



## Blood Bank Management System Using Cloud Computing

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**Abstract**— The cloud based blood bank system developed by my group members is based on a website which is related to some how ease the process of arranging blood i.e. getting the blood from blood bank, the donors available, how much unit available, arranging the required unit in the quickest way possible. We usually see that in our WhatsApp groups there are some request or messages requiring urgent blood but it some how slips out after some time from our memories and there after we are unable to help them, this web-app helps to minimize the process of getting blood. Our website is currently based in our college therefore it is having donors and seekers mostly in our college students. It will help in times of emergency.

**Keywords:**— Blood bank, Blood bank system, Cloud based Website.

### 1. INTRODUCTION

A blood bank is a place where blood of different groups is collected and stored in a safe manner with excess quantities of blood. It is done to keep it safe and provide it for the seeker when requested, but the seeker has to donate some or equal amount of blood in order to get it. A blood bank is a place where a laboratory is set up to check and store the blood. Generally, in banks, the seeker has to provide a prescription from the hospital so that it minimizes the possibility of theft.

The “Blood Bank Management System” is a web-based application which can play a great impact on the donor and seeker to minimize the time that is spent have, arranging the blood. We generally see in cases of urgent requirement there are some difficulties in getting blood. Therefore, this web-app will play an important role in those cases. So, when there is a requirement,

information can be spread as easily and, for that, an admin plays a vital part. We generally see that there are some blood camps also being held. Therefore, this website will provide that information also. There are three major actors that are present in this circumstance. They are:-seeker, donor, and admin.

Cloud Computing is a ready to use, on demand service providing platform which require minimum management by the user according to his choice of service. The major services that it provides are cloud storage, applications, physical/virtual servers, hosting, development tools, etc. The cloud platform that we are using to host, database storage, authentication, etc is firebase store. It is a platform provided by Google so it is very easy to use and very much user friendly. It provides most of its services and tools free of cost for as much time as it is required by the user. It provides its application or services to various platform or applications like Android, IOS, JavaScript, PHP, C++, etc.

## **2. LITERATURE SURVEY**

In this survey we gathered different information from different blood banks and hospitals and that helped us to deduce the idea -for developing this cloud-based blood bank system that will be helpful in times of emergency. This will help us in providing elegant management of blood banks, donors, seekers, etc. The process of registration and submission is simple and user- friendly. While conducting the survey, we came across that the process of blood donation is quite hectic. Therefore, this website will help in minimizing the time taken.

### ***a) Existing system***

We gathered different data from our college and city and came across that the process that is taken to attend to one person for providing blood is time consuming. There are a lot of research that has been conducted to integrate cloud computing into the health sector. This is one of them. The basic

information that we gathered gave us the percentage that not more than 10% of the total population of our country donates blood. Donors usually don't come to know about the request or need for blood. This gave us the inspiration for developing this website.

### ***b) Drawbacks of the existing system***

The existing system is the manual system in which the seeker first visits the hospital and the following factors are to be undertaken:-

- Filling up the form
- Get a prescription slip
- Submit the slip to the blood bank
- Donate or arrange for blood in exchange.

A few drawbacks of the existing system:

1. Cannot receive the blood on time.
2. Time-consuming.
3. Data management has become tedious.

### ***c) Motivation***

The motivation behind developing this website is that we came across some requests in our college WhatsApp group for urgent blood required, but these messages generally are left unnoticed needs to provide help to the people in need. We tried to provide as much help as possible by developing this website. We also tried to minimize the time taken by donors to donate blood and book appointments.

### ***d) Objective***

- To generate a blood bank portal for donor, seeker, admin to register and login.
- To provide notification when blood camps are held.
- Only authorized users are allowed to make requests or donate.

- Admin can generate blood stock, check and book appointments and provide information about campaigns.

### 3. PROPOSED SYSTEM

#### a. User registration

In this phase, all the user, i.e. admin, seeker or donor, has to go through the registration process in which they have to fill up their details such as name, address, date of birth, contact number, blood group, etc. Also, the seeker has to provide a prescription slip to request blood.

#### b. Admin

The admin has the main authority for the whole work of the website. The admin looks or checks for login/ logout details, campaign details, appointment booking for donors. Only the admin has the authorization for different stock reports and providing notification about camps. All the users will get a unique identification code so that the required information can be accessed easily.

#### c. Donor

This is the phase in which the donor has to register, provide his information. It is then saved and can be viewed and displayed easily. The donor has to book an appointment for donating his blood and this can be done easily on our website.

#### d. Seeker

The seeker is the person who will request blood and to do so, he has to provide his information i.e. register first so that the possibility of theft can be minimized. After this, it will receive a unique identification code. But in the registration process, they will have to provide a prescription slip which they will receive from the hospital, so that process or request is authorized.

#### e. Cloud Storage

Cloud storage used in this project is firebase cloud storage. It is a Google product for better accessibility and user interface. Cloud storage is built for developers who need storage facilities as well as servers. Since it is a Google product, it provides authenticity as well as hosting and a real time database. Firebase authentication is a very important tool as, in the current times, it is very essential to authenticate users and this work can be very hard if we have to write all the code by ourselves. Therefore, this is done easily with a firebase. The firebase real time database provides real time synchronization for the connected users. It is a NoSQL database used for store and sync in real time. The fire store is a newer technology. It is the same as a real time database but it provides offline support to for android as well as websites.

### 4. SCOPE OF PROPOSED SYSTEM

The scope of this project is short and it provides an elegant way of management of blood, blood bank, donor, seeker, camps. The main idea behind this project is to interconnection between different users into a single network, authorization, information and validation. It also provides effective:-

- Blood donation management
- Maintain information about different users
- Maintain authorization
- Inform or notify about blood camps

### 5. RESULT AND DISCUSSIONS

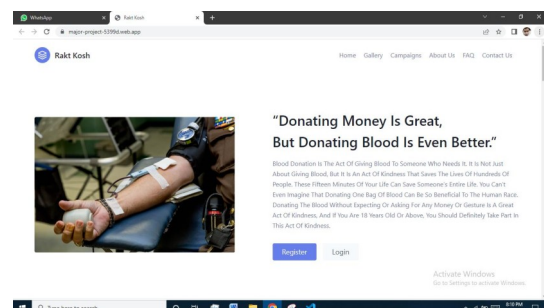


Figure 1: Home page

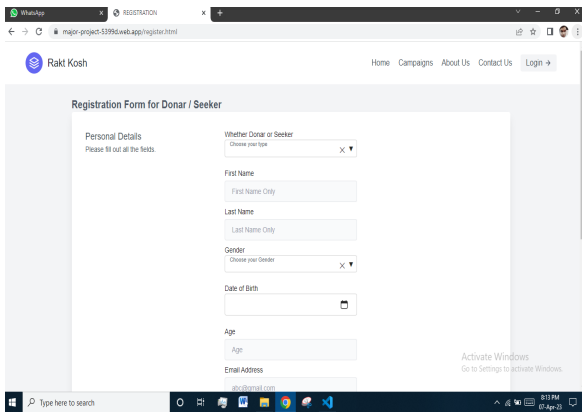


Figure 2: Registration page

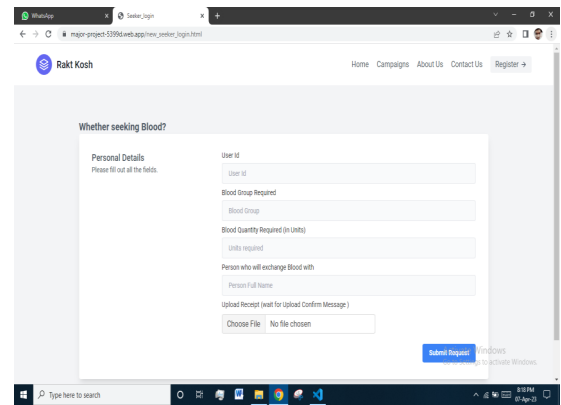


Figure 6. Blood request form

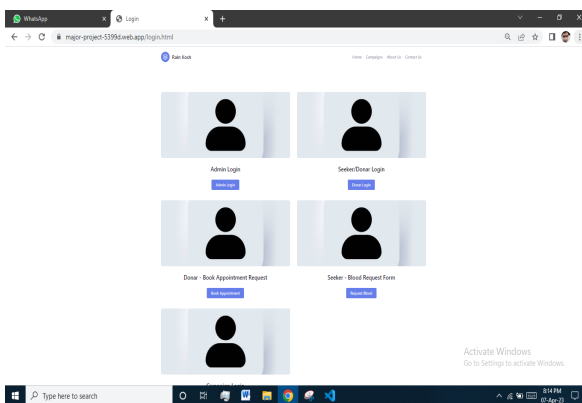


Figure 3: Login page

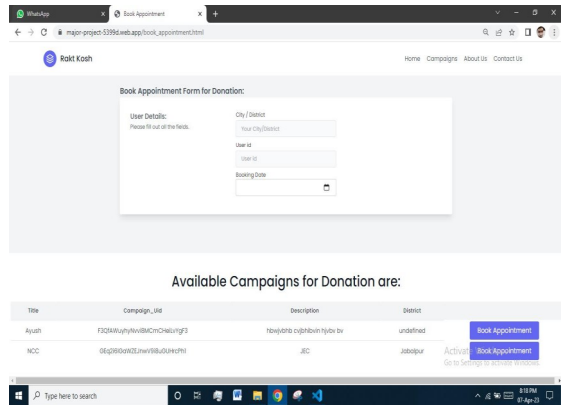


Figure 7. Book appointment form

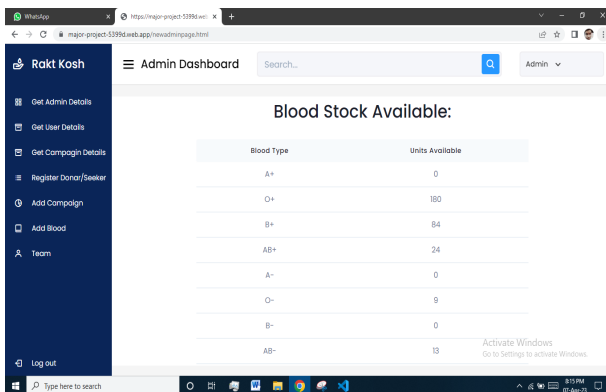


Figure 4: Admin dashboard

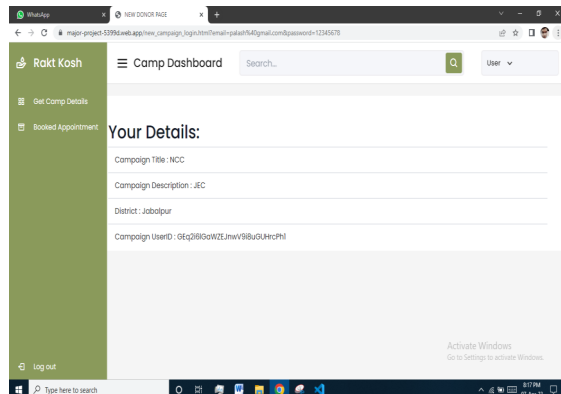


Figure 8. Campaign dashboard

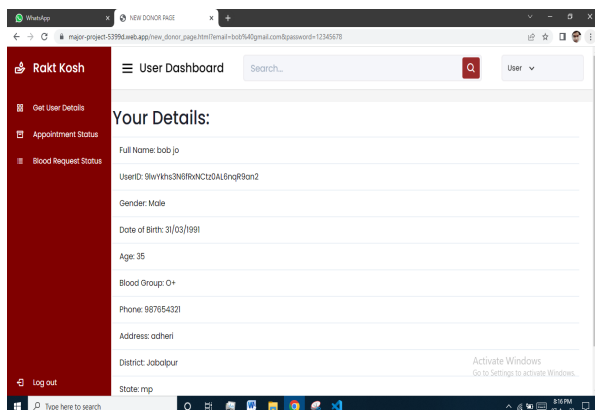


Figure 5: User dashboard

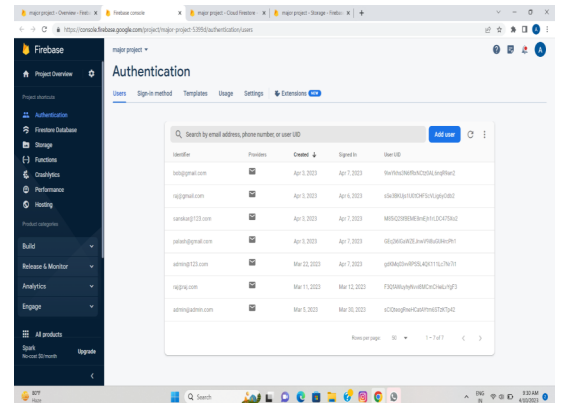


Figure 9. Firebase Authentication

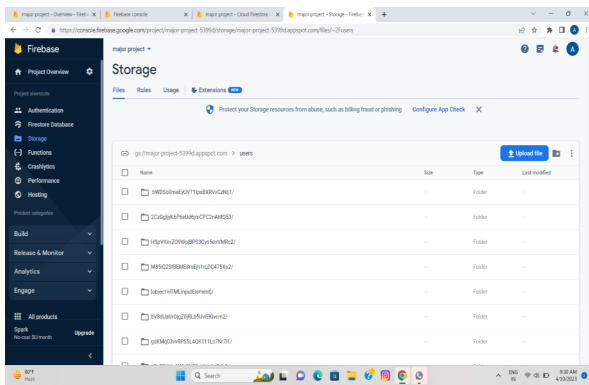


Figure 10: Firebase Storage

## 6. CONCLUSION AND FUTURE ENHANCEMENT

The proposed system provides web-based applications which are very useful in times of emergency service, i.e. like blood donations, transfusions, etc. This system provides a better way to communicate with seekers and donors. It is also able to maintain information of users and notify them about different blood camps. For future enhancement, we can develop a android application that will be very handy and user-friendly.

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