

Capstone Project -1

Hotel Booking Analysis

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- Problem Statement
- Analysis of problems
- Challenges
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Data Summary

Dataset – Hotel Booking Analysis

After data cleaning we have 86913 rows and 29 columns

We are dealing with following columns -

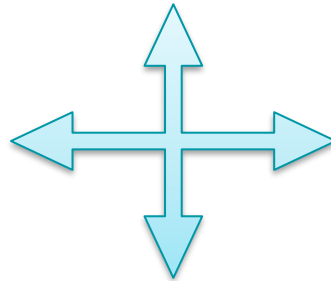
'hotel', 'is_canceled', 'lead_time', 'arrival_date_year', 'arrival_date_month',
'arrival_date_week_number', 'arrival_date_day_of_month', 'stays_in_weekend_nights',
'stays_in_week_nights', 'adults', 'meal', 'country', 'market_segment', 'distribution_channel',
'is_repeated_guest', 'previous_cancellations', 'previous_bookings_not_canceled',
'reserved_room_type', 'assigned_room_type', 'booking_changes', 'deposit_type',
'days_in_waiting_list', 'customer_type', 'adr', 'required_car_parking_spaces',
'total_of_special_requests', 'reservation_status', 'reservation_status_date', 'childs'

Business Perspective

- Hotel data analytics refers to qualitative and quantitative processes and techniques used to enhance productivity, marketing strategies, occupancy rates, and yield.
- It enables hotels to personalize experiences for their guests, introduce better hotel pricing strategies, and expand their customer base.
- It makes positive industry because –

**Customer Data Analytics & market
segmentation**

**real-time data & hotel
strategies**



**Managing hotel Booking
channels**

**Many more ways
to scale up**

Problem Statement

- How many total bookings were made by both the resort and city hotels ?
- Analysis based on year wise bookings takes place
- Which are the categories of room booked by customer ?
- Through which market segment the customer have to wait more for confirming their booking ?
- Which were cancelled and non-cancelled bookings made by the customers ?
- Impact of lead time on cancellation
- Cancellation percentage by year
- Which month have highest number of cancellation ?
- Effect of deposit on non-cancellation

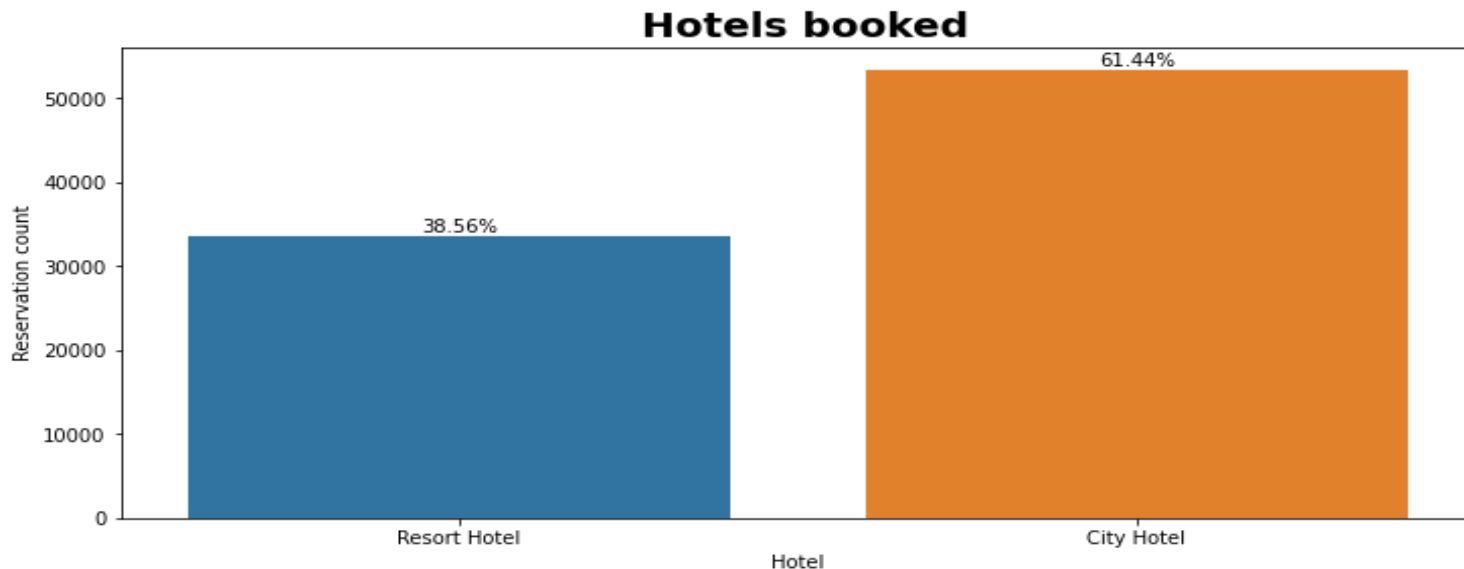
Problem Statement

- How much does guest pay for a room per night ?
- Which are the most busy month ?
- Which meals were more preferable to the customer ?
- How long does guest stay at hotel on weekends and weekdays ?
- How many adults and child guests arrived per month in each hotels?
- Booking and cancellation per market segment ?
- Lets see how ADR(average daily rate) change over year, so that we can understand hotel industry is growing by renting their room.
- Which is the most preferred business segment ?

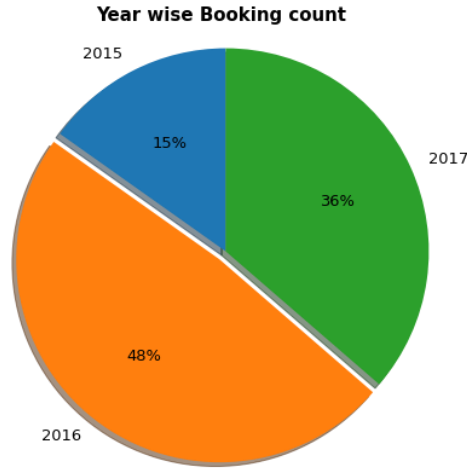
Analysis of Problems

Analysis based on Bookings

How many total bookings were made by both the resort and city hotels ?

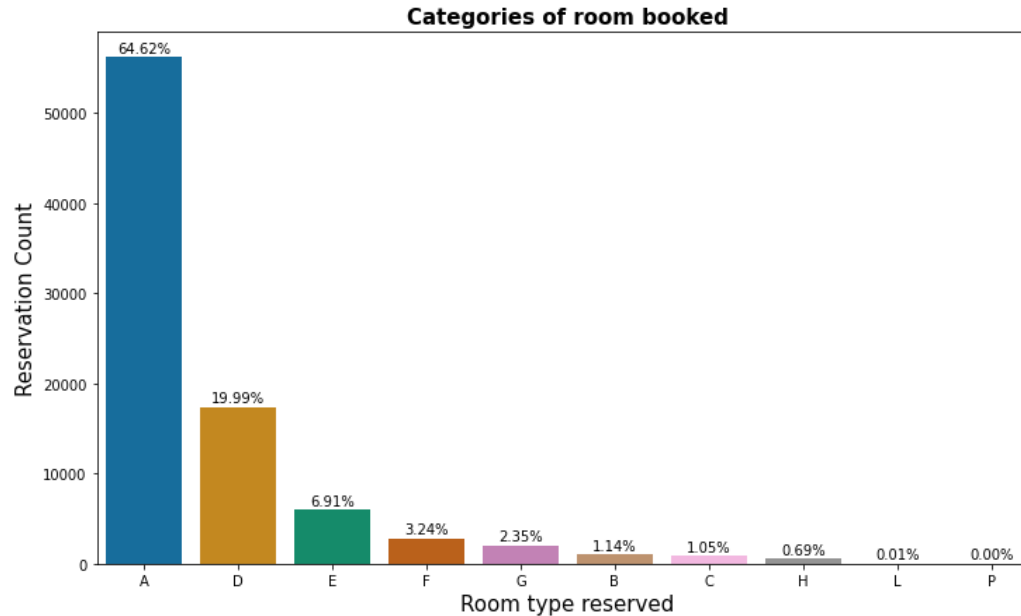


Analysis based on year wise booking takes place



By looking to pie chart we have year wise booking with most booking in the year 2016 with 48%, followed by 2017 with 36% and 2015 with 15%.

Which are the categories of a room booked by the customer ?



- The most preferable reserved room type is category A with 64.62%, followed by room type category D with 19.99% and E with 6.91%.

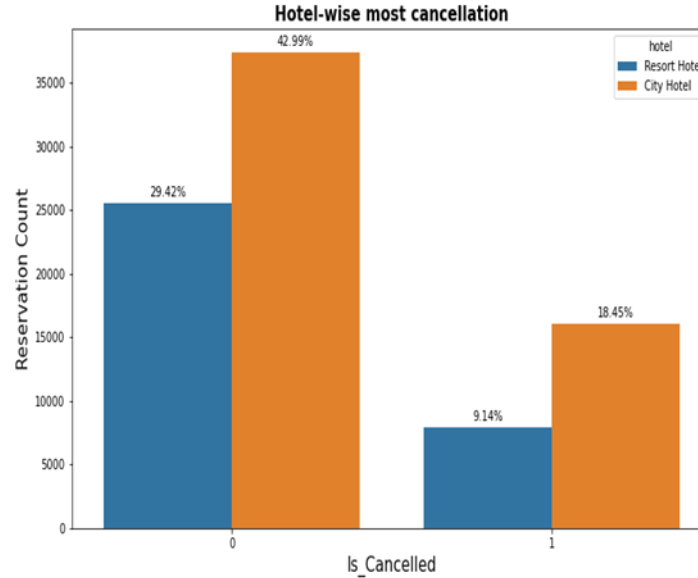
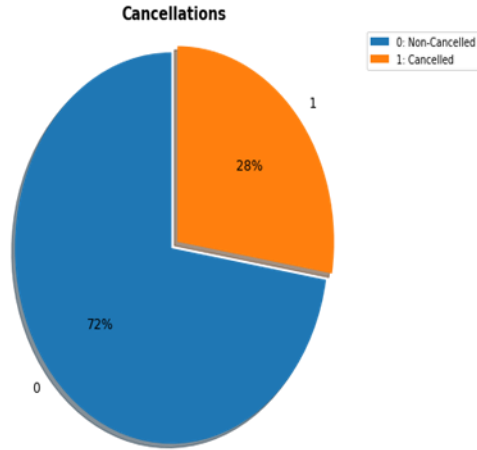
Through which market segment customer have to wait to confirm their bookings ?



- Based on Market Segment we observed that waiting days for Groups are the highest and least for Aviation.

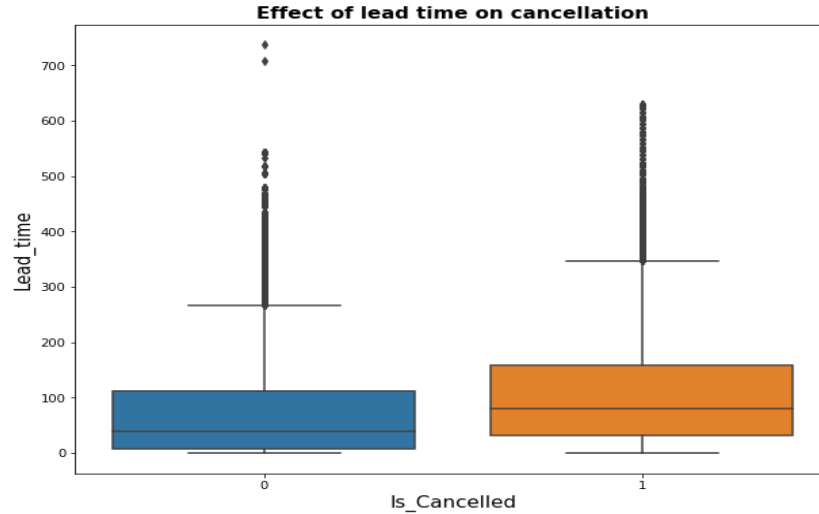
Analysis based on Cancellations

Which were cancelled and non-cancelled bookings made by the customer ?



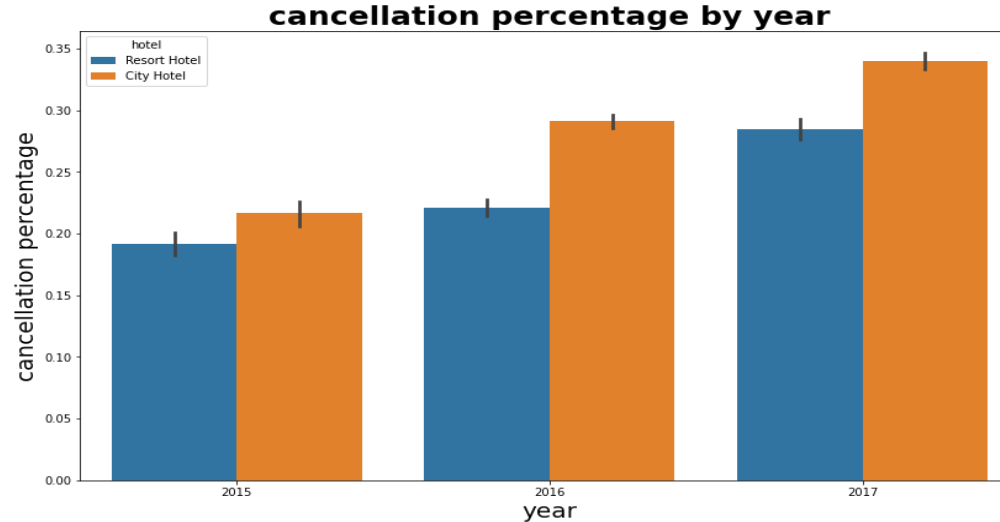
- City Hotel is preferable most with 42.99% but we can see most cancellation are also from city hotel is 18.45%. As in Resort type we have non-cancellation with 29.42 % and cancellation with 9.14%.

Impact of lead time on cancellation



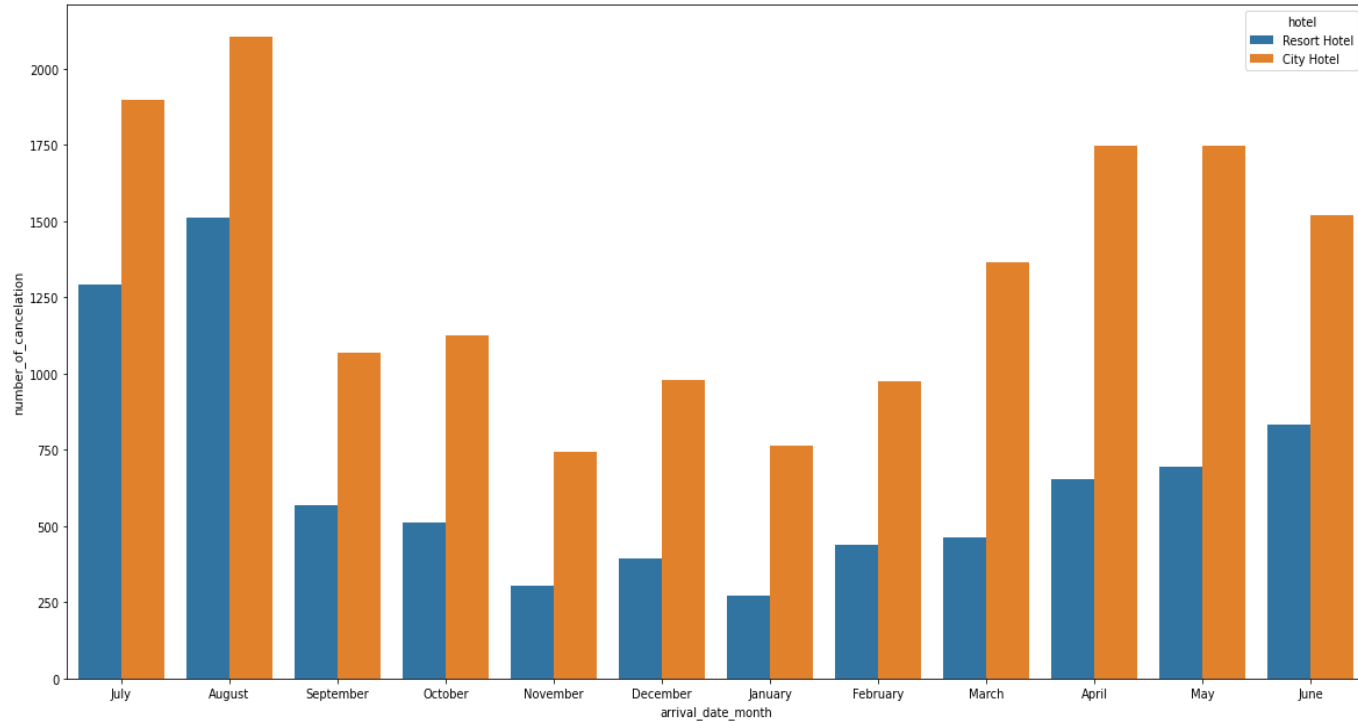
- For non-cancellation the plot varies between 0 (minimum) to 280 (maximum) and Q1 And Q3 for that is 1 - 110. Also, median is 30. The cancellation is
- 30 – 175, median is 80.

Cancellation percentage by year

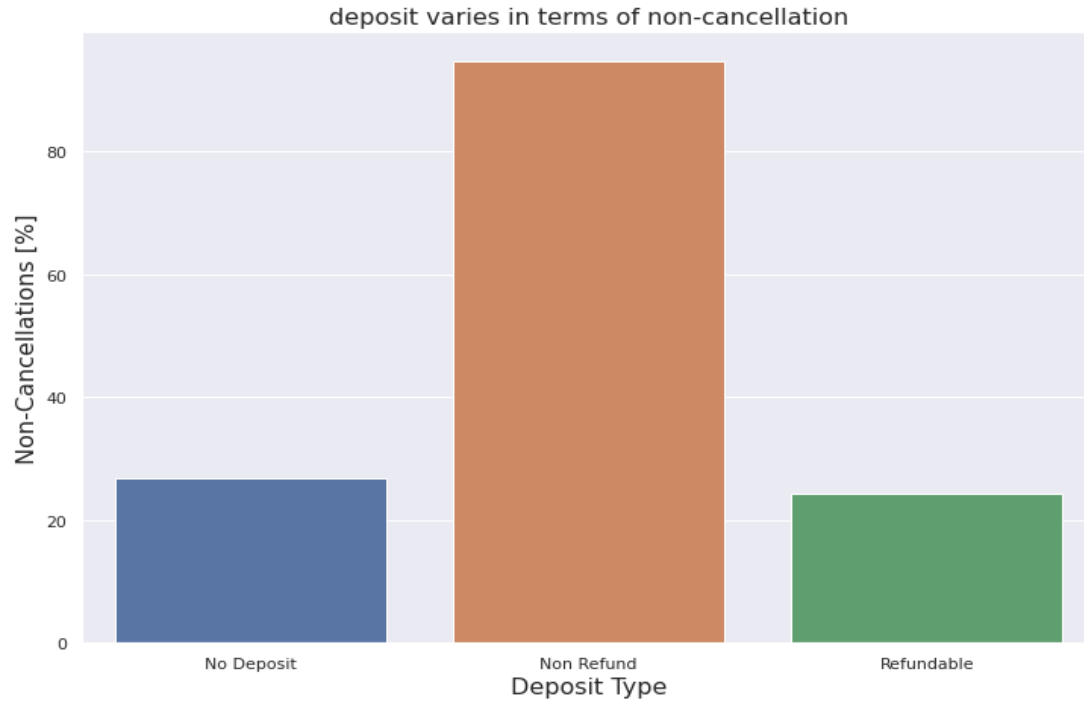


In 2017 there are most no. of cancellations of both resort and city hotel, followed by the year 2016, and lastly the year 2015 with the least no. of cancellations among the 3 years.

Which month have highest number of cancellations ?

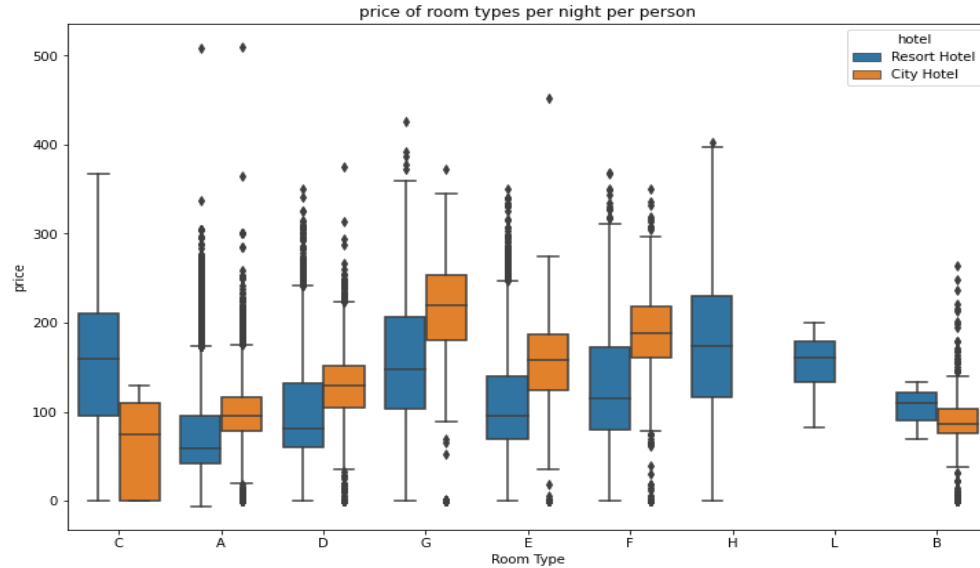


How deposit varies in terms of non-cancellations



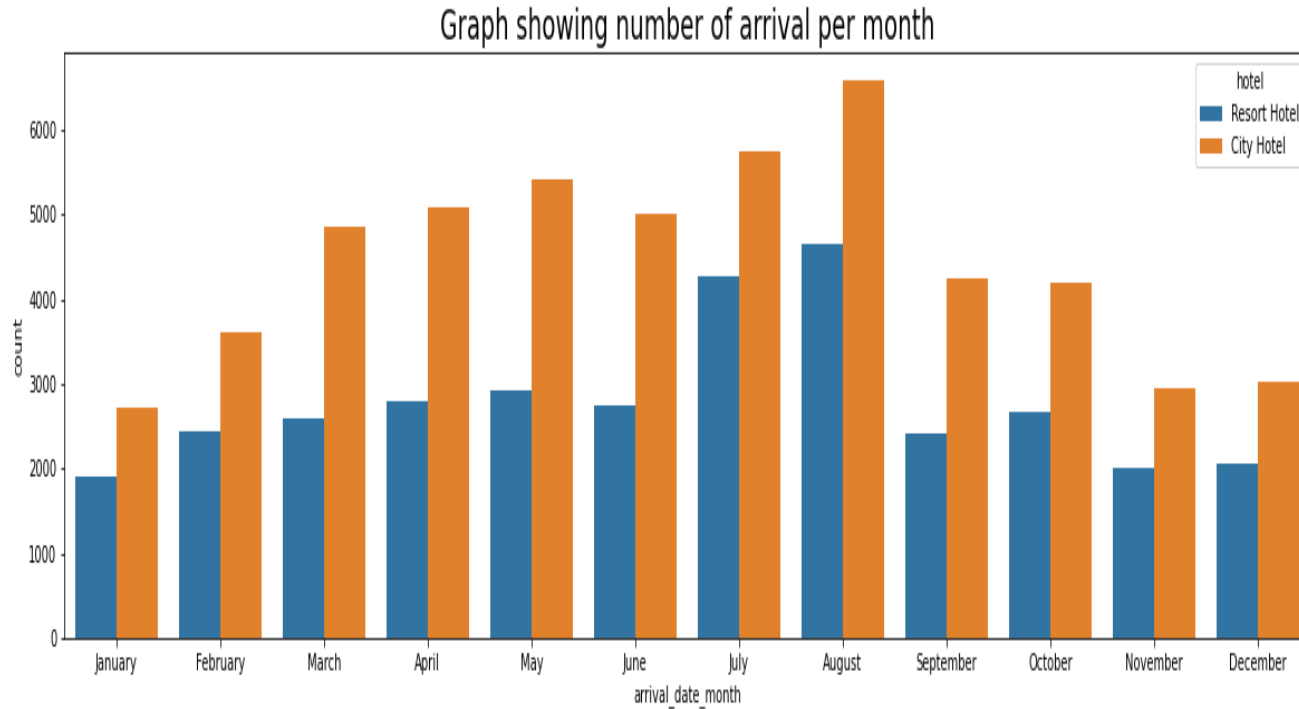
General Analysis

How much does guest pay for a room per night ?

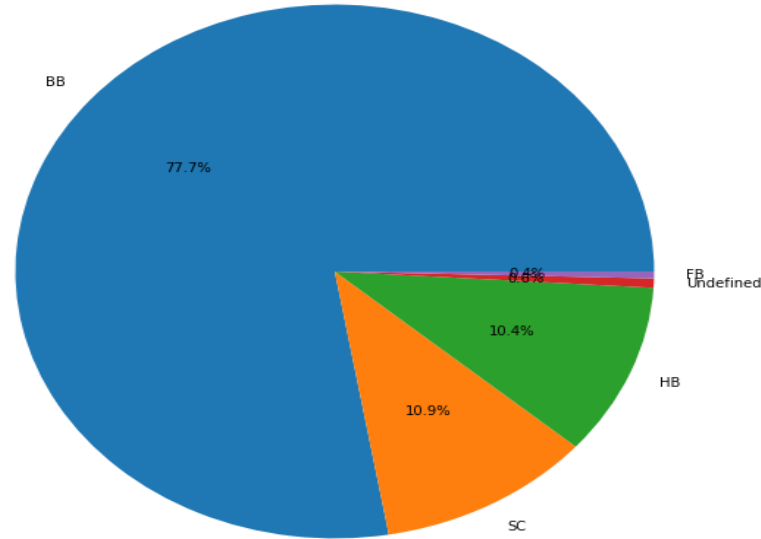


- We can see in the above figure that with respect to "A" category room it has highest price approx as outlier whereas with respect to 'G' category room of city hotel are much costlier than other.

Which are the most busy months ?

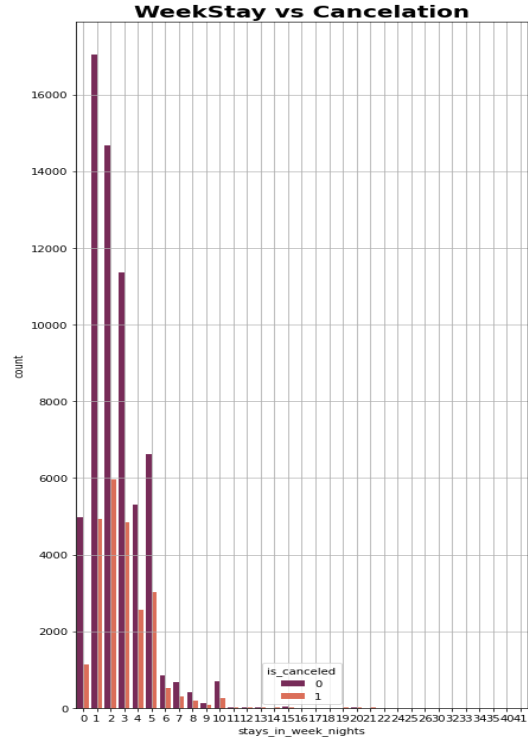
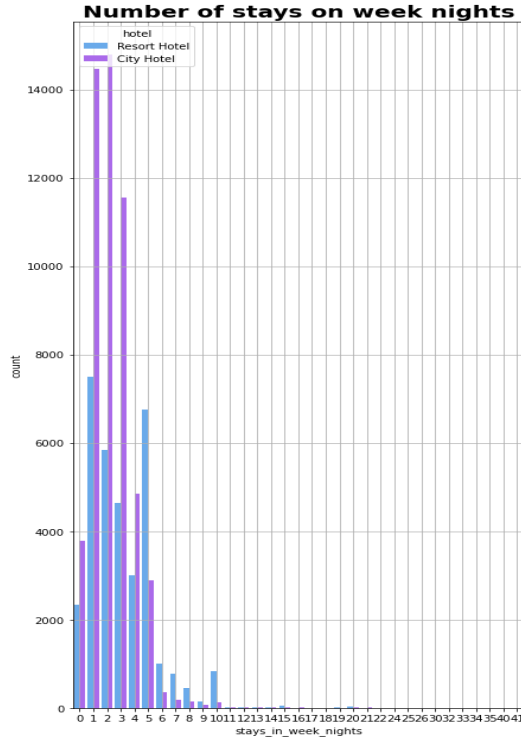


Which meals were more preferable to the customer ?

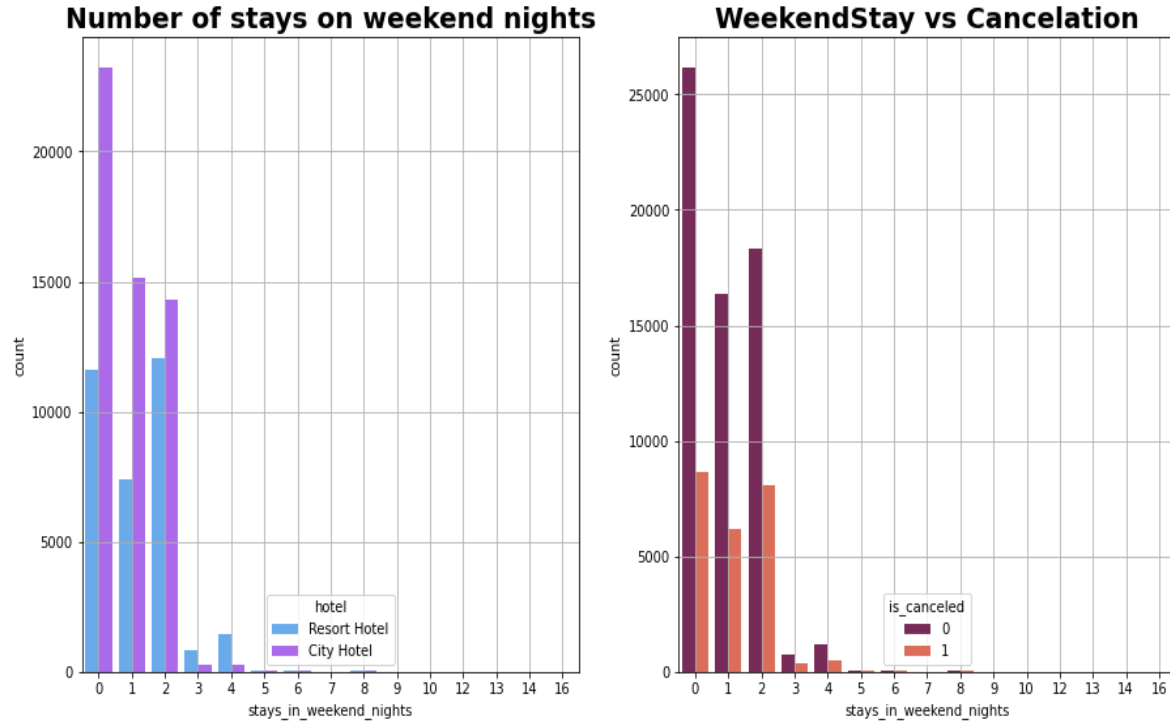


BB is most i.e Bed and Breakfast

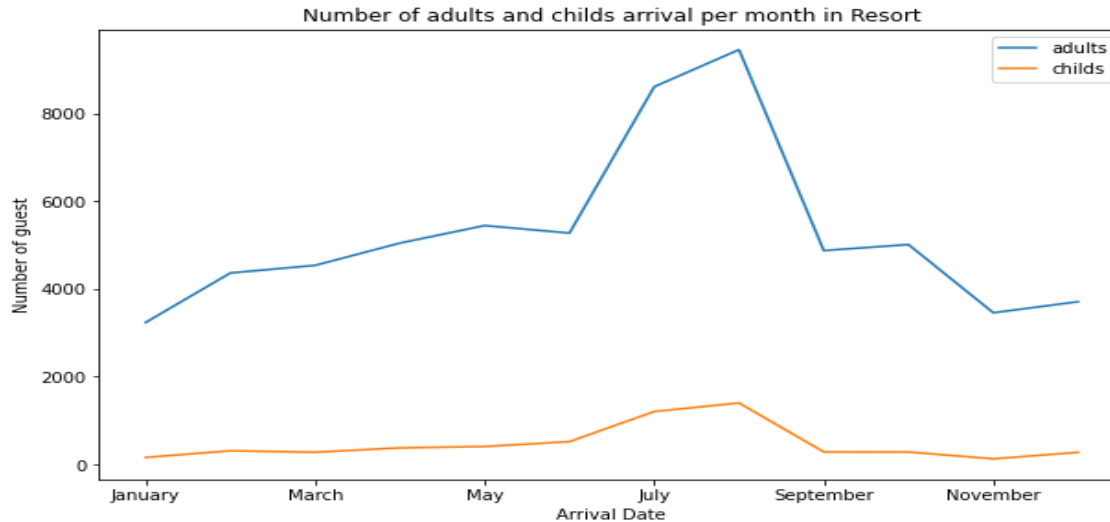
How long does guest stay at hotel on weekends and weekdays ?



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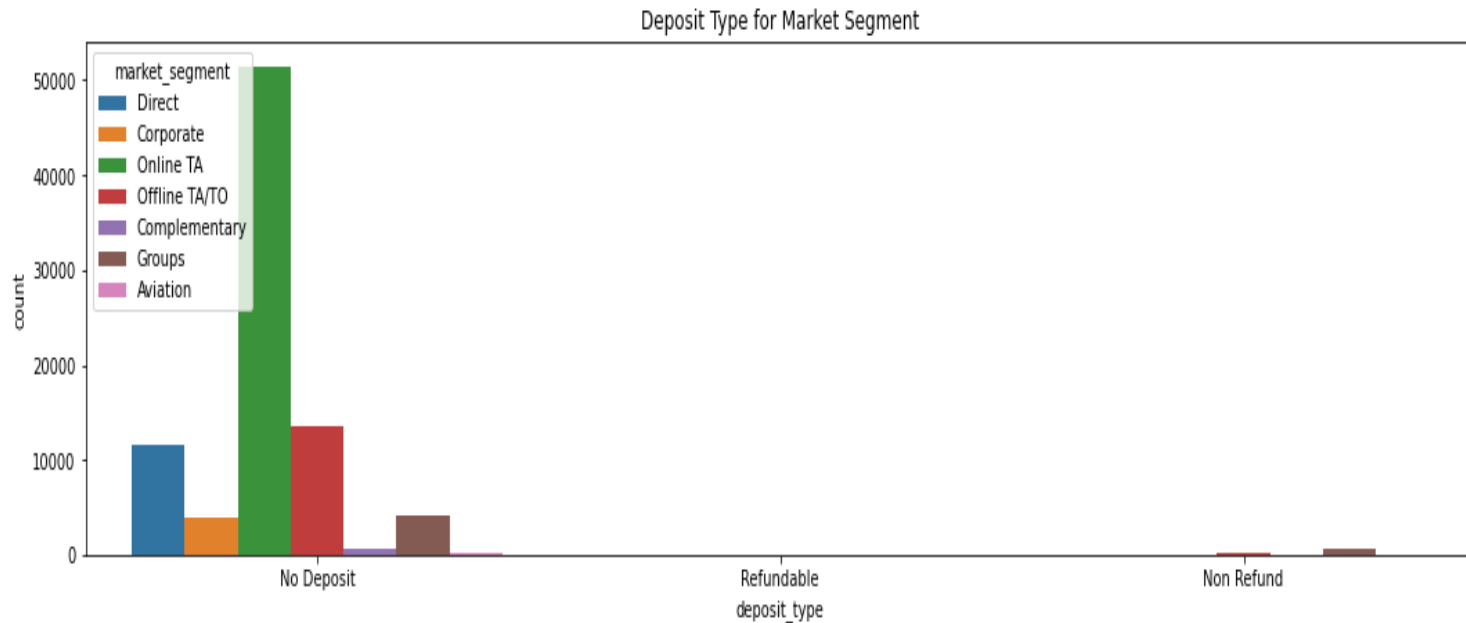
How many adults and childs guest arrived per month in each month ?



- Based on the line chart the adults are highly recommend to visit in the Resort Hotel, right from June month to August. We have highest number of adults.

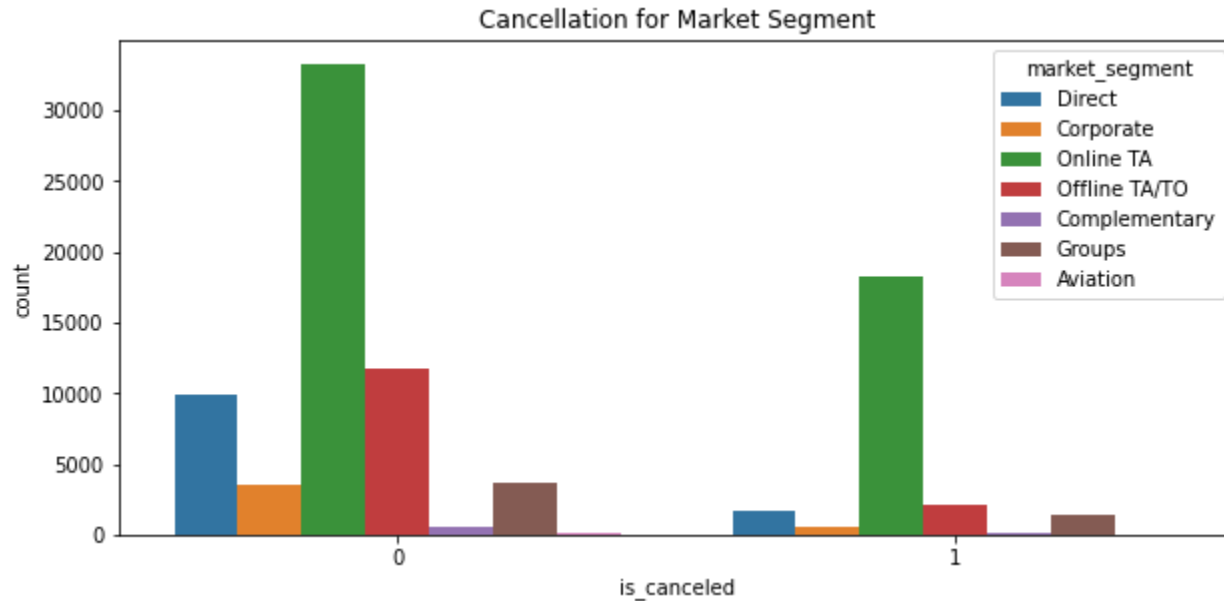
Business Perspective

Booking and cancellation per market segment

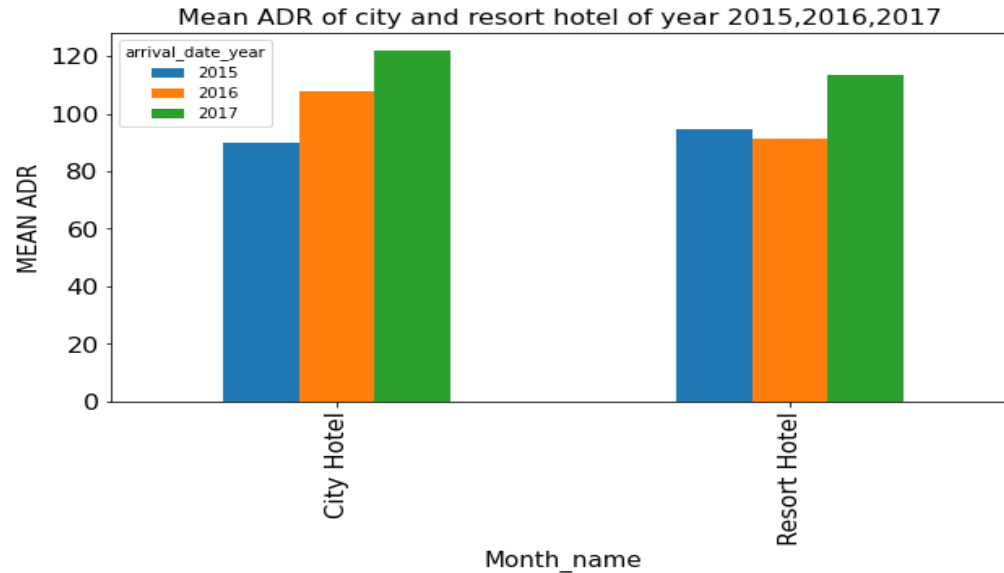


- Most bookings are done through Online TA

Booking and cancellation per market segment

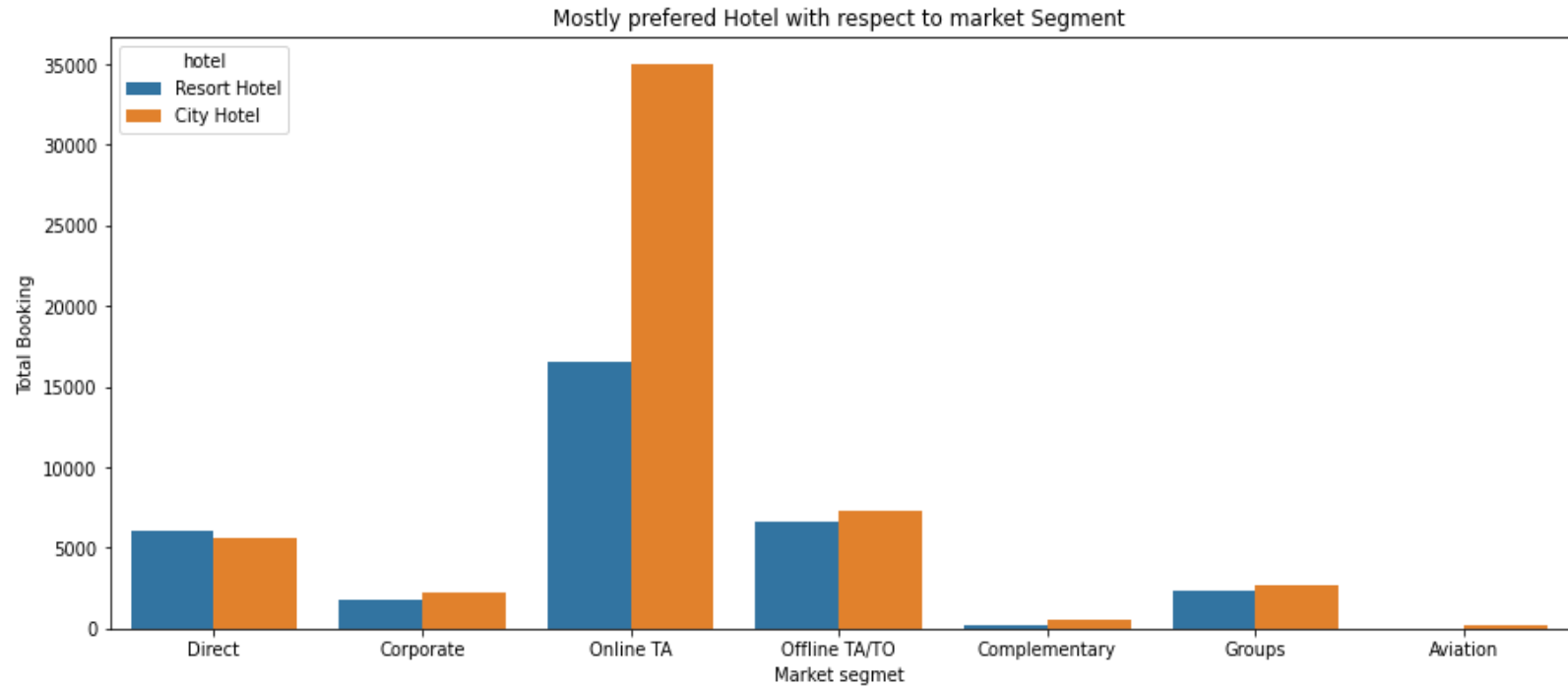


Lets see how ADR (Average Daily Rate) change over year, so that we can understand hotel industry is growing by renting their room.



- In city hotel the growth in average daily rate is increasing year by year and resort hotel is increase highly in 2017.

Which is the most preferred business segment ?



Challenges

- Identifying various different problem statement.
- Analysis of perfect problem with different graphs and plots.
- Understand how data is been used in business strategy.
- Difficult to understand some column.

Conclusion

- We conclude various aspects of business problem right from analysis of booking, cancellation, general analysis and more importantly with business perspective.
- The analysis has shows most booking with city hotels with category 'A' reservation of 64.62%.
- As we sees the result, also that cancellation is most in the city hotels and its gradually been increasing from 2015 to 2017.
- Most of the preferred hotels are for adults rather than childs with higher rate from June to August month and busiest in both hotels in July and August.
- Looking towards the market segment their were no deposit in online TA.

Conclusion

- ADR also shows a precise segment that city hotels are growing from 2015 to 2017 as compared to resort hotels.
- But at last by all analysis and research it is been clear that most of the preferred business is city hotels while looking towards corporate, online TA, offline TA/TO etc.

Thank You