Medical Data History

Database Overview table rows

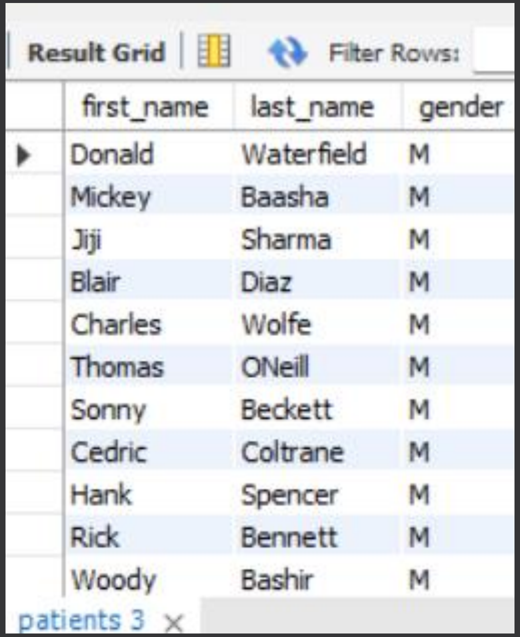
patients 4530, admissions 5067 ,doctors 27 ,province_names 13

Schema: patients(patient_id, first_name, last_name, gender, birth_date, city, province_id, allergies, height, weight) ↔ admissions(patient_id, admission_date, discharge_date, diagnosis, doctor_id) ↔ doctors(doctor_id, first_name, last_name, specialty); patients.province_id ↔ province_names.province_i

Query 1 – Male Patients

SQL:

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



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
Hank	Spencer	M
Rick	Bennett	M
Woody	Bashir	M

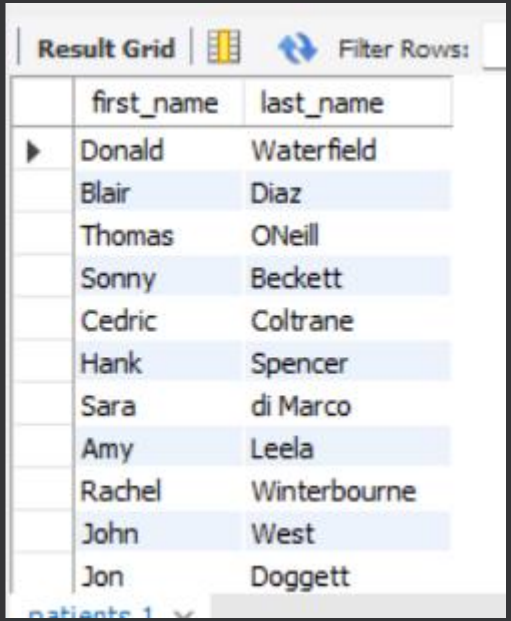
Insights:

- Shows all patients where gender = 'M'.
- Useful for gender distribution analysis.
- 2468 row(s) returned

Query 2 – Patients Without Allergies

SQL:

SELECT first_name, last_name FROM patients WHERE allergies IS NULL;



first_name	last_name
Donald	Waterfield
Blair	Diaz
Thomas	ONeill
Sonny	Beckett
Cedric	Coltrane
Hank	Spencer
Sara	di Marco
Amy	Leela
Rachel	Winterbourne
John	West
Jon	Doggett

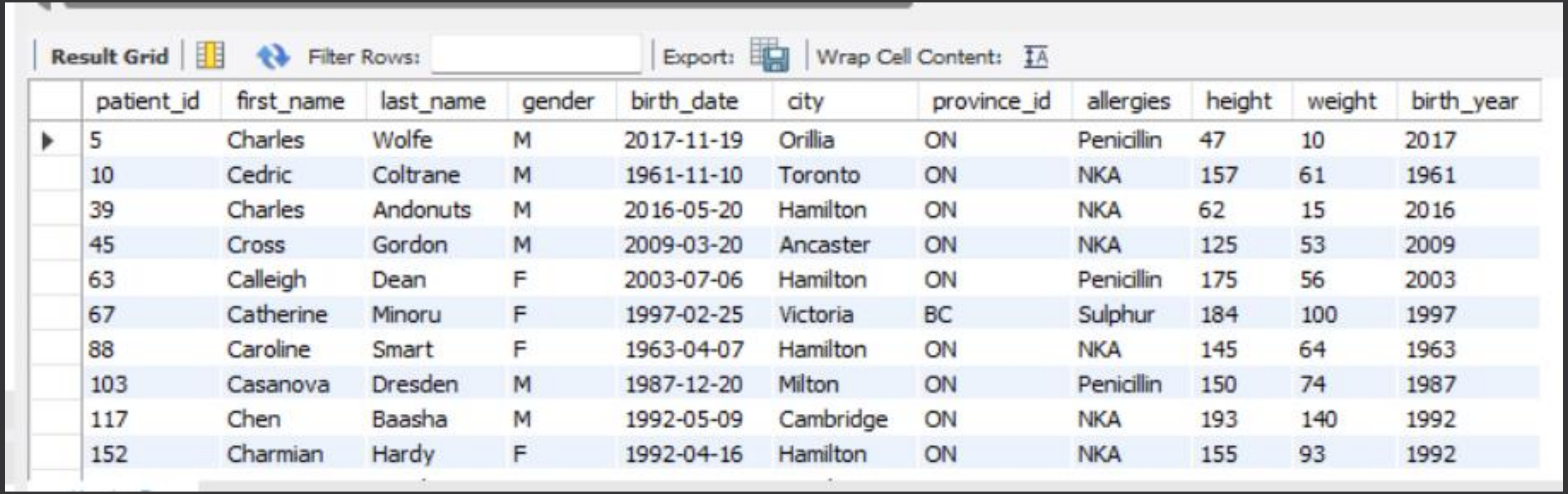
Insights:

- Identifies patients with no recorded allergies.
- Useful for updating missing data.
- 2059 row(s) returned.

Query 3 – First Names Starting with C

SQL:

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



patient_id	first_name	last_name	gender	birth_date	city	province_id	allergies	height	weight	birth_year
5	Charles	Wolfe	M	2017-11-19	Orillia	ON	Penicillin	47	10	2017
10	Cedric	Coltrane	M	1961-11-10	Toronto	ON	NKA	157	61	1961
39	Charles	Andonuts	M	2016-05-20	Hamilton	ON	NKA	62	15	2016
45	Cross	Gordon	M	2009-03-20	Ancaster	ON	NKA	125	53	2009
63	Calleigh	Dean	F	2003-07-06	Hamilton	ON	Penicillin	175	56	2003
67	Catherine	Minoru	F	1997-02-25	Victoria	BC	Sulphur	184	100	1997
88	Caroline	Smart	F	1963-04-07	Hamilton	ON	NKA	145	64	1963
103	Casanova	Dresden	M	1987-12-20	Milton	ON	Penicillin	150	74	1987
117	Chen	Baasha	M	1992-05-09	Cambridge	ON	NKA	193	140	1992
152	Charmian	Hardy	F	1992-04-16	Hamilton	ON	NKA	155	93	1992

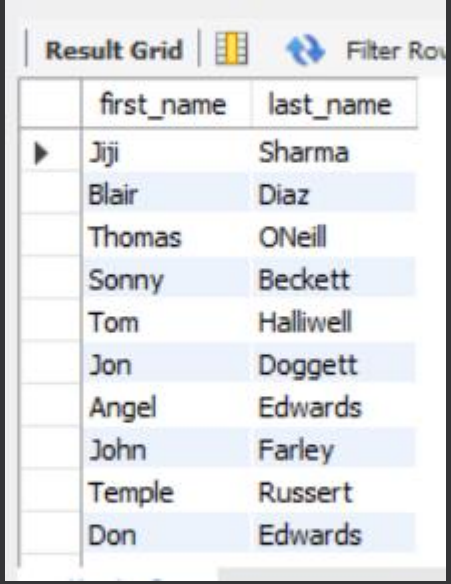
Insights:

- Filtered patient list by first name pattern.
- Supports targeted searches.
- 302 row(s) returned.

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

SQL:

```
select first_name,last_name from patients where weight between '100' and '120';
```



first_name	last_name
Jiji	Sharma
Blair	Diaz
Thomas	ONeill
Sonny	Beckett
Tom	Halliwell
Jon	Doggett
Angel	Edwards
John	Farley
Temple	Russert
Don	Edwards

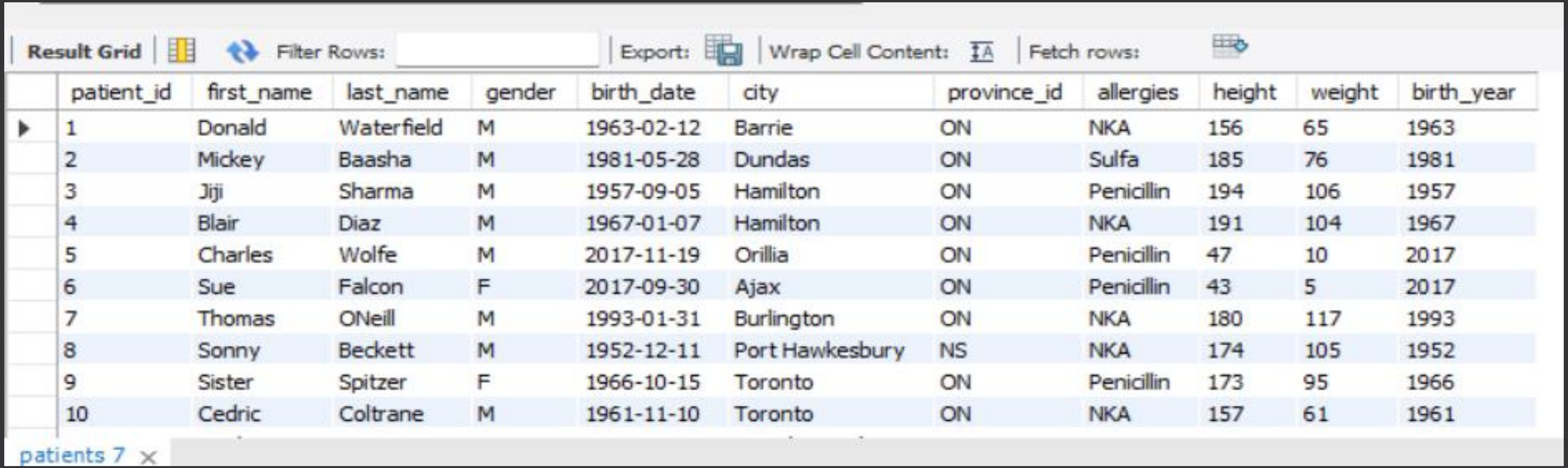
Insights:

- In weight 100–120kg: 952

Query 5 – Update NULL allergies to 'NKA’

SQL :

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



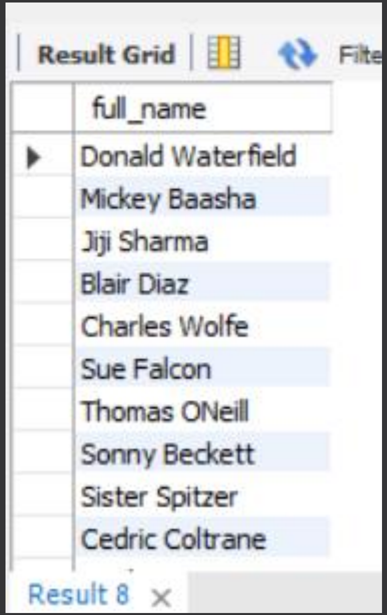
patient_id	first_name	last_name	gender	birth_date	city	province_id	allergies	height	weight	birth_year
1	Donald	Waterfield	M	1963-02-12	Barrie	ON	NKA	156	65	1963
2	Mickey	Baasha	M	1981-05-28	Dundas	ON	Sulfa	185	76	1981
3	Jiji	Sharma	M	1957-09-05	Hamilton	ON	Penicillin	194	106	1957
4	Blair	Diaz	M	1967-01-07	Hamilton	ON	NKA	191	104	1967
5	Charles	Wolfe	M	2017-11-19	Orillia	ON	Penicillin	47	10	2017
6	Sue	Falcon	F	2017-09-30	Ajax	ON	Penicillin	43	5	2017
7	Thomas	ONeill	M	1993-01-31	Burlington	ON	NKA	180	117	1993
8	Sonny	Beckett	M	1952-12-11	Port Hawkesbury	NS	NKA	174	105	1952
9	Sister	Spitzer	F	1966-10-15	Toronto	ON	Penicillin	173	95	1966
10	Cedric	Coltrane	M	1961-11-10	Toronto	ON	NKA	157	61	1961

Insights:

- Ensures missing allergy info defaults to “No Known Allergies”.
- Improves medical record completeness.

Query 6 – Full name concatenation

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



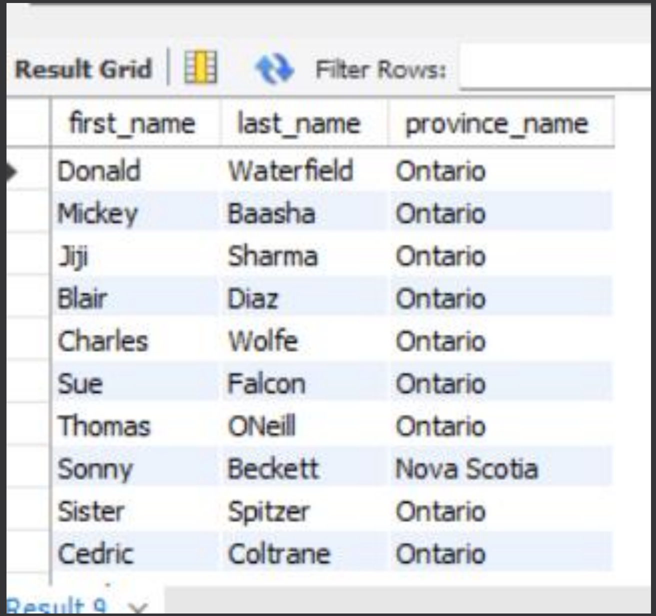
full_name
Donald Waterfield
Mickey Baasha
Jiji Sharma
Blair Diaz
Charles Wolfe
Sue Falcon
Thomas ONeill
Sonny Beckett
Sister Spitzer
Cedric Coltrane

Insights:

- Creates unified full name for reporting.
- Helpful for patient list exports.

Query 7 – Join with province names

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



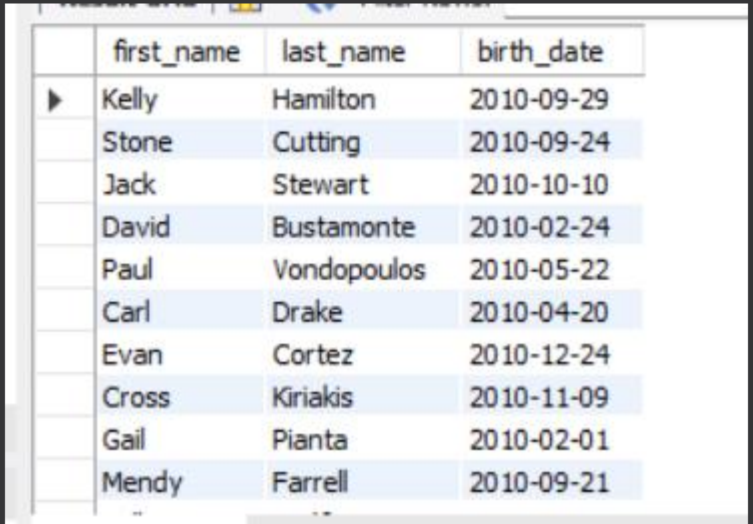
first_name	last_name	province_name
Donald	Waterfield	Ontario
Mickey	Baasha	Ontario
Jiji	Sharma	Ontario
Blair	Diaz	Ontario
Charles	Wolfe	Ontario
Sue	Falcon	Ontario
Thomas	ONeill	Ontario
Sonny	Beckett	Nova Scotia
Sister	Spitzer	Ontario
Cedric	Coltrane	Ontario

Insights:

- Adds full province name to patient data.
- Improves readability for reports.

Query 8 – Birth year is 2010

SELECT first_name, last_name, birth_date FROM patients WHERE YEAR(birth_date) = 2010;



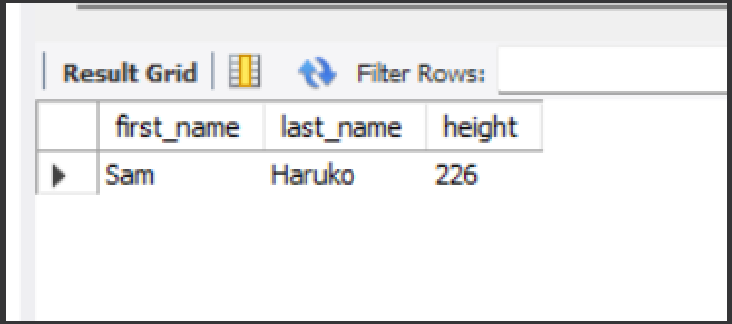
first_name	last_name	birth_date
Kelly	Hamilton	2010-09-29
Stone	Cutting	2010-09-24
Jack	Stewart	2010-10-10
David	Bustamonte	2010-02-24
Paul	Vondopoulos	2010-05-22
Carl	Drake	2010-04-20
Evan	Cortez	2010-12-24
Cross	Kiriakis	2010-11-09
Gail	Pianta	2010-02-01
Mendy	Farrell	2010-09-21

Insights:

- Filters patients born in 2010.
- Useful for age-specific health analysis
- 55 row(s) returned.

Query 9 – Patient(s) with greatest height

```
SELECT first_name, last_name, height FROM patients WHERE height = (SELECT MAX(height) FROM patients);
```



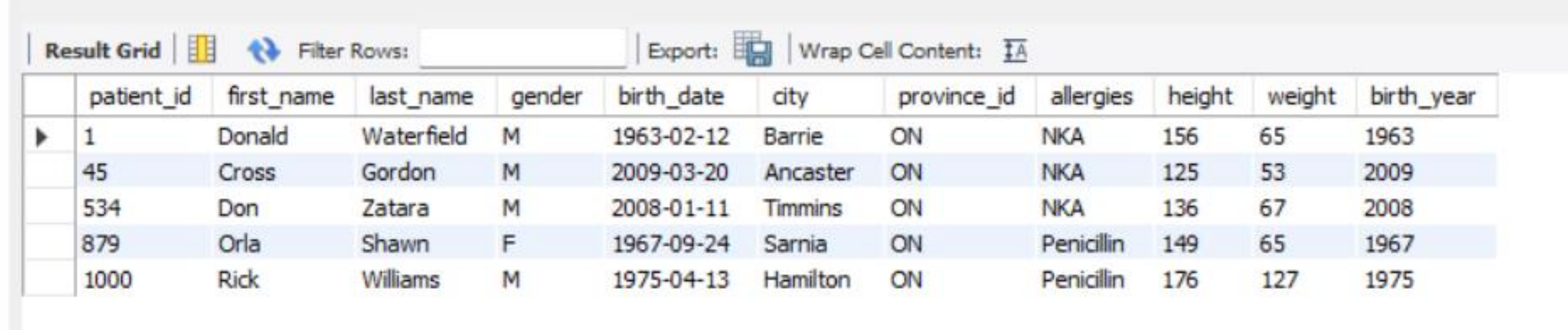
first_name	last_name	height
Sam	Haruko	226

Insights:

- Identifies tallest patient(s).
- Could be used for anomaly detection or equipment planning.

Query 10 – Specific patient IDs

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



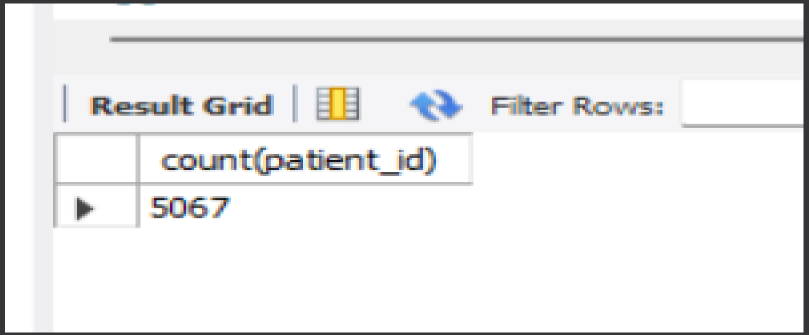
patient_id	first_name	last_name	gender	birth_date	city	province_id	allergies	height	weight	birth_year
1	Donald	Waterfield	M	1963-02-12	Barrie	ON	NKA	156	65	1963
45	Cross	Gordon	M	2009-03-20	Ancaster	ON	NKA	125	53	2009
534	Don	Zatara	M	2008-01-11	Timmins	ON	NKA	136	67	2008
879	Orla	Shawn	F	1967-09-24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

Insights:

- Retrieves detailed info for selected patients.
- Often used for manual checks or special cases.

Query 11 – Total admissions count

SELECT COUNT(*) AS total_admissions FROM admissions;



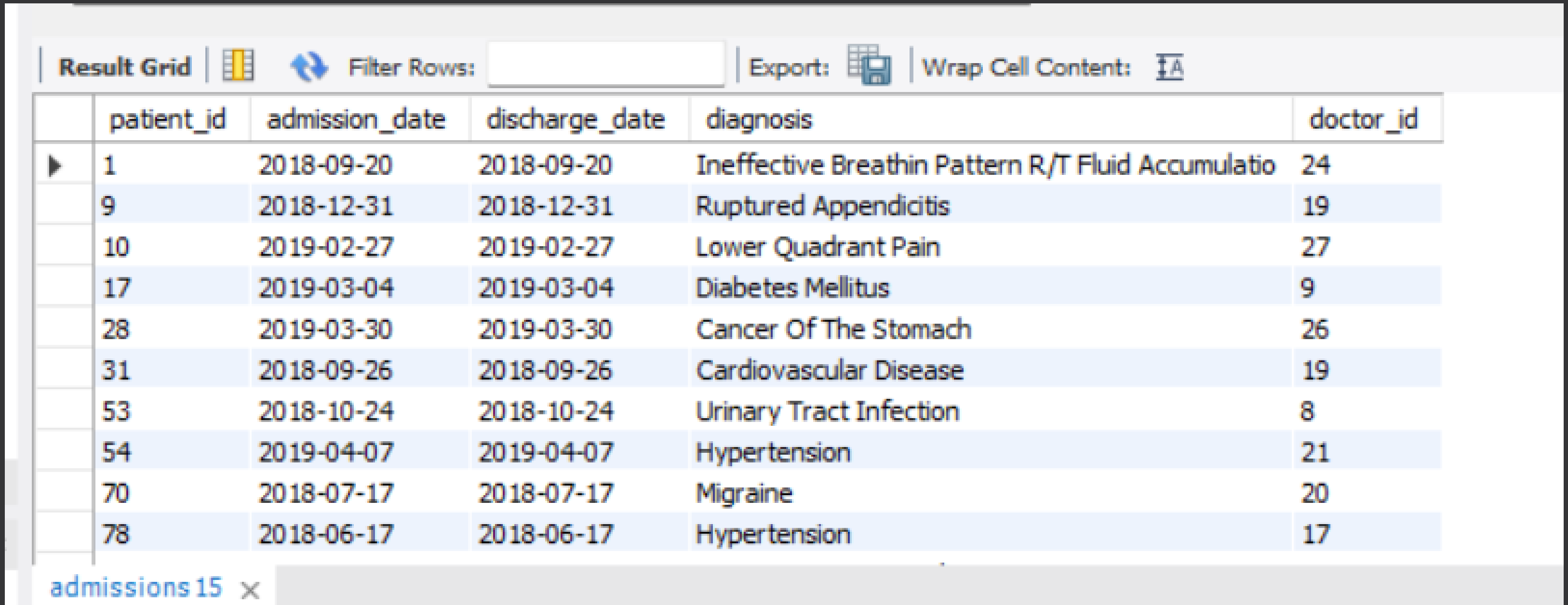
```
count(patient_id)
5067
```

Insights:

- Shows overall hospital workload volume.
- Can be benchmarked against capacity.

Query 12 – Same-day admissions

SELECT * FROM admissions WHERE admission_date = discharge_date;



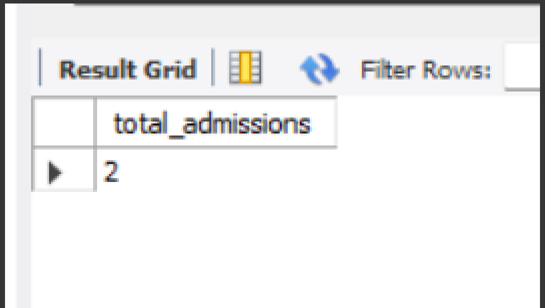
patient_id	admission_date	discharge_date	diagnosis	doctor_id
1	2018-09-20	2018-09-20	Ineffective Breathin Pattern R/T Fluid Accumulatio	24
9	2018-12-31	2018-12-31	Ruptured Appendicitis	19
10	2019-02-27	2019-02-27	Lower Quadrant Pain	27
17	2019-03-04	2019-03-04	Diabetes Mellitus	9
28	2019-03-30	2019-03-30	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
54	2019-04-07	2019-04-07	Hypertension	21
70	2018-07-17	2018-07-17	Migraine	20
78	2018-06-17	2018-06-17	Hypertension	17

Insights:

- Finds cases discharged the same day.
- Useful for outpatient vs inpatient analysis.
- 481 row(s) returned.

Query 13 – Admissions for patient 579

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



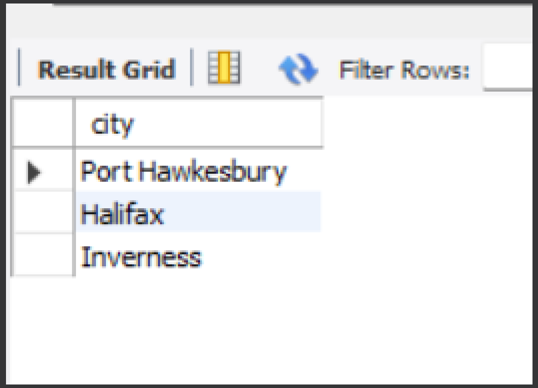
total_admissions
2

Insights:

- Measures one patient’s admission frequency.

Query 14 – Unique NS cities

SELECT DISTINCT city FROM patients WHERE province_id = 'NS';



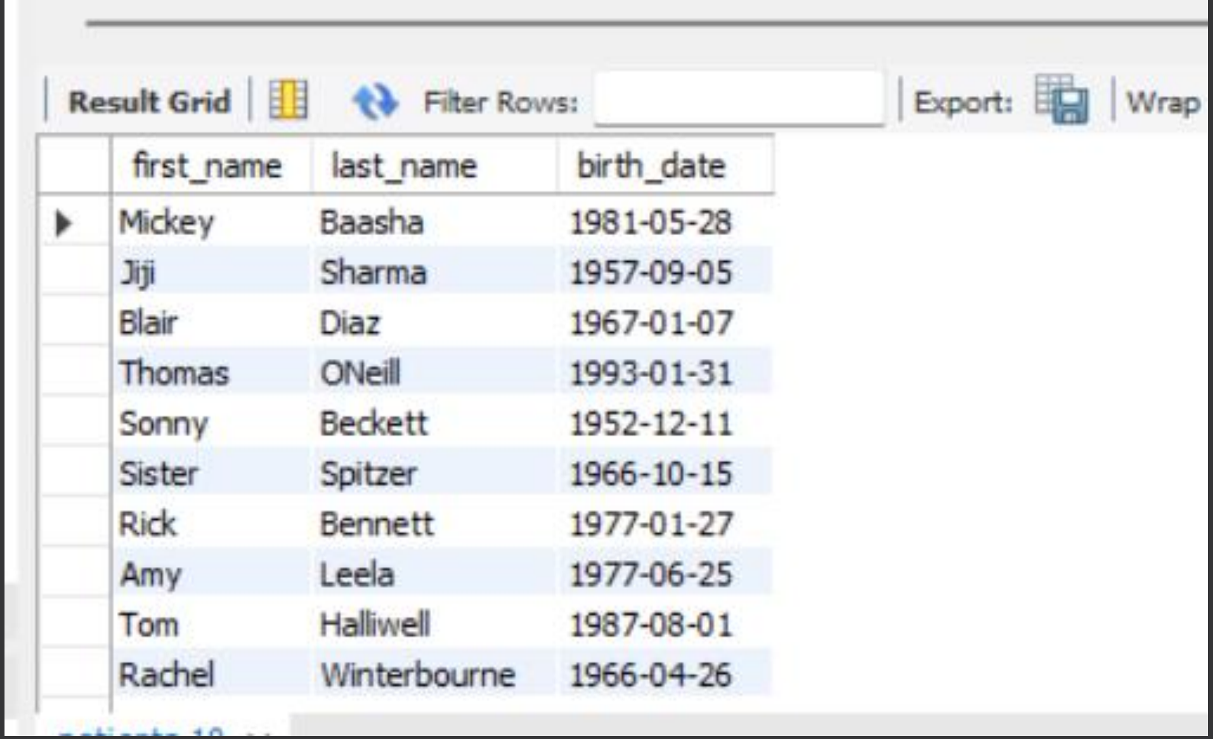
city
Port Hawkesbury
Halifax
Inverness

Insights:

- Shows geographical spread in Nova Scotia.
- Useful for regional resource allocation.

Query 15 – Height >160cm & weight >70kg

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



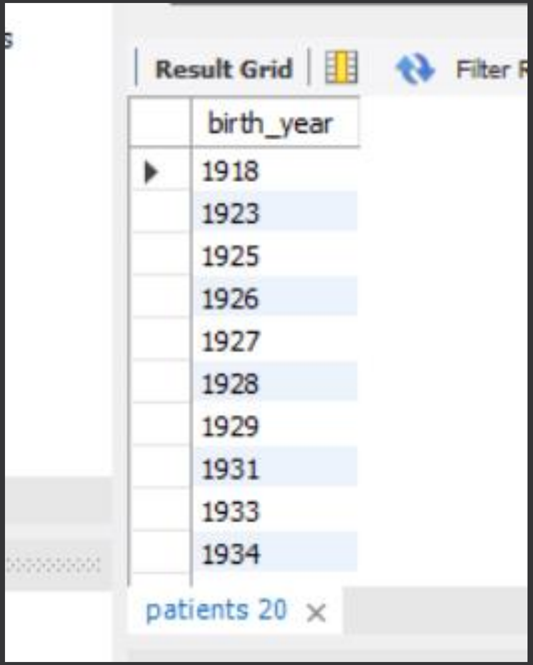
first_name	last_name	birth_date
Mickey	Baasha	1981-05-28
Jiji	Sharma	1957-09-05
Blair	Diaz	1967-01-07
Thomas	ONeill	1993-01-31
Sonny	Beckett	1952-12-11
Sister	Spitzer	1966-10-15
Rick	Bennett	1977-01-27
Amy	Leela	1977-06-25
Tom	Halliwell	1987-08-01
Rachel	Winterbourne	1966-04-26

Insights:

- Identifies heavier/taller patients.
- Can help target specific health programs.
- 2091 row(s) returned.

Query 16 – Unique birth years

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



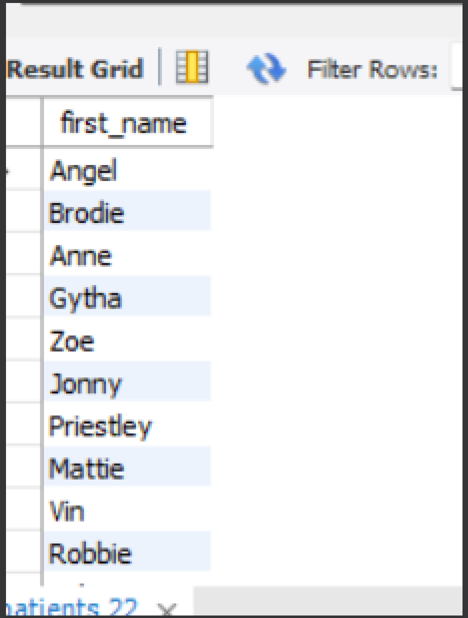
```
birth_year
1918
1923
1925
1926
1927
1928
1929
1931
1933
1934
```

Insights:

- Gives range of birth years in dataset.
- Useful for demographic profiling.

Query 17 – Unique first names (occur once)

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



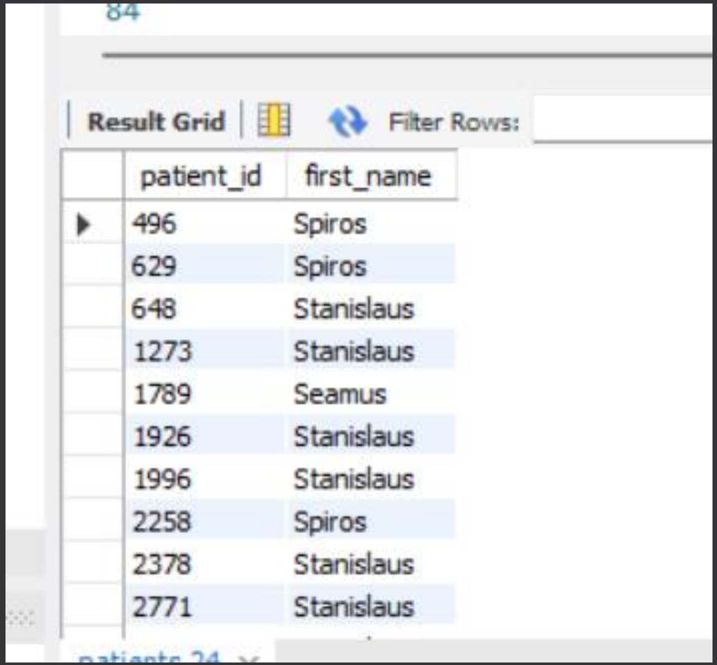
first_name
Angel
Brodie
Anne
Gytha
Zoe
Jonny
Priestley
Mattie
Vin
Robbie

Insights:

- Finds rare names in the database.
- Could be used for identity verification.

Query 18 – First name starts/ends with S, length ≥6

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



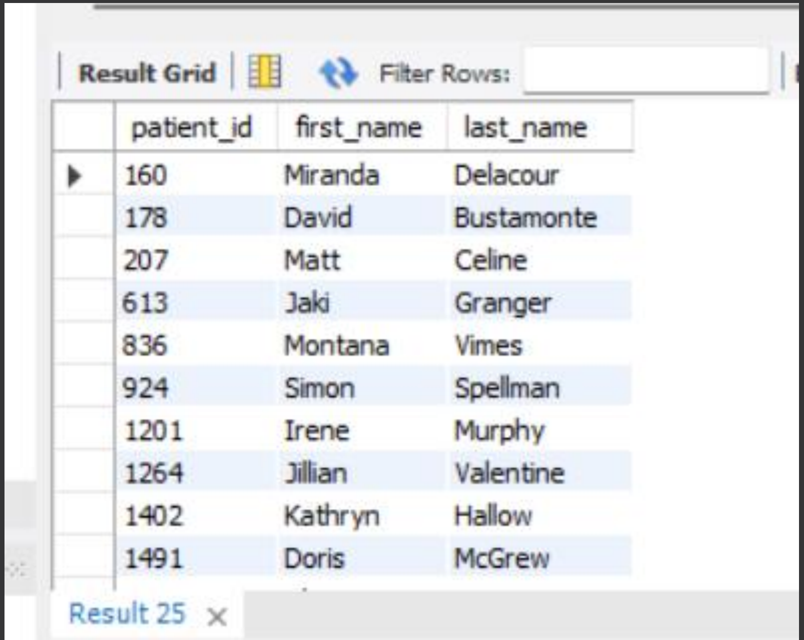
patient_id	first_name
496	Spiros
629	Spiros
648	Stanislaus
1273	Stanislaus
1789	Seamus
1926	Stanislaus
1996	Stanislaus
2258	Spiros
2378	Stanislaus
2771	Stanislaus

Insights:

- Very specific name pattern search.
- Example of using multiple string filters.
- 11 row(s) returned.

Query 19 – Dementia patients

```
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';
```



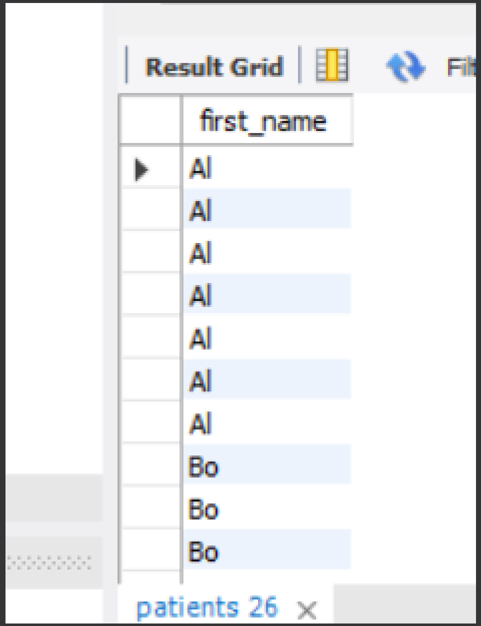
patient_id	first_name	last_name
160	Miranda	Delacour
178	David	Bustamonte
207	Matt	Celine
613	Jaki	Granger
836	Montana	Vimes
924	Simon	Spellman
1201	Irene	Murphy
1264	Jillian	Valentine
1402	Kathryn	Hallow
1491	Doris	McGrew

Insights:

- Identifies patients with dementia diagnoses.
- Critical for tracking chronic illness cases.
- 26 row(s) returned.

Query 20 – Order first names by length then alphabet

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



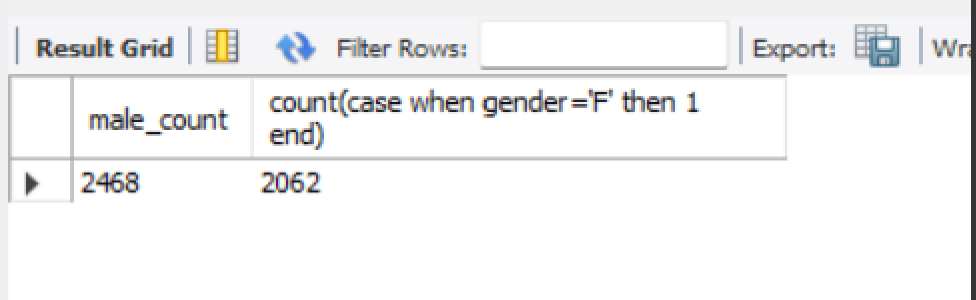
first_name
Al
Al
Al
Al
Al
Al
Al
Bo
Bo
Bo

Insights:

- Sorts names first by length, then alphabetically.
- Helpful for formatting or name length studies.

Query 21 – Male/Female totals in one row

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;



male_count	count(case when gender='F' then 1 end)
2468	2062

Insights:

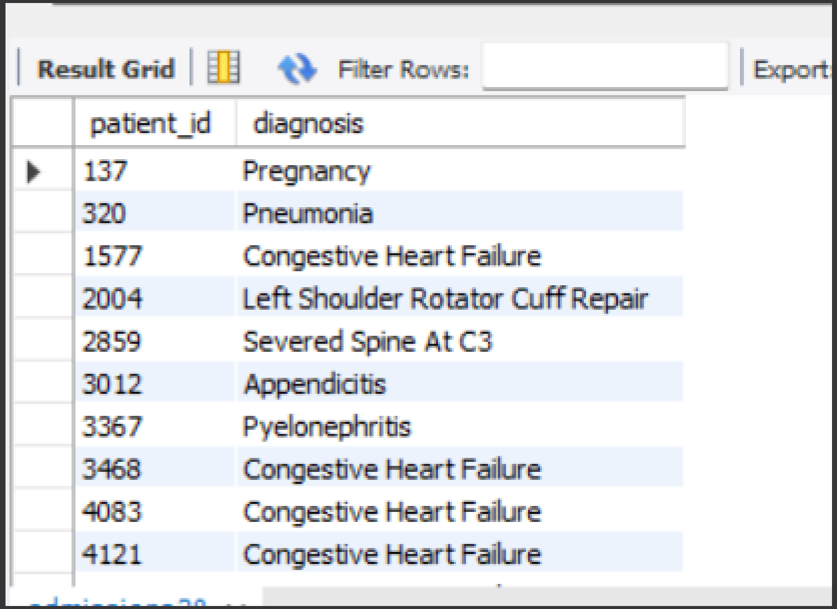
- Gives gender distribution at a glance.
- Useful for demographic reporting.

Query 22 – Male/Female totals (duplicate)

(Same SQL and insights as Query 21)

Query 23 – Multiple admissions same diagnosis

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



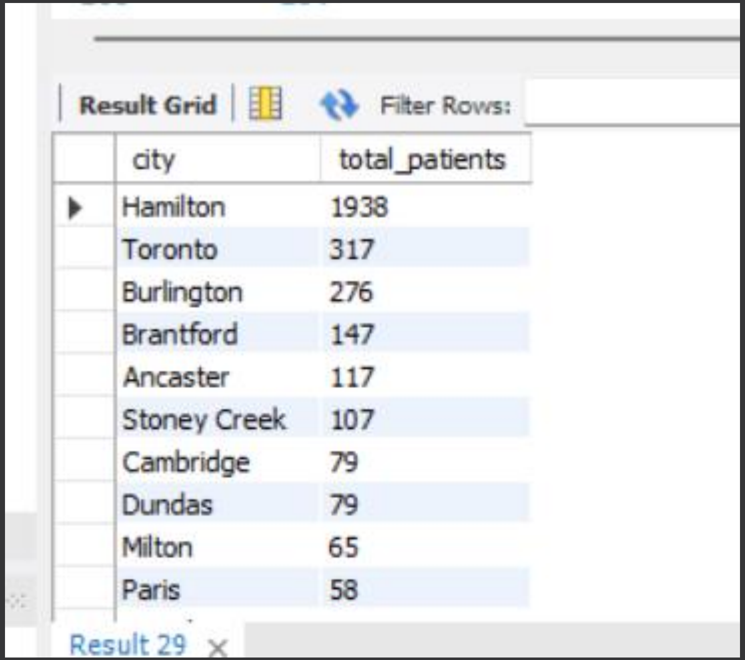
patient_id	diagnosis
137	Pregnancy
320	Pneumonia
1577	Congestive Heart Failure
2004	Left Shoulder Rotator Cuff Repair
2859	Severed Spine At C3
3012	Appendicitis
3367	Pyelonephritis
3468	Congestive Heart Failure
4083	Congestive Heart Failure
4121	Congestive Heart Failure

Insights:

- Shows recurring diagnosis per patient.
- Helps identify chronic or recurring illnesses.

Query 24 – City and total patients

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



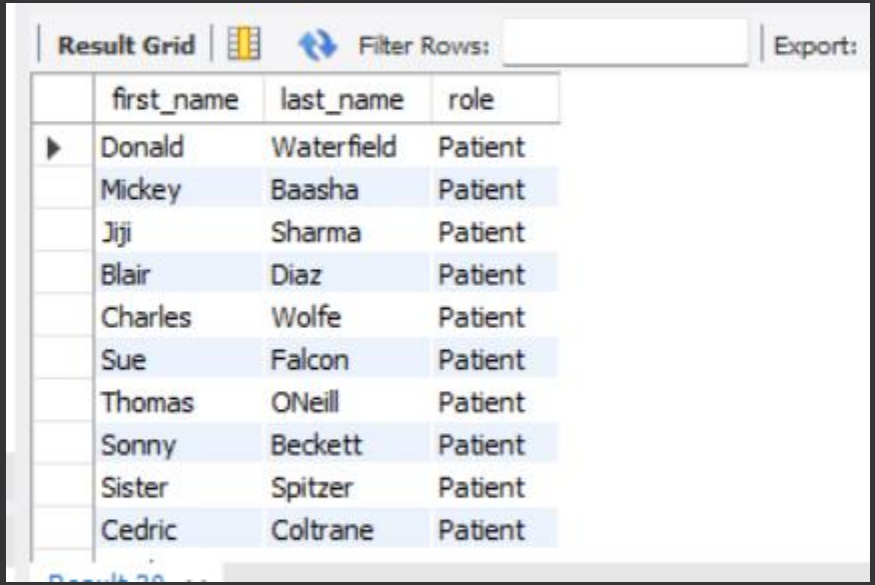
city	total_patients
Hamilton	1938
Toronto	317
Burlington	276
Brantford	147
Ancaster	117
Stoney Creek	107
Cambridge	79
Dundas	79
Milton	65
Paris	58

Insights:

- Shows patient distribution by city.
- Highlights high-demand locations.

Query 25 – Patients and doctors list with role

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



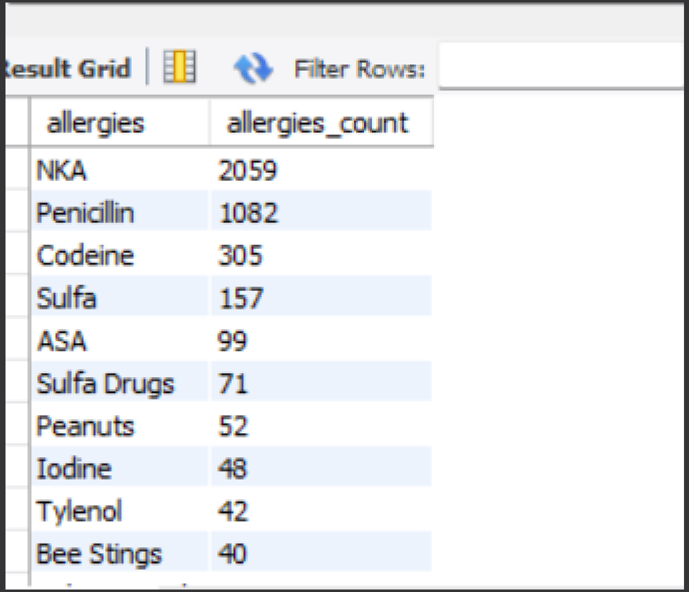
first_name	last_name	role
Donald	Waterfield	Patient
Mickey	Baasha	Patient
Jiji	Sharma	Patient
Blair	Diaz	Patient
Charles	Wolfe	Patient
Sue	Falcon	Patient
Thomas	ONeill	Patient
Sonny	Beckett	Patient
Sister	Spitzer	Patient
Cedric	Coltrane	Patient

Insights:

- Combines both groups into one list.
- Useful for all-personnel directories.
- 4538 row(s) returned.

Query 26 – Allergies by popularity

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



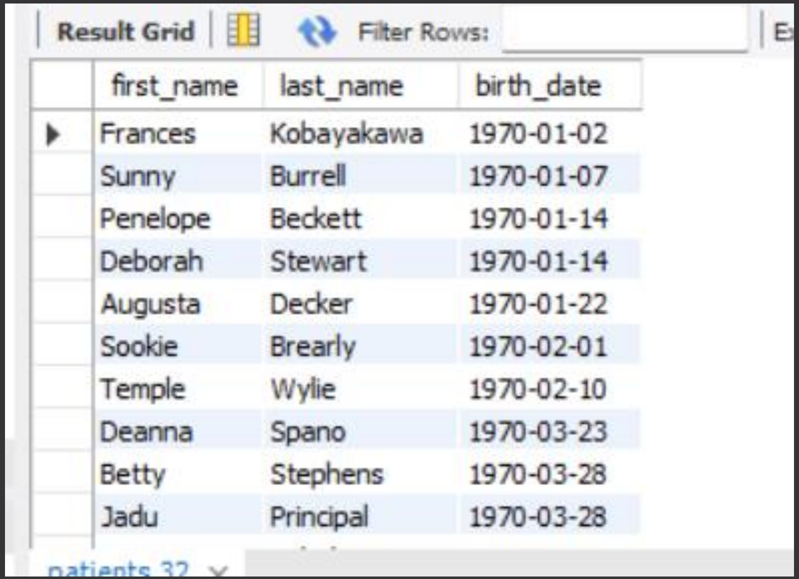
allergies	allergies_count
NKA	2059
Penicillin	1082
Codeine	305
Sulfa	157
ASA	99
Sulfa Drugs	71
Peanuts	52
Iodine	48
Tylenol	42
Bee Stings	40

Insights:

- Ranks most common allergies.
- Guides allergy-related precautions.

Query 27 – Born in 1970s decade

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



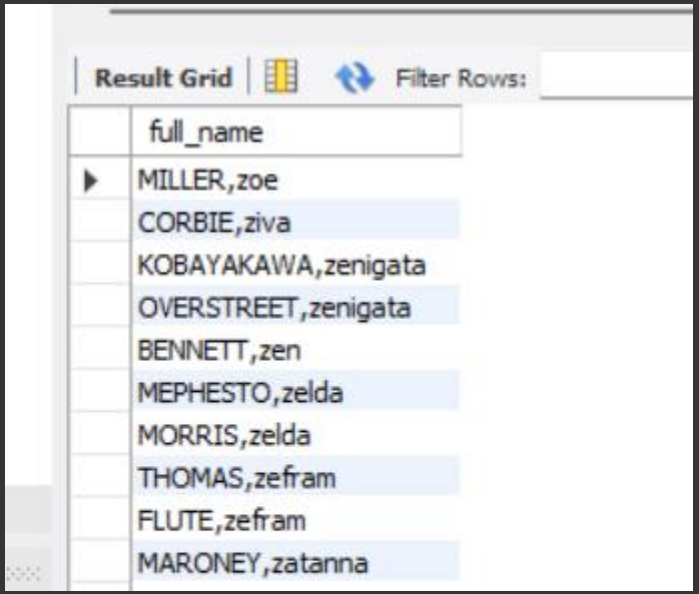
first_name	last_name	birth_date
Frances	Kobayakawa	1970-01-02
Sunny	Burrell	1970-01-07
Penelope	Beckett	1970-01-14
Deborah	Stewart	1970-01-14
Augusta	Decker	1970-01-22
Sookie	Brearly	1970-02-01
Temple	Wylie	1970-02-10
Deanna	Spano	1970-03-23
Betty	Stephens	1970-03-28
Jadu	Principal	1970-03-28

Insights:

- Filters for a specific decade of births.
- Useful for generation-based studies.
- 623 row(s) returned.

Query 28 – Full name format LAST,first

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



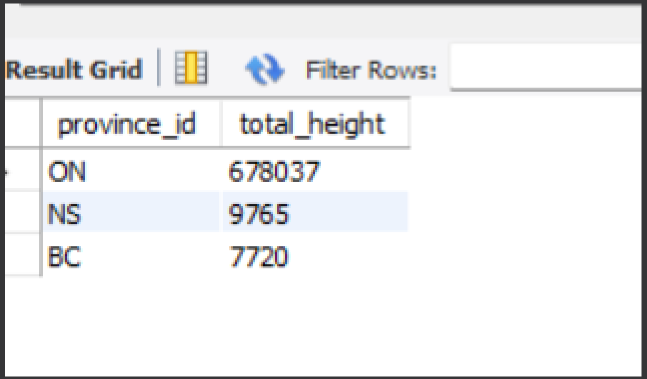
```
full_name
MILLER,zoe
CORBIE,ziva
KOBAYAKAWA,zenigata
OVERSTREET,zenigata
BENNETT,zen
MEPHESTO,zelda
MORRIS,zelda
THOMAS,zefram
FLUTE,zefram
MARONEY,zatanna
```

Insights:

- Formats names in a consistent style.
- Useful for directories or mailing lists.

Query 29 – Province height total ≥7000

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



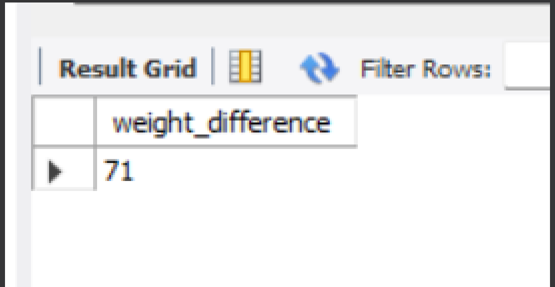
province_id	total_height
ON	678037
NS	9765
BC	7720

Insights:

- Sums height per province.
- Arbitrary threshold used for filtering.

Query 30 – Weight range for 'Maroni'

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



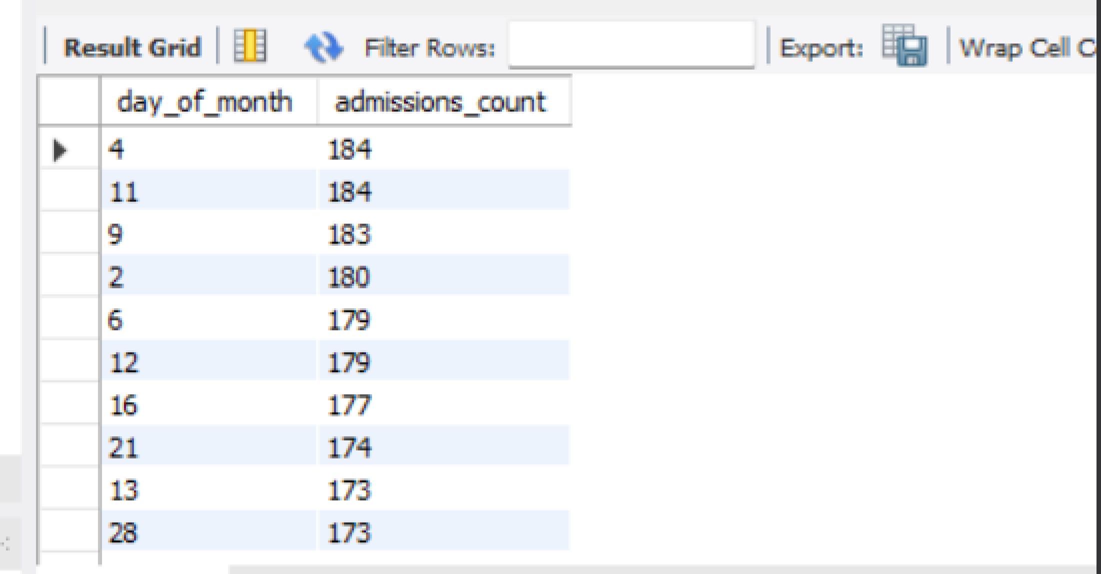
```
weight_difference
71
```

Insights:

- Measures variation in weight for a family name.
- Useful for identifying inconsistencies.

Query 31 – Admissions per day of month

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



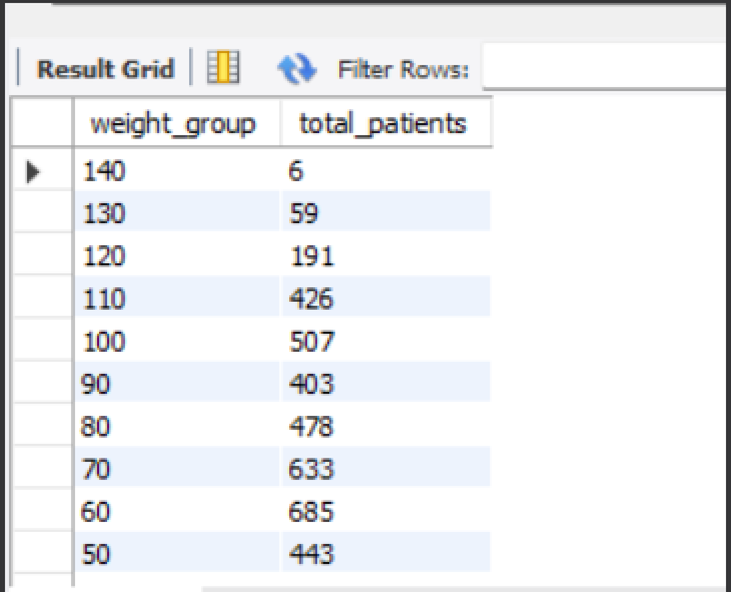
day_of_month	admissions_count
4	184
11	184
9	183
2	180
6	179
12	179
16	177
21	174
13	173
28	173

Insights:

- Shows daily admission patterns.
- Can help spot peak days.

Query 32 – Weight groups of 10kg

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



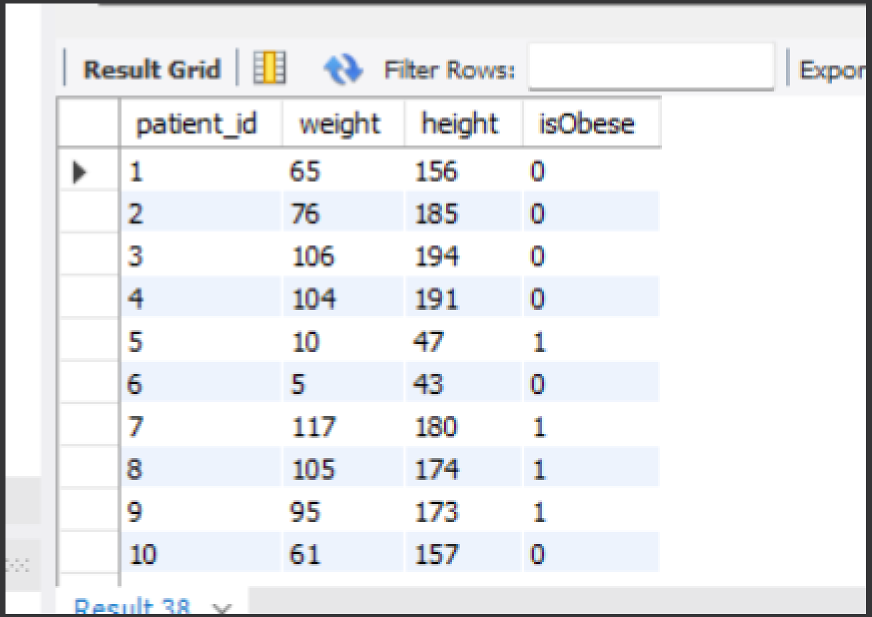
weight_group	total_patients
140	6
130	59
120	191
110	426
100	507
90	403
80	478
70	633
60	685
50	443

Insights:

- Groups patients into 10kg ranges.
- Useful for BMI/weight distribution studies.

Query 33 – Obesity flag (BMI ≥30)

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



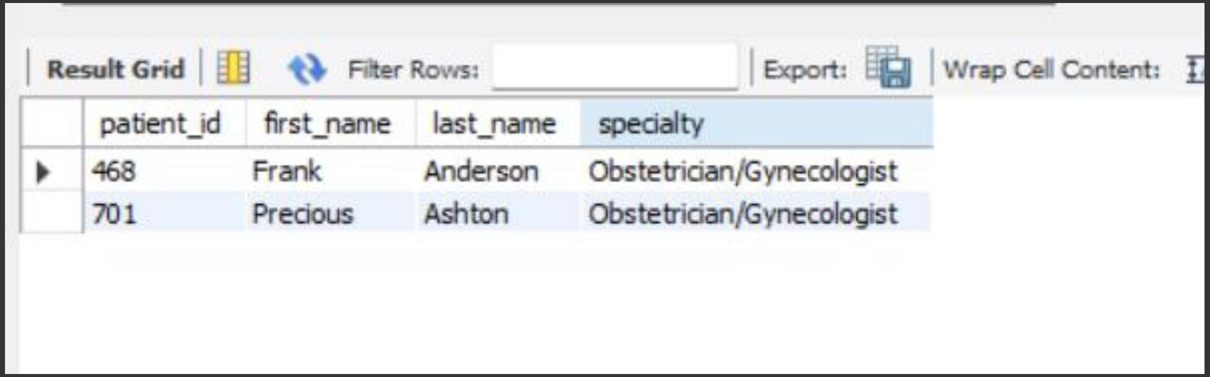
patient_id	weight	height	isObese
1	65	156	0
2	76	185	0
3	106	194	0
4	104	191	0
5	10	47	1
6	5	43	0
7	117	180	1
8	105	174	1
9	95	173	1
10	61	157	0

Insights:

- Flags obese patients using BMI formula.
- Critical for health risk tracking.

Query 34 – Epilepsy patients with doctor Lisa

```
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.doctor_id = d.doctor_id
WHERE a.diagnosis = 'Epilepsy' AND d.first_name = 'Lisa';
```



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

Insights:

- Filters patients with epilepsy treated by Dr. Lisa.
- Useful for targeted case reviews.