BLOOD BANK MANAGEMENT SYSTEM

SQL Analysis

CREATE TABLES DEFINE THE SCHEMA FOR EACH TABLE AND CREATE THEM IN MYSQL.

```sql
CREATE DATABASE BloodBankManagement;

CREATE TABLE Donors (
    DonorID INT PRIMARY KEY,
    Name VARCHAR(100),
    Age INT,
    BloodGroup VARCHAR(5),
    LastDonationDate DATE,
    Diseases VARCHAR(255),
    ContactNumber VARCHAR(15)
);
```

```sql
CREATE TABLE Recipients (
    RecipientID INT PRIMARY KEY,
    Name VARCHAR(100),
    Age INT,
    BloodGroupRequired VARCHAR(5),
    HospitalID INT,
    RequestDate DATE,
    QuantityRequired INT,
    FOREIGN KEY (HospitalID) REFERENCES Hospitals(HospitalID)
);
```

```sql
CREATE TABLE Hospitals (
    HospitalID INT PRIMARY KEY,
    HospitalName VARCHAR(100),
    Location VARCHAR(100),
    ContactNumber VARCHAR(15)
);
```

```sql
CREATE TABLE BloodStock (
    StockID INT PRIMARY KEY,
    BloodGroup VARCHAR(5),
    QuantityAvailable INT,
    QualityStatus VARCHAR(20)
);
```

```sql
CREATE TABLE Donations (
    DonationID INT PRIMARY KEY,
    DonorID INT,
    DonationDate DATE,
    QuantityDonated INT,
    FOREIGN KEY (DonorID) REFERENCES Donors(DonorID)
);
```

LIST ALL DONORS WITH THEIR RECENT DONATIONS

```sql
-- list all doners with their recent donation
SELECT d.DonorID , d.Name , d.BloodGroup, d.LastDonationDate, dn.DonationDate, dn.QuantityDonated
FROM Donors d
LEFT JOIN Donations dn ON d.DonorID = dn.DonorID
ORDER BY dn.DonationDate DESC;

```

FIND BLOOD AVAILABILITY FOR EACH GROUP

```sql
-- Find Blood Availability For Each Group
SELECT b.BloodGroup, b.QuantityAvailable, b.QualityStatus
FROM bloodstock b
WHERE b.QualityStatus = 'Safe';
```

LIST HOSPITALS AND THEIR BLOOD REQUESTS

```sql
-- List of Hospitals in their Blood Request

SELECT h.HospitalName, h.Location, r.BloodGroupRequired, r.QuantityRequired, r.RequestDate
FROM Hospitals h
INNER JOIN recipients r ON h.HospitalID = r.HospitalID
ORDER BY r.RequestDate DESC;
```

MATCH RECIPIENTS WITH AVAILABLE BLOOD

```sql
-- match Recipients with Available Blood
SELECT r.RecipientID, r.Name as RecipientName , r.BloodGroupRequired, b.QuantityAvailable
FROM recipients r
INNER JOIN BloodStock b ON r.BloodGroupRequired = b.BloodGroup
WHERE b.QuantityAvailable >= r.QuantityRequired AND b.QualityStatus ='Safe';
```

IDENTIFY ACTIVE DONORS WHO HAVE DONATED RECENTLY

```sql
-- Identify Active Donors Who Have Donated Recently

SELECT d.DonorID , d.Name , d.BloodGroup , d.LastDonationDate
FROM Donors d
WHERE d.LastDonationDate > DATE_SUB(CURDATE(), INTERVAL  3 MONTH);
```

CREATE A COMBINED VIEW

```sql
CREATE VIEW DonarRecipientSummary AS
SELECT
     d.Name AS DonarName,
     d.BloodGroup AS DonorBloodGroup,
     r.Name AS RecipientName,
     r.BloodGroupRequired AS RecipientBloodGroup,
     r.QuantityRequired AS QuantityRequested,
     h.HospitalName AS Hospital
FROM Donors d
JOIN Donations dn ON d.DonorID = dn.DonorID
JOIN recipients r ON r.BloodGroupRequired = d.BloodGroup
JOIN hospitals h ON r.HospitalID = h.HospitalID;


SELECT * From DonarRecipientSummary;
```

THANK YOU