Green University of Bangladesh
Department of Computer Science and Engineering (CSE)
Faculty of Sciences and Engineering
Semester: (Spring, Year:2022), B.Sc. in CSE (Day)

Course Title: Database System Lab
Course Code: CSE 210 Section: 202 (DA)

Lab Project Name: ‘’Blood Donation Management System’’

Student Details

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Submission Date : 12 May 2022

Course Teacher’s Name : Mst. Babe SUltana

[For Teachers use only: Don’t Write Anything inside this box]

Lab Project Status

Marks: …… **Signature: .....**

Comments: ..... **Date: .....**

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Chapter 1

Introduction

1.1 Introduction

A person donates blood voluntarily so that it can be used for future transfusions when they are needed in hospitals for treatment procedures that require them. Whole blood (blood obtained straight from the body) or particular blood components such as red blood cells, white blood cells, plasma, and platelets can be donated. Blood banks are frequently involved in the collection of blood as well as other procedures such as stock management, approval of blood requests, and updating donation information. It also oversees the management of blood inventories and other blood bank-related tasks.

1.2 Design Goals/Objective

The purpose of this system is:

- To simplify and automate the process of searching for blood.
- To improve old system, increase the efficiency of the database.
- Give chances to the public to discover more about blood donner.

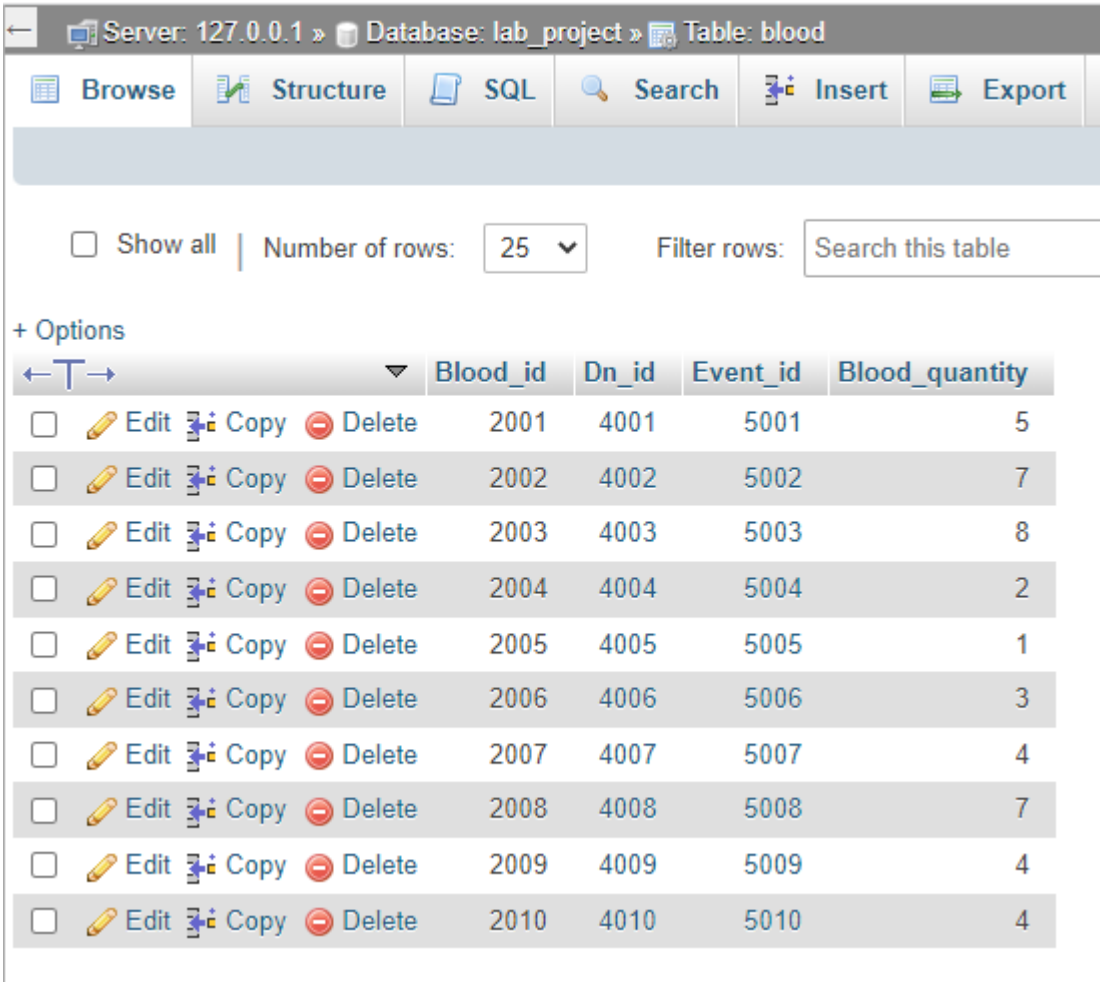
Chapter 2

Design/Development/Implementation of the Project

2.1 Implementation of the project

```
--
-- Database: `lab_project`
--

-- --------------------------------------------------------

--
-- Table structure for table `blood`
--


CREATE TABLE `blood` (
  `Blood_id` int(11) NOT NULL,
  `Dn_id` int(11) DEFAULT NULL,
  `Event_id` int(11) DEFAULT NULL,
  `Blood_quantity` int(11) DEFAULT NULL
) ;

INSERT INTO `blood` (`Blood_id`, `Dn_id`, `Event_id`, `Blood_quantity`) VALUES
(2001, 4001, 5001, 5),
(2002, 4002, 5002, 7),
(2003, 4003, 5003, 8),
(2004, 4004, 5004, 2),
(2005, 4005, 5005, 1),
```

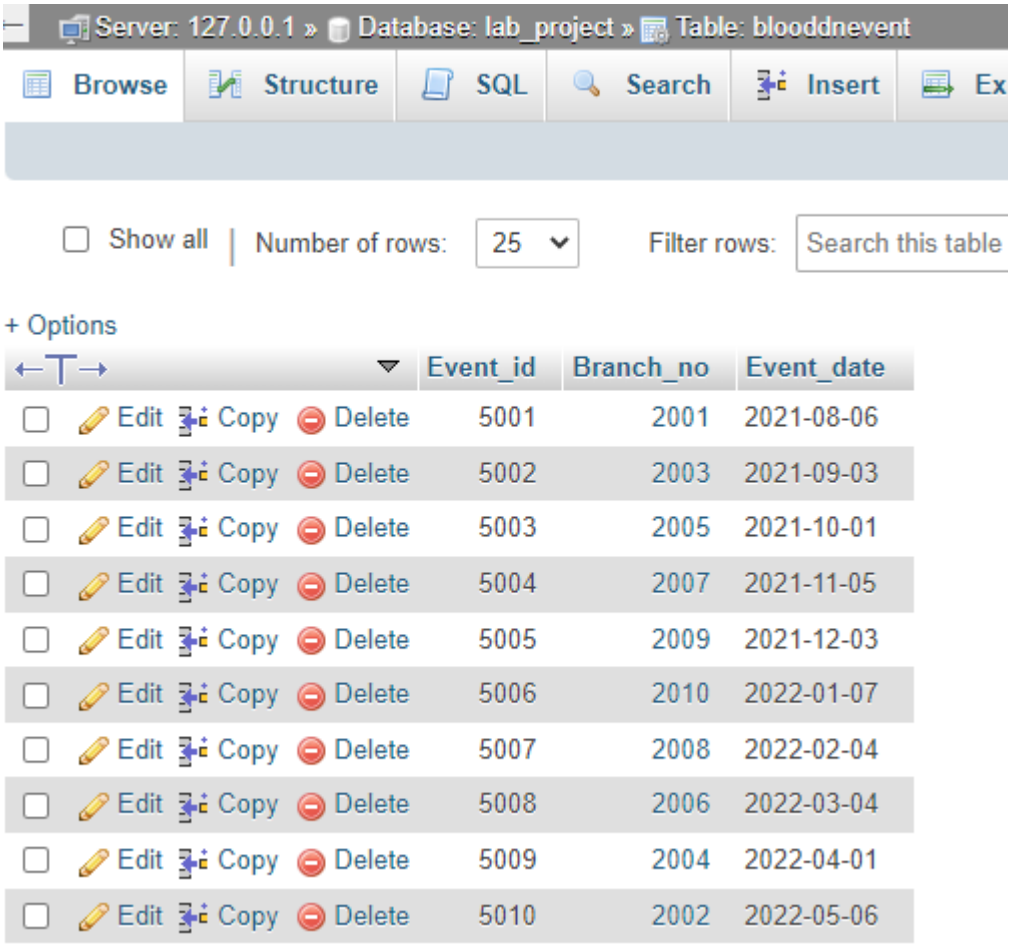
```
(2006, 4006, 5006, 3),
(2007, 4007, 5007, 4),
(2008, 4008, 5008, 7),
(2009, 4009, 5009, 4),
(2010, 4010, 5010, 4);

-- --------------------------------------------------------
```



	Blood_id	Dn_id	Event_id	Blood_quantity
Edit Copy Delete	2001	4001	5001	5
Edit Copy Delete	2002	4002	5002	7
Edit Copy Delete	2003	4003	5003	8
Edit Copy Delete	2004	4004	5004	2
Edit Copy Delete	2005	4005	5005	1
Edit Copy Delete	2006	4006	5006	3
Edit Copy Delete	2007	4007	5007	4
Edit Copy Delete	2008	4008	5008	7
Edit Copy Delete	2009	4009	5009	4
Edit Copy Delete	2010	4010	5010	4

```
--
-- Table structure for table `blooddnevent`
--

CREATE TABLE `blooddnevent` (
  `Event_id` int(11) NOT NULL,
  `Branch_no` int(11) DEFAULT NULL,
```

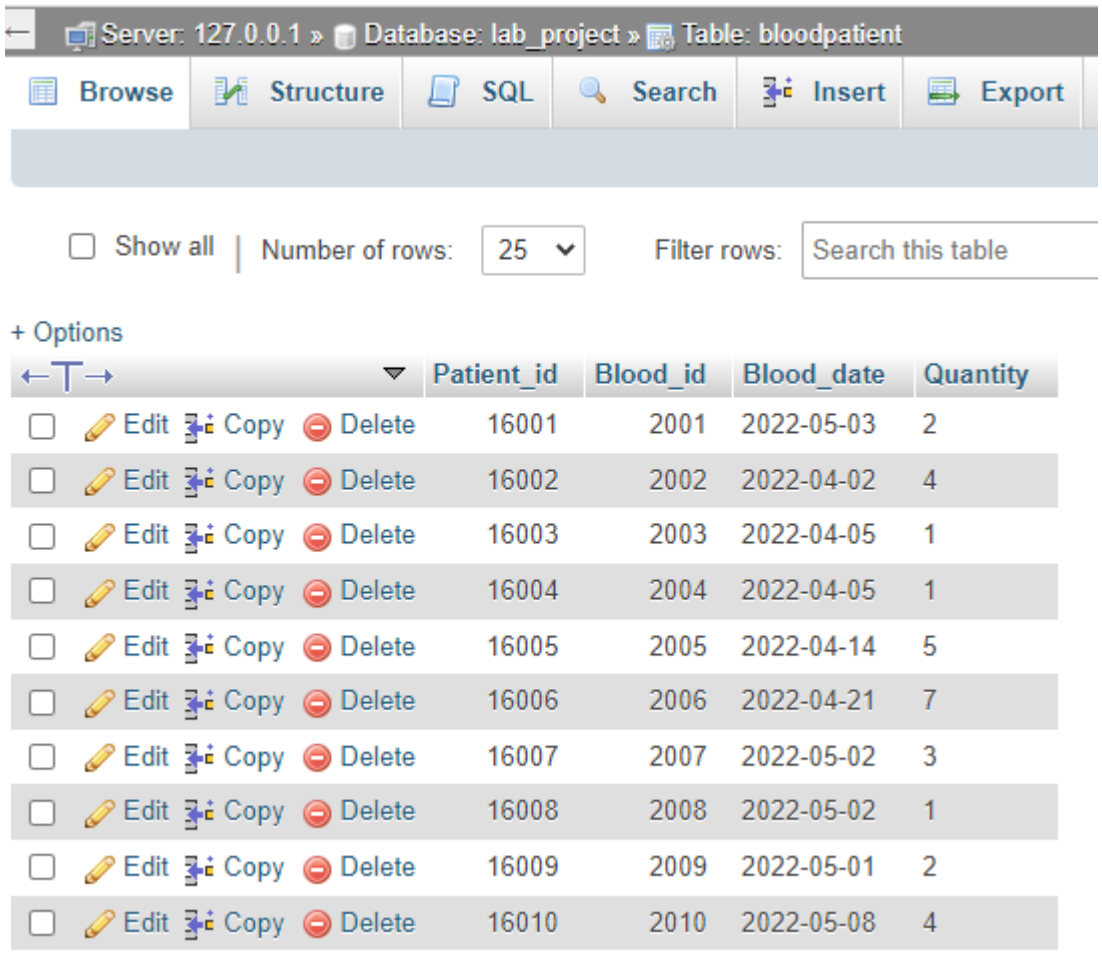
```
  `Event_date` date DEFAULT NULL
) ;

--
--

INSERT INTO `blooddnevent` (`Event_id`, `Branch_no`, `Event_date`) VALUES
(5001, 2001, '2021-08-06'),
(5002, 2003, '2021-09-03'),
(5003, 2005, '2021-10-01'),
(5004, 2007, '2021-11-05'),
(5005, 2009, '2021-12-03'),
(5006, 2010, '2022-01-07'),
(5007, 2008, '2022-02-04'),
(5008, 2006, '2022-03-04'),
(5009, 2004, '2022-04-01'),
(5010, 2002, '2022-05-06');

-- --------------------------------------------------------
```



	Event_id	Branch_no	Event_date
Edit Copy Delete	5001	2001	2021-08-06
Edit Copy Delete	5002	2003	2021-09-03
Edit Copy Delete	5003	2005	2021-10-01
Edit Copy Delete	5004	2007	2021-11-05
Edit Copy Delete	5005	2009	2021-12-03
Edit Copy Delete	5006	2010	2022-01-07
Edit Copy Delete	5007	2008	2022-02-04
Edit Copy Delete	5008	2006	2022-03-04
Edit Copy Delete	5009	2004	2022-04-01
Edit Copy Delete	5010	2002	2022-05-06

```
--
-- Table structure for table `bloodpatient`
--

CREATE TABLE `bloodpatient` (
  `Patient_id` int(11) NOT NULL,
  `Blood_id` int(11) NOT NULL,
  `Blood_date` date DEFAULT NULL,
  `Quantity` varchar(10) DEFAULT NULL
);

--
-- Dumping data for table `bloodpatient`
--

INSERT INTO `bloodpatient` (`Patient_id`, `Blood_id`, `Blood_date`, `Quantity`) VALUES
```

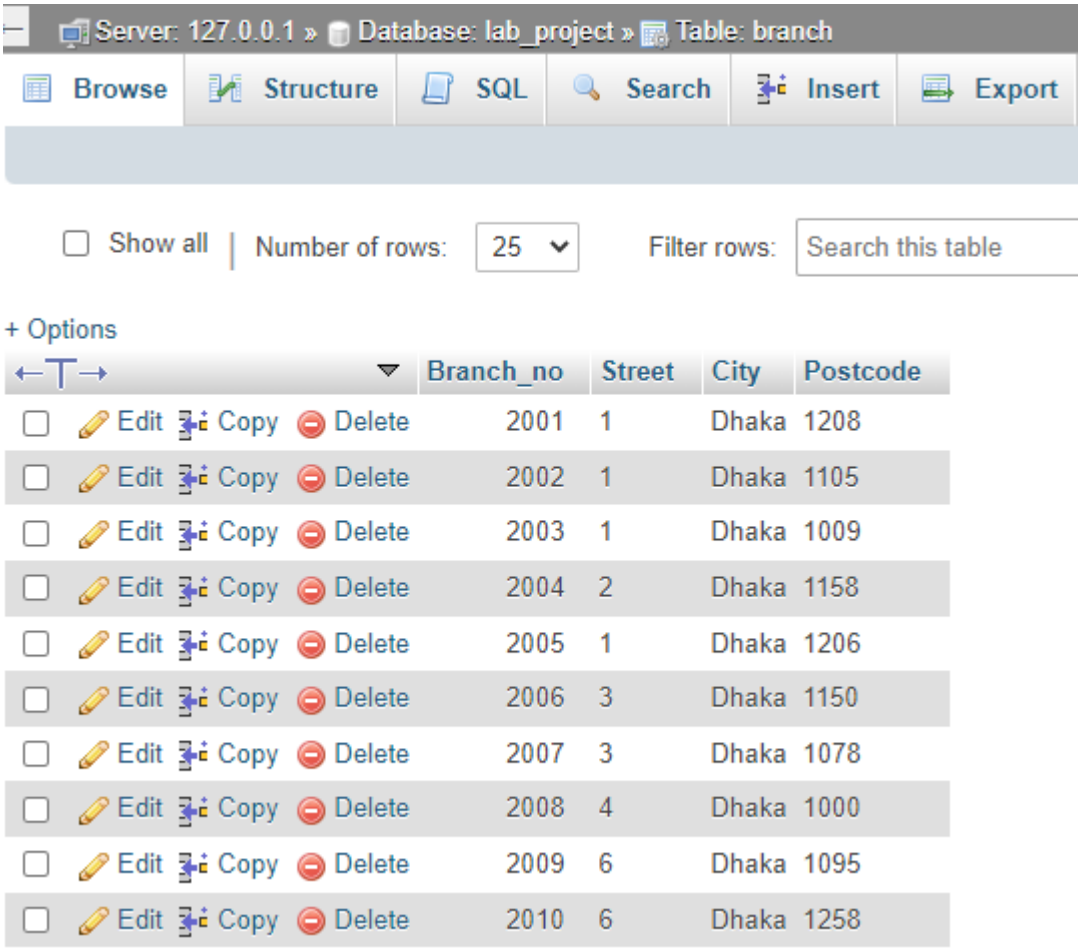
```
(16001, 2001, '2022-05-03', '2'),
(16002, 2002, '2022-04-02', '4'),
(16003, 2003, '2022-04-05', '1'),
(16004, 2004, '2022-04-05', '1'),
(16005, 2005, '2022-04-14', '5'),
(16006, 2006, '2022-04-21', '7'),
(16007, 2007, '2022-05-02', '3'),
(16008, 2008, '2022-05-02', '1'),
(16009, 2009, '2022-05-01', '2'),
(16010, 2010, '2022-05-08', '4');

-- --------------------------------------------------------
```



	Patient_id	Blood_id	Blood_date	Quantity
Edit Copy Delete	16001	2001	2022-05-03	2
Edit Copy Delete	16002	2002	2022-04-02	4
Edit Copy Delete	16003	2003	2022-04-05	1
Edit Copy Delete	16004	2004	2022-04-05	1
Edit Copy Delete	16005	2005	2022-04-14	5
Edit Copy Delete	16006	2006	2022-04-21	7
Edit Copy Delete	16007	2007	2022-05-02	3
Edit Copy Delete	16008	2008	2022-05-02	1
Edit Copy Delete	16009	2009	2022-05-01	2
Edit Copy Delete	16010	2010	2022-05-08	4

```
--
```

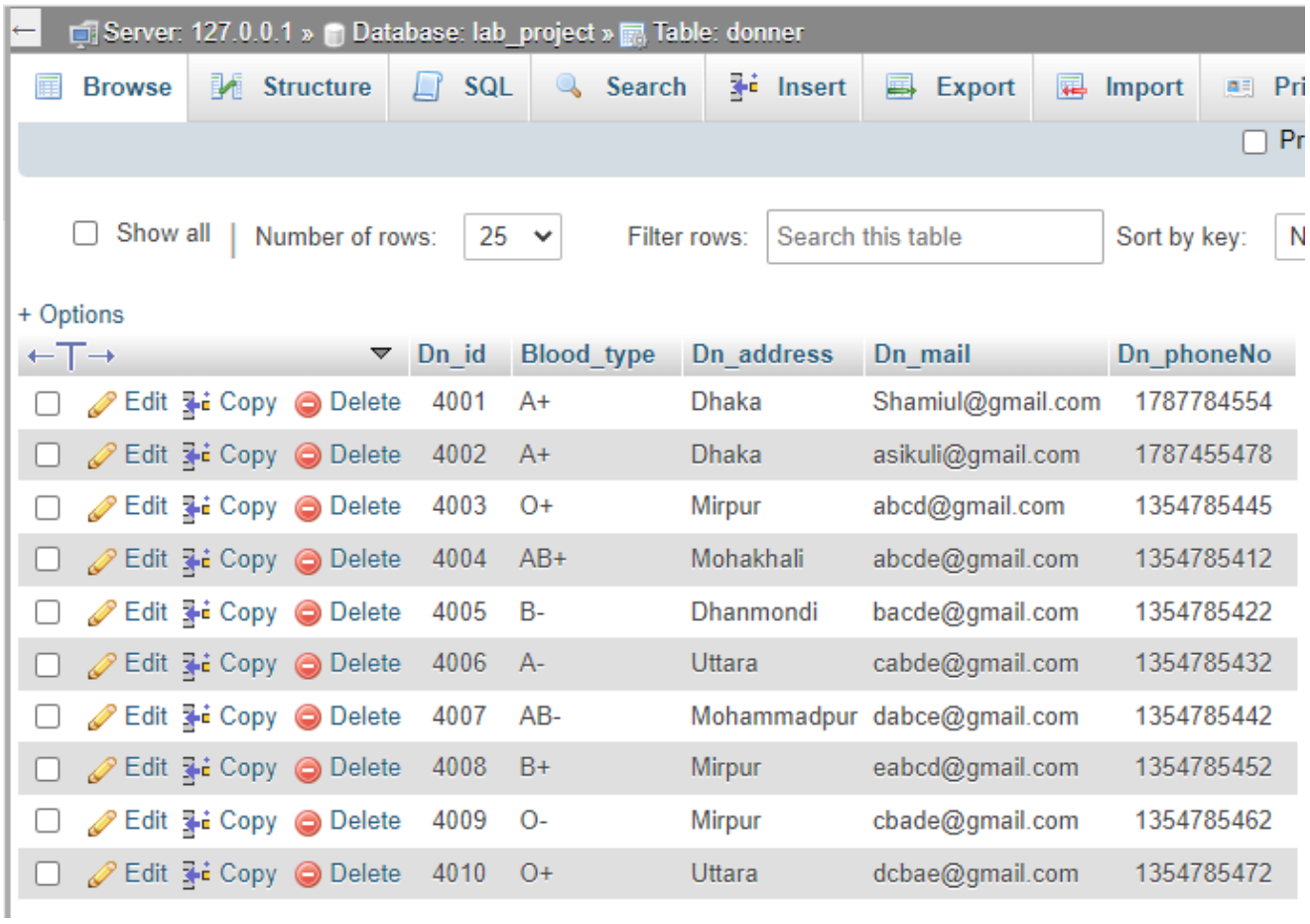
```
-- Table structure for table `branch`
--

CREATE TABLE `branch` (
  `Branch_no` int(11) NOT NULL,
  `Street` char(1) DEFAULT NULL,
  `City` varchar(20) DEFAULT NULL,
  `Postcode` varchar(10) DEFAULT NULL
);
--
-- Dumping data for table `branch`
--

INSERT INTO `branch` (`Branch_no`, `Street`, `City`, `Postcode`) VALUES
(2001, '1', 'Dhaka', '1208'),
(2002, '1', 'Dhaka', '1105'),
(2003, '1', 'Dhaka', '1009'),
(2004, '2', 'Dhaka', '1158'),
(2005, '1', 'Dhaka', '1206'),
(2006, '3', 'Dhaka', '1150'),
(2007, '3', 'Dhaka', '1078'),
(2008, '4', 'Dhaka', '1000'),
(2009, '6', 'Dhaka', '1095'),
(2010, '6', 'Dhaka', '1258');

-- --------------------------------------------------------
```



	Branch_no	Street	City	Postcode
Edit Copy Delete	2001	1	Dhaka	1208
Edit Copy Delete	2002	1	Dhaka	1105
Edit Copy Delete	2003	1	Dhaka	1009
Edit Copy Delete	2004	2	Dhaka	1158
Edit Copy Delete	2005	1	Dhaka	1206
Edit Copy Delete	2006	3	Dhaka	1150
Edit Copy Delete	2007	3	Dhaka	1078
Edit Copy Delete	2008	4	Dhaka	1000
Edit Copy Delete	2009	6	Dhaka	1095
Edit Copy Delete	2010	6	Dhaka	1258

```
--
-- Table structure for table `donner`
--

CREATE TABLE `donner` (
  `Dn_id` int(11) NOT NULL,
  `Blood_type` varchar(5) DEFAULT NULL,
  `Dn_address` varchar(15) DEFAULT NULL,
  `Dn_mail` varchar(50) DEFAULT NULL,
  `Dn_phoneNo` bigint(20) DEFAULT NULL
);


--
-- Dumping data for table `donner`
--
```

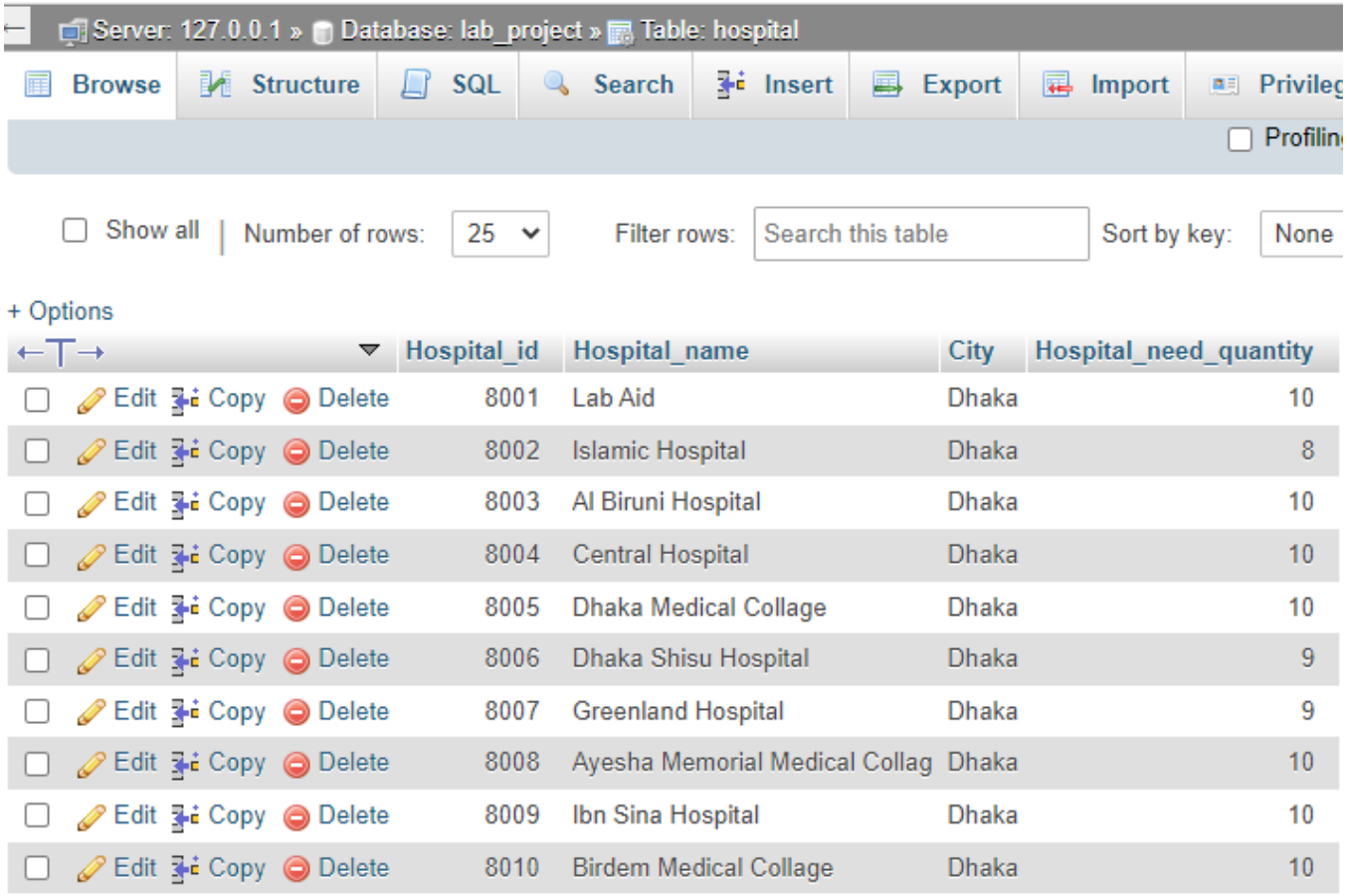
```
INSERT INTO `donner` (`Dn_id`, `Blood_type`, `Dn_address`, `Dn_mail`, `Dn_phoneNo`) VALUES
(4001, 'A+', 'Dhaka', 'Shamiul@gmail.com', 1787784554),
(4002, 'A+', 'Dhaka', 'asikuli@gmail.com', 1787455478),
(4003, 'O+', 'Mirpur', 'abcd@gmail.com', 1354785445),
(4004, 'AB+', 'Mohakhali', 'abcde@gmail.com', 1354785412),
(4005, 'B-', 'Dhanmondi', 'bacde@gmail.com', 1354785422),
(4006, 'A-', 'Uttara', 'cabde@gmail.com', 1354785432),
(4007, 'AB-', 'Mohammadpur', 'dabce@gmail.com', 1354785442),
(4008, 'B+', 'Mirpur', 'eabcd@gmail.com', 1354785452),
(4009, 'O-', 'Mirpur', 'cbade@gmail.com', 1354785462),
(4010, 'O+', 'Uttara', 'dcbae@gmail.com', 1354785472);

-- --------------------------------------------------------
```



	Dn_id	Blood_type	Dn_address	Dn_mail	Dn_phoneNo
Edit Copy Delete	4001	A+	Dhaka	Shamiul@gmail.com	1787784554
Edit Copy Delete	4002	A+	Dhaka	asikuli@gmail.com	1787455478
Edit Copy Delete	4003	O+	Mirpur	abcd@gmail.com	1354785445
Edit Copy Delete	4004	AB+	Mohakhali	abcde@gmail.com	1354785412
Edit Copy Delete	4005	B-	Dhanmondi	bacde@gmail.com	1354785422
Edit Copy Delete	4006	A-	Uttara	cabde@gmail.com	1354785432
Edit Copy Delete	4007	AB-	Mohammadpur	dabce@gmail.com	1354785442
Edit Copy Delete	4008	B+	Mirpur	eabcd@gmail.com	1354785452
Edit Copy Delete	4009	O-	Mirpur	cbade@gmail.com	1354785462
Edit Copy Delete	4010	O+	Uttara	dcbae@gmail.com	1354785472

--

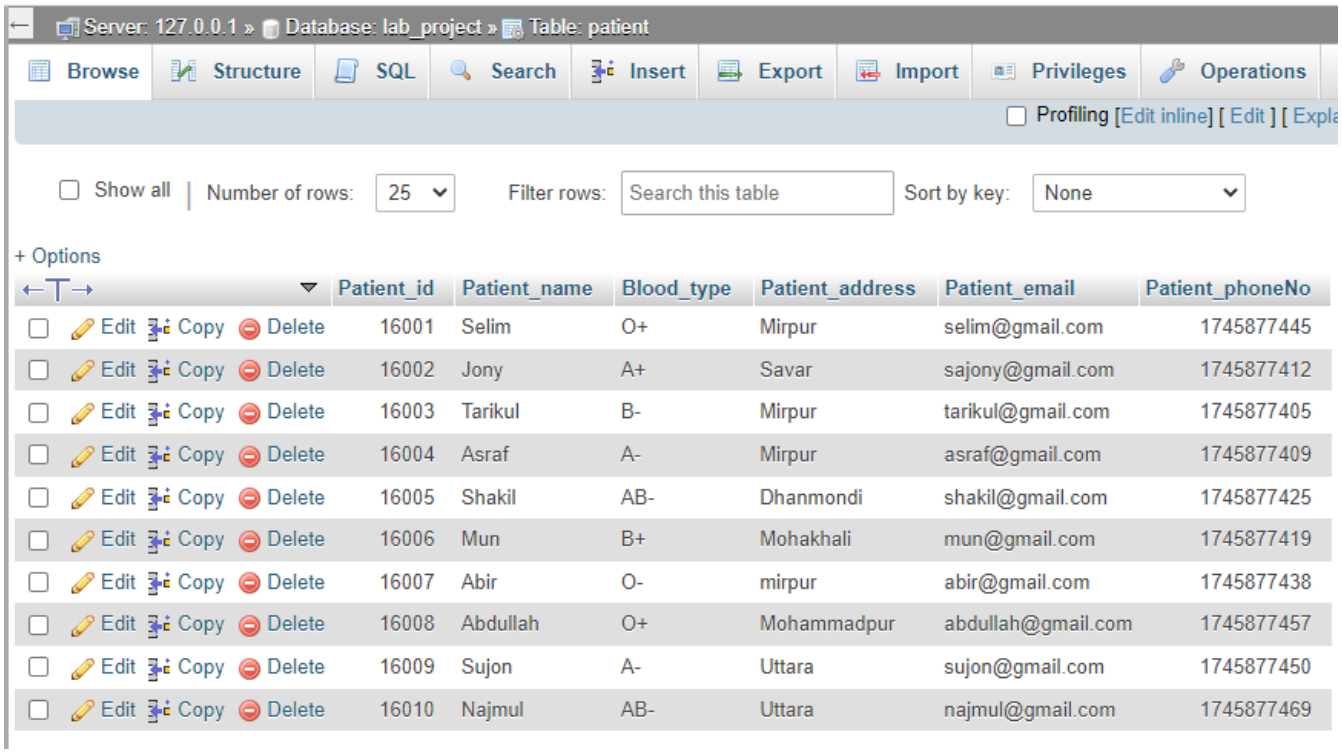
```
-- Table structure for table `hospital`
--

CREATE TABLE `hospital` (
  `Hospital_id` int(11) NOT NULL,
  `Hospital_name` varchar(30) DEFAULT NULL,
  `City` varchar(20) DEFAULT NULL,
  `Hospital_need_quantity` int(11) DEFAULT NULL
);



--
-- Dumping data for table `hospital`
--

INSERT INTO `hospital` (`Hospital_id`, `Hospital_name`, `City`, `Hospital_need_quantity`) VALUES
(8001, 'Lab Aid', 'Dhaka', 10),
(8002, 'Islamic Hospital', 'Dhaka', 8),
(8003, 'Al Biruni Hospital', 'Dhaka', 10),
(8004, 'Central Hospital', 'Dhaka', 10),
(8005, 'Dhaka Medical Collage', 'Dhaka', 10),
(8006, 'Dhaka Shisu Hospital', 'Dhaka', 9),
(8007, 'Greenland Hospital', 'Dhaka', 9),
(8008, 'Ayesha Memorial Medical Collag', 'Dhaka', 10),
(8009, 'Ibn Sina Hospital', 'Dhaka', 10),
(8010, 'Birdem Medical Collage', 'Dhaka', 10);

-- --------------------------------------------------------
```



	Hospital_id	Hospital_name	City	Hospital_need_quantity
Edit Copy Delete	8001	Lab Aid	Dhaka	10
Edit Copy Delete	8002	Islamic Hospital	Dhaka	8
Edit Copy Delete	8003	Al Biruni Hospital	Dhaka	10
Edit Copy Delete	8004	Central Hospital	Dhaka	10
Edit Copy Delete	8005	Dhaka Medical Collage	Dhaka	10
Edit Copy Delete	8006	Dhaka Shisu Hospital	Dhaka	9
Edit Copy Delete	8007	Greenland Hospital	Dhaka	9
Edit Copy Delete	8008	Ayesha Memorial Medical Collag	Dhaka	10
Edit Copy Delete	8009	Ibn Sina Hospital	Dhaka	10
Edit Copy Delete	8010	Birdem Medical Collage	Dhaka	10

```
--
-- Table structure for table `patient`
--

CREATE TABLE `patient` (
  `Patient_id` int(11) NOT NULL,
  `Patient_name` varchar(20) DEFAULT NULL,
  `Blood_type` varchar(10) DEFAULT NULL,
  `Patient_address` varchar(30) DEFAULT NULL,
  `Patient_email` varchar(40) DEFAULT NULL,
  `Patient_phoneNo` bigint(20) DEFAULT NULL
);

--
-- Dumping data for table `patient`
--
```

```
INSERT INTO `patient` (`Patient_id`, `Patient_name`, `Blood_type`, `Patient_address`, `Patient_email`,
`Patient_phoneNo`) VALUES
(16001, 'Selim', 'O+', 'Mirpur', 'selim@gmail.com', 1745877445),
(16002, 'Jony', 'A+', 'Savar', 'sajony@gmail.com', 1745877412),
(16003, 'Tarikul', 'B-', 'Mirpur', 'tarikul@gmail.com', 1745877405),
(16004, 'Asraf', 'A-', 'Mirpur', 'asraf@gmail.com', 1745877409),
(16005, 'Shakil', 'AB-', 'Dhanmondi', 'shakil@gmail.com', 1745877425),
(16006, 'Mun', 'B+', 'Mohakhali', 'mun@gmail.com', 1745877419),
(16007, 'Abir', 'O-', 'mirpur', 'abir@gmail.com', 1745877438),
(16008, 'Abdullah', 'O+', 'Mohammadpur', 'abdullah@gmail.com', 1745877457),
(16009, 'Sujon', 'A-', 'Uttara', 'sujon@gmail.com', 1745877450),
(16010, 'Najmul', 'AB-', 'Uttara', 'najmul@gmail.com', 1745877469);

--
```



	Patient_id	Patient_name	Blood_type	Patient_address	Patient_email	Patient_phoneNo
Edit Copy Delete	16001	Selim	O+	Mirpur	selim@gmail.com	1745877445
Edit Copy Delete	16002	Jony	A+	Savar	sajony@gmail.com	1745877412
Edit Copy Delete	16003	Tarikul	B-	Mirpur	tarikul@gmail.com	1745877405
Edit Copy Delete	16004	Asraf	A-	Mirpur	asraf@gmail.com	1745877409
Edit Copy Delete	16005	Shakil	AB-	Dhanmondi	shakil@gmail.com	1745877425
Edit Copy Delete	16006	Mun	B+	Mohakhali	mun@gmail.com	1745877419
Edit Copy Delete	16007	Abir	O-	mirpur	abir@gmail.com	1745877438
Edit Copy Delete	16008	Abdullah	O+	Mohammadpur	abdullah@gmail.com	1745877457
Edit Copy Delete	16009	Sujon	A-	Uttara	sujon@gmail.com	1745877450
Edit Copy Delete	16010	Najmul	AB-	Uttara	najmul@gmail.com	1745877469

Chapter 3

Performance Evaluation

3.1 Queries For Selection & Projection

1. Display the Donner id, donner mail whose mail start with D.

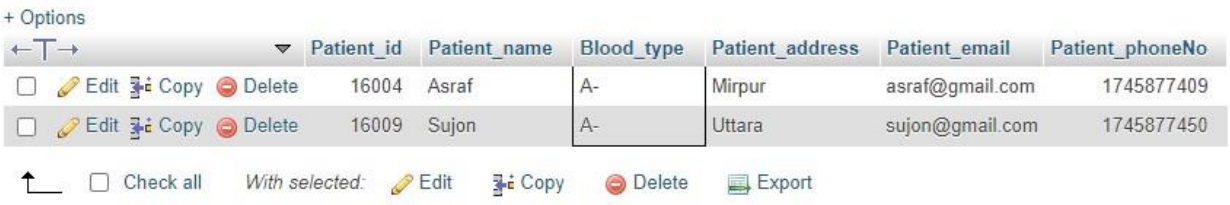
```
SELECT * FROM `donner`
SELECT Dn_id, Dn_mail, Dn_phoneNo FROM donner WHERE Dn_mail LIKE 'd%';
```

+ Options

	Dn_id	Dn_mail	Dn_phoneNo
Edit Copy Delete	4007	dabce@gmail.com	1354785442
Edit Copy Delete	4010	dcbae@gmail.com	1354785472

2. Display the information of all patients who has a type of blood A-

```
SELECT * FROM patient WHERE Blood_type = 'A-'
```



+ Options

	Patient_id	Patient_name	Blood_type	Patient_address	Patient_email	Patient_phoneNo
Edit Copy Delete	16004	Asraf	A-	Mirpur	asraf@gmail.com	1745877409
Edit Copy Delete	16009	Sujon	A-	Uttara	sujon@gmail.com	1745877450

Check all *With selected:* Edit Copy Delete Export

3. Find the donner who contributed to the blood donation event id 5007

```
SELECT Dn_id FROM blood WHERE Event_id = '5007'
```

4. Display blood donation event which is registered on 05 November 2021

```
SELECT Event_id FROM blooddnevent WHERE Event_date = '2021-11-05';
```

5. Display street, city, postcode which located in branch no 2007

```
SELECT Street,City,Postcode FROM branch WHERE Branch_no = '2007'
```

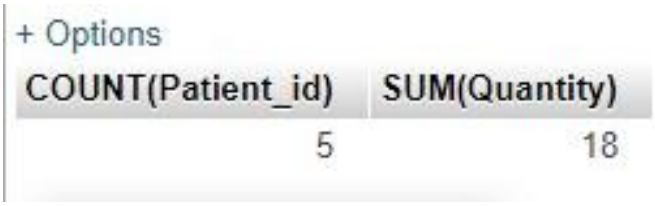
3.2 Aggregation and Grouping

1. **Display the blood id of the patient that received more than 1 quantity of blood.**

```
SELECT COUNT(Blood_id) FROM bloodpatient WHERE Quantity > 1
```

2. **Number of patients received blood in April and the sum of quantity.**

```
SELECT COUNT(Patient_id), SUM(Quantity) FROM bloodpatient WHERE Blood_date LIKE '%4
%';
```



3. **Number of patients in each bloodtype.**

```
SELECT Blood_type, COUNT(Patient_id) FROM patient GROUP BY Blood_type
```

+ Options

Blood_type	COUNT(Patient_id)
A+	1
A-	2
AB-	2
B+	1
B-	1
O+	2
O-	1

4. Display Blood type, donner address, donner phone number that have 'O+' blood type in order.

```
SELECT Blood_type, Dn_address, Dn_phoneNo FROM donner WHERE Blood_type = 'O+'
 ORDER BY Dn_address
```

+ Options

	Blood_type	Dn_address ▲ 1	Dn_phoneNo
Edit Copy Delete	O+	Mirpur	1354785445
Edit Copy Delete	O+	Uttara	1354785472

Check all *With selected:* Edit Copy Delete Export

5. Display list of branch no, event id, and dates from earliest to recent date.

```
SELECT Branch_no, Event_id, Event_date FROM blooddnevent ORDER BY Event_date
```

+ Options

	Branch_no	Event_id	Event_date
Edit Copy Delete	2001	5001	2021-08-06
Edit Copy Delete	2003	5002	2021-09-03
Edit Copy Delete	2005	5003	2021-10-01
Edit Copy Delete	2007	5004	2021-11-05
Edit Copy Delete	2009	5005	2021-12-03
Edit Copy Delete	2010	5006	2022-01-07
Edit Copy Delete	2008	5007	2022-02-04
Edit Copy Delete	2006	5008	2022-03-04
Edit Copy Delete	2004	5009	2022-04-01
Edit Copy Delete	2002	5010	2022-05-06

3.3 Join

1. **Display donner id, blood type and quantity of blood donated.**

```
SELECT b.Dn_id, d.Blood_type, b.blood_quantity FROM blood b, donner
d WHERE b.Dn_id = d.Dn_id
```

+ Options

Dn_id	Blood_type	blood_quantity
4001	A+	5
4002	A+	7
4003	O+	8
4004	AB+	2
4005	B-	1
4006	A-	3
4007	AB-	4
4008	B+	7
4009	O-	4
4010	O+	4

2. **Display patient id, blood type and quantity of blood received.**

```
SELECT p.Patient_id, p.Blood_type, b.quantity FROM patient p, bloodpatient b WHERE
b.Patient_id = p.Patient_id
```

+ Options

Patient_id	Blood_type	quantity
16001	O+	2
16002	A+	4
16003	B-	1
16004	A-	1
16005	AB-	5
16006	B+	7
16007	O-	3
16008	O+	1
16009	A-	2
16010	AB-	4

3.4 Nested Queries

1. Display all patient information who received blood on 14 April 2022.

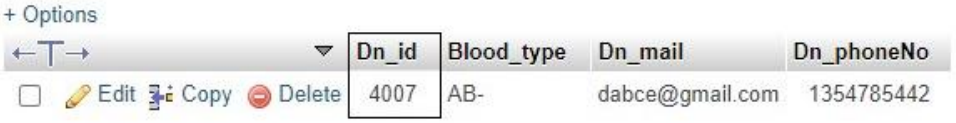
```
SELECT * FROM patient WHERE Patient_id = (SELECT Patient_id FROM bloodpatient WHERE
blood_date = '2022-04-14');
```

+ Options

	Patient_id	Patient_name	Blood_type	Patient_address	Patient_email	Patient_phoneNo
Edit Copy Delete	16005	Shakil	AB-	Dhanmondi	shakil@gmail.com	1745877425

2. **Display donner id, blood type, donner mail, phone number who donate blood at event id 5007.**

```
SELECT Dn_id, Blood_type, Dn_mail, Dn_phoneNo FROM donner WHERE Dn_id IN (SELECT Dn_id
FROM blood WHERE event_id = '5007')
```

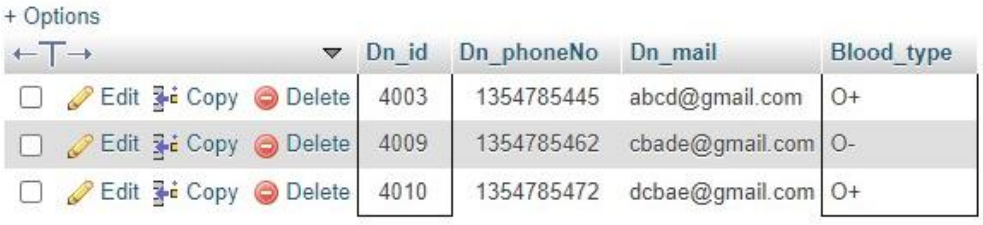


3. **Display all information that is managed by branch no 2003**

```
SELECT * FROM blooddnevent WHERE Branch_no IN (SELECT Branch_no FROM branch WHERE
Branch_no = '2003')
```

4. **Display donner id, name, phone number and blood type for all donners that have 'O' blood type.**

```
SELECT Dn_id, Dn_phoneNo, Dn_mail, Blood_type FROM donner WHERE Dn_id IN (SELECT Dn_id
FROM blood WHERE Blood_type LIKE 'O%')
```



5. **Display patient id, name and phone number that receives more than 2 blood quantity.**

```
SELECT Patient_id, Patient_name, Patient_phoneNo FROM patient WHERE Patient_id IN
(SELECT Patient_id FROM bloodpatient WHERE quantity > 2);
```

+ Options

	Patient_id	Patient_name	Patient_phoneNo
Edit Copy Delete	16002	Jony	1745877412
Edit Copy Delete	16005	Shakil	1745877425
Edit Copy Delete	16006	Mun	1745877419
Edit Copy Delete	16007	Abir	1745877438
Edit Copy Delete	16010	Najmul	1745877469

3.5 Trigger

MYSQL Before Delete Trigger

1. Create Blood_quantityNeed table

```
CREATE TABLE Blood_quantityNeed ( Hospital_id INT PRIMARY KEY, Hospital_name varchar(40),
Perday_totalQuantity int )

INSERT INTO `blood_quantityneed` (`Hospital_id`, `Hospital_name`, `Perday_totalQuantity`)
VALUES ('8001', 'Lab Aid', '8'), ('8002', 'Islamic Hospital', '10'), ('8003', 'Al Biruni
Hospital', '10'), ('8004', 'Central Hospital', '9');
```

+ Options

	Hospital_id	Hospital_name	Perday_totalQuantity
Edit Copy Delete	8001	Lab Aid	8
Edit Copy Delete	8002	Islamic Hospital	10
Edit Copy Delete	8003	Al Biruni Hospital	10
Edit Copy Delete	8004	Central Hospital	9

2. **Create backup table**

```
CREATE TABLE blood_quantityneedArchives ( serial int PRIMARY key AUTO_INCREMENT,
Hospital_id INT, Hospital_name varchar(40), Perday_totalQuantity int, updatedate
datetime DEFAULT CURRENT_TIMESTAMP )
```

3. **Create a trigger**

```
CREATE TRIGGER before_delete_salaries BEFORE DELETE ON Blood_quantityNeed FOR EACH ROW BEGIN
INSERT INTO blood_quantityneedarchives (Hospital_id, Hospital_name, Perday_totalQuantity)
VALUES(OLD.Hospital_id, OLD.Hospital_name, OLD.Perday_totalQuantity); END
```

4. **Delate a value from bloodquantityneed table**

```
DELETE FROM blood_quantityneed WHERE Hospital_id = '8002'
```

5. **After delate bloodquantityneed table**

+ Options

	Hospital_id	Hospital_name	Perday_totalQuantity
Edit Copy Delete	8001	Lab Aid	8
Edit Copy Delete	8003	Al Biruni Hospital	10
Edit Copy Delete	8004	Central Hospital	9

Check all *With selected:* Edit Copy Delete Export

6. After delate backup table

Chapter 4

Conclusion

4.1 Discussion

In this project we have implemented the commands that we learnt from this course as well as got a clear view over the commands of Oracle MYSQL. We have learnt the uses of these commands precisely. How we can use these to make a management system. While we was doing the project, we have got stuck at some point. But after thinking for a while of that we have managed to solve the problem. Solving queries that we have made are so much good to do. Finding queries of our own is so hard to do. But it was fun. Finally, overall, we have made our project library management system precisely according to the er diagram that we submitted to our instructor in project proposal report.

4.1 Conclusion

This was an effort to make a simple blood donation management system which may be useful system who search blood. A user can easily find a blood donner phone number, email, address.

From a proper analysis of positive points, it can be safely concluded this database system meeting some basic requirements of a user. In future, we add a user interface so that a user can easily use the system without facing any problem.

4.2 Scope of Future Work

In future we will add some advance features in our blood donation management system project. Besides, we have made a plan to create a library management system apps and lunch it into Google play store.

References

https://itsourcecode.com/fyp/blood-bank-management-system-project-report-documentation-pdf/