BLOOD BANK MANAGEMENT SYSTEM

A MINI PROJECT REPORT

Submitted by

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In partial satisfaction of the requirements for the degree of

BACHELOR OF TECHNOLOGY
in

ARTIFICIAL INTELLIGENCE

SCHOOL OF COMPUTING

COLLEGE OF ENGINEERING AND TECHNOLOGY

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

KATTANKULATHUR - 603203

APRIL 2023

SRM INSTITUTION OF SCIENCE AND TECHNOLOGY
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BONAFIDE CERTIFICATE

Certified that this Course Project Report titled "**BLOOD BANK MANAGEMENT SYSTEM**" is the bonafide work done by **UDITA KAUSAKHI U [RA2111047010102], CHARVI JAIN[RA2111047010113]** of II Year/ IV Sem B. Tech (AI) who carried out under my supervision for the course 18AIC207J - Database Management Systems for Artificial Intelligence. Certified further, that to the best of my knowledge the work reported herein does not form part of any other work.

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ABSTRACT

The main aim of developing the Online Blood Donation Management System is to establish a link between the blood donors and the organization and generate e-information.

With the help of this application, anyone or any organization who wants to donate blood for a good cause can register themselves. The client should start by adding donor names and generating unique IDs and add their details and relevant information such as blood type, medical report, and contact number.

After the database is created of patients and donors, a new database for the blood bank is created. There the name of the blood bank, its staff details, operating hours, and address is added along with the addition of patient names with unique IDs, details on their medical conditions, and blood types. And, anyone who requires blood can register through this site.

Admin authority is authorized to add, delete, and modify if required. The intention of creating the Online Blood Donation Management System project is to develop an online Blood Donation Information. The entire project has been developed keeping the distributed client-server computing technology in mind.

OBJECTIVE

The primary objective of this project is to develop a database management system that allows blood banks to efficiently manage their inventory and blood donation processes. To achieve this, the system will be designed using a relational database management system (RDBMS) and will consist of several tables to store data related to donors, blood inventory, donations, recipients, and blood requests.

A key objective is to create a system that allows blood banks to keep track of their blood inventory. This includes tracking the blood group, quantity, and expiry date of each unit of blood in the inventory. By having access to this information, blood banks can plan and manage their inventory to ensure that blood is available when needed.

Another important objective is to provide a platform for blood banks to manage the blood donation process. This includes donor registration, donation records, and blood requests from hospitals or individuals. By having a centralized database to manage all the information related to blood donation, blood banks can easily access and manage the data. This makes it easier to track the movement of blood and ensure that the inventory is up-to-date.

Finally, an objective of this project is to provide a user-friendly interface that makes it easy for blood bank staff to manage their inventory and donation processes. The system will be designed to be intuitive and easy to use, providing a simple interface for blood banks to manage their inventory and donation processes. The system will also provide reports and analytics to help blood banks make better decisions about their inventory management and donation processes.

ER DIAGRAM
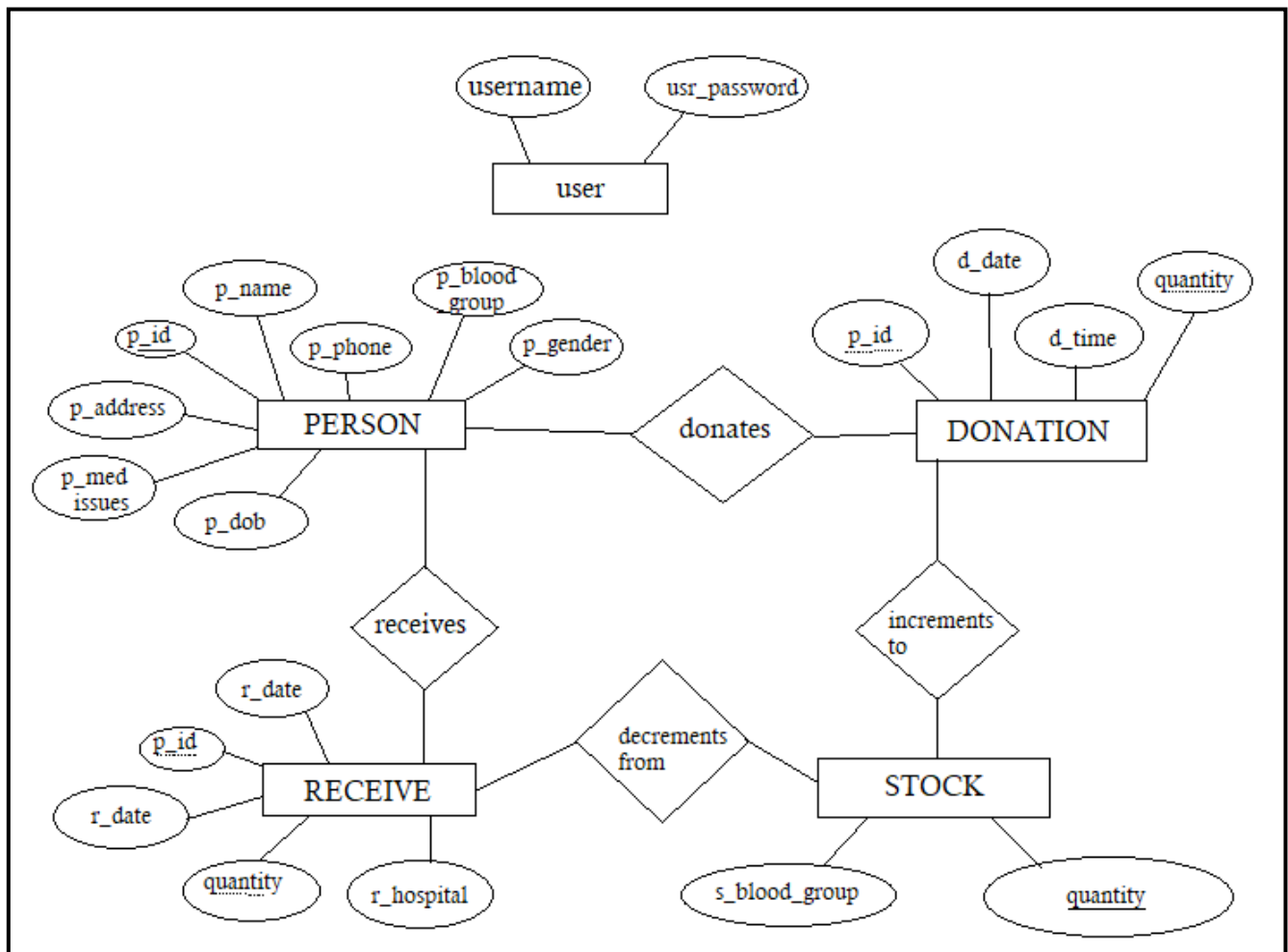
ER Diagram Description:

SR. NO.	TABLE NAME	DESCRIPTION
1	person	It stores the person's details including their personal information along with medical history and person id
2	user	It stores username and password
3	donation	It keeps a record about all the donations
4	receive	It stores the recipients' details including name, address, blood type and id
5	stock	It stores the blood details, quantity of blood available in each group

Queries used in SQLite

```
CREATE DATABASE IF NOT EXISTS `blood_bank` DEFAULT
CHARACTER SET utf8mb4 COLLATE utf8mb4_general_ci;
USE `blood_bank`;


CREATE TABLE `donation` (
 `p_id` int(10) NOT NULL,
 `d_date` date NOT NULL,
 `d_time` time NOT NULL,
 `d_quantity` int(1) NOT NULL)

CREATE TABLE `person` (
 `p_id` int(10) NOT NULL,
 `p_name` varchar(25) NOT NULL,
 `p_phone` char(10) NOT NULL,
 `p_dob` date NOT NULL,
 `p_address` varchar(100) DEFAULT NULL,
 `p_gender` char(1) NOT NULL,
 `p_blood_group` varchar(3) NOT NULL,
 `p_med_issues` varchar(100) DEFAULT NULL)

CREATE TABLE `receive` (
 `p_id` int(10) NOT NULL,
 `r_date` date NOT NULL,
 `r_time` time NOT NULL,
 `r_quantity` int(1) NOT NULL,
 `r_hospital` varchar(50) NOT NULL)

CREATE TABLE `stock` (
 `s_blood_group` varchar(3) NOT NULL,
 `s_quantity` int(5) NOT NULL DEFAULT 0)

INSERT INTO `stock` (`s_blood_group`, `s_quantity`) VALUES
('A+', 0),
('A-', 0),
('AB+', 0),
('AB-', 0),
('B+', 0),
('B-', 0),
```

```sql
('O+', 0),
('O-', 0);

CREATE TABLE `user` (
  `username` varchar(10) NOT NULL,
  `password` varchar(16) NOT NULL)


INSERT INTO `user` (`username`, `password`) VALUES
('SuperAdmin', '12345678'),
('test_user', 'qwertyuiop');

ALTER TABLE `donation`
  ADD PRIMARY KEY (`p_id`,`d_date`,`d_time`);

ALTER TABLE `person`
  ADD PRIMARY KEY (`p_id`);

ALTER TABLE `receive`
  ADD PRIMARY KEY (`p_id`,`r_date`,`r_time`);

ALTER TABLE `stock`
  ADD PRIMARY KEY (`s_blood_group`);

ALTER TABLE `user`
  ADD PRIMARY KEY (`username`);

ALTER TABLE `person`
  MODIFY `p_id` int(10) NOT NULL AUTO_INCREMENT;

ALTER TABLE `donation`
  ADD CONSTRAINT `Donation_ibfk_1` FOREIGN KEY (`p_id`)
REFERENCES `person` (`p_id`);

ALTER TABLE `receive`
  ADD CONSTRAINT `Receive_ibfk_1` FOREIGN KEY (`p_id`)
REFERENCES `person` (`p_id`);
COMMIT;
```

FRONT END DESIGN

Front-End is created using front end design tools such as Sublime Text Editor a long with front end language PHP.
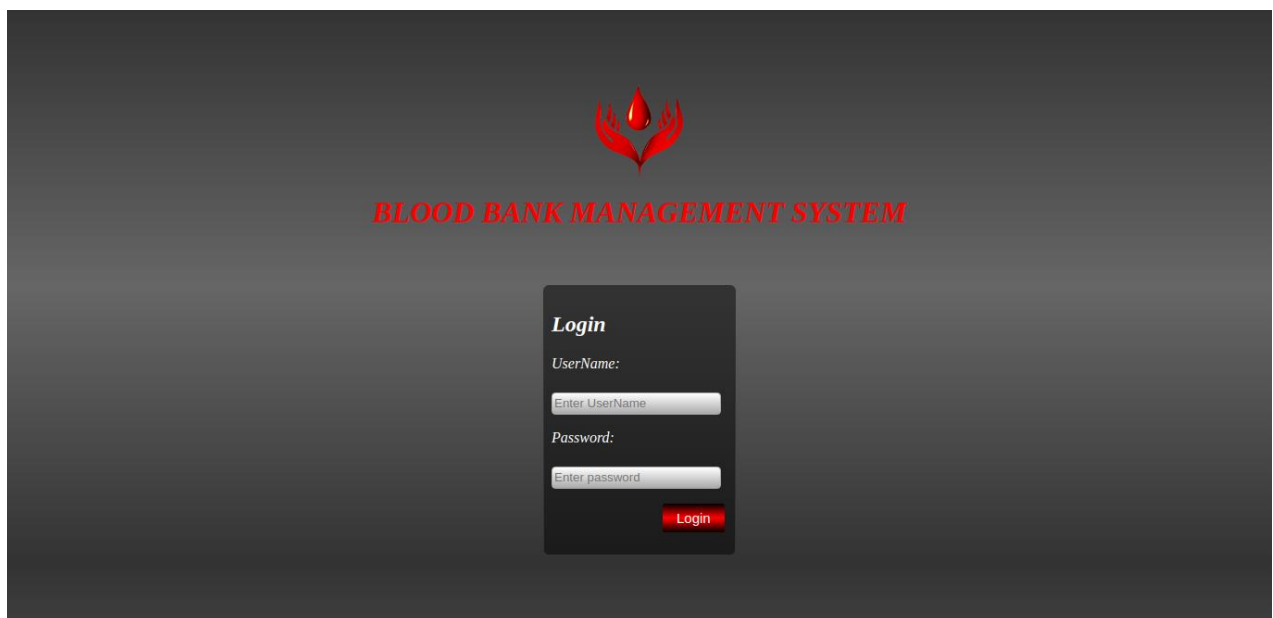
Pseudo-Code

Login page:
Step1: Enter the USERNAME in the given field.
Step2: Enter the valid PASSWORD.
Step3: Click on LOGIN button
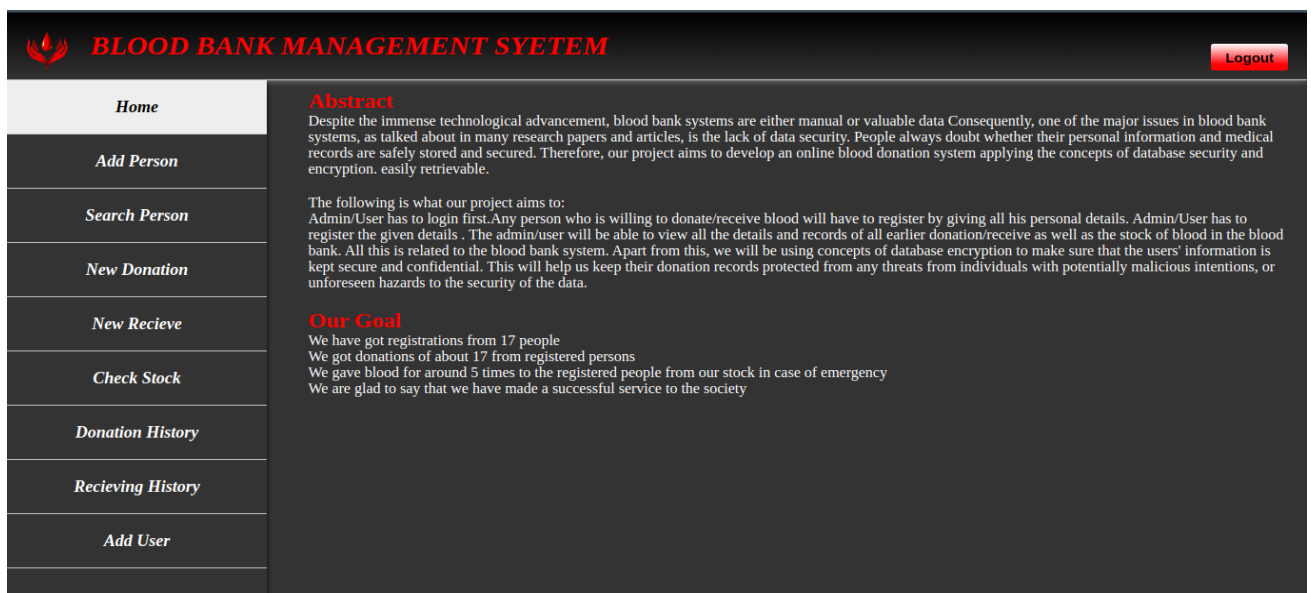
Home page:
This page contains the goal of the database.
It also gives the brief information about number of registrations, donations and receives taken place in the blood management.

Person page:

The user must enter the personal details of the new donor/receiver.

Step1: Open the ADD PERSON page.

Step2: The PERSON ID is auto incremented because its unique for all.

Step3: Enter the PERSON NAME.

Step 4: Enter the PHONE NUMBER.

Step5: Enter the GENDER.

Step6: Select the DATE OF BIRTH.

Step7: Select the BLOOD GROUP.

Step 8: Enter the ADDRESS.

Step9: Enter the MEDICAL ISSUES if any.

Step10: Click on REGISTER button.

Search Person Page:

In this page one can retrieve the details of the person using PERSON ID.

Step1: Open the SEARCH PERSON page

Step2: Enter the PERSON ID.

Step3: Click on SUBMIT button.

Donation page:

If any person is willing to donate the blood.

Step1: Open the NEW DONATION page.

Step2: Enter the unique PERSON ID of the person.

Step3: Enter the Units of blood donated.

Step4: Click on SUBMIT button.

Receive page:
If any person require blood for emergency purpose.
Step1: Open the NEW RECEIVE page.
Step2: Enter the unique PERSON ID of person.
Step3: Enter the Units of blood received by a person.
Step4: Enter the Hospital Name in which the person is being treated.
Step5: Click on SUBMIT button.
(Note: Person details are accessed using the PERSON ID, date and time is automatically accessed using computers default time.)

Stock Page:
If the user forgets password, then they can recover it.
Step1: Go to HOME page
Step2: Press MOVIE button
Step3: select FORGOT PASSWORD
Step4: Enter the following fields
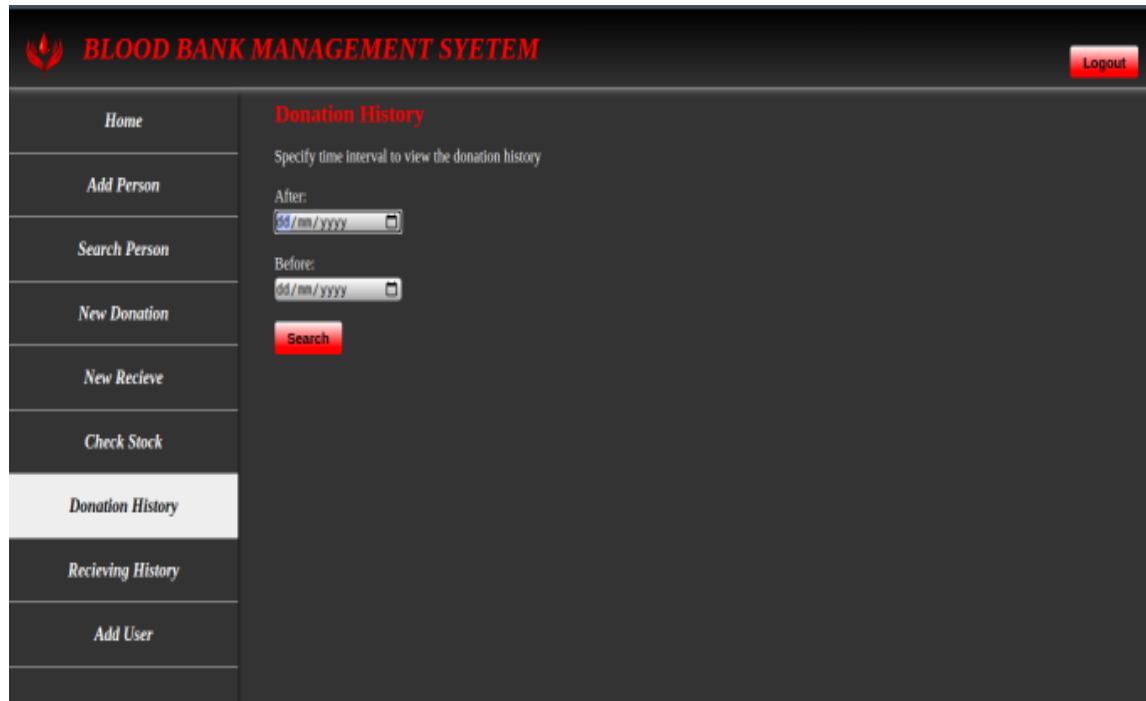
Donation History Page:

Step1: Enter the time interval in after and before date.
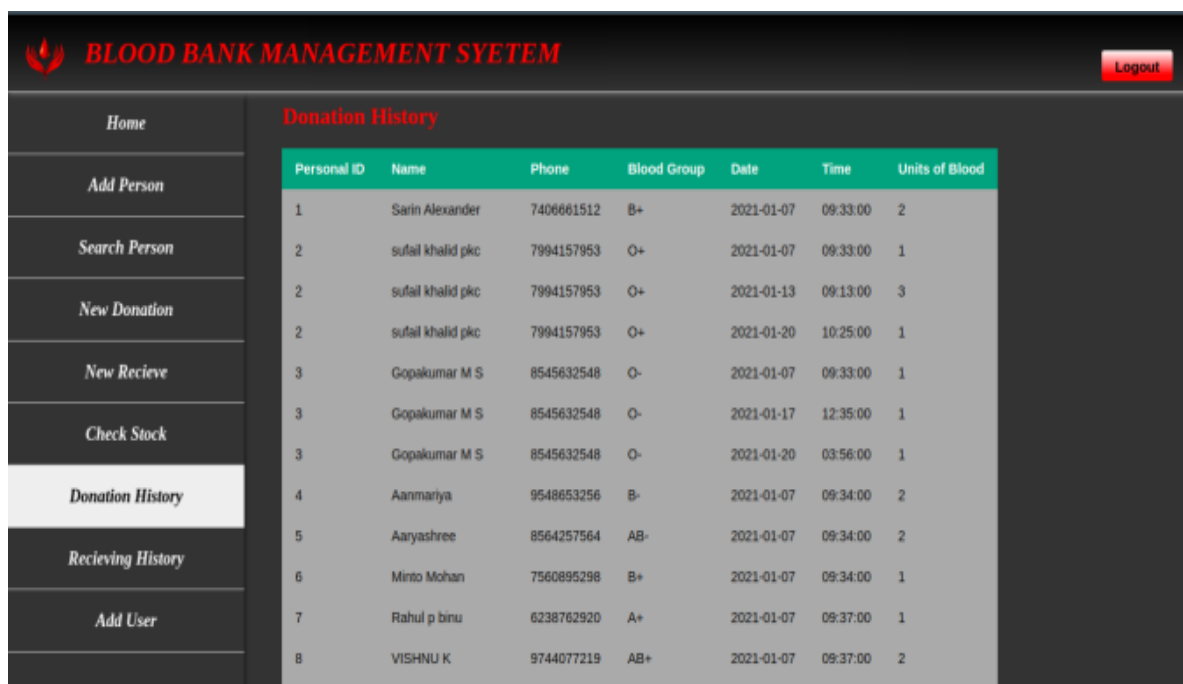
Step2: Click on SEARCH button.

It displays all the donation history of that time interval.

If no donation history is present then it responds with "No record found on this time interval."

Receive History Page:

Specify the time interval so that you can get details from that time interval only.

Step1: Enter the time interval in after and before date.

Step2: Click on SEARCH button.

It displays all the receive history of that time interval.

If no receive history is present then it responds with "No record found on this time interval."

Add User Page:

Adding new user.

Step1: Enter the SUPER ADMIN PASSWORD.
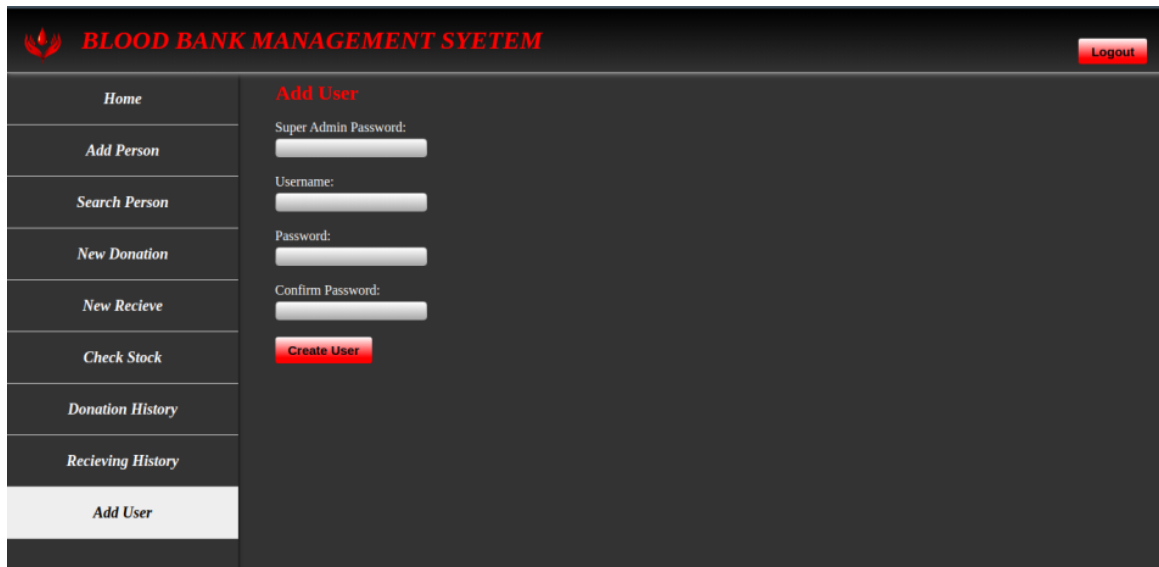
Step2: Enter the new USERNAME.

Step3: Enter the PASSWORD.

Step4: CONFIRM PASSWORD.

Step5: Click on CREATE USER button.

New user is created.

Logout:

Once you are done with the work. You can logout using "LOGOUT" button.

CONCLUSION

The main purpose of our blood management system is to provide blood bank with easier way to store and retrieve data and keep record of the availability of blood in blood bank.

After inserting the data to database, staff need not register of the same person again. They can simply search for recorded data and retrieve them for future blood donation or receiving purpose of that person.

REFERENCES

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[2] R. K. Chavan and D. P. Gaikwad, "A Full-Stack Web-Based Blood Management System using PHP," in Proceedings of the 2019 3rd International Conference on Computing Methodologies and Communication (ICCMC), Erode, India, 2019, pp. 37-42, doi: 10.1109/ICCMC.2019.8728665.

[3] M. B. Khan, M. R. Islam, and M. S. Kabir, "Full Stack Blood Management System: Design and Implementation," in Proceedings of the 2020 IEEE 10th Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, USA, 2020, pp. 84-89, doi: 10.1109/CCWC47524.2020.9031193.