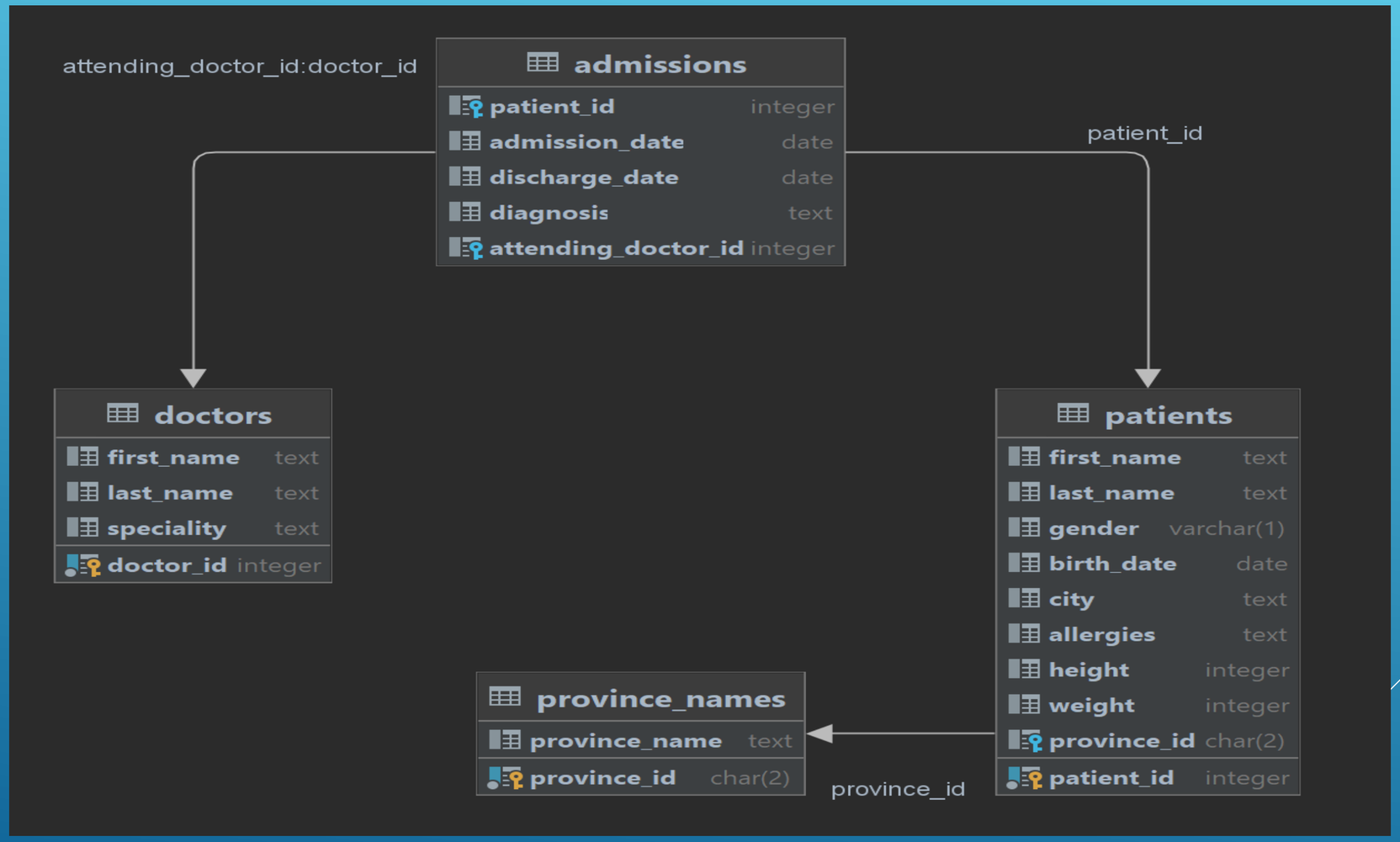
MEDICAL DATA HISTORY

- An SQL Project

SQL SCHEMA


attending_doctor_id:doctor_id
admissions
patient_id integer
admission_date date
discharge_date date
diagnosis text
attending_doctor_id integer
patient_id
doctors
first_name text
last_name text
speciality text
doctor_id integer
patients
first_name text
last_name text
gender varchar(1)
birth_date date
city text
allergies text
height integer
weight integer
province_id char(2)
patient_id integer
province_names
province_name text
province_id char(2)
province_id

1. SHOW FIRST NAME, LAST NAME, AND GENDER OF PATIENTS WHO'S GENDER IS 'M'

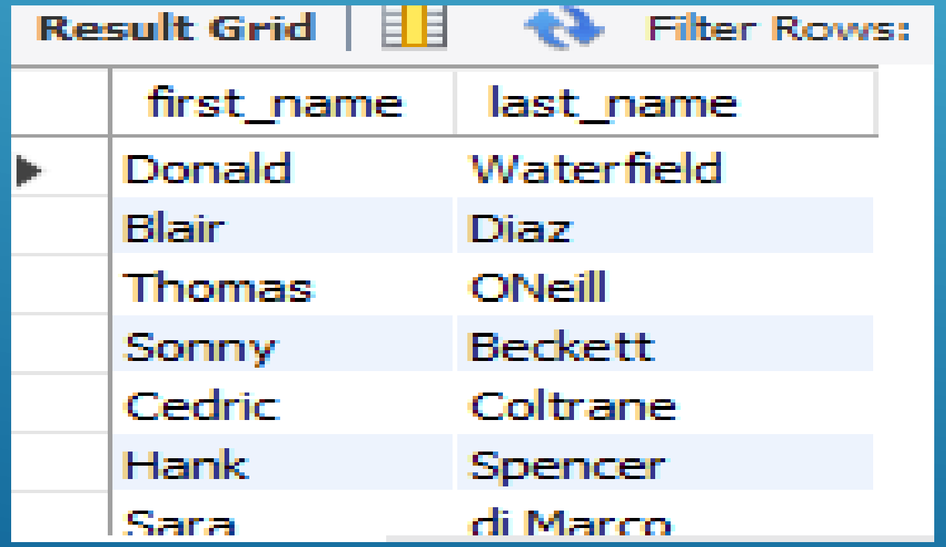
```
select first_name,last_name, gender  from patients where gender = "M";
```

Result Grid | Filter Rows:

first_name	last_name	gender
Donald	Waterfield	M
Mickey	Baasha	M
Jiji	Sharma	M
Blair	Diaz	M
Charles	Wolfe	M
Thomas	ONeill	M
Sonny	Beckett	M
Cedric	Coltrane	M

2. SHOW FIRST NAME AND LAST NAME OF PATIENTS WHO DOES NOT HAVE ALLERGIES.

```
select first_name,last_name from patients where allergies is null;
```

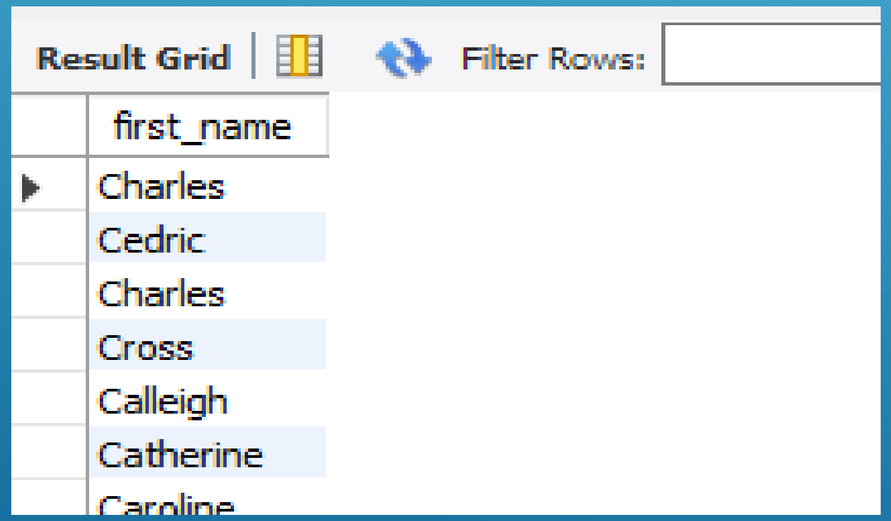


Result Grid | Filter Rows:

first_name	last_name
Donald	Waterfield
Blair	Diaz
Thomas	ONeill
Sonny	Beckett
Cedric	Coltrane
Hank	Spencer
Sara	di Marco

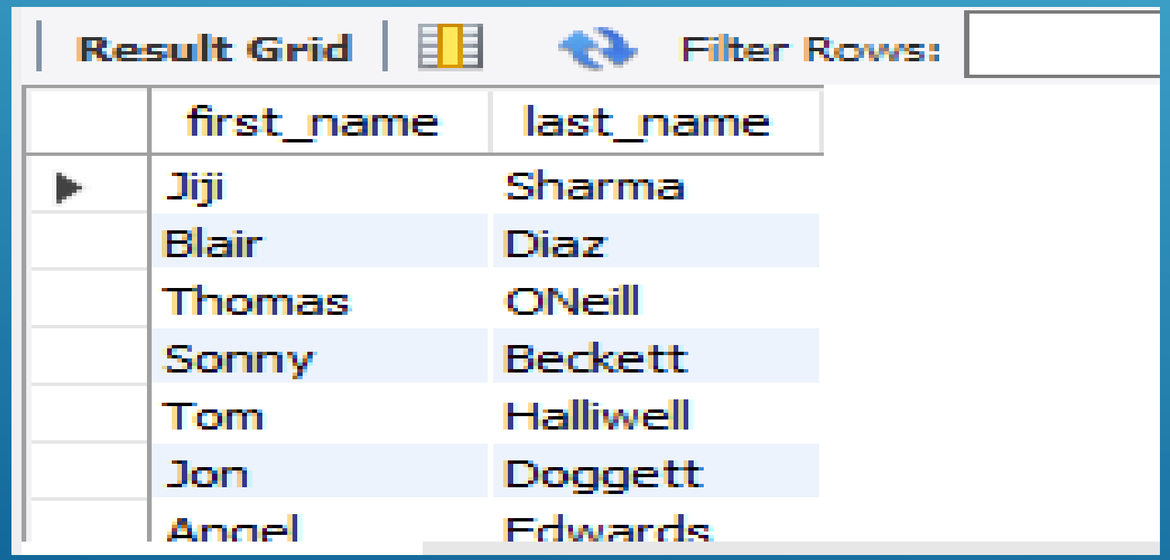
3. SHOW FIRST NAME OF PATIENTS THAT START WITH THE LETTER 'C'

```
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 from patients where weight >=100 and weight<=120;
```



first_name	last_name
Jiji	Sharma
Blair	Diaz
Thomas	ONeill
Sonny	Beckett
Tom	Halliwell
Jon	Doggett
Angel	Edwards

5. UPDATE THE PATIENTS TABLE FOR THE ALLERGIES COLUMN. IF THE PATIENT'S ALLERGIES IS NULL THEN REPLACE IT WITH 'NKA'

```
update patients set allergies = "NKA“ where allergies is null;
```

6. SHOW FIRST NAME AND LAST NAME CONCATENATED INTO ONE COLUMN TO SHOW THEIR FULL NAME.

```
select concat(first_name," ",last_name) as full_name from patients;
```

7. SHOW FIRST NAME, LAST NAME, AND THE FULL PROVINCE NAME OF EACH PATIENT.

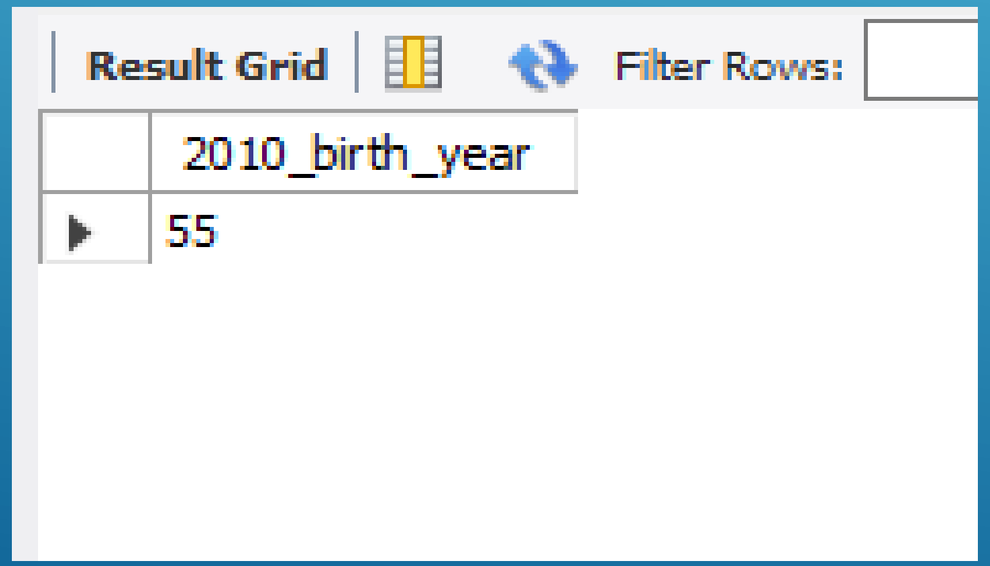
```
select p.first_name, p.last_name , n.province_name
from patients as p
join province_names as n
on p.province_id = n.province_id;
```

Result Grid | Filter Rows:

first_name	last_name	province_name
Donald	Waterfield	Ontario
Mickey	Baasha	Ontario
Jiji	Sharma	Ontario
Blair	Diaz	Ontario
Charles	Wolfe	Ontario
Sue	Falcon	Ontario
Thomas	ONeill	Ontario

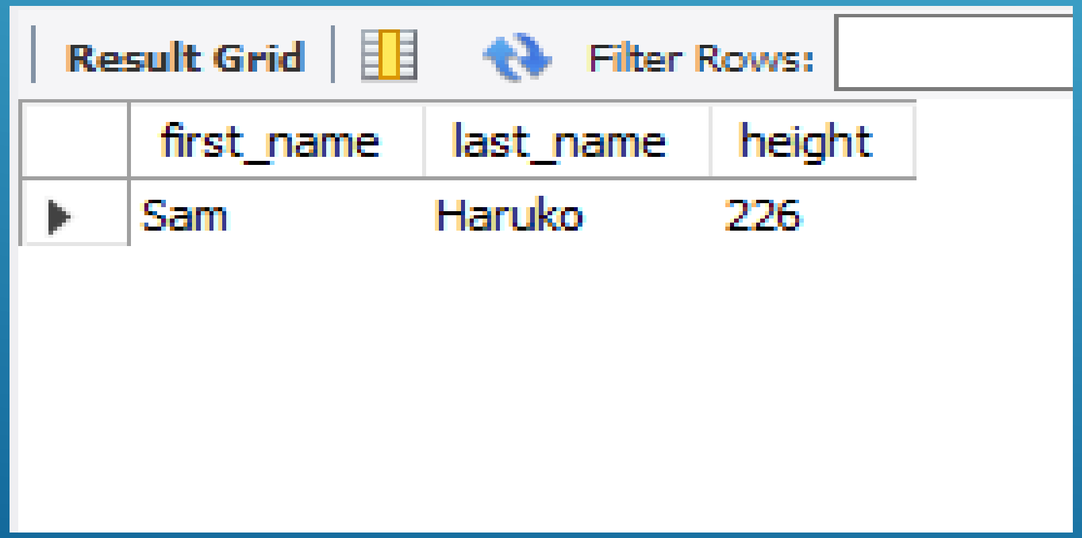
8. SHOW HOW MANY PATIENTS HAVE A BIRTH_DATE WITH 2010 AS THE BIRTH YEAR.

```
select count(*) as 2010_birth_year from patients
where year(birth_date) = 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
where height = (select max(height) from patients);
```



first_name	last_name	height
Sam	Haruko	226

10. SHOW ALL COLUMNS FOR PATIENTS WHO HAVE ONE OF THE FOLLOWING PATIENT_IDS: 1,45,534,879,1000

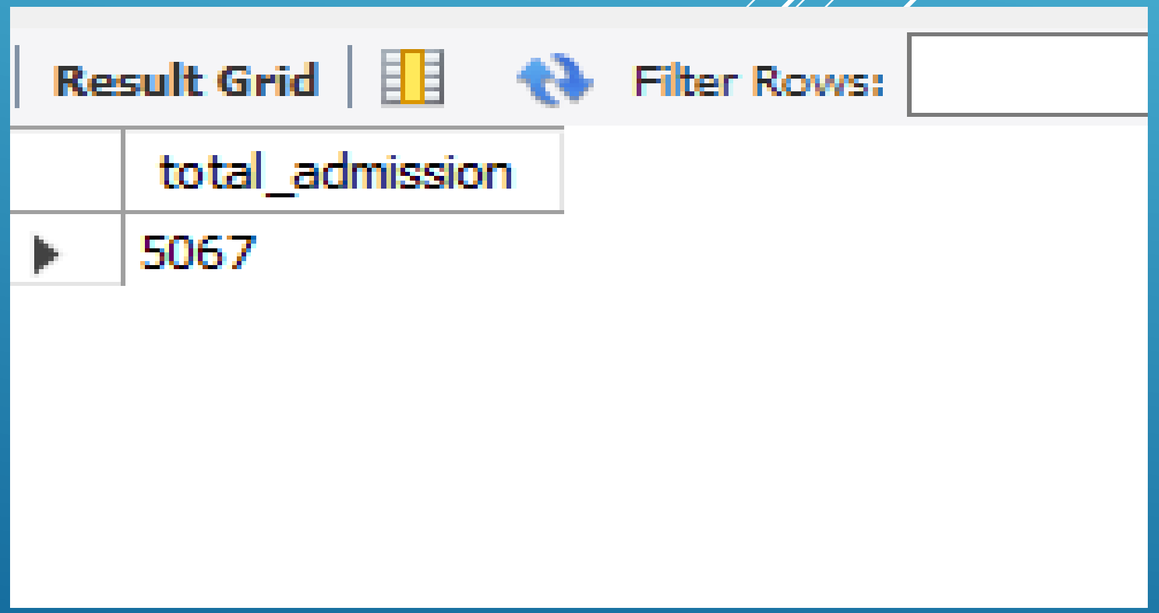
```
select * from patients where patient_id in(1,45,534,879,1000);
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

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
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

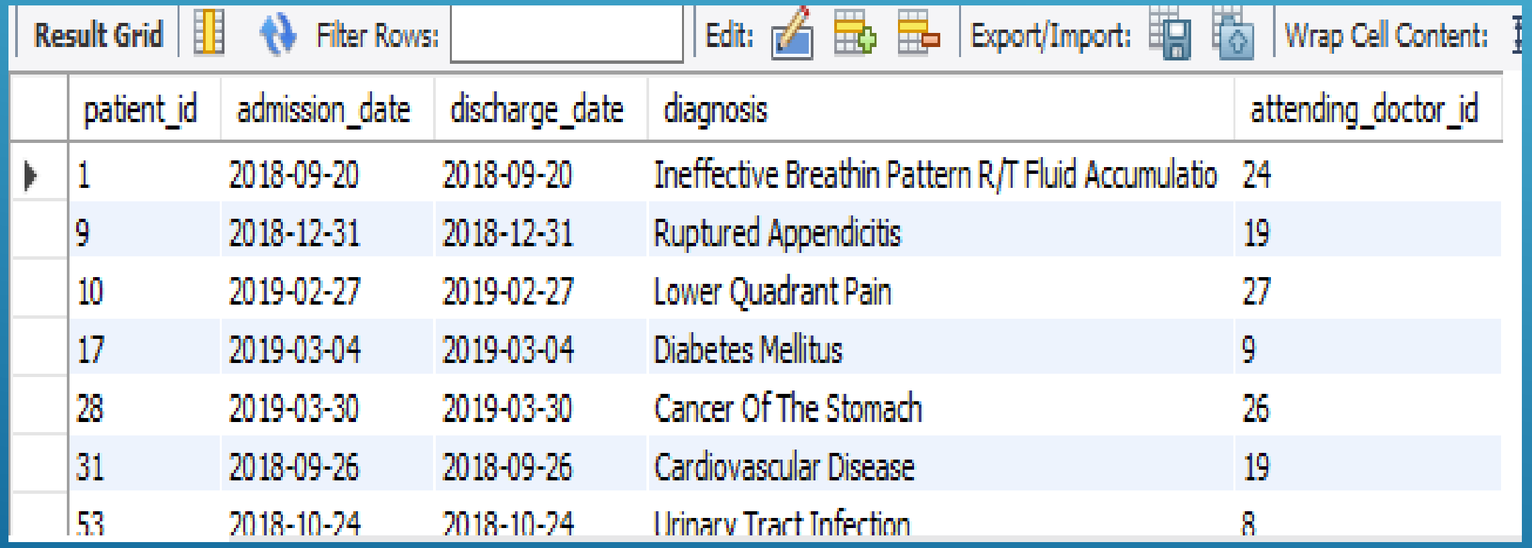
11. SHOW THE TOTAL NUMBER OF ADMISSIONS

```
select count(*) as total_admissionfrom
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;
```

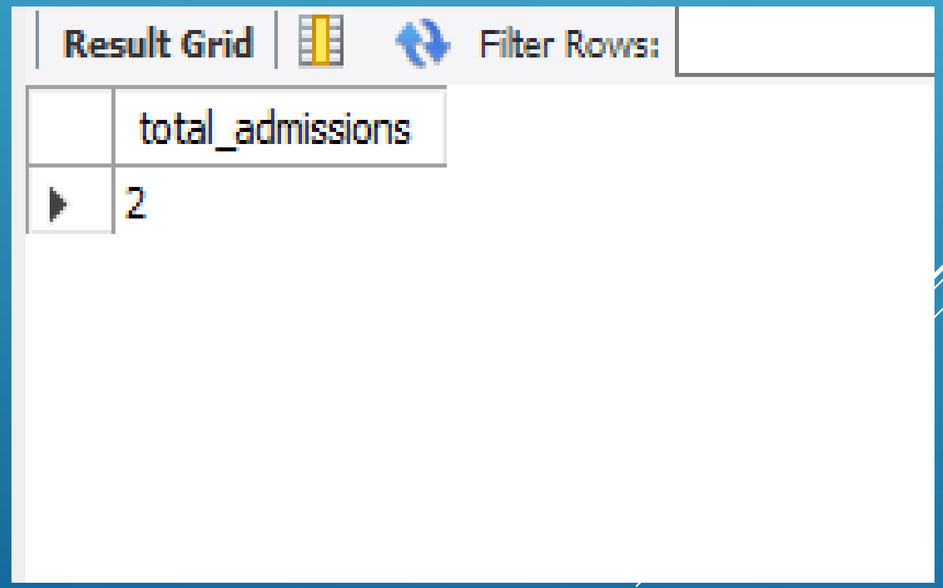


Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

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
31	2018-09-26	2018-09-26	Cardiovascular Disease	19
53	2018-10-24	2018-10-24	Urinary Tract Infection	8

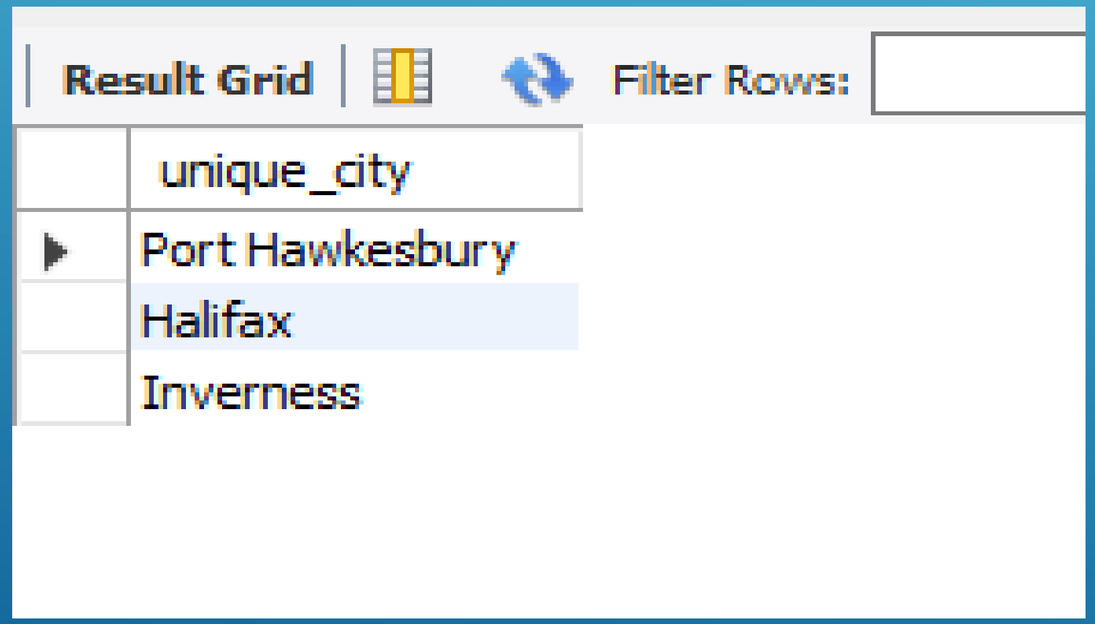
13. SHOW THE TOTAL NUMBER OF ADMISSIONS FOR PATIENT_ID 579.

```
select count(*) as total_admissionsfrom admissions  where
 patient_id = 579;
```



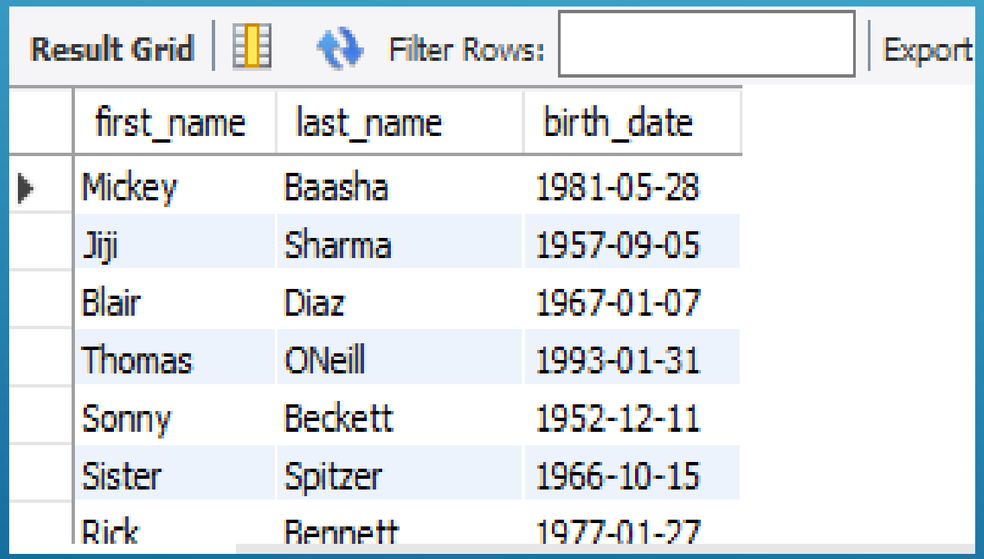
14. BASED ON THE CITIES THAT OUR PATIENTS LIVE IN, SHOW UNIQUE CITIES THAT ARE IN PROVINCE_ID 'NS'?

```
select distinct city as unique_cityfrom 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 from patients
where height >160 and weight > 70;
```

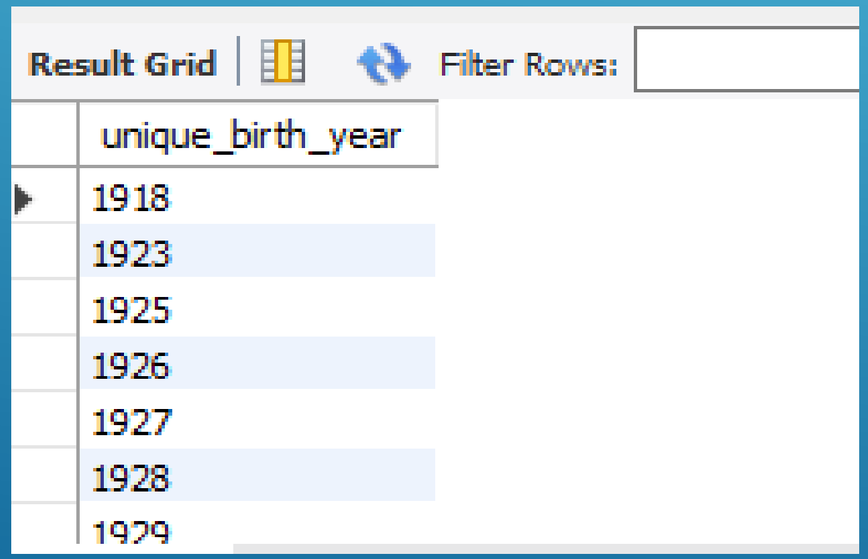


Result Grid | Filter Rows: | Export

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
Sister	Spitzer	1966-10-15
Rick	Bennett	1977-01-27

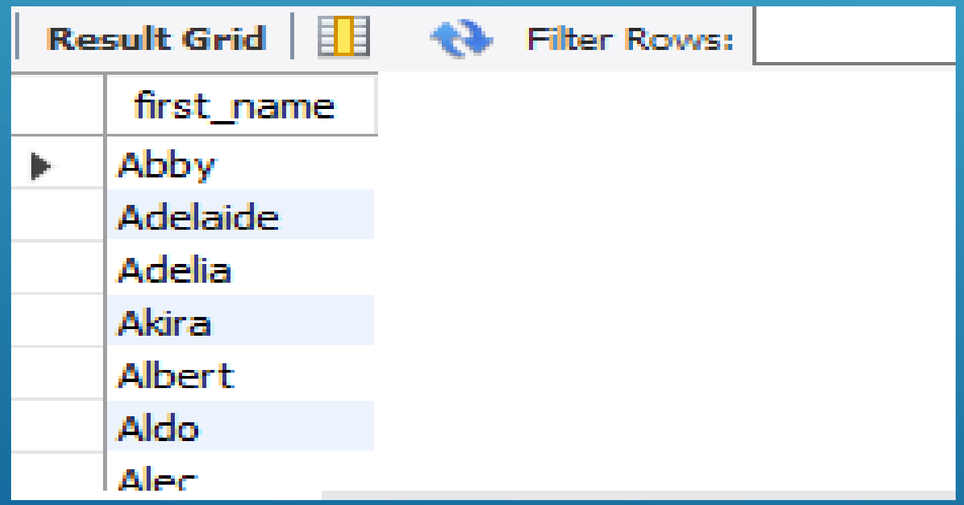
16. SHOW UNIQUE BIRTH YEARS FROM PATIENTS AND ORDER THEM BY ASCENDING.

```
select distinct (year(birth_date)) as unique_birth_year from patients order by
 unique_birth_year asc ;
```



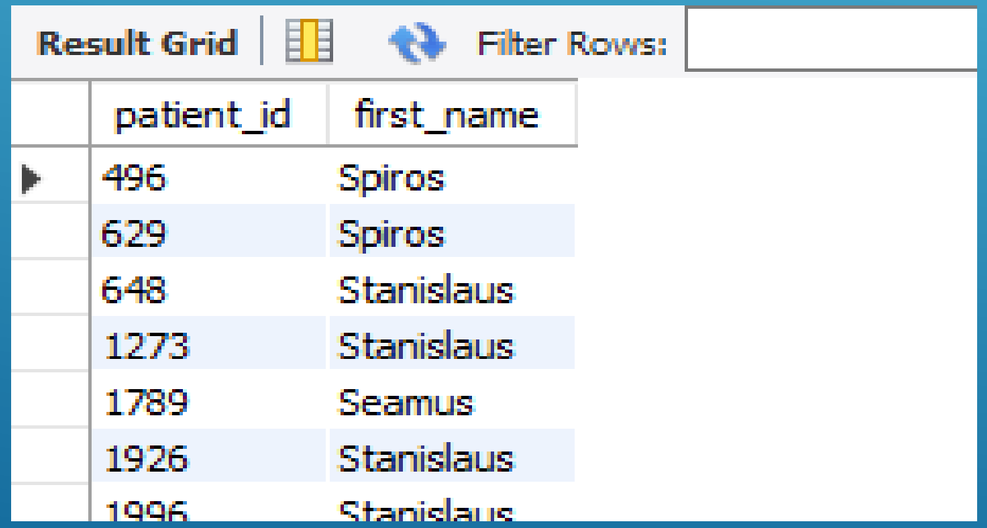
17. SHOW UNIQUE FIRST NAMES FROM THE PATIENTS TABLE WHICH ONLY OCCURS ONCE IN THE LIST.

```
select 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 START AND ENDS WITH 'S' AND IS AT LEAST 6 CHARACTERS LONG.

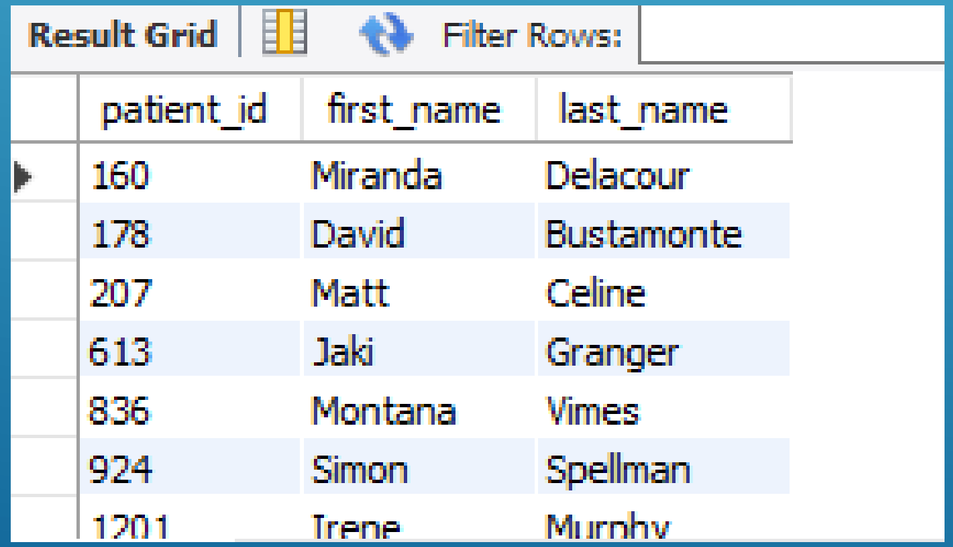
```
select patient_id, first_name from patients where first_name like "s%s"  and
 length(first_name) >= 6 ;
```



patient_id	first_name
496	Spiros
629	Spiros
648	Stanislaus
1273	Stanislaus
1789	Seamus
1926	Stanislaus
1996	Stanislaus

19. SHOW PATIENT_ID, FIRST_NAME, LAST_NAME FROM PATIENTS WHO'S DIAGNOSIS IS 'DEMENTIA'. PRIMARY DIAGNOSIS IS STORED IN THE ADMISSIONS TABLE.

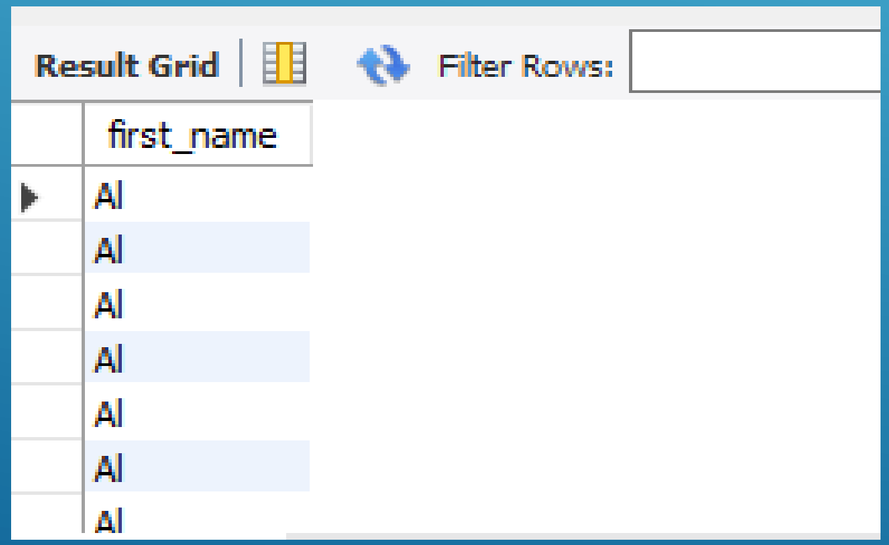
```
select p.patient_id, p.first_name, p.last_name from patients as p
Join admissions as a
on p.patient_id = a.patient_id
 where a.diagnosis = "Dementia“ ;
```



patient_id	first_name	last_name
160	Miranda	Delacour
178	David	Bustamonte
207	Matt	Celine
613	Jaki	Granger
836	Montana	Vimes
924	Simon	Spellman
1201	Irene	Murphy

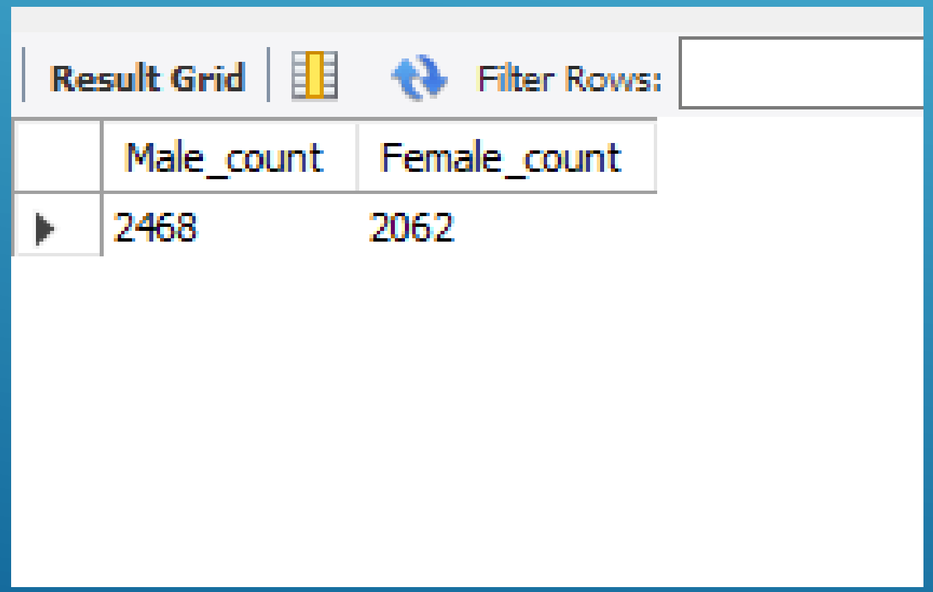
20. DISPLAY EVERY PATIENT'S FIRST_NAME. ORDER THE LIST BY THE LENGTH OF EACH NAME AND THEN BY ALPHBETICALLY.

```
select first_name from patients order by length(first_name), first_name ;
```



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.

```
select
(select count(gender) from patients where gender = "M") as Male_count,
(select count(gender) from patients where gender="F") as Female_count;
```



23. SHOW PATIENT_ID, DIAGNOSIS FROM ADMISSIONS. FIND PATIENTS ADMITTED MULTIPLE TIMES FOR THE SAME DIAGNOSIS.

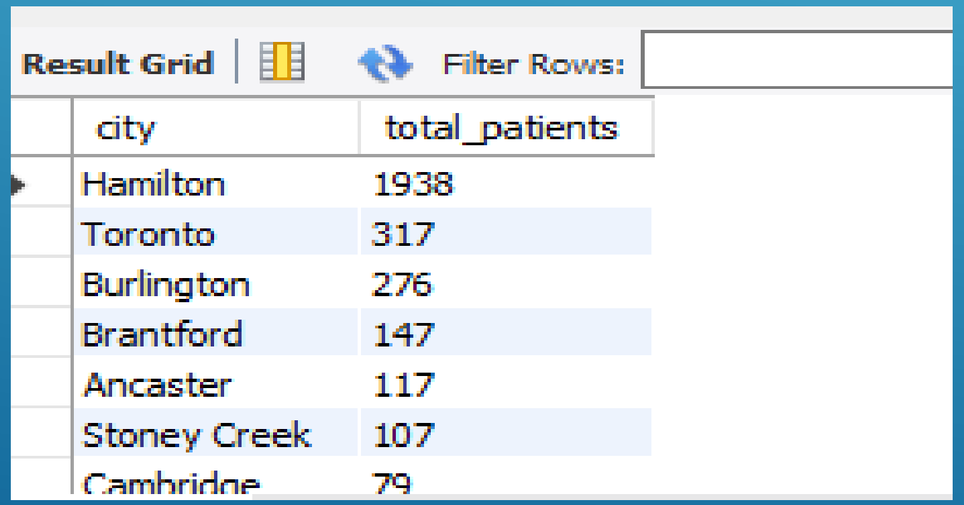
```
select patient_id, diagnosis
from admissions
group by patient_id, diagnosis
having count(diagnosis)>1;
```

Result Grid | Filter Rows:

patient_id	diagnosis
137	Pregnancy
320	Pneumonia
1577	Congestive Heart Failure
2004	Left Shoulder Rotator Cuff Repair
2859	Severed Spine At C3
3012	Appendicitis
3367	Pyelonephritis

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(*) as total_patients
 from patients
group by city
order by total_patients desc, city asc ;
```



Result Grid | Filter Rows:

city	total_patients
Hamilton	1938
Toronto	317
Burlington	276
Brantford	147
Ancaster	117
Stoney Creek	107
Cambridge	79

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

Result Grid | Filter Rows:

first_name	last_name	role
Simon	Santiago	Doctor
Heather	Beck	Doctor
Jenny	Pulaski	Doctor
Jeanette	Sites	Doctor
Larry	Miller	Doctor
Donna	Greenwood	Doctor
Donald	Waterfield	Patient
Mickey	Baasha	Patient
Jiji	Sharma	Patient

26. SHOW ALL ALLERGIES ORDERED BY POPULARITY. REMOVE NULL VALUES FROM QUERY.

```
select allergies, count(*) as popularity
from patients
where allergies is not null
group by allergies
order by popularity desc;
```

Result Grid | Filter Rows:

allergies	popularity
Penicillin	1082
Codeine	305
Sulfa	157
ASA	99
Sulfa Drugs	71
Peanuts	52
Iodine	48
Tylenol	42
Bee Stings	40
Valporic Acid	38

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.

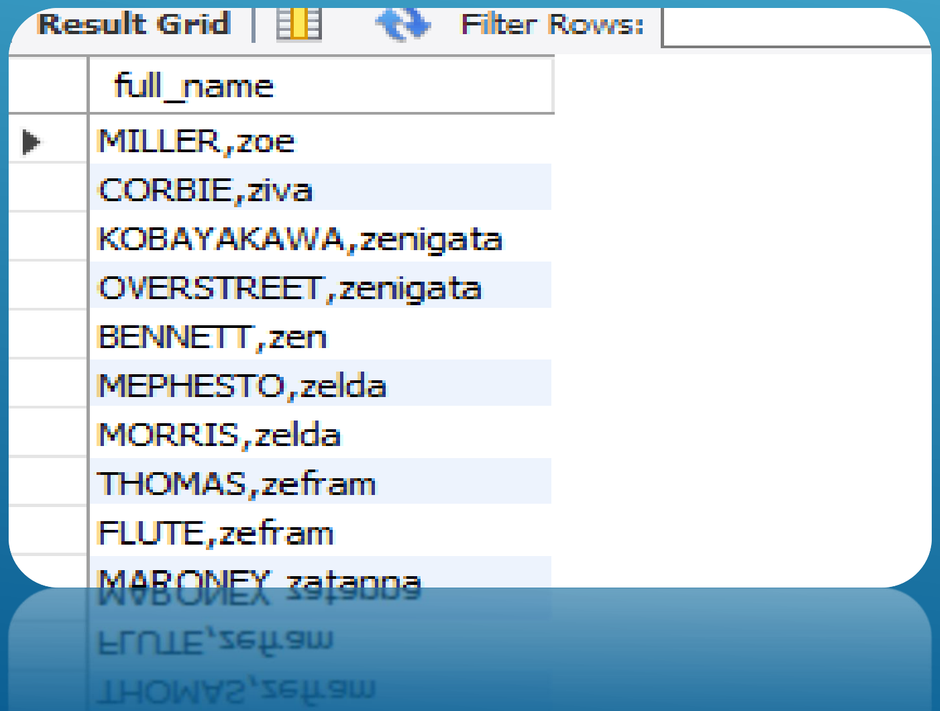
```
select first_name, last_name, birth_date from patients
where year(birth_date) between 1970 and 1979
order by birth_date asc;
```

Result Grid | Filter Rows:

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
Sookie	Brearly	1970-02-01
Temple	Wylie	1970-02-10
Deanna	Spano	1970-03-23
Jadu	Principal	1970-03-28

28. 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 .

```
select concat(upper(last_name),  ',' ,lower(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.

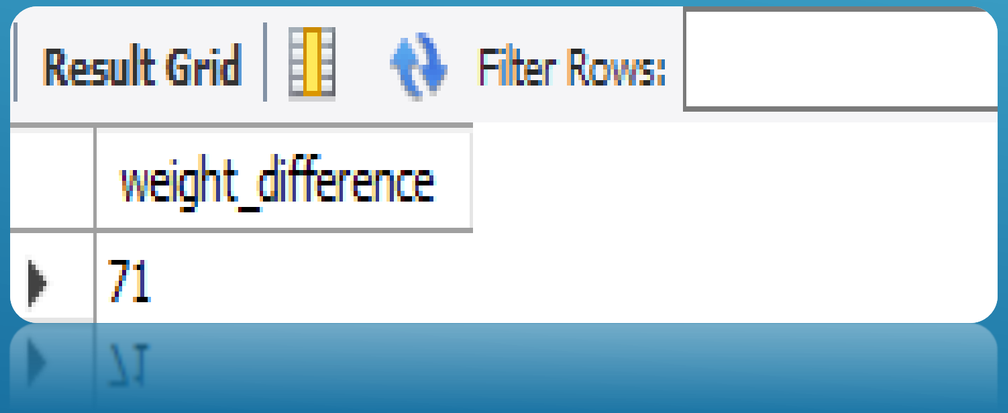
```
select province_id, sum(height)as total_height
 from patients
group by province_id
having total_height >= 7000;
```

Result Grid | Filter Rows:

province_id	total_height
BC	7720
NS	9765
ON	678037

30. SHOW THE DIFFERENCE BETWEEN THE LARGEST WEIGHT AND SMALLEST WEIGHT FOR PATIENTS WITH THE LAST NAME 'MARONI’.

```
select max(weight)-min(weight) as weight_difference
from patients
 where last_name='Maroni’ ;
```



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 day(admission_date) as day_of_month,count(admission_date) as admission_count
 from admissions
group by admission_date
order by admission_count desc,day_of_month;
```

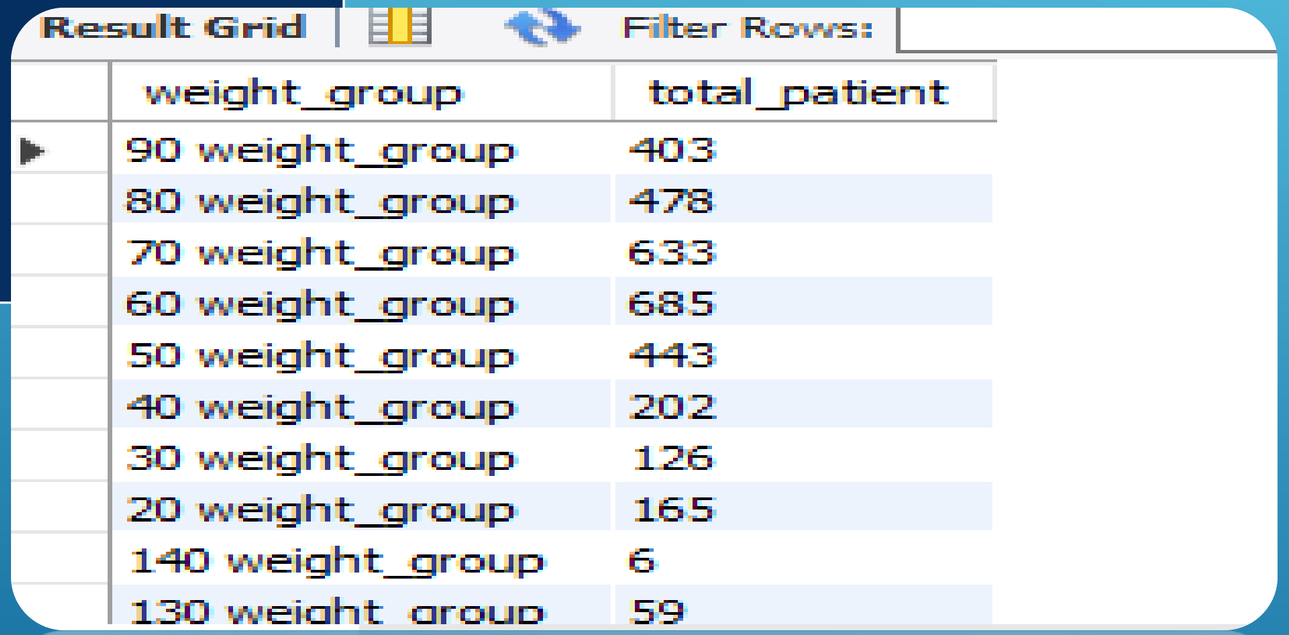
Result Grid | Filter Rows:

day_of_month	admission_count
9	30
13	25
8	23
4	22
11	22
11	22
15	22
3	21
13	21

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.

```
select
case
when weight between 1 and 9 then '1 weight_group'
when weight between 10 and 19 then '10 weight_group'
when weight between 20 and 29 then '20 weight_group'
when weight between 30 and 39 then '30 weight_group'
when weight between 40 and 49 then '40 weight_group'
when weight between 50 and 59 then '50 weight_group'
when weight between 60 and 69 then '60 weight_group'
when weight between 70 and 79 then '70 weight_group'
```

```
when weight between 80 and 89 then '80 weight_group'
 when weight between 90 and 99 then '90 weight_group'
 when weight between 100 and 109 then '100 weight_group'
when weight between 110 and 119 then '110 weight_group'
when weight between 120 and 129 then '120 weight_group'
when weight between 130 and 139 then '130 weight_group'
when weight between 140 and 149 then '140 weight_group'
when weight between 150 and 159 then '150 weight_group'
end as weight_group,count(*) as total_patient
from patients
  group by weight_group
order by weight_group desc;
```



Result Grid | Filter Rows:

weight_group	total_patient
90 weight_group	403
80 weight_group	478
70 weight_group	633
60 weight_group	685
50 weight_group	443
40 weight_group	202
30 weight_group	126
20 weight_group	165
140 weight_group	6
130 weight_group	59

33. SHOW PATIENT_ID, WEIGHT, HEIGHT, IS OBESE FROM THE PATIENTS TABLE. DISPLAY IS OBESE AS A BOOLEAN 0 OR 1. OBESE IS DEFINED AS WEIGHT(KG)/(HEIGHT(M). WEIGHT IS IN UNITS KG. HEIGHT IS IN UNITS CM.

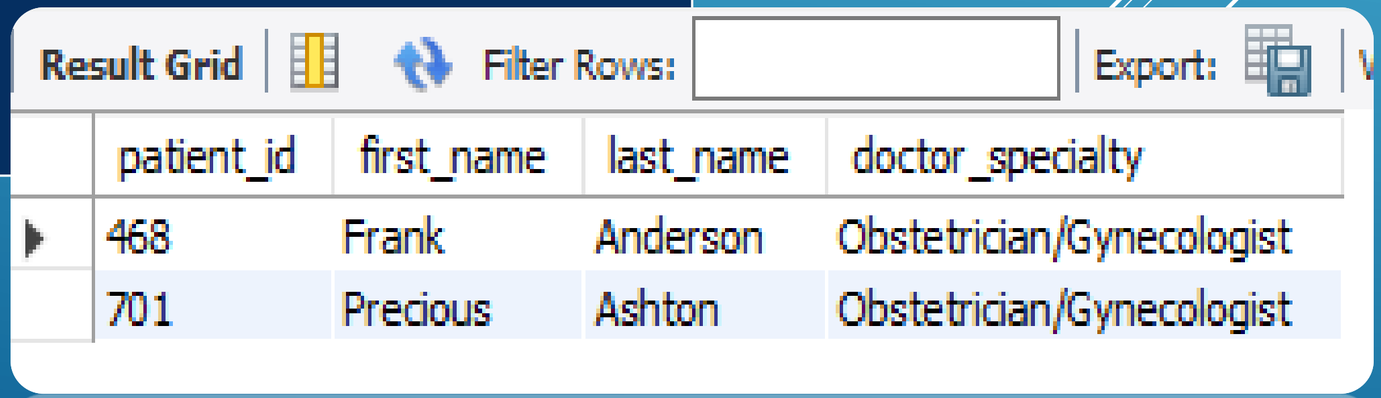
```
select patient_id, weight, height,
case when (weight/power(height/100,2)) >=30 then 1 else 0
end as is Obese
 from patients;
```

Result Grid | Filter Rows:

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
6	5	43	0
7	117	180	1
8	105	174	1
9	95	173	1
10	61	157	0

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



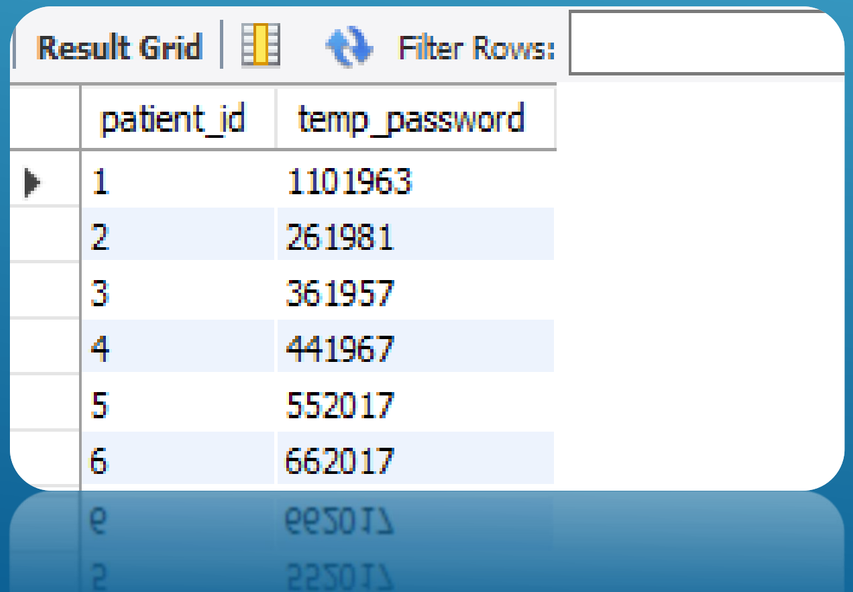
patient_id	first_name	last_name	doctor_specialty
468	Frank	Anderson	Obstetrician/Gynecologist
701	Precious	Ashton	Obstetrician/Gynecologist

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 patient_id, concat(patient_id,length(last_name),year(birth_date)) as temp_password
from patients ;
```



patient_id	temp_password
1	1101963
2	261981
3	361957
4	441967
5	552017
6	662017

Thank You!!!