Hotel Reservation Analysis

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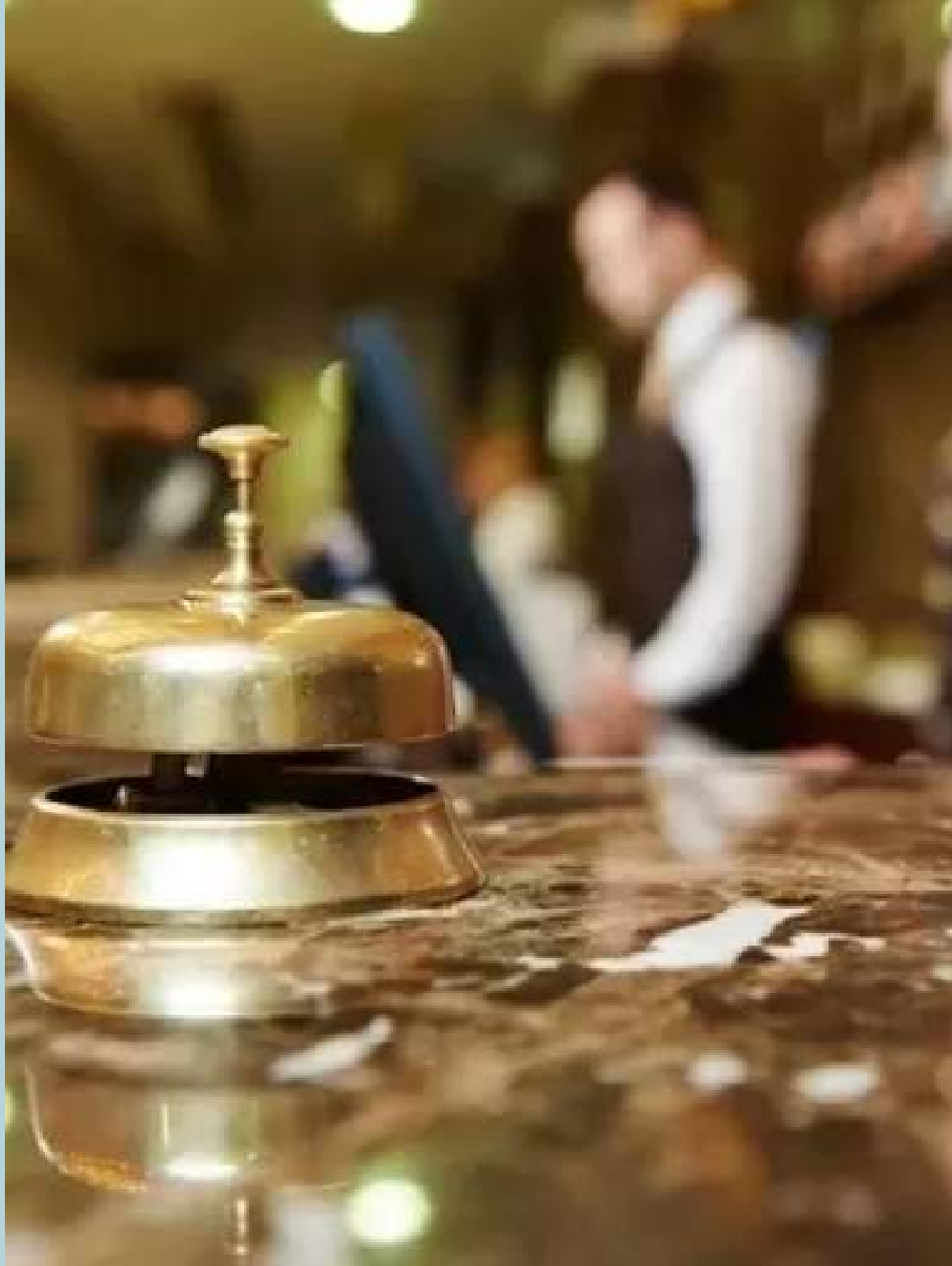
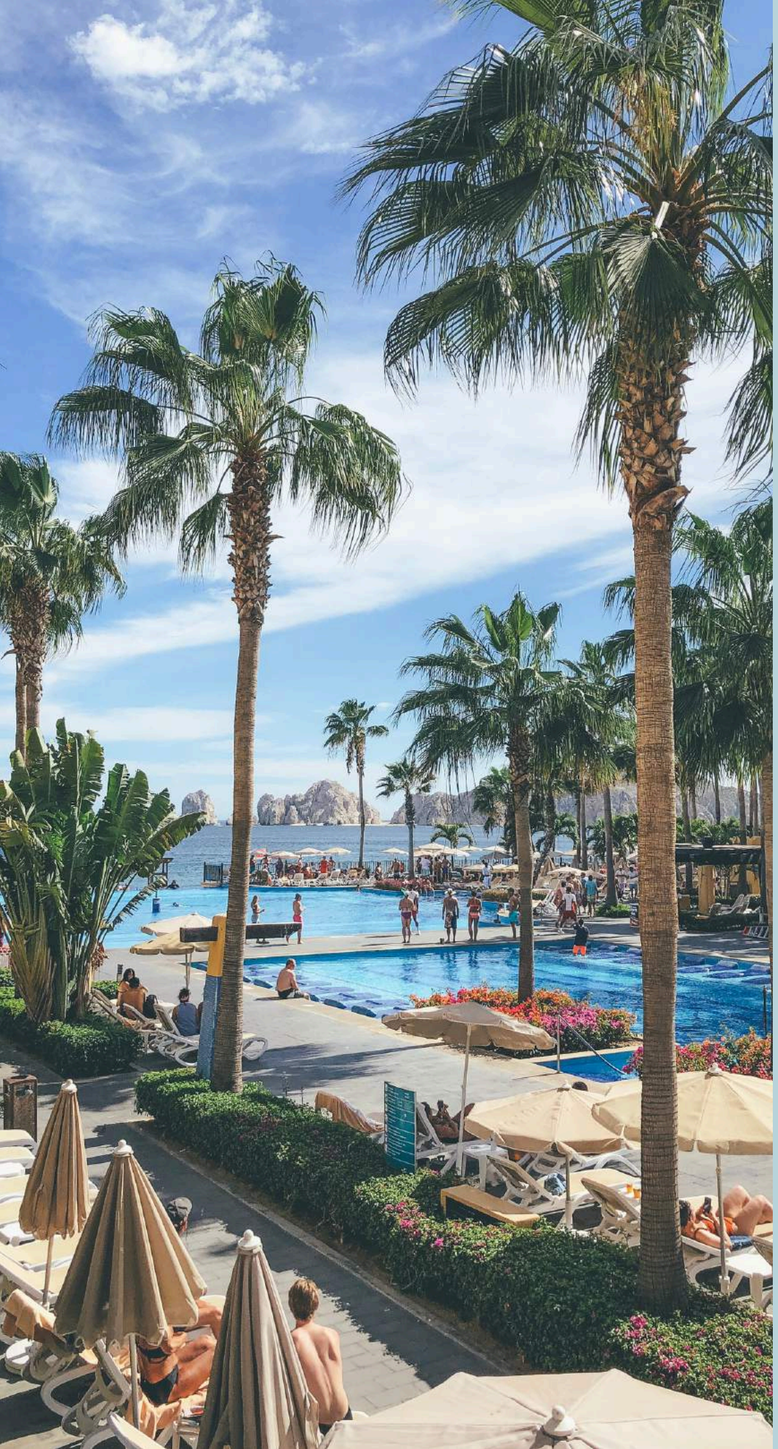
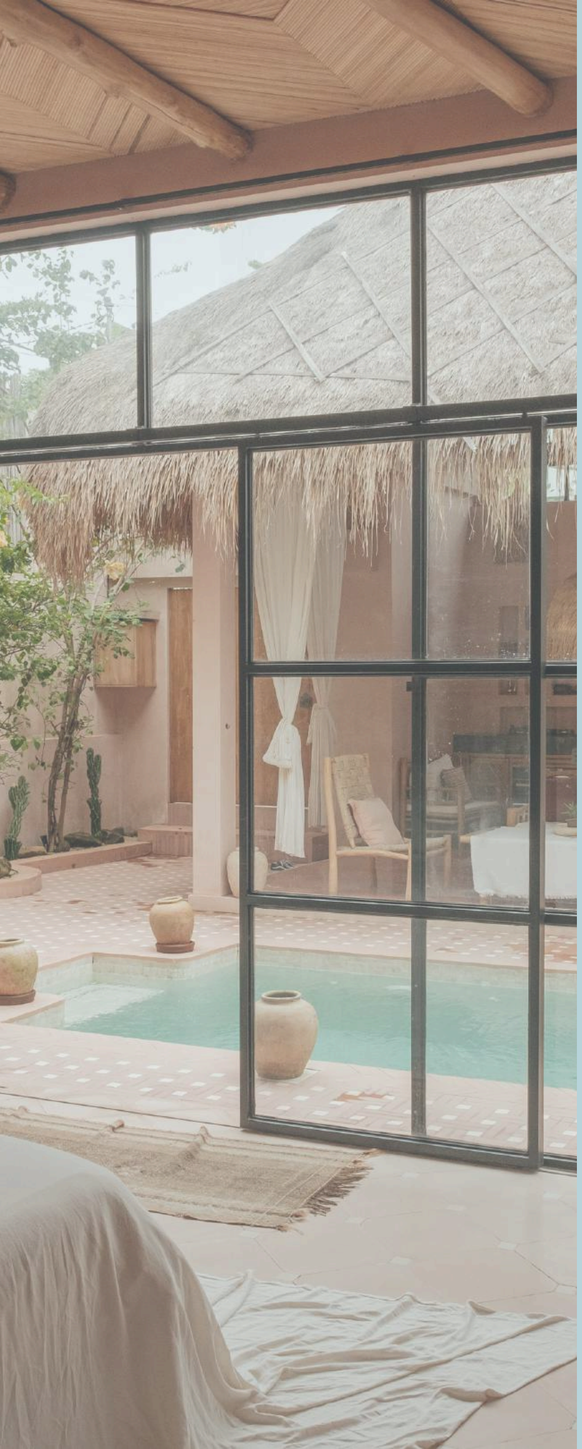




Project Overview

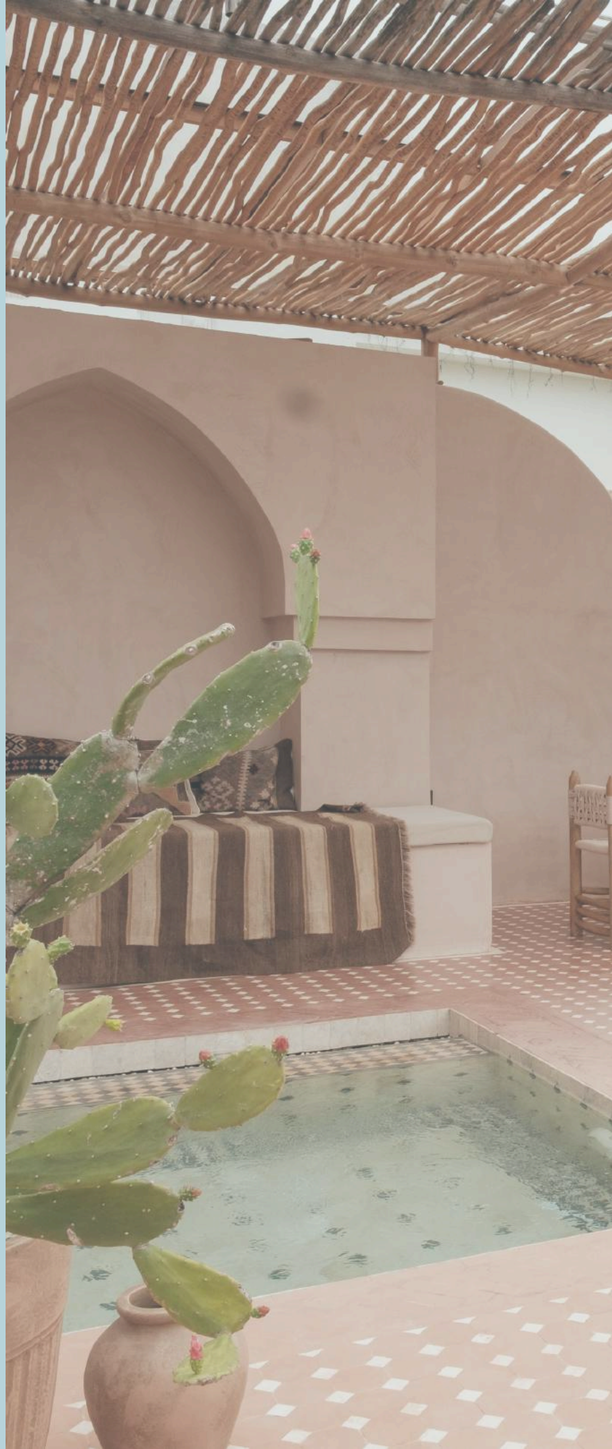
The Hotel Reservation Analysis project aims to uncover key insights into reservation trends, customer preferences, and revenue performance by analyzing historical data.

This will help optimize pricing strategies, enhance customer satisfaction, and improve operational efficiency, empowering hotel management to make informed decisions and boost competitiveness.



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.



Dataset Overview

```
SELECT * FROM hotel_reservation_dataset
```

Rows : 700
Columns : 12

booking_id	no_of_adults	no_of_children	no_of_weekend_nights	no_of_week_nights	type_of_meal_plan	room_type_reserved	lead_time	market_segment_type	avg_price_per_room	booking_status	arrival_date
INN00001	2	0	1	2	Meal Plan 1	Room_Type 1	224	Offline	65	Not_Canceled	2017-10-02
INN00002	2	0	2	3	Not Selected	Room_Type 1	5	Online	107	Not_Canceled	2018-11-06
INN00003	1	0	2	1	Meal Plan 1	Room_Type 1	1	Online	60	Canceled	2018-02-28
INN00004	2	0	0	2	Meal Plan 1	Room_Type 1	211	Online	100	Canceled	2018-05-20
INN00005	2	0	1	1	Not Selected	Room_Type 1	48	Online	95	Canceled	2018-04-11
INN00006	2	0	0	2	Meal Plan 2	Room_Type 1	346	Online	115	Canceled	2018-09-13
INN00007	2	0	1	3	Meal Plan 1	Room_Type 1	34	Online	108	Not_Canceled	2017-10-15
INN00008	2	0	1	3	Meal Plan 1	Room_Type 4	83	Online	106	Not_Canceled	2018-12-26
INN00009	3	0	0	4	Meal Plan 1	Room_Type 1	121	Offline	97	Not_Canceled	2018-07-06
INN00010	2	0	0	5	Meal Plan 1	Room_Type 4	44	Online	133	Not_Canceled	2018-10-18
INN00011	1	0	1	0	Not Selected	Room_Type 1	0	Online	85	Not_Canceled	2018-09-11

01

WHAT IS THE TOTAL NUMBER OF RESERVATIONS IN THE DATASET?

```
SELECT COUNT(*) AS total_reservations
FROM hotel_reservation_dataset
```

total_reservations
700

Number of Reservations in this dataset totals to 700

WHICH MEAL PLAN IS THE MOST POPULAR AMONG GUESTS?

02

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

type_of_meal_plan	count
Meal Plan 1	527
Not Selected	109
Meal Plan 2	64

Meal Plan 1

It is the most popular meal plan among guest which counts to 527

03

WHAT IS THE AVERAGE PRICE PER ROOM FOR RESERVATIONS INVOLVING CHILDREN?

```sql
SELECT SUM(avg_price_per_room) AS Avg_price_per_room
FROM hotel_reservation_dataset
WHERE no_of_children > 0;
```

Average price per room for reservations involving children amounts to 6942.

Avg_price_per_room
6,942

04 HOW MANY RESERVATIONS WERE MADE FOR THE YEAR 20XX ?

```sql
SELECT COUNT(*) AS total_reservations
FROM hotel_reservation_dataset
WHERE YEAR(arrival_date) = 2017
```

total_reservations
123

Total 123 reservations were made for the year 2017.

05

WHAT IS THE MOST COMMONLY BOOKED ROOM TYPE?

```sql
SELECT room_type_reserved, COUNT(*) AS count
FROM hotel_reservation_dataset
GROUP BY room_type_reserved
ORDER BY count DESC;
```

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

Room Type 1

It is the most booked room type with over 534 reservations.

06

HOW MANY RESERVATIONS FALL ON A WEEKEND ?

```sql
SELECT COUNT(*) AS No_of_Weekend_reservations
FROM hotel_reservation_dataset
WHERE no_of_weekend_nights > 0;
```

Total 383 reservations were made on weekends

No_of_Weekend_reservations
383

WHAT IS THE HIGHEST AND LOWEST LEAD TIME FOR RESERVATIONS?

07

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

MAX(lead_time)	MIN(lead_time)
443	0

Maximum lead time for reservation

Minimum lead time for reservation

08 WHAT IS THE MOST COMMON MARKET SEGMENT TYPE FOR RESERVATIONS?

```sql
SELECT market_segment_type, COUNT(*) AS No_of_Reservations
FROM hotel_reservation_dataset
GROUP BY market_segment_type
ORDER BY No_of_Reservations DESC;
```

market_segment_type	No_of_Reservations
Online	518
Offline	140
Corporate	27
Complementary	14
Aviation	1

Online

market segment type with maximum reservations totals to 518

09

HOW MANY RESERVATIONS HAVE A BOOKING STATUS OF "CONFIRMED"?

```sql
SELECT COUNT(*) AS Confirmed_reservations
FROM hotel_reservation_dataset
WHERE booking_status = 'Not_Canceled';
```

Confirmed_reservations
493

Total 493 reservations have a booking status : “CONFIRMED”

10

WHAT IS THE TOTAL NUMBER OF ADULTS AND CHILDREN ACROSS ALL RESERVATIONS?

```sql
SELECT SUM(no_of_adults) AS Total_Adults,
SUM(no_of_children) AS Total_Children
FROM hotel_reservation_dataset;
```

Total_Adults	Total_Children
1,316	69

Total ADULTS across all reservations

Total CHILDREN across all reservations

11 WHAT IS THE AVERAGE NUMBER OF WEEKEND NIGHTS FOR RESERVATIONS INVOLVING CHILDREN?

```sql
SELECT AVG(no_of_weekend_nights) AS Avg_weekend_nights
FROM hotel_reservation_dataset
WHERE no_of_children > 0;
```

Average number of weekend nights involving children totals to 1.

Avg_weekend_nights
1.0

12

HOW MANY RESERVATIONS WERE MADE IN EACH MONTH OF THE YEAR?

```
SELECT MONTH(arrival_date) AS MONTH,
COUNT(*) AS No_of_Reservations
FROM hotel_reservation_dataset
GROUP BY MONTH(arrival_date);
```

Month-wise Number of Reservations

January starts with least reservations i.e, 11
Whereas, October tops the list with 103 reservations.

MONTH	No_of_Reservations
1	11
2	28
3	52
4	67
5	55
6	84
7	44
8	70
9	80
10	103
11	54
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 AS Room_type,
ROUND(AVG(no_of_weekend_nights + no_of_week_nights),1) AS Avg_Nights
FROM hotel_reservation_dataset
GROUP BY room_type_reserved;
```

Room_type	Avg_Nights
Room_Type 1	2.9
Room_Type 2	3.0
Room_Type 4	3.8
Room_Type 5	2.5
Room_Type 6	3.6
Room_Type 7	2.7

Average Number of Nights for each Room Type

- **Least : Room Type 5**
- **Max : Room Type 4**

14 FOR RESERVATIONS INVOLVING CHILDREN, WHAT IS THE MOST COMMON ROOM TYPE, AND WHAT IS THE AVERAGE PRICE FOR THAT ROOM TYPE?

```sql
SELECT room_type_reserved, COUNT(*) AS Count,
SUM(avg_price_per_room) AS Avg_price_per_room
FROM hotel_reservation_dataset
WHERE no_of_children > 0
GROUP BY room_type_reserved
ORDER BY count DESC;
```

ROOM TYPE 1

counts maximum reservations involving children to 24 and Average Price for this Room Type 1 amounts to 2957

room_type_reserved	Count	Avg_price_per_room
Room_Type 1	24	2,957
Room_Type 6	17	3,152
Room_Type 2	5	560
Room_Type 4	1	86
Room_Type 7	1	187

15

FIND THE MARKET SEGMENT TYPE THAT GENERATES THE HIGHEST AVERAGE PRICE PER ROOM.

```sql
SELECT market_segment_type, avg_price_per_room
FROM hotel_reservation_dataset
GROUP BY market_segment_type
ORDER BY avg_price_per_room DESC;
```

market_segment_type	avg_price_per_room
Aviation	110
Online	107
Corporate	67
Offline	65
Complementary	0

AVIATION

Market segment with the highest average price per room of 110

Thank You

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