



Bloodbook

Donate **Blood**, Save Lives



INTRODUCTION

In the time of need, a bag of blood can make the difference between life and death. Patients all over the country in need of blood face a severe problem of not knowing where/how to look for blood. Currently various voluntary organizations work to connect blood donors with them. However, they also face two problems: they can't share data which would increase efficiency, and they don't have any centralized digital data management system that can match donors with requests in real time. To solve this problem, we are proposing a system where people can register to get and donate blood, as well as organizations can manage their work. We also want to make our system accessible to all. Considering the huge number of people comfortable with communicating through social media only, we also propose to integrate our system with a Messenger chatbot that will enable users to interact with the system through Facebook Messenger.

SCOPE

The scope of this project contains people and organizations who are willing to donate blood, manage blood donations or are in need of blood. People who are registered (General User) will be the principal user of the system. They will be able to mark themselves as "active donor" and will be notified via messenger/email when other registered users request for blood in their area. They will also be able to update their blood donation related information. When someone will look for blood, the system will inform the active donors and the parties will confirm donations based on mutual communication. The system will also provide a common platform to blood banks to share information about their collection, contact info and invite people to their events (blood collection, seminars etc). However, direct communication within the platform will be out of the scope because it might delay the donation process engaging both donor and receiver at the same time.

USERS & THEIR ROLES

Anonymous Users

*All the users, without an account or not logged in will be treated as **anonymous users**. An anonymous user can -*

- **View** Info of Blood Bank(s)
- **Search** for available blood with specific criteria and view number of available donors and blood bank stock.

General Users

*Users who have been registered to donate or request blood will be considered as **general users**. He/She can -*

- All the access of **anonymous users**.
- Mark himself/herself as an **active donor** who will be notified **via Messenger and Email** when blood is needed near him/her
- **Request** for Blood with data, notify active donors to donate and see availability in nearest blood banks
- **Update** data about last blood donation to get notified when he/she is ready to donate again
- **Post** about his/her blood donation activity which can be displayed in his/her public profile
- **View** public info and activities of other donors
- **Get notified** via Facebook Messenger and Email about nearest blood donation request and blood bank campaign

Blood Banks

*Organizations which collect blood can register as a **blood bank** Blood Bank can -*

- **Update info** like location, availability of blood, contact info etc.
- **Post** about their upcoming event, campaign etc

Admin Users

- **Disable** any registered user
- **See and Verify** the documents of blood bank
- **Monitor** statistics of blood donation

USE CASE OF THE SYSTEM

1. Registration

An **anonymous user** and the **system** are the actors of the use case. There are 2 types of user the actor can register for:

General User: System will collect the required information and send an email with a verification link. When the user enters the verification link, the system will create a general user.

Blood Bank: System will collect the required information and send an email with a verification link. When the user enters the verification link and the documents submitted are approved by the admin, the system will create a blood bank.

2. Search

Anonymous user, general user and the **system** are the actors of the use case. An anonymous user or general user can search for a specific blood group within a specific location with date. When the system receives the data it finds the number of active donors who can donate within that time period around that location, info from blood banks arounds and displays them.

3. Update Status

General user, Blood Bank and the **system** are the actors of the use case.

A general user can update his/her donor status as active or inactive. He/she can update the time of his last donation. Using this info, the system will decide if the user will be notified upon a new blood request.

A blood bank can enter the availability status of different blood groups and the system will update these changes.

4. Request for Blood

General user and the **system** are the actors of the use case. A general user can request for blood like searching and this time the system upon receiving the search criteria, notifies the relevant blood donors along with showing the information.

5. Linking with Messenger

General user, Messenger chatbot API (**external system**) and the **system** are the actors of the use case. A general user can request a messenger connection key. After any facebook user sends a message to the bot with that key, he/she will be connected with the facebook account by the system. This linking will be used to connect to the donor fast.

6. Notify the Donors

General user, **Blood Bank**, External API (**external system**) and the **system** are the actors of the use case.

Active Donors (General Users) will be notified (using external API) upon the request of blood by any general user or events posted by blood banks by the system.

7. Disable/Verify an User

Admin User and the **system** are the actors of the use case. An admin user can verify a new user or disable an User from further access to the system.

8. Update Info, Events, Activities

General user, **Blood Bank** and the **system** are the actors of the use case. General users and Blood Bank can update their location or share their activities or events to the system.

TECHNOLOGIES

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Backend

Java Spring Boot (Starter), JPA (Hibernate), Spring Security, PostgreSQL Database, External API (Facebook chatbot, Email, Geocoding, File CDN)

Frontend

React, Material Design UI