

# Hotel Reservation Analysis



SQL | Internship | Mentorness | 

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# Overview:

The hotel industry relies on data to make informed decisions and enhance guest experience. In this project, I analyzed a hotel reservation dataset to uncover insights into guest preferences, booking trends, and key operational factors. Using SQL, I queried and analyzed the data to answer specific questions, providing valuable information for improving hotel operations.



# Methodology :

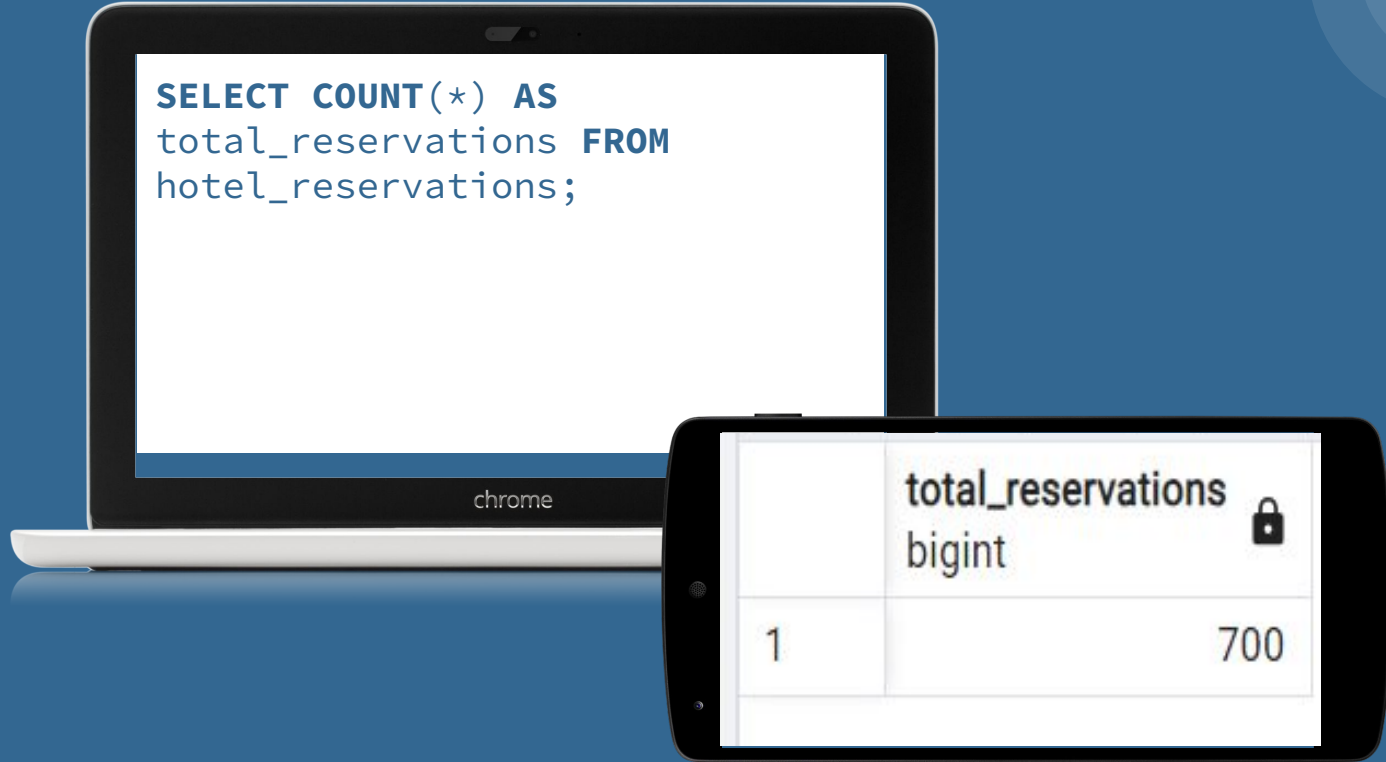
- ❑ Utilized PostgreSQL for Querying and Analyzing Data
- ❑ Employed PostgreSQL, a powerful relational database management system, for querying and analyzing the hotel reservation dataset.
- ❑ Leveraged PostgreSQL's capabilities to handle complex data operations and generate visualizations for enhanced data interpretation.

# Dataset Details :

The dataset includes the following columns:

- **Booking\_ID**: Unique identifier for each reservation.
- **no\_of\_adults**: Number of adults in the reservation.
- **no\_of\_children**: Number of children in the reservation.
- **no\_of\_weekend\_nights**: Weekend nights in the reservation.
- **no\_of\_week\_nights**: Weekday nights in the reservation.
- **type\_of\_meal\_plan**: Chosen meal plan.
- **room\_type\_reserved**: Reserved room type.
- **lead\_time**: Days between booking and arrival.
- **arrival\_date**: Date of arrival.
- **market\_segment\_type**: Market segment of the reservation.
- **avg\_price\_per\_room**: Average price per room.
- **booking\_status**: Booking status.

Q 1 : What is the total number of reservations in the dataset?



Q 2 : Which meal plan is the most popular among guests?

```
SELECT type_of_meal_plan,  
COUNT(*) AS count  
FROM hotel_reservations  
GROUP BY type_of_meal_plan  
ORDER BY count DESC  
LIMIT 1;
```

chrome

	type_of_meal_plan character varying	count bigint
1	Meal Plan 1	527

Q 3 : What is the average price per room for reservations involving children?

```
SELECT  
ROUND(CAST(AVG(avg_price_per_ro  
om) AS numeric), 2) AS  
avg_price_per_room_with_childre  
n  
FROM hotel_reservations  
WHERE no_of_children > 0;
```

chrome

	avg_price_per_room_with_children	
	numeric	🔒

1

144.57

Q 4 : How many reservations were made for the year 2018?

```
SELECT COUNT(*) AS  
reservations_in_year  
FROM hotel_reservations  
WHERE EXTRACT(YEAR FROM  
arrival_date) = 2018;
```

chrome

	reservations_in_year	
	bigint	🔒

1

577



Q 5 : What is the most commonly booked room type?

```
SELECT room_type_reserved,  
COUNT(*) AS count  
FROM hotel_reservations  
GROUP BY room_type_reserved  
ORDER BY count DESC  
LIMIT 1;
```

	room_type_reserved	count
	character varying	bigint
1	Room_Type 1	534

Q 6 : How many reservations fall on a weekend (no\_of\_weekend\_nights > 0)?



Q 7 : What is the highest and lowest lead time for reservations?

```
SELECT MAX(lead_time) AS  
max_lead_time, MIN(lead_time)  
AS min_lead_time  
FROM hotel_reservations;
```

	max_lead_time integer	min_lead_time integer
1	443	0

Q 8 : What is the most common market segment type for reservations?

```
SELECT market_segment_type,  
COUNT(*) AS count  
FROM hotel_reservations  
GROUP BY market_segment_type  
ORDER BY count DESC  
LIMIT 1;
```

	market_segment_type	count
	character varying	bigint
1	Online	518

Q 9 : How many reservations have a booking status of "Confirmed"?

```
SELECT COUNT(*) AS  
confirmed_reservations  
FROM hotel_reservations  
WHERE booking_status =  
'Not_Canceled';
```

chrome

	confirmed_reservations	
	bigint	🔒

1	493
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Q 10 : What is the total number of adults and children across all reservations?

```
SELECT SUM(no_of_adults) AS  
total_adults,  
SUM(no_of_children) AS  
total_children  
FROM hotel_reservations;
```

chrome

	total_adults bigint	total_children bigint
1	1316	69

Q 11 : What is the average number of weekend nights for reservations involving children?

```
SELECT  
ROUND(CAST(AVG(no_of_weekend_ni  
ghts)AS numeric), 2) AS  
avg_weekend_nights_with_childre  
n  
FROM hotel_reservations  
WHERE no_of_children > 0;
```

	avg_weekend_nights_with_children	
	numeric	🔒

1

1.00

Q 12 : How many reservations were made in each month of the year?

```
SELECT EXTRACT(MONTH FROM  
arrival_date) AS month,  
COUNT(*) AS reservations_count  
FROM hotel_reservations  
GROUP BY month  
ORDER BY month;
```

	month numeric	reservations_count bigint
1	1	11
2	2	28
3	3	52
4	4	67
5	5	55
6	6	84
7	7	44
8	8	70
9	9	80
10	10	103
11	11	54
12	12	52



Q 13 : What is the average number of nights (both weekend and weekday) spent by guests for each room type?

```
SELECT room_type_reserved,  
ROUND(CAST(AVG(no_of_weekend_ni  
ghts + no_of_week_nights)AS  
numeric), 2) AS avg_nights  
FROM hotel_reservations  
GROUP BY room_type_reserved;
```

	room_type_reserved character varying	avg_nights numeric
1	Room_Type 7	2.67
2	Room_Type 1	2.88
3	Room_Type 5	2.50
4	Room_Type 2	3.00
5	Room_Type 6	3.61
6	Room_Type 4	3.80

Q 14 : For reservations involving children, what is the most common room type, and what is the average price for that room type?

```
SELECT room_type_reserved,  
ROUND(CAST(AVG(avg_price_per_ro  
om)AS numeric), 2) AS avg_price  
FROM hotel_reservations  
WHERE no_of_children > 0  
GROUP BY room_type_reserved  
ORDER BY COUNT(*) DESC  
LIMIT 1;
```

chrome

	room_type_reserved	avg_price
	character varying	numeric
1	Room_Type 1	123.12

Q 15 : Find the market segment type that generates the highest average price per room.

```
SELECT market_segment_type,  
ROUND(CAST(AVG(avg_price_per_ro  
om)AS numeric), 2) AS avg_price  
FROM hotel_reservations  
GROUP BY market_segment_type  
ORDER BY avg_price DESC  
LIMIT 1;
```

chrome

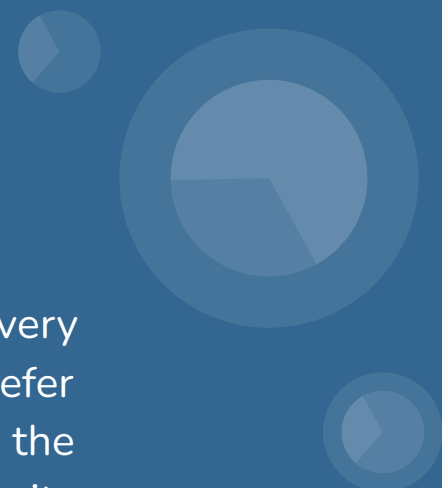
	market_segment_type	avg_price
	character varying	numeric
1	Online	112.46

# Recommendations:

- ❑ Increase Marketing Efforts During Peak Booking Periods
- ❑ Offer Special Packages for Popular Room Types and Meal Plans
- ❑ Implement Strategies to Reduce Cancellations
- ❑ Focus on Attracting Corporate Bookings
- ❑ Adjust Pricing Based on Room Type Popularity
- ❑ Enhance Seasonal Promotions

# Conclusion:

The analysis shows that certain meal plans and room types are very popular, with weekends seeing a surge in bookings. Families prefer specific room types and prices, while a key market segment books the highest rates. By using these insights, the hotel can enhance its offerings, target marketing efforts, and improve guest experiences, leading to increased bookings and higher revenue.



THANK YOU!!

