

Blood Bank Management System Documentation

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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

Donors Table		
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
Date of Birth	date	Donor's date of birth
Contact Number	varchar(20)	Donor's contact number
Email	varchar(50)	Donor's email
Address	varchar(100)	Donor's address
Last Donation Date	date	Date of donor's last blood donation
Blood Inventory Table		
Blood ID	int	Unique identifier for each blood unit
Donor ID	int	Foreign key referencing the Donor ID in the Donors table
Collection Date	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-)
Volume in ML	int	Volume of the blood unit in milliliters
Status	enum('available', 'eserved', 'expired')	Current status of the blood unit

Blood Needs Table		
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-)
Quantity in ML	int	Quantity of blood needed in milliliters
Needed By Date	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.

Hardik Charda :)