**PRCE-001 Medical Data History**

**Task 2: Perform the Problem Queries:**

1. Show first name, last name, and gender of patients whose gender is 'M'

SHOW databases;

use project\_medical\_data\_history;

select \* from patients;

select first\_name, last\_name, gender from patients where gender= 'M';

2. Show first name and last name of patients who do not have allergies.

select first\_name, last\_name, allergies from patients where allergies is null;

3. Show first name of patients that start with the letter 'C'

select first\_name from patients where first\_name like 'C%';

4. Show first name and last name of patients that weight within the range of 100 to 120 (inclusive)

select first\_name, last\_name, weight from patients where weight between 100 and 120;

5. Update the patients table for the allergies column. If the patient's allergies is null then replace it with 'NKA'

SELECT patient\_id, first\_name, COALESCE(allergies, 'NKA') AS allergies FROM patients where allergies is null;

6. Show first name and last name concatenated into one column to show their full name.

select concat\_ws(' ', first\_name, last\_name) as full\_name from patients;

7. Show first name, last name, and the full province name of each patient.

select first\_name, last\_name, concat\_ws(' ', city, province\_id) as province from patients;

8. Show how many patients have a birth\_date with 2010 as the birth year.

select count(\*) from patients where birth\_date like '2010%';

9. Show the first\_name, last\_name, and height of the patient with the greatest height.

select first\_name, last\_name, height from patients order by height desc limit 1;

10. Show all columns for patients who have one of the following patient\_ids: 1,45,534,879,1000

select \* from patients where patient\_id in (1, 45, 534, 879, 1000);

11. Show the total number of admissions

select \* from admissions;

select count(patient\_id) from admissions;

select count(distinct patient\_id) from admissions;

12. Show all the columns from admissions where the patient was admitted and discharged on the same day.

select \* from admissions where admission\_date=discharge\_date;

13. Show the total number of admissions for patient\_id 579.

select count(admission\_date) from admissions where patient\_id='579';

14. Based on the cities that our patients live in, show unique cities that are in province\_id 'NS'?

select \* from patients;

select distinct city from patients where province\_id= 'NS';

15. Write a query to find the first\_name, last name and birth date of patients who have height more than 160 and weight more than 70

select first\_name, last\_name, birth\_date, height, weight from patients where height >160 and weight>70;

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

select distinct extract(year from birth\_date) as birth\_years from patients order by birth\_years asc;

17. 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.

Tip: HAVING clause was added to SQL because the WHERE keyword cannot be used with aggregate functions.

select distinct first\_name from patients group by first\_name having count(first\_name)=1;

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

select patient\_id, first\_name from patients where first\_name like 's\_\_\_\_%s';

19. Show patient\_id, first\_name, last\_name from patients whose diagnosis is 'Dementia'. Primary diagnosis is stored in the admissions table.

select p.patient\_id, p.first\_name, p.last\_name from patients as p

join admissions as a on p.patient\_id=a.patient\_id

where a.diagnosis= 'Dementia';

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

select distinct first\_name, char\_length(first\_name) as length from patients order by length asc;

21. Show the total number of male patients and the total number of female patients in the patients table. Display the two results in the same row.

select count(case when gender='M' then 1 end) as males,

count(case when gender='F' then 1 end) as females

from patients;

22. Show the total number of male patients and the total number of female patients in the patients table. Display the two results in the same row.

select count(case when gender='M' then 1 end) as males,

count(case when gender='F' then 1 end) as females

from patients;

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

select patient\_id, diagnosis from admissions group by patient\_id, diagnosis having count(\*)>1;

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

select city, count(patient\_id) from patients group by city order by count(patient\_id) desc, city asc;

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

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

union

select first\_name, last\_name, 'doctor' as role from doctors;

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

SELECT allergies, COUNT(\*) AS frequency FROM patients WHERE allergies IS NOT NULL GROUP BY allergies ORDER BY frequency DESC;

27. 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.

select first\_name, last\_name, birth\_date from patients where birth\_date like '197%' order by birth\_date asc;

28. 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 descending order EX: SMITH,jane

select concat\_ws(',', upper(last\_name), first\_name) as full\_name from patients order by first\_name desc;

29. 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.

select province\_id, sum(height) from patients group by province\_id having sum(height)>7000 or sum(height)=7000;

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

select max(weight) as max\_weight, min(weight) as min\_weight, max(weight)-min(weight) as weight\_difference from patients where last\_name= 'Maroni' group by last\_name;

31. 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.

select distinct day(admission\_date) as day\_of\_month, count(\*) as admission\_count from admissions group by day\_of\_month order by admission\_count desc;

32. Show all of the patients grouped into weight groups. Show the total number of patients in each weight group. Order the list by the weight group descending. e.g. if they weigh 100 to 109 they are placed in the 100 weight group, 110-119 = 110 weight group, etc.

select \* from patients;

select count(patient\_id) as total\_patients, floor(weight/10)\*10 as weight\_group from patients group by weight\_group order by weight\_group desc;

33. Show patient\_id, weight, height, isObese from the patients table. Display isObese as a boolean 0 or 1.

Obese is defined as weight(kg)/(height(m). Weight is in units kg. Height is in units cm.

select patient\_id, weight as weight\_in\_kg, height/100 as height\_in\_m, case when weight / power(height/100, 2) >= 30 then 1 else 0 end as isObese from patients;

34. Show patient\_id, first\_name, last\_name, and attending doctor's specialty. Show only the patients who has a diagnosis as 'Epilepsy' and the doctor's first name is 'Lisa'. Check patients, admissions, and doctors tables for required information.

select p.patient\_id, p.first\_name, p.last\_name, d.specialty from patients as p

join admissions as a on p.patient\_id=a.patient\_id

join doctors as d on d.doctor\_id=a.attending\_doctor\_id

where a.diagnosis='Epilepsy' and d.first\_name='Lisa';

35. All patients who have gone through admissions, can see their medical documents on our site. Those patients are given a temporary password after their first admission. Show the patient\_id and temp\_password.

The password must be the following, in order:

- patient\_id

- the numerical length of patient's last\_name

- year of patient's birth\_date

select p.patient\_id,

concat\_ws('', p.patient\_id, char\_length(p.last\_name), year(p.birth\_date)) as temp\_password

from patients as p

join admissions as a on p.patient\_id = a.patient\_id

group by p.patient\_id, p.last\_name, p.birth\_date;