

SOL PROJECT

# Hospital Management Analysis



# Objective



The primary objective of this project is to develop a comprehensive and efficient Hospital Management System (HMS) using SQL to streamline and enhance the management of hospital operations.

The system aims to:

Enhance Data Management and Accessibility, Improve Patient Care and Experience, Streamline Administrative Processes, Ensure Data Security and Privacy, Enable Effective Reporting and Analytics.

By achieving these objectives, the project aims to enhance the overall efficiency, effectiveness, and quality of hospital management ultimately leading to improved patient satisfaction and operational excellence.



# Part -1

## (Easy Question)

## Question 1.

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

```
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      |
|   | Tom        | Halliwell  | M      |
|   | John       | West       | M      |
|   | Jon        | Doggett    | M      |
|   | Nino       | Andrews    | M      |
|   | John       | Farley     | M      |



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

**Question 2.**  
**Show first name and last name of patients that weight within the range of 100 to 120 (inclusive).**

Result Grid | Filter Rows:

|   | first_name | last_name | weight |
|---|------------|-----------|--------|
| ▶ | Jiji       | Sharma    | 106    |
|   | Blair      | Diaz      | 104    |
|   | Thomas     | ONeill    | 117    |
|   | Sonny      | Beckett   | 105    |
|   | Tom        | Halliwell | 114    |
|   | Jon        | Doggett   | 116    |
|   | Angel      | Edwards   | 106    |
|   | John       | Farley    | 104    |
|   | Temple     | Russert   | 102    |
|   | Don        | Edwards   | 118    |
|   | Gary       | Ramotswe  | 101    |
|   | Phil       | Chester   | 112    |
|   | Woody      | Riviera   | 109    |
|   | Rocky      | Donahue   | 110    |
|   | Shiro      | Whale     | 117    |
|   | Didi       | Dean      | 110    |





### Question3.

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

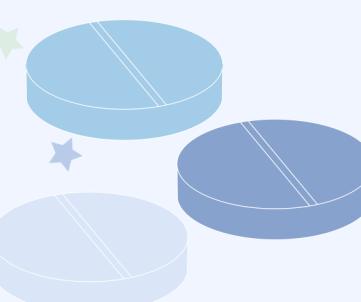
```
SELECT  
    first_name  
FROM  
    patients  
WHERE  
    first_name LIKE 'C%';
```

|   | first_name |
|---|------------|
| ▶ | Charles    |
|   | Cedric     |
|   | Charles    |
|   | Cross      |
|   | Calleigh   |
|   | Catherine  |
|   | Caroline   |
|   | Casanova   |
|   | Chen       |
|   | Charmian   |
|   | Cary       |
|   | Christine  |
|   | Carol      |
|   | Corrado    |
|   | Cordelia   |



Question 4.  
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;
```



Result Grid

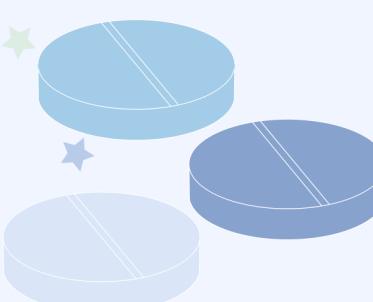
|   | full_name         |
|---|-------------------|
| ▶ | Donald Waterfield |
|   | Mickey Baasha     |
|   | Jiji Sharma       |
|   | Blair Diaz        |
|   | Charles Wolfe     |
|   | Sue Falcon        |
|   | Thomas O'Neill    |
|   | Sonny Beckett     |
|   | Sister Spitzer    |
|   | Cedric Coltrane   |
|   | Hank Spencer      |
|   | Sara di Marco     |
|   | Daphne Seabright  |
|   | Rick Bennett      |
|   | Amy Leela         |
|   | Woody Bashir      |



## Question 5.

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

```
SELECT  
    first_name, last_name, province_name  
FROM  
    patients  
    JOIN  
    province_names ON patients.province_id = province_names.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     | O'Neill    | Ontario       |
|   | Sonny      | Beckett    | Nova Scotia   |
|   | Sister     | Spitzer    | Ontario       |
|   | Cedric     | Coltrane   | Ontario       |
|   | Hank       | Spencer    | Ontario       |
|   | Sara       | di Marco   | Ontario       |
|   | Daphne     | Seabright  | Ontario       |
|   | Rick       | Bennett    | Ontario       |
|   | Amy        | Leela      | Ontario       |
|   | Woody      | Bashir     | Ontario       |

Question 6.  
Show how many patients have a birth\_date with  
2010 as the birth year.

```
SELECT  
    COUNT(patient_id)  
FROM  
    patients  
WHERE  
    YEAR(birth_date) = '2010';
```

|                   | Result Grid | grid icon | refresh icon | F |
|-------------------|-------------|-----------|--------------|---|
| COUNT(patient_id) |             |           |              |   |
| ▶                 | 55          |           |              |   |

Question 7.  
Show the first\_name, last\_name, and height of  
the patient with the greatest height.

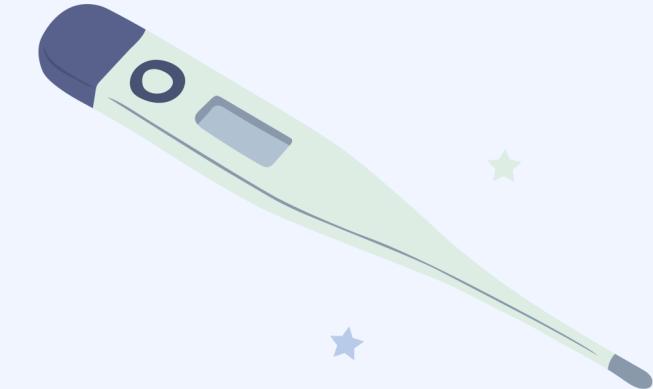
```
SELECT  
    first_name, last_name, height  
FROM  
    patients  
ORDER BY height DESC  
LIMIT 1;
```

Result Grid | Filter Rows:

|   | first_name | last_name | height |
|---|------------|-----------|--------|
| ▶ | Sam        | Haruko    | 226    |

## Question 8.

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



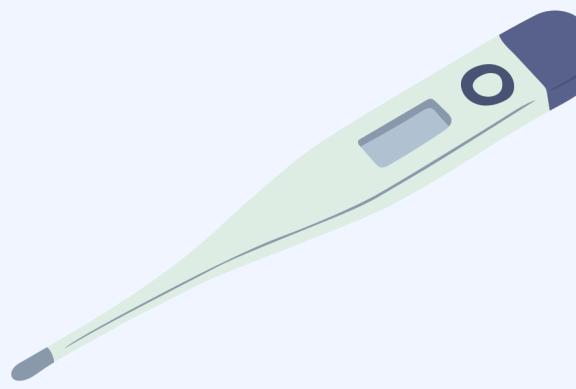
```
SELECT
    *
FROM
    patients
WHERE
    patient_id IN (1 , 45, 534, 879, 1000)
```

**Question 9.**  
**Show the total number of admissions.**

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

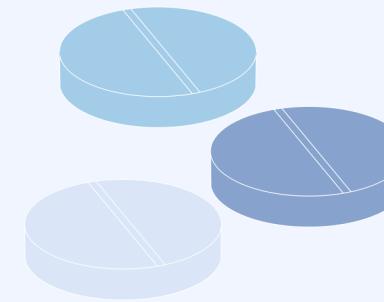
Result Grid

|      | total_admissions |
|------|------------------|
| 5067 | 5067             |

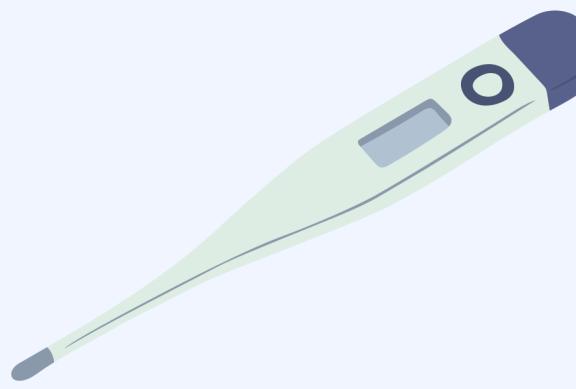


**Question 10.**  
**Show all the columns from admissions**  
**where the patient was admitted and**  
**discharged on the same day.**

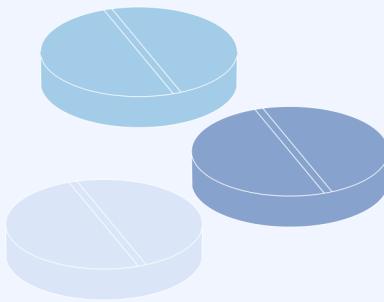
**SELECT**  
\*  
**FROM**  
admissions  
**WHERE**  
admission\_date = discharge\_date;



| patient_id | admission_date | discharge_date | diagnosis  | attending_doctor |
|------------|----------------|----------------|--|------------------|
| 1          | 2018-09-20     | 2018-09-20     | Ineffective Breathing Pattern R/T Fluid Accumulation | 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               |
| 91         | 2018-08-30     | 2018-08-30     | Congestive Heart Failure                             | 3                |
| 92         | 2019-01-03     | 2019-01-03     | Osteo Arthritis Knee                                 | 5                |
| 93         | 2019-05-20     | 2019-05-20     | Left Cerebral Vascular Accident                      | 12               |
| 110        | 2019-02-18     | 2019-02-18     | Biliary Colic  | 14               |
| 111        | 2018-08-25     | 2018-08-25     | Subdural Hematoma                                    | 27               |
| 113        | 2018-10-21     | 2018-10-21     | 2nd & 3rd Degree Burns To Right Arm / Both Legs      | 13               |



**Question II.**  
**Show the patient id and the total number  
of admissions for patient\_id 579.**



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

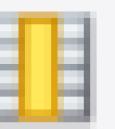


**Result Grid** |   Filter Rows

|   | patient_id | total_admissions |
|---|------------|------------------|
| ▶ | 579        | 2                |

Question 12.  
Based on the cities that our patients live in, show unique cities that are in province\_id 'NS'?

```
SELECT DISTINCT  
    city AS unique_cities  
FROM  
    patients  
WHERE  
    province_id = 'NS';
```

| Result Grid |  

|   | unique_cities   |
|---|-----------------|
| ▶ | Port Hawkesbury |
|   | Halifax         |
|   | Inverness       |



### Question 13.

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

```
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 |
|   | Jon        | Doggett      | 1951-12-25 |
|   | Angel      | Edwards      | 1975-08-22 |
|   | Nino       | Andrews      | 2001-04-21 |
|   | John       | Farley       | 1956-09-12 |
|   | Luaille    | Maureen      | 1953-08-22 |

## Question 14.

Write a query to find list of patients first\_name, last\_name, and allergies where allergies are not null and are from the city of 'Hamilton'.

```
SELECT  
    first_name, last_name, allergies  
FROM  
    patients  
WHERE  
    allergies IS NOT NULL  
    AND city = 'Hamilton';
```

|   | first_name | last_name | allergies   |
|---|------------|-----------|-------------|
| ▶ | Jiji       | Sharma    | Penicillin  |
|   | Tom        | Halliwell | Ragweed     |
|   | Nino       | Andrews   | Peanuts     |
|   | John       | Farley    | Gluten      |
|   | Sam        | Threep    | Sulpha      |
|   | Temple     | Russert   | Hay Fever   |
|   | Alice      | Donovan   | Penicillin  |
|   | Stone      | Cutting   | Codeine     |
|   | Phil       | Chester   | Penicillin  |
|   | Roland     | Murphy    | Sulfa Drugs |
|   | Shiro      | Whale     | Penicillin  |
|   | Calleigh   | Dean      | Penicillin  |
|   | Lily       | Vargas    | Codeine     |
|   | Kazuki     | Ranall    | Penicillin  |
|   | Mike       | Mars      | Penicillin  |
|   | Matt       | Goergen   | Penicillin  |



# Thank you!

