Course: Data Analytics

TEAM ID: PTID CDA NOV 25 825

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Project ID: PRSQL-02 – Medical Data History

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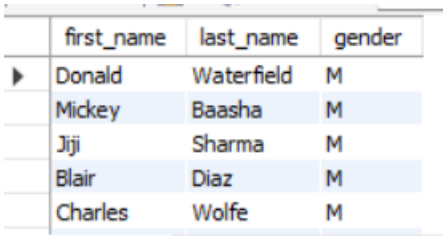
Question 1: Show first name, last name, and gender of patients whose gender is 'M'

SQL Query:

```
SELECT first_name, last_name, gender
FROM patients
WHERE gender = 'M';
```

Output Screenshot for few Rows from output window.



first_name	last_name	gender
Donald	Waterfield	M
Mickey	Baasha	M
Jiji	Sharma	M
Blair	Diaz	M
Charles	Wolfe	M

Question 2: Show first name and last name of patients who does not have allergies.

SQL Query:

```
SELECT first_name, last_name
FROM patients
WHERE allergies IS NULL;
```

Output Screenshot for few Rows from output window.

first_name	last_name
Donald	Waterfield
Blair	Diaz
Thomas	ONeill
Sonny	Beckett
Cedric	Coltrane

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

SQL Query:

```
SELECT first_name
FROM patients
WHERE first_name LIKE 'C%';
```

Output Screenshot for few Rows from output window.

first_name
Charles
Cedric
Charles
Cross
Calleigh

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

SQL Query:

```
SELECT first_name, last_name
FROM patients
WHERE weight BETWEEN 100 AND 120;
```

Output Screenshot for few Rows from output window.

first_name	last_name
Jiji	Sharma
Blair	Diaz
Thomas	ONeill
Sonny	Beckett
Tom	Halliwell

Question 5: Update the patients table for the allergy's column. If the patient's allergies are null then replace it with 'NKA'

SQL Query:

Step 1 — Turn OFF Safe Updates

```
SET SQL_SAFE_UPDATES = 0;
```

Step 2 — Run UPDATE query

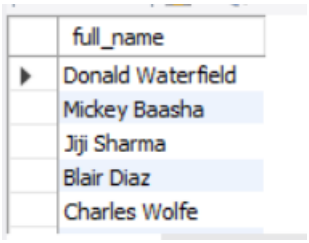
```
UPDATE patients
SET allergies = 'NKA'
WHERE allergies IS NULL;
```

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

SQL Query:

```
SELECT CONCAT(first_name, ' ', last_name) AS full_name
FROM patients;
```

Output Screenshot for few Rows from output window.



full_name
Donald Waterfield
Mickey Baasha
Jiji Sharma
Blair Diaz
Charles Wolfe

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

SQL Query:

```
SELECT p.first_name, p.last_name, pn.province_name
FROM patients p JOIN province_names pn
ON p.province_id = pn.province_id;
```

Output Screenshot for few Rows from output window.

first_name	last_name	province_name
Donald	Waterfield	Ontario
Mickey	Baasha	Ontario
Jiji	Sharma	Ontario
Blair	Diaz	Ontario
Charles	Wolfe	Ontario

Question 8: Show how many patients have a birthdate with 2010 as the birth year.

SQL Query:

```
SELECT COUNT(*) AS patients_born_in_2010 FROM patients
WHERE YEAR(birth_date) = 2010;
```

Output Screenshot for few Rows from output window.

patients_born_in_2010
55

Question 9: Show the first_name, last_name, and height of the patient with the greatest height.

SQL Query:

```
SELECT first_name, last_name, height
FROM patients
ORDER BY height DESC
LIMIT 1;
```

Output Screenshot for few Rows from output window.

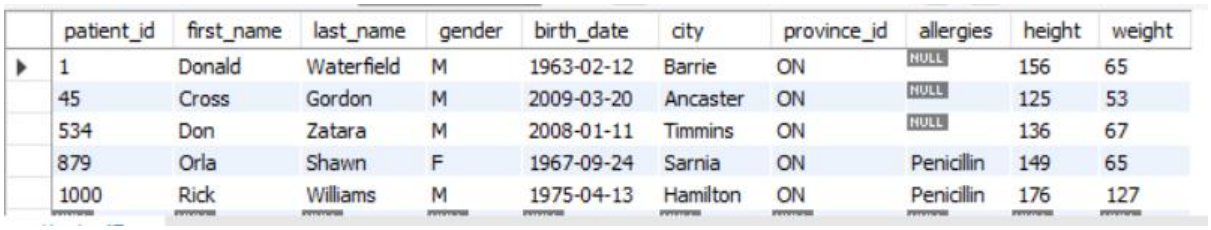
first_name	last_name	height
Sam	Haruko	226

Question 10: Show all columns for patients who have one of the following patient_ids: 1,45,534,879,1000

SQL Query:

```
SELECT *
FROM patients
WHERE patient_id IN (1, 45, 534, 879, 1000);
```

Output Screenshot for few Rows from output window.



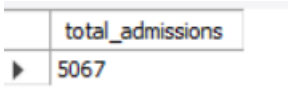
patient_id	first_name	last_name	gender	birth_date	city	province_id	allergies	height	weight
1	Donald	Waterfield	M	1963-02-12	Barrie	ON	NULL	156	65
45	Cross	Gordon	M	2009-03-20	Ancaster	ON	NULL	125	53
534	Don	Zatara	M	2008-01-11	Timmins	ON	NULL	136	67
879	Orla	Shawn	F	1967-09-24	Sarnia	ON	Penicillin	149	65
1000	Rick	Williams	M	1975-04-13	Hamilton	ON	Penicillin	176	127

Question 11: Show the total number of admissions

SQL Query:

```
SELECT COUNT(*) As total_admissions
FROM admissions;
```

Output Screenshot for few Rows from output window.



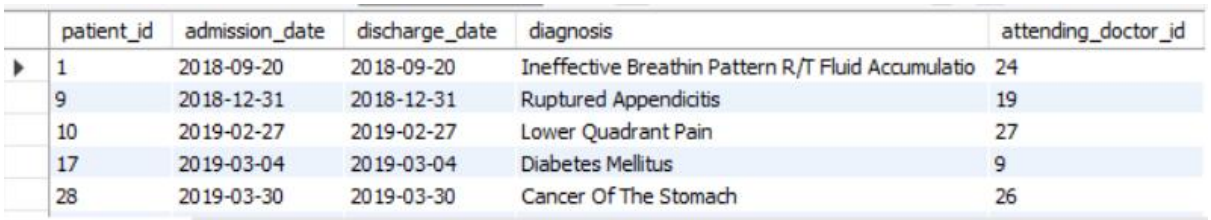
total_admissions
5067

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

SQL Query:

```
SELECT *
FROM admissions
WHERE admission_date = discharge_date;
```

Output Screenshot for few Rows from output window.



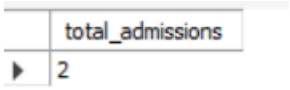
patient_id	admission_date	discharge_date	diagnosis	attending_doctor_id
1	2018-09-20	2018-09-20	Ineffective Breathin Pattern R/T Fluid Accumulatio	24
9	2018-12-31	2018-12-31	Ruptured Appendicitis	19
10	2019-02-27	2019-02-27	Lower Quadrant Pain	27
17	2019-03-04	2019-03-04	Diabetes Mellitus	9
28	2019-03-30	2019-03-30	Cancer Of The Stomach	26

Question 13: Show the total number of admissions for patient_id 579.

SQL Query:

```
SELECT COUNT(*) AS total_admissions
FROM admissions where patient_id = 579;
```

Output Screenshot for few Rows from output window.



total_admissions
2

Question 14: Based on the cities that our patients live in, show unique cities that are in province_id 'NS'?

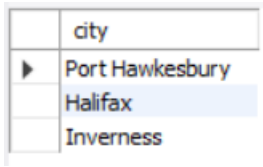
SQL Query:

```
SELECT DISTINCT city

FROM patients

WHERE province_id = 'NS';
```

Output Screenshot for few Rows from output window.



city
Port Hawkesbury
Halifax
Inverness

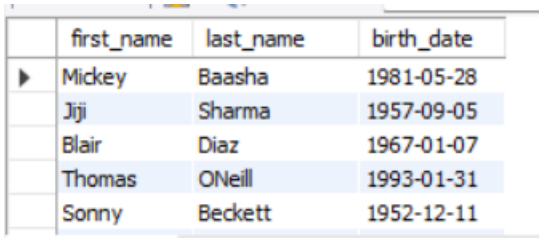
Question 15: Write a query to find the first_name, last name and birth date of patients who have height more than 160 and weight more than 70

SQL Query:

```
SELECT first_name,

last_name, birth_date FROM patients WHERE height > 160 AND weight > 70;
```

Output Screenshot for few Rows from output window.



first_name	last_name	birth_date
Mickey	Baasha	1981-05-28
Jiji	Sharma	1957-09-05
Blair	Diaz	1967-01-07
Thomas	ONeill	1993-01-31
Sonny	Beckett	1952-12-11

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

SQL Query:

```
SELECT DISTINCT YEAR(birth_date) AS birth_year
FROM patients
ORDER BY birth_year ASC;
```

Output Screenshot for few Rows from output window.

birth_year
1918
1923
1925
1926
1927

Question 17: Show unique first names from the patients table which only occurs once in the list.

SQL Query:

```
SELECT first_name
FROM patients
GROUP BY first_name
HAVING COUNT(*) = 1;
```

Output Screenshot for few Rows from output window.

first_name
Abby
Adelaide
Adelia
Akira
Albert

Question 18: Show patient_id and first_name from patients where their first_name start and ends with 's' and is at least 6 characters long.

SQL Query:

```
SELECT patient_id, first_name
FROM patients
WHERE first_name LIKE 's%s'
  AND LENGTH(first_name) >= 6;
```

Output Screenshot for few Rows from output window.

patient_id	first_name
496	Spiros
629	Spiros
648	Stanislaus
1273	Stanislaus
1789	Seamus

Question 19: Show patient_id, first_name, last_name from patients whose diagnosis is 'Dementia'. Primary diagnosis is stored in the admissions table.

SQL Query:

```
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';
```

Output Screenshot for few Rows from output window.

patient_id	first_name	last_name
160	Miranda	Delacour
178	David	Bustamonte
207	Matt	Celine
613	Jaki	Granger
836	Montana	Vimes

Question 20: Display every patient's first_name. Order the list by the length of each name and then by alphabetically.

SQL Query:

```
SELECT first_name
FROM patients
ORDER BY LENGTH(first_name), first_name;
```

Output Screenshot for few Rows from output window.

first_name
Al
Al
Al
Al
Al

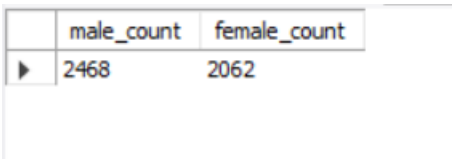
Question 21: Show the total amount of male patients and the total amount of female patients in the patients' table. Display the two results in the same row.

SQL Query:

Option 1

```
SELECT
   SUM(gender = 'M') AS male_count,
   SUM(gender = 'F') AS female_count
FROM patients;
```

Output Screenshot for few Rows from output window.



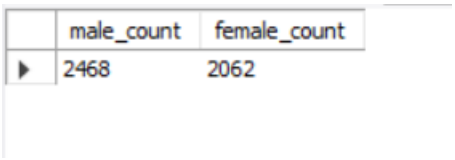
male_count	female_count
2468	2062

Question 22: 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.

SQL Query:

```
SELECT
   SUM(CASE WHEN gender = 'M' THEN 1 ELSE 0 END) AS male_count,
   SUM(CASE WHEN gender = 'F' THEN 1 ELSE 0 END) AS female_count
FROM patients;
```

Output Screenshot for few Rows from output window.



male_count	female_count
2468	2062

Question 23: Show patient_id, diagnosis from admissions. Find patients admitted multiple times for the same diagnosis.

SQL Query:

```
SELECT  patient_id, diagnosis, COUNT(*) AS times_admitted
FROM admissions GROUP BY patient_id, diagnosis
HAVING COUNT(*) > 1;
```

Output Screenshot for few Rows from output window.

patient_id	diagnosis	times_admitted
137	Pregnancy	2
320	Pneumonia	2
1577	Congestive Heart Failure	2
2004	Left Shoulder Rotator Cuff Repair	2
2859	Severed Spine At C3	2

Question 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.

SQL Query:

```
SELECT city, COUNT(*) AS total_patients
FROM patients GROUP BY city
ORDER BY total_patients DESC, city;
```

Output Screenshot for few Rows from output window.

city	total_patients
Hamilton	1938
Toronto	317
Burlington	276
Brantford	147
Ancaster	117

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

SQL Query:

```
SELECT  first_name, last_name, 'Patient' AS role FROM patients
UNION ALL
SELECT   first_name, last_name,  'Doctor' AS role
FROM doctors;
```

Output Screenshot for few Rows from output window.

first_name	last_name	role
Donald	Waterfield	Patient
Mickey	Baasha	Patient
Jiji	Sharma	Patient
Blair	Diaz	Patient
Charles	Wolfe	Patient

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

SQL Query:

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

Output Screenshot for few Rows from output window.

allergies	popularity
Penicillin	1082
Codeine	305
Sulfa	157
ASA	99
Sulfa Drugs	71

Question 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.

SQL Query:

Option1:

```
SELECT first_name,last_name,birth_date FROM patients
WHERE birth_date BETWEEN '1970-01-01' AND '1979-12-31'
```

Option2:

```
SELECT first_name,last_name,birth_date
FROM patients WHERE YEAR(birth_date) BETWEEN 1970 AND 1979
ORDER BY birth_date ASC;
```

Output Screenshot for few Rows from output window.

first_name	last_name	birth_date
Frances	Kobayakawa	1970-01-02
Sunny	Burrell	1970-01-07
Penelope	Beckett	1970-01-14
Deborah	Stewart	1970-01-14
Augusta	Decker	1970-01-22

Question 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 decending order EX: SMITH,jane

SQL Query:

Option1:

```
SELECT CONCAT(UPPER(last_name), ',', LOWER(first_name)) AS full_name
FROM patients ORDER BY first_name DESC;
```

Output Screenshot for few Rows from output window.

full_name
MILLER,zoe
CORBIE,ziva
KOBAYAKAWA,zenigata
OVERSTREET,zenigata
BENNETT,zen

Question 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.

SQL Query:

```
SELECT  province_id, SUM(height) AS total_height
FROM patients GROUP BY province_id
HAVING SUM(height) >= 7000;
```

Output Screenshot for few Rows from output window.

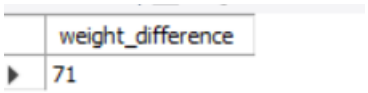
province_id	total_height
BC	7720
NS	9765
ON	678037

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

SQL Query:

```
SELECT MAX(weight) - MIN(weight) AS weight_difference
FROM patients WHERE last_name = 'Maroni';
```

Output Screenshot for few Rows from output window.



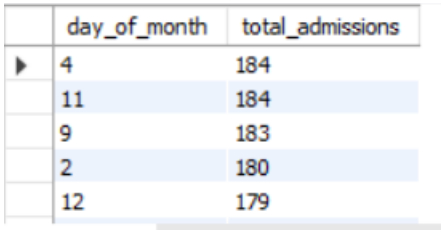
weight_difference
71

Question 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

SQL Query:

```
SELECT  DAY(admission_date) AS day_of_month, COUNT(*) AS total_admissions
FROM admissions GROUP BY DAY(admission_date)
ORDER BY total_admissions DESC;
```

Output Screenshot for few Rows from output window.



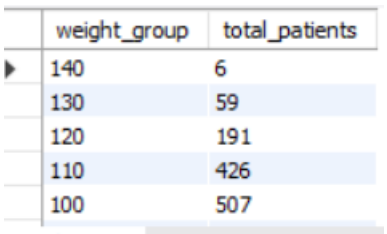
day_of_month	total_admissions
4	184
11	184
9	183
2	180
12	179

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

SQL Query:

```
SELECT FLOOR(weight / 10) * 10 AS weight_group,COUNT(*) AS total_patients
FROM patients GROUP BY weight_group
ORDER BY weight_group DESC;
```

Output Screenshot for few Rows from output window.



weight_group	total_patients
140	6
130	59
120	191
110	426
100	507

Question 33: Show patient_id, weight, height, is Obese from the patient's 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.

SQL Query:

```
SELECT patient_id, weight, height,
CASE WHEN weight / POWER(height / 100, 2) >= 30 THEN 1 ELSE 0 END AS isObese
FROM patients;
```

Output Screenshot for few Rows from output window.

patient_id	weight	height	isObese
1	65	156	0
2	76	185	0
3	106	194	0
4	104	191	0
5	10	47	1

Question 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.

SQL Query:

```
SELECT p.patient_id, p.first_name,p.last_name, d.specialty
FROM patients p JOIN admissions a ON p.patient_id = a.patient_id
JOIN doctors d ON a.attending_doctor_id = d.doctor_id
WHERE a.diagnosis = 'Epilepsy' AND d.first_name = 'Lisa';
```

Output Screenshot for few Rows from output window.

patient_id	first_name	last_name	specialty
468	Frank	Anderson	Obstetrician/Gynecologist
701	Precious	Ashton	Obstetrician/Gynecologist

----------END----------