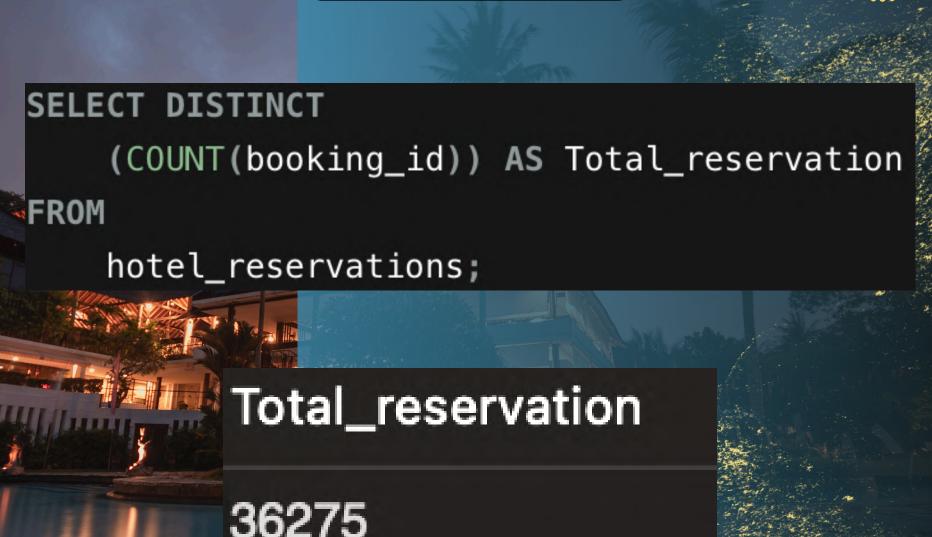# HOTEL RESERVATION ANALYSIS WITH SQL

OVERVIEW

The hotel industry relies on data to make informed decisions and provide a better guest experience. In this internship, you 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. You 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.
- **avarrival_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.

What is the total number of reservations in the dataset?

```sql
SELECT DISTINCT
    (COUNT(booking_id)) AS Total_reservation
FROM
    hotel_reservations;
```

Total_reservation
36275

Which meal plan is the most popular among guests ?

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

type_of_meal_plan	most_popular_meal_plan
Meal Plan 1	27835

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

```sql
SELECT
    ROUND(AVG(avg_price_per_room)) AS avg_price_involving_children
FROM
    hotel_reservations
WHERE
    no_of_children > 0;
```

avg_price_involving_children
141

How many reservations were made for the year 2018?

```sql
SELECT
    COUNT(Booking_id) AS 'reservations of 2018'
FROM
    hotel_reservations
WHERE
    arrival_year = 2018;
```

reservations of 2018
29761

What is the most commonly booked room type?

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

room_type_reserved	most_commonly_booked_room
Room_Type 1	28130

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

```sql
SELECT
    COUNT(no_of_weekend_nights) AS 'total reservations on a weekend'
FROM
    hotel_reservations
WHERE
    no_of_weekend_nights > 0;
```

total reservations on a weekend
19403

What is the highest and lowest lead time for reservations?

```sql
SELECT
    MAX(lead_time) AS 'Highest lead time',
    MIN(lead_time) AS 'Lowest lead time'
FROM
    hotel_reservations;
```

Highest lead time	Lowest lead time
443	0

What is the most common market segment type for reservations?

```sql
SELECT
    market_segment_type,
    COUNT(market_segment_type) AS 'common market segment type'
FROM
    hotel_reservations
GROUP BY market_segment_type
ORDER BY 'common market segment type' DESC
LIMIT 1;
```

market_segment_type	common market segment type
Offline	10528

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

```sql
SELECT
    COUNT(booking_status) AS booking_confirmed
FROM
    hotel_reservations
WHERE
    booking_status = 'Not_Canceled';
```

booking_confirmed
24390

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

```sql
SELECT
    SUM(no_of_adults) + SUM(no_of_children) AS Total_count
FROM
    hotel_reservations;
```

Total_count
70745

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

```sql
SELECT
    AVG(no_of_weekend_nights) AS 'average weekend night involving children'
FROM
    hotel_reservations
WHERE
    no_of_children > 0;
```

average weekend night involving children
0.9125

How many reservations were made in each month of the year 2018?

```sql
SELECT
    arrival_month,
    COUNT(booking_id) AS 'No of reservations'
FROM
    hotel_reservations
WHERE
    arrival_year = 2018
GROUP BY
    arrival_month
ORDER BY
    arrival_month;
```

arrival_month	No of reservations
1	1014
2	1704
3	2358
4	2736
5	2598
6	3203
7	2557
8	2799
9	2962
10	3404
11	2333
12	2093

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

```sql
SELECT
    room_type_reserved AS room_type,
    ROUND(AVG(no_of_weekend_nights + no_of_week_nights)) AS avg_nights_spent_by_guests
FROM
    hotel_reservations
GROUP BY room_type_reserved;
```

room_type	avg_nights_spent_by_guests
Room_Type 1	3
Room_Type 4	3
Room_Type 2	3
Room_Type 6	3
Room_Type 5	3
Room_Type 7	3
Room_Type 3	3

THANK YOU!