North South University

Department of Electrical & Computer Engineering

Project Assignment

Course Code:	CSE311
Course Name:	Database Management System
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Submitted To:	**Nadeem Ahmed**
Date of Submission:	**05.01.2022**

Project Title: Drop Of Life

Project Information:

Project Description:

Blood is a very important thing. People's life rely on it. This system is actually a blood bank management system. Whenever someone is in need of blood, they can take blood for free but there is a costing issue that is for blood cross matching. This system requires active participation from those people who are willing to donate blood. Without donating there won't be any blood in store which can be given when someone is in need. Whenever order is placed by a hospital, blood is been reached there within short time.

ER Diagram Description:

A Blood Bank stores blood of various blood groups. Many donors donate blood, each of different blood group/type. A donor may donate blood more than once and he is identified by a donor id (DID), name, sex, age, address and phone number. The blood donated by the donor is characterized by blood type, code and cost. Before each donor donates his blood, he is required to register himself as a donor with the receptionist who works at the Blood Bank. The receptionist is identified by employee id, name, address and phone number. The Blood Banks receives orders for blood from many hospitals for emergency purposes and other surgical requirements and each blood bank issues the same of required blood type. Each blood bank has its own blood bank number (BNO), issues, orders and blood types stored. The Blood Bank is managed by the blood bank manager who is identified by employee id, name, email_id and

phone number .He is responsible for the proper management of the blood bank. The hospitals are identified by name, address and phone number.

Entities and Attributes (Key):

1. Donor – donor id (DID), name, age, sex, address, phno
2. Blood – code, blood type, cost
3. Receptionist – employee id (emp_id) , emp_name, emp_address, emp_phno
4. Blood Bank– Blood Bank number(BNO), issues, orders , blood type
5. Blood Bank Manager – managerid(mang_id), mang_name ,mang_email _id , mang_phno
6. Hospital- name, phone number(phno), address

Entities and Relationships:

1. Donate (1:M):

A donor may donate blood any number of times.

2. Register(M:1):

Many donors may register blood donation with a single receptionist.

3. Stored(M:1):

Blood of different type in large numbers is stored in a single Blood Bank.

4. Managed(1:1):

Blood Bank is managed by a blood bank -manager.

5. Works(1:1):

A receptionist works in a Blood Bank.

6. Order(M:M):

Hospitals may order blood from different Blood Banks.

ER Diagram:

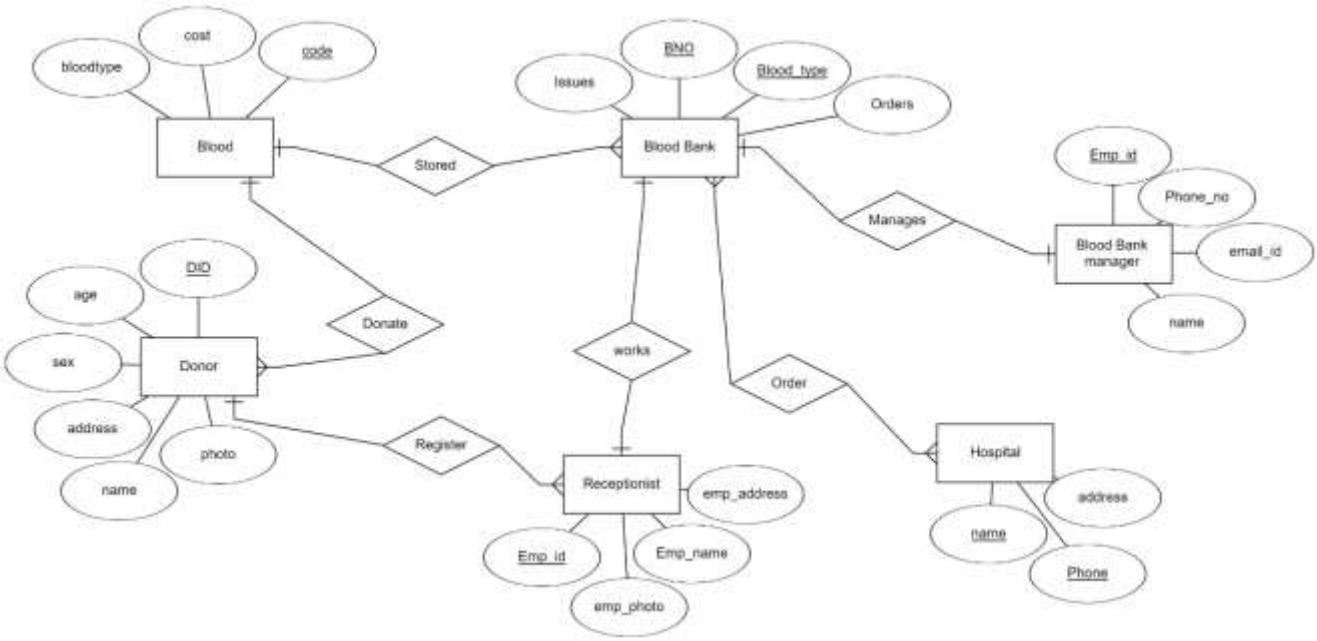


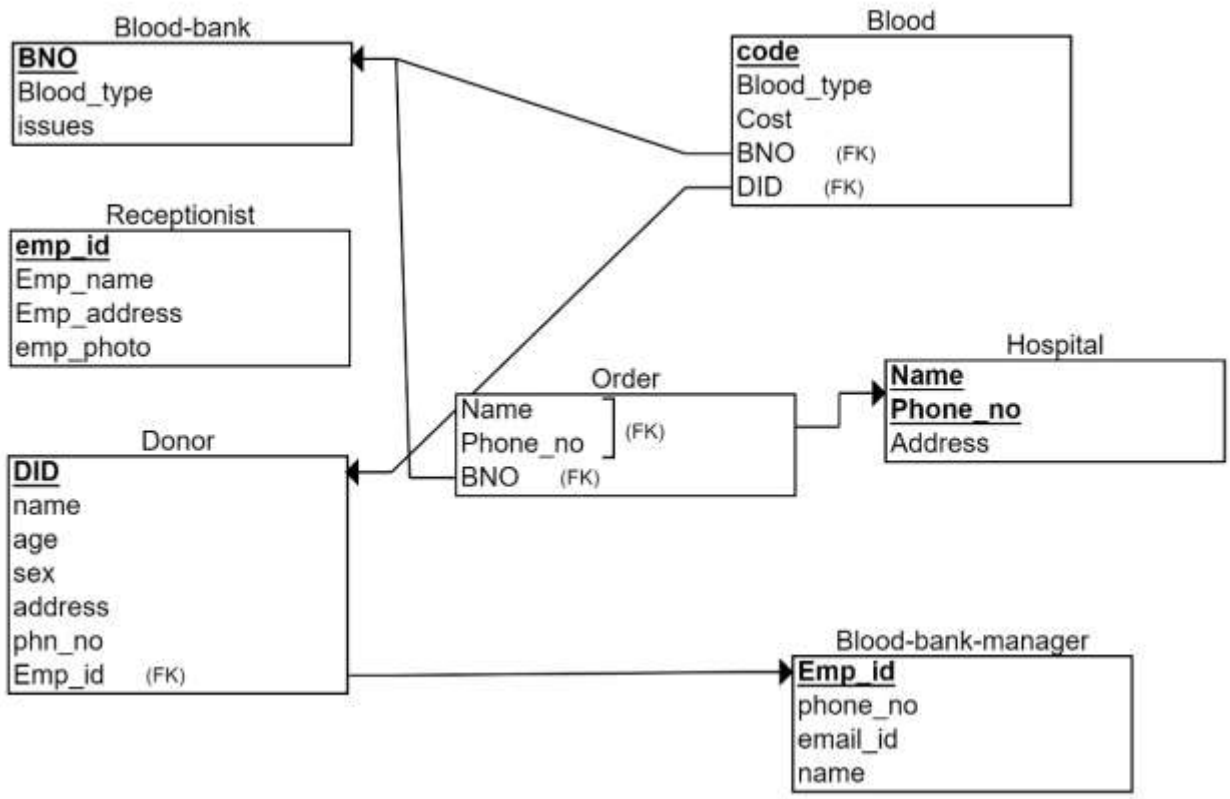
Table Building:

For ‘many to one’ or ‘one to many’ relations, we can build either 2 tables Or we can build 3 tables. However, for my design I am going to build two Tables for each ‘many to one’ or ‘one to many’ relation. For ‘one to one’ relation I have created each 1 table. For ‘many to many’ relation I have to build 3 tables; One new table will be created in the name of the relation.

Table building sequence:

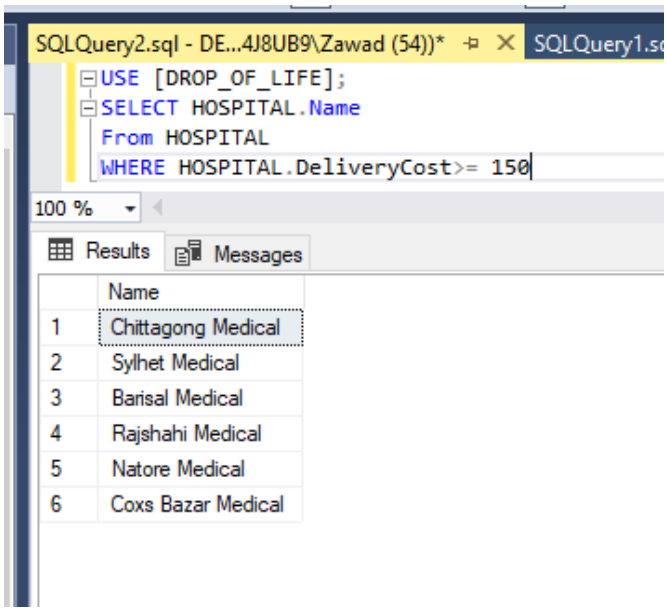
1. BLOOD BANK MANAGER
2. HOSPITAL
3. RECEPTIONIST
4. DONOR
5. BLOOD BANK
6. BLOOD
7. ORDER

Schema Diagram:

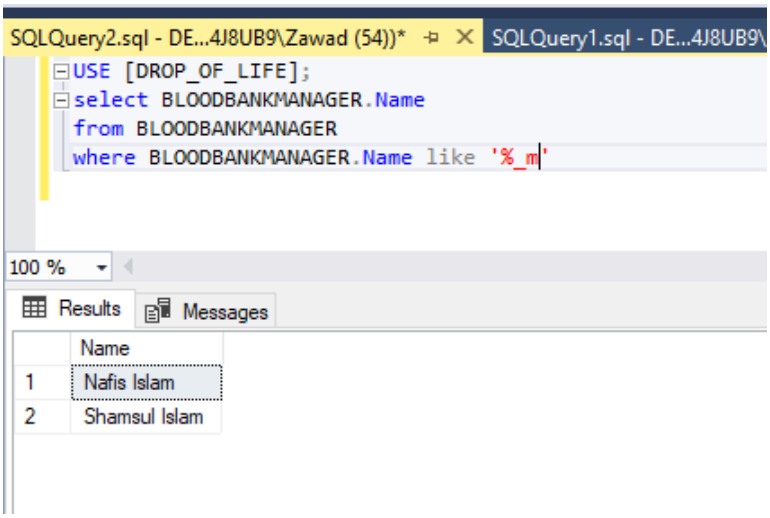


Query Execution:

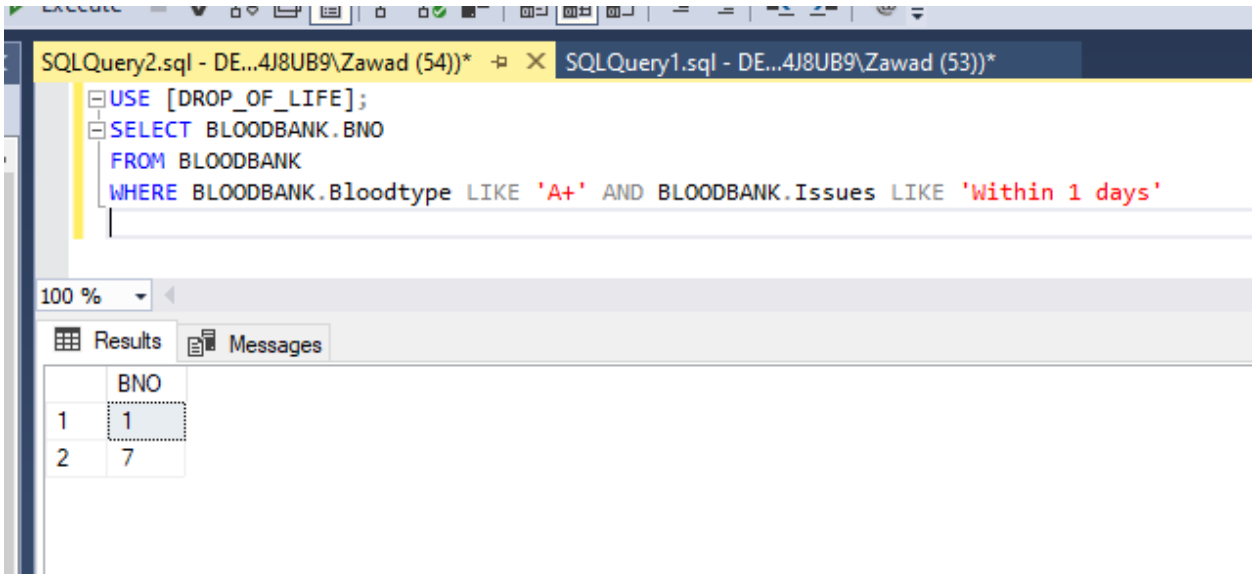
1. **Find the name of all the hospitals those have a delivery costing more than or equal to 150 taka.**



2. **Find the name of the blood bank managers those name ends with‘m’?**



3. **Find BNO(Blood Code No) of the blood those who have received order for A+ blood and need to deliver within 24 hours or 1 day.**



4. **Find the name and phone number of those donar's who's name has even one S and are male.**

```
USE [DROP_OF_LIFE];
select DONOR.name, DONOR.Phone
from DONOR
where DONOR.Name like '%S%' and DONOR.Sex like 'M'
```

100 %

Results | Messages

	name	Phone
1	Polash	1800000003
2	Mostafa	1800000004
3	Syed	1800000011
4	Sumon	1800000014

5. **Find the code for those who's asking blood group is B+.**

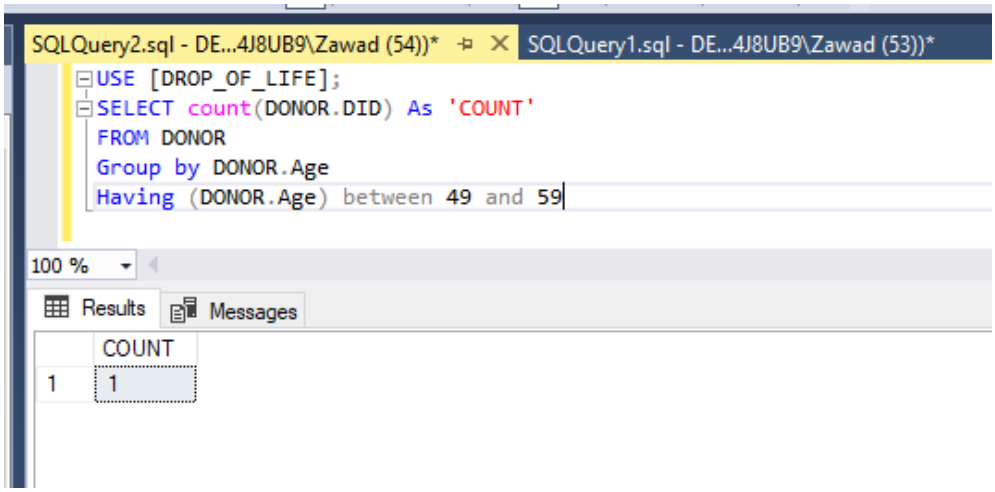
```
USE [DROP_OF_LIFE];
select BLOOD.Code
from BLOOD
where BLOOD.Bloodtype like 'B+'
order by BLOOD.cost desc
```

100 %

Results | Messages

	Code
1	23
2	31
3	32

6. Find the number of all donors who has an age between 49 to 59.



Appendix:

```
CREATE DATABASE DROP_OF_LIFE;
GO
USE [DROP_OF_LIFE];
GO
CREATE TABLE BLOODBANKMANAGER (
Emp_Id INT PRIMARY KEY,
Name VARCHAR (40),
Email_Id NVARCHAR (50),
Phone BIGINT
);

insert into [dbo].[BLOODBANKMANAGER]
VALUES
(1001,'Hasan Mahmud','hasan02@dol.org','01700000000'),
(1002,'Momtaha Rahman','momtaha2@dol.org','01700000001'),
(1003,'Nafis Islam','nafis@dol.org','01700000002'),
(1004,'Shamsul Islam','shamsul@dol.org','01700000003'),
(1005,'Shamsul Haque','shamsul01@dol.org','01700000004');

CREATE TABLE HOSPITAL(
Phone INT,
Name VARCHAR(20),
Address NCHAR (40),
DeliveryCost INT,
PRIMARY KEY(Phone,Name),
);


insert into [dbo].[HOSPITAL]
VALUES
(020000001,'Ayesha Memorial','1,Mohakhali',20),
(020000002,'Dhaka Medical','1,buet',40),
(020000003,'Chittagong Medical','1,Chittagong',200),
(020000004,'Sylhet Medical','1,Sylhet',150),
```

```
(020000005,'Cumilla Medical','1,Cumilla',100),
(020000006,'Barisal Medical','1,Barisal',153),
(020000007,'SSM Medical','1,SS',10),
(020000008,'Rajshahi Medical','1,Rajshahi',167),
(020000009,'Natore Medical','1,Natore',172),
(020000010,'Bogura Medical','1,Bogura',134),
(020000011,'Khulna Medical','1,Khulna',122),
(020000012,'Chadpur Medical','1,Chadpur',87),
(020000013,'Tangail Medical','1,Tangail',65),
(020000014,'Rongpur Medical','1,Rongpur',122),
(020000015,'Pabna Medical','1,Pabna',98),
(020000016,'Chapai Medical','1,Chapai',76),
(020000017,'BB Medical','1,BB',54),
(020000018,'Feni Medical','1,feni',87),
(020000019,'Coxs Bazar Medical','1,Coxs bazar',250),
(020000020,'Sourawardi Medical','1,Sourawardi',30);

CREATE TABLE RECEPTIONIST (
Emp_Id INT PRIMARY KEY,
Emp_Name VARCHAR (40),
Emp_Address NVARCHAR (50),
Emp_Phone BIGINT
);

insert into [dbo].[RECEPTIONIST]
VALUES
(2001,'Abir','1,Mohakhali',01900000000),
(2002,'Abid','1,buet',01900000001),
(2003,'Hasan','1,pabna',01900000002),
(2004,'Zawad','1,feni',01900000003),
(2005,'Mahmud','1,sylhet',01900000004),
(2006,'Masum','1,coxs',01900000005),
(2007,'Zubaida','1,mdpur',01900000006),
(2008,'Koli','1,Mirpur',01900000007),
(2009,'Nasreen','1,chadpur',01900000008),
(2010,'Samiha','1,cumilla',01900000009),
(2011,'Sadat','1,Malibagh',01900000010),
(2012,'Tumpa','1,ibrahimpur',01900000011),
(2013,'Aqib','1,natore',01900000012),
(2014,'Anika','1,rajshahr',01900000013),
(2015,'Ferdous','1,cua',01900000014),
(2016,'Bristy','1,tangail',01900000015),
(2017,'Nafis','1,baileyroad',01900000016),
(2018,'Arisha','1,dhanmondi',01900000017),
(2019,'Aria','1,uttara',01900000018),
(2020,'Mim','1,60 feet',01900000019);


CREATE TABLE DONOR (
DID INT Primary key,
Name Char(20),
Age Tinyint,
Sex Varchar(10),
Address NVARCHAR(50),
Phone BIGINT,
Emp_Id INT,
FOREIGN KEY (Emp_Id) REFERENCES BLOODBANKMANAGER(Emp_Id)
);
```

```
insert into [dbo].[DONOR]
VALUES
(101,'Didar',30,'M','1,Mohakhali',01800000000,1001),
(102,'kANTA',31,'F','1,Mohakhali',01800000001,1002),
(103,'Monika',32,'F','1,Mohakhali',01800000002,1003),
(104,'Polash',33,'M','1,Mohakhali',01800000003,1004),
(105,'Mostafa',34,'M','1,Mohakhali',01800000004,1005),
(106,'Shely',35,'F','1,Mohakhali',01800000005,1001),
(107,'Khursida',36,'F','1,Mohakhali',01800000008,1002),
(108,'Shamima',37,'F','1,Mohakhali',01800000006,1003),
(109,'Fatema',38,'F','1,Mohakhali',01800000007,1004),
(110,'Mahbub',39,'M','1,Mohakhali',01800000009,1005),
(111,'Rahman',40,'M','1,Mohakhali',01800000010,1001),
(112,'Syed',41,'M','1,Mohakhali',01800000011,1002),
(113,'Arif',42,'M','1,Mohakhali',01800000012,1003),
(114,'Mahmud',43,'M','1,Mohakhali',01800000013,1004),
(115,'Sumon',44,'M','1,Mohakhali',01800000014,1005),
(116,'Faruque',45,'M','1,Mohakhali',01800000015,1001),
(117,'Ali',46,'M','1,Mohakhali',01800000016,1002),
(118,'Sufia',47,'f','1,Mohakhali',01800000017,1003),
(119,'Begum',48,'f','1,Mohakhali',01800000018,1004),
(120,'Lutfur',49,'M','1,Mohakhali',01800000019,1005);

CREATE TABLE BLOODBANK(
BNO INT,
Bloodtype VARCHAR(5),
Orders NCHAR (40),
Issues CHAR(50),
PRIMARY KEY(BNO)
);

insert into [dbo].[BLOODBANK]
VALUES
(1,'A+','A+ 5 bag','Within 1 days'),
(2,'A-','A- 5 bag','Within 2 days'),
(3,'B+','B+ 4 bag','Within 3 days'),
(4,'B-','B- 4 bag','Within 2 days'),
(5,'O+','O+ 5 bag','Within 1 days'),
(6,'O+','O+ 6 bag','Within 2 days'),
(7,'A+','A+ 1 bag','Within 1 days'),
(8,'A-','A- 2 bag','Within 3 days'),
(9,'AB+','AB+ 2 bag','Within 2 days'),
(10,'AB-','AB- 4 bag','Within 10 hours'),
(11,'B+','B+ 3 bag','Within 1 days'),
(12,'B+','B+ 2 bag','Within 2 days'),
(13,'B-','B- 5 bag','Within 3 days'),
(14,'A+','A+ 6 bag','Within 12 hours'),
(15,'A+','A+ 57 bag','Within 1 hour'),
(16,'O-','O- 8 bag','Within 3 hour'),
(17,'O-','O- 9 bag','Within 9 hours'),
(18,'B-','B- 7 bag','Within 1 days'),
(19,'A-','A- 7 bag','Within 1 days'),
(20,'A-','A- 7 bag','Within 1 days');


CREATE TABLE BLOOD(
Code tinyint,
```

```
Bloodtype VARCHAR(5),
cost int,
DID INT,
BNO INT,
PRIMARY KEY(Code),
FOREIGN KEY (BNO) REFERENCES BLOODBANK(BNO),
FOREIGN KEY (DID) REFERENCES DONOR(DID)
);

insert into [dbo].[BLOOD]
VALUES
(21,'A+',12,101,1),
(22,'A-',13,102,2),
(23,'B+',14,103,3),
(24,'B-',15,104,4),
(25,'O+',16,105,5),
(26,'O+',16,106,6),
(27,'A+',12,107,7),
(28,'A-',13,108,8),
(29,'AB+',17,109,9),
(30,'AB-',18,110,10),
(31,'B+',14,111,11),
(32,'B+',14,112,12),
(33,'B-',15,113,13),
(34,'A+',12,114,14),
(35,'A+',12,115,15),
(36,'O-',20,116,16),
(37,'O-',20,117,17),
(38,'B-',15,118,18),
(39,'A-',13,119,19),
(40,'A-',13,120,20);

CREATE TABLE ORDERS(
BNO INT,
Phone INT,
Name VARCHAR(20),
FOREIGN KEY (BNO) REFERENCES BLOODBANK(BNO),
FOREIGN KEY (Phone,Name) REFERENCES HOSPITAL(Phone,Name)
);

insert into [dbo].[ORDERS]
VALUES
(1,020000001,'Ayesha Memorial'),
(2,020000002,'Dhaka Medical'),
(3,020000003,'Chittagong Medical'),
(4,020000004,'Sylhet Medical'),
(5,020000005,'Cumilla Medical'),
(6,020000006,'Barisal Medical'),
(7,020000007,'SSM Medical'),
(8,020000008,'Rajshahi Medical'),
(9,020000009,'Natore Medical'),
(10,020000010,'Bogura Medical'),
(11,020000011,'Khulna Medical'),
(12,020000012,'Chadpur Medical'),
(13,020000013,'Tangail Medical'),
(14,020000014,'Rongpur Medical'),
(15,020000015,'Pabna Medical'),
(16,020000016,'Chapai Medical'),
```

```
(17,020000017,'BB Medical'),
(18,020000018,'Feni Medical'),
(19,020000019,'Coxs Bazar Medical'),
(20,020000020,'Sourawardi Medical');
```