

DBMS Mini Project
Bloodbank Database Management

By

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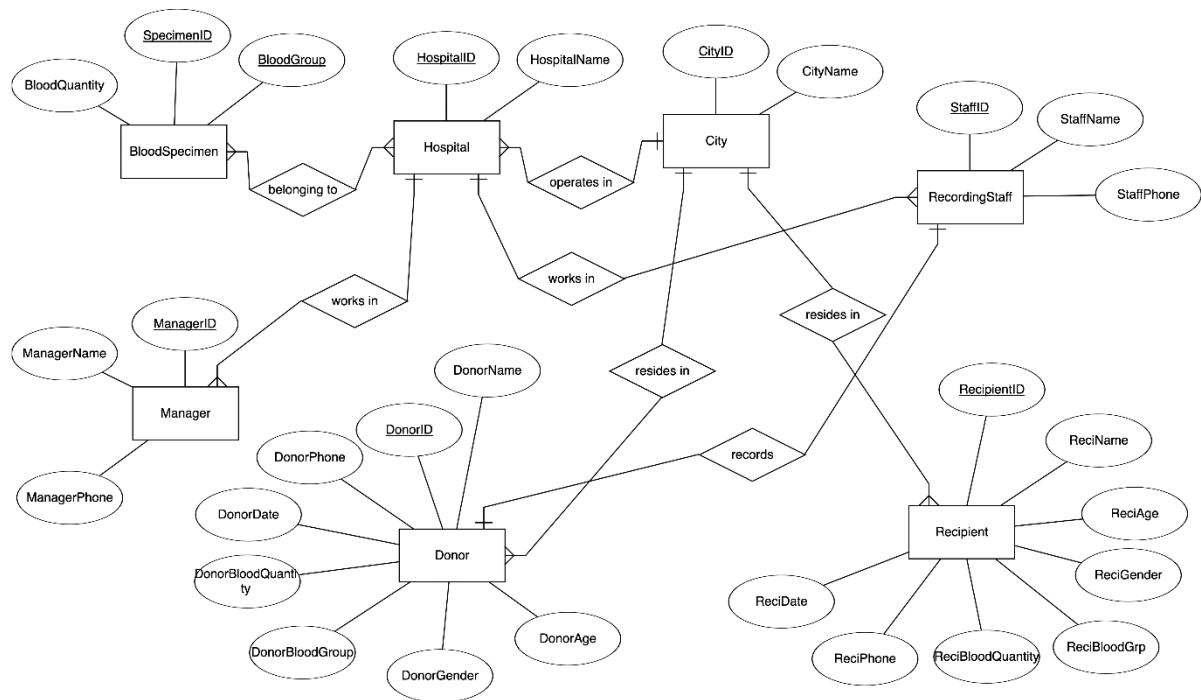
Abstract

The program handles the database for blood donation and it's concerned authorities . It provides a holistic approach to handle the donation process . It provides a platform for each end user to access the database based on their access rights as well as allows manipulation of the database on the same scale . The main end users are managers , recording staff and hospitals . We provide a special table for blood specimen , which keeps a tally on the remaining blood and it's details from the camp .

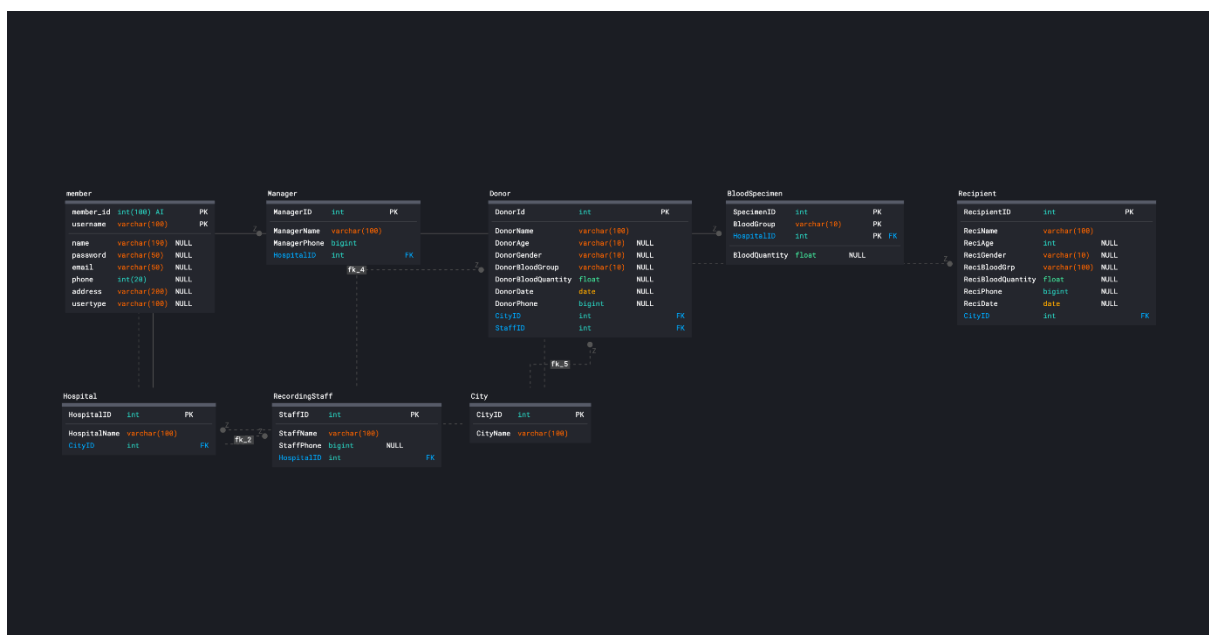
Software and Tools

- ➔ Php for the frontend
- ➔ Mysql for the database

ER Diagram



Relational Schema



The database design is in 3NF

- ➔ 1NF , as there are no multi variate attributes in the database
- ➔ 2NF , as there are no partial dependencies , all the functional dependencies are full dependencies
- ➔ 3NF , as there are no transitive dependencies with non prime attributes , but there are transitive dependencies with prime attributes which satisfy 3NF .

DDL Commands

Member Table:-

```
DROP TABLE IF EXISTS member;
CREATE TABLE member (
  member_id int(100) NOT NULL AUTO_INCREMENT,
  name varchar(190) DEFAULT NULL,
  username varchar(100) NOT NULL,
  password varchar(50) DEFAULT NULL,
  email varchar(50) DEFAULT NULL,
  phone int(20) DEFAULT NULL,
  address varchar(200) DEFAULT NULL,
  usertype varchar(100) DEFAULT NULL,
  PRIMARY KEY (member_id,username)
);
```

City Table:-

```
DROP TABLE IF EXISTS City;
CREATE TABLE City ( CityID int NOT NULL PRIMARY KEY,
                    CityName varchar(100) NOT NULL);
```

Hospital Table:-

```
DROP TABLE IF EXISTS Hospital;
CREATE TABLE Hospital (HospitalID int NOT NULL PRIMARY KEY,
                        HospitalName varchar(100) NOT NULL ,
                        CityID int NOT NULL,
                        FOREIGN KEY(CityID) REFERENCES City(CityID));
```

Recording Staff Table:-

```
create table RecordingStaff (StaffID int NOT NULL PRIMARY KEY,
                             StaffName varchar(100) NOT NULL,
                             StaffPhone bigint,
                             HospitalID int NOT NULL,
                             FOREIGN KEY(HospitalID) REFERENCES
Hospital(HospitalID));
```

Manager Table:-

```
DROP TABLE IF EXISTS Manager;
CREATE TABLE Manager(ManagerID int NOT NULL PRIMARY KEY,
                      ManagerName varchar(100) NOT NULL,
                      ManagerPhone bigint NOT NULL,
                      HospitalID int NOT NULL,
                      FOREIGN KEY(HospitalID) REFERENCES Hospital(HospitalID));
```

Donor Table:-

```
DROP TABLE IF EXISTS Donor;
create table Donor(DonorId int NOT NULL PRIMARY KEY,
                  DonorName varchar(100)NOT NULL,
                  DonorAge varchar(10),
                  DonorGender varchar(10),
                  DonorBloodGroup varchar(10),
                  DonorBloodQuantity float,
                  DonorDate date,
                  DonorPhone bigint,
                  CityID int NOT NULL,
                  StaffID int NOT NULL ,
                  FOREIGN KEY (StaffID) REFERENCES RecordingStaff(StaffID),
                  FOREIGN KEY(CityID) REFERENCES City(CityId));
```

Bloodspecimen Table:-

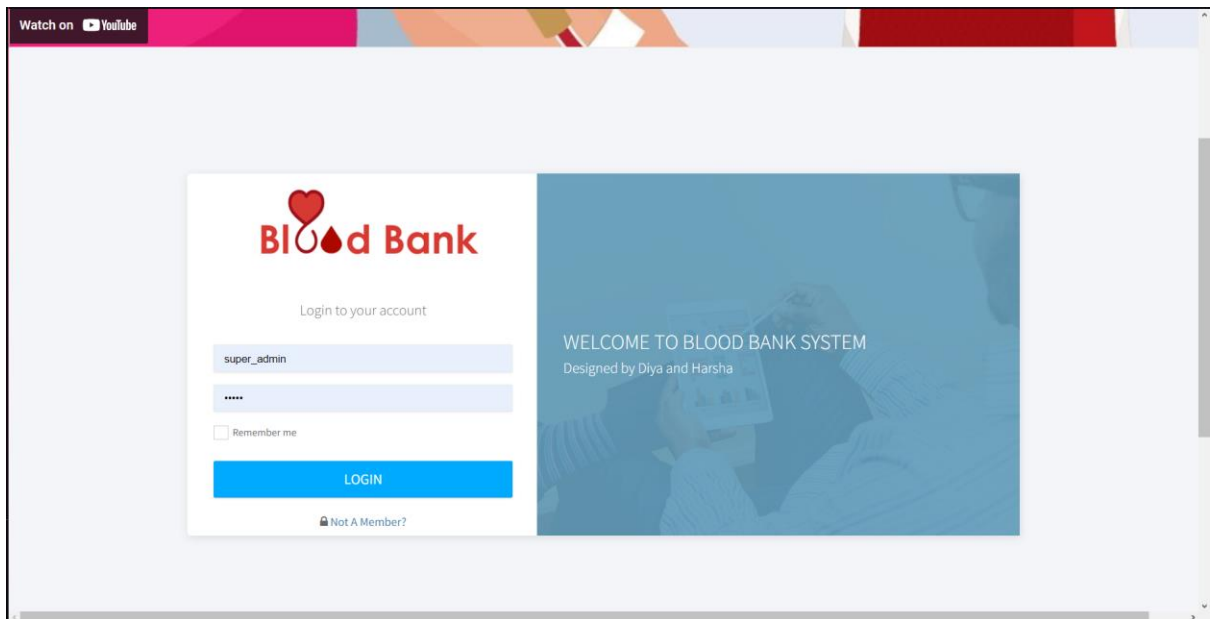
```
DROP TABLE IF EXISTS BloodSpecimen;
create table BloodSpecimen(SpecimenID int NOT NULL,
                           BloodGroup varchar(10) NOT NULL,
                           BloodQuantity float ,
                           HospitalID int NOT NULL,
                           FOREIGN KEY(HospitalID) REFERENCES
Hospital(HospitalID),
                           primary key(SpecimenID,BloodGroup,HospitalID));
```

Recipient Table:-

```
DROP TABLE IF EXISTS Recipient;
create table Recipient(RecipientID int NOT NULL PRIMARY KEY,
                      Reciname varchar(100) NOT NULL,
                      RecAge int ,
                      RecGender varchar(10),
                      RecBloodGrp varchar(100) ,
                      RecBloodQuantity float,
                      RecPhone bigint,
                      RecDate date,
                      CityID int NOT NULL,
                      FOREIGN KEY (CityID) REFERENCES City(CityID));
```

Functionalities And Screenshots

➔ Login Page



This login page verifies credentials based on the member table in the database and allows access as well as their respective user roles .

➔ Manager View

[Logout](#)

- Donors
- Recipients
- Recording Staff
- Blood Specimen

Hello, **super_admin** Manage Donors Here.

[Add new](#)

ID	Name	Age	Gender	Blood Group	Blood Quantity	Date	Phone	City	Staff	
61100	Olivia Bennett	32	F	A+	1.25	2023-05-12	9055512340	1	101100	Delete Edit
61150	Liam Anderson	26	M	B+	1.6	2023-05-10	7023463548	2	101150	Delete Edit
61200	Sophia Carter	30	F	O+	1	2023-05-11	9837647926	3	101200	Delete Edit
61250	Noah Parker	33	M	O+	1.32	2023-05-16	7027884799	4	101250	Delete Edit
61300	Ava Mitchell	28	F	A+	0.8	2023-06-07	9887784870	5	101300	Delete Edit
61350	Jackson Turner	30	M	B+	1.1	2023-06-04	9079845756	6	101350	Delete Edit
61400	Isabella Foster	26	F	O+	0.75	2023-05-20	9087897781	7	101400	Delete Edit
61450	Ethan Harrison	29	M	O+	1.1	2023-06-01	7083471783	8	101450	Delete Edit

➔ Staff View

Logout

Hello, **dbms** Manage Donors Here.

Add new

ID	Name	Age	Gender	Blood Group	Blood Quantity	Date	Phone	City	Staff	
61100	Olivia Bennett	32	F	A+	1.25	2023-05-12	9055512340	1	101100	<div>Delete</div> <div>Edit</div>
61150	Liam Anderson	26	M	B+	1.6	2023-05-10	7023463548	2	101150	<div>Delete</div> <div>Edit</div>
61200	Sophia Carter	30	F	O+	1	2023-05-11	9837647926	3	101200	<div>Delete</div> <div>Edit</div>
61250	Noah Parker	33	M	O+	1.32	2023-05-16	7027884799	4	101250	<div>Delete</div> <div>Edit</div>
61300	Ava Mitchell	28	F	A+	0.8	2023-06-07	9887784870	5	101300	<div>Delete</div> <div>Edit</div>
61350	Jackson Turner	30	M	B+	1.1	2023-06-04	9079845756	6	101350	<div>Delete</div> <div>Edit</div>
61400	Isabella Foster	26	F	O+	0.75	2023-05-20	9087897781	7	101400	<div>Delete</div> <div>Edit</div>
61450	Ethan Harrison	29	M	O+	1.1	2023-06-01	7083471783	8	101450	<div>Delete</div> <div>Edit</div>
61500	Mia Reynolds	26	F	AB-	1.5	2023-05-22	9934547832	9	101500	<div>Delete</div> <div>Edit</div>

These two views are created with the help of the member table as well as the user roles concept in sql . This way the website maintains the hierarchy through the bloodbank.

➔ The Tables

Donor

Logout

Donors

Recipients

Recording Staff

Blood Specimen

Hello, **super_admin** Manage Donors Here.

Add new

ID	Name	Age	Gender	Blood Group	Blood Quantity	Date	Phone	City	Staff	
61100	Olivia Bennett	32	F	A+	1.25	2023-05-12	9055512340	1	101100	<div>Delete</div> <div>Edit</div>
61150	Liam Anderson	26	M	B+	1.6	2023-05-10	7023463548	2	101150	<div>Delete</div> <div>Edit</div>
61200	Sophia Carter	30	F	O+	1	2023-05-11	9837647926	3	101200	<div>Delete</div> <div>Edit</div>
61250	Noah Parker	33	M	O+	1.32	2023-05-16	7027884799	4	101250	<div>Delete</div> <div>Edit</div>
61300	Ava Mitchell	28	F	A+	0.8	2023-06-07	9887784870	5	101300	<div>Delete</div> <div>Edit</div>
61350	Jackson Turner	30	M	B+	1.1	2023-06-04	9079845756	6	101350	<div>Delete</div> <div>Edit</div>
61400	Isabella Foster	26	F	O+	0.75	2023-05-20	9087897781	7	101400	<div>Delete</div> <div>Edit</div>
61450	Ethan Harrison	29	M	O+	1.1	2023-06-01	7083471783	8	101450	<div>Delete</div> <div>Edit</div>
61500	Mia Reynolds	26	F	AB-	1.5	2023-05-22	9934547832	9	101500	<div>Delete</div> <div>Edit</div>
61550	Aiden Sullivan	30	M	B+	1	2023-06-10	7098475980	10	101550	<div>Delete</div> <div>Edit</div>

Recipient

Logout

Donors

Recipients

Recording Staff

Blood Specimen

Hello, [super_admin](#) Manage Recipients Here.

Add new

ID	Name	Age	Gender	Blood Group	Blood Quantity	Date	Phone	City	
1001	Sara Sharma	28	Female	A+	2	2023-05-15	9876543211	1	<div>DeleteEdit</div>
1002	Raj Singh	35	Male	B+	1.5	2023-06-20	8765432100	2	<div>DeleteEdit</div>
1003	Aisha Patel	40	Female	O+	2.3	2023-07-10	7654321099	3	<div>DeleteEdit</div>
1004	Kabir Kapoor	25	Male	O+	1.8	2023-08-05	6543210988	4	<div>DeleteEdit</div>
1005	Zara Gupta	32	Female	A+	2.5	2023-09-12	5432109877	5	<div>DeleteEdit</div>
1006	Arjun Kumar	22	Male	B+	1.7	2023-10-18	4321098766	6	<div>DeleteEdit</div>
1007	Ananya Sharma	38	Female	O+	2.1	2023-11-25	3210987655	7	<div>DeleteEdit</div>
1008	Karan Yadav	29	Male	O+	1.9	2023-12-30	2109876544	8	<div>DeleteEdit</div>

Recording Staff

Logout

Donors

Recipients

Recording Staff

Blood Specimen

Hello, [super_admin](#) Manage Staff Here.

Add new

StaffID	Name	Phone	HospitalID	
101100	Harper Bennett	9078411847	1000	<div>DeleteEdit</div>
101150	Logan Anderson	9834720824	2000	<div>DeleteEdit</div>
101200	Avery Carter	7024182462	3000	<div>DeleteEdit</div>
101250	Mason Parker	9023467912	4000	<div>DeleteEdit</div>
101300	Addison Mitchell	9927423478	5000	<div>DeleteEdit</div>
101350	Riley Turner	9932128455	6000	<div>DeleteEdit</div>
101400	Quinn Foster	7047237512	7000	<div>DeleteEdit</div>
101450	Cameron Harrison	9878467853	8000	<div>DeleteEdit</div>
101500	Morgan Bennett	9841515450	9000	<div>DeleteEdit</div>

Bloodspecimen

Logout

Donors

Recipients

Recording Staff

Blood Specimen

Hello, **super_admin** Manage Blood Specimen Here.

Initialise

Show 10 entries

Search:

SpecimenID	BloodGroup	BloodQuantity	HospitalID
701	A+	3.75	1000
702	A-		1000
703	B+		1000
704	B-		1000
705	O+		1000
706	O-		1000
707	AB+		1000
708	AB-		1000
709	A+		2000
710	A-		2000

➔ Initialization code snippets

```
➔ INSERT INTO member values
➔      (1,'admin','super_admin','admin',NULL,NULL,NULL,'admin'),
➔      (2,'diya','diyamaria','trial',NULL,NULL,NULL,'staff');
```

```
INSERT INTO City values
      (001,'Delhi'),
      (002,'Mumbai'),
      (003,'Kochi'),
      (004,'Chennai'),
      (005,'Pune'),
      (006,'Jaipur'),
      (007,'Kolkata'),
      (008,'Hyderabad'),
      (009,'Ahmedabad'),
      (010,'Bangalore');

INSERT INTO Hospital values
      (1000,'Grace Mercy General Hospital',001),
      (2000,'Hope Springs Medical Center',002),
      (3000,'Sunrise Health and Wellness Hospital',003),
      (4000,'Harmony Care Hospital',004),
      (5000,'Evergreen Community Medical Center',005),
      (6000,'Serenity Memorial Hospital',006),
      (7000,'Beacon Hill Medical Center',007),
      (8000,'Unity Regional Hospital',008),
      (9000,'Oasis Medical Plaza',009),
      (10000,'Tranquil Grove Healthcare Center',010);

INSERT INTO RecordingStaff values
      (101100,'Harper Bennett',9078411847,1000),
      (101150,'Logan Anderson',9834720824,2000),
```



```
(101200, 'Avery Carter', 7024182462, 3000),
(101250, 'Mason Parker', 9023467912, 4000),
(101300, 'Addison Mitchell', 9927423478, 5000),
(101350, 'Riley Turner', 9932128455, 6000),
(101400, 'Quinn Foster', 7047237512, 7000),
(101450, 'Cameron Harrison', 9878467853, 8000),
(101500, 'Morgan Reynolds', 9841515460, 9000),
(101550, 'Jordan Sullivan', 9024792313, 10000);
```

INSERT INTO Manager values

```
(1100, 'Alice Johnson', 5551234, 1000),
(1150, 'Bob Smith', 5555678, 2000),
(1200, 'Carol Davis', 5559876, 3000),
(1250, 'David Miller', 5554321, 4000),
(1300, 'Emily Wilson', 5558765, 5000),
(1350, 'Frank Taylor', 5552345, 6000),
(1400, 'Grace Anderson', 5556789, 7000),
(1450, 'Henry Parker', 5553456, 8000),
(1500, 'Isabel Brown', 5557890, 9000),
(1550, 'Jack Harris', 5556543, 10000);
```

INSERT INTO Donor values

```
(61100, 'Olivia Bennett', '32', 'F', 'A+', 1.25, '2023-05-12', 9055512340, 1, 101100),
(61150, 'Liam Anderson', '26', 'M', 'B+', 1.6, '2023-05-10', 7023463548, 2, 101150),
(61200, 'Sophia Carter', '30', 'F', 'O+', 1.0, '2023-05-11', 9837647926, 3, 101200),
(61250, 'Noah Parker', '33', 'M', 'O+', 1.32, '2023-05-16', 7027884799, 4, 101250),
(61300, 'Ava Mitchell', '28', 'F', 'A+', 0.8, '2023-06-07', 9887784870, 5, 101300),
(61350, 'Jackson Turner', '30', 'M', 'B+', 1.1, '2023-06-04', 9079845756, 6, 101350),
(61400, 'Isabella Foster', '26', 'F', 'O+', 0.75, '2023-05-20', 9087897781, 7, 101400),
(61450, 'Ethan Harrison', '29', 'M', 'O+', 1.1, '2023-06-01', 7083471783, 8, 101450),
(61500, 'Mia Reynolds', '26', 'F', 'AB-', 1.5, '2023-05-22', 9934547832, 9, 101500),
(61550, 'Aiden Sullivan', '30', 'M', 'B+', 1.0, '2023-06-10', 7098475980, 10, 101550);
```

INSERT INTO Recipient VALUES

```
(1001, 'Sara Sharma', 28, 'Female', 'A+', 2.0, 9876543211, '2023-05-15', 1),
(1002, 'Raj Singh', 35, 'Male', 'B+', 1.5, 8765432100, '2023-06-20', 2),
(1003, 'Aisha Patel', 40, 'Female', 'O+', 2.3, 7654321099, '2023-07-10', 3),
```

```
(1004, 'Kabir Kapoor', 25, 'Male', 'O+', 1.8, 6543210988,
'2023-08-05', 4),
(1005, 'Zara Gupta', 32, 'Female', 'A+', 2.5, 5432109877,
'2023-09-12', 5),
(1006, 'Arjun Kumar', 22, 'Male', 'B+', 1.7, 4321098766,
'2023-10-18', 6),
(1007, 'Ananya Sharma', 38, 'Female', 'O+', 2.1, 3210987655,
'2023-11-25', 7),
(1008, 'Karan Yadav', 29, 'Male', 'O+', 1.9, 2109876544,
'2023-12-30', 8),
(1009, 'Pooja Verma', 33, 'Female', 'AB-', 1.6, 1098765433,
'2024-01-14', 9),
(1010, 'Rohan Kumar', 27, 'Male', 'B+', 2.2, 9876543210,
'2024-02-22', 10);
```

➔ Insertion

Add Donor

Donor ID:

61100

Donor Name:

Olivia Bennett

Donor Age:

32

Donor Gender:

F

Donor Blood Group:

A+

Donor Blood Quantity:

1.25

Donor Date:

05-12-2023



Donor Phone:

9055512340

Olivia Bennett

Donor Age:

32

Donor Gender:

F

Donor Blood Group:

A+

Donor Blood Quantity:

1.25

Donor Date:

05-12-2023

Donor Phone:

9055512340

City ID:

1

Staff ID:

101100

Submit

Logout

Donors

Recipients

Recording Staff

Blood Specimen

Hello, [super_admin](#) Manage Donors Here.

Add new

ID	Name	Age	Gender	Blood Group	Blood Quantity	Date	Phone	City	Staff		
61100	Olivia Bennett	32	F	A+	1.25	2023-12-05	9055512340	1	101100	Delete	Edit
61150	Liam Anderson	26	M	B+	1.6	2023-05-10	7023463548	2	101150	Delete	Edit
61200	Sophia Carter	30	F	O+	1	2023-05-11	9837647926	3	101200	Delete	Edit
61250	Noah Parker	33	M	O+	1.32	2023-05-16	7027884799	4	101250	Delete	Edit
61300	Ava Mitchell	28	F	A+	0.8	2023-06-07	9887784870	5	101300	Delete	Edit
61350	Jackson Turner	30	M	B+	1.1	2023-06-04	9079845756	6	101350	Delete	Edit
61400	Isabella Foster	26	F	O+	0.75	2023-05-20	9087897781	7	101400	Delete	Edit
61450	Ethan Harrison	29	M	O+	1.1	2023-06-01	7083471783	8	101450	Delete	Edit

Here , we can see the insertion operation being used . This operation is been shown for donor in the above screenshots but we can also add entries through the front end for the recipients as well the . The staff user can only access the donor table , while the manager can access all tables .

Add Recipient

Recipient ID:

Recipient Name:

Recipient Age:

Recipient Gender:

Recipient Blood Group:

Recipient Blood Quantity:

Recipient Date:

dd-mm-yyyy

Recipient Phone:

Add Recording Staff

Staff ID:

Staff Name:

Staff Phone:

Hospital ID:

Submit

➔ Deletion

localhost says

Are you sure you want to delete this donor?

OKCancel

Logout

Donors

Recipients

Recording Staff

Blood Specimen

Hello, **super_admin** Manage Donors Here.

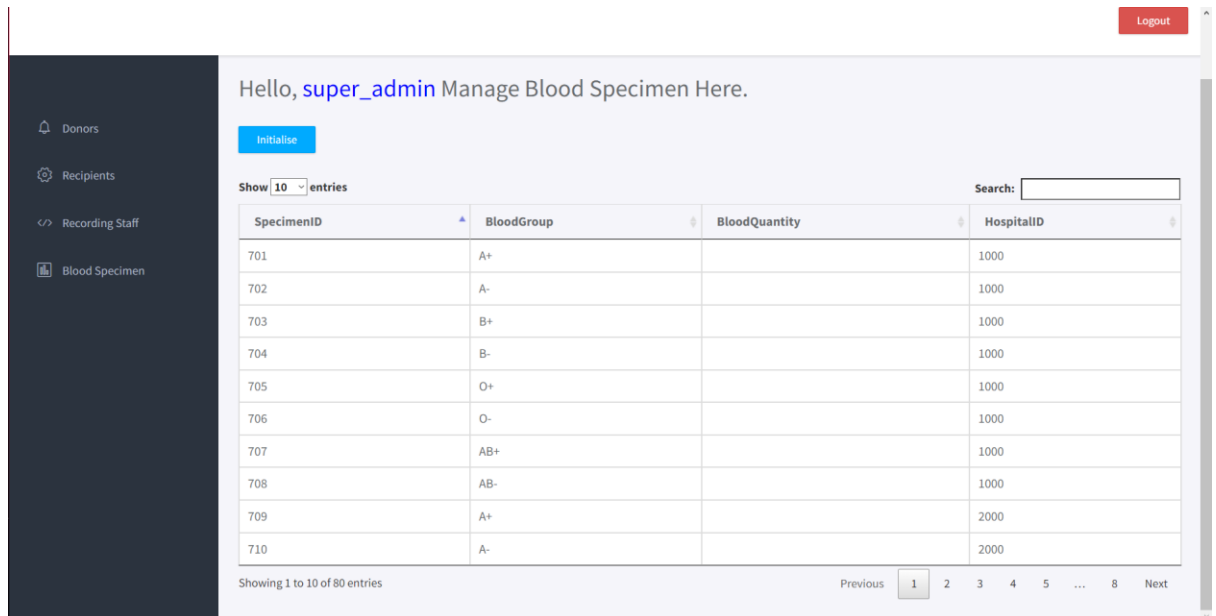
Add new

ID	Name	Age	Gender	Blood Group	Blood Quantity	Date	Phone	City	Staff	
61100	Olivia Bennett	32	F	A+	1.25	2023-05-12	9055512340	1	101100	DeleteEdit
61150	Liam Anderson	26	M	B+	1.6	2023-05-10	7023463548	2	101150	DeleteEdit
61200	Sophia Carter	30	F	O+	1	2023-05-11	9837647926	3	101200	DeleteEdit
61250	Noah Parker	33	M	O+	1.32	2023-05-16	7027884799	4	101250	DeleteEdit
61300	Ava Mitchell	28	F	A+	0.8	2023-06-07	9887784870	5	101300	DeleteEdit
61350	Jackson Turner	30	M	B+	1.1	2023-06-04	9079845756	6	101350	DeleteEdit
61400	Isabella Foster	26	F	O+	0.75	2023-05-20	9087897781	7	101400	DeleteEdit
61450	Ethan Harrison	29	M	O+	1.1	2023-06-01	7083471783	8	101450	DeleteEdit

➔ Initialize

This functionality initializes the bloodspecimen table according to the respective blood quantities from the donor and recipient table.

The function uses update , join , nested queries , aggregate function (SUM) as well as procedures



Hello, [super_admin](#) Manage Blood Specimen Here.

[Initialise](#)

Show entries

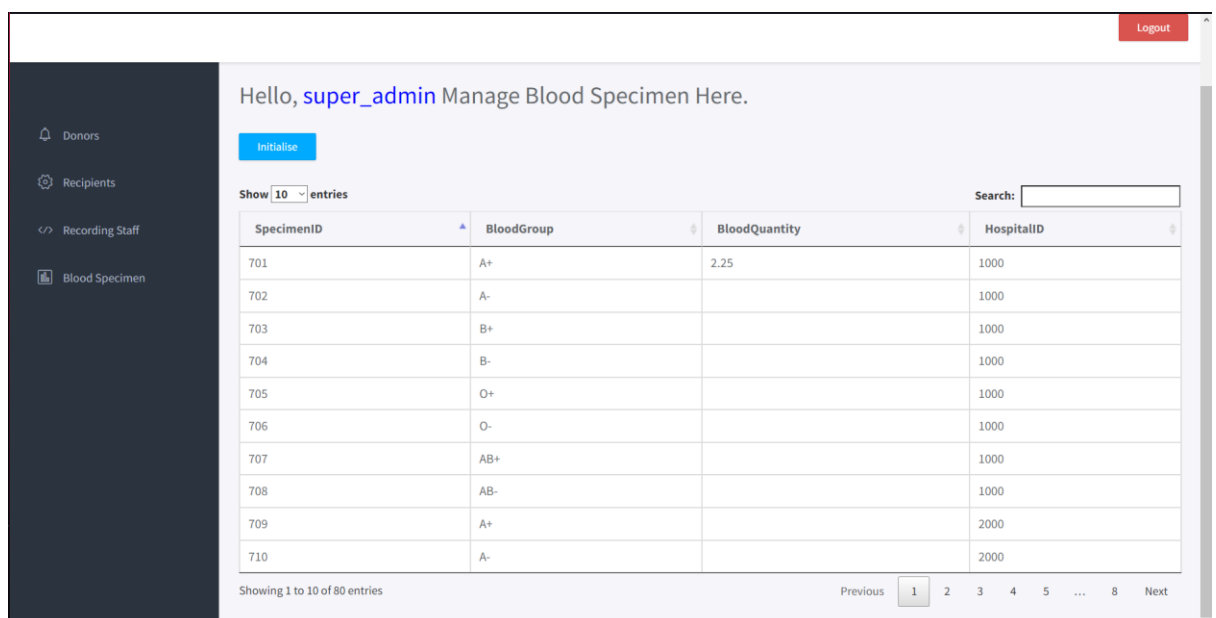
Search:

SpecimenID	BloodGroup	BloodQuantity	HospitalID
701	A+		1000
702	A-		1000
703	B+		1000
704	B-		1000
705	O+		1000
706	O-		1000
707	AB+		1000
708	AB-		1000
709	A+		2000
710	A-		2000

Showing 1 to 10 of 80 entries

Previous [1](#) [2](#) [3](#) [4](#) [5](#) ... [8](#) Next

Notice how the blood quantity attribute for this table is empty at the moment
After we click on the initialize button it update on the procedure call



Hello, [super_admin](#) Manage Blood Specimen Here.

[Initialise](#)

Show entries

Search:

SpecimenID	BloodGroup	BloodQuantity	HospitalID
701	A+	2.25	1000
702	A-		1000
703	B+		1000
704	B-		1000
705	O+		1000
706	O-		1000
707	AB+		1000
708	AB-		1000
709	A+		2000
710	A-		2000

Showing 1 to 10 of 80 entries

Previous [1](#) [2](#) [3](#) [4](#) [5](#) ... [8](#) Next

We can see the first row being updated with the sum of blood quantities based from the donor table , mentioned above.

Code snippet:

DELIMITER \$\$

CREATE PROCEDURE update_on_bloodspecimen()

```

BEGIN
UPDATE BloodSpecimen BS
SET BS.BloodQuantity = (
    SELECT SUM(D.DonorBloodQuantity)
    FROM Donor D
    INNER JOIN RecordingStaff RS ON D.StaffID = RS.StaffID
    WHERE D.DonorBloodGroup = BS.BloodGroup AND RS.HospitalID = BS.HospitalID);
END $$
DELIMITER ;

```

➔ Other procedures and their code snippets

```

DELIMITER $$
CREATE PROCEDURE find_Donor_rs(IN id INT)
BEGIN
    SELECT
DonorName,DonorAge,DonorGender,DonorBloodGroup,DonorBloodQuantity,DonorDate,DonorPhone
    FROM Donor
    where StaffID=id;
END $$
DELIMITER;

```

```

DELIMITER $$
CREATE PROCEDURE find_Donor_admin(IN id INT)
BEGIN
    SELECT *
    FROM Donor
    WHERE DonorId=id;
END $$
DELIMITER;



```













```

DELIMITER $$
CREATE PROCEDURE findall_Donor_admin()
BEGIN
    SELECT *
    FROM Donor;
END $$
DELIMITER;

```

Routines










☐ Check all  Export  Drop

	Name	Type	Returns	
<input type="checkbox"/>	find_Donor_rs	PROCEDURE		 Edit  Execute  Export  Drop
<input type="checkbox"/>	findall_Donor_admin	PROCEDURE		 Edit  Execute  Export  Drop
<input type="checkbox"/>	update_on_bloodspecimen	PROCEDURE		 Edit  Execute  Export  Drop

The above procedures are also used to differentiate between the users .

→ Triggers

Now we only have triggers left

Triggers 					
<input type="checkbox"/> Check all  Export  Drop					
	Name	Table	Time	Event	
<input type="checkbox"/>	decrement_blood_quantity	recipient	AFTER	INSERT	 Edit  Export  Drop
<input type="checkbox"/>	increment_blood_quantity	donor	AFTER	INSERT	 Edit  Export  Drop

we have two triggers that help with the blood quantity attribute of the bloodspecimen table. These triggers dynamically update the blood quantity on the bloodspecimen table , with every insert to the donor table as well as the recipient table . It increments the quantity on insert into donor and decrements on insert into recipient.

Logout

Donors

Recipients

Recording Staff

Blood Specimen

Hello, [super_admin](#) Manage Blood Specimen Here.

Initialise

Show

10

 entries

Search:

SpecimenID	BloodGroup	BloodQuantity	HospitalID
701	A+	2.25	1000
702	A-		1000
703	B+		1000
704	B-		1000
705	O+		1000
706	O-		1000
707	AB+		1000
708	AB-		1000
709	A+		2000
710	A-		2000

Showing 1 to 10 of 80 entries

Previous

1

2345...8Next

Before insert into donor and recipient

Logout

Donors

Recipients

Recording Staff

Blood Specimen

Hello, [super_admin](#) Manage Blood Specimen Here.

Initialise

Show

10

 entries

Search:

SpecimenID	BloodGroup	BloodQuantity	HospitalID
701	A+	2.25	1000
702	A-		1000
703	B+		1000
704	B-		1000
705	O+		1000
706	O-		1000
707	AB+		1000
708	AB-		1000
709	A+		2000
710	A-		2000

Showing 1 to 10 of 80 entries

Previous

1

2345...8Next

After insert into donor

Logout

Donors

Recipients

Recording Staff

Blood Specimen

Hello, [super_admin](#) Manage Donors Here.

Add new

ID	Name	Age	Gender	Blood Group	Blood Quantity	Date	Phone	City	Staff	
61100	Olivia Bennett	32	F	A+	1.25	2023-12-05	9055512340	1	101100	<div>DeleteEdit</div>
61101	ben	23	Male	A+	2	2023-11-09	24974797	1	101100	<div>DeleteEdit</div>
61150	Liam Anderson	26	M	B+	1.6	2023-05-10	7023463548	2	101150	<div>DeleteEdit</div>
61200	Sophia Carter	30	F	O+	1	2023-05-11	9837647926	3	101200	<div>DeleteEdit</div>
61250	Noah Parker	33	M	O+	1.32	2023-05-16	7027884799	4	101250	<div>DeleteEdit</div>
61300	Ava Mitchell	28	F	A+	0.8	2023-06-07	9887784870	5	101300	<div>DeleteEdit</div>
61350	Jackson Turner	30	M	B+	1.1	2023-06-04	9079845756	6	101350	<div>DeleteEdit</div>
61400	Isabella Foster	26	F	O+	0.75	2023-05-20	9087897781	7	101400	<div>DeleteEdit</div>

we have inserted “ben”

Logout

Donors

Recipients

Recording Staff

Blood Specimen

Hello, [super_admin](#) Manage Blood Specimen Here.

Initialise

Show 10 entries

Search:

SpecimenID	BloodGroup	BloodQuantity	HospitalID
701	A+	4.25	1000
702	A-		1000
703	B+		1000
704	B-		1000
705	O+		1000
706	O-		1000
707	AB+		1000
708	AB-		1000
709	A+		2000
710	A		2000

and accordingly the quantity for the A+ blood group for that particular hospital has incremented itself.

Now to decrement it by insert on recipient:

ID	Name	Age	Gender	Blood Group	Blood Quantity	Date	Phone	City		
1000	ben	23	Male	A+	3	2023-11-22	98498489127	1	Delete	Edit
1001	Sara Sharma	28	Female	A+	2	2023-05-15	9876543211	1	Delete	Edit
1002	Raj Singh	35	Male	B+	1.5	2023-06-20	8765432100	2	Delete	Edit
1003	Aisha Patel	40	Female	O+	2.3	2023-07-10	7654321099	3	Delete	Edit
1004	Kabir Kapoor	25	Male	O+	1.8	2023-08-05	6543210988	4	Delete	Edit
1005	Zara Gupta	32	Female	A+	2.5	2023-09-12	5432109877	5	Delete	Edit
1006	Arjun Kumar	22	Male	B+	1.7	2023-10-18	4321098766	6	Delete	Edit
1007	Ananya Sharma	38	Female	O+	2.1	2023-11-25	3210987655	7	Delete	Edit

now we have added a “ben” to our recipient table

Let’s check the bloodspecimen table

SpecimenID	BloodGroup	BloodQuantity	HospitalID
701	A+	1.25	1000
702	A-		1000
703	B+		1000
704	B-		1000
705	O+		1000
706	O-		1000
707	AB+		1000
708	AB-		1000
709	A+		2000
710	A-		2000

the quantity has been decreased accordingly

Code snippet

Trigger 1

DELIMITER //

```
CREATE TRIGGER increment_blood_quantity
AFTER INSERT ON Donor
FOR EACH ROW
BEGIN
    UPDATE BloodSpecimen
```

```

SET BloodQuantity = BloodQuantity + NEW.DonorBloodQuantity
WHERE HospitalID = (
    SELECT HospitalID
    FROM RecordingStaff
    WHERE StaffID = NEW.StaffID
) AND BloodGroup = NEW.DonorBloodGroup;
END //

DELIMITER ;

```

Trigger 2

```

BEGIN
    UPDATE BloodSpecimen BS
    INNER JOIN City C ON BS.BloodGroup = NEW.ReciBloodGrp
    SET BS.BloodQuantity = GREATEST(0, BS.BloodQuantity - NEW.ReciBloodQuantity)
    WHERE C.CityID = NEW.CityID AND BS.BloodGroup = NEW.ReciBloodGrp;
END

```

➔ Users and Roles

Users having access to "db_bloodbank.bloodspecimen"					
<input type="checkbox"/>	User name	Host name	Type	Privileges	Grant Action
<input type="checkbox"/>	Manager		wildcard: db_bloodbank	SELECT, INSERT, UPDATE, DELETE	No
<input type="checkbox"/>	diyamaria	localhost	global	SELECT, INSERT, UPDATE, DELETE	Yes
<input type="checkbox"/>	root	127.0.0.1	global	ALL PRIVILEGES	Yes
<input type="checkbox"/>	root	:::1	global	ALL PRIVILEGES	Yes
<input type="checkbox"/>	root	localhost	global	ALL PRIVILEGES	Yes
<input type="checkbox"/>	super_admin	localhost	global	SELECT, INSERT, UPDATE, DELETE	Yes
<input type="checkbox"/>			database-specific	SELECT, INSERT, UPDATE, DELETE, CREATE, DROP, INDEX, ALTER, CREATE TEMPORARY TABLES, CREATE VIEW, EVENT, TRIGGER, SHOW VIEW, CREATE ROUTINE, ALTER ROUTINE, EXECUTE	Yes
<input type="checkbox"/> Check all With selected: Export					

Code

```
CREATE ROLE staff;
```

```
-- Grant privileges to the Staff Role (only on the Donor table)
```

```
GRANT SELECT, INSERT, UPDATE, DELETE ON db_bloodbank.Donor TO staff;
```

```
-- Create Manager Role
```

```
CREATE ROLE manager;
```

```
-- Grant privileges to the Manager Role (on all tables)
```

```
GRANT SELECT, INSERT, UPDATE, DELETE ON db_bloodbank.* TO manager;
```