Blood Bank Management System

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1. PHASE I

1.1. ER DIAGRAM

The ER diagram for the Blood Bank Management System comprehensively illustrates the various entities involved and their intricate relationships, forming the basis for a robust and efficient system. The central entity is the Person, which includes attributes such as First Name, Middle Name, Last Name, Address, Date of Birth (DOB), Age, and Contact details. A person can register with multiple donation centers, indicating a many-to-many (M:N) relationship. Further specialization within the entity allows a person to be classified as either a Donor or a Receiver.

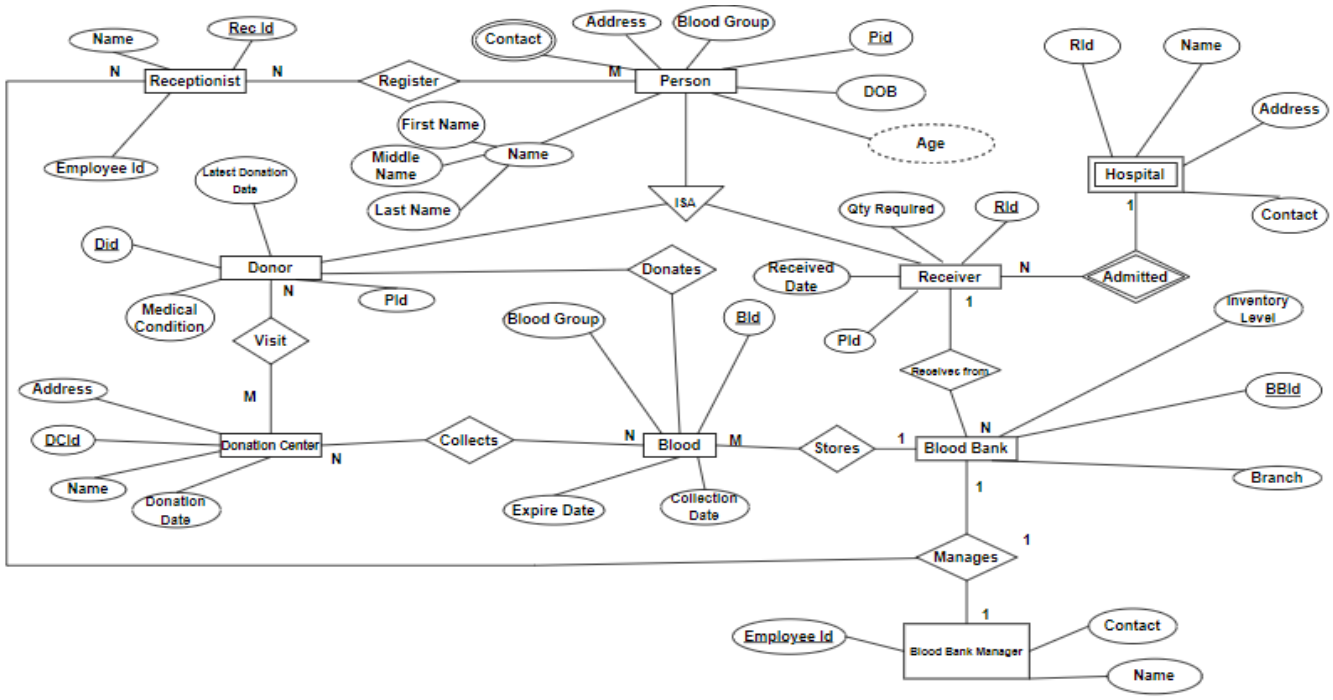
The Donor entity, identified by a unique Donor ID (DID), also records the donor's medical condition and latest donation date. Donors have a many-to-many relationship with blood groups and can visit various donation centers. The Receiver entity, identified by a Receiver ID (RID), includes attributes such as Name, Address, Contact, DOB, Age, and Quantity Required, reflecting the specific requirements of patients in need of blood.

Blood, as a critical entity, includes attributes like Blood ID (BID), Collection Date, and Expiry Date. Blood donations are collected by donation centers and stored in blood banks, establishing a complex many-to-many relationship with both donation centers and donors. Each unit of blood is eventually assigned to a receiver, reinforcing a many-to-one (N:1) relationship.

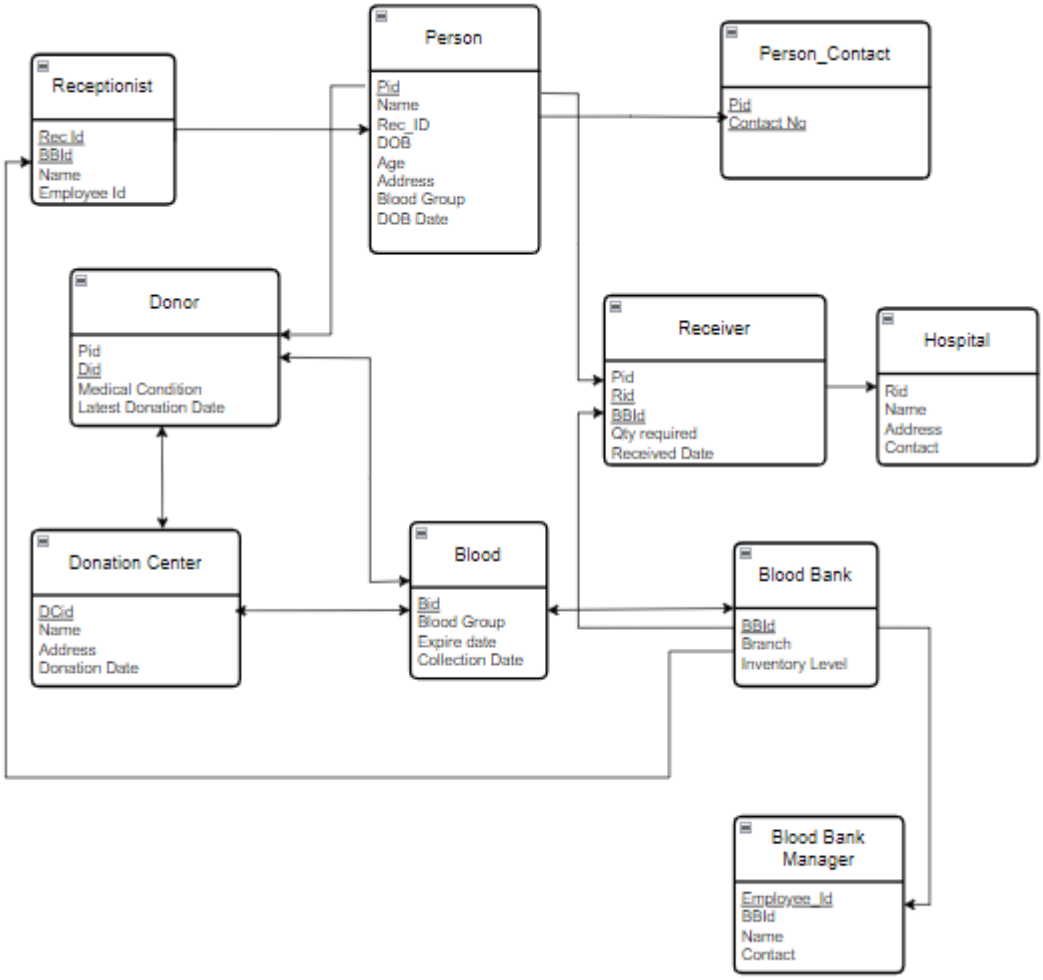
Donation Centers, identified by a Donation Center ID (DCId), maintain attributes such as Name and Address. These centers play a crucial role in collecting blood from donors. They operate under the management of Blood Banks, which are identified by a Blood Bank ID (BBId) and include attributes such as Branch and Inventory Level. Blood banks manage multiple donation centers and store blood units, which are later supplied to hospitals.

The Hospital entity, identified by a Hospital ID (RId), encompasses attributes like Name, Address, and Contact. Hospitals admit receivers (patients) and maintain an inventory of blood supplied by various blood banks, signifying a many-to-many relationship. Receptionists, identified by a Receptionist ID (Rec Id), are responsible for registering persons, forming a many-to-many relationship with the Person entity.

This ER diagram not only captures the fundamental entities and their attributes but also details the relationships necessary for an efficient blood donation and distribution process. By mapping out these connections, the system ensures seamless interaction between donors, donation centers, blood banks, hospitals, and receivers, ultimately facilitating effective blood management and distribution.



1.2. Reducing ER into table



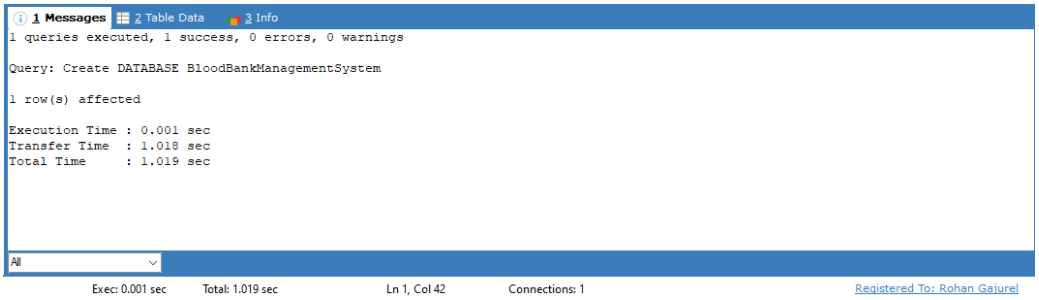
2. PHASE II

2.1. DDL Command DB and Table Creation

2.1.1. Creating Database BloodBankManagementSystem

```
Create DATABASE BloodBankManagementSystem
```

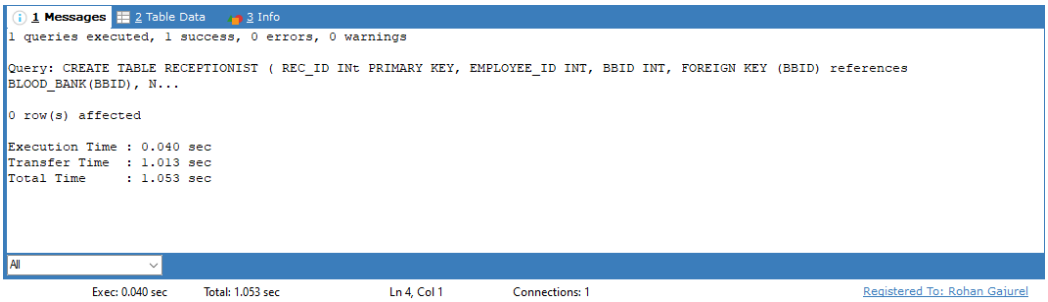
Output



2.1.2. Receptionist Table

```
CREATE TABLE RECEPTIONIST

(

REC_ID INT PRIMARY KEY,

EMPLOYEE_ID INT,

BBID INT, FOREIGN KEY (BBID) REFERENCES
BLOOD_BANK(BBID),

NAME VARCHAR(100)

);
```

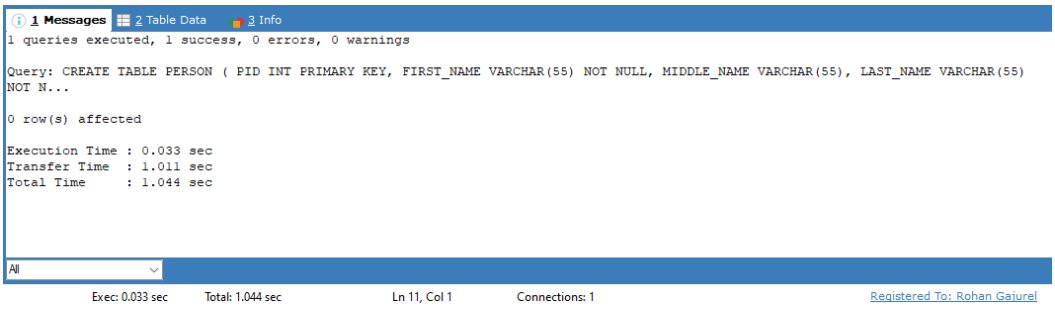
Output



2.1.3. Person Table

```
CREATE TABLE PERSON (
 PID INT PRIMARY KEY,
 FIRST_NAME VARCHAR(55) NOT NULL,
 MIDDLE_NAME VARCHAR(55),
 LAST_NAME VARCHAR(55) NOT NULL,
 GENDER CHAR(1) CHECK (gender IN ('M', 'F', 'O')),
 ADDRESS VARCHAR(55) NOT NULL,
 BLOOD_GROUP VARCHAR(5) NOT NULL,
 DOB DATE NOT NULL
);
```

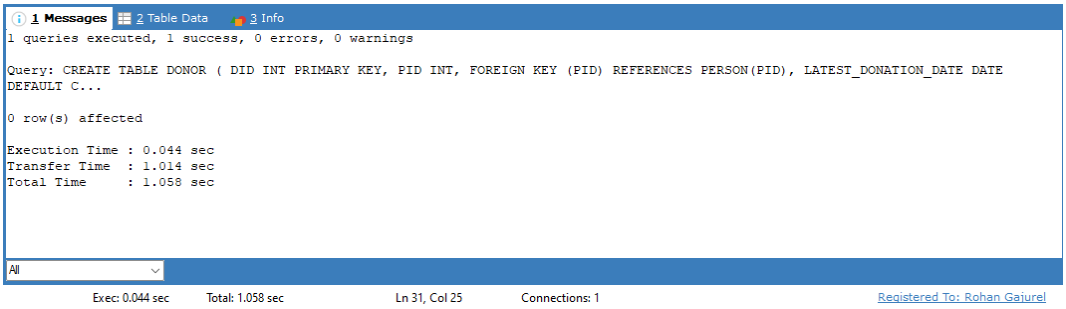
Output



2.1.4. Donor Tabe

```
CREATE TABLE DONOR (
    DID INT PRIMARY KEY,
    PID INT,
    FOREIGN KEY (PID) REFERENCES PERSON(PID),
    LATEST_DONATION_DATE DATE DEFAULT
CURRENT_TIMESTAMP,
    MEDICAL_CONDITION VARCHAR(30)
);
```

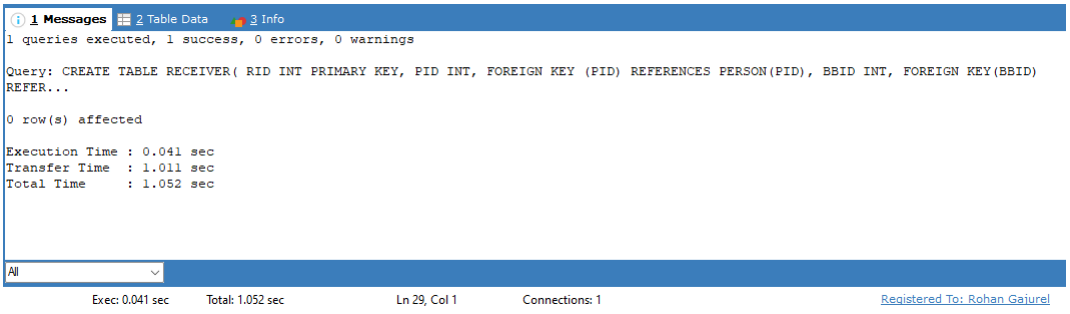
Output



2.1.5. Receiver Table

```
CREATE TABLE RECEIVER(

RID INT PRIMARY KEY,

PID INT,

FOREIGN KEY (PID) REFERENCES PERSON(PID),

BBID INT,

 FOREIGN KEY(BBID) REFERENCES BLOOD_BANK(BBID),

RECIVED_DATE DATE DEFAULT NOW(),

QTY_REQUIRED VARCHAR(30)

)
```

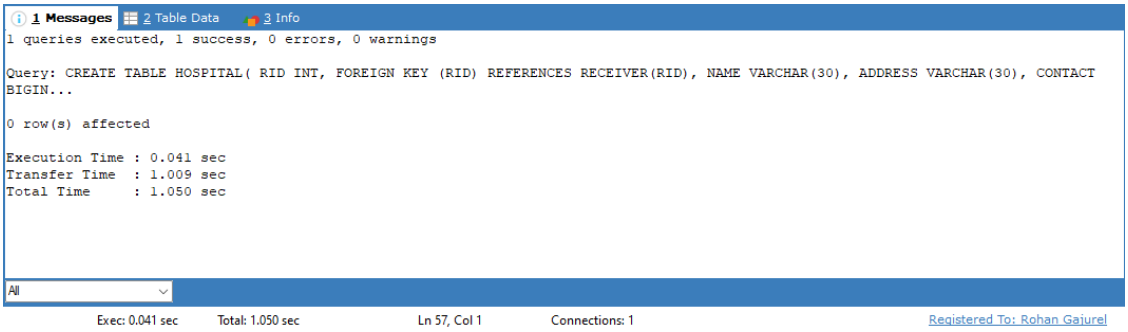
Output



2.1.6. Hospital Table

```
CREATE TABLE HOSPITAL(

RID INT,

FOREIGN KEY (RID) REFERENCES RECEIVER(RID),

NAME VARCHAR(30),

ADDRESS VARCHAR(30),

CONTACT BIGINT

);
```

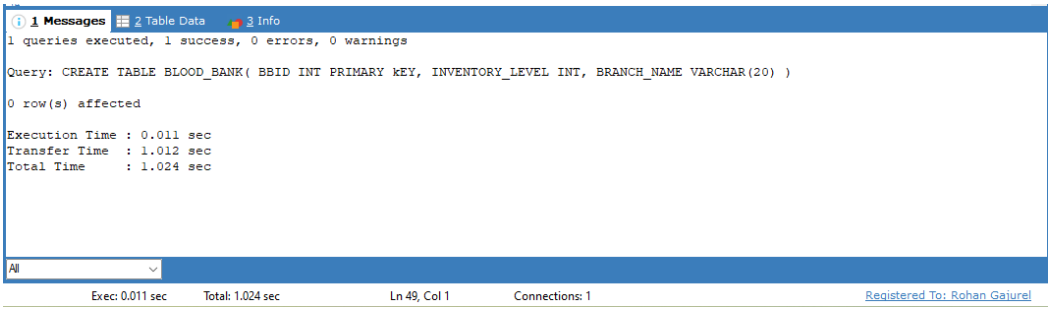
Output



2.1.7. Blood_Bank Table

```
CREATE TABLE BLOOD_BANK(
BBID  INT PRIMARY kEY,
INVENTORY_LEVEL INT,
BRANCH_NAME VARCHAR(20)
);
```

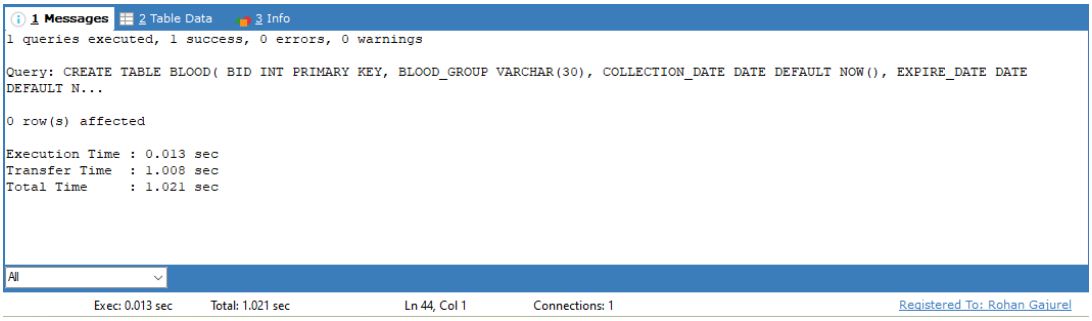
Output



2.1.8. Blood Table

```
CREATE TABLE BLOOD(

BID INT PRIMARY KEY,

BLOOD_GROUP VARCHAR(30),

COLLECTION_DATE DATE DEFAULT NOW(),

EXPIRE_DATE DATE DEFAULT NOW()

)
```

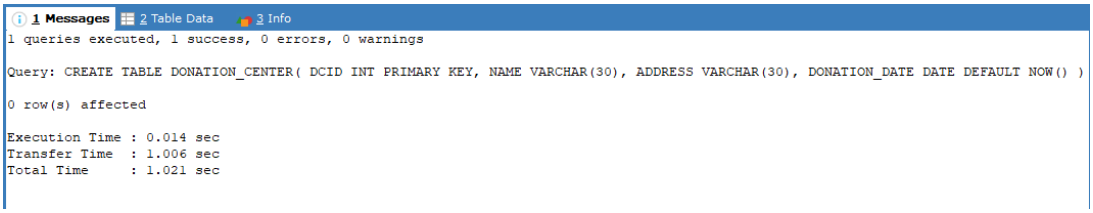
Output



2.1.9. Donation_Center Table

```
CREATE TABLE DONATION_CENTER(

DCID INT PRIMARY KEY,

NAME VARCHAR(30),

ADDRESS VARCHAR(30),

DONATION_DATE DATE DEFAULT NOW()

)
```

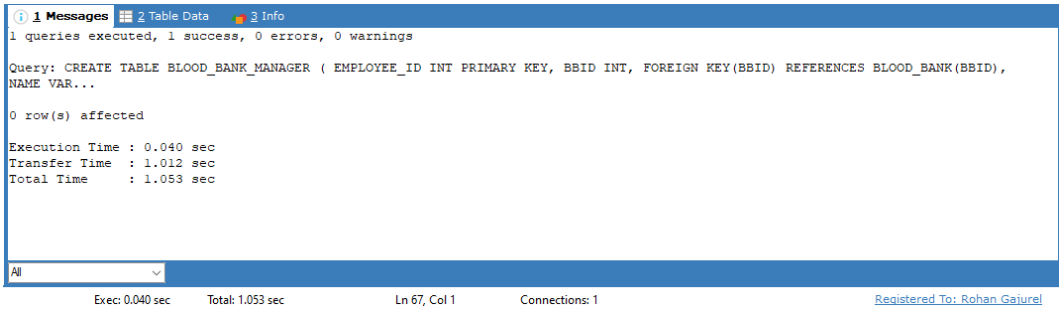
Output



2.1.10. Blood_Bank_Manager

```
CREATE TABLE BLOOD_BANK_MANAGER
(
EMPLOYEE_ID INT PRIMARY KEY,
BBID INT,
 FOREIGN KEY(BBID) REFERENCES BLOOD_BANK(BBID),
NAME VARCHAR(100),
CONTACT BIGINT
);
```

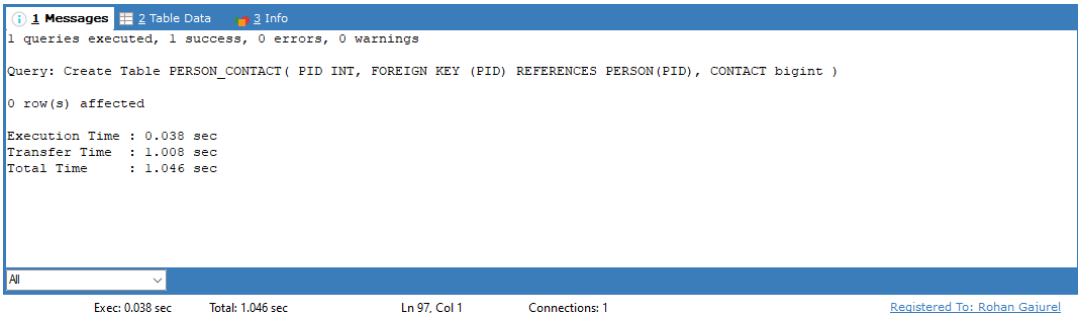
Output



2.1.11. Person_Contact

```
CREATE TABLE PERSON_CONTACT(
    PID INT,
    FOREIGN KEY (PID) REFERENCES PERSON(PID),
    CONTACT BIGINT
    );
```

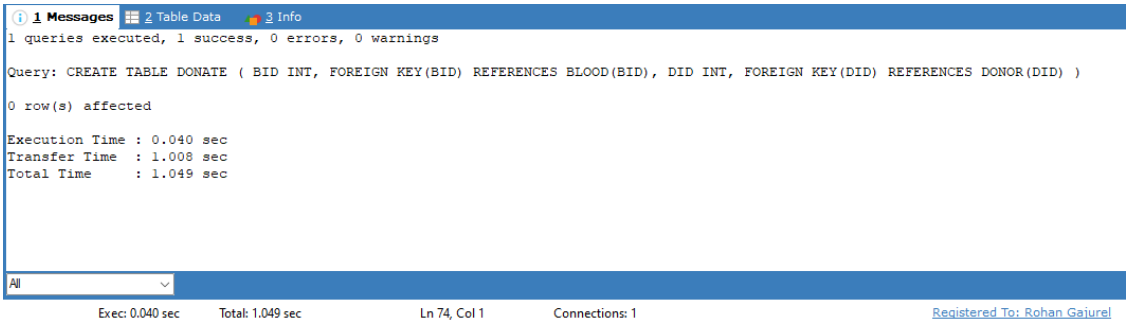
Output



2.1.12. Creating relationship table

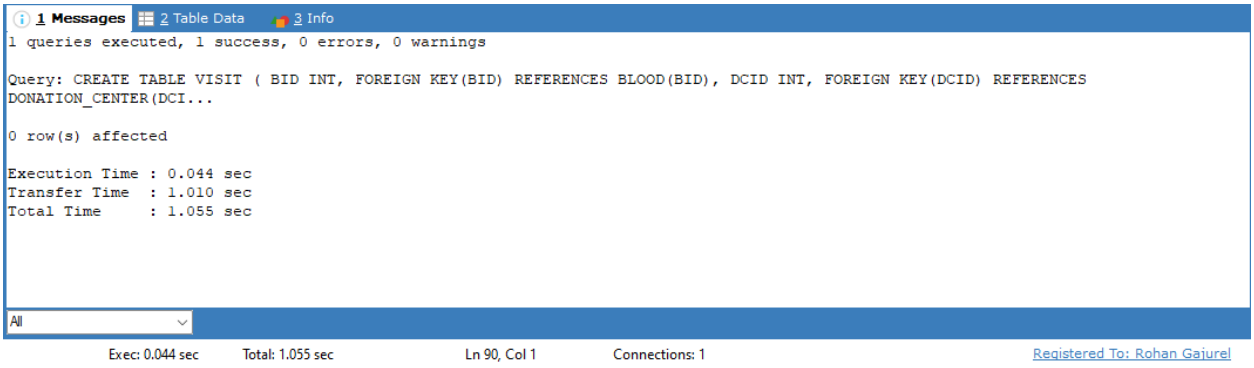
DONATE

```
CREATE TABLE DONATE
(
BID INT,
 FOREIGN KEY(BID) REFERENCES BLOOD(BID),
DID INT,
 FOREIGN KEY(DID) REFERENCES DONOR(DID)
);
```



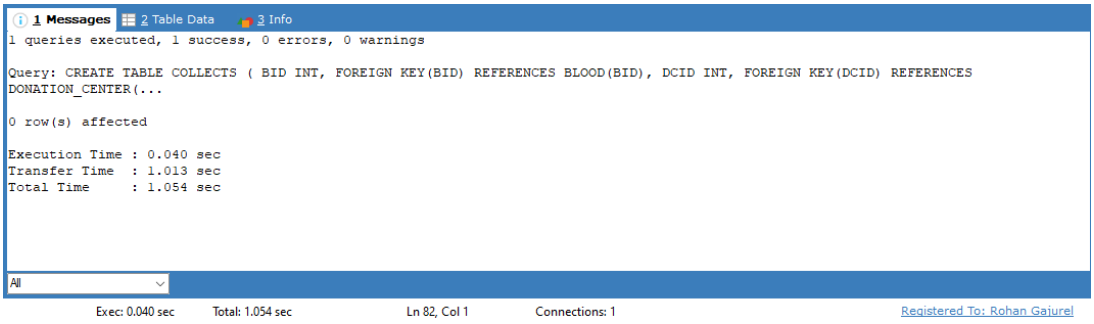
VISIT

```
CREATE TABLE VISIT
(
BID INT,
 FOREIGN KEY(BID) REFERENCES BLOOD(BID),
DCID INT,
 FOREIGN KEY(DCID) REFERENCES DONATION_CENTER(DCID));
```



COLLECTS

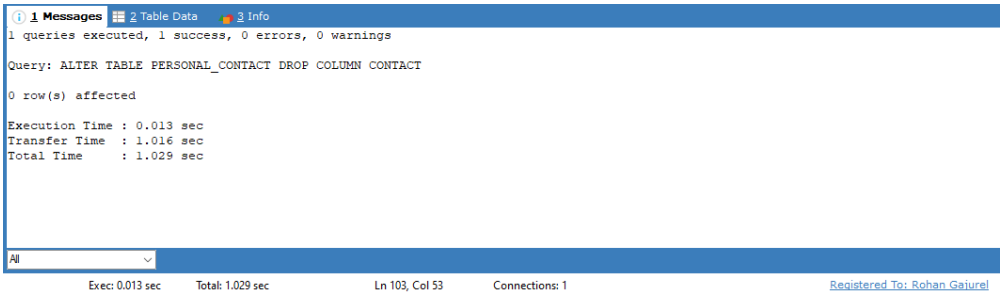
```
CREATE TABLE COLLECTS
(
BID INT,
 FOREIGN KEY(BID) REFERENCES BLOOD(BID),
DCID INT,
 FOREIGN KEY(DCID) REFERENCES DONATION_CENTER(DCID)
);
```



2.1.13. Drop Command

```
ALTER TABLE PERSONAL_CONTACT DROP COLUMN CONTACT
```

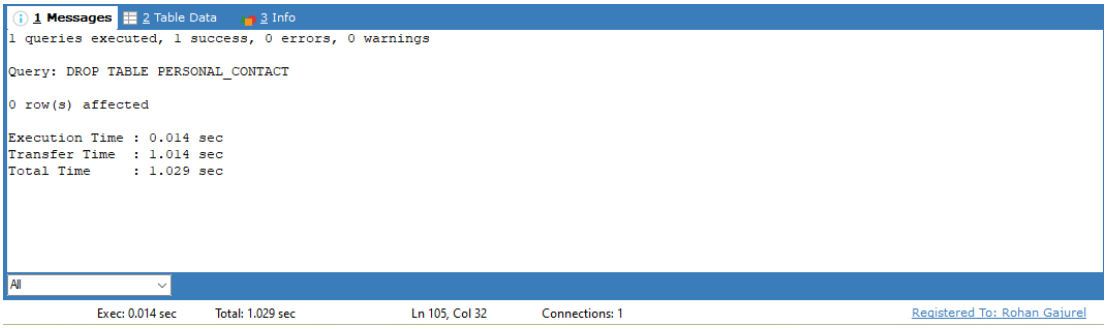
Output



2.1.14. Drop: Deleting Table

```
DROP TABLE PERSONAL_CONTACT
```

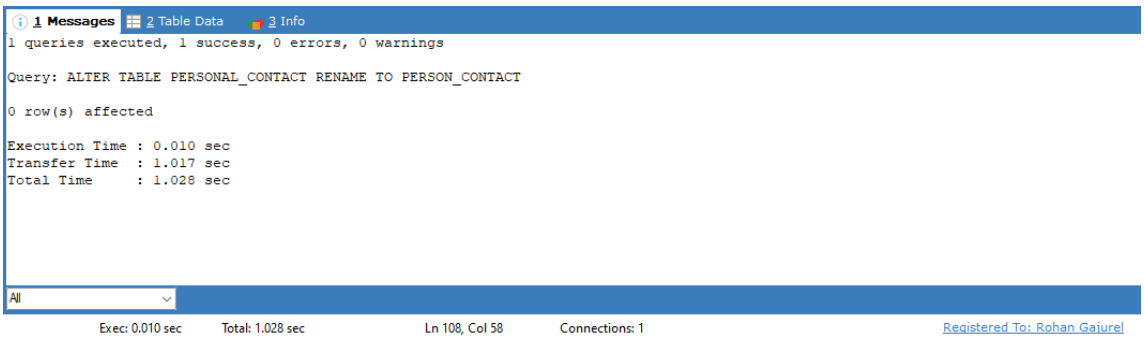
Output



2.1.15. RENAME: Changing table name

```
ALTER TABLE PERSONAL_CONTACT RENAME TO
PERSON_CONTACT
```

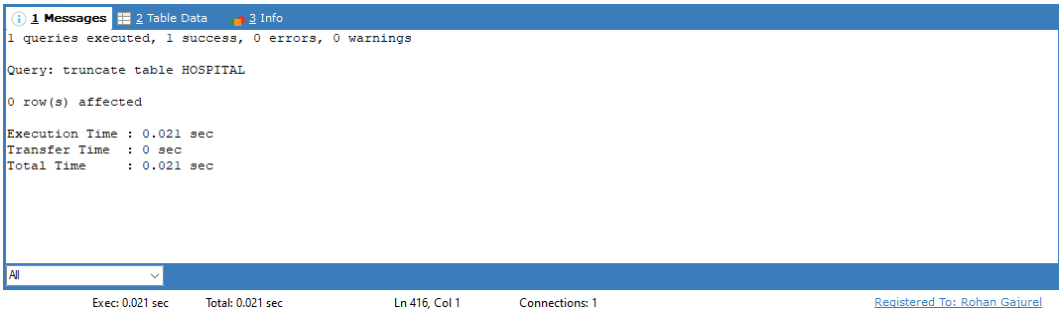
Output



2.1.16. TRUNCATE

```
TRUNCATE table HOSPITAL
```

Output



3. PHASE III

3.1. INSERTION OF DATA

3.1.1. INSERT INTO PERSON

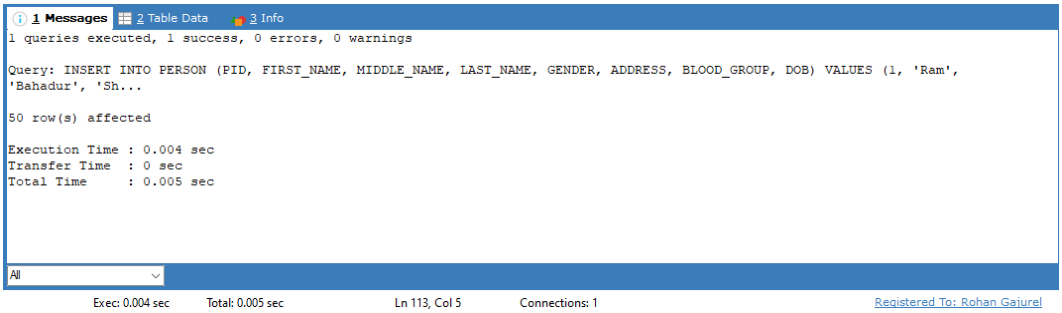
```
INSERT INTO PERSON (PID, FIRST_NAME, MIDDLE_NAME,
LAST_NAME, GENDER, ADDRESS, BLOOD_GROUP, DOB) VALUES

(1, 'Ram', 'Bahadur', 'Sharma', 'M', 'Kathmandu',
'A+', '1990-01-01'),

(2, 'Sita', NULL, 'Adhikari', 'F', 'Lalitpur', 'B+',
'1992-02-02'),

(3, 'Hari', 'Prasad', 'Gurung', 'M', 'Pokhara', 'O+',
'1985-03-03'),

(4, 'Gita', NULL, 'Rana', 'F', 'Biratnagar', 'AB+',
'1988-04-04'),

(5, 'Mohan', 'Raj', 'Thapa', 'M', 'Bhaktapur', 'A-',
'1980-05-05'),

(6, 'Radha', NULL, 'Khadka', 'F', 'Butwal', 'B-',
'1995-06-06'),

(7, 'Bishnu', 'Kumar', 'Maharjan', 'M', 'Dharan', 'O-
', '1993-07-07'),

(8, 'Laxmi', NULL, 'Tamang', 'F', 'Chitwan', 'AB-',
'1991-08-08'),

(9, 'Kamal', 'Krishna', 'Shrestha', 'M', 'Hetauda',
'A+', '1989-09-09'),

(10, 'Nirmala', NULL, 'Bista', 'F', 'Janakpur', 'B+',
'1994-10-10'),

(11, 'Dipak', 'Man', 'Lama', 'M', 'Kirtipur', 'O+',
'1990-11-11'),
```

```
(12, 'Sarita', NULL, 'Shahi', 'F', 'Nepalgunj', 'AB+',
'1992-12-12'),

(13, 'Prakash', 'Chandra', 'Karki', 'M', 'Birgunj',
'A-', '1987-01-13'),

(14, 'Rekha', NULL, 'Nepali', 'F', 'Dhankuta', 'B-',
'1991-02-14'),

(15, 'Ramesh', 'Nath', 'Jha', 'M', 'Dhangadhi', 'O-',
'1986-03-15'),

(16, 'Sunita', NULL, 'Shrestha', 'F', 'Gulmi', 'AB-',
'1990-04-16'),

(17, 'Krishna', 'Bahadur', 'Khadka', 'M', 'Surkhet',
'A+', '1988-05-17'),

(18, 'Anita', NULL, 'Gurung', 'F', 'Palpa', 'B+',
'1985-06-18'),

(19, 'Madan', 'Lal', 'Singh', 'M', 'Tanahun', 'O+',
'1992-07-19'),

(20, 'Bina', NULL, 'Rai', 'F', 'Okhaldhunga', 'AB+',
'1989-08-20'),

(21, 'Keshav', 'Prasad', 'Bhandari', 'M', 'Bharatpur',
'A-', '1993-09-21'),

(22, 'Menuka', NULL, 'Magar', 'F', 'Lamjung', 'B-',
'1991-10-22'),

(23, 'Nirajan', 'Kumar', 'Tamang', 'M', 'Dhading', 'O-
', '1987-11-23'),

(24, 'Sarmila', NULL, 'Sharma', 'F', 'Ilam', 'AB-',
'1990-12-24'),

(25, 'Kiran', 'Lal', 'Thapa', 'M', 'Sunsari', 'A+',
'1985-01-25'),
```

```
(26, 'Manju', NULL, 'Adhikari', 'F', 'Kavre', 'B+',
'1988-02-26'),

(27, 'Sanjay', 'Prasad', 'Gurung', 'M', 'Gorkha',
'O+', '1991-03-27'),

(28, 'Anju', NULL, 'Rana', 'F', 'Sindhupalchowk',
'AB+', '1986-04-28'),

(29, 'Dinesh', 'Raj', 'Shrestha', 'M', 'Dolakha', 'A-
', '1990-05-29'),

(30, 'Sushma', NULL, 'Karki', 'F', 'Nuwakot', 'B-',
'1987-06-30'),

(31, 'Rajesh', 'Kumar', 'Thapa', 'M', 'Baglung', 'O-',
'1992-07-31'),

(32, 'Kabita', NULL, 'Khadka', 'F', 'Rukum', 'AB-',
'1994-08-01'),

(33, 'Pawan', 'Krishna', 'Maharjan', 'M',
'Sankhuwasabha', 'A+', '1989-09-02'),

(34, 'Reena', NULL, 'Gurung', 'F', 'Sindhuli', 'B+',
'1991-10-03'),

(35, 'Bimal', 'Chandra', 'Rai', 'M', 'Bara', 'O+',
'1985-11-04'),

(36, 'Jyoti', NULL, 'Tamang', 'F', 'Parsa', 'AB+',
'1988-12-05'),

(37, 'Nabin', 'Man', 'Khadka', 'M', 'Saptari', 'A-',
'1990-01-06'),

(38, 'Rajani', NULL, 'Shrestha', 'F', 'Sarlahi', 'B-',
'1992-02-07'),

(39, 'Ajay', 'Prasad', 'Singh', 'M', 'Kanchanpur', 'O-
', '1986-03-08'),
```

```
(40, 'Nisha', NULL, 'Rana', 'F', 'Bardiya', 'AB-',
'1991-04-09'),

(41, 'Bijay', 'Kumar', 'Thapa', 'M', 'Jumla', 'A+',
'1988-05-10'),

(42, 'Sabina', NULL, 'Adhikari', 'F', 'Kailali', 'B+',
'1987-06-11'),

(43, 'Arjun', 'Bahadur', 'Gurung', 'M', 'Dailekh',
'O+', '1990-07-12'),

(44, 'Menuka', NULL, 'Rai', 'F', 'Dolpa', 'AB+',
'1985-08-13'),

(45, 'Sagar', 'Chandra', 'Shrestha', 'M', 'Achham',
'A-', '1989-09-14'),

(46, 'Manisha', NULL, 'Gurung', 'F', 'Jajarkot', 'B-',
'1991-10-15'),

(47, 'Ashok', 'Raj', 'Karki', 'M', 'Ramechhap', 'O-',
'1986-11-16'),

(48, 'Anita', NULL, 'Tamang', 'F', 'Arghakhanchi',
'AB-', '1990-12-17'),

(49, 'Raju', 'Krishna', 'Nepali', 'M', 'Kapilvastu',
'A+', '1987-01-18'),

(50, 'Lila', NULL, 'Shrestha', 'F', 'Parbat', 'B+',
'1988-02-19');
```

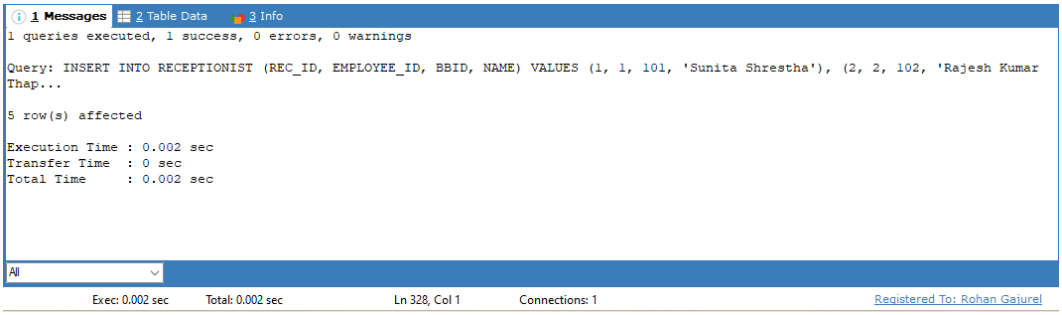
3.1.2. Output



3.1.3. INSERT DATA INTO RECEPTIONIST

```
INSERT INTO RECEPTIONIST (REC_ID, EMPLOYEE_ID, BBID,
NAME) VALUES
(1, 1, 101, 'Sunita Shrestha'),
(2, 2, 102, 'Rajesh Kumar Thapa'),
(3, 3, 103, 'Bimala Gurung'),
(4, 1, 102, 'Dipak Sharma'),
(5, 5, 101, 'Anjali Rai');
```

Output

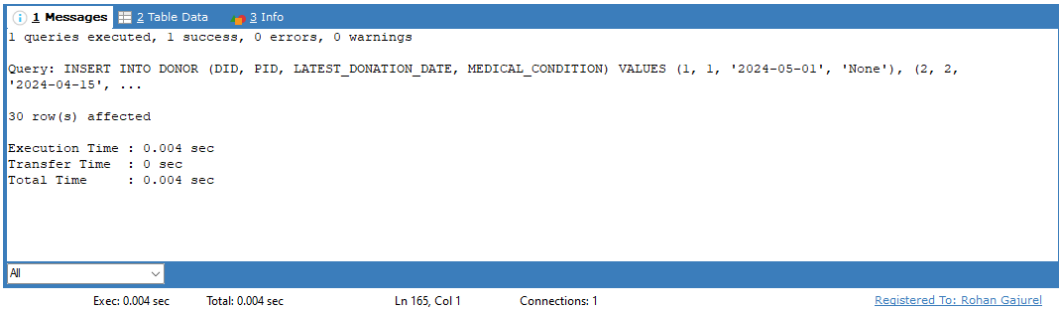


3.1.4. INSERT DATA INTO DONOR

```
INSERT INTO DONOR (DID, PID, LATEST_DONATION_DATE,
MEDICAL_CONDITION) VALUES
(1, 1, '2024-05-01', 'None'),
(2, 2, '2024-04-15', 'None'),
(3, 3, '2024-03-30', 'None'),
(4, 4, '2024-02-28', 'None'),
(5, 5, '2024-01-25', 'None'),
(6, 6, '2024-05-05', 'Diabetic'),
(7, 7, '2024-04-10', 'None'),
(8, 8, '2024-03-20', 'Hypertension'),
(9, 9, '2024-02-10', 'None'),
(10, 10, '2024-01-15', 'None'),
(11, 11, '2024-05-01', 'None'),
(12, 12, '2024-04-05', 'None'),
(13, 13, '2024-03-15', 'Asthma'),
(14, 14, '2024-02-25', 'None'),
(15, 15, '2024-01-10', 'None'),
(16, 16, '2024-05-02', 'None'),
(17, 17, '2024-04-12', 'None'),
(18, 18, '2024-03-22', 'None'),
(19, 19, '2024-02-05', 'None'),
(20, 20, '2024-01-20', 'None'),
(21, 21, '2024-05-05', 'None'),
```

```
(22, 22, '2024-04-15', 'None'),
(23, 23, '2024-03-05', 'None'),
(24, 24, '2024-02-10', 'None'),
(25, 25, '2024-01-30', 'None'),
(26, 26, '2024-05-08', 'None'),
(27, 27, '2024-04-18', 'None'),
(28, 28, '2024-03-28', 'None'),
(29, 29, '2024-02-15', 'None'),
(30, 30, '2024-01-05', 'None');
```

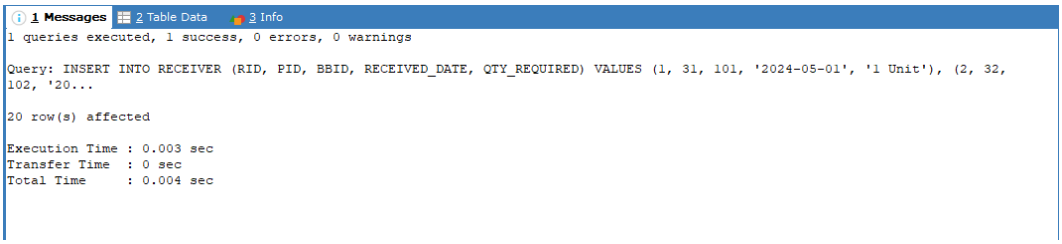
Output



3.1.5. INSERT DATA INTO RECEIVER

```
INSERT INTO RECEIVER (RID, PID, BBID, RECEIVED_DATE,
QTY_REQUIRED) VALUES
 (1, 31, 101, '2024-05-01', '1 Unit'),
(2, 32, 102, '2024-04-15', '2 Units'),
(3, 33, 103, '2024-03-30', '1 Unit'),
(4, 34, 101, '2024-02-28', '1 Unit'),
(5, 35, 102, '2024-01-25', '2 Units'),
(6, 36, 103, '2024-05-05', '1 Unit'),
(7, 37, 101, '2024-04-10', '1 Unit'),
(8, 38, 103, '2024-03-20', '2 Units'),
(9, 39, 103, '2024-02-10', '1 Unit'),
(10, 40, 102, '2024-01-15', '2 Units'),
(11, 41, 102, '2024-05-01', '1 Unit'),
(12, 42, 101, '2024-04-05', '2 Units'),
(13, 43, 103, '2024-03-15', '1 Unit'),
(14, 44, 101, '2024-02-25', '1 Unit'),
(15, 45, 102, '2024-01-10', '2 Units'),
(16, 46, 103, '2024-05-02', '1 Unit'),
(17, 47, 101, '2024-04-12', '2 Units'),
(18, 48, 102, '2024-03-22', '1 Unit'),
(19, 49, 101, '2024-02-05', '1 Unit'),
(20, 50, 103, '2024-01-20', '2 Units');
```

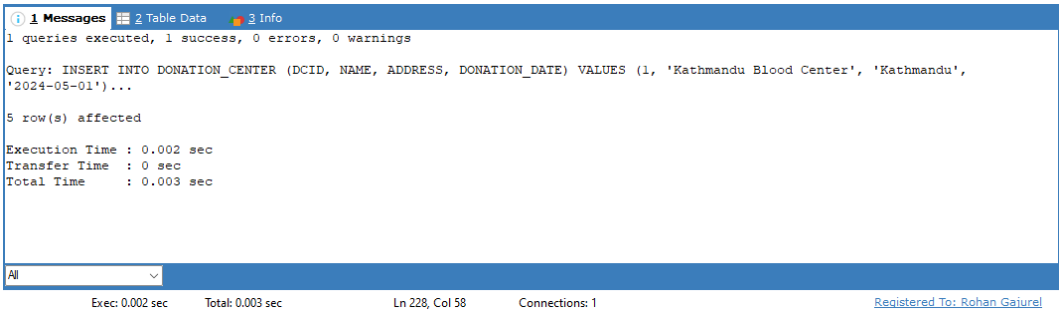
Output



3.1.6. INSERT DATA INTO DONATION_CENTER

```
INSERT INTO DONATION_CENTER (DCID, NAME, ADDRESS, DONATION_DATE) VALUES

(1, 'Kathmandu Blood Center', 'Kathmandu', '2024-05-01'),

(2, 'Lalitpur Blood Center', 'Lalitpur', '2024-04-15'),

(3, 'Pokhara Blood Center', 'Pokhara', '2024-03-30'),

(4, 'Biratnagar Blood Center', 'Biratnagar', '2024-02-28'),

(5, 'Chitwan Blood Center', 'Chitwan', '2024-01-25');
```

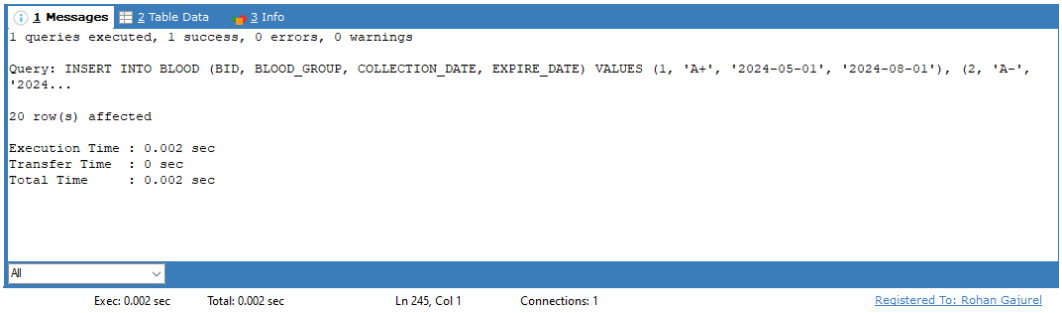
Output



3.1.7. INSERT DATA INTO BLOOD

```
INSERT INTO BLOOD (BID, BLOOD_GROUP, COLLECTION_DATE,
EXPIRE_DATE) VALUES
(1, 'A+', '2024-05-01', '2024-08-01'),
(2, 'A-', '2024-04-15', '2024-07-15'),
(3, 'B+', '2024-03-30', '2024-06-30'),
(4, 'B-', '2024-02-28', '2024-05-28'),
(5, 'O+', '2024-01-25', '2024-04-25'),
(6, 'O-', '2024-05-05', '2024-08-05'),
(7, 'AB+', '2024-04-10', '2024-07-10'),
(8, 'AB-', '2024-03-20', '2024-06-20'),
(9, 'A+', '2024-02-10', '2024-05-10'),
(10, 'A-', '2024-01-15', '2024-04-15'),
(11, 'B+', '2024-05-01', '2024-08-01'),
(12, 'B-', '2024-04-05', '2024-07-05'),
(13, 'O+', '2024-03-15', '2024-06-15'),
(14, 'O-', '2024-02-25', '2024-05-25'),
(15, 'AB+', '2024-01-10', '2024-04-10'),
(16, 'AB-', '2024-05-02', '2024-08-02'),
(17, 'A+', '2024-04-12', '2024-07-12'),
(18, 'A-', '2024-03-22', '2024-06-22'),
(19, 'B+', '2024-02-05', '2024-05-05'),
(20, 'B-', '2024-01-20', '2024-04-20');
```

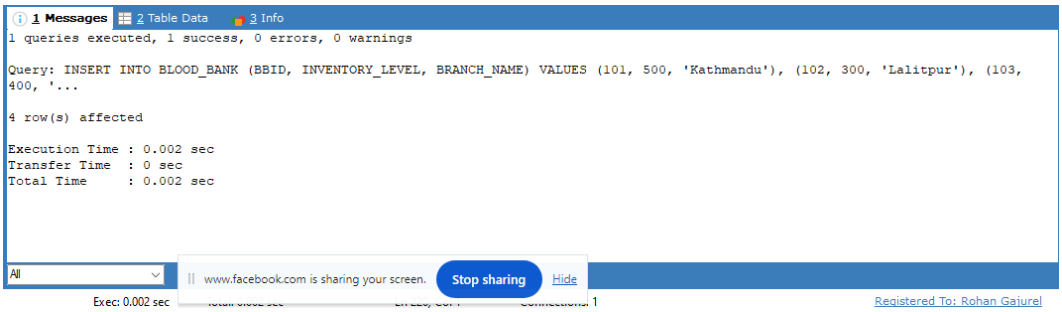
Output


1 Messages
2 Table Data
3 Info
1 queries executed, 1 success, 0 errors, 0 warnings
Query: INSERT INTO BLOOD (BID, BLOOD_GROUP, COLLECTION_DATE, EXPIRE_DATE) VALUES (1, 'A+', '2024-05-01', '2024-08-01'), (2, 'A-',
'2024...
20 row(s) affected
Execution Time : 0.002 sec
Transfer Time : 0 sec
Total Time : 0.002 sec
All
Exec: 0.002 sec
Total: 0.002 sec
Ln 245, Col 1
Connections: 1
Registered To: Rohan Gajurel

3.1.8. INSERT DATA INTO BLOOD_BANK

```
INSERT INTO BLOOD_BANK (BBID, INVENTORY_LEVEL,
BRANCH_NAME) VALUES
(101, 500, 'Kathmandu'),
(102, 300, 'Lalitpur'),
(103, 400, 'Pokhara'),
(104, 350, 'Biratnagar');
```

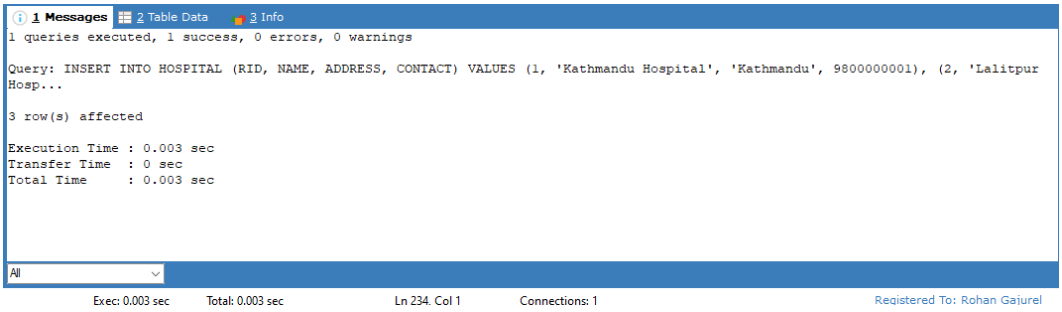
Output



3.1.9. INSERT DATA INTO HOSPITAL

```
INSERT INTO HOSPITAL (RID, NAME, ADDRESS, CONTACT)
VALUES
(1, 'Kathmandu Hospital', 'Kathmandu', 9800000001),
(2, 'Lalitpur Hospital', 'Lalitpur', 9800000002),
(3, 'Pokhara Hospital', 'Pokhara', 9800000003);
```

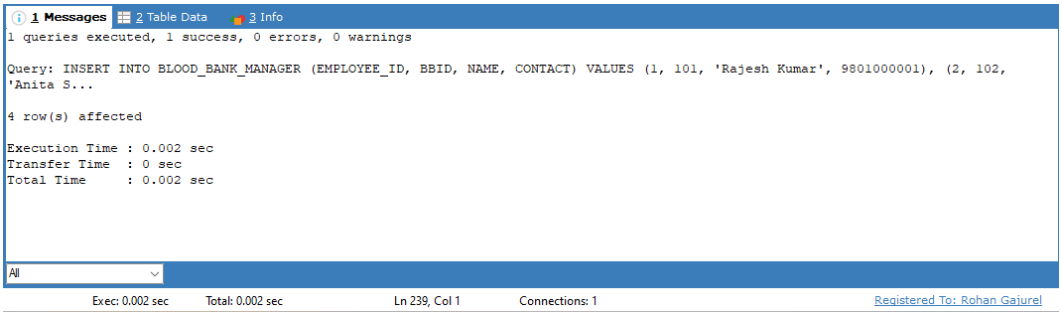
Output



3.1.10. INSERT DATA INTO BLOOD_BANK_MANAGER

```
INSERT INTO BLOOD_BANK_MANAGER (EMPLOYEE_ID, BBID,
NAME, CONTACT) VALUES
(1, 101, 'Rajesh Kumar', 9801000001),
(2, 102, 'Anita Sharma', 9801000002),
(3, 103, 'Bikash Thapa', 9801000003),
(4, 104, 'Sita Rana', 9801000004);
```

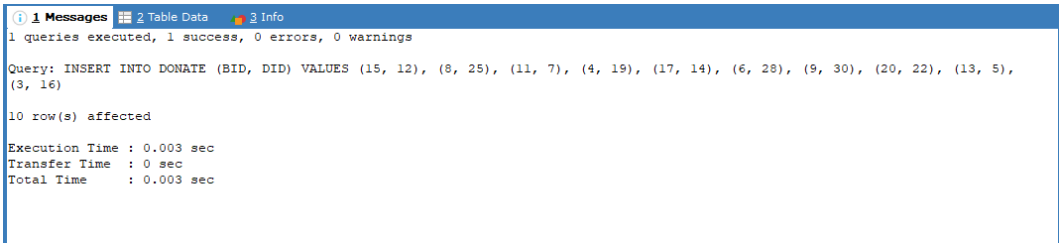
Output



3.1.11. INSERT DATA INTO DONATE

```
INSERT INTO DONATE (BID, DID) VALUES
(15, 12),
(8, 25),
(11, 7),
(4, 19),
(17, 14),
(6, 28),
(9, 30),
(20, 22),
(13, 5),
(3, 16);
```

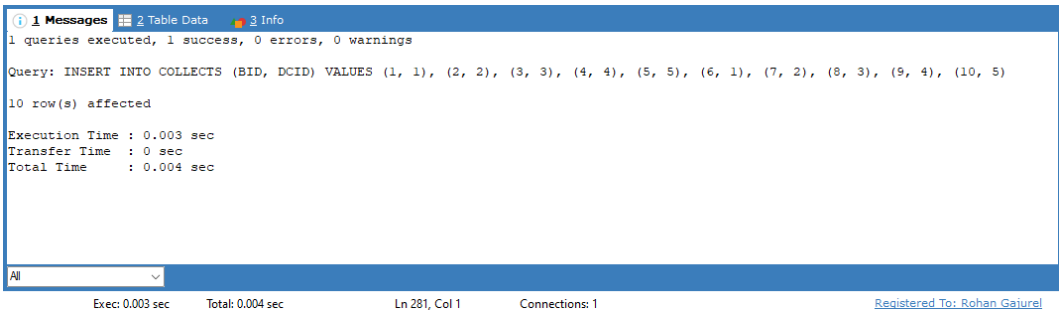
Output



3.1.12. INSERT DATA INTO COLLECTS

```
INSERT INTO COLLECTS (BID, DCID) VALUES
(1, 1),
(2, 2),
(3, 3),
(4, 4),
(5, 5),
(6, 1),
(7, 2),
(8, 3),
(9, 4),
(10, 5);
```

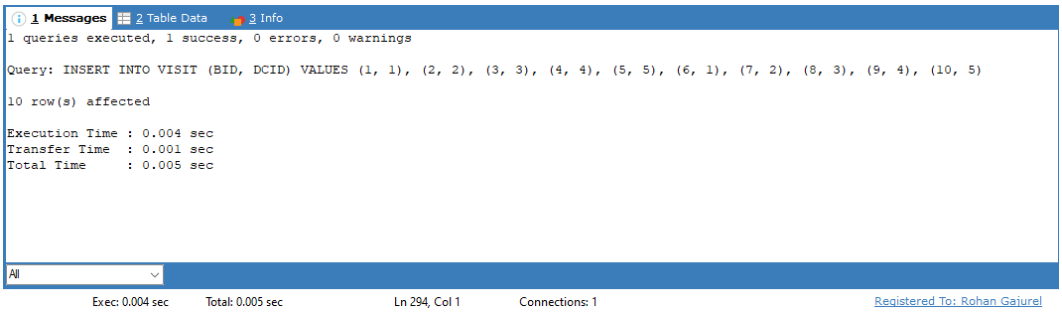
Output



3.1.13. INSERT DATA INTO VISIT

```
INSERT INTO VISIT (BID, DCID) VALUES
(1, 1),
(2, 2),
(3, 3),
(4, 4),
(5, 5),
(6, 1),
(7, 2),
(8, 3),
(9, 4),
(10, 5);
```

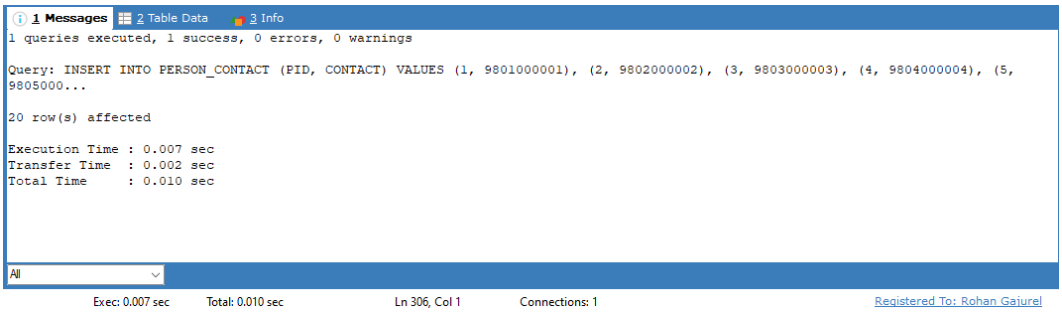
Output



3.1.14. INSERT INTO PERSON_CONTACT

```
INSERT INTO PERSON_CONTACT (PID, CONTACT) VALUES
(1, 9801000001),
(2, 9802000002),
(3, 9803000003),
(4, 9804000004),
(5, 9805000005),
(6, 9806000006),
(7, 9807000007),
(8, 9808000008),
(9, 9809000009),
(10, 9810000010),
(1, 9801000011),
(2, 9802000012),
(3, 9803000023),
(4, 9804000044),
(5, 9805000015),
(6, 9806000016),
(6, 9807000017),
(7, 9808000018),
(7, 9809000019),
(8, 9810000011);
```

Output

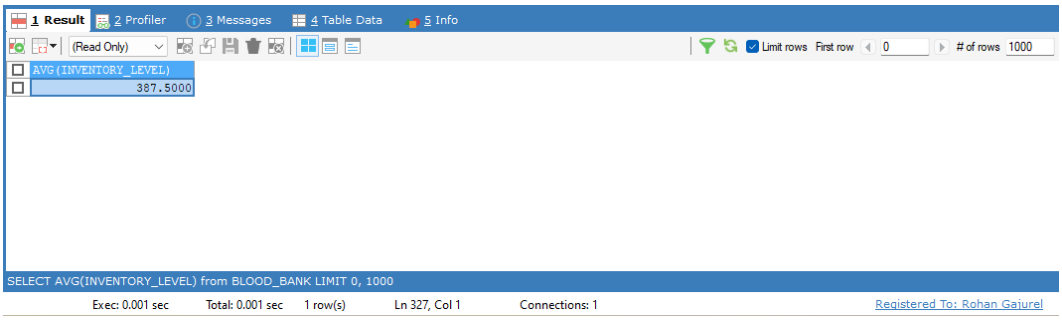

1 Messages
2 Table Data
3 Info
1 queries executed, 1 success, 0 errors, 0 warnings
Query: INSERT INTO PERSON_CONTACT (PID, CONTACT) VALUES (1, 9801000001), (2, 9802000002), (3, 9803000003), (4, 9804000004), (5, 9805000...
20 row(s) affected
Execution Time : 0.007 sec
Transfer Time : 0.002 sec
Total Time : 0.010 sec
All
Exec: 0.007 sec
Total: 0.010 sec
Ln 306, Col 1
Connections: 1
Registered To: Rohan Gajurel

3.2. Aggregate Function

3.2.1. AVG():

```
SELECT AVG(INVENTORY_LEVEL) FROM BLOOD_BANK
```

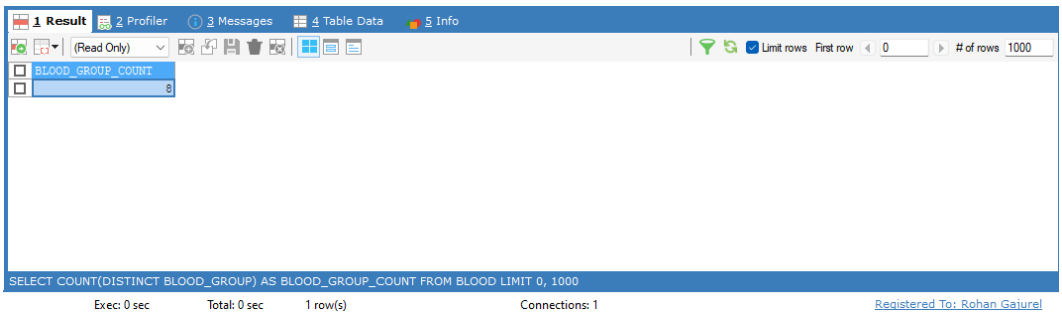
Output



3.2.2. COUNT():

```
SELECT COUNT(DISTINCT BLOOD_GROUP) AS
BLOOD_GROUP_COUNT FROM BLOOD;
```

Output



3.2.3. MAX():

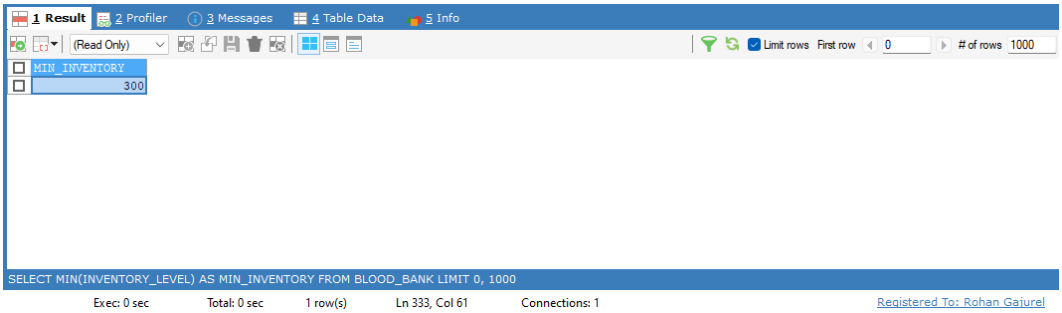
```
SELECT MAX(INVENTORY_LEVEL) AS MAX_INVENTORY FROM
BLOOD_BANK
```

Output

3.2.4. MIN():

```
SELECT MIN(INVENTORY_LEVEL) AS MIN_INVENTORY FROM
BLOOD_BANK
```

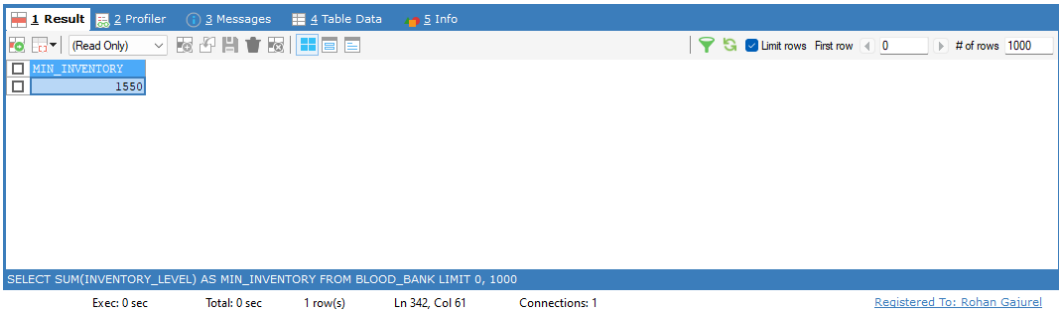
Output



3.2.5. SUM():

```
SELECT SUM(INVENTORY_LEVEL) AS MIN_INVENTORY FROM
BLOOD_BANK
```

Output



3.3. JOIN

3.3.1. INNER JOIN

```
SELECT p.FIRST_NAME,p.LAST_NAME, b.BLOOD_GROUP

FROM DONOR d

INNER JOIN PERSON p ON d.PID = p.PID

INNER JOIN BLOOD b ON d.DID = b.BID;
```

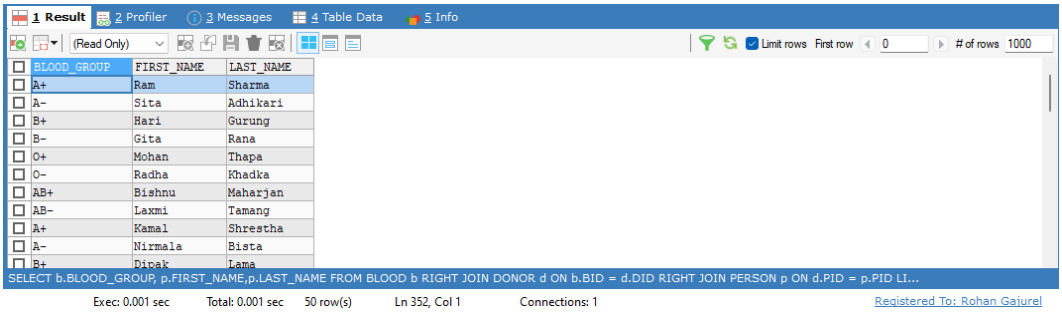
Output

FIRST_NAME	LAST_NAME	BLOOD_GROUP
Ram	Sharma	A+
Sita	Adhikari	A-
Hari	Gurung	B+
Gita	Rana	B-
Mohan	Thapa	O+
Radha	Khadka	O-
Bishnu	Maharjan	AB+
Laxmi	Tamang	AB-
Kamal	Shrestha	A+
Nirmala	Bista	A-
Dipak	Lama	B+

3.3.2. RIGHT JOIN

```
SELECT b.BLOOD_GROUP, p.FIRST_NAME,p.LAST_NAME

FROM BLOOD b

RIGHT JOIN DONOR d ON b.BID = d.DID

RIGHT JOIN PERSON p ON d.PID = p.PID;
```

Output

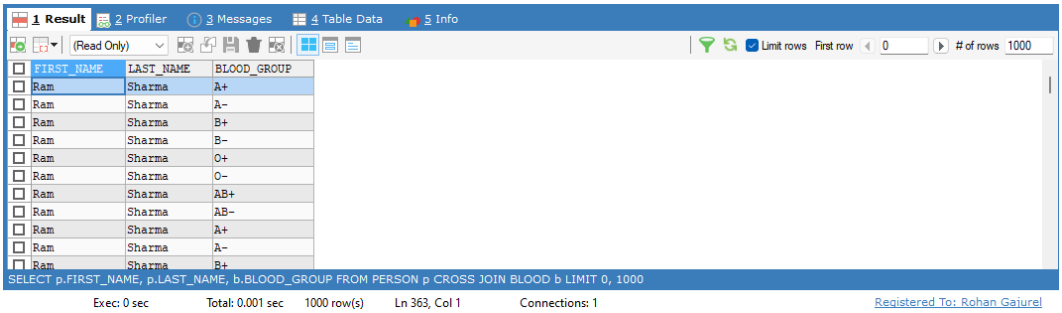


BLOOD_GROUP	FIRST_NAME	LAST_NAME
A+	Ram	Sharma
A-	Sita	Adhikari
B+	Hari	Gurung
B-	Gita	Rana
O+	Mohan	Thapa
O-	Radha	Khadka
AB+	Bishnu	Maharjan
AB-	Laxmi	Tamang
A+	Kamal	Shrestha
A-	Nirmala	Bista
B+	Dipak	Lama

3.3.3. CROSS JOIN

```
SELECT p.FIRST_NAME, p.LAST_NAME, b.BLOOD_GROUP

FROM PERSON p

CROSS JOIN BLOOD b;
```

Output

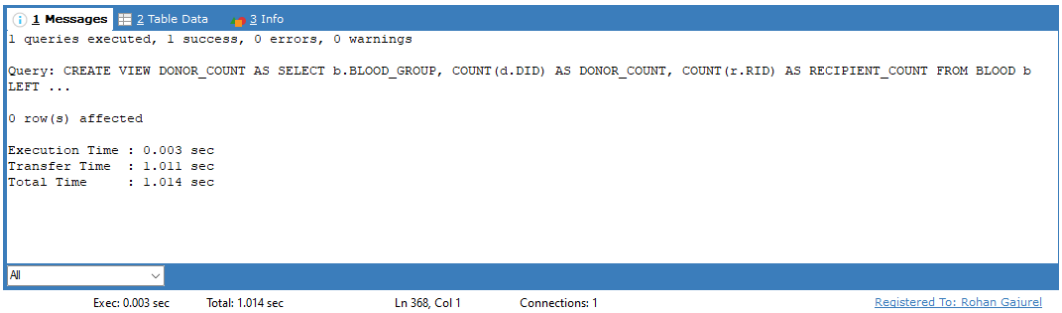


3.4. VIEW IN DATABASE

3.4.1. Creating View

```
CREATE VIEW DONOR_COUNT AS

SELECT b.BLOOD_GROUP, COUNT(d.DID) AS DONOR_COUNT,
COUNT(r.RID) AS RECIPIENT_COUNT

FROM BLOOD b

LEFT JOIN DONOR d ON b.BID = d.DID

LEFT JOIN RECEIVER r ON b.BID = r.BBID

GROUP BY b.BLOOD_GROUP;
```

Output

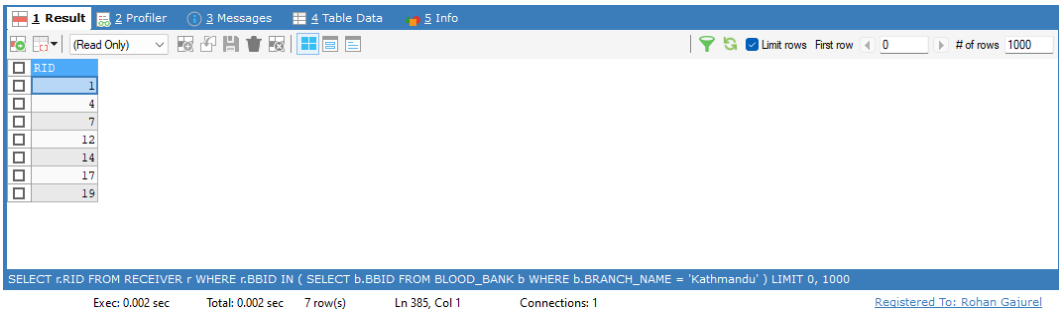


3.5. SUBQUERY

3.5.1. Select using Subquery

```
SELECT r.RID

FROM RECEIVER r

WHERE r.BBID IN (

    SELECT b.BBID

    FROM BLOOD_BANK b

    WHERE b.BRANCH_NAME = 'Kathmandu'

);
```

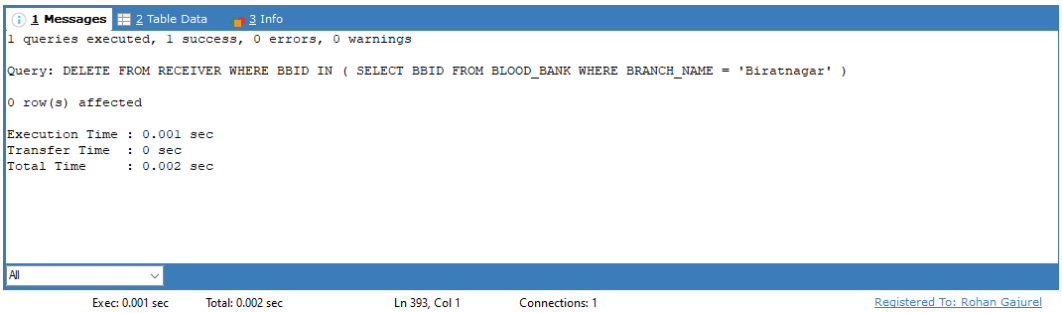
Output



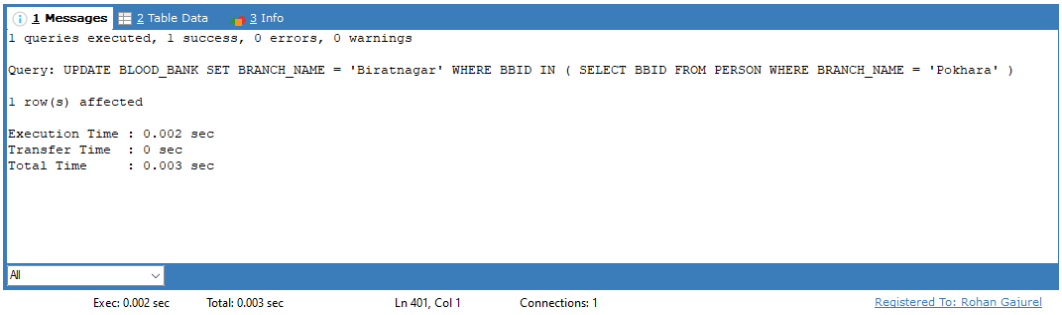
3.5.2. Delete using Subquery

```
DELETE FROM RECEIVER

WHERE BBID IN (

    SELECT BBID

    FROM BLOOD_BANK

    WHERE BRANCH_NAME = 'Biratnagar'

);
```

Output



3.5.3. Update using Subquery

```
UPDATE BLOOD_BANK

SET BRANCH_NAME = 'Biratnagar'

WHERE BBID IN (

    SELECT BBID

    FROM PERSON

    WHERE BRANCH_NAME = 'Pokhara'

);
```

Output