

UNIVERSITY OF MASSACHUSETTS, LOWELL – COMP3090 – Database I

Final Project

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DOCTORS (**D_ID**, D_NAME, D_GENDER, D_AGE, D_SPECIALIZATION, D_YEARS_OF_EXPERIENCE, D_CONTACT, D_STREET, D_CITY)

PATIENTS (**P_ID**, P_NAME, P_GENDER, P_AGE, P_DISEASE, P_CONTACT, P_STREET, P_CITY)

NURSES (**N_ID**, N_NAME, N_SPECIALIZATION, N_SHIFT, N_STREET, N_CITY)

P_ASSIGNMENT (**P_ID**, **D_ID**)

N_ASSISTS (**N_ID**, **D_ID**)

TESTS (**T_ID**, T_NAME, P_ID, D_ID, T_DATE, T_RESULT)

1) List all doctors' name whose contact number starts with "978".

```
select D_NAME
from DOCTORS
where D_CONTACT LIKE "978*";
```

Query1
D_NAME
MARY SMITH
PATRICIA JOHNSON
LINDA WILLIAMS

2) List all the doctors who are consulted by a patient names "RICHARD MILLER".

```
select D_NAME
from DOCTORS
where D_ID in (select D_ID FROM P_ASSIGNMENT where P_ID in (select P_ID from PATIENTS where P_NAME="RICHARD MILLER"));
```

Query2
D_NAME
WILLIAM BROWN
PATRICIA JOHNSON

3) List the nurse(s) who assist at least two doctors. (Your result should display nurse(s)'s name.)

```
select N_NAME
from NURSES
where N_ID in (select N_ID from (select count(D_ID) as NUM_DOC, N_ID
from N_ASSISTS
group by N_ID
having count(D_ID) >= 2));
```

Query3
N_NAME
SOLINDA WILLIAMS
JENNIFER DAVIS
MARIA MILLER
MARGARET MOORE
SANDRA MARTIN
CAROL GARCIA
SHARON ROBINSON
MICHELLE CLARK

4) List the average years of experience of the doctors.

```
select avg(D_YEARS_OF_EXPERIENCE)
from DOCTORS;
```

Query4	
AVG_YEARS_OF_EXP	
	15.3

5) Find the patients who had assignments with every doctor with specialization "Neurology".

(Your result should display patient's name.).

```
select distinct P.P_NAME
from PATIENTS P, P_ASSIGNMENT A
where P.P_ID = A.P_ID and A.D_ID in (select D_ID from DOCTORS where D_SPECIALIZATION = "NEUROLOGY");
```

```
select p_name from Patients p1 where not exists (select d_id from doctors where d_specialization = 'Neurology' and d_id not in ( select d_id
from p_assignment p2 where p2.p_id = p1.p_id));
```

Query5
p_name
CHARLES WILSON

Query5
P_NAME
CHARLES WILSON
DOROTHY TAYLOR
KAREN JACKSON
KIMBERLY LEE
MICHELLE CLARK
RONALD CLARK
SARAH LEWIS

6) List the doctors and the number of nurses they have, display in the descending order of the number.

(Your result should display doctor's name and the number of their nurses.)

```
select D.D_NAME, COUNT(A.N_ID) AS NUM_NURSES
from DOCTORS D, N_ASSISTS A
where D.D_ID = A.D_ID
group by D.D_ID, D.D_NAME
order by count(A.N_ID) desc;
```

Query6	
D_NAME	NUM_NURSES
PATRICIA JOHNSON	5
ELIZABETH BROWN	4
WILLIAM BROWN	3
MICHAEL JONES	3
ROBERT WILLIAMS	3
JOHN JOHNSON	3
JAMES SMITH	3
BARBARA JONES	2
LINDA WILLIAMS	2
MARY SMITH	2

7) Find the doctor whose patients have the most different type of diseases. (Your result should display the doctor's name.)

```
SELECT d_name, count(disease) AS [count]
FROM (SELECT DISTINCT p.p_disease as disease, d.d_name as d_name
FROM (SELECT d.d_name, a.d_id, p.p_id, p.p_disease
FROM P_assignment a, Patients p, Doctors d
WHERE a.p_id = p.p_id AND d.d_id = a.d_id)) AS [%$##@_Alias]
GROUP BY d_name
HAVING COUNT(disease) >=ALL(SELECT count(disease)
FROM (SELECT DISTINCT p.p_disease as disease, d.d_name as d_name
FROM (SELECT d.d_name, a.d_id, p.p_id, p.p_disease
FROM P_assignment a, Patients p, Doctors d
WHERE a.p_id = p.p_id AND d.d_id = a.d_id))
GROUP BY d_name);
```

Query7	
d_name	count
PATRICIA JOHNSON	11

8) List the city where the most number of doctors and nurses live in. (Your result should display the city and the number.)

```
select CITY, count(id) as count
from
    (select D_ID as id, D_CITY as city
    from DOCTORS
    union
    select N_ID, N_CITY
    from NURSES)
group by CITY
having count(ID) >= all (select count(ID) from (select D_ID as id, D_CITY as city
                                                    from DOCTORS
                                                    union
                                                    select N_ID, N_CITY
                                                    from NURSES)
                        group by CITY)
```

Query8	
city	count
Lowell	7

9) Increment years of experience of all the doctors by 1.

```
update DOCTORS
```

```
set D_YEARS_OF_EXPERIENCE = D_YEARS_OF_EXPERIENCE + 1
```

10) Delete all the tests whose result is negative.

```
delete from TESTS
```

```
where T_RESULT = "Negative";
```