



HOTEL RESERVATION ANALYSIS

with SQL

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OVERVIEW

- The hotel industry relies on data to make informed decisions and provide a better guest experience.
- In this project, I will work with a hotel reservation dataset to gain insights into guest preferences, booking trends, and other key factors that impact the hotel's operations.
- I will use SQL to query and analyze the data, as well as answer specific questions about the dataset.

DATASET DETAILS

- **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.

SQL HOTEL DATASET

Booking_ID	no_of_adults	no_of_children	no_of_weekend_nigh...	no_of_week_nigh...	type_of_meal_plan	room_type_reserved	lead_time	arrival_date	market_segment_type	avg_price_per_ro...	booking_stat...
INN00001	2	0	1	2	Meal Plan 1	Room_Type 1	224	2017-10-02	Offline	65	Not_Canceled
INN00002	2	0	2	3	Not Selected	Room_Type 1	5	2018-11-06	Online	106.68	Not_Canceled
INN00003	1	0	2	1	Meal Plan 1	Room_Type 1	1	2018-02-28	Online	60	Canceled
INN00004	2	0	0	2	Meal Plan 1	Room_Type 1	211	2018-05-20	Online	100	Canceled
INN00005	2	0	1	1	Not Selected	Room_Type 1	48	2018-04-11	Online	94.5	Canceled
INN00006	2	0	0	2	Meal Plan 2	Room_Type 1	346	2018-09-13	Online	115	Canceled
INN00007	2	0	1	3	Meal Plan 1	Room_Type 1	34	2017-10-15	Online	107.55	Not_Canceled
INN00008	2	0	1	3	Meal Plan 1	Room_Type 4	83	2018-12-26	Online	105.61	Not_Canceled
INN00009	3	0	0	4	Meal Plan 1	Room_Type 1	121	2018-07-06	Offline	96.9	Not_Canceled
INN00010	2	0	0	5	Meal Plan 1	Room_Type 4	44	2018-10-18	Online	133.44	Not_Canceled
INN00011	1	0	1	0	Not Selected	Room_Type 1	0	2018-09-11	Online	85.03	Not_Canceled
INN00012	1	0	2	1	Meal Plan 1	Room_Type 4	35	2018-04-30	Online	140.4	Not_Canceled
INN00013	2	0	2	1	Not Selected	Room_Type 1	30	2018-11-26	Online	88	Canceled
INN00014	1	0	2	0	Meal Plan 1	Room_Type 1	95	2018-11-20	Online	90	Canceled
INN00015	2	0	0	2	Meal Plan 1	Room_Type 1	47	2017-10-20	Online	94.5	Not_Canceled
INN00016	2	0	0	2	Meal Plan 2	Room_Type 1	256	2018-06-15	Online	115	Canceled
INN00017	1	0	1	0	Meal Plan 1	Room_Type 1	0	2017-10-05	Offline	96	Not_Canceled
INN00018	2	0	1	3	Not Selected	Room_Type 1	1	2017-08-10	Online	96	Not_Canceled
INN00019	2	0	2	2	Meal Plan 1	Room_Type 1	99	2017-10-30	Online	65	Canceled
INN00020	2	0	1	0	Meal Plan 1	Room_Type 1	12	2017-10-04	Offline	72	Not_Canceled
INN00021	2	0	2	2	Meal Plan 1	Room_Type 1	99	2017-10-30	Online	65	Canceled
INN00022	1	0	0	1	Meal Plan 1	Room_Type 1	122	2018-11-25	Corporate	67	Not_Canceled
INN00023	2	0	2	4	Meal Plan 1	Room_Type 1	2	2018-03-20	Offline	85	Not_Canceled
INN00024	2	0	0	3	Meal Plan 1	Room_Type 1	37	2018-10-13	Offline	105	Not_Canceled
INN00025	2	0	2	1	Not Selected	Room_Type 1	130	2018-05-22	Online	94.5	Not_Canceled
INN00026	2	0	0	2	Meal Plan 1	Room_Type 1	99	2018-04-28	Online	114.3	Not_Canceled
INN00027	2	0	1	1	Meal Plan 1	Room_Type 1	60	2017-09-21	Offline	65	Not_Canceled
INN00028	1	0	0	2	Meal Plan 1	Room_Type 4	2	2018-05-19	Aviation	110	Canceled
INN00029	1	0	1	2	Meal Plan 1	Room_Type 1	37	2017-11-06	Online	37.33	Canceled
INN00030	2	0	0	2	Meal Plan 2	Room_Type 1	56	2017-09-17	Offline	82	Not_Canceled
INN00031	2	0	1	1	Meal Plan 1	Room_Type 4	3	2017-09-19	Online	177.5	Not_Canceled
INN00032	2	0	2	2	Meal Plan 1	Room_Type 1	107	2018-11-13	Online	87.5	Not_Canceled
INN00033	0	2	0	3	Meal Plan 1	Room_Type 2	56	2018-12-07	Online	82.44	Not_Canceled
INN00034	2	0	0	1	Not Selected	Room_Type 1	2	2018-01-09	Online	69.5	Not_Canceled
INN00035	2	0	0	2	Meal Plan 1	Room_Type 1	72	2018-10-07	Offline	85.5	Not_Canceled
INN00036	2	0	0	1	Not Selected	Room_Type 1	23	2018-04-27	Online	115	Not_Canceled

QUERY 1

What is the total number of reservations in the dataset?

```
select count(*) as Total_Reservations  
from hotel;
```

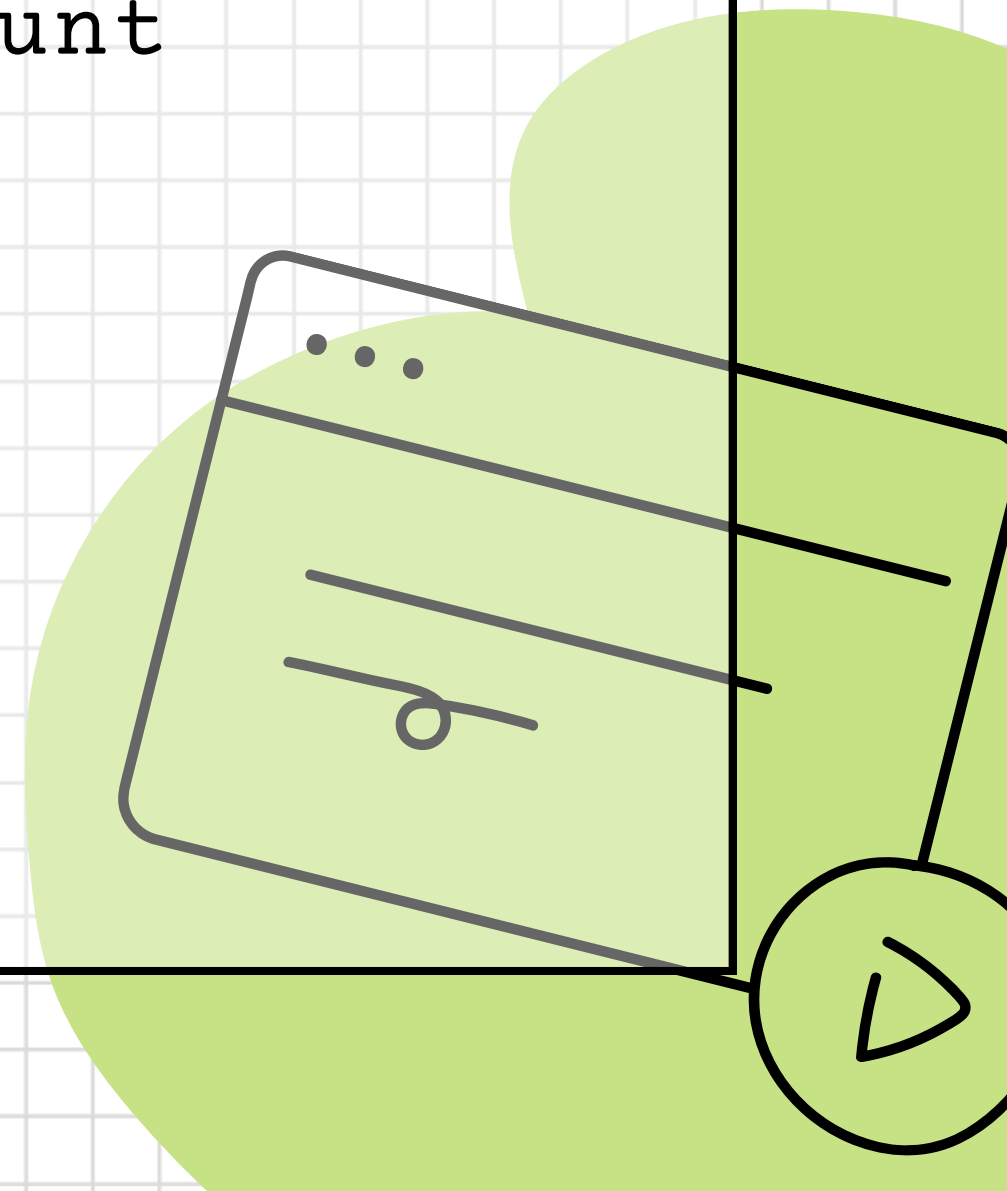
Total_Reservations
700

QUERY 2

Which meal plan is the most popular among guests?

```
select type_of_meal_plan, count(*) as count
from hotel
group by type_of_meal_plan
order by count desc limit 1;
```

type_of_meal_plan	count
Meal Plan 1	527



QUERY 3

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

```
select avg(avg_price_per_room) as Avg_Price_with_Children  
from hotel  
where no_of_children > 0;
```

Avg_Price_with_Children
144.56833333333336

QUERY 4

How many reservations were made for the year 2018?

```
select count(*) as Reservations_in_2018  
from hotel  
where year(arrival_date) = 2018;
```

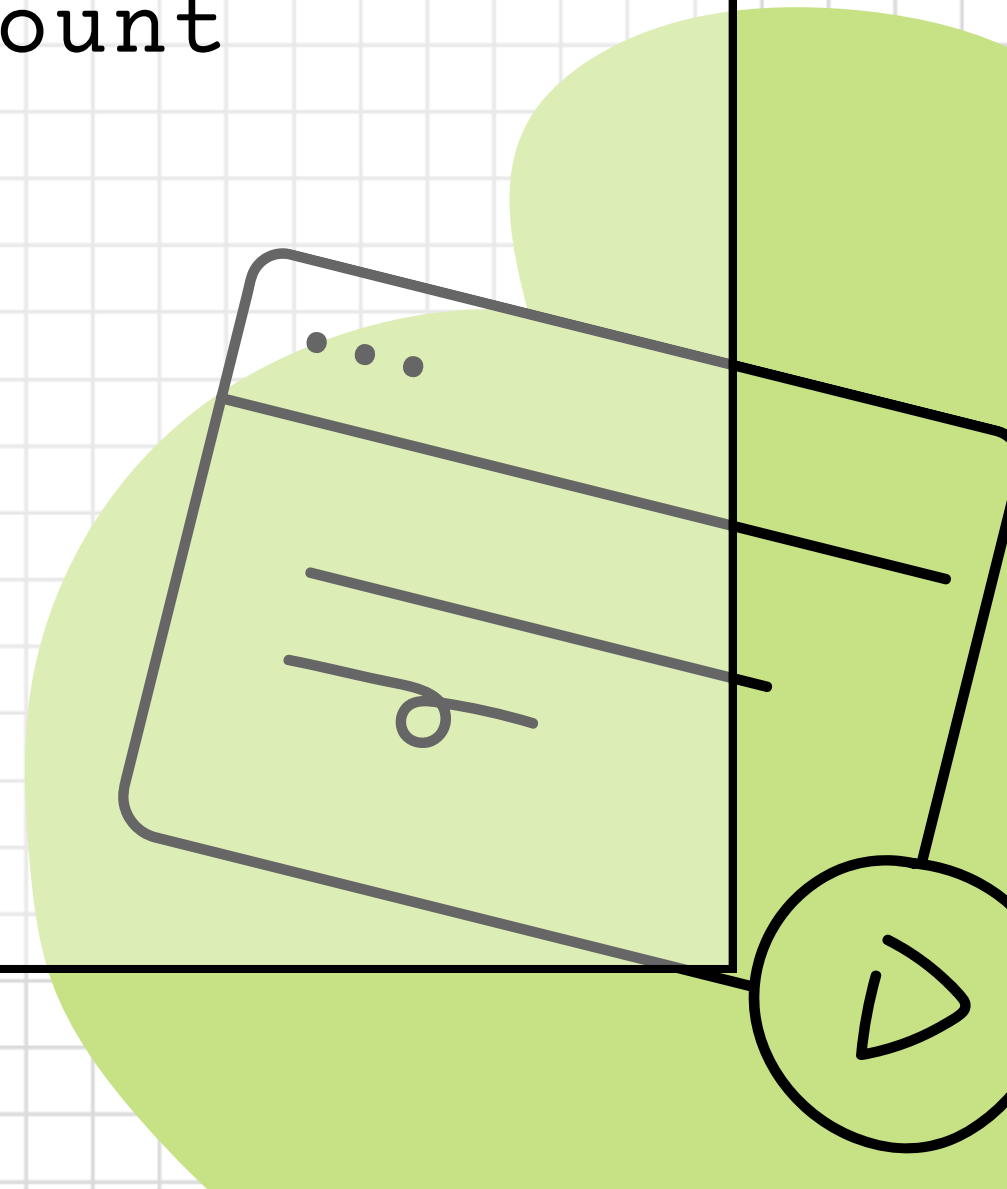
Reservations_in_2018
577

QUERY 5

What is the most commonly booked room type?

```
select room_type_reserved, count(*) as count
from hotel
group by room_type_reserved
order by count desc limit 1;
```

room_type_reserved	count
Room_Type 1	534



QUERY 6

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

```
select count(*) as Weekend_Reservations  
from hotel  
where no_of_weekend_nights > 0;
```

Weekend_Reservations
383

QUERY 1

What is the highest and lowest lead time for reservations?

```
select max(lead_time) as Highest_Lead_Time,  
min(lead_time) as Lowest_Lead_Time  
from hotel;
```

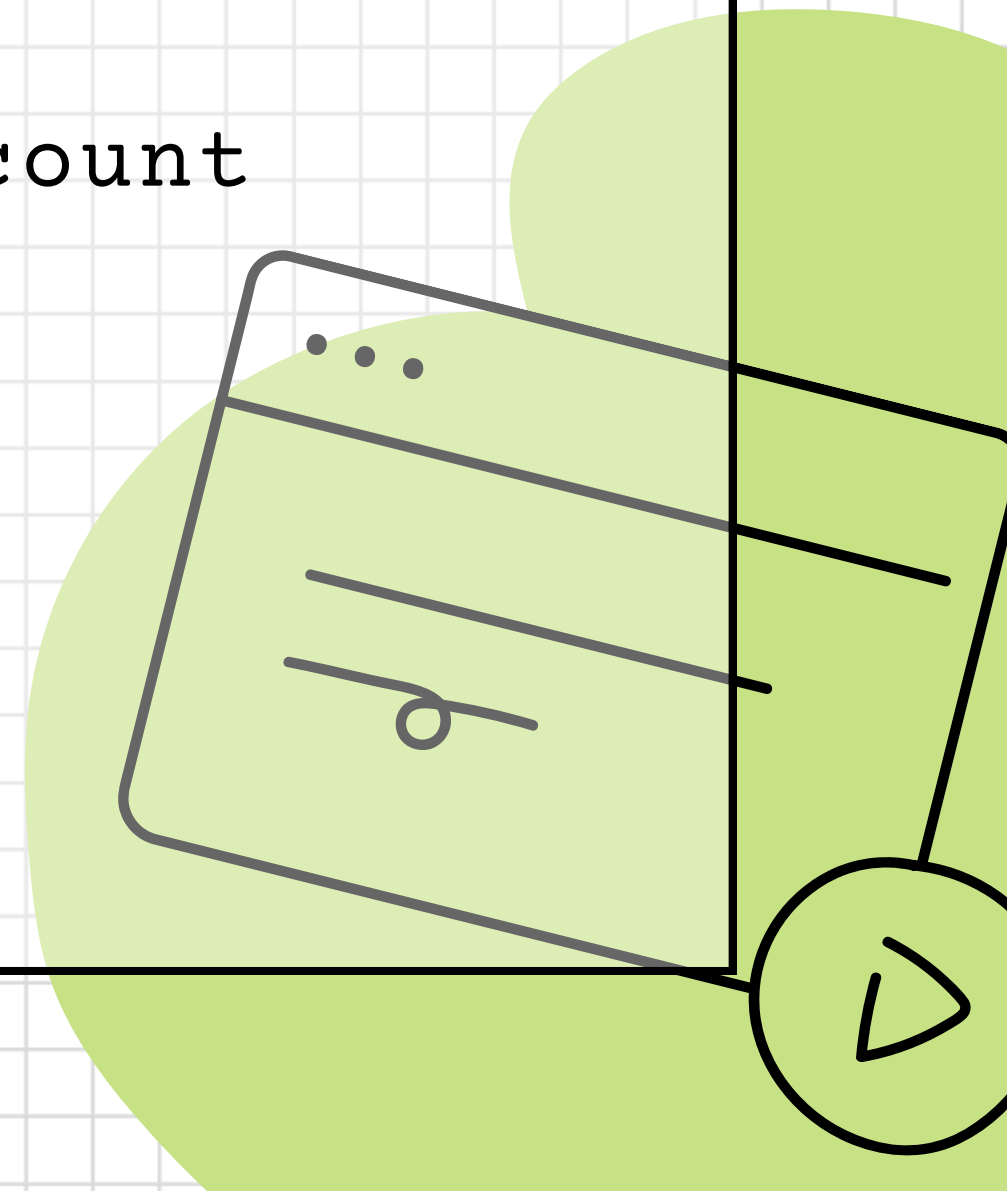
Highest_Lead_Time	Lowest_Lead_Time
443	0

QUERY 8

What is the most common market segment type for reservations?

```
select market_segment_type, count(*) as count
from hotel
group by market_segment_type
order by count desc limit 1;
```

market_segment_type	count
Online	518



QUERY 9

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

```
select count(booking_status) as Confirmed_Reservations
from hotel
where booking_status = 'Not_Canceled';
```

Confirmed_Reservations
493

QUERY 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;
```

Total_Adults	Total_Children
1316	69

QUERY 11

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

```
select avg(no_of_weekend_nights) as  
Avg_Weekend_Nights_with_Children  
from hotel  
where no_of_children > 0;
```

Avg_Weekend_Nights_with_Children
1.0000

QUERY 12

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

```
select month(arrival_date) as  
month, count(*) as count  
from hotel  
group by month  
order by month;
```

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

QUERY 13

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

```
select room_type_reserved,  
avg(no_of_weekend_nights +  
no_of_week_nights) as Avg_Nights  
from hotel  
group by room_type_reserved;
```

room_type_reserved	Avg_Nights
Room_Type 1	2.8783
Room_Type 4	3.8000
Room_Type 2	3.0000
Room_Type 6	3.6111
Room_Type 5	2.5000
Room_Type 7	2.6667

QUERY 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, count(*) as count,  
avg(avg_price_per_room) as avg_price  
from hotel  
where no_of_children > 0  
group by room_type_reserved  
order by count desc limit 1;
```

room_type_reserved	count	avg_price
Room_Type 1	24	123.12291666666665



QUERY 15

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

```
select market_segment_type, avg(avg_price_per_room)
as Highest_Avg_Price_per_room
from hotel
group by market_segment_type
order by Highest_Avg_Price_per_room desc limit 1;
```

market_segment_type	Highest_Avg_Price_per_room
Online	112.45521235521232



THANK YOU