Blood Bank Management System

Asmita Aochar[1], Kajal Chopade [2], Devashish Umale[3], Tanvi Borse[4] , Ashwini Deshmukh[5]

[1]Asmita Aochar, ENTC, SSGMCE Shegaon. [2]Kajal Chopade, ENTC, SSGMCE Shegaon.
[3]Devashish Umale, ENTC, SSGMCE Shegaon. [4]Tanvi Borse, ENTC, SSGMCE Shegaon.
[5]Ashwini Deshmukh, ENTC, SSGMCE Shegaon.

---***--

Abstract --The role of blood in the human body is crucial, as it delivers essential nutrients and oxygen to all cells and organs, making it indispensable for human life. Therefore, the establishment of blood banks was a necessary development to ensure a reliable and sufficient supply of blood for medical treatments and emergencies. Blood banks are essential components of hospitals and countries, as they provide a critical service in ensuring the safe and timely transfusion of blood to those in need. In many hospitals, the blood-handling process is reliant on manual steps, which unfortunately increases the likelihood of human error. To address this issue, a web-based system was designed and implemented using the Django framework, Python programming language, and HTML/CSS, among other technologies.

We have suggested a management system for the blood bank functions, consisting of the subsequent modules:

1) Blood demand forecast (2) show amount of blood stock is available (3) secure blood supply chain
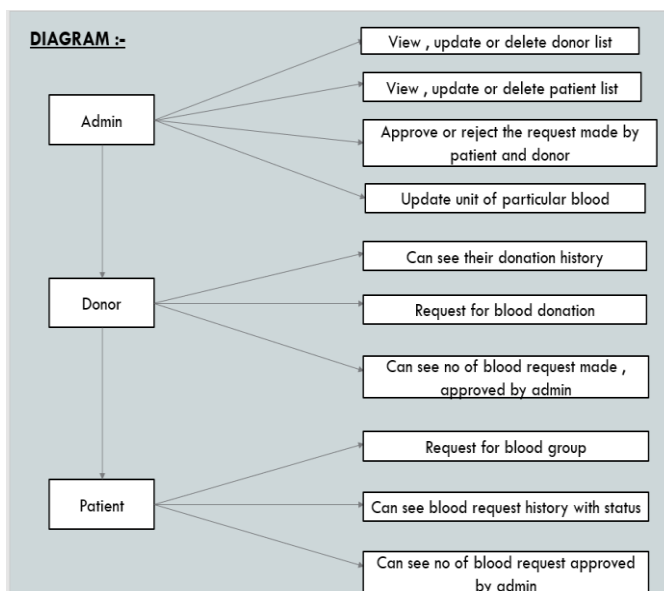
We can reduce the gap between blood supply and demand, identify the best-suited blood donor during emergency situations, and enhance the confidentiality of data.

I.   INTRODUNCTION

An application software designed for managing blood banks can also be referred to as a blood bank management system.

designed to help blood bank manage their day- to -day opera- -tions more efficiently. system typically   include modules for

Managing blood donations, inventory,processing,distribution

The blood bank management system project aims to collect blood from different sources and distribute it to those in need of blood transfusions This system aims to guarantee a sufficient availability of blood products and assist in preserving lives. The blood bank management software is designed to manage daily blood bank transactions efficiently

and allow quick access to donor and blood collection details as needed. Additionally, the software facilitates the registration of donor information, blood collection data, and blood issue reports. It is user-friendly and can cater to the needs of individuals requiring blood transfusions The blood bank management software is designed to meet the present and future needs of all blood banks. Its adaptable design can accommodate the changing requirements of blood banks and ensure that they can continue to function efficiently.

The system allows blood banks to keep track of blood donations, donor information, and blood inventory levels. It can also generate reports on blood usage and donor demographics. This information can be used to better manage the blood supply and ensure that there is always enough blood available for patients in need.

Additionally, a blood bank management system may also include features such as appointment scheduling, blood screening, and donor eligibility checks. This helps to ensure that blood donations are safe and that donors meet the necessary criteria to donate blood.

In modern medicine and healthcare, the demand for blood is crucial as someone in need of blood to save their life is always present. Blood transfusion is a crucial medical intervention that plays a vital role in managing patients within healthcare systems. The Blood Transfusion Service (BTS) holds the critical responsibility of ensuring the safe and timely supply of blood and blood products while also prioritizing the safety and well-being of the blood donors. this project is to develop a computerized system for managing blood donation process that can store donor information and blood test details. The system will be developed using Python programming language and Django framework, which is a powerful tool for building web applications Python is a high-level, object-oriented programming language that is interpreted and supports dynamic typing and binding, making it well-suited for speedy application development.. An effective blood bank management system is crucial for ensuring the safe and efficient operation of blood banks, as well as providing sufficient blood supply for patients

requiring transfusions.

(3)
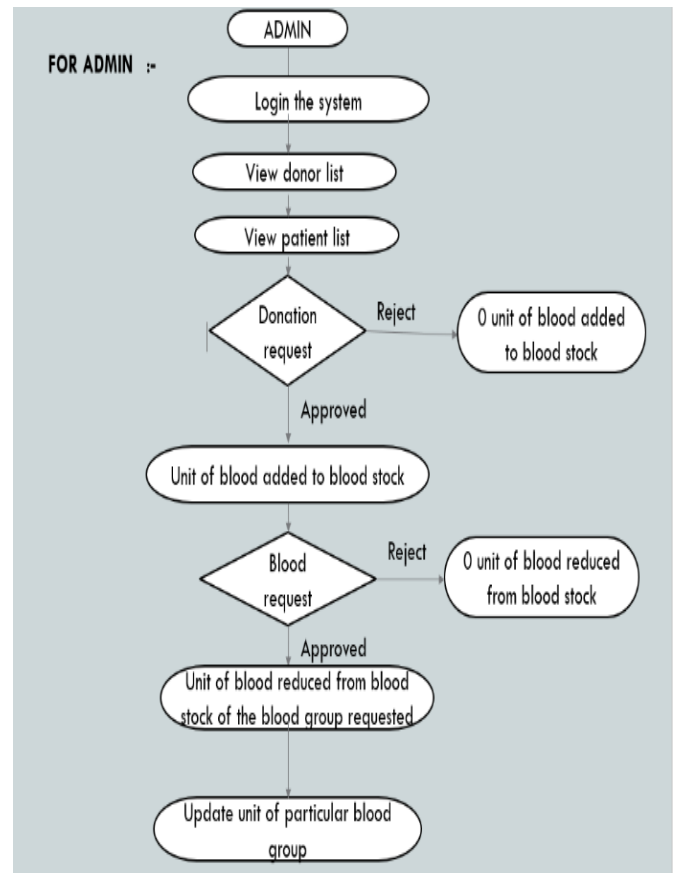
II.   BLOCK DIAGRAM

(2)

Block Diagram Description

In this block diagram of admin firstly admin have to login the system .within admin there are two modules those are patient and donor module. Admin have the authority to view, check and update patient and donor details as well as they can accept or reject request of patient and donor accordingly. System can update data related blood itself and admin also have right to modify or update blood stock. If the request from the donor is approved then declared amount of blood units added to the blood stock and if request rejected it does not affect the blood stock. If request from patient accepted than required amount of blood deduct from blood stock otherwise no effect on the blood stock.
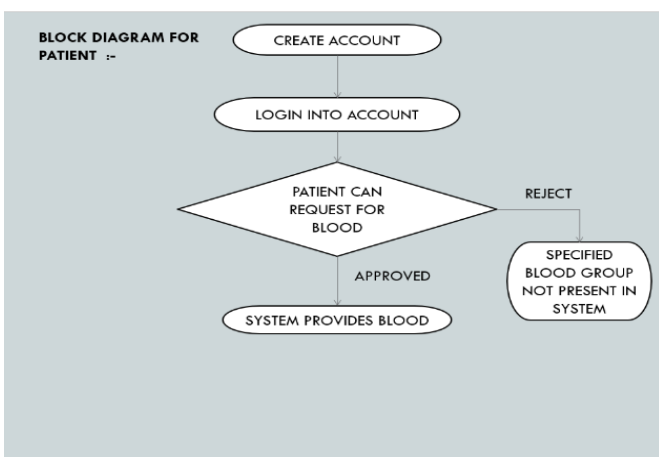
In (2) and(3) block diagram of donor patient. initially they Must create their accounts by filling some personal Information. When account successfully created by the users, they can be accessing their account by login. For that simply they have click on the login button. Afterwards Donor can send the request if its approved they can donate blood else they cannot donate blood .After login the account patient also can make request if the request if the request approved requested Unit of blood reduce from the account otherwise no change in blood stock.
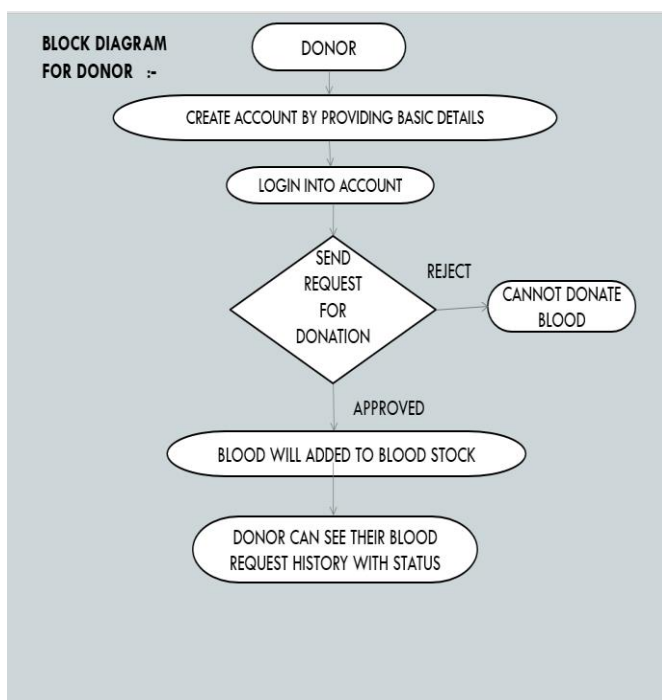
(4)

III. METHODOLOGY

The proposed methodology involves defining the problem statement, collecting relevant data, and designing a website with a web application. The primary goal is to ensure that blood and blood donors are readily available when needed, thus improving access to healthcare services. The website is designed using Html, CSS, Python, and Django language, and it consists of several modules such as patient, donor, and admin. The system's functionalities include donor and patient registration, donor and patient information management, donation request processing, blood request processing, stock management, and monitoring the stock movements.

A crucial component of the blood bank management system is the creation of a comprehensive database, organized into individual tables corresponding to different modules within the system, with each table containing relevant information for its respective module.

ADMIN

This section of the blood bank management system provides a user-friendly interface for the administrator to manage both donor and patient information. The administrator is required to log in using a unique user ID and password, after which they can perform various actions such as updating and maintaining donor and patient details, approving or rejecting requests, and changing their password.

DONOR

A unique user id and password is provided to each member of the Blood Bank System, which identifies them uniquely. Once the member enters the login details, they are given access to a range of options, including changing their password, finding a suitable blood group, viewing their donation history, making a donation request, and logging out. This feature ensures secure and easy access to the Blood Bank System for all members.

PATIENT

A patient needs to register first and then they are given a unique user id and password. In case of an emergency, such as requiring a rare blood group, they can make a blood request through the system. The available options for each patient include changing their password, making a blood request, checking the status of their request, and logging out.

SYSTEM DATABASE

The system maintains a comprehensive database of information related to blood donors, patients, and blood stock, including details such as personal information, blood type, and donation history. Users can easily update their personal

information through the system. The database also tracks the availability of blood stock and the distribution of blood to patients in need.

IV. ADVANTAGES

➢ Accurate donor information: The system can help to maintain accurate records of donor information, including blood type, medical history, and eligibility to donate.

➢ Efficient blood inventory management: The system can help to manage blood inventory levels more effectively, ensuring that there is always an adequate supply of blood for patients in need.

➢ Enhanced safety: The system can help to ensure that blood donations are safe by screening donors for infectious diseases and ensuring that donated blood meets regulatory standards.

➢ Time consumption will be less