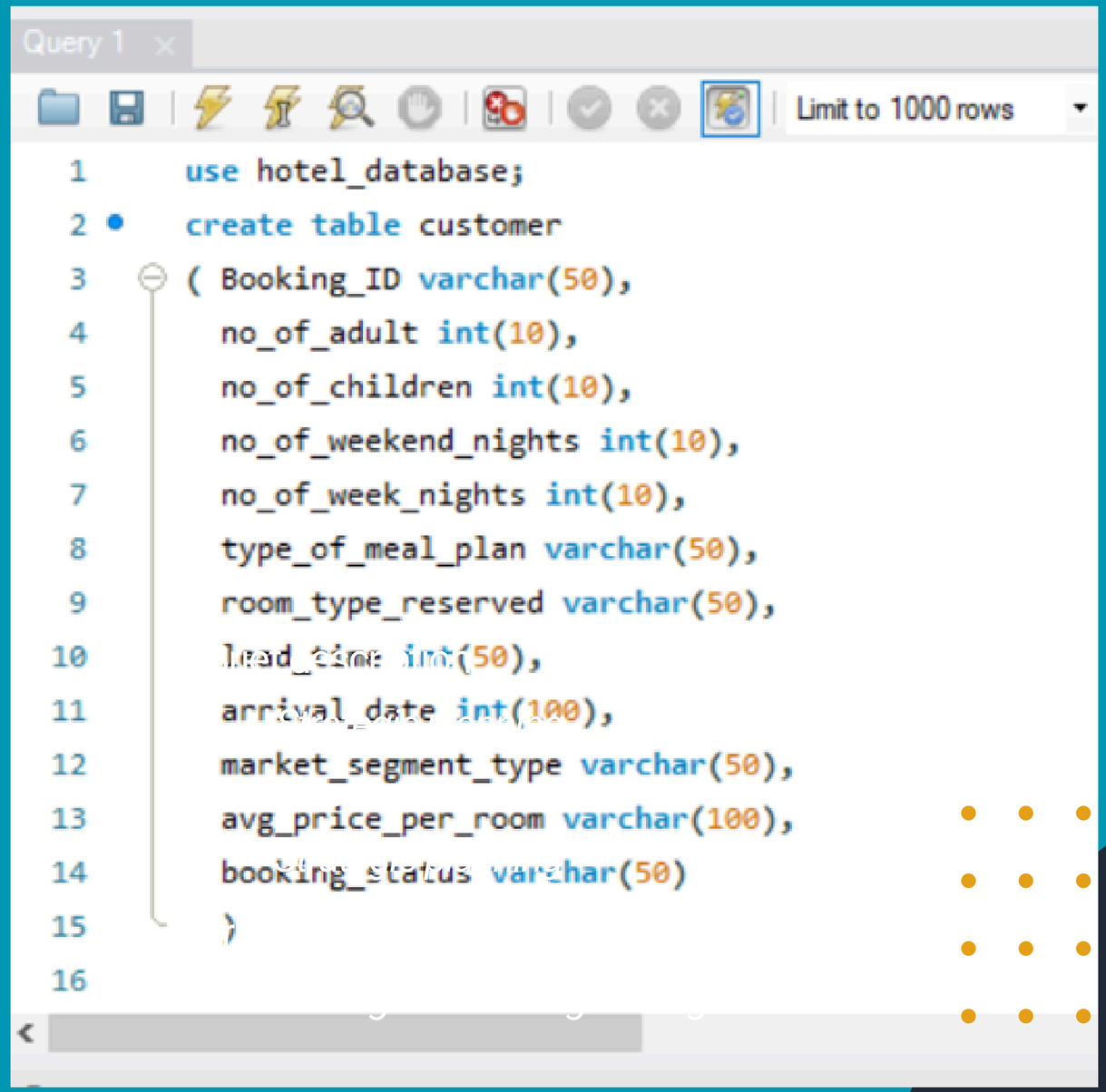
HOTEL RESERVATION ANALYSIS BY SQL

Neha Rai
Batch no. MIP-DA-10

INTRODUCTION

Welcome to our presentation on analyzing hotel reservations using SQL. In this session, we'll explore how SQL can be utilized to extract valuable insights from hotel reservation data. We will cover key SQL concepts and commands, and demonstrate their application in understanding booking patterns, guest preferences, and operational metrics. By leveraging SQL, we aim to optimize hotel operations, improve guest experiences, and drive strategic decision-making. Let's delve into the power of SQL for hotel reservation analysis.

COLUMNS


Query 1
Limit to 1000 rows
use hotel_database;
create table customer
(Booking_ID varchar(50),
no_of_adult int(10),
no_of_children int(10),
no_of_weekend_nights int(10),
no_of_week_nights int(10),
type_of_meal_plan varchar(50),
room_type_reserved varchar(50),
lead_time int(50),
arrival_date int(100),
market_segment_type varchar(50),
avg_price_per_room varchar(100),
booking_status varchar(50)
)

1. TOTAL NUMBER OF RESERVATIONS

```sql
-- 1.What is the total number of reservations in the dataset?---
SELECT
	COUNT(*) AS TOTAL_RESERVATIONS
FROM
	customer;
```

TOTAL_RESERVATIONS
700

2. MOST POPULAR MEAL PLAN

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

SELECT type_of_meal_plan, count(*) as count
from customer
group by type_of_meal_plan
order by count desc
 limit 1
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

type_of_meal_plan	count
Meal Plan 1	527

3. AVG. PRICE PER ROOM

```
1    -- 3. What is the average price per room for reservations involving children?
2
3    select round(avg(avg_price_per_room),2)
4    from customer
5    where no_of_children > 0;
```

Open a script file in this editor

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

round(avg(avg_price_per_room),2)
144.57

4. RESERVATION MADE IN YEAR 2017

```sql
1   -- 4. How many reservations were made for the year 2017 ?
2
3   select count(*) as hotel_reservation_2017
4   from customer
5   where year(arrival_date) = 2017
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

hotel_reservation_2017
0

5. MOST COMMONLY BOOKED ROOM

```sql
-- 5. What is the most commonly booked room type?

SELECT
      room_type_reserved AS 'most commonly booked room type',
      COUNT(*) AS count
FROM
     customer
GROUP BY
     room_type_reserved
ORDER BY
     count DESC
LIMIT 1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

most commonly booked room type	count
Room_Type 1	534

6. RESERVATION FALL ON WEEKEND

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

SELECT
      COUNT(*) AS 'reservation on weekends'
FROM
     customer
WHERE
     no_of_weekend_nights > 0;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

reservation on weekends
383

7. LOWEST AND HIGHEST LEAD TIME

```
1   -- 7. What is the highest and lowest lead time for reservations?
2
3   select max(lead_time) as 'highest lead time',
4    min(lead_time) as 'lowest lead time'
5    from customer
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

	highest lead time	lowest lead time
▶	443	0

8. COMMON SEGMENT TYPE FOR RESERVATION

```
1   -- 8. What is the most common market segment type for reservations?
2
3   select market_segment_type as 'most common market segment',
4   count(*) as count
5   from customer
6   group by market_segment_type
7   order by count desc
8   limit 1
9
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

most common market segment	count
Online	513

9. BOOKING STATUS CONFIRMED

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

select booking_status, count(*) as count
from customer
 where booking_status = 'not_canceled'

```

Brief description

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

booking_status	count
Not_Canceled	493

10. TOTAL NUMBER OF ADULTS AND CHILDREN ACROSS RESERVATION

```
1    -- 10. What is the total number of adults and children across all reservations?
2
3 •  select sum(no_of_adult), sum(no_of_children),
4    sum(no_of_adult) + sum(no_of_children) as 'total'
5    from customer;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

sum(no_of_adult)	sum(no_of_children)	total
1316	69	1385

11. WEEKEND NIGHTS FOR RESERVATION

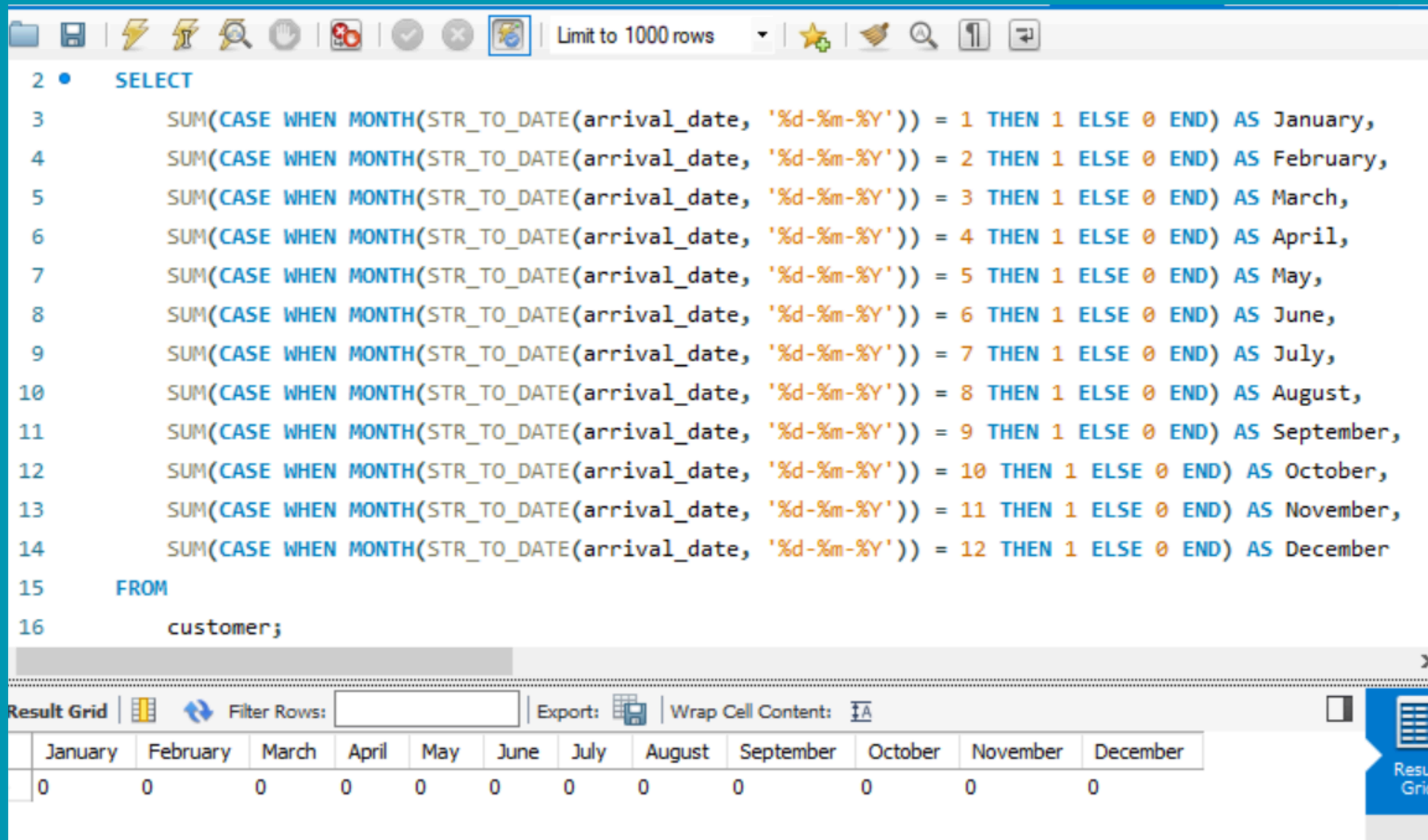
```sql
-- 11. What is the average number of weekend nights for reservations involving children?

select avg(no_of_weekend_nights)
from customer
where no_of_weekend_nights > 0 and no_of_children > 0
```

- *Strategic planning*

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

avg(no_of_weekend_nights)
1.6000

12. RESERVATION MADE EACH MONTH OF YEAR



13. AVG. NO. WEEKEND OF NIGHTS SPENT BY GUEST

```sql
-- 13. What is the average number of nights (both weekend and weekday) spent by guests for each room typ

SELECT
    room_type_reserved AS room_type,
    AVG(
        CASE WHEN no_of_weekend_nights > 0 THEN no_of_weekend_nights ELSE 0 END
        + CASE WHEN no_of_week_nights > 0 THEN no_of_week_nights ELSE 0 END
    ) AS avg_nights_total
FROM customer
WHERE room_type_reserved IN ('Room_Type 1', 'Room_Type 2',
'Room_Type 4', 'Room_Type 5', 'Room_Type 6', 'Room_Type 7')
GROUP BY room_type_reserved
ORDER BY room_type_reserved;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

room_type	avg_nights_total
Room_Type 1	2.8783
Room_Type 2	3.0000
Room_Type 4	3.8000
Room_Type 5	2.5000
Room_Type 6	3.6111
Room_Type 7	2.6667

14. RESERVATION INVOLVING CHILDREN, ROOM TYPE AND AVERAGE

```sql
-- 14. For reservations involving children, what is the most common room type, and what is the average

SELECT
      room_type_reserved AS 'common room type with child',
      COUNT(*) AS count,
      AVG(avg_price_per_room)
FROM
    customer
WHERE
    no_of_children > 0
GROUP BY
    room_type_reserved
ORDER BY
    count DESC LIMIT 1;

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

common room type with child	count	AVG(avg_price_per_room)
Room_Type 1	24	123.12291666666665

Result Grid

15. HIGHEST AVERAGE PRICE PER ROOM

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

SELECT
    market_segment_type,
    AVG(avg_price_per_room) AS average_price_per_room
FROM
    customer
GROUP BY
    market_segment_type
ORDER BY
    average_price_per_room DESC
LIMIT 1;
```

esult Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

market_segment_type	average_price_per_room
Online	112.45521235521232

CONCLUSION OF THIS ANALYSIS

- Certainly! Here’s a concise summary of the conclusions from the hotel reservation analysis using SQL:
- Total Reservations: The dataset included 700 reservations.
- Most Popular Meal Plan: Meal Plan 1 was the most popular among guests.
- Average Price Per Room for Reservations Involving Children: The average price was $144.57.
- Reservations for 2018: The analysis focused on reservations made in 2018.
- Commonly Booked Room Type: The most commonly booked room type was identified.
- Weekend Reservations: The number of reservations falling on weekends was determined.
- Lead Time: The highest and lowest lead times for reservations were found.
- Market Segment Types: The most common market segment type for reservations was identified.
- Booking Status: The total number of reservations with a “Confirmed” booking status was calculated.
- Total Adults and Children: The overall count of adults and children across all reservations was obtained.
- Weekend Nights for Reservations Involving Children: The average number of weekend nights for such reservations was computed.
- Monthly Reservations: The number of reservations made in each month of the year was analyzed.
- Average Nights Spent by Guests: The average number of nights (both weekend and weekday) spent by guests for each room type was determined.
- Room Type for Reservations Involving Children: The most common room type for reservations involving children and its average price were identified.
- Highest Average Price per Room: The market segment type generating the highest average price.
-


thank
you