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#### **SUBMITTED TO**

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#### **ABSTRACT**

An Online Med Tender Management System in hospitals help to manage the process of buying medical supplies for patients with ease and transparently. It makes everything digital, from announcing needs to evaluating offers and contract bidding. This system makes the process faster, clearer, and fairer for everyone involved.

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# **Brief Introduction About The Project**

It is a software or digital platform designed to handle the process of inviting, evaluating, and managing bids or proposals in the medical or healthcare sector. This system helps organizations in the healthcare industry to efficiently manage the procurement of goods and services.

Key features of such a system may include **organizing documents related to tenders**, **evaluating bids**, **managing relationships** with vendors, and ensuring compliance with relevant regulations.

## **Aims And Objective**

The Medical Tender Management System helps healthcare providers manage purchases better by handling tender processes digitally. Goals include making procurement smoother, evaluating bids transparently, managing vendors, organizing documents, saving costs, improving decision-making, communicating better, managing risks, and always striving to get better.

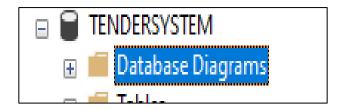
It keeps track of tender invitations, bid submissions, vendor details, procurement documents, regulatory reports, communication logs, decision-making, risk assessments, and improvement efforts.

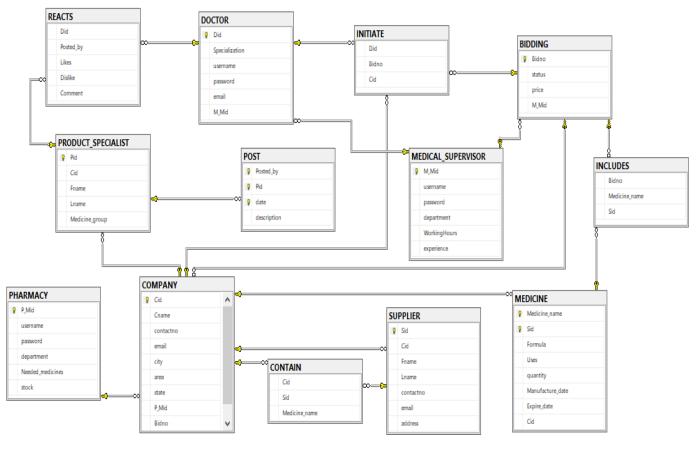
## **Database Entities**

MEDICAL SUPERVISOR
PHARMACY
DOCTOR
COMPANY
PRODUCT SPECIALIST
SUPPLIER
MEDICINE
BIDDING
POST

CONTAINS	
INCLUDES	
REACTS	
INITIATES	







## **Relational Schema**

**MEDICAL\_SUPERVISOR** (M\_Mid ,username, password, department, WorkingHours, experience)

**PHARMACY** (P\_Mid, username, password, department, Needed\_medicines, stock)

**DOCTOR** (Did, Specialization, username, password, email, M\_Mid)

**COMPANY** (Cid, Cname, contactno, email, city, area, state, P\_Mid, Bidno)

**PRODUCT\_SPECIALIST** (Pid, Cid, Fname, Lname, Medicine\_group)

**SUPPLIER** (Sid, Cid, Fname, Lname, contactno, email, address)

**MEDICINE** (Medicine\_name, Sid, Formula, Uses, quantity, Manufacture\_date, Expire\_date, Cid)

**BIDDING** (Bidno, status, Price, M\_Mid)

**POST** (Posted\_by, Pid, date, description)

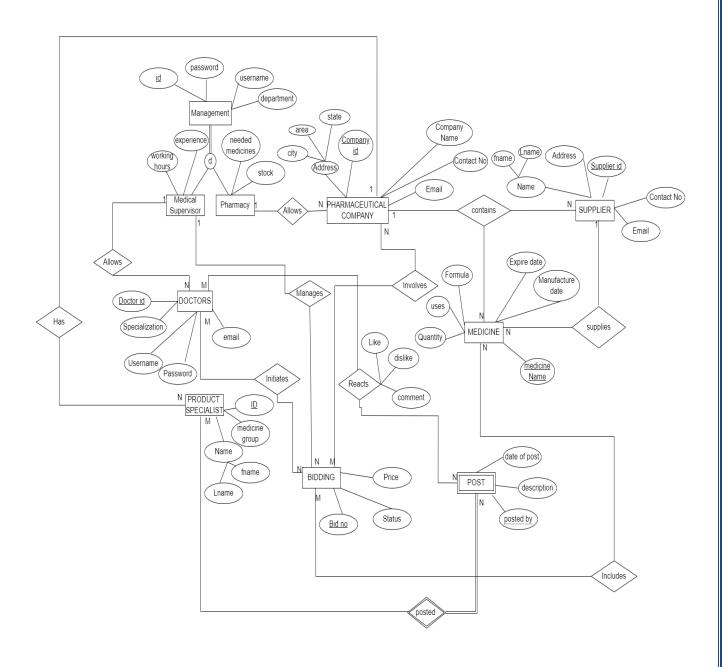
**CONTAIN** (Cid, Sid, Medicine\_name)

**INCLUDES** (Bidno, Medicine name)

**REACTS** (Did, Posted\_by, likes, dislike, comment)

INITIATE (Did , Bid\_no , Cid)

# **Er Diagram**



## **Relational Model**

#### MEDICAL SUPERVISOR M Mid password department Working hours experience username **PHARMACY** P Mid department **Needed medicines** username password stock DOCTOR Did Specialization username password email M Mid COMPANY P Mid Bidno Cid Cname email city state contactno area PRODUCT SPECIALIST Medicine group Fname Lname **SUPPLIER** Sid Cid email address Fname Lname contactno **MEDICINE** Medicine name Sid Formula Uses Manufacture date Expire date Cid quantity BIDDING , **Bidno** status price M Mid **POST** Posted by Pid date description **CONTAINS** Sid Medicine name Cid **INCLUDES** <u>Bidno</u> Medicine name **REACTS** like Did Posted by dislike comment INITIATE

Cid

Did

<u>Bidno</u>

## **Database creation on SQL**

# The query for Creating Database

CREATE DATABASE TENDERSYSTEM:

# **Queries for creating** tables

```
CREATE TABLE MEDICAL_SUPERVISOR (
   M Mid INT PRIMARY KEY,
    username VARCHAR(50) NOT NULL UNIQUE,
    password VARCHAR(50) NOT NULL,
    department VARCHAR(100),
   WorkingHours VARCHAR(50),
    experience INT );
CREATE TABLE PHARMACY (
   P Mid INT PRIMARY KEY,
    username VARCHAR(50) NOT NULL UNIQUE,
    password VARCHAR(50) NOT NULL,
    department VARCHAR(100),
   Needed medicines TEXT,
    stock INT );
CREATE TABLE DOCTOR (
   Did INT PRIMARY KEY,
   Specialization VARCHAR(100),
    username VARCHAR(50) NOT NULL UNIQUE,
    password VARCHAR(50) NOT NULL,
    email VARCHAR(100) NOT NULL,
   M_Mid INT FOREIGN KEY REFERENCES
MEDICAL_SUPERVISOR(M_Mid) );
CREATE TABLE BIDDING (
    Bidno INT PRIMARY KEY,
    status VARCHAR(50),
    price DECIMAL(10, 2),
   M Mid INT FOREIGN KEY REFERENCES
MEDICAL_SUPERVISOR(M_Mid) );
CREATE TABLE COMPANY (
   Cid INT PRIMARY KEY,
   Cname VARCHAR(100),
    contactno VARCHAR(15),
   email VARCHAR(100),
    city VARCHAR(50),
```

```
area VARCHAR(50),
    state VARCHAR(50),
    P Mid INT FOREIGN KEY REFERENCES
PHARMACY(P Mid),
    Bidno INT FOREIGN KEY REFERENCES
BIDDING(Bidno));
CREATE TABLE PRODUCT SPECIALIST (
    Pid INT PRIMARY KEY,
    Fname VARCHAR(50),
    Lname VARCHAR(50),
    Medicine group VARCHAR(100),
    Cid INT FOREIGN KEY REFERENCES
COMPANY(Cid) );
CREATE TABLE SUPPLIER (
    Sid INT PRIMARY KEY,
    Fname VARCHAR(50),
    Lname VARCHAR(50),
    contactno VARCHAR(15),
    email VARCHAR(100),
    address VARCHAR(200),
    Cid INT FOREIGN KEY REFERENCES
COMPANY(Cid) );
CREATE TABLE MEDICINE (
    Medicine_name VARCHAR(100) PRIMARY
KEY,
    Formula VARCHAR(100),
    Uses TEXT,
    quantity INT,
    Manufacture_date DATE,
    Expire_date DATE,
    Cid INT FOREIGN KEY REFERENCES
COMPANY(Cid),
    Sid INT FOREIGN KEY REFERENCES
SUPPLIER (Sid) );
CREATE TABLE POST (
    Posted_by INT PRIMARY KEY,
    date DATE UNIQUE,
    description TEXT,
    Pid INT FOREIGN KEY REFERENCES
PRODUCT_SPECIALIST(Pid) );
CREATE TABLE CONTAIN (
    Cid INT FOREIGN KEY REFERENCES
COMPANY(Cid),
    Sid INT FOREIGN KEY (Sid) REFERENCES
SUPPLIER(Sid),
    Medicine name VARCHAR(100) FOREIGN
KEY REFERENCES MEDICINE(Medicine_name));
```

```
CREATE TABLE INCLUDES (
    Bidno INT FOREIGN KEY REFERENCES
BIDDING(Bidno),
   Medicine_name VARCHAR(100) FOREIGN
KEY REFERENCES MEDICINE(Medicine_name) );
             DROP TABLE INCLUDES;
CREATE TABLE REACTS (
    Likes INT NOT NULL ,
   Dislike INT NOT NULL,
       CONSTRAINT CHK_Reacts_Like_Dislike
CHECK (
        (Likes = 1 AND Dislike = 0) OR
        (Likes = 0 AND Dislike = 1)),
   Comment TEXT,
  Did INT FOREIGN KEY REFERENCES
DOCTOR(Did),
    Posted_by INT FOREIGN KEY REFERENCES
POST(Posted_by));
CREATE TABLE INITIATE (
   Did INT FOREIGN KEY REFERENCES
DOCTOR(Did),
    Bid_no INT FOREIGN KEY REFERENCES
BIDDING(Bidno),
    Cid INT FOREIGN KEY REFERENCES
COMPANY(Cid));
```

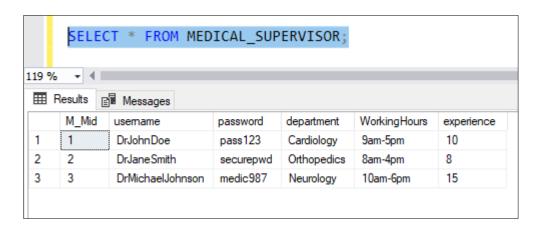
# Inserting values in table

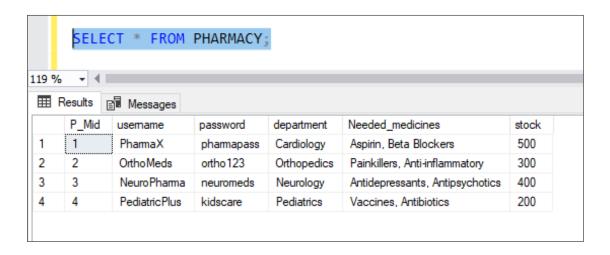
```
INSERT INTO MEDICAL_SUPERVISOR
(1, 'DrJohnDoe', 'pass123', 'Cardiology',
'9am-5pm', 10),
(2, 'DrJaneSmith', 'securepwd',
'Orthopedics', '8am-4pm', 8),
(3, 'DrMichaelJohnson', 'medic987',
'Neurology', '10am-6pm', 15);
INSERT INTO PHARMACY
(1, 'PharmaX', 'pharmapass',
'Cardiology', 'Aspirin, Beta Blockers',
(2, 'OrthoMeds', 'ortho123',
'Orthopedics', 'Painkillers, Anti-
inflammatory', 300),
(3, 'NeuroPharma', 'neuromeds',
'Neurology', 'Antidepressants,
Antipsychotics', 400),
(4, 'PediatricPlus', 'kidscare',
'Pediatrics', 'Vaccines, Antibiotics',
INSERT INTO DOCTOR
VALUES
```

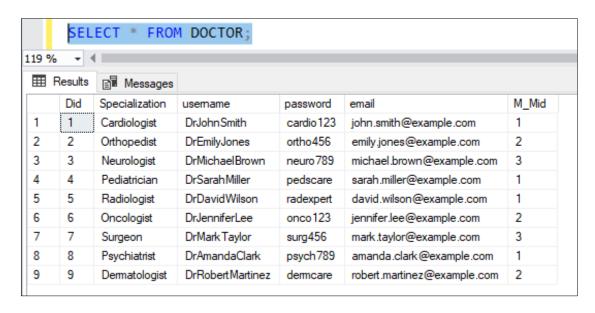
```
(1, 'Cardiologist', 'DrJohnSmith',
'cardio123', 'john.smith@example.com',
(2, 'Orthopedist', 'DrEmilyJones',
'ortho456', 'emily.jones@example.com',
(3, 'Neurologist', 'DrMichaelBrown',
'neuro789', 'michael.brown@example.com',
(4, 'Pediatrician', 'DrSarahMiller',
'pedscare', 'sarah.miller@example.com',
(5, 'Radiologist', 'DrDavidWilson',
'radexpert', 'david.wilson@example.com',
(6, 'Oncologist', 'DrJenniferLee',
'onco123', 'jennifer.lee@example.com',
(7, 'Surgeon', 'DrMarkTaylor', 'surg456',
'mark.taylor@example.com', 3),
(8, 'Psychiatrist', 'DrAmandaClark',
'psych789', 'amanda.clark@example.com',
1),
(9, 'Dermatologist', 'DrRobertMartinez',
'dermcare',
'robert.martinez@example.com', 2);
INSERT INTO BIDDING
VALUES
(1, 'Open', 1000.00, 1),
(2, 'Closed', 1500.50, 2),
(3, 'Pending', 2000.75, 3);
INSERT INTO COMPANY
VALUES
(1, 'HealthMeds', '1234567890',
'contact@healthmeds.com', 'New York',
'Manhattan', 'NY', 1, 1),
(2, 'OrthoSupplies', '2345678901',
'info@orthosupplies.com', 'Los Angeles', 'Beverly Hills', 'CA', 2, 2), (3, 'NeuroPharm', '3456789012',
'support@neuropharm.com', 'Chicago',
'Downtown', 'IL', 3, 3),
(4, 'PediatricPlus', '4567890123',
'info@pediatricplus.com', 'Houston',
'Downtown', 'TX', 4, 2);
INSERT INTO PRODUCT_SPECIALIST
(1, 'George', 'White', 'Cardiology', 1),
(2, 'Nina', 'Black', 'Orthopedics', 2),
(3, 'David', 'Green', 'Neurology', 3),
(4, 'Emma', 'Brown', 'Pediatrics', 4),
(5, 'Daniel', 'Taylor', 'Cardiology', 1);
INSERT INTO SUPPLIER
VALUES
```

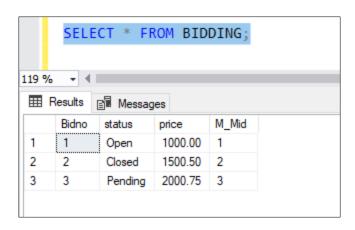
```
(1, 'William', 'Johnson', '7890123456',
'william.johnson@supplier.com', '123 Main
                                                   (1, '2023-01-10', 'Discussion about new
St, New York, NY', 1),
                                                   cardiac treatments', 1),
(2, 'Sophia', 'Davis', '8901234567',
                                                   (2, '2023-02-15', 'Orthopedic case
                                                   studies review', 2),
'sophia.davis@supplier.com', '456 Elm St,
                                                   (3, '2023-03-20', 'Neurology conference
Los Angeles, CA', 2),
(3, 'Daniel', 'Taylor', '9012345678',
                                                   highlights', 3),
                                                   (4, '2023-04-25', 'Pediatrics vaccination
'daniel.taylor@supplier.com', '789 Oak
                                                   drive announcement', 4),
St, Chicago, IL', 3);
                                                   (5, '2023-05-30', 'Radiology imaging
INSERT INTO MEDICINE
                                                   technology advancements', 5);
                                                   INSERT INTO CONTAIN
VALUES
('Aspirin', 'C9H8O4', 'Pain relief, Anti-
                                                   VALUES
inflammatory', 200, '2023-01-15', '2024-
                                                   (1, 1, 'Aspirin'),
                                                   (2, 2, 'Ibuprofen'),
(3, 3, 'Lorazepam'),
01-15', 1, 1),
('Ibuprofen', 'C13H18O2', 'Pain relief,
Anti-inflammatory', 300, '2023-02-20',
                                                   (4, 4, 'Amoxicillin'),
                                                   (1, 1, 'Paracetamol'),
'2024-02-20', 2, 2),
('Lorazepam', 'C15H10Cl2N2O2', 'Anxiety
                                                   (2, 2, 'Lisinopril');
disorders, Insomnia', 150, '2023-03-25',
'2024-03-25', 3, 3),
('Amoxicillin', 'C16H19N3O5S', 'Bacterial
                                                   INSERT INTO INCLUDES
infections', 100, '2023-04-30', '2024-04-
                                                   VALUES
                                                   (1, 'Aspirin'),
30', 4, 4),
('Paracetamol', 'C8H9NO2', 'Pain relief,
                                                   (2, 'Ibuprofen'),
Fever reduction', 250, '2023-05-05',
                                                   (3, 'Lorazepam'),
                                                   (1, 'Amoxicillin'),
'2024-05-05', 1, 1),
                                                   (2, 'Paracetamol'),
('Lisinopril', 'C21H31N3O5',
'Hypertension, Heart failure', 150,
                                                   (3, 'Lisinopril');
'2023-06-10', '2024-06-10', 2, 1),
('Levofloxacin', 'C18H20FN304',
                                                   INSERT INTO REACTS
'Bacterial infections', 200, '2023-07-
                                                   VALUES
15', '2024-07-15', 3, 2),
                                                   (1, 0, 'Great post, very informative!',
('Simvastatin', 'C25H38O5', 'High
                                                   5, 1),
                                                   (0, 1, 'Interesting discussion, but I
cholesterol, Heart disease', 180, '2023-
08-20', '2024-08-20', 4, 3),
                                                   have some doubts.', 2, 4),
('Hydrochlorothiazide', 'C7H8ClN3O4S2',
                                                   (1, 0, 'Excellent presentation, looking
'Hypertension, Edema', 120, '2023-09-25',
                                                   forward to more.', 3, 3),
'2024-09-25', 1, 3),
                                                   (0, 1, 'Mixed feelings about this
('Omeprazole', 'C17H19N3O3S',
                                                   topic.', 4, 2);
'Gastroesophageal reflux disease', 220,
'2023-10-30', '2024-10-30', 2, 4), ('Metformin', 'C4H11N5', 'Type 2
                                                   INSERT INTO INITIATE
                                                  VALUES
diabetes', 180, '2023-11-05', '2024-11-
                                                   (1, 1, 3),
05', 3, 3);
                                                   (2, 2, 1),
                                                   (3, 2, 2);
INSERT INTO POST (Posted_by, date,
description, Pid)
```

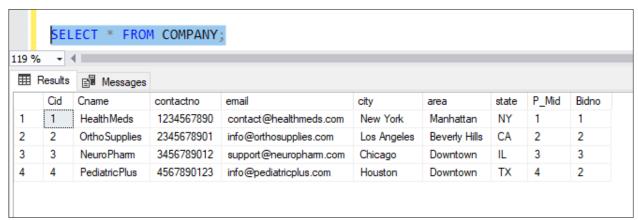
# Queries to display tables after inserting values in it

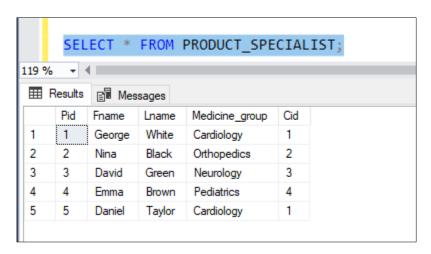


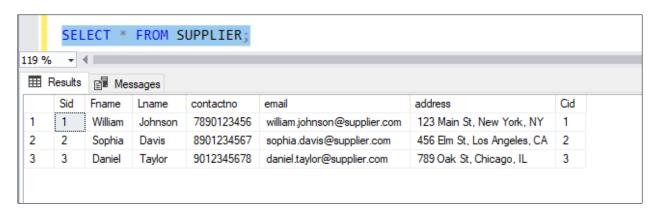


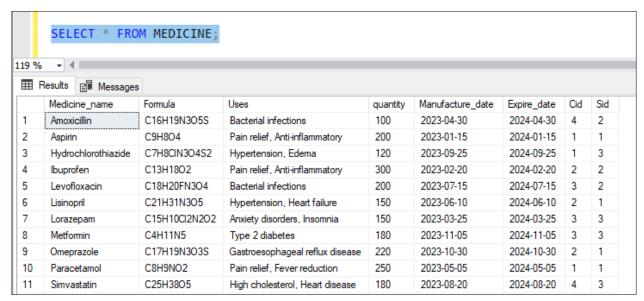




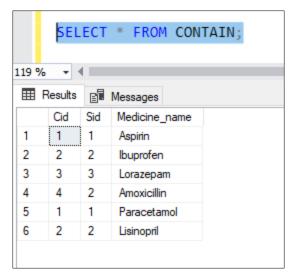


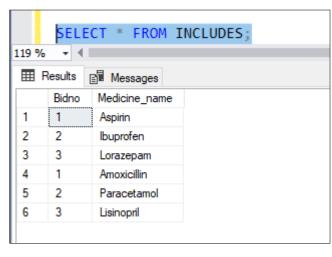


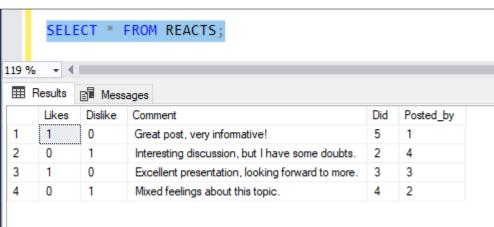


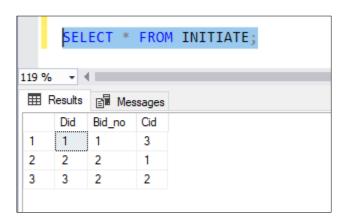




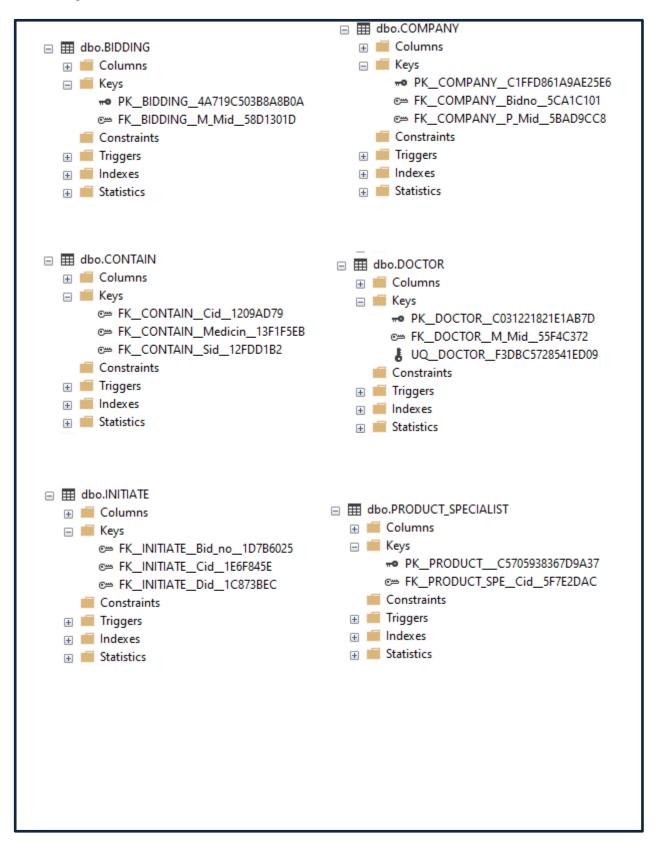


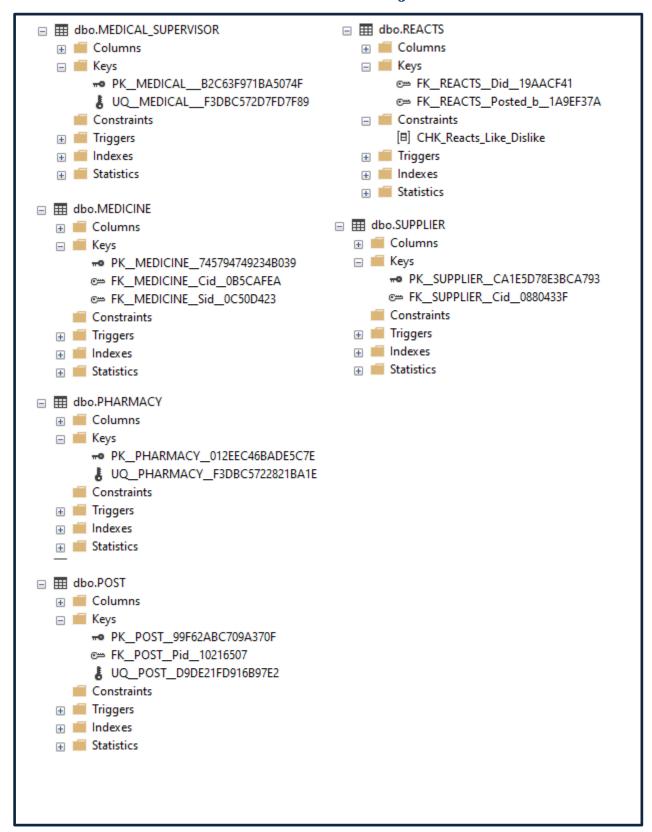






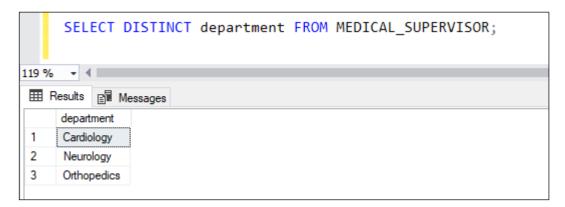
## **Keys and constraints of table**



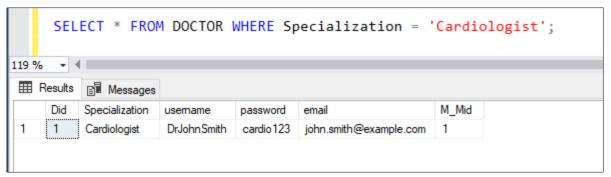


# **Basic queries**

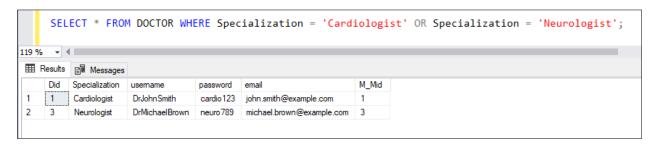
#### Retrieve Unique departments from the MEDICAL\_SUPERVISOR table



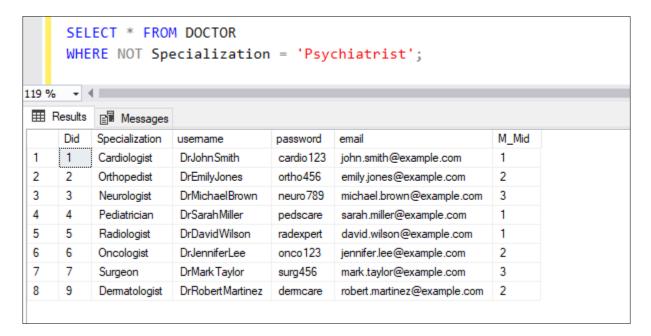
#### Retrieve doctors whose specialization is Cardiology



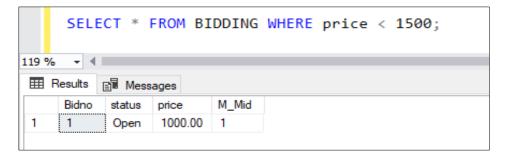
#### Retrieve doctors specializing in either Cardiologist or Neurologist



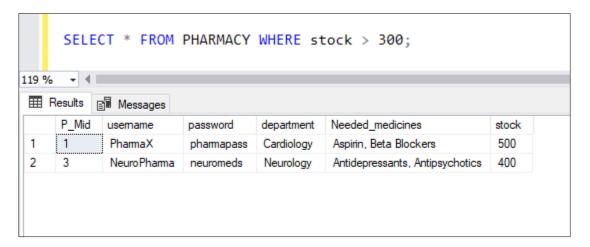
#### Select all from the DOCTOR table whose specialization is not Psychiatrist



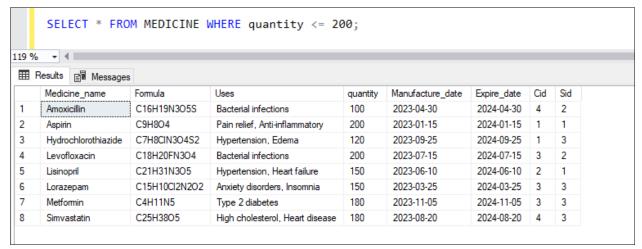
#### Select bids with a price greater than 1500



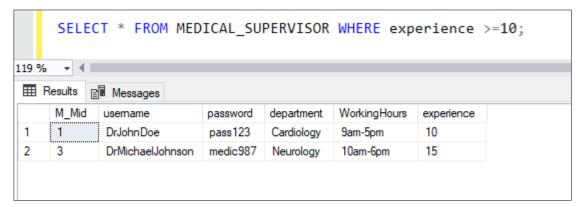
#### Select pharmacies whose stock is greater than 300



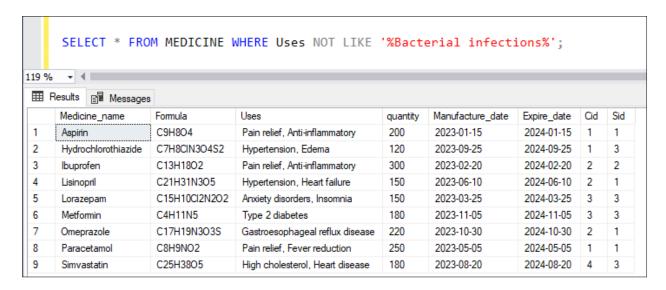
#### Select medicines with a quantity less than or equal to 200



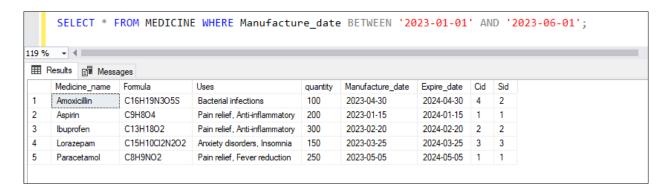
#### Select medical Supervisors with experience greater or equal than 10



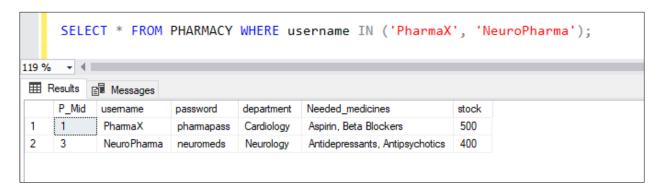
#### Select medicines where the Uses does not contain the 'Bacterial infections'



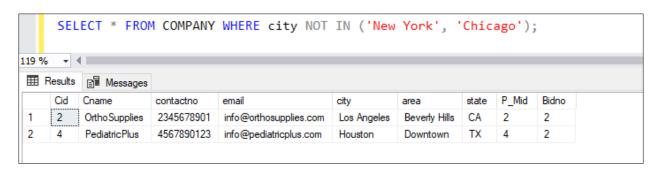
Select medicines with a Manufacture\_date between '2023-01-01' and '2023-06-01'



#### Select pharmacies whose usernames are 'PharmaX' or 'NeuroPharma'



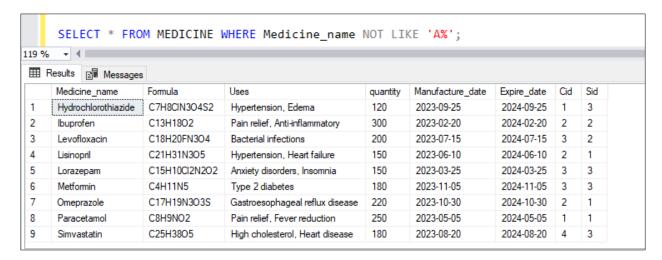
# retrieve all rows from the COMPANY table where the city column does not match 'New York' or 'Chicago'



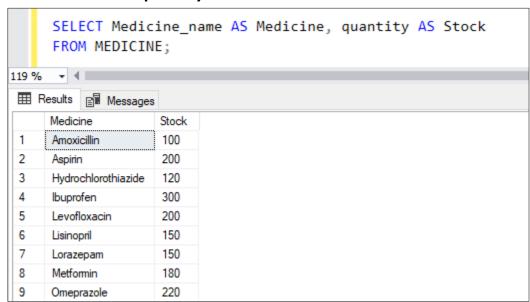
#### Select doctors with names starting with 'S'



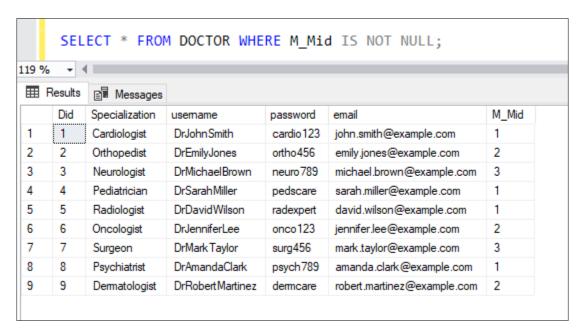
#### Select medicines with names not starting with 'A'



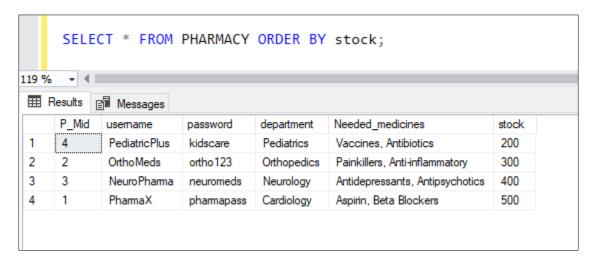
#### Select name and quantity from MEDICINE table and alias the result



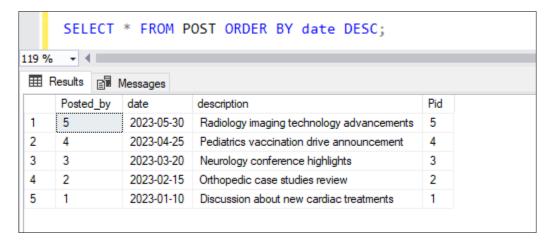
#### Retrieve all doctors who are not associated with any medical supervisor



#### Order pharmacy by their stock

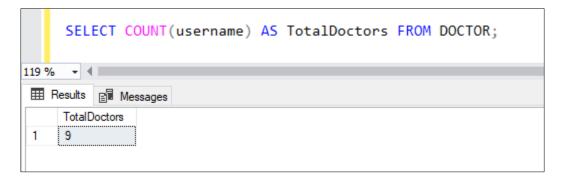


#### Order post by their date in descending order

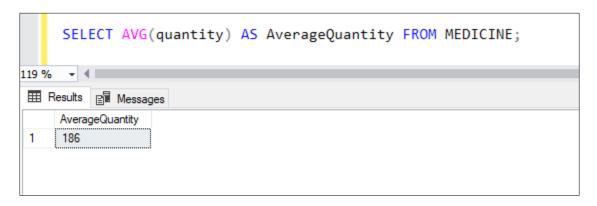


## **Aggregate functions**

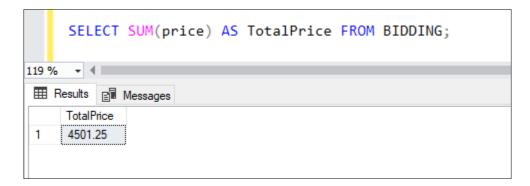
#### Count the names of doctors in the DOCTOR table



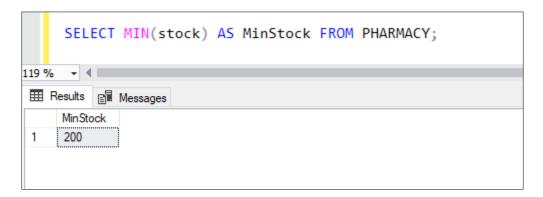
#### Calculate the average quantity of medicines in the MEDICINE table



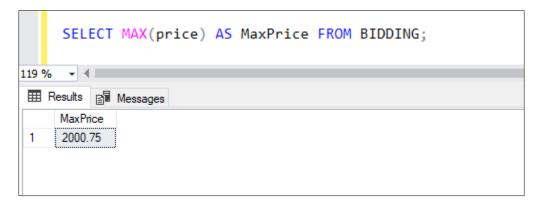
#### Select sum of price in the BIDDING table



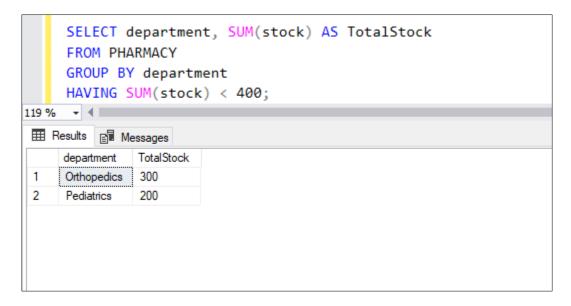
#### Find the minimum stock available in pharmacies in the PHARMACY table



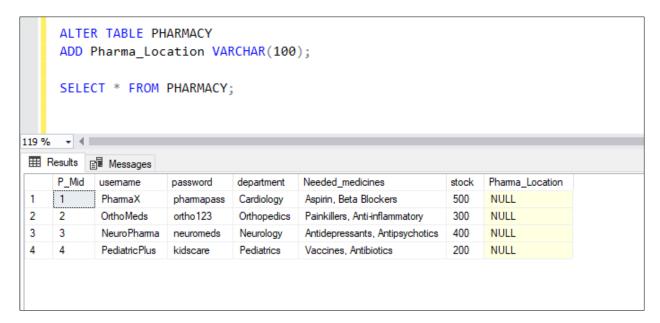
### Find the maximum price of bidding in the BIDDING table



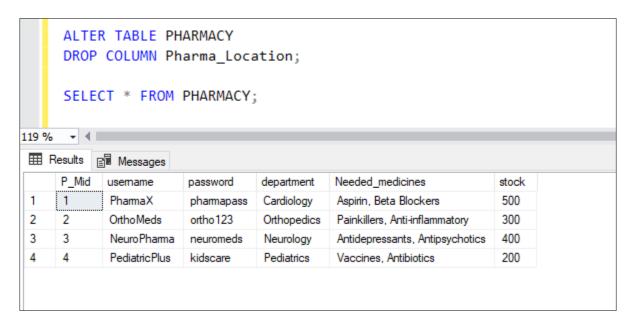
Select the department and sum of stock from the PHARMACY table, grouping by department, and filtering the results using the HAVING clause to only include departments where the sum of stock is less than 400



#### Add column Pharma\_Location in the PHARMACY table



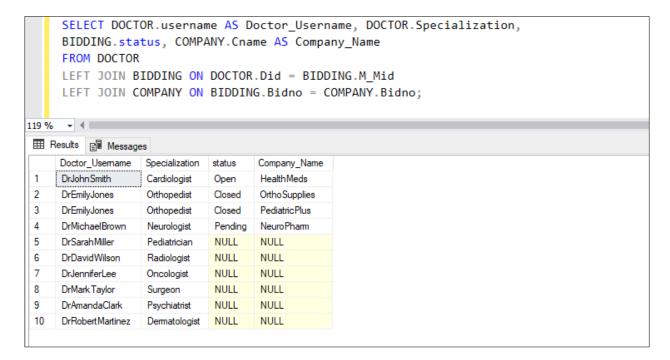
#### Drop column Pharma\_Location in the PHARMACY table



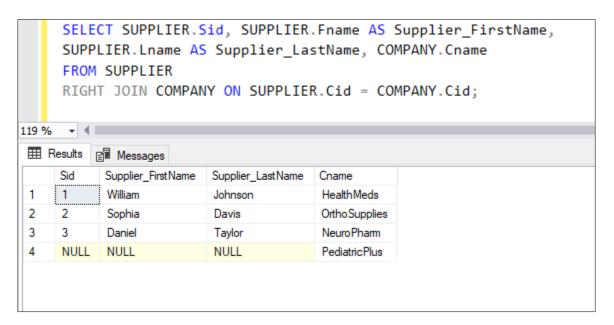
#### Inner join query



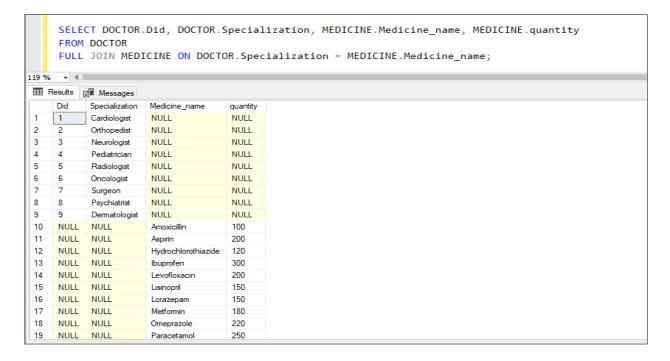
#### Left join query



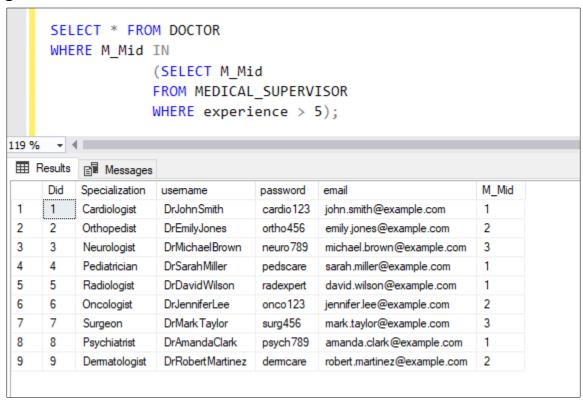
#### Right join query



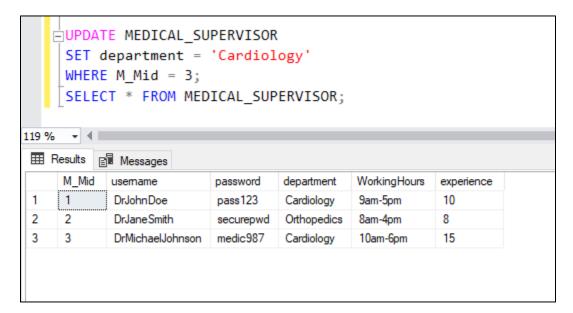
#### **Full join query**



Select all rows from the DOCTOR table where the M\_Mid is in a subquery that selects M\_Mid from the MEDICAL\_SUPERVISOR table where the experience is greater than 5



#### Updating the department of a specific MEDICAL\_SUPERVISOR by their M\_Mid



#### Drop the UNIQUE constraint from the email column in the DOCTOR table

```
ALTER TABLE DOCTOR
ADD CONSTRAINT unique_email UNIQUE (email);

-ALTER TABLE DOCTOR
DROP CONSTRAINT unique_email;

119 % 

Messages
Commands completed successfully.

Completion time: 2024-06-09T20:59:05.2864961+05:00
```