Project 2: Hotel Reservation Analysis with SQL

In this project, I will use SQL to answer questions related to the dataset. This will help me develop my data analysis skills in a practical context.

Overview:

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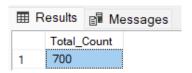
Dataset Details:

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.

Queries:

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

SELECT COUNT(*) AS Total_Count FROM [Hotel Reservation];

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

SELECT type_of_meal_plan, COUNT(*) AS Most_Popular_by_Guest
FROM [Hotel Reservation]
GROUP BY type_of_meal_plan
ORDER BY Most_Popular_by_Guest DESC;

	type_of_meal_plan	Most_Popular_by_Guest
1	Meal Plan 1	527
2	Not Selected	109
3	Meal Plan 2	64

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

SELECT AVG(avg_price_per_room) AS Average_Price_For_Reser_with_Children

FROM [Hotel Reservation]

WHERE no_of_children>0;

	Average_Price_For_Reser_with_Children
1	144.568333333333

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

SELECT COUNT(Booking_ID) AS Total_reservation_2018

FROM [Hotel Reservation]

WHERE YEAR(arrival_date)='2018';

	Total_reservation_2018
1	577

5.What is the most commonly booked room type?

SELECT room_type_reserved, COUNT(*) AS Commonly_Booked

FROM [Hotel Reservation]

GROUP BY room_type_reserved
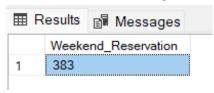
ORDER BY Commonly_Booked DESC;

	room_type_reserved	Commonly_Booked
1	Room_Type 1	534
2	Room_Type 4	130
3	Room_Type 6	18
4	Room_Type 2	8
5	Room_Type 7	6
6	Room_Type 5	4

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

SELECT COUNT(Booking_ID) AS Weekend_Reservation

FROM [Hotel Reservation]

WHERE no_of_weekend_nights>0;

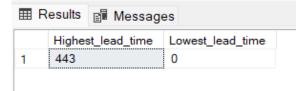|	Weekend_Reservation
1	383

7. 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 Reservation];

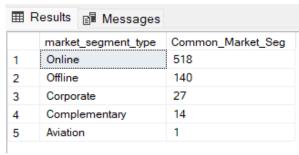|	Highest_lead_time	Lowest_lead_time
1	443	0

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

SELECT market_segment_type, COUNT(*) AS Common_Market_Seg

FROM [Hotel Reservation]
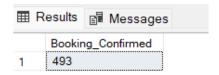
GROUP BY market_segment_type

ORDER BY Common_Market_Seg DESC;

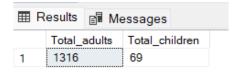|	market_segment_type	Common_Market_Seg
1	Online	518
2	Offline	140
3	Corporate	27
4	Complementary	14
5	Aviation	1

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

SELECT COUNT(*) AS Booking_Confirmed

FROM [Hotel Reservation]

WHERE booking_status ='Not_Canceled';

	Booking_Confirmed
1	493

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 Reservation];

	Total_adults	Total_children
1	1316	69

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

SELECT AVG(no_of_weekend_nights) AS Average_Weekend_nights

FROM [Hotel Reservation]

WHERE no_of_children>0;

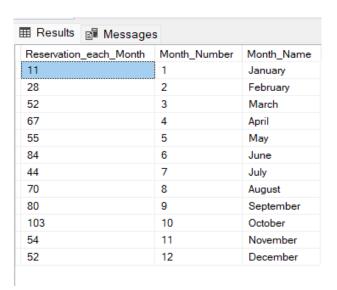|	Average_Weekend_nights
1	1

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

SELECT COUNT(Booking_ID) AS Reservation_each_Month, MONTH(arrival_date) AS Month_Number,
DATENAME(MONTH,arrival_date) AS Month_Name
FROM [Hotel Reservation]
GROUP BY MONTH(arrival_date), DATENAME(MONTH, arrival_date)
ORDER BY Month_Number;

Reservation_each_Month	Month_Number	Month_Name
11	1	January
28	2	February
52	3	March
67	4	April
55	5	May
84	6	June
44	7	July
70	8	August
80	9	September
103	10	October
54	11	November
52	12	December

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_RoomType
FROM [Hotel Reservation]
GROUP BY room_type_reserved;

room_type_reserved	Avg_Nights_RoomType
Room_Type 1	2.87827715355805
Room_Type 2	3
Room_Type 4	3.8
Room_Type 5	2.5
Room_Type 6	3.61111111111111
Room_Type 7	2.66666666666667

14. For reservations involving children, what is the most common room type, and what is the average price for that room type?
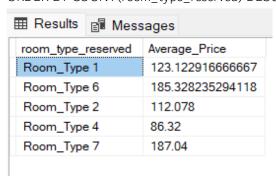
SELECT room_type_reserved, AVG(avg_price_per_room) AS Average_Price

FROM [Hotel Reservation]

WHERE no_of_children>0

GROUP BY room_type_reserved

ORDER BY COUNT(room_type_reserved) DESC;

room_type_reserved	Average_Price
Room_Type 1	123.122916666667
Room_Type 6	185.328235294118
Room_Type 2	112.078
Room_Type 4	86.32
Room_Type 7	187.04

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_Room

FROM [Hotel Reservation]

GROUP BY market_segment_type

ORDER BY Avg_Price_Room DESC;

market_segment_type	Avg_Price_Room
Online	112.455212355212