

Blood Bank Management System Documentation

Name- Redemption Blood Bank

Submitted by HARDIK CHAVDA

Abstract:

The Blood Bank Management System is a software solution designed to streamline and automate the processes involved in managing blood donations, blood recipients, blood collection camps, and stock details within a blood bank. Implemented in C#, this system provides interface for efficient management of critical blood bank operations.

Key Features:

1. Blood Donor Management:

- Register new blood donors including their personal information, contact details, blood type, and donation history.

2. Blood Recipient Management:

- Record details of blood recipients including their personal information, medical history, and blood requirements.

3. Blood Collection:

- Schedule and organize blood donation camps at various locations.

4. Camp Management:

- Create, schedule, and manage blood donation camps with ease.

5. Stock Details:

- Monitor the stock levels of different blood types available in the blood bank.

System Modules:

1. User Management:

- Admin: Has full access to all functionalities of the system including managing users, donors, recipients, camps, and stock details.

2. Donor Management Module:

- Tracks donor eligibility, donation history, and contact details.

3. Recipient Management Module:

- Facilitates the recording of transfusion details and medical history.

4. Blood Collection Module:

- Manages the scheduling and organization of blood donation camps.
- Records blood collection details including donor information, blood type, and quantity collected.

5. Stock Management Module:

- Monitors and maintains the stock levels of different blood types.

Technology Stack:

- Frontend: C# Windows Forms for the user interface.
- Backend: C# for business logic implementation.
- Database: SQL Server for data storage and retrieval.

Database Table Details

<u>Donors Table</u>		
Column Name	Data Type	Description
Donor_ID	int	Unique identifier for each donor
Name	varchar(50)	Donor's name
Blood_Group	varchar(2)	Donor's blood group (e.g. A+, A-, B+, B-, AB+, AB-, O+, O-)
Gender	enum('M', 'F')	Donor's gender
DateofBirth	date	Donor's date of birth
ContactNumber	varchar(20)	Donor's contact number
Email	varchar(50)	Donor's email
Address	varchar(100)	Donor's address
LastDonationDate	date	Date of donor's last blood donation
<u>Blood Inventory Table</u>		
Blood_ID	int	Unique identifier for each blood unit
Donor_ID	int	Foreign key referencing the Donor ID in the Donors table
CollectionDate	date	Date of blood collection
Expiry_Date	date	Date of blood expiry
Blood_Group	varchar(2)	Blood group of the unit (e.g. A+, A-, B+, B-, AB+, AB-, O+, O-)
VolumeinML	int	Volume of the blood unit in milliliters
Status	enum('available', 'eserved', 'expired')	Current status of the blood unit

<u>Blood Needs Table</u>		
Need_ID	int	Unique identifier for each blood need
Recipient_Name	varchar(50)	Name of the blood recipient
Hospital_Name	varchar(50)	Name of the hospital requesting blood
Blood_Group	varchar(2)	Blood group needed (e.g. A+, A-, B+, B-, AB+, AB-, O+, O-)
QuantityinML	int	Quantity of blood needed in milliliters
NeededByDate	date	Date by which the blood is needed
Status	enum('pending', 'fulfilled', 'cancelled')	Current status of the blood need

Benefits:

- Efficient management of blood donors, recipients, camps, and stock details.
- Improved tracking and monitoring of blood inventory.
- Simplified donor and recipient information management.
- Facilitates timely and accurate blood transfusions for patients in need.

Professor's sing

created and design by

Hardik Charda :)