GEETANJALI COLLAGE-RAJKOT

Blood Bank Management System Documentation
Name- Redemption Blood Bank

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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
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
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
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

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-)
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

Blood Collection Camp Table

Camp_ID	int	Unique identifier for the blood collection camp
Camp_Name	varchar(50)	Name of the blood collection camp
Camp_Location	varchar(100)	Location of the blood collection camp
Camp_Date	date	Date of the blood collection camp
Camp_Time	time	Time of the blood collection camp
Organizer	varchar(50)	Name of the organization or individual who organized the camp
Contact_Person	varchar(50)	Name of the contact person for the camp
Contact_Phone	varchar(20)	Phone number of the contact person
Contact_Email	varchar(50)	Email address of the contact person
Expected_Donors	int	Expected number of donors for the camp
Blood_Units_Expected	int	Expected number of blood units to be collected
Created_By	varchar(50)	User who created the camp record
Created_Date	datetime	Date and time the camp record was created
Modified_By	varchar(50)	User who last modified the camp record
Modified_Date	datetime	Date and time the camp record was last modified

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.

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