UNIVERSITY OF MASSACHUSETTS, LOWELL - COMP3090 - Database I

Final Project

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DOCTORS (<u>**D_ID**</u>, D_NAME, D_GENDER, D_AGE, D_SPECIALIZATION, D_YEARS_OF_EXPERIENCE, D_CONTACT, D_STREET, D_CITY)

 $PATIENTS \ (\underline{P_ID}, P_NAME, P_GENDER, P_AGE, P_DISEASE, P_CONTACT, P_STREET, P_CITY)$

 $NURSES\ (\underline{\textbf{N_ID}},\ N_NAME,\ N_SPECIALIZATION,\ N_SHIFT,\ N_STREET,\ N_CITY)$

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;

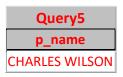
| Query4 | |
|------------|--------|
| AVG_YEARS_ | OF_EXP |
| | 15.3 |

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 | | | |
| 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.)

| 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";
```