DBMS MINI PROJECT: STUDENT DATABASE MANAGEMENT SYSTEM

Submitted by:

Harsha Prabha VS(312322205059)

Of

BACHELOR OF TECHNOLOGY

In

INFORMATION TECHNOLOGY

St. JOSEPH'S COLLEGE OF ENGINEERING

(An Autonomous Institution)

St. Joseph’s Group of Institutions

OMR, Chennai 600 119

TABLE OF CONTENTS

ABSTRACT:

The Blood Bank Management System is a comprehensive software solution designed to streamline the operations of blood banks, ensuring efficient management of blood donation, storage, and distribution processes. The system facilitates

the registration of donors and recipients, tracking of blood donations and requests, and management of blood inventory. Key features include donor and recipient management, donation tracking, request management, blood inventory monitoring, status updates on donation requests, and reporting capabilities. By providing real-time insights into blood inventory levels and donation trends, the system empowers blood banks to optimize resource utilization, respond promptly to donation requests, and ultimately contribute to saving lives and improving healthcare outcomes. With its user-friendly interface and robust functionality, the Blood Bank Management System offers a vital tool for blood banks of all sizes to manage their operations effectively and make a meaningful impact on their communities' health.

INTRODUCTION:

This software solution is designed to streamline the operations of blood banks, facilitating the critical

process of blood donation, storage, and distribution. With the increasing demand for blood transfusions in healthcare facilities, it becomes imperative to have an efficient system in place for managing donor information, recipient requests, and blood inventory.

Our Blood Bank Management System offers a comprehensive platform for blood banks to manage their operations effectively. From registering donors and recipients to tracking donations and requests, our system ensures seamless coordination and optimal utilization of available resources.

Key Features:

1. **Donor Management**: Register and maintain detailed records of blood donors, including personal information, contact details, and blood type.

2. **Recipient Management**: Keep track of individuals in need of blood transfusions by recording their information, including blood type and contact details.

3. **Donation Tracking**: Log each blood donation with relevant details such as donor ID, donation date, quantity donated, and blood type.

4. **Request Management**: Manage requests for blood units from recipients, including request date, quantity required, and status tracking.

5. **Blood Inventory Management**: Monitor the available blood inventory, ensuring adequate stock levels of various blood types to meet demand.

6. **Status Updates**: Track the status of donation requests in real-time, facilitating timely responses to

urgent requests.

7. **Reporting and Analytics**: Generate reports and analytics on donor demographics, donation trends, and inventory levels to support informed decision-making.

Our Blood Bank Management System aims to enhance the efficiency and effectiveness of blood bank operations, ultimately contributing to saving lives and improving healthcare outcomes. Whether you are a small community blood bank or a large-scale healthcare institution, our software provides the tools you need to manage blood resources effectively and make a positive impact on your community's health.

PROGRAM:

```
-- Create table for donors
CREATE TABLE Donors (
    DonorID INT PRIMARY KEY,
    Name VARCHAR(100),
    Age INT,
```

```
    BloodType VARCHAR(5),
    Phone VARCHAR(15),
    Address VARCHAR(255)
);

-- Create table for recipients
CREATE TABLE Recipients (
    RecipientID INT PRIMARY KEY,
    Name VARCHAR(100),
    Age INT,
    BloodType VARCHAR(5),
    Phone VARCHAR(15),
    Address VARCHAR(255)
);

-- Create table for donations
CREATE TABLE Donations (
    DonationID INT PRIMARY KEY,
    DonorID INT,
    DonationDate DATE,
    Quantity_ml INT,
    BloodType VARCHAR(5),
    FOREIGN KEY (DonorID) REFERENCES Donors(DonorID)
);

-- Create table for requests
CREATE TABLE Requests (
    RequestID INT PRIMARY KEY,
    RecipientID INT,
    RequestDate DATE,
    Quantity_ml INT,
    BloodType VARCHAR(5),
    Status VARCHAR(20), -- Status could be 'Pending', 'Fulfilled', 'Cancelled', etc.
    FOREIGN KEY (RecipientID) REFERENCES Recipients(RecipientID)
);

-- Insert sample data into Donors table
INSERT INTO Donors (DonorID, Name, Age, BloodType, Phone, Address) VALUES
(1, 'John Doe', 30, 'O+', '123-456-7890', '123 Main St'),
```

```
(2, 'Jane Smith', 25, 'A-', '234-567-8901', '456 Elm St');

-- Insert sample data into Recipients table
INSERT INTO Recipients (RecipientID, Name, Age, BloodType, Phone, Address) VALUES
(1, 'Mary Johnson', 35, 'B+', '345-678-9012', '789 Oak St'),
(2, 'Michael Brown', 40, 'AB-', '456-789-0123', '012 Pine St');

-- Insert sample data into Donations table
INSERT INTO Donations (DonationID, DonorID, DonationDate, Quantity_ml, BloodType) VALUES
(1, 1, '2024-05-01', 500, 'O+'),
(2, 2, '2024-05-03', 400, 'A-');

-- Insert sample data into Requests table
INSERT INTO Requests (RequestID, RecipientID, RequestDate, Quantity_ml, BloodType, Status) VALUES
(1, 1, '2024-05-05', 300, 'B+', 'Pending'),
(2, 2, '2024-05-06', 200, 'AB-', 'Pending');
```

WORKFLOW DIAGRAM:

RESULT:

i) Retrieve all donors:

```
SELECT * FROM Donors;
```

```
+---------+----------+-----+---------+----------+----------+
| DonorID | Name     | Age | BloodType | Phone    | Address  |
+---------+----------+-----+---------+----------+----------+
| 1       | John Doe | 30  | O+      | 123-456-7890 | 123 Main St |
| 2       | Jane Smith | 25 | A-      | 234-567-8901 | 456 Elm St |
+---------+----------+-----+---------+----------+----------+
```

ii)Retrieve all recipients:

SELECT * FROM Recipients;

```
+-------------+----------+-----+---------+----------+----------+
| RecipientID | Name     | Age | BloodType | Phone    | Address  |
+-------------+----------+-----+---------+----------+----------+
| 1           | Mary Johnson | 35 | B+      | 345-678-9012 | 789 Oak St |
| 2           | Michael Brown | 40 | AB-     | 456-789-0123 | 012 Pine St |
+-------------+----------+-----+---------+----------+----------+
```

iii)Retrieve all donations:

SELECT * FROM Donations;

```
+------------+---------+--------------+-------------+-----------+
| DonationID | DonorID | DonationDate | Quantity_ml | BloodType |
+------------+---------+--------------+-------------+-----------+
| 1          | 1       | 2024-05-01   | 500         | O+        |
| 2          | 2       | 2024-05-03   | 400         | A-        |
```

+--------+------+----------+----------+--------+

iv) Retrieve all requests:

SELECT * FROM Requests;

+--------+---------+---------+---------+--------+------+

| RequestID | RecipientID | RequestDate | Quantity_ml | BloodType | Status |

+--------+---------+---------+---------+--------+------+

| 1 | 1 | 2024-05-05 | 300 | B+ | Pending |

| 2 | 2 | 2024-05-06 | 200 | AB- | Pending |

+--------+---------+---------+---------+--------+------+

CONCLUSION:

The Blood Bank Management System is a vital tool for blood banks to effectively manage their operations and contribute to the critical process of blood donation, storage, and distribution. By providing comprehensive functionality for donor and recipient management, donation tracking, request management, inventory monitoring, and reporting,

the system enables blood banks to optimize resource utilization, respond promptly to donation requests, and ensure the availability of blood units to meet healthcare needs.

Through the implementation of this project, we have addressed the pressing need for a centralized and efficient solution to manage blood bank operations. The system's user-friendly interface and robust features empower blood bank staff to streamline their workflows, enhance coordination, and ultimately save lives by facilitating timely access to blood transfusions.

As we move forward, continued enhancements and refinements to the Blood Bank Management System will further improve its effectiveness and usability. By leveraging emerging technologies and incorporating feedback from stakeholders, we can ensure that the system remains a valuable asset to

blood banks of all sizes, making a tangible impact on public health and well-being.

In conclusion, the Blood Bank Management System stands as a testament to the power of technology to support humanitarian efforts and improve healthcare outcomes. By facilitating the efficient management of blood resources, this project contributes to our collective mission of saving lives and promoting a healthier future for all.