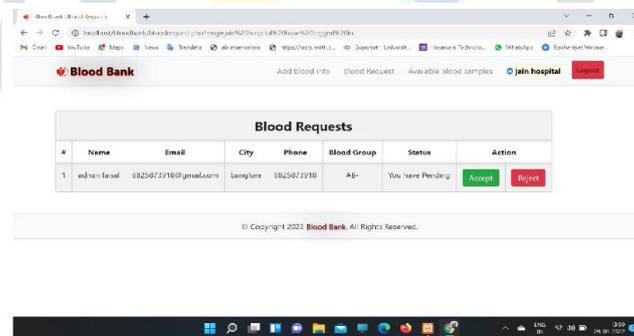


Fig 6. blood request page

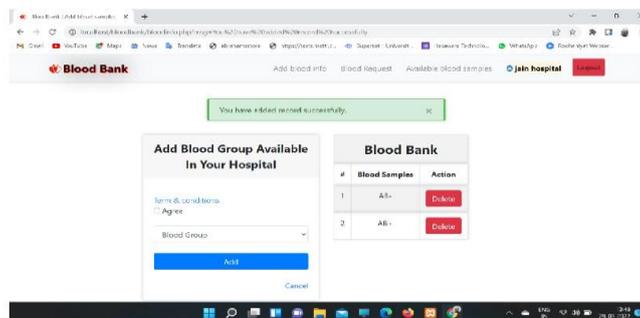


Fig 7. add blood group page

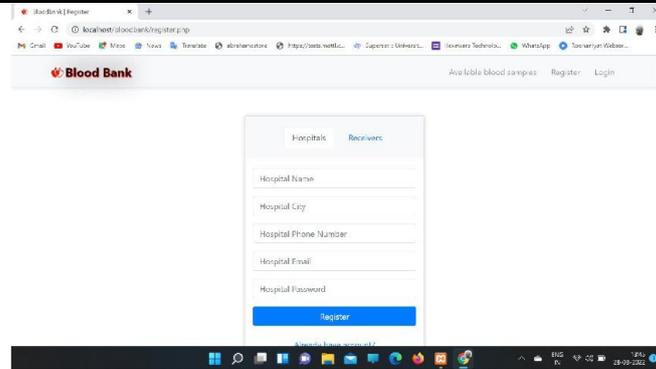


Fig 8. hospital registration page



Fig 9. xampp server

## VI. CONCLUSION AND FUTURE ENHANCEMENT

Due to the growing technology in today's world it makes easy for a task to be done within no time and hence the online portal created by us makes it feasible for people to request blood as and when required and hospitals to provide information regarding which blood group is present in their inventory so they update the same on the portal. the portal can be accessed online and by everyone as we are using amazon ec2 service for the deployment of our application. the main purpose to choose this topic was to make availability of the required blood group on fingertips for the patient without hustle. it will help to easily get access to rare blood groups from the hospitals in very short time. Furthermore, we are planning to connect this software to GPS that will enable people to navigate to the nearest hospitals or where he has requested for the specific blood group.

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