

HOTEL **RESERVATION** **ANALYSIS**

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OVERVIEW

The hotel industry heavily relies on data to make informed decisions, optimize operations, and enhance guest experiences. In this project, we aim to analyze a hotel reservation dataset using SQL to uncover insights into guest preferences, booking trends, and various factors impacting the hotel's performance.



DATASET DETAILS

The dataset includes the following columns:

- **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.

Dataset Overview

Booking_ID	no_of_adults	no_of_children	no_of_weekend_nights	no_of_week_nights	type_of_meal_plan
INN00001	2	0	1	2	Meal Plan 1
INN00002	2	0	2	3	Not Selected
INN00003	1	0	2	1	Meal Plan 1
INN00004	2	0	0	2	Meal Plan 1
INN00005	2	0	1	1	Not Selected
INN00006	2	0	0	2	Meal Plan 2
INN00007	2	0	1	3	Meal Plan 1
INN00008	2	0	1	3	Meal Plan 1
INN00009	3	0	0	4	Meal Plan 1
INN00010	2	0	0	5	Meal Plan 1
INN00011	1	0	1	0	Not Selected
INN00012	1	0	2	1	Meal Plan 1
INN00013	2	0	2	1	Not Selected
INN00014	1	0	2	0	Meal Plan 1
INN00015	2	0	0	2	Meal Plan 1
INN00016	2	0	0	2	Meal Plan 2
INN00017	1	0	1	0	Meal Plan 1
INN00018	2	0	1	3	Not Selected
INN00019	2	0	2	2	Meal Plan 1

room_type_reserved	lead_time	arrival_date	market_segment_typ	avg_price_per_room	booking_status
Room_Type 1	224	02-10-2017	Offline	65	Not_Canceled
Room_Type 1	5	06-11-2018	Online	106.68	Not_Canceled
Room_Type 1	1	28-02-2018	Online	60	Canceled
Room_Type 1	211	20-05-2018	Online	100	Canceled
Room_Type 1	48	11-04-2018	Online	94.5	Canceled
Room_Type 1	346	13-09-2018	Online	115	Canceled
Room_Type 1	34	15-10-2017	Online	107.55	Not_Canceled
Room_Type 4	83	26-12-2018	Online	105.61	Not_Canceled
Room_Type 1	121	06-07-2018	Offline	96.9	Not_Canceled
Room_Type 4	44	18-10-2018	Online	133.44	Not_Canceled
Room_Type 1	0	11-09-2018	Online	85.03	Not_Canceled
Room_Type 4	35	30-04-2018	Online	140.4	Not_Canceled
Room_Type 1	30	26-11-2018	Online	88	Canceled
Room_Type 1	95	20-11-2018	Online	90	Canceled
Room_Type 1	47	20-10-2017	Online	94.5	Not_Canceled
Room_Type 1	256	15-06-2018	Online	115	Canceled
Room_Type 1	0	05-10-2017	Offline	96	Not_Canceled
Room_Type 1	1	10-08-2017	Online	96	Not_Canceled
Room_Type 1	99	30-10-2017	Online	65	Canceled

1. What is the total number of reservations in the dataset?

```
SELECT COUNT(Booking_ID) AS Total_Reservations  
FROM hotel_res
```

OUTPUT



	Total_Reservations
1	700

2. Which meal plan is the most popular among guests?

```
SELECT TOP 1 type_of_meal_plan, COUNT(*) AS Popularity  
FROM hotel_res  
GROUP BY type_of_meal_plan
```

OUTPUT



type_of_meal_plan	Popularity
Meal Plan 1	527

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

```
SELECT AVG(avg_price_per_room) AS Average_Price  
FROM hotel_res  
WHERE no_of_children > 0
```

OUTPUT

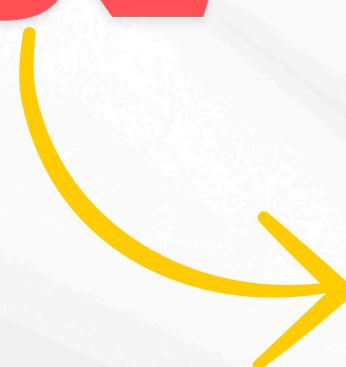


	Average_Price
1	144.568333307902

4. How many reservations were made for the year 2018 ?

```
SELECT COUNT(Booking_ID) AS Reservations_Year_2018  
FROM hotel_res  
WHERE YEAR(arrival_date) = 2018
```

OUTPUT

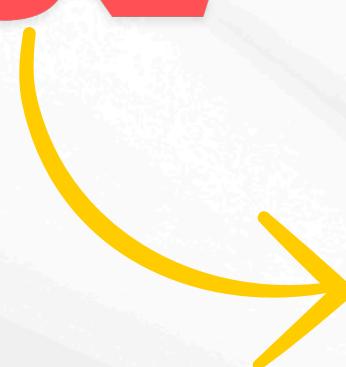


	Reservations_Year_2018
1	577

5. What is the most commonly booked room type?

```
SELECT TOP 1 room_type_reserved as [Type of Room],Count(*) as Frequency  
FROM hotel_res  
GROUP BY room_type_reserved  
ORDER BY Frequency DESC
```

OUTPUT



	Type of Room	Frequency
1	Room_Type 1	534

6. How many reservations fall on a weekend?

```
SELECT COUNT(*) AS [Number of Reservation]  
FROM hotel_res  
WHERE no_of_weekend_nights > 0
```

OUTPUT

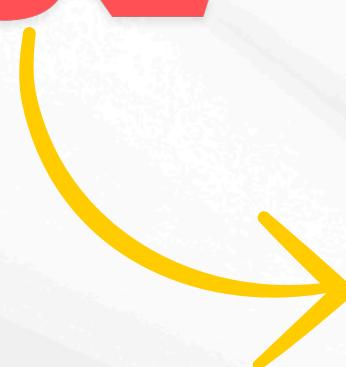


	Number of Reservation
1	383

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

```
SELECT  
    MAX(lead_time) as max_time,  
    MIN(lead_time) as min_time  
FROM hotel_res
```

OUTPUT



	max_time	min_time
1	443	0

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

```
SELECT TOP 1 market_segment_type , COUNT(*) AS Frequency  
FROM hotel_res  
GROUP BY market_segment_type  
ORDER BY Frequency DESC
```

OUTPUT

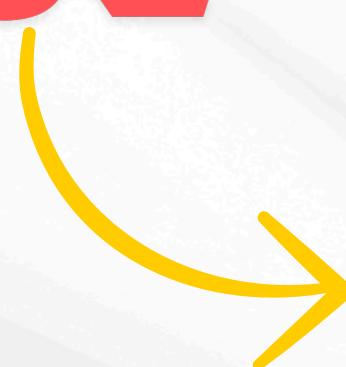


	market_segment_type	Frequency
1	Online	518

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

```
SELECT COUNT(booking_status) as confirmed_booking  
FROM hotel_res  
WHERE booking_status = 'Not_Canceled'
```

OUTPUT



	confirmed_booking
1	493

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

```
SELECT SUM(no_of_adults) AS total_num_adults, SUM(no_of_children) AS total_num_children  
FROM hotel_res
```

OUTPUT



total_num_adults	total_num_children
1316	69

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

```
SELECT AVG(no_of_weekend_nights) AS Avg_Weekend_Nights  
FROM hotel_res  
WHERE no_of_children > 0
```

OUTPUT



	Avg_Weekend_Nights
1	1

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

```
SELECT MONTH(arrival_date) AS Month, COUNT(Booking_ID) AS Reservations  
FROM hotel_res  
GROUP BY MONTH(arrival_date)  
ORDER BY Month
```

OUTPUT



	Month	Reservations
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

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_Total_Nights  
FROM hotel_res  
GROUP BY room_type_reserved
```

OUTPUT



	room_type_reserved	Avg_Total_Nights
1	Room_Type 1	2
2	Room_Type 2	3
3	Room_Type 4	3
4	Room_Type 5	2
5	Room_Type 6	3
6	Room_Type 7	2

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

```
SELECT TOP 1 room_type_reserved, COUNT(*) AS Frequency, AVG(avg_price_per_room) AS Avg_Price  
FROM hotel_res  
WHERE no_of_children > 0  
GROUP BY room_type_reserved  
ORDER BY Frequency DESC
```

OUTPUT



	room_type_reserved	Frequency	Avg_Price
1	Room_Type 1	24	123.12291653951

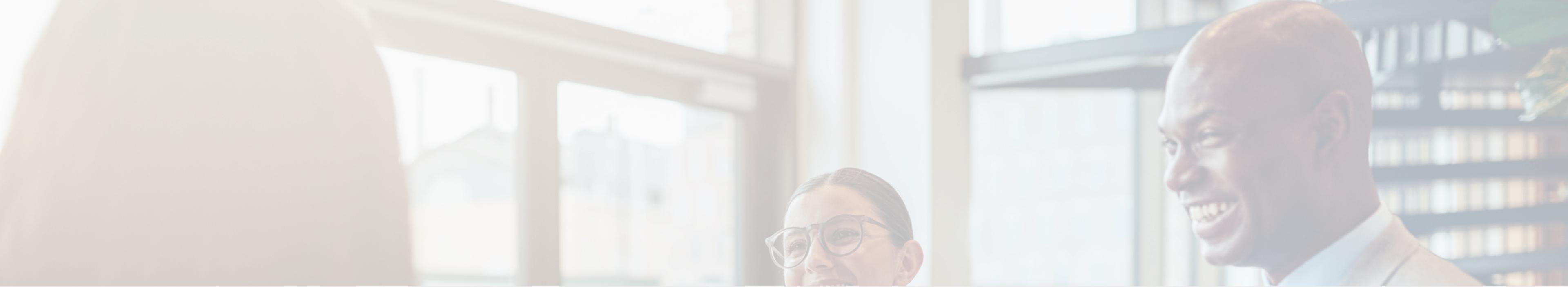
15. Find the market segment type that generates the highest average price per room.

```
SELECT TOP 1 market_segment_type,  
       AVG(avg_price_per_room) AS Avg_Price  
FROM hotel_res  
GROUP BY market_segment_type  
ORDER BY Avg_Price DESC
```

OUTPUT



	market_segment_type	Avg_Price
1	Online	112.455212331647



THANK YOU!

