URL : <https://www.sql-practice.com/>

Db : hospital

Level - Medium

Q1: Show unique birth years from patients and order them by ascending.

ANS 1 :

SELECT

DISTINCT YEAR(birth\_date) AS birth\_year

FROM patients

ORDER BY birth\_year;

ANS 2 :

SELECT year(birth\_date)

FROM patients

GROUP BY year(birth\_date)

Q2 : Show unique first names from the patients table which only occurs once in the list.

For example, if two or more people are named 'John' in the first\_name column then don't include their name in the output list. If only 1 person is named 'Leo' then include them in the output.

ANS 1 :

Select distinct(first\_name) as unique\_count from patients

group by first\_name

having count (unique\_count) = 1

ANS 2 :

SELECT first\_name

FROM (

SELECT

first\_name,

count(first\_name) AS occurrencies

FROM patients

GROUP BY first\_name

)

WHERE occurrencies = 1

Q3 : Show patient\_id and first\_name from patients where their first\_name start and ends with 's' and is at least 6 characters long.

ANS 1

SELECT

patient\_id,

first\_name

FROM patients

WHERE first\_name LIKE 's\_\_\_\_%s';

ANS 2 :

SELECT

patient\_id,

first\_name

FROM patients

WHERE

first\_name LIKE 's%s'

AND len(first\_name) >= 6;

ANS 3 :

SELECT

patient\_id,

first\_name

FROM patients

where

first\_name like 's%'

and first\_name like '%s'

and len(first\_name) >= 6;

:

Q4 : Show patient\_id, first\_name, last\_name from patients whos diagnosis is 'Dementia'.

Primary diagnosis is stored in the admissions table.

ANS 1

select p.patient\_id , p.first\_name , p.last\_name

from patients p

join admissions a

ON p.patient\_id = a.patient\_id

where a.diagnosis = 'Dementia'

ANS 2 :

SELECT

patient\_id,

first\_name,

last\_name

FROM patients

WHERE patient\_id IN (

SELECT patient\_id

FROM admissions

WHERE diagnosis = 'Dementia'

);

Q5. Display every patient's first\_name.Order the list by the length of each name and then by alphabetically.

Ans : select first\_name from patients

order by len(first\_name) asc , first\_name asc

Q6: Show the total amount of male patients and the total amount of female patients in the patients table.Display the two results in the same row.

ANS 1 :

SELECT

(SELECT count(\*) FROM patients WHERE gender='M') AS male\_count,

(SELECT count(\*) FROM patients WHERE gender='F') AS female\_count;

ANS 2 :

SELECT

SUM(Gender = 'M') as male\_count,

SUM(Gender = 'F') AS female\_count

FROM patients

ANS 3 :

select

sum(case when gender = 'M' then 1 end) as male\_count,

sum(case when gender = 'F' then 1 end) as female\_count

from patients;

NOTE : case in sql : <https://www.w3schools.com/sql/sql_case.asp>

Q7. Show first and last name, allergies from patients which have allergies to either 'Penicillin' or 'Morphine'. Show results ordered ascending by allergies then by first\_name then by last\_name.

ANS 1 :

select first\_name , last\_name , allergies

from patients

where allergies = 'Penicillin' OR allergies = 'Morphine'

order by allergies asc , first\_name asc , last\_name asc

ANS 2 :

SELECT

first\_name,

last\_name,

allergies

FROM patients

WHERE

allergies IN ('Penicillin', 'Morphine')

ORDER BY

allergies,

first\_name,

last\_name;

Q8. Show patient\_id, diagnosis from admissions. Find patients admitted multiple times for the same diagnosis.

ANS :

SELECT

patient\_id,

diagnosis

FROM admissions

GROUP BY

patient\_id,

diagnosis

HAVING COUNT(\*) > 1;

Q9 . Show the city and the total number of patients in the city.Order from most to least patients and then by city name ascending.

ANS :

select city , count(patient\_id) as total\_patients

from patients

group by city

order by total\_patients desc , city asc

Q10. Show first name, last name and role of every person that is either patient or doctor. The roles are either "Patient" or "Doctor"

ANS :

select first\_name , last\_name , "patient" as role from patients

union ALL

select first\_name , last\_name , "doctor" as role from doctors

Q11 . Show all allergies ordered by popularity. Remove NULL values from query.

Ans 1 :

SELECT

allergies,

COUNT(\*) AS total\_diagnosis

FROM patients

WHERE

allergies IS NOT NULL

GROUP BY allergies

ORDER BY total\_diagnosis DES

ANS 2 :

SELECT

allergies,

count(\*)

FROM patients

WHERE allergies NOT NULL

GROUP BY allergies

ORDER BY count(\*) DESC

ANS 3 :

SELECT

allergies,

count(allergies) AS total\_diagnosis

FROM patients

GROUP BY allergies

HAVING

allergies IS NOT NULL

ORDER BY total\_diagnosis DESC

Q12 . Show all patient's first\_name, last\_name, and birth\_date who were born in the 1970s decade. Sort the list starting from the earliest birth\_date..

ANS 1 :

select first\_name , last\_name , birth\_date

from patients

where Year(birth\_date) >= 1970 and Year(birth\_date) <=1979

order by birth\_date asc

ANS 2 :

SELECT

first\_name,

last\_name,

birth\_date

FROM patients

WHERE

birth\_date >= '1970-01-01'

AND birth\_date < '1980-01-01'

ORDER BY birth\_date ASC

ANS 3 :

SELECT

first\_name,

last\_name,

birth\_date

FROM patients

WHERE year(birth\_date) LIKE '197%'

ORDER BY birth\_date ASC

Q13. We want to display each patient's full name in a single column. Their last\_name in all upper letters must appear first, then first\_name in all lower case letters. Separate the last\_name and first\_name with a comma. Order the list by the first\_name in decending order

EX: SMITH,jane

Ans 1 :

select concat( UPPER(last\_name) , "," , lower(first\_name)) as fullname

from patients

order by first\_name desc

Ans 2 :

SELECT

UPPER(last\_name) || ',' || LOWER(first\_name) AS new\_name\_format

FROM patients

ORDER BY first\_name DESC;

Q14. Show the province\_id(s), sum of height; where the total sum of its patient's height is greater than or equal to 7,000.

ANS :

select sum(height) as total , province\_id

from patients

group by province\_id

having total >= 7000

ANS 2:

select \* from (select province\_id, SUM(height) as sum\_height FROM patients group by province\_id) where sum\_height >= 7000;

Q15. Show the difference between the largest weight and smallest weight for patients with the last name 'Maroni'

Ans :

select (max(weight) - min(weight) ) as diff

from patients

where last\_name = 'Maroni'

Q16. Show all of the days of the month (1-31) and how many admission\_dates occurred on that day. Sort by the day with most admissions to least admissions.

ANS :

select DAY(admission\_date)as day\_number , count(\*) as no\_of\_admission

from admissions

group by day\_number

order by no\_of\_admission desc

Q17. Show all columns for patient\_id 542's most recent admission\_date

Ans 1 :

select \* from admissions

where patient\_id = '542'

order by admission\_date desc

limit 1

ANS 2 :

SELECT \*

FROM admissions

WHERE patient\_id = 542

GROUP BY patient\_id

HAVING

admission\_date = MAX(admission\_date);

Ans 3 :

SELECT \*

FROM admissions

WHERE

patient\_id = '542'

AND admission\_date = (

SELECT MAX(admission\_date)

FROM admissions

WHERE patient\_id = '542'

)

Ans 4 :

SELECT \*

FROM admissions

GROUP BY patient\_id

HAVING

patient\_id = 542

AND max(admission\_date)

Q18. Show patient\_id, attending\_doctor\_id, and diagnosis for admissions that match one of the two criteria:

1. patient\_id is an odd number and attending\_doctor\_id is either 1, 5, or 19.

2. attending\_doctor\_id contains a 2 and the length of patient\_id is 3 characters.

ANS :

select patient\_id , attending\_doctor\_id , diagnosis

from admissions

where

(patient\_id%2 !=0 and attending\_doctor\_id in (1,5,19))

or

(attending\_doctor\_id LIKE '%2%' and len(patient\_id) = 3 )

Q19. Show first\_name, last\_name, and the total number of admissions attended for each doctor.

Every admission has been attended by a doctor.

ANS 1:

select first\_name, last\_name , count(attending\_doctor\_id)

from admissions a

JOIN doctors d

oN a.attending\_doctor\_id = d.doctor\_id

group by attending\_doctor\_id

Ans 2 :

SELECT

first\_name,

last\_name,

count(\*)

from

doctors p,

admissions a

where

a.attending\_doctor\_id = p.doctor\_id

group by p.doctor\_id;

Q20 : For each doctor, display their id, full name, and the first and last admission date they attended.

Ans :

select distinct(doctor\_id) , concat(first\_name , " ", last\_name) as fullname , MAX(admission\_date) , MIN(admission\_date)

from admissions a

join doctors d

on a.attending\_doctor\_id = d.doctor\_id

group by doctor\_id

order by doctor\_id asc

Q21 : Display the total amount of patients for each province. Order by descending.

Ans :

select count(patient\_id) as patient\_count , province\_name from patients pa

join province\_names pn

on pn.province\_id = pa.province\_id

group by province\_name

order by patient\_count desc