

# DBMS

## ASSIGNMENT-4

**NAME:** Heni Prajapati

**REG. NO.:** 19BCS119

**1. Write 5 Nested Queries for your respective database- the queries should not be very similar like just changing the where clause or just building all the queries on only one or two tables etc. The queries should make sense, it should cover most part of your database tables.**

**Query:**

```
SELECT * FROM t1_patients
where doc_id IN(SELECT doc_id FROM t1_doctor
where doc_designation = 'Gynaecologist');
```

```
SELECT * FROM t1_bill
where pat_id IN(SELECT pat_id FROM t1_patients
where pat_name = 'Ramesh');
```

```
SELECT * FROM t1_staff
where doc_id IN(SELECT doc_id FROM t1_doctor
where doc_designation = 'Gynaecologist');
```

```
SELECT * FROM t1_patient_diagnosis
where pat_id IN(SELECT doc_id FROM t1_doctor
where doc_name = 'Rashmi');
```

```
SELECT * FROM t1_staff
where doc_id IN(SELECT pat_id FROM t1_patients
where pat_gender = 'Female');
```

## Output:

150 %

Results Messages

	pat_id	pat_name	pat_gender	pat_phone	pat_address	doc_id	pat_lname
1	3	Swati	Female	9641264523	12 nsyqtxb	1	NULL
2	13	Ramesh	Male	9809988989	12 nndhswu	1	NULL
3	15	Swati	Female	9641264523	12 nsyqtxb	1	NULL
4	25	Ramesh	Male	9809988989	12 nndhswu	1	NULL
5	29	Swati	Female	9641264523	12 nsyqtxb	1	NULL

	bill_no	patient_name	doctor_name	bill_date	amount	pat_id
1	4	Shivani Khanna	Rajesh	2020-12-12	100	1
2	10	Heni Prajapati	Sumit	2020-12-29	500	1
3	11	Rajendra Sukla	Rashmi	2021-01-12	3000	18
4	30	Shivani Khanna	Rajesh	2020-12-12	100	1
5	33	Rajkumar Yadav	Sumit	2021-02-12	1200	18
6	50	Rajendra Sukla	Rashmi	2021-01-12	3000	18

	staff_id	staff_name	staff_gender	staff_dept	staff_address	staff_phone	doc_id
1	4	Suhani	Female	Intern	66 Ram Nagar, Gandhi Road, Delhi	9182736454	1
2	6	Rajesh	Male	Attending Physician	12 Ram Nagar, Gandhi Road, Delhi	9786541234	1

	diag_no	diag_details	remark	diag_date	other	pat_id
1	3	Food Infection		2021-12-12	NULL	2
2	10	Covid-19		2020-12-20	NULL	5

	staff_id	staff_name	staff_gender	staff_dept	staff_address	staff_phone	doc_id
1	1	Himani	Female	Registered nurse	12 Ram Nagar, Gandhi Road, Delhi	9786541234	3
2	3	Raja	Male	Registered nurse	12-A Laxman Nagar, Gandhi Road, Delhi	8765431299	3
3	5	Priya	Female	Specialists	09 Ram Nagar, MG Road, Delhi	7986142357	3

> Query executed successfully.

## 2. Illustrate how we can use concat and AS operator in SQL.

### Query:

```
SELECT pat_id,concat(pat_name,pat_gender) as 'Name and Gender' FROM t1_patients;
```

## Output:

dbo.t1\_doctor

dbo.t1\_patient\_diagnosis

dbo.t1\_patients

Columns

- pat\_id (PK, FK, int, not null)
- pat\_name (char(50), null)
- pat\_gender (char(10), null)
- pat\_phone (bigint, null)
- pat\_address (varchar(100), null)
- doc\_id (FK, int, not null)
- pat\_lname (char(50), null)

Keys

Constraints

Triggers

Indexes

Statistics

dbo.t1\_staff

Columns

- staff\_id (PK, int, not null)
- staff\_name (char(50), null)
- staff\_gender (char(10), null)
- staff\_dept (varchar(20), null)
- staff\_address (varchar(100), null)

150 %

Results Messages

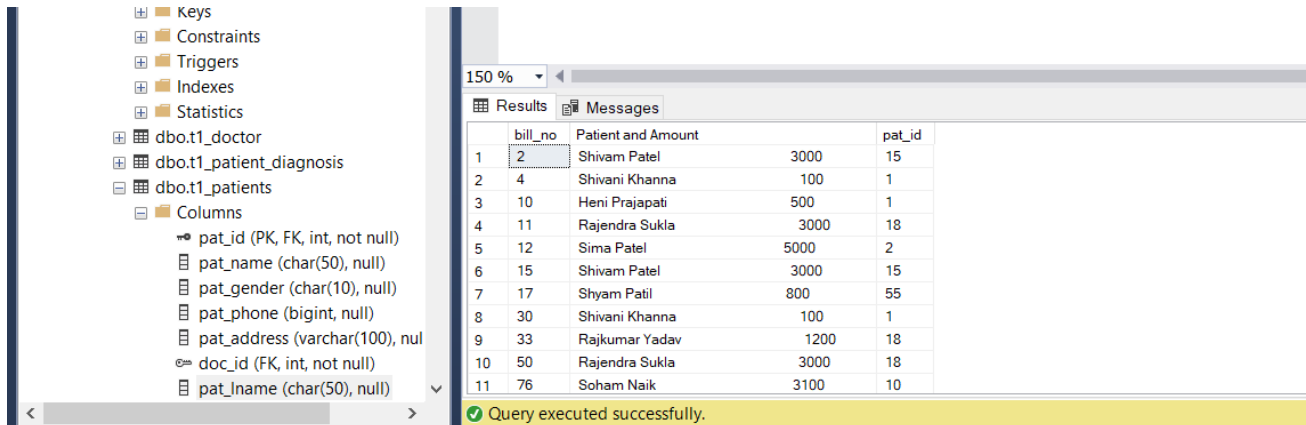
	pat_id	Name and Gender
1	1	Ramesh Male
2	2	Suresh Male
3	3	Swati Female
4	4	Pooja Female
5	5	Raj Male
6	6	Ramesh Male
7	7	Zoya Female
8	8	Heni Female
9	9	Sreya Female
10	10	Hardik Male
11	11	Mansi Female
12	12	Bhavin Male
13	13	Ramesh Male
14	14	Suresh Male
15	15	Swati Female
16	16	Pooja Female
17	17	Rai Male

> Query executed successfully.

### Query:

```
SELECT bill_no,concat(patient_name,amount) as 'Patient and Amount',pat_id  
FROM t1_bill;
```

### Output:

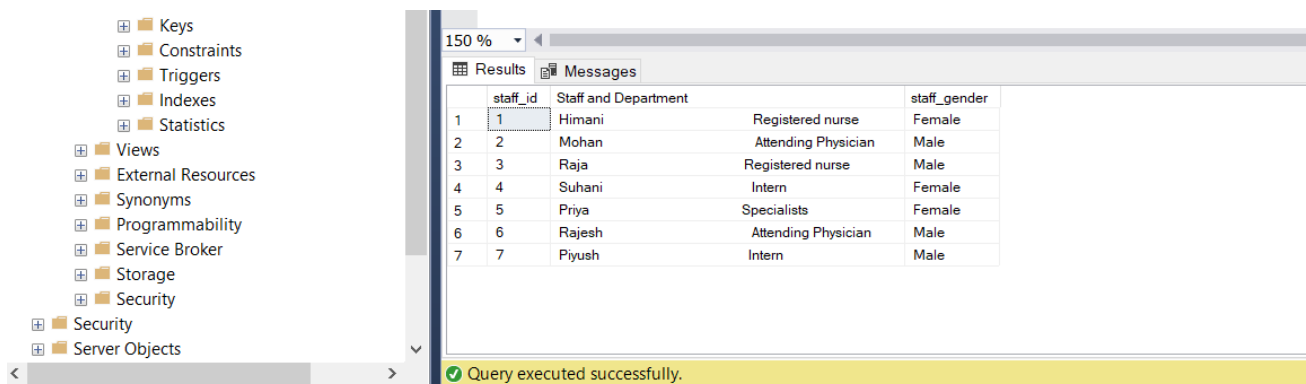


bill_no	Patient and Amount	pat_id
2	Shivam Patel 3000	15
4	Shivani Khanna 100	1
10	Heni Prajapati 500	1
11	Rajendra Sukla 3000	18
12	Sima Patel 5000	2
15	Shivam Patel 3000	15
17	Shyam Patil 800	55
30	Shivani Khanna 100	1
33	Rajkumar Yadav 1200	18
50	Rajendra Sukla 3000	18
76	Soham Naik 3100	10

### Query:

```
SELECT staff_id,concat(staff_name,staff_dept) as 'Staff and  
Department',staff_gender FROM t1_staff;
```

### Output:



staff_id	Staff and Department	staff_gender
1	Himani Registered nurse	Female
2	Mohan Attending Physician	Male
3	Raja Registered nurse	Male
4	Suhani Intern	Female
5	Priya Specialists	Female
6	Rajesh Attending Physician	Male
7	Piyush Intern	Male

## 3. Illustrate all the Comparison operator

### Query:(= operator)

```
SELECT * FROM t1_bill WHERE amount=3000;
```

## Output:

The screenshot shows the SQL Server Enterprise Manager interface. On the left, the 'Server Objects' tree is expanded, showing 'Keys', 'Constraints', 'Triggers', 'Indexes', 'Statistics', 'Views', 'External Resources', 'Synonyms', 'Programmability', 'Service Broker', 'Storage', 'Security', and 'Server Objects'. The 'Results' tab is active, displaying a table with 7 columns: bill\_no, patient\_name, doctor\_name, bill\_date, amount, and pat\_id. The table contains 4 rows of data. A status bar at the bottom indicates 'Query executed successfully.'

	bill_no	patient_name	doctor_name	bill_date	amount	pat_id
1	2	Shivam Patel	Sumit	2020-11-12	3000	15
2	11	Rajendra Sukla	Rashmi	2021-01-12	3000	18
3	15	Shivam Patel	Jayesh	2020-11-12	3000	15
4	50	Rajendra Sukla	Rashmi	2021-01-12	3000	18

## Query:(= operator)

```
SELECT * FROM t1_bill WHERE pat_id=18;
```

## Output:

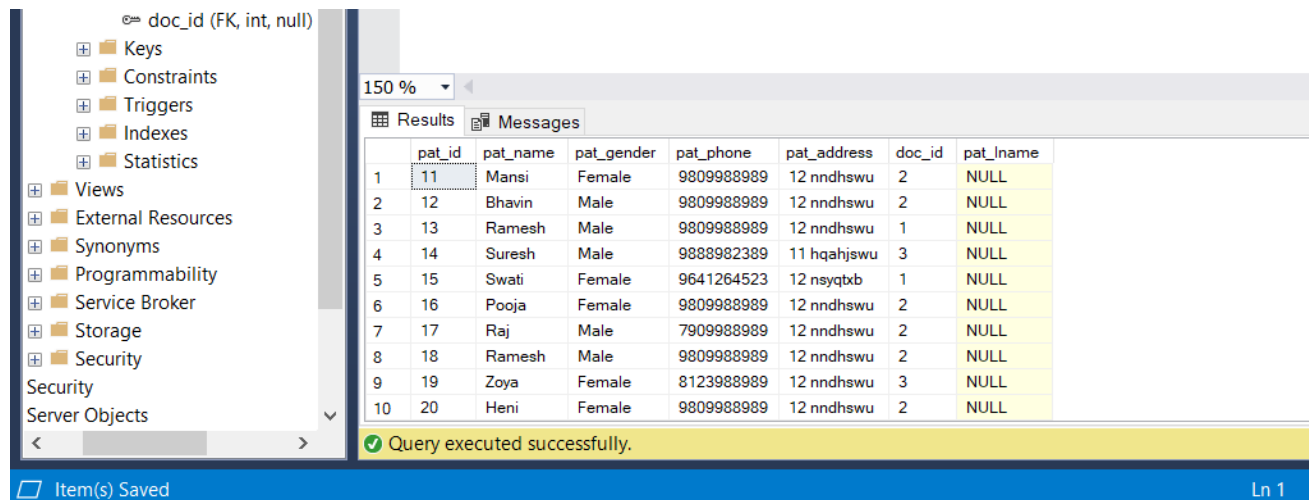
The screenshot shows the SQL Server Enterprise Manager interface. On the left, the 'Server Objects' tree is expanded, showing 'Keys', 'Constraints', 'Triggers', 'Indexes', 'Statistics', 'Views', 'External Resources', 'Synonyms', 'Programmability', 'Service Broker', 'Storage', 'Security', and 'Server Objects'. The 'Results' tab is active, displaying a table with 7 columns: bill\_no, patient\_name, doctor\_name, bill\_date, amount, and pat\_id. The table contains 3 rows of data. A status bar at the bottom indicates 'Query executed successfully.'

	bill_no	patient_name	doctor_name	bill_date	amount	pat_id
1	11	Rajendra Sukla	Rashmi	2021-01-12	3000	18
2	33	Rajkumar Yadav	Sumit	2021-02-12	1200	18
3	50	Rajendra Sukla	Rashmi	2021-01-12	3000	18

## Query:(> operator)

```
SELECT * FROM t1_patients WHERE pat_id>10;
```

## Output:



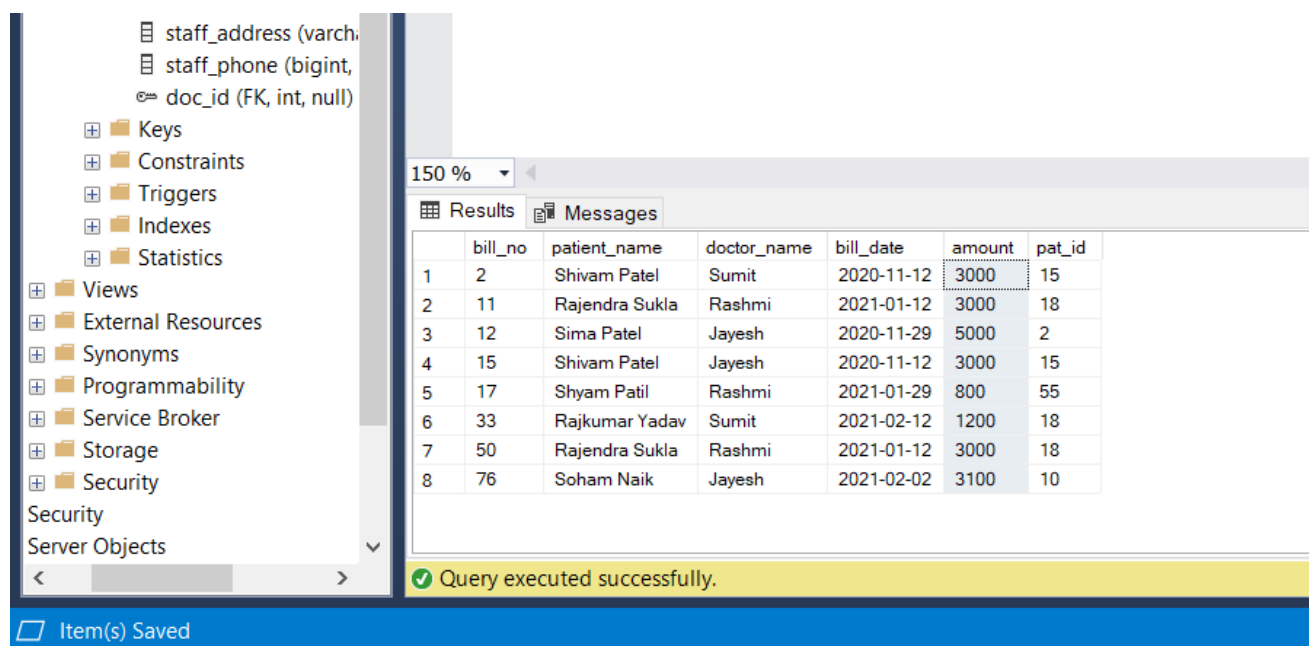
The screenshot shows the SQL Server Enterprise Manager interface. On the left, the 'Server Objects' tree is expanded to 'Security'. The main pane displays a query result for a table with columns: pat\_id, pat\_name, pat\_gender, pat\_phone, pat\_address, doc\_id, and pat\_lname. The results are displayed in a grid with 10 rows. The status bar at the bottom indicates 'Query executed successfully.' and 'Ln 1'.

	pat_id	pat_name	pat_gender	pat_phone	pat_address	doc_id	pat_lname
1	11	Mansi	Female	9809988989	12 nndhswu	2	NULL
2	12	Bhavin	Male	9809988989	12 nndhswu	2	NULL
3	13	Ramesh	Male	9809988989	12 nndhswu	1	NULL
4	14	Suresh	Male	9889882389	11 hqahjswu	3	NULL
5	15	Swati	Female	9641264523	12 nsyqtkb	1	NULL
6	16	Pooja	Female	9809988989	12 nndhswu	2	NULL
7	17	Raj	Male	7909988989	12 nndhswu	2	NULL
8	18	Ramesh	Male	9809988989	12 nndhswu	2	NULL
9	19	Zoya	Female	8123988989	12 nndhswu	3	NULL
10	20	Heni	Female	9809988989	12 nndhswu	2	NULL

## Query:(> operator)

SELECT \* FROM t1\_bill WHERE amount>500;

## Output:



The screenshot shows the SQL Server Enterprise Manager interface. On the left, the 'Server Objects' tree is expanded to 'Security'. The main pane displays a query result for a table with columns: bill\_no, patient\_name, doctor\_name, bill\_date, amount, and pat\_id. The results are displayed in a grid with 8 rows. The status bar at the bottom indicates 'Query executed successfully.' and 'Ln 1'.

	bill_no	patient_name	doctor_name	bill_date	amount	pat_id
1	2	Shivam Patel	Sumit	2020-11-12	3000	15
2	11	Rajendra Sukla	Rashmi	2021-01-12	3000	18
3	12	Sima Patel	Jayesh	2020-11-29	5000	2
4	15	Shivam Patel	Jayesh	2020-11-12	3000	15
5	17	Shyam Patil	Rashmi	2021-01-29	800	55
6	33	Rajkumar Yadav	Sumit	2021-02-12	1200	18
7	50	Rajendra Sukla	Rashmi	2021-01-12	3000	18
8	76	Soham Naik	Jayesh	2021-02-02	3100	10

## Query:(< operator)

SELECT \* FROM t1\_bill WHERE amount<3000;

## Output:

	bill_no	patient_name	doctor_name	bill_date	amount	pat_id
1	4	Shivani Khanna	Rajesh	2020-12-12	100	1
2	10	Heni Prajapati	Sumit	2020-12-29	500	1
3	17	Shyam Patil	Rashmi	2021-01-29	800	55
4	30	Shivani Khanna	Rajesh	2020-12-12	100	1
5	33	Rajkumar Yadav	Sumit	2021-02-12	1200	18

Query executed successfully.

m(s) Saved

## Query:(< operator)

```
SELECT * FROM t1_doctor WHERE doc_id<15;
```

## Output:

	doc_id	doc_name	doc_gender	doc_designation	doc_phone	doc_address
1	1	Sumit	Male	Gynaecologist	9876567821	13 jusddx 2swhv
2	2	Rashmi	Female	Cardiologist	8751537485	67 dhjs dsdsj
3	3	Jayesh	Male	Dentist	9898760912	jeak aukh wdj
4	4	Sumit	Male	Cardiologist	9876567821	13 jusddx 2swhv
5	5	Rashmi	Female	Gynaecologist	8751537485	67 dhjs dsdsj
6	6	Ram	Male	Audiologist	9898760912	jeak aukh wdj
7	7	Sunita	Female	Gynaecologist	9966715243	Surat
8	8	Sayam	Male	Lab Technician	9966715243	Ahmedabad
9	9	Deedhiti	Female	ENT Specialist	8810237512	Rajkot
10	10	Smit	Male	Paediatrician	8809761256	Mumbai

Query executed successfully.

d

## Query:(<= operator)

```
SELECT * FROM t1_doctor WHERE doc_id<=8;
```

## Output:

doc\_id (FK, int, null)  
keys  
constraints  
triggers  
indexes  
statistics

Resources  
ms  
programmability  
Service Broker  
Security  
Server Objects

150 %

Results Messages

	doc_id	doc_name	doc_gender	doc_designation	doc_phone	doc_address
1	1	Sumit	Male	Gynaecologist	9876567821	13 jusddx 2swhv
2	2	Rashmi	Female	Cardiologist	8751537485	67 dhjs dsdsj
3	3	Jayesh	Male	Dentist	9898760912	jeak aukh wdj
4	4	Sumit	Male	Cardiologist	9876567821	13 jusddx 2swhv
5	5	Rashmi	Female	Gynaecologist	8751537485	67 dhjs dsdsj
6	6	Ram	Male	Audiologist	9898760912	jeak aukh wdj
7	7	Sunita	Female	Gynaecologist	9966715243	Surat
8	8	Sayam	Male	Lab Technician	9966715243	Ahmedabad

Query executed successfully.

## Query:(<= operator)

SELECT \* FROM t1\_bill WHERE pat\_id<=50;

## Output:

Constraints  
Triggers  
Indexes  
Statistics  
Views  
External Resources  
Synonyms  
Programmability  
Service Broker  
Storage  
Security  
Server Objects

150 %

Results Messages

	bill_no	patient_name	doctor_name	bill_date	amount	pat_id
1	2	Shivam Patel	Sumit	2020-11-12	3000	15
2	4	Shivani Khanna	Rajesh	2020-12-12	100	1
3	10	Heni Prajapati	Sumit	2020-12-29	500	1
4	11	Rajendra Sukla	Rashmi	2021-01-12	3000	18
5	12	Sima Patel	Jayesh	2020-11-29	5000	2
6	15	Shivam Patel	Jayesh	2020-11-12	3000	15
7	30	Shivani Khanna	Rajesh	2020-12-12	100	1
8	33	Rajkumar Yadav	Sumit	2021-02-12	1200	18
9	50	Rajendra Sukla	Rashmi	2021-01-12	3000	18
10	76	Soham Naik	Jayesh	2021-02-02	3100	10

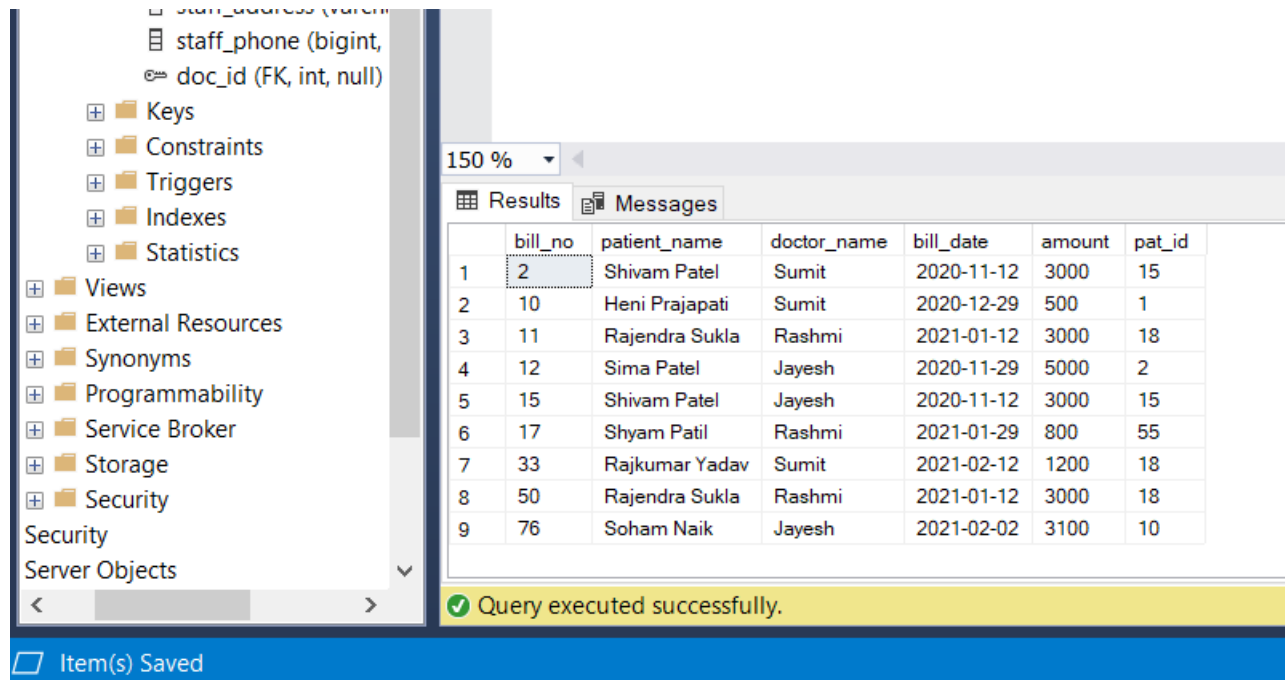
Query executed successfully.

em(s) Saved

## Query:(>= operator)

SELECT \* FROM t1\_bill WHERE amount>=300;

## Output:



The screenshot shows the SQL Server Enterprise Manager interface. On the left, the 'Server Objects' tree is expanded to 'Security'. The main pane displays a query result for a table named 't1\_patient\_diagnosis'. The query executed successfully, returning 9 rows of data. The columns are: bill\_no, patient\_name, doctor\_name, bill\_date, amount, and pat\_id. The first row is highlighted.

	bill_no	patient_name	doctor_name	bill_date	amount	pat_id
1	2	Shivam Patel	Sumit	2020-11-12	3000	15
2	10	Heni Prajapati	Sumit	2020-12-29	500	1
3	11	Rajendra Sukla	Rashmi	2021-01-12	3000	18
4	12	Sima Patel	Jayesh	2020-11-29	5000	2
5	15	Shivam Patel	Jayesh	2020-11-12	3000	15
6	17	Shyam Patil	Rashmi	2021-01-29	800	55
7	33	Rajkumar Yadav	Sumit	2021-02-12	1200	18
8	50	Rajendra Sukla	Rashmi	2021-01-12	3000	18
9	76	Soham Naik	Jayesh	2021-02-02	3100	10

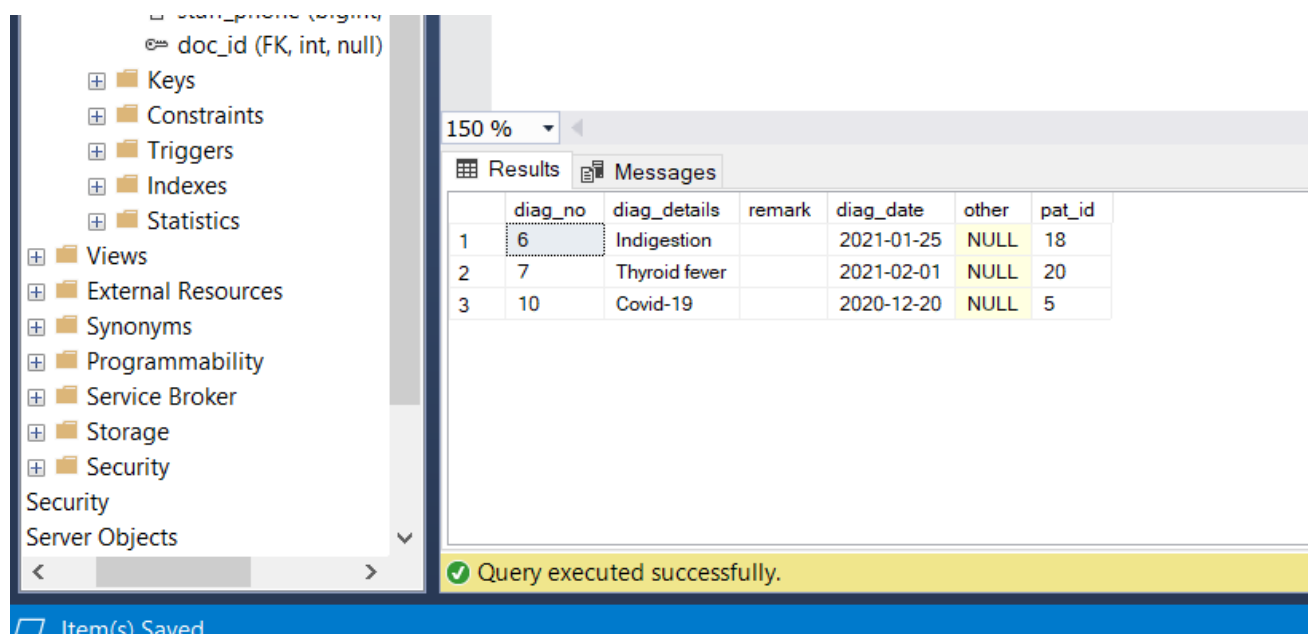
Query executed successfully.

Item(s) Saved

## Query:(>= operator)

```
SELECT * FROM t1_patient_diagnosis WHERE diag_no>=5;
```

## Output:



The screenshot shows the SQL Server Enterprise Manager interface. On the left, the 'Server Objects' tree is expanded to 'Security'. The main pane displays a query result for a table named 't1\_patient\_diagnosis'. The query executed successfully, returning 3 rows of data. The columns are: diag\_no, diag\_details, remark, diag\_date, other, and pat\_id. The first row is highlighted.

	diag_no	diag_details	remark	diag_date	other	pat_id
1	6	Indigestion		2021-01-25	NULL	18
2	7	Thyroid fever		2021-02-01	NULL	20
3	10	Covid-19		2020-12-20	NULL	5

Query executed successfully.

Item(s) Saved

## Query:(<> operator)

```
SELECT * FROM t1_patients WHERE pat_id<>5;
```



## Output:

	pat_id	pat_name	pat_gender	pat_phone	pat_address	doc_id	pat_lname
1	1	Ramesh	Male	9809988989	12 nndhswu	2	NULL
2	2	Suresh	Male	9888982389	11 hqahjswu	3	NULL
3	3	Swati	Female	9641264523	12 nsyqtxb	1	NULL
4	4	Pooja	Female	9809988989	12 nndhswu	2	NULL
5	6	Ramesh	Male	9809988989	12 nndhswu	2	NULL
6	7	Zoya	Female	8123988989	12 nndhswu	2	NULL
7	8	Heni	Female	9809988989	12 nndhswu	2	NULL
8	9	Sreya	Female	9809988989	12 nndhswu	2	NULL
9	10	Hardik	Male	9809988989	12 nndhswu	2	NULL
10	11	Mansi	Female	9809988989	12 nndhswu	2	NULL

Query executed successfully.

Item(s) Saved

## Query:(<>operator)

SELECT \* FROM t1\_patients WHERE pat\_phone<>9809988989;

## Output:

	pat_id	pat_name	pat_gender	pat_phone	pat_address	doc_id	pat_lname
1	2	Suresh	Male	9888982389	11 hqahjswu	3	NULL
2	3	Swati	Female	9641264523	12 nsyqtxb	1	NULL
3	5	Raj	Male	7909988989	12 nndhswu	2	NULL
4	7	Zoya	Female	8123988989	12 nndhswu	2	NULL
5	14	Suresh	Male	9888982389	11 hqahjswu	3	NULL
6	15	Swati	Female	9641264523	12 nsyqtxb	1	NULL
7	17	Raj	Male	7909988989	12 nndhswu	2	NULL
8	19	Zoya	Female	8123988989	12 nndhswu	3	NULL
9	27	Suresh	Male	9888982389	11 hqahjswu	3	NULL
10	29	Swati	Female	9641264523	12 nsyqtxb	1	NULL

Query executed successfully.

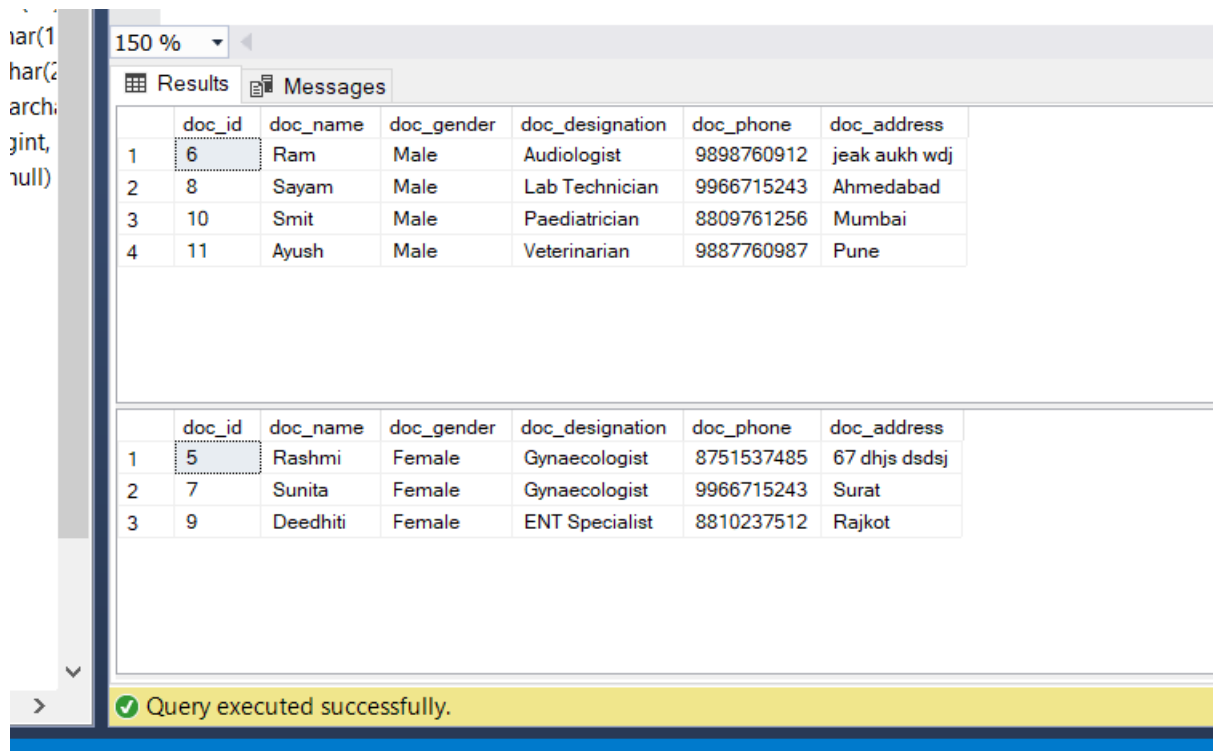
#### 4. Illustrate Logical operators except ANY, ALL and Like

##### Query:(AND operator)

```
SELECT * FROM t1_doctor WHERE doc_gender = 'Male' AND doc_id>=5;
```

```
SELECT * FROM t1_doctor WHERE doc_gender = 'Female' AND doc_id>=5;
```

##### Output:



150 %

Results Messages

	doc_id	doc_name	doc_gender	doc_designation	doc_phone	doc_address
1	6	Ram	Male	Audiologist	9898760912	jeak aukh wdj
2	8	Sayam	Male	Lab Technician	9966715243	Ahmedabad
3	10	Smit	Male	Paediatrician	8809761256	Mumbai
4	11	Ayush	Male	Veterinarian	9887760987	Pune

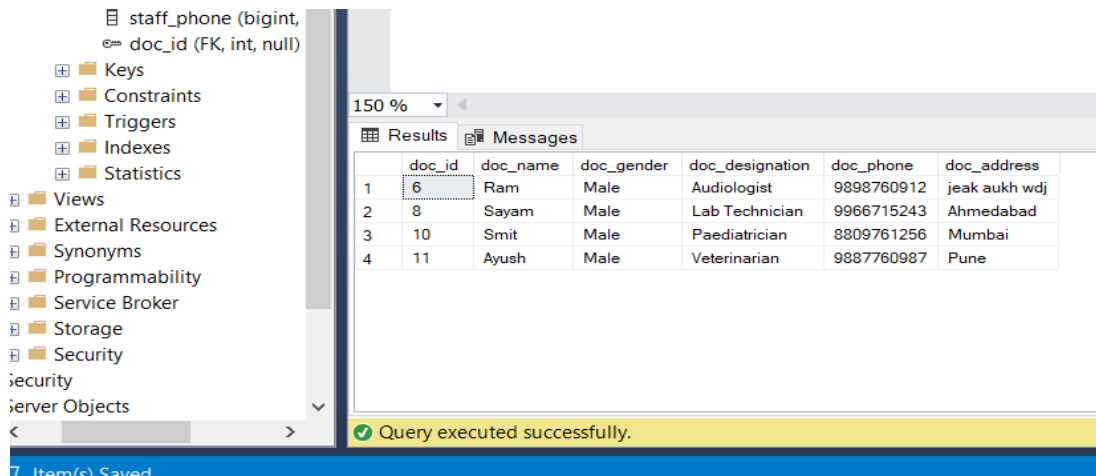
	doc_id	doc_name	doc_gender	doc_designation	doc_phone	doc_address
1	5	Rashmi	Female	Gynaecologist	8751537485	67 dhjs dsdsj
2	7	Sunita	Female	Gynaecologist	9966715243	Surat
3	9	Deedhiti	Female	ENT Specialist	8810237512	Rajkot

✓ Query executed successfully.

##### Query:(AND operator)

```
SELECT * FROM t1_doctor WHERE doc_gender = 'Male' AND doc_id>=5;
```

## Output:



150 %

Results Messages

	doc_id	doc_name	doc_gender	doc_designation	doc_phone	doc_address
1	6	Ram	Male	Audiologist	9898760912	jeak aukh wdj
2	8	Sayam	Male	Lab Technician	9966715243	Ahmedabad
3	10	Smit	Male	Paediatrician	8809761256	Mumbai
4	11	Ayush	Male	Veterinarian	9887760987	Pune

Query executed successfully.

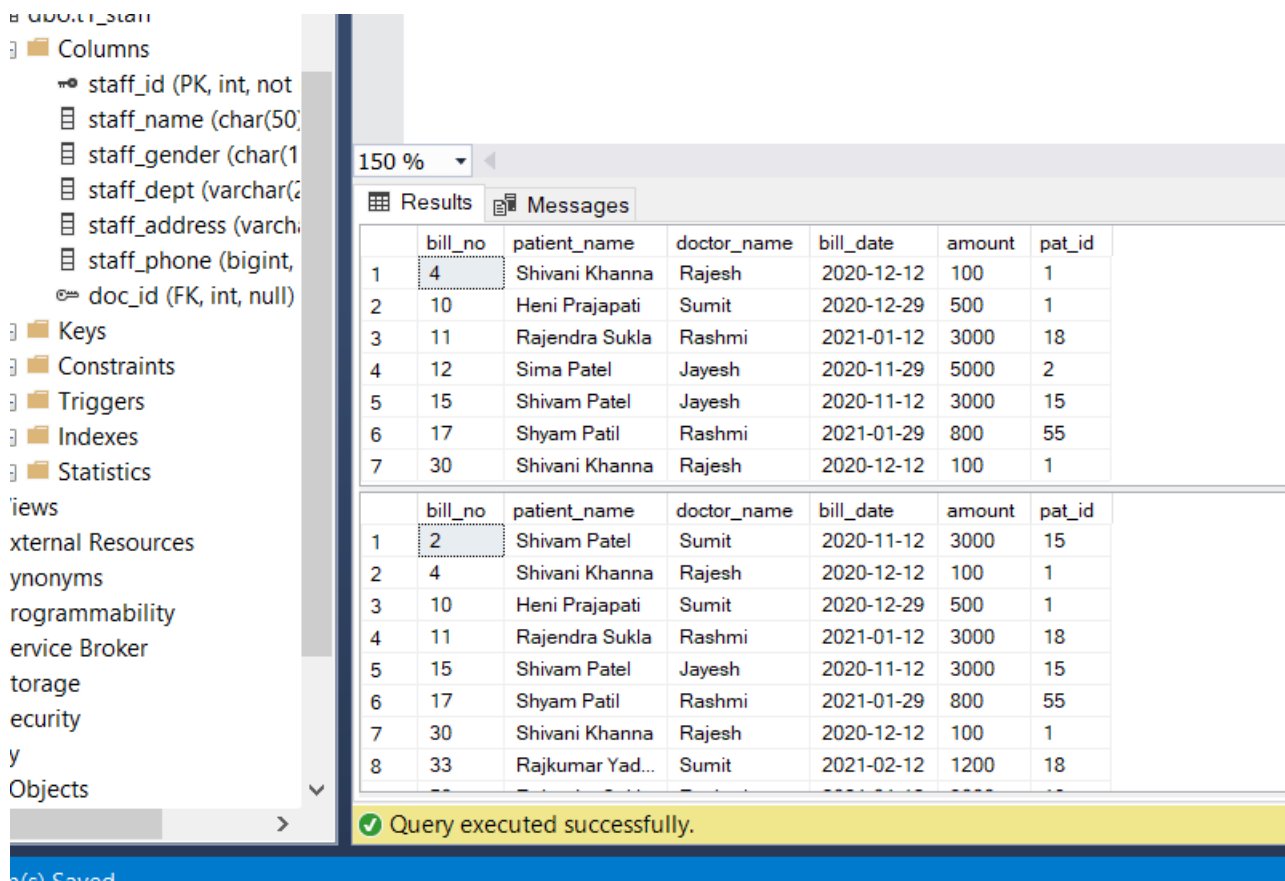
Item(s) Saved

## Query:(BETWEEN operator)

SELECT \* FROM t1\_bill WHERE bill\_no BETWEEN 3 and 30;

SELECT \* FROM t1\_bill WHERE amount BETWEEN 100 and 3000;

## Output:



150 %

Results Messages

	bill_no	patient_name	doctor_name	bill_date	amount	pat_id
1	4	Shivani Khanna	Rajesh	2020-12-12	100	1
2	10	Heni Prajapati	Sumit	2020-12-29	500	1
3	11	Rajendra Sukla	Rashmi	2021-01-12	3000	18
4	12	Sima Patel	Jayesh	2020-11-29	5000	2
5	15	Shivam Patel	Jayesh	2020-11-12	3000	15
6	17	Shyam Patil	Rashmi	2021-01-29	800	55
7	30	Shivani Khanna	Rajesh	2020-12-12	100	1
8	33	Rajkumar Yad...	Sumit	2021-02-12	1200	18

Query executed successfully.

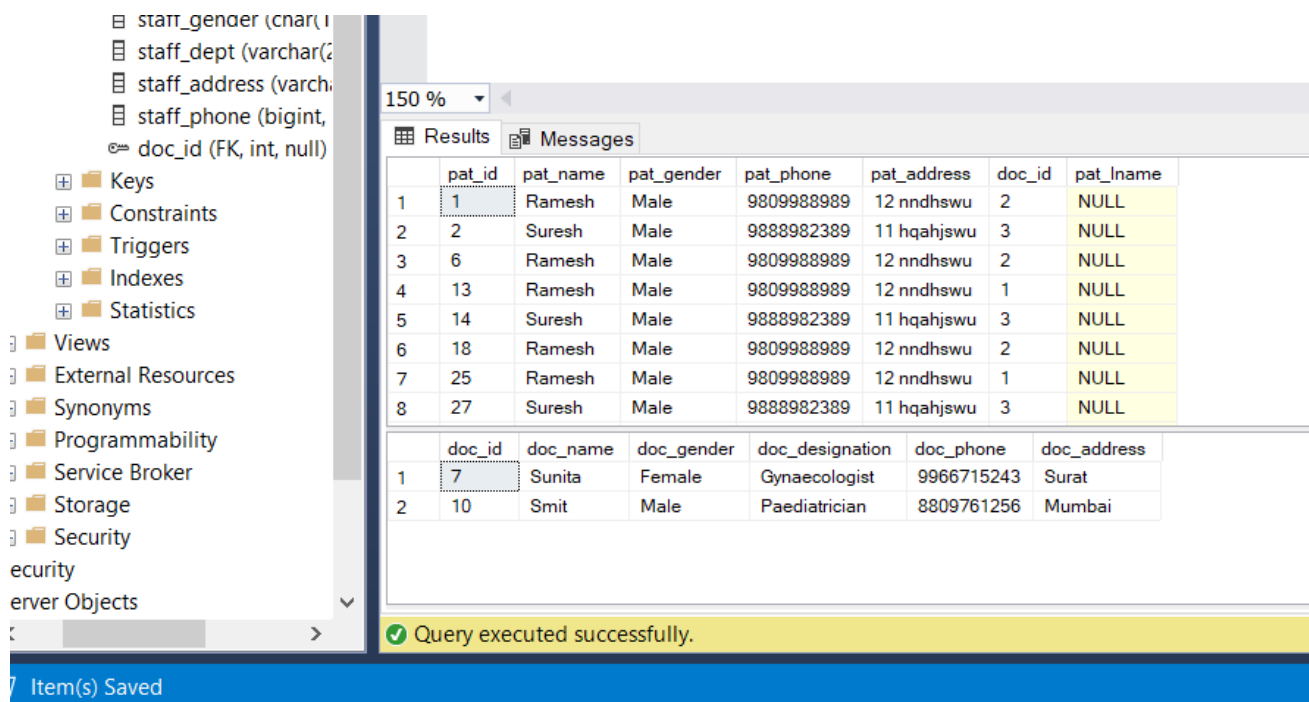
Item(s) Saved

### Query:(IN operator)

```
SELECT * FROM t1_patients WHERE pat_name In ('Ramesh','Suresh');
```

```
SELECT * FROM t1_doctor WHERE doc_address In ('Surat','Mumbai');
```

### Output:



The screenshot displays a database interface with a left-hand sidebar containing a tree view of database objects (Keys, Constraints, Triggers, Indexes, Statistics, Views, External Resources, Synonyms, Programmability, Service Broker, Storage, Security, Security Objects, Server Objects). The main area shows the results of two SQL queries. The first query, using the IN operator, filters the t1\_patients table for patients named 'Ramesh' or 'Suresh'. The second query filters the t1\_doctor table for doctors located in 'Surat' or 'Mumbai'. A status bar at the bottom indicates 'Query executed successfully.' and 'Item(s) Saved'.

	pat_id	pat_name	pat_gender	pat_phone	pat_address	doc_id	pat_lname
1	1	Ramesh	Male	9809988989	12 nndhswu	2	NULL
2	2	Suresh	Male	9888982389	11 hqahjswu	3	NULL
3	6	Ramesh	Male	9809988989	12 nndhswu	2	NULL
4	13	Ramesh	Male	9809988989	12 nndhswu	1	NULL
5	14	Suresh	Male	9888982389	11 hqahjswu	3	NULL
6	18	Ramesh	Male	9809988989	12 nndhswu	2	NULL
7	25	Ramesh	Male	9809988989	12 nndhswu	1	NULL
8	27	Suresh	Male	9888982389	11 hqahjswu	3	NULL

	doc_id	doc_name	doc_gender	doc_designation	doc_phone	doc_address
1	7	Sunita	Female	Gynaecologist	9966715243	Surat
2	10	Smit	Male	Paediatrician	8809761256	Mumbai

Query executed successfully.

Item(s) Saved

### Query:(OR operator)

```
SELECT * FROM t1_patients WHERE pat_gender = 'Male' OR  
pat_name='Suresh';
```

```
SELECT * FROM t1_doctor WHERE doc_address = 'Surat' OR  
doc_designation='Gynaecologist';
```

Output:

staff\_gender (char(1))

staff\_dept (varchar(20))

staff\_address (varchar(200))

staff\_phone (bigint(20))

doc\_id (FK, int, null)

Keys

Constraints

Triggers

Indexes

Statistics

Views

External Resources

Synonyms

Programmability

Service Broker

Storage

Security

Server Objects

150 %

ResultsMessages

	pat_id	pat_name	pat_gender	pat_phone	pat_address	doc_id	pat_lname
1	1	Ramesh	Male	9809988989	12 nndhswu	2	NULL
2	2	Suresh	Male	9888982389	11 hqahjswu	3	NULL
3	5	Raj	Male	7909988989	12 nndhswu	2	NULL
4	6	Ramesh	Male	9809988989	12 nndhswu	2	NULL
5	10	Hardik	Male	9809988989	12 nndhswu	2	NULL
6	12	Bhavin	Male	9809988989	12 nndhswu	2	NULL
7	13	Ramesh	Male	9809988989	12 nndhswu	1	NULL
8	14	Suresh	Male	9888982389	11 hqahjswu	3	NULL
9	17	Raj	Male	7909988989	12 nndhswu	2	NULL

	doc_id	doc_name	doc_gender	doc_designation	doc_phone	doc_address
1	1	Sumit	Male	Gynaecologist	9876567821	13 jusddx 2swhv
2	5	Rashmi	Female	Gynaecologist	8751537485	67 dhjs dsdsj
3	7	Sunita	Female	Gynaecologist	9966715243	Surat

Query executed successfully.

Item(s) SavedLn 3