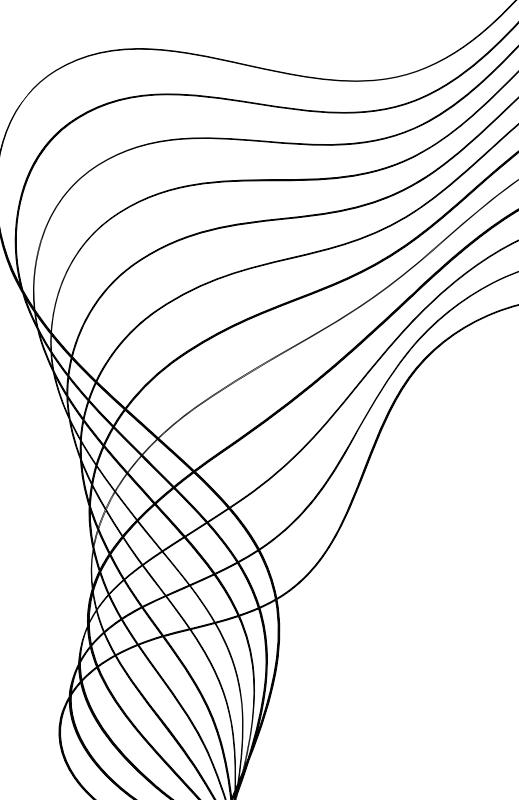


MENTORNESS INTERNSHIP PROGRAM



PROJECT 2: HOTEL RESERVATION ANALYSIS USING SQL



PROBLEM STATEMENT



**SQL IS USED TO ANSWER
THE QUESTIONS TO THE DATASET**

- The hotel industry operates in a dynamic environment where understanding guest preferences, booking trends, and various factors affecting operations is crucial for providing exceptional guest experiences and optimizing business outcomes.
- To effectively address these challenges, this internship focuses on leveraging data analytics techniques, specifically SQL, to analyze a hotel reservation dataset.



OBJECTIVES

1. Utilizing SQL to query and analyze the hotel reservation dataset.
2. Extracting insights into guest preferences, booking trends, and operational factors.
3. Providing actionable recommendations to improve guest experiences and optimize hotel operations based on data-driven findings.

DATASET

Booking_ID: A unique identifier for each hotel reservation.

no_of_adults: The number of adults in the reservation.

no_of_children: The number of children in the reservation.

no_of_weekend_nights: The number of nights in the reservation that fall on weekends.

no_of_week_nights: The number of nights in the reservation that fall on weekdays.

type_of_meal_plan: The meal plan chosen by the guests.

room_type_reserved: The type of room reserved by the guests.

lead_time: The number of days between booking and arrival.

arrival_date: The date of arrival.

market_segment_type: The market segment to which the reservation belongs.

avg_price_per_room: The average price per room in the reservation.

booking_status: The status of the booking.

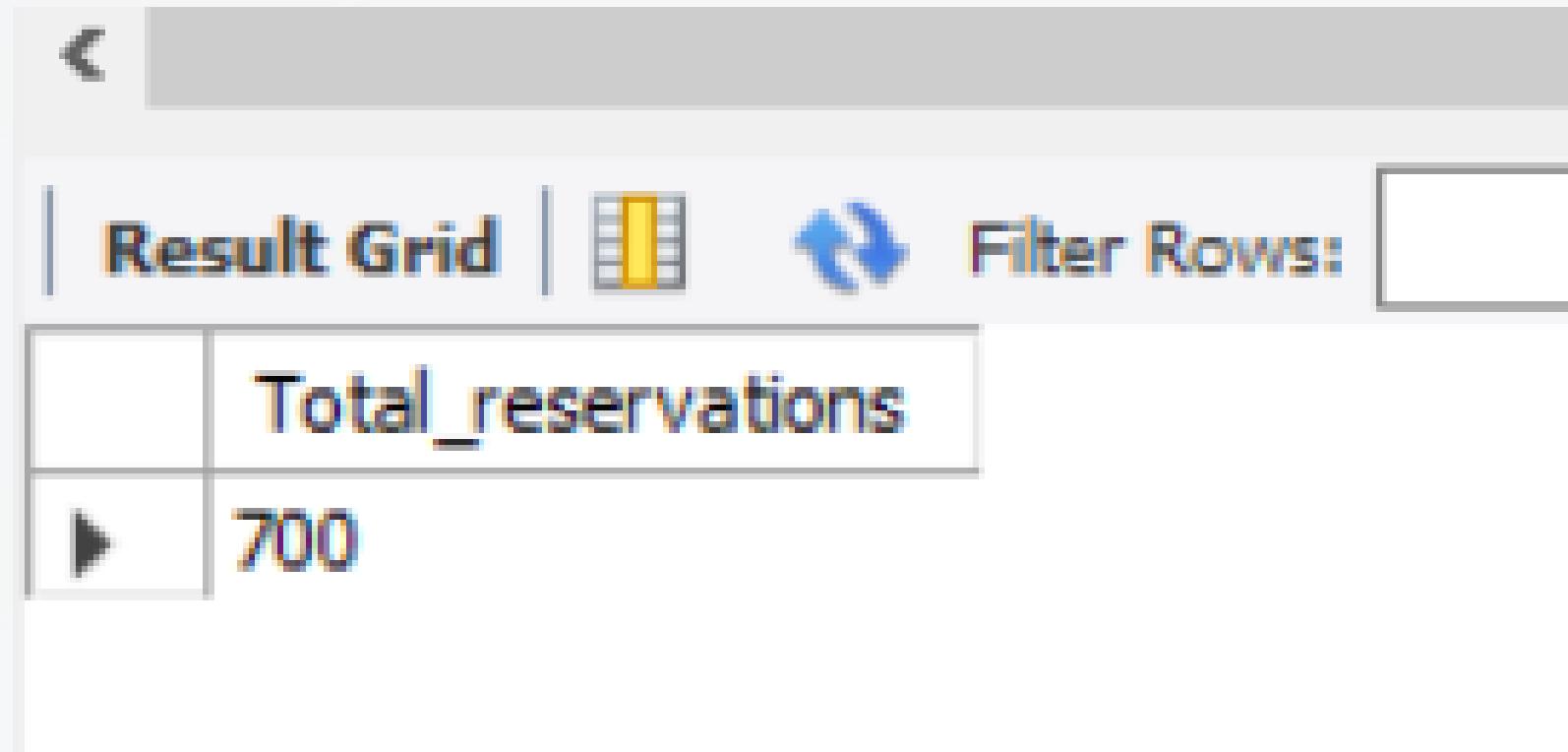
WHAT IS THE TOTAL NUMBER OF RESERVATIONS IN THE DATASET?

QUERY

```
-- What is the total number of reservation in dataset?
```

- ```
SELECT COUNT(Booking_ID) AS Total_reservations
FROM hotel_reservation;
```

## OUTPUT



The screenshot shows a MySQL Workbench interface. The top bar has tabs for 'Result Grid' (selected), 'SQL', 'Variables', and 'Filter Rows'. The 'Result Grid' tab shows a table with one row. The first column is empty, and the second column is labeled 'Total\_reservations' with the value '700'.

|   |                    |
|---|--------------------|
|   | Total_reservations |
| ▶ | 700                |

# WHICH MEAL PLAN IS THE MOST POPULAR AMONG GUESTS?

## QUERY

```
-- which meal plan is most popular among the guests?
```

- ```
SELECT type_of_meal_plan, COUNT(type_of_meal_plan) AS Popular_meal
FROM hotel_reservation
GROUP BY type_of_meal_plan
ORDER BY Popular_meal DESC;
```

OUTPUT

Result Grid | Filter Rows:

	type_of_meal_plan	Popular_meal
▶	Meal Plan 1	527
	Not Selected	109
	Meal Plan 2	64

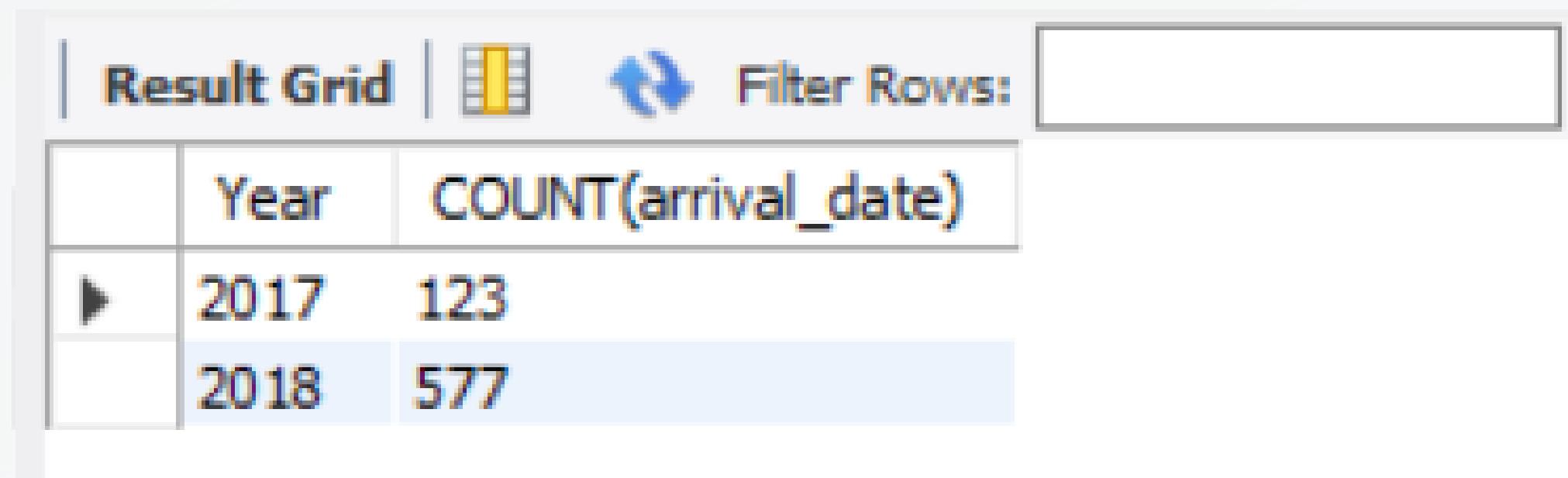
HOW MANY RESERVATIONS WERE MADE FOR THE YEAR 20XX (REPLACE XX WITH THE DESIRED YEAR)?

QUERY

-- 4. How many reservations were made for the year 20XX (replace XX with the desired year)?

```
SELECT YEAR(STR_TO_DATE(arrival_date, '%d-%m-%Y')) AS Year,  
COUNT(arrival_date) FROM hotel_reservation  
GROUP BY 1;
```

OUTPUT



The screenshot shows the MySQL Workbench interface with the 'Result Grid' tab selected. The results of the query are displayed in a table with two columns: 'Year' and 'COUNT(arrival_date)'. The data shows two rows: one for the year 2017 with 123 reservations, and one for the year 2018 with 577 reservations. The table has a header row and two data rows. The 'Result Grid' tab is highlighted with a blue border, and there are buttons for 'Filter Rows' and a search bar.

	Year	COUNT(arrival_date)
▶	2017	123
	2018	577

What is the most commonly booked room type?

QUERY

-- 5. What is the most commonly booked room type?

- ```
SELECT room_type_reserved, COUNT(room_type_reserved) AS ROOM_TYPE
FROM hotel_reservation
GROUP BY 1
ORDER BY ROOM_TYPE DESC;
```

Result Grid | Filter Rows:

|   | room_type_reserved | ROOM_TYPE |
|---|--------------------|-----------|
| ▶ | Room_Type 1        | 534       |
|   | Room_Type 4        | 130       |
|   | Room_Type 6        | 18        |
|   | Room_Type 2        | 8         |
|   | Room_Type 7        | 6         |

## OUTPUT

# How many reservations fall on a weekend (no\_of\_weekend\_nights > 0)?

## QUERY

```
-- How many reservations fall on a weekend (no_of_weekend_nights > 0)?
```

- ```
SELECT COUNT(no_of_weekend_nights) AS Total_reservations
FROM hotel_reservation
WHERE no_of_weekend_nights >0;
```

OUTPUT

Result Grid	
	Filter Rows
	Total_reservations
▶	383

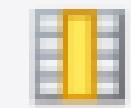
What is the highest and lowest lead time for reservations?

QUERY

```
-- What is the highest and lowest lead time for reservations?
```

```
SELECT MAX(lead_time),  
       MIN( lead_time)  
  FROM hotel_reservation;
```

Result Grid



Filter Rows:

	MAX(lead_time)	MIN(lead_time)
▶	443	0

OUTPUT

What is the most common market segment type for reservations?

QUERY

```
-- What is the most common market segment type for reservations?
```

- ```
SELECT market_segment_type, COUNT(market_segment_type) AS COUNT
FROM hotel_reservation
GROUP BY market_segment_type
ORDER BY COUNT DESC;
```

Result Grid | Filter Rows:

|   | market_segment_type | COUNT |
|---|---------------------|-------|
| ▶ | Online              | 518   |
|   | Offline             | 140   |
|   | Corporate           | 27    |
|   | Complementary       | 14    |
|   | Aviation            | 1     |

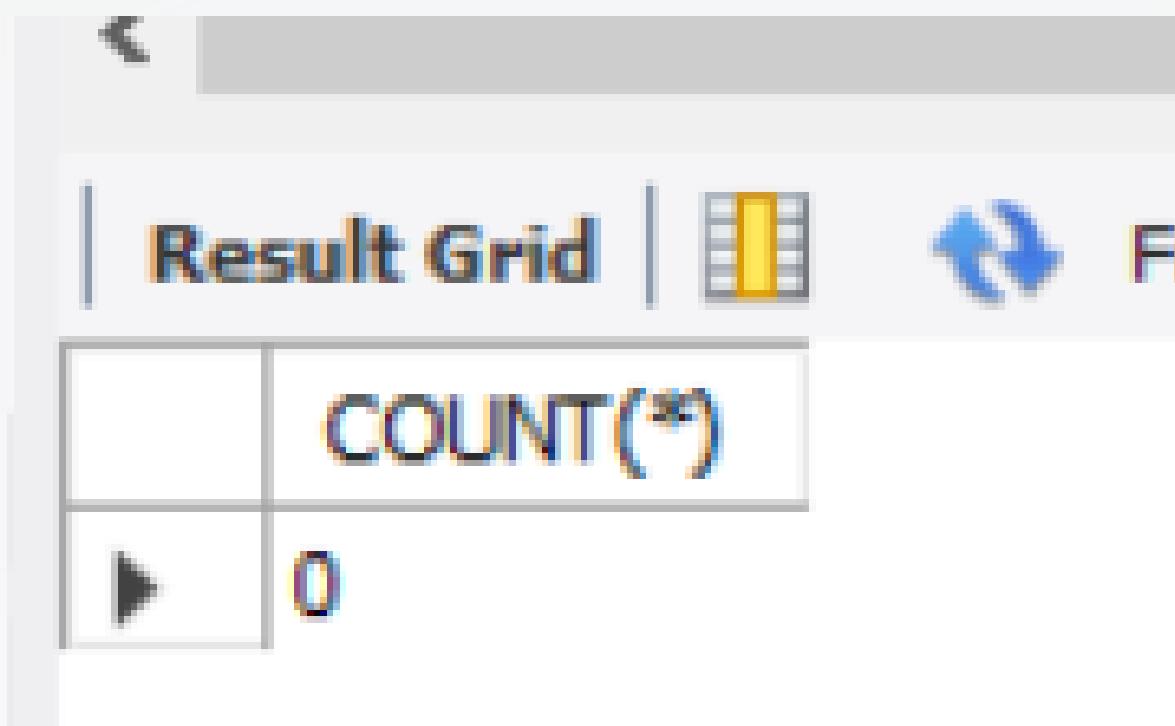
## OUTPUT

# How many reservations have a booking status of "Confirmed"?

## QUERY

-- How many reservations have a booking status of "Confirmed"

- `SELECT COUNT(*) FROM hotel_reservation  
WHERE booking_status = "Confirmed";`



The screenshot shows a MySQL Workbench interface. At the top, there is a toolbar with various icons. Below the toolbar, the title 'Result Grid' is displayed next to a grid icon. The main area shows a single row in a table with two columns. The first column is empty, and the second column contains the value '0'. There are navigation buttons for moving between rows and columns.

|   |          |
|---|----------|
|   | COUNT(*) |
| ▶ | 0        |

## OUTPUT

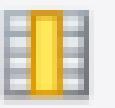
# What is the total number of adults and children across all reservations?

## QUERY

-- What is the total number of adults and children across all reservations?

- `SELECT SUM(no_of_adults) AS ADULTS, SUM(no_of_children) AS CHILDREN  
FROM hotel_reservation;`

## OUTPUT

Result Grid |   Filter Rows:

|   | ADULTS | CHILDREN |
|---|--------|----------|
| ▶ | 1316   | 69       |

What is the average number of nights (both weekend and weekday) spent by guests for each room type?(both weekend and weekday) spent by guests for each room type?

## QUERY

```
-- What is the average number of nights (both weekend and weekday) spent by guests for each room
-- type?
```

- ```
SELECT AVG(no_of_weekend_nights) AS WEEKEND_NIGHTS_AVG,
AVG(no_of_week_nights) AS WEEK_NIGHTS_AVG,
room_type_reserved FROM
hotel_reservation
GROUP BY room_type_reserved;
```

Result Grid | Filter Rows: Export: Wrap:

	WEEKEND_NIGHTS_AVG	WEEK_NIGHTS_AVG	room_type_reserved
▶	0.7884	2.0899	Room_Type 1
	1.0923	2.7077	Room_Type 4
	1.0000	2.0000	Room_Type 2
	1.0556	2.5556	Room_Type 6
	0.0000	2.5000	Room_Type 5

OUTPUT

For reservations involving children, what is the most common room type, and what is the average price for that room type?

QUERY

```
2
3  -- For reservations involving children, what is the most common room type, and what is the average
4  -- price for that room type?
5
6 • SELECT COUNT(room_type_reserved) AS COUNT,
7    ROUND(AVG( avg_price_per_room)) AS AVG_PRICE,
8    room_type_reserved
9    FROM hotel_reservation
10   WHERE no_of_children > 0
11   GROUP BY room_type_reserved
12   ORDER BY COUNT DESC;
```

OUTPUT

Result Grid | Filter Rows:

	COUNT	AVG_PRICE	room_type_reserved
▶	24	123	Room_Type 1
	17	185	Room_Type 6
	5	112	Room_Type 2
	1	86	Room_Type 4
	1	187	Room_Type 7

INSIGHTS

- Based on the analysis of the hotel reservation dataset, it's evident that MEAL plan 1 is the most ordered among guests
- Improving feedback collection, customizing the menu to suit guests' tastes, and adjusting prices strategically will make people like MEAL plan 1 even more.
- Using online ads can help attract more guests to choose MEAL plan 1.

- *The most booked room type is Room 1. However, there exists a significant variation in the booking trends across other types of rooms. This variance indicates an opportunity to implement effective measures aimed at increasing the booking rates of other room types as well.*
- *Understanding what guests like about the popular rooms can help hotels make the other rooms more appealing to guests too*

- *Insights suggest that guests prefer online booking due to its convenience, accessibility,*
- *Hotels can use this information to focus more on promoting their services online, improve their websites for booking, and offer special deals to make people want to book online even more.*

**THANK YOU
FOR
WATCHING**

