# GOAL

Develop a Database to Analyze and Visualize Hotel Booking Data

# REQUIREMENT

## Build a visual story or a dashboard to present to your stakeholders

**Is our hotel revenue growing by year?**

We have 2 different hotel segments. It would be good to see segment wise revenue breakdown

**Should we increase parking lot size?**

We want to understand if there is a trend in guests with their own cars

**What trends can we see in the data?**

Focus on average daily rates and guests to see seasonality

# Data Analysis Project Pipeline

**1** **2** **3** **4** **5**

**Build a Database** **Develop the SQL Query** **Connect the data to Tableau** **Visualize** **Summarize findings**

# SQL Query

**After building the database in SQL Server, we query the data for our use.**

**Code Snippets:**

**-- Stacking the total data of 3 years by Union and making a CTE**

```
WITH HotelData AS
(
SELECT * FROM PortfolioProject..data2018
union
SELECT * FROM PortfolioProject..data2019
union
SELECT * FROM PortfolioProject..data2020
)

SELECT * FROM HotelData
```

**-- Calculating Total revenue per year and segmenting by hotel type**

```
SELECT
    arrival_date_year,
    hotel,
    SUM(stays_in_weekend_nights+stays_in_week_nights) as Total_Nights,
    ROUND(SUM((stays_in_weekend_nights+stays_in_week_nights)*adr),0) as Revenue
FROM HotelData
WHERE is_canceled = 0
GROUP BY arrival_date_year, hotel;
```

# SQL Query

**Code Snippets:**

**-- Joing MarketSegment and Meals table, calculating reveneue taking discount into consideration**

```
WITH
HotelData AS
(
SELECT * FROM PortfolioProject..data2018
union
SELECT * FROM PortfolioProject..data2019
union
SELECT * FROM PortfolioProject..data2020
)

SELECT
    *,
    (a.stays_in_weekend_nights + a.stays_in_week_nights) as Total_Nights,
    ((a.stays_in_weekend_nights + a.stays_in_week_nights) * a.adr * (1.0 - b.Discount)) as Revenue
FROM HotelData a
    join
    PortfolioProject..market_segment b
    ON a.market_segment = b.market_segment
    join
    PortfolioProject..meal_cost c
    ON a.meal = c.meal
    WHERE a.is_canceled = 0;
```

# SQL Query

**Code Snippets:**

**-- Total Revenue, Total Nights, Avg. ADR, Avg. Discount**

```
WITH
HotelData AS
(
SELECT * FROM PortfolioProject..data2018
union
SELECT * FROM PortfolioProject..data2019
union
SELECT * FROM PortfolioProject..data2020
)

SELECT
    SUM (((a.stays_in_weekend_nights + a.stays_in_week_nights) * a.adr * (1.0 - b.Discount))) as Total_Revenue,
    SUM ((a.stays_in_weekend_nights + a.stays_in_week_nights)) as Total_Nights,
    AVG (a.adr) as Avg_adr,
    AVG (b.Discount) as Avg_Discount
FROM HotelData a
    join
    PortfolioProject..market_segment b
    ON a.market_segment = b.market_segment
    WHERE a.is_canceled = 0;
```

*Now we connect this data to Tableau and build our dashboard.*

# Hotel Booking Data Analysis

**Country**
(All) ▼

| Revenue | Avg. Adr | Total Nights | Avg. Discount | Reqd. Car Spaces |
|---|---|---|---|---|
| **$19.98M** | **100.4** | **260K** | **25.33%** | **11.75%** |

## Revenue vs Time

**Hotel**
- ■ City Hotel
- ■ Resort Hotel



Revenue (y-axis): 1000K, 500K, 0K

Month of Reservation Status Date (x-axis): June 2018, September 2018, December 2018, March 2019, June 2019, September 2019, December 2019, March 2020, June 2020, September 2020
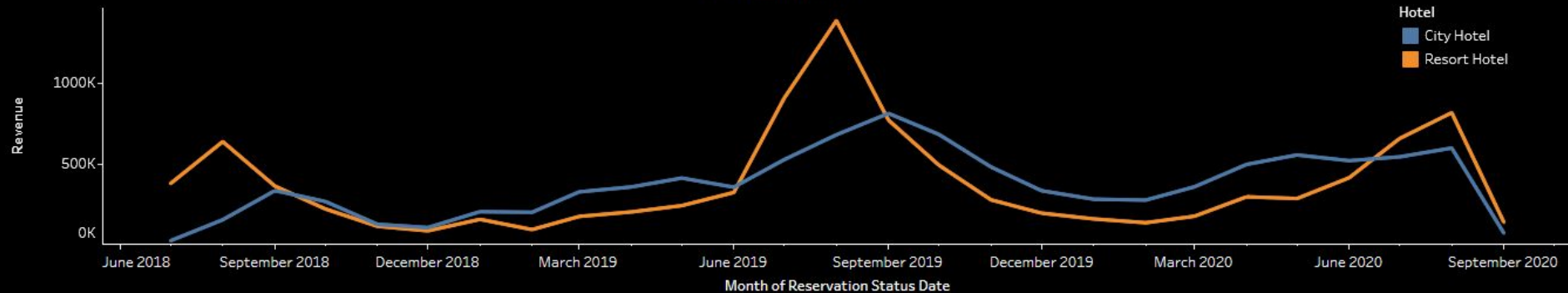
## Summary

| Year of Reservation Status Date | Hotel | Revenue | Reqd. Car Parking Spaces |
|---|---|---|---|
| 2018 | City Hotel | 981,087 | 3.73% |
| | Resort Hotel | 1,773,813 | 20.48% |
| 2019 | City Hotel | 5,333,117 | 5.74% |
| | Resort Hotel | 5,181,003 | 21.38% |
| 2020 | City Hotel | 3,668,327 | 3.95% |
| | Resort Hotel | 3,043,215 | 20.32% |

## Hotel wise Revenue



9,982,531 City Hotel

9,998,031 Resort Hotel

19,980,562

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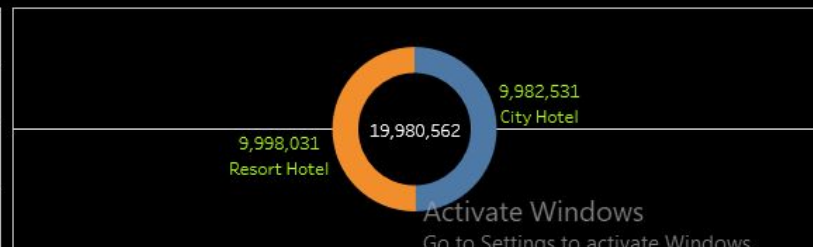
# Summary and Findings

1. Hotel Revenue is growing at steady pace both in resorts and city hotels. Though the rate of growth has decreased i.e. Growth from 2018 to 2019 was very steep as compared to the growth from 2019 to 2020.

2. Both resort hotels and city hotels contribute equally in terms of total overall revenue.

3. There is no such increase in demand for car parking spaces. The percentage of required car parking spaces is almost constant. Though we can see, the demand is high in resort hotels than city hotels owing to the fact that people drive their own cars to the resorts far from the main city.

4. There is a peak seasonality of bookings in June - October where bookings is very high constantly in the 3 years. The Adr also increases during this time owing to the high demand as expected.

5. The discount rates are quite constant throughout the year around 25%

Visit here to see the dashboard in full :
https://public.tableau.com/views/HotelBookingAnalysisDashboard/Dashboard1?:language=en-US&:display_count=n&:origin=viz_share_link

Visit here for dataset and all codes:
https://github.com/Analyst-Shuvamoy/Hotel_Booking_Project