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DIGITAL BLOOD BANK SYSTEM Using Cloud Computing

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ABSTRACT: The objective of this web application is to develop online Blood Donation Information. BloodDonor Agent is to create information about the donor and the donor-related organization blood. This system is employed to maintain whole information about donors, receivers, camps. As we know the Working of the Blood Bank System. A blood bank is a repository or a blood bank or blood component, collected for blood donation or collection, stored and stored for later use in a blood transfusion. The main purpose of this work is to save lives by providing blood transfusions online. Our Digital bank project plan using Cloud Computing is developed to enable users to look at the information of nearby donors, hospitals, blood banks. This project is developed with three ideas namely hospital, blood bank, and patient/donor. We have provided authorized user protection as the new user must register according to their type of opinion and the existing user must sign in. Provides better blood management and storage.

KEYWORDS: Queue, Corruption, Professional donors' monopoly, Data security.

I. INTRODUCTION

It is healthy to donate blood. Therefore, we have created a web application to simplify the blood donation process. The donor can easily locate where his blood group is needed. Those areas could be organizations or individuals who urgently need a donor's blood type. If there is an urgent need for a particular blood group, you can use the web app only to contact people with a blood group needed. This program contains various blood modules and blood donors. Emergencies, where accidents occur, create an urgent, critical need for certain blood types. In addition to the urgent need, medical advances have increased the need for blood in many advanced therapies and selected surgeries. Despite the growing demand for blood, only about 5 percent of India's blood donors. In our project, we propose a new and effective way to overcome these conditions. A large number of blood donors are attracted through the web system. Cloud based services can be considered essential for emergency blood transfusions as they can enable medium and fast access to donor data and location from anywhere and almost any device. Since almost everyone has a cell phone with them, it ensures quick location tracking and communication. We use GPS and find sponsors near the place where the request was made. Thus the 'Digital Blood Bank System' can be of help to blood donors

II. PROPOSED PROJECT

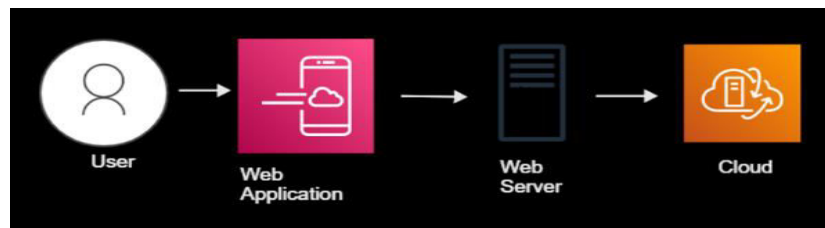
The user has to first go on the web application. He/she will be provided with two options: Login and sign in. If the person has already registered, then he/she has to login. If not, he/she has to create an account providing basic details like name, address, contact, date of birth, blood group, email id etc. The user is allowed to update his/her information. Once the user registers, he/she can check various blood banks that are located.

The user will find various options on the screen:

- > Blood camps
- > Search donors
- > Search blood banks
- > Ask for blood at the nearest hospital
- > Nearby hospital
- > View notification

- Emergency contact detail
- Management of blood donation
- Blood safety
- The production of partial blood.
- Storage and distribution of blood

III. SYSTEM ARCHITECTURE



The main components of System Architecture are user, web-application, web server, cloud.

Where user are Donors, Patients and Admin. Which will get login into portal to access the web-application. The Web-application consist of many features like finding blood bank near user with the help of GPS facility and also get notification of near by blood camp with help of message. This all things get directed toward webserver which is used to take the web-application online through which any user can access it through internet. This webserver is attach to cloud where data for users(Donors, Patients and Admin) can get stored securely. As we know that cloud computing is a trending technology which is used by many of the company for there work. And we know many of the cloud provider like AWS by Amazon,

Azure by Microsoft, GCP by Google provide many of the service. As we know cloud is the platform which can be access from any part of the world through Internet. So with the help of Cloud we can access our web site from any part of world.

IV. METHODOLOGIES

4.1 Blood bank Web Application

This Module Consist of detail information of how web-application works. The Digital blood bank system is the cloud web-based online application. that implemented using HTML, CSS, JavaScript, Django Framework, Python, and SQLite for database.

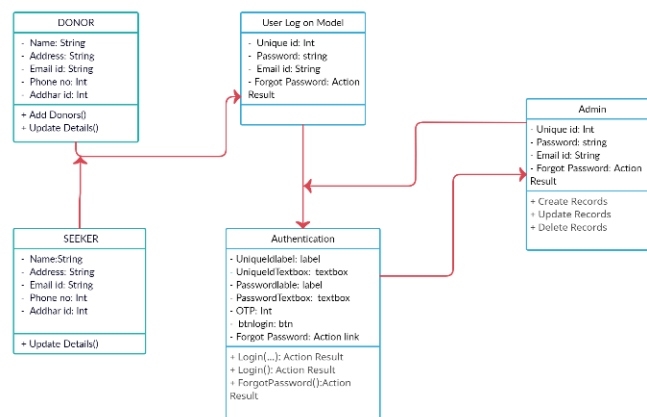
In this Module the requests from receptors for the required blood group are served. The Blood donor can register on the system and it will used Aadhar id as a unique for login on the completion of registration. If the false request sent to the blood bank the admin as well as blood bank have full rights to delete the request. In case If the request is sent to blood bank for specific blood group by user and his registration id also generated but unfortunately user won't come, the admin has full right to reject the request. Blood bank admin can add or remove a donor from the system. Also, he can add blood stock to the relevant blood bank. Digital Blood Bank Management system has separate Admin panel. Admin has entire rights to add various blood banks and terminate. The system is having separate blood bank panel in which blood banks can have their user-friendly dashboard in which they can manage blood, manage request, and manage blood issued. The Blood donor can register on the system and it will provide a donor id on the completion of registration. If the false request sent to the blood bank the admin as well as blood bank have full rights to delete the request. In case If the request is sent to blood bank for specific blood group by user and his registration id also generated but unfortunately user won't come, the system automatically cancel his registration id and update blood bank data by using real time updating the system will inform to all the relevant donors with the request. Blood bank can add or remove a donor from the system. Also, he can add blood stock to the relevant blood bank. Blood Bank Management system has separate Admin panel.

Admin has entire rights to add various blood banks and terminate. Admin can also check whether the blood bank is active or not. The system is having separate blood bank panel in which blood banks can have their user-friendly dashboard in which they can manage blood, manage request, and manage blood issued.

4.2 Database

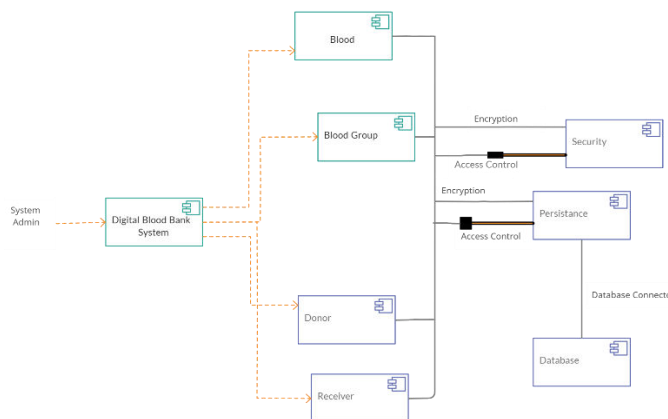
In this system, database is used to record and manage the transactions of blood donations and blood issued. The main purpose of this system is to keep an organize records management of blood. Information such as Donor Details, Blood Collection, Screening, Component preparation, Blood storage, Blood request, Compatibility, Blood issue, Monthly statistics records are stored using database. It provides great help in the properly monitoring of blood available in the blood bank and for easy processing of blood request.

V. ACTOR'S AND MODELING OF SYSTEM

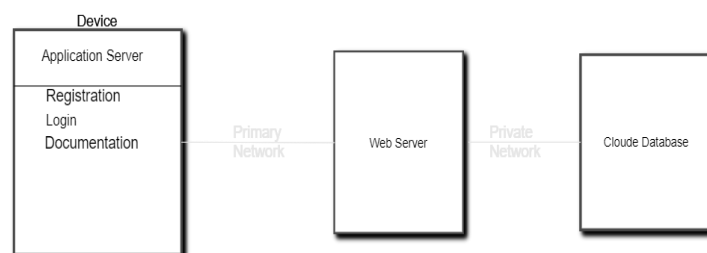


1. Class Diagram

COMPONENT DIAGRAM



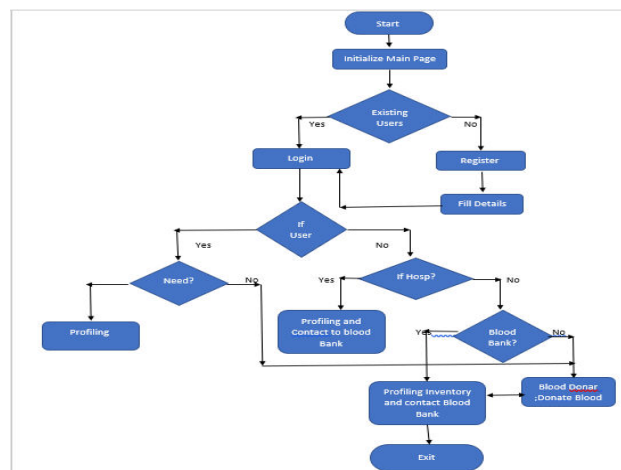
2. Components Diagram



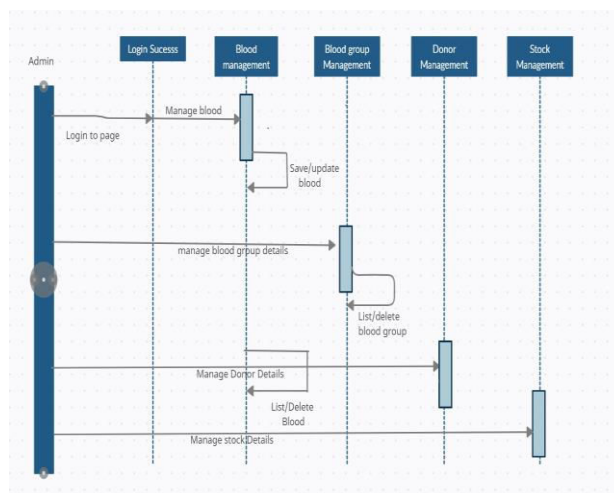
3. Deployment Diagram



4. Use Case Diagram



5. Activity Diagram



6. Sequence Diagram

5.1 DONOR

The web-application is useful not only for the receiver end but as well as donor end.

As we know initially blood bank used traditional way where one has to physically go to the blood bank register himself and carry out the formalities there, With the help of our digital blood bank web-application, donor can register himself with the online portal. And search to the nearest blood bank available and schedule a date for donating blood voluntarily, this not only will save his/her time in case of emergency but will also provide the user with peace of mind. Since the donor is registered to the blood bank the donor could be directly reached by the blood bank in case of absolute emergency.

The personal data of the donor will not be made public and cannot be accessed by the receiver directly but will be stored in that particular blood bank database thereby not violating his/her privacy. the personal data of the donor will not be made public and cannot be accessed by the receiver directly but will be stored in that particular blood bank database thereby not violating his/her privacy.

5.2 ADMIN

The admin section also contains login section where every admin of the blood bank has to login with authentication. The admin contains all rights like manage blood bank, manage donor, manage request. He can also change donor details, delete donor or change password. Add stock of blood-to-blood bank etc.

- Manage blood request
- Manage blood donor
- Manage blood bank
- Delete donor details
- Admin maintains security of the system
- Logout

5.3 Receiver

The receiver module helps user by logging him/her to the portal find blood group and send request to blood bank for required blood group. When user (receiver) put request for blood system ask the user for whom blood is need for what disease it is needed with id-proof. After entering the request is send to admin as the user goes to blood bank by checking all document blood get allocated to user. In this system we have also given navigation facility to user through which he can directly find blood bank near to him by entering his location.

- Search Blood group.
- Request for blood.
- Navigate nearby blood bank through GPS.

VI. SYSTEM VIEW

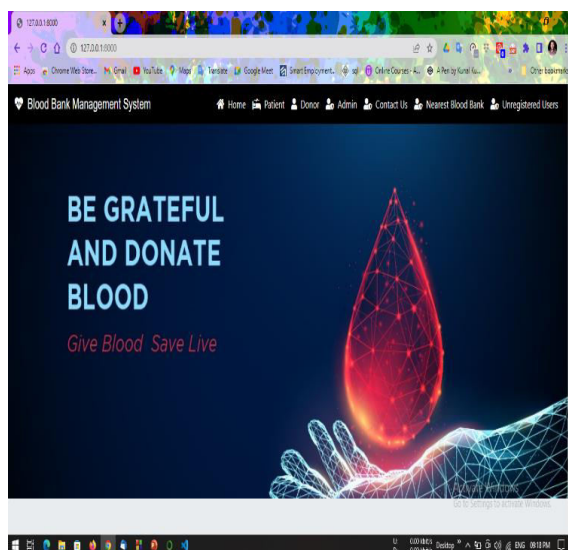


Fig.1-Home Page

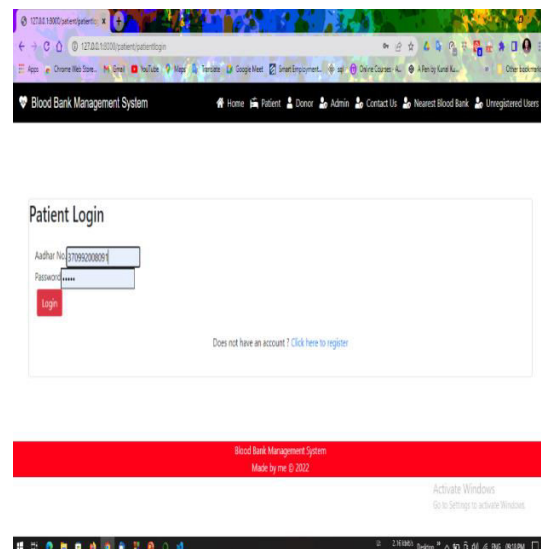


Fig.2-Patient Login

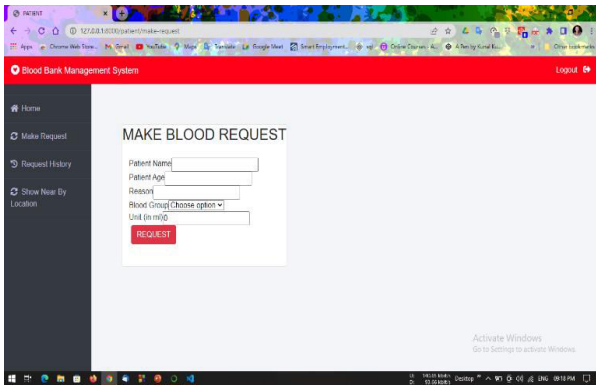


Fig.3-Patient Making Blood Request

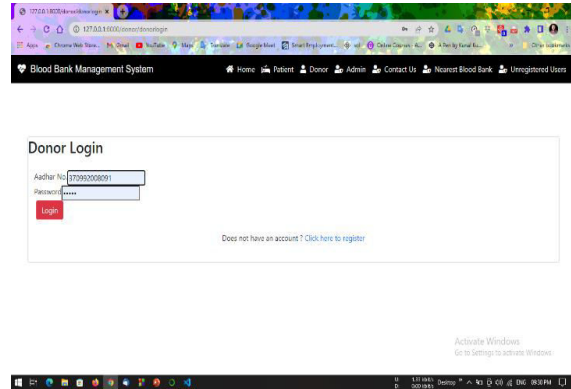


Fig.4-Donor Login

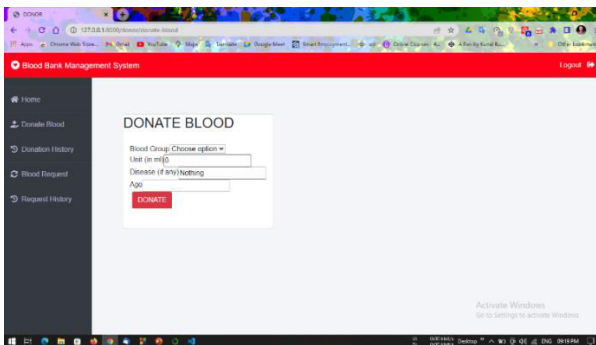


Fig.5-Donor Sending Request For Donating Blood

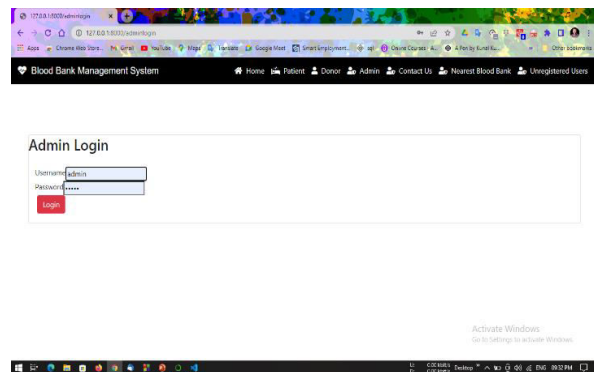


Fig.6-Admin Login

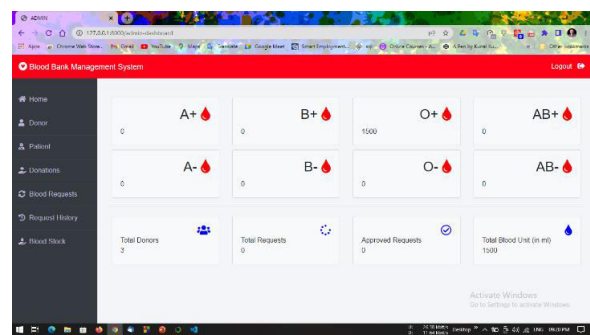


Fig.7- Admin Blood Stock Page

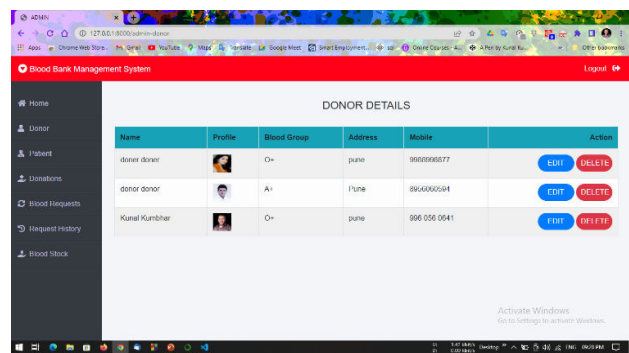


Fig.8-Admin Donor Details Page

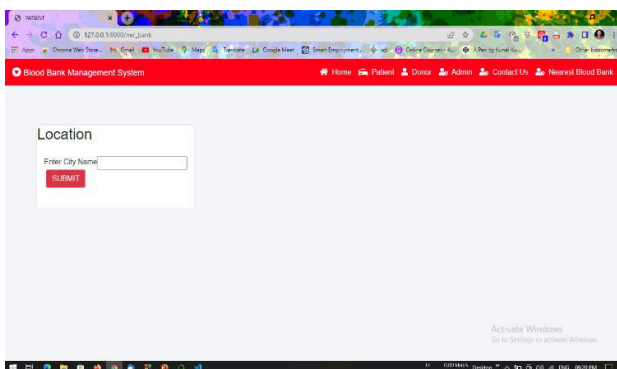


Fig.9-Finding Blood Bank Location Using Navigation

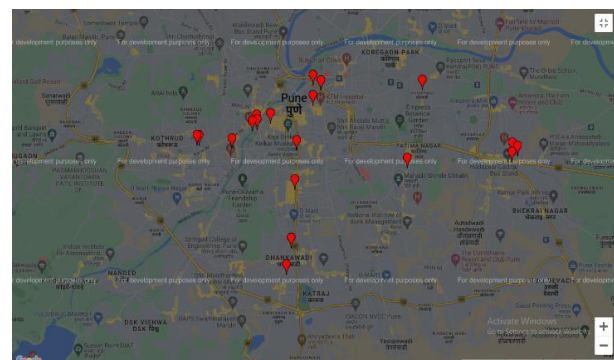


Fig.10-Location Find On Map

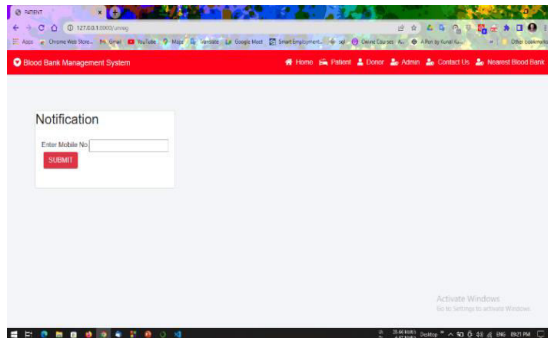


Fig.11 Notification Page

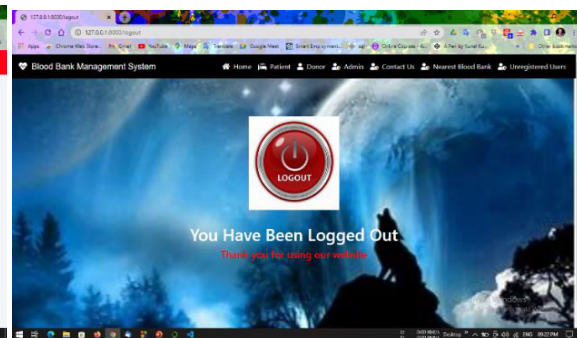


Fig.12-Logging Out Page

VII. CONCLUSION

In the world of information technology where the whole world becomes a global village, where the end-user can find information sitting at home with a single click. In fact, the government has taken steps to change the system. The management information system helps to make the system paperless. Now the end-user has to register and their job is done. All transactions were made possible as a result of the management system in question. The researcher believes that developing a blood bank management information system makes any changes to the system. It is a small contribution for a researcher to work for humanity.

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