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BLOOD AND ORGAN DONATION MANAGEMENT SYSTEM

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Abstract: Situations like accidents create an immediate and critical need for specific blood types and organs. In addition, medical field has advanced which also increased the need for blood and organs for various treatments and surgeries. So, in such cases, it is difficult for hospital staff and recipients to follow up. This project acts as a solution for various problems by providing valuable information about donors of blood and organs to the people in need in a single platform. This application is a platform that allows users to donate blood/organ as well as search for people who are in need of blood. The system provides quick access to the details of the blood donor needed by those in need and people for donating blood/organ. This also helps hospitals to get details of the organ donor. System can act as an intermediate between donor, recipient and also with hospitals. Through this application any person who wishes to donate the blood and organs can register themself.

I. INTRODUCTION

1.1 Motivation

The number of people who are in need of blood are increasing in large number each day. The Blood and Organ Donation Management System is a platform that allows users to donate blood/organ as well as search for people who are in need of blood. Through this application any person who is interested in donating the blood and organ can register themselves. The project is managed by an administrator who can view and delete information.

The main aim of this system is to provide blood to the people who are in need of blood and to hospitals who are in need of organ. Using this system user can search for the blood group available in the district and they can get contact details of the hospitals who have them. Using this system donors can register themselves who want to donate blood and organs. To register in the system, they have to enter their contact information and a pledge form for organ donors. These donors can specify the hospital that they want to donate their blood to. These registered users have to undergo a testing process from the hospital to verify whether their blood can be accepted or not for further process. Those who are in need of these services have to register and login to get details of the availability of the blood. The hospital that requires organs have to register and login as well so that they can view the available stock of blood. They are the only entity that can view the details of the organ donors.

1.2 Objectives

- The main objective of the Blood and organ donation Management System is to manage the details of donor, blood group, recipient, hospital and stock.
- The project is managed by an administrator who can view and delete information.
- The blood and organ donation management system (BODMS) provides an online platform and quick access for people in need.
- The system can easily maintain all the information about the blood donors, organ donors. Proposed work provides services to people in need and for donors who are willing to donate blood.
- This supports fast searching to find the match of the blood group for the right person.
- To check the availability of blood anytime.

II. SYSTEM STUDY

2.1 Existing System

For the existing system, the processes are manually done. These processes include finding out and contacting potential donors for donating blood and organ. There is no specific system to store this information which eliminates risk of data mismanagement, security issues and less user friendly.

2.2 Proposed System

The proposed system covers all the major drawbacks of existing system. It is user friendly and provide the users with an application with quick access to information. The system makes the overall project management much easier and flexible. Users can see their blood result easily. There is no risk of data management at any level while the project is under development process. Advantages Of Proposed System - High Accuracy, less cost, Easy installation, User friendly, Easy to use and flexible.

The proposed blood and organ donation management system is designed based on the running blood bank management websites. The aim is to provide blood donation service to a particular state. Web Based Blood Bank Management System is designed to store, process, retrieve and analyze information of patients and donors within a blood bank. During an organ transplant, accidents, cancer treatment etc. blood is required. For blood donation, one needs to check for a donor or needs to visit blood bank. The Manual Blood donation system has many disadvantages where, it is too time taking process, often leads to error results, consumes lot of manpower, lacks donor information, retrieval of data consumes a lot of time, accuracy is less. At time of emergency, it becomes hard to approach the right donor. Rare blood groups are difficult to find and recipients find difficulties in tracking the right blood donor.

III. METHODOLOGY

3.1 Concept

The details entered by the blood donors are stored in the respective hospital's side and only genuine persons from the hospital can view them. They can filter the data by accepting or rejecting the donors after which the donors will be notified in their results page which can be accessed using a unique username and password. The administrator can view all the users of the website and can perform basic CRUD operations. This would help in case of removing certain users as in hospital or general users in terms of any future problems. In case of organ donors, the entire list of donors who have completed the pledge forms are visible to all hospitals registered in the site and can contact them as and when the need arises. The recipients who are in search of blood can filter search according to place and blood type which would report them the list of hospitals that have the desired blood type. Our application is developed so as to reduce the time to a great extent that is spent in searching for the right donor and the availability of blood required. Thus, this application provides the required information in minimal time and also helps in quicker decision making. This would enable them to stay besides their dear ones rather than stressing out.

3.2 System Flow

The proposed solution involves a web application, developed for individual users and hospitals which are connected over a network. Hospitals and individual users, both have to register before using the functionalities of the system. Once registered the user's data will be stored in the database. The information stored on registration will be very crucial as it will be used in case of emergency. The contact detail of the hospitals will be available when a user will search for blood units. The blood unit count is automatically incremented as soon as blood is accepted by the hospitals.

3.3 Method

This work is developed in view of the distributed client server architecture. The system is to manage the donor, recipients and organization that are related to donating the blood. Through this application any person who is interested in donating blood can register himself as a donor. Recipients can request blood online, with the help of this site. The work has been planned to be having the view of distributed architecture, with centralized storage of the database. The application for the storage of the data has been planned using MySQL, all the user interfaces have been designed using HTML. The database connectivity is planned using the "SQL Connection" methodology. The database tables are normalized up to 3NF to eliminate all the anomalies that could possibly arise due to the database transaction.

IV. ANALYSIS

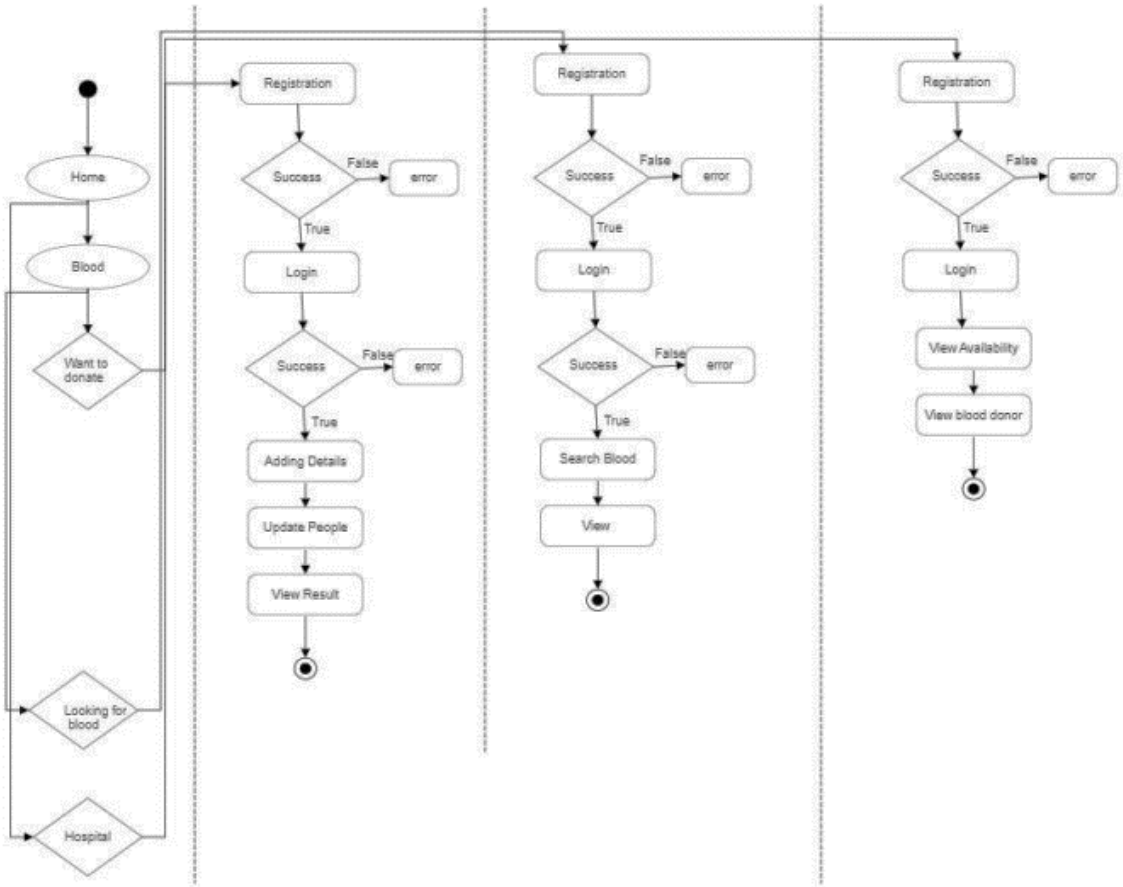

Fig. Activity Diagram of Blood Donation Management System

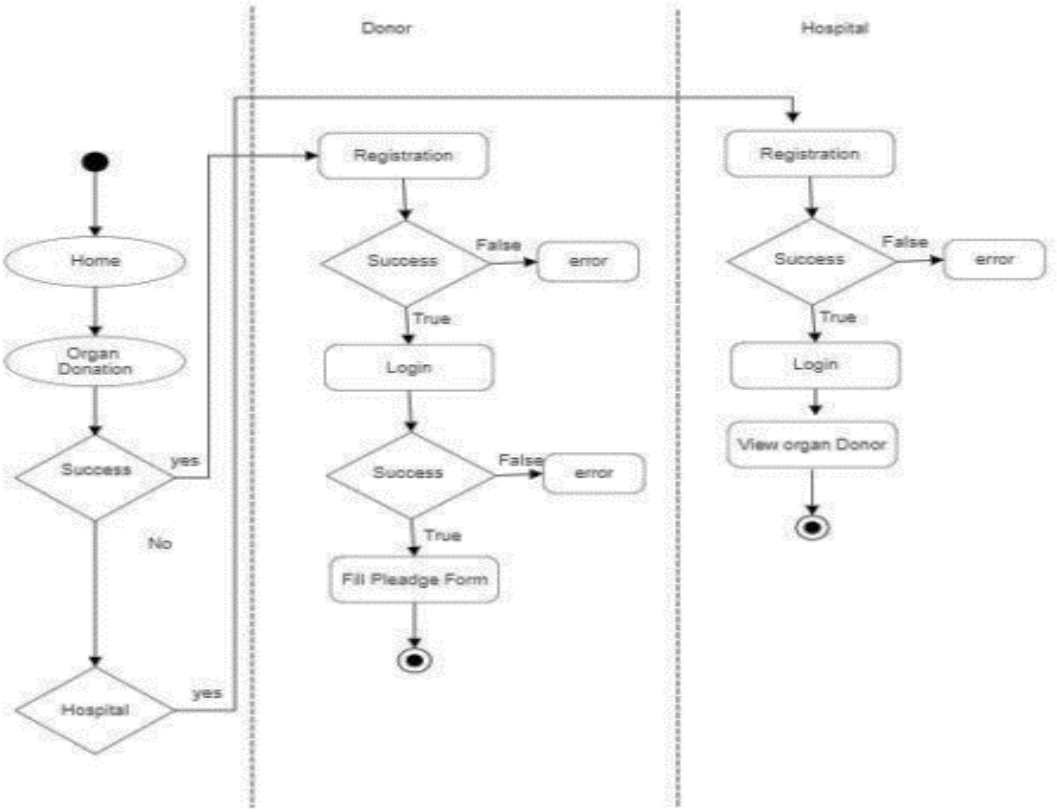

Fig. Activity Diagram of Organ Donation Management System

The Donor can view the blood donation schedule, blood donation history and also blood test results for each of the blood donation that has been made. The Donor can view the advance blood test that has been made to his or her blood during the donation. Blood test function is accessible by the Laboratory Staff. The laboratory staff will enter the blood test result. If one of the results of

critical tests which are HIV, Syphilis and Viruses is positive, the overall test will be failed. If the Recipient is in the need of blood to fulfil the patients need, they need to request for the blood.

V. RESULT

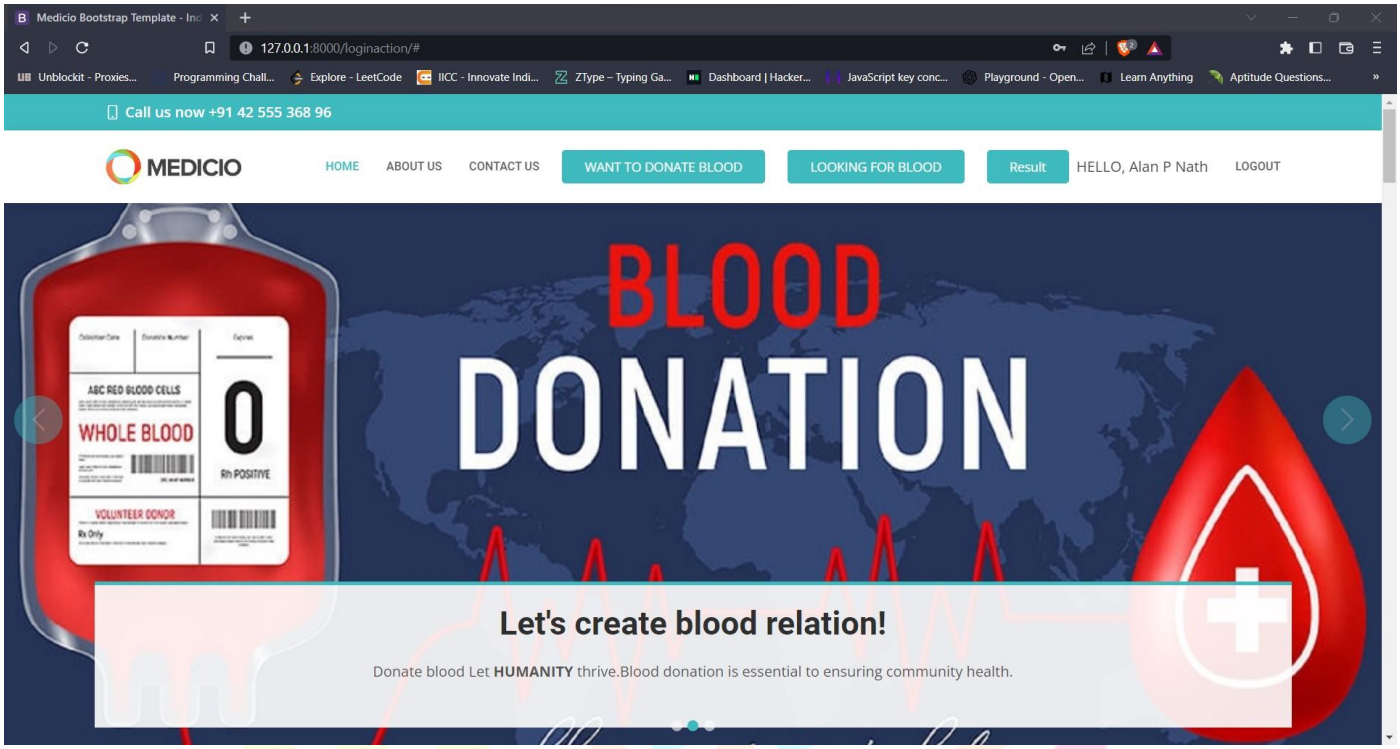

Fig. Blood Donation Page

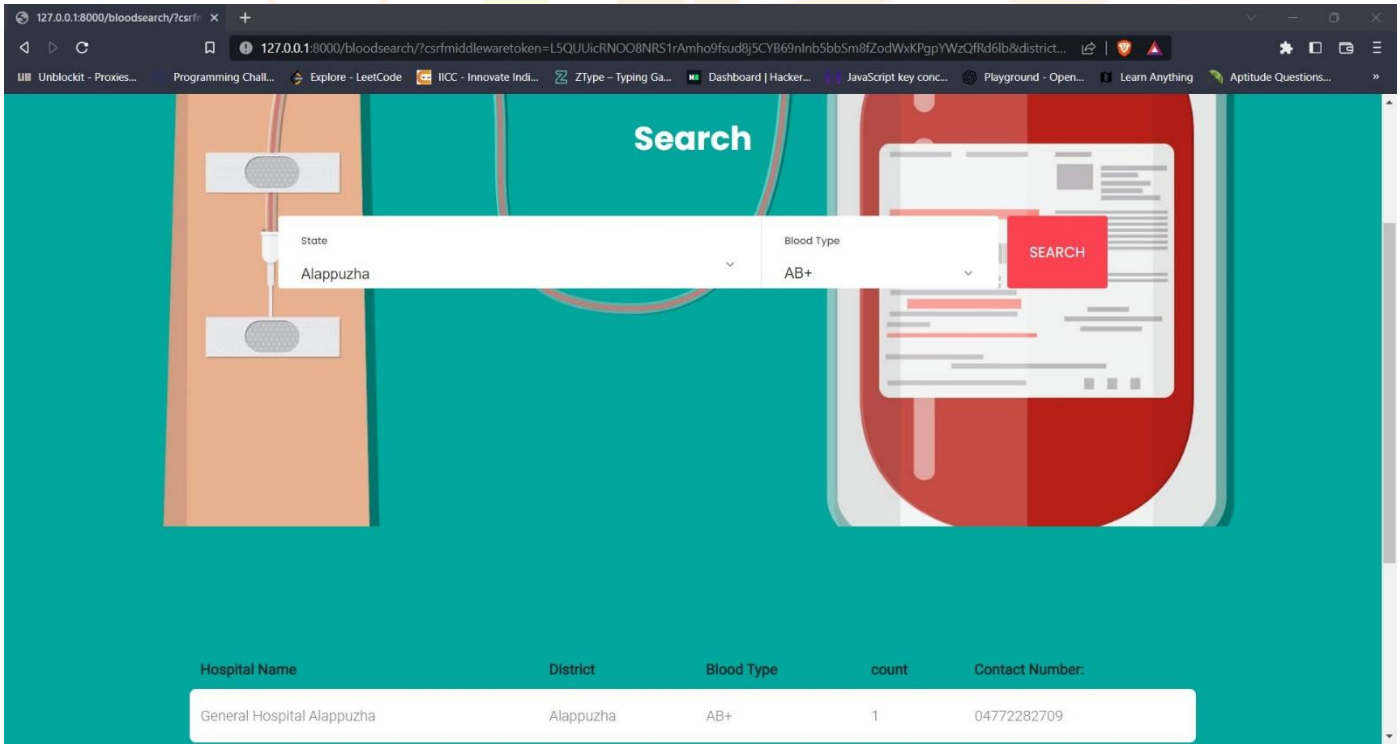

Fig. Blood Search Page

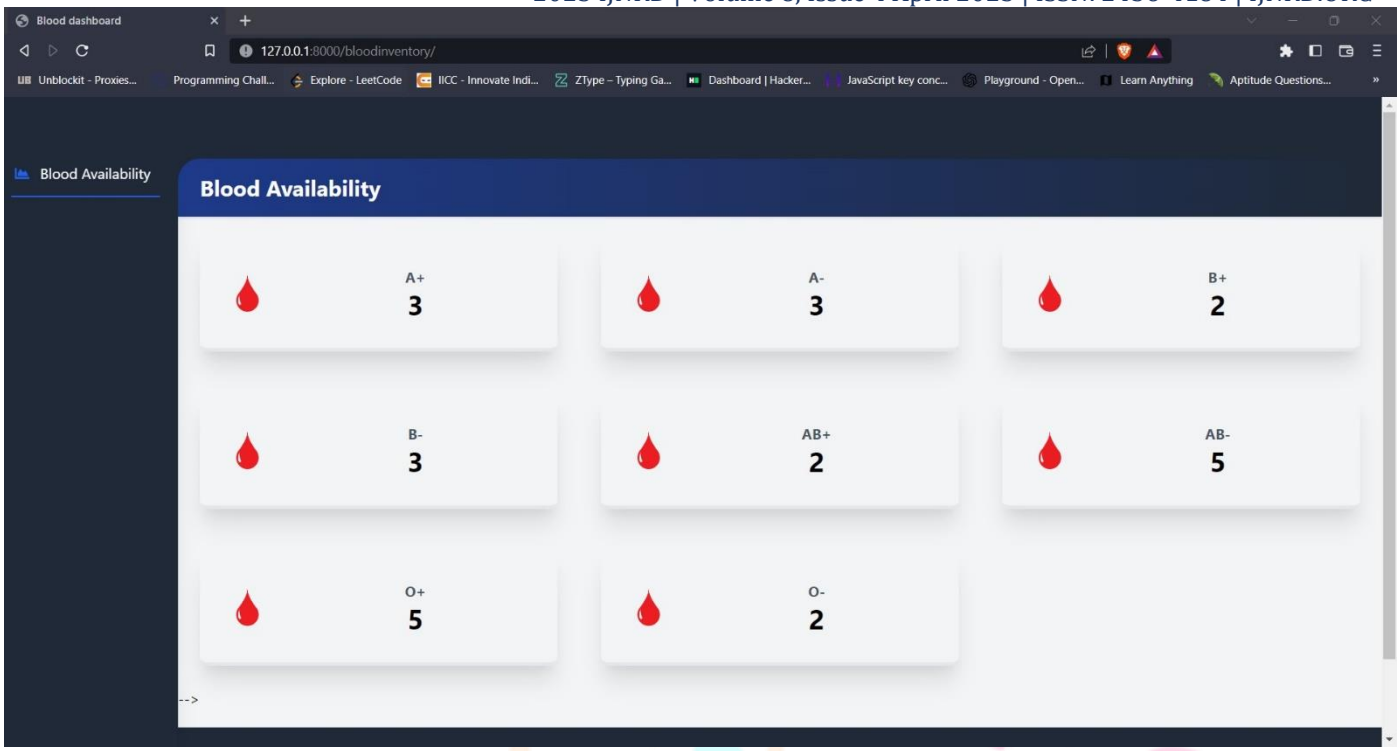

Fig. Blood Availability

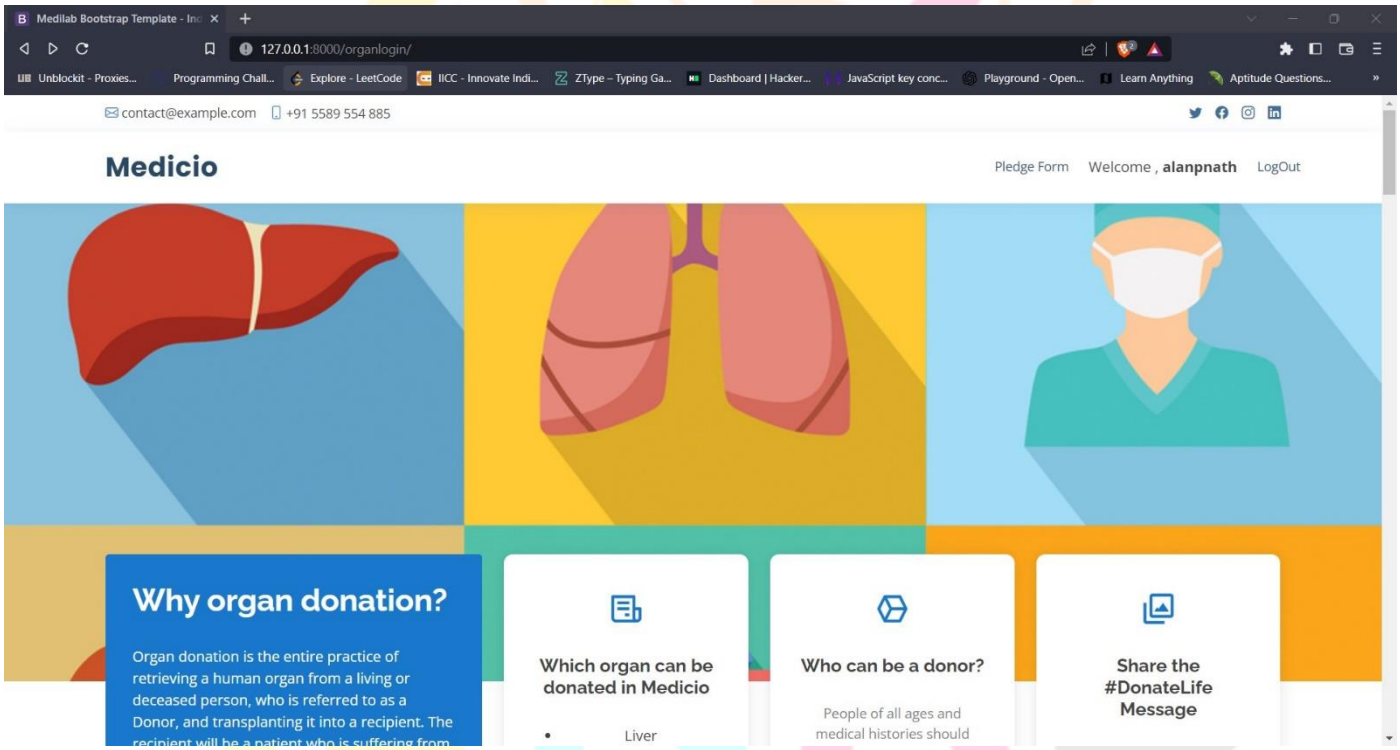

Fig. Organ Donation Page

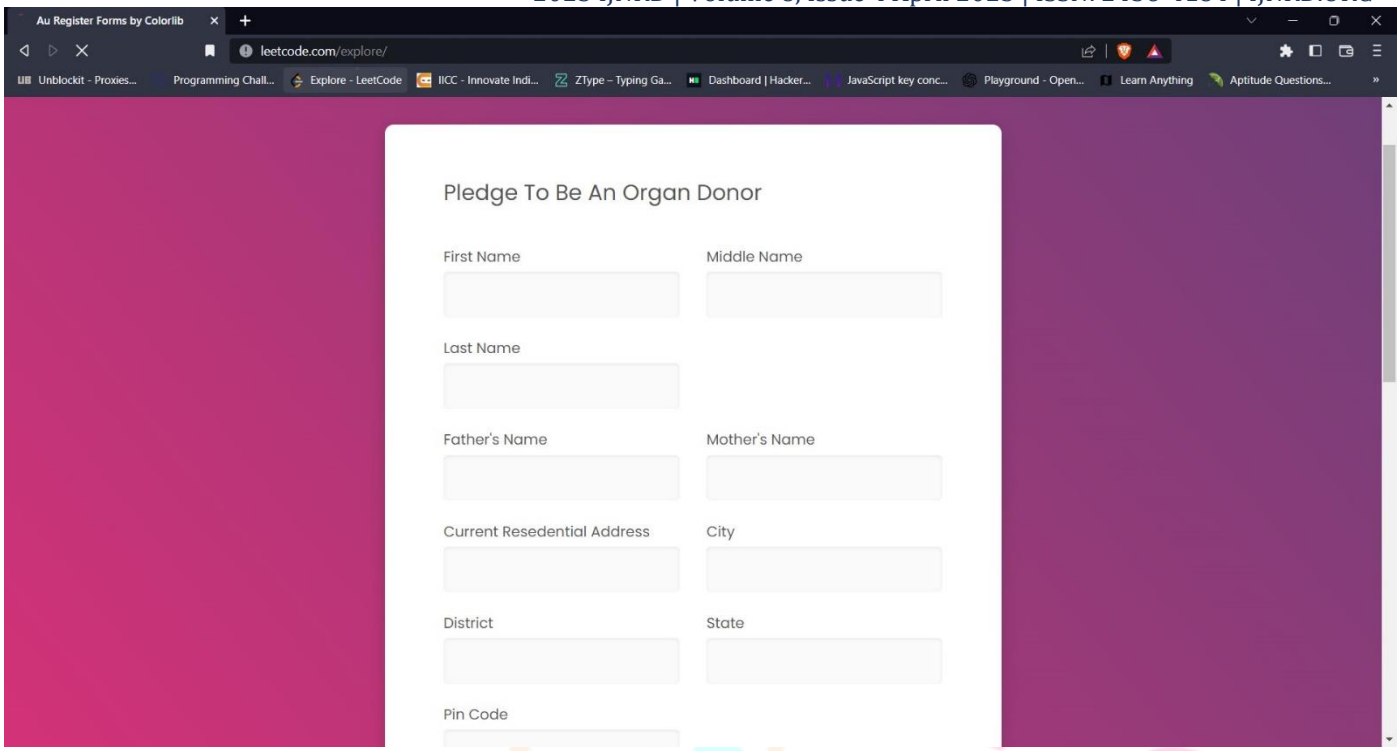

Fig. Organ Pledge Form

VI. CONCLUSION AND FUTURE SCOPE

The proposed Blood and Organ Donation Management System provides a reliable platform for donors, acceptors, and hospitals. The system is a web-based application that helps to minimize human errors and problems pertaining to data redundancy. It offers many advantages and benefits that contribute to its effectiveness and efficiency. It is a fast-paced and efficient way, as the data entered will be verified and frequently updated, thereby increasing the probability of saving one's life.

This system proposes a blood and organ donation management system, which we believe will bring remarkable change. Collaboration with blood banks and support of various regional languages for better reach. The size of the database may increase exponentially, so maybe changed such that it is scalable and can be deployed on the cloud, as well as can be developed as a mobile application.

VII. REFERENCES

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