Capstone Project - 1
Hotel Booking Analysis

By-Dany Chitturi

Points for Discussion

- Data Summary

- Hotel-wise Bookings

- Country-wise Bookings

- Analysis on Confirmed Bookings

- Analysis on Cancelled Bookings

- Market Segment-wise Bookings

- Distribution Channel-wise Bookings

- Analysis on Average Daily Rate

- Bookings by Customer type

- Overall Analysis

- Conclusion

Data Summary

- **Hotel_Booking_df :** This dataset contains all the information for city hotel and resort hotel and includes information such as when the booking was made, Length of stay , The number of adults , Children and/or babies, The number of available parking spaces and many other information.

- **Average Daily Rate (Adr) :** Average daily rate is an important hotel KPI that's based on calculating the average price of a hotel room sold on any day. Adr indicates the price at which the room being sold for or the average room rates

- **Lead Time :** Lead time is the number of days between the time a guest books their room and the time they are scheduled to arrive at the hotel

- **Market Segment :** Market segmentation is a way of dividing potential guests into groups based on a set of shared characteristics. Examples : Online / Offline travel agencies , Direct , Corporate and Groups

- **Distribution Channel :** A hotel distribution channel is anywhere – online or offline that properties can sell rooms to potential customers. Examples : Online / Offline travel agencies , Global distribution systems (GDS) and Direct
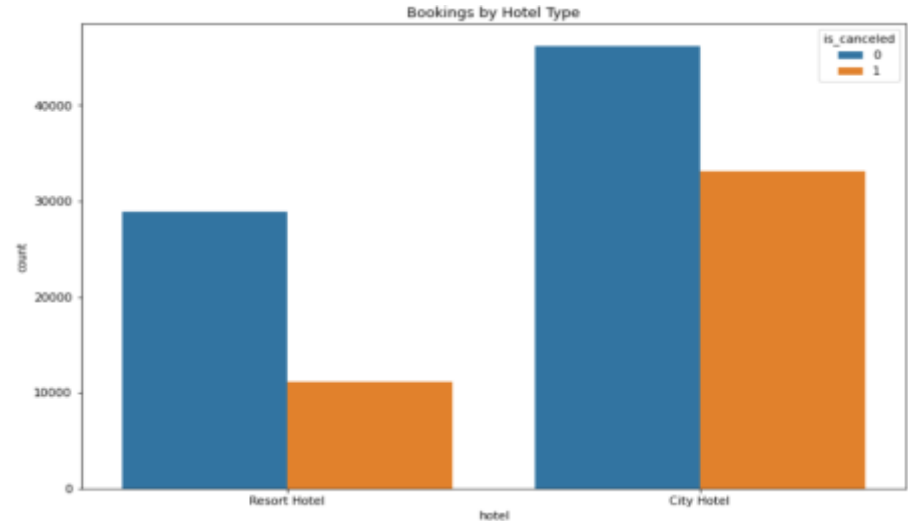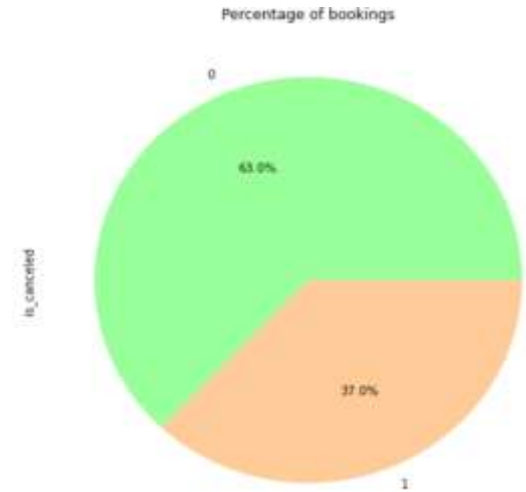
Hotel-wise Bookings

We will analyze the bookings for both City and Resort hotels and will answer the following questions :

   1. Percentage of bookings for both hotel types

   2. Percentage of cancellations for both hotel types
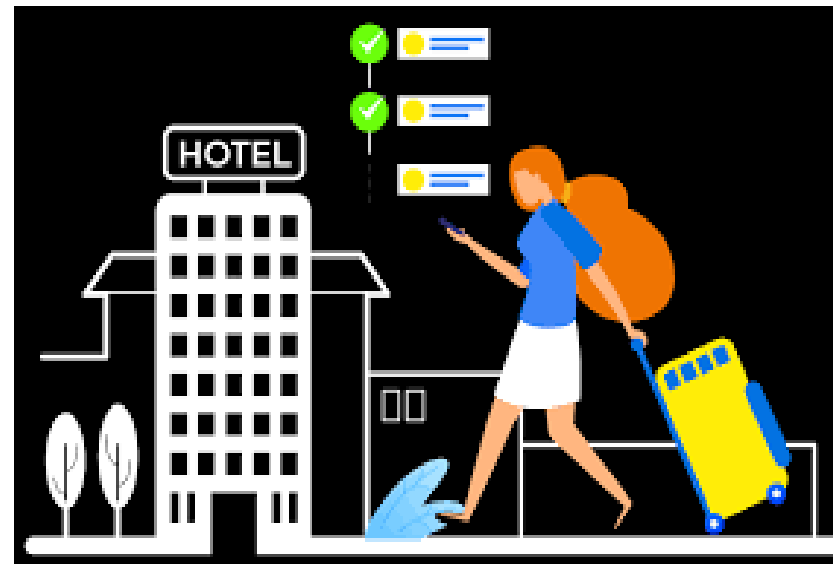
Hotel-wise Bookings

- Out of all the bookings majority of the bookings were not cancelled , only 37% of the bookings were cancelled

- Majority of the bookings are of City hotel about 66%

- City hotel has high cancellation rate of 41.7 % when compared to resort hotel which is about 28%.

Percentage of bookings

Bookings by Hotel Type

Country-wise Bookings

- Top 5 countries with most number of bookings are Portugal , Great Britain , France , Spain and Germany

- Approximately 60% of total bookings are from Portugal (40%) , Great Britain (10%) and France (9%)

- Top 5 countries with least number of bookings are Mali , Tanzania , Faroe islands , Namibia and Bahrain

Country wise Bookings
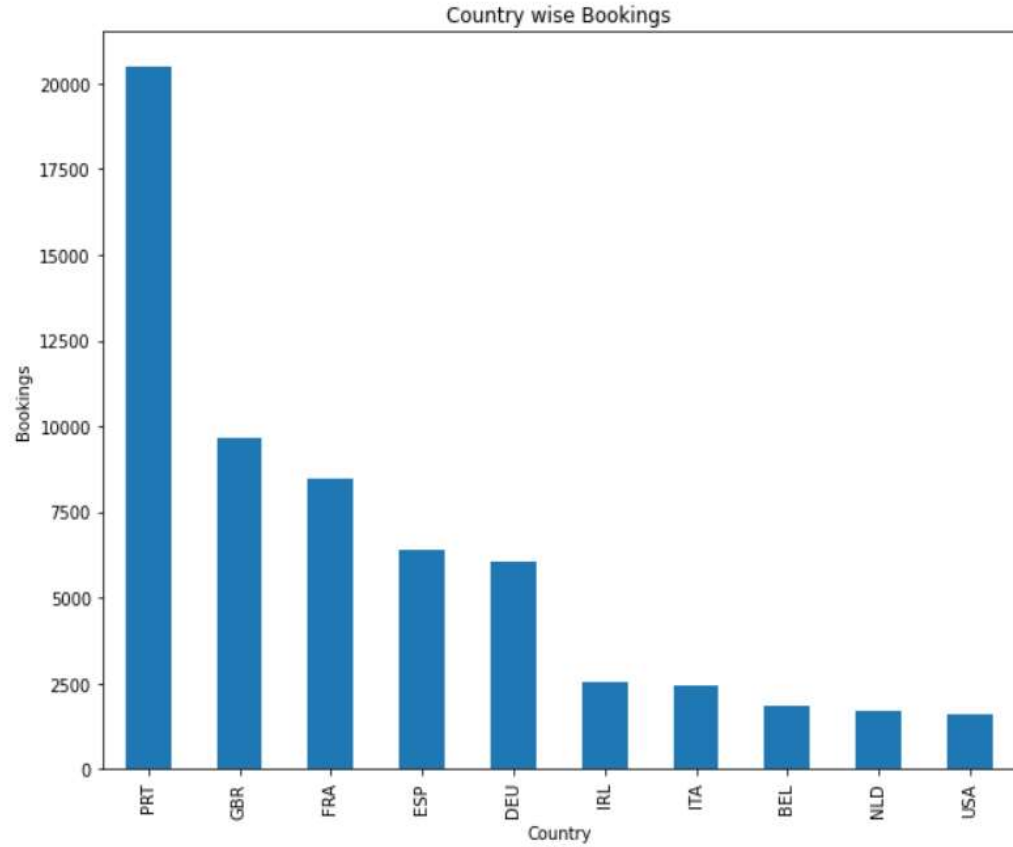
Analysis on Confirmed Bookings

In this section we try to answer the following questions :

• Which year has the highest number of bookings

• Top 4 months with most and least number of bookings

• Which days in a month have least number of bookings

Analysis on Confirmed Bookings

- We can see most of the bookings were in the year 2016 and booking were done in City hotel.

- August is the busiest month followed by July , May and June

- Bookings for both the hotels are least in the months November, December and January
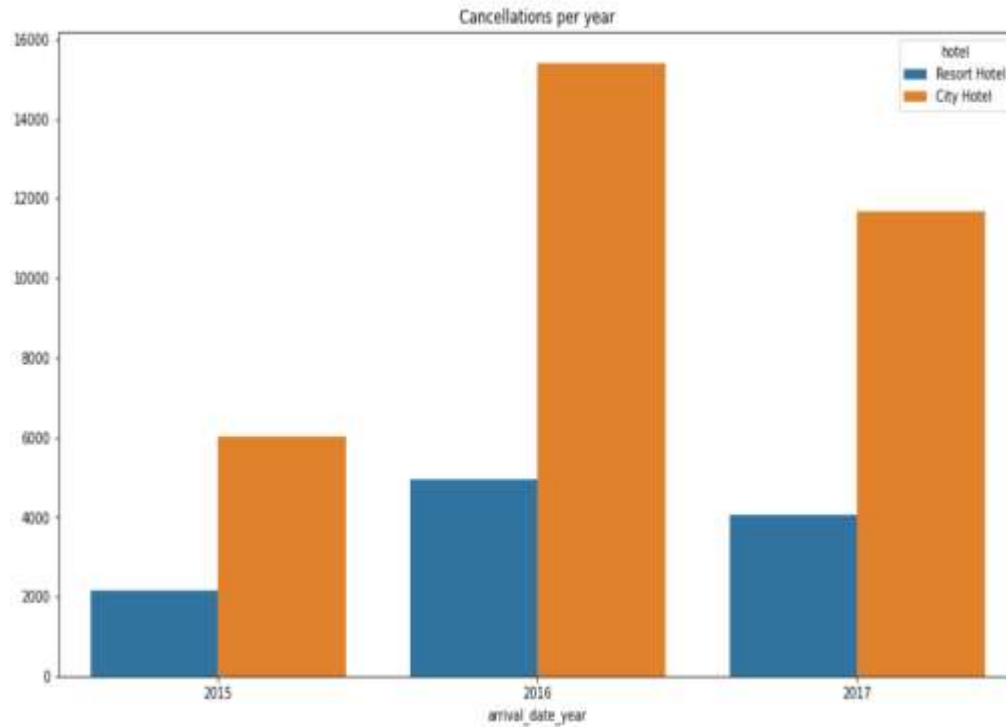
- Bookings are less in the month ends
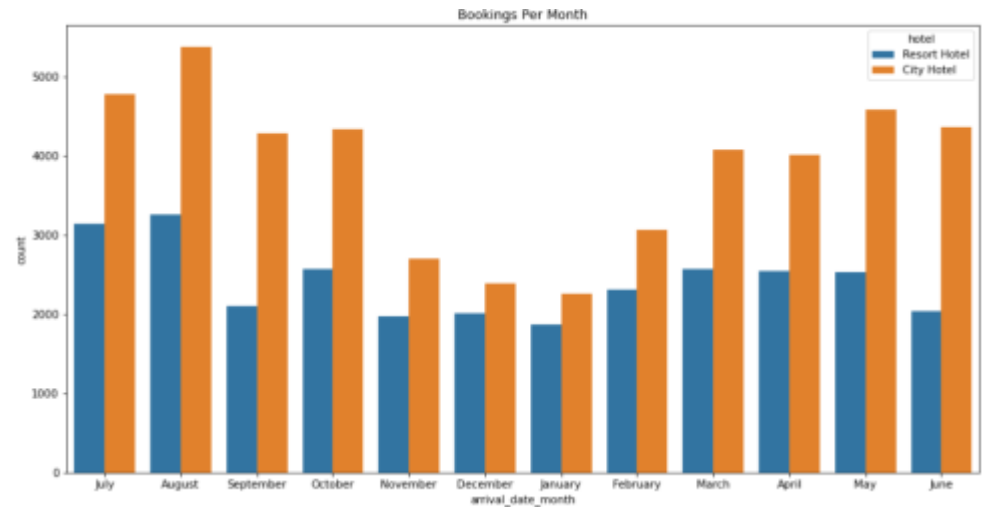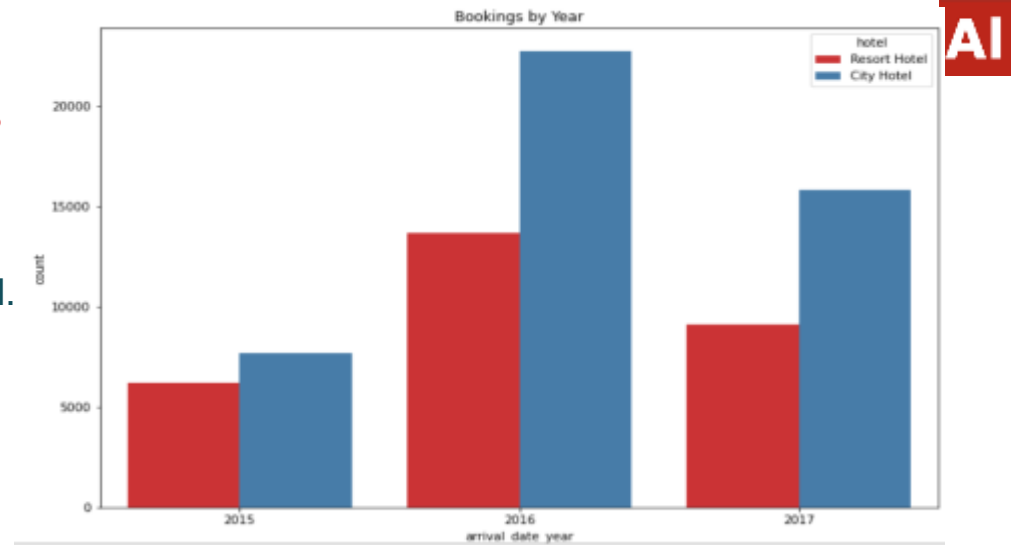
Analysis on Cancelled Bookings

• In this section we will analyze the cancelled bookings and will answer the following questions :

  • Which year has the most number of cancellations and highest cancellation rate

  • Top 3 months with most number of cancellations

  • Which customer type has most number of cancellations and highest cancellation rate

  • Is there any relationship between Lead time and Cancellations

  • Will 'No deposit' bookings leads to more cancellations

Analysis on Cancelled Bookings

• Majority of the cancellations are in the year 2016. Cancellation rate for city hotel is highest which is about 44%. Highest cancellation rate for resort hotel is 31% in the year 2017

| arrival_date_year	hotel	Cancellation_rate
2015	City Hotel	43.882473
	Resort Hotel	25.715660
2016	City Hotel	40.395910
	Resort Hotel	26.552486
2017	City Hotel	42.500364
	Resort Hotel	30.761059

Analysis on Cancelled Bookings

• June , April and May are the months with highest cancellation rates with 41% , 40.8% and 40 % respectively

• 97% of the cancellations are from Transient and Transient-party type customers.
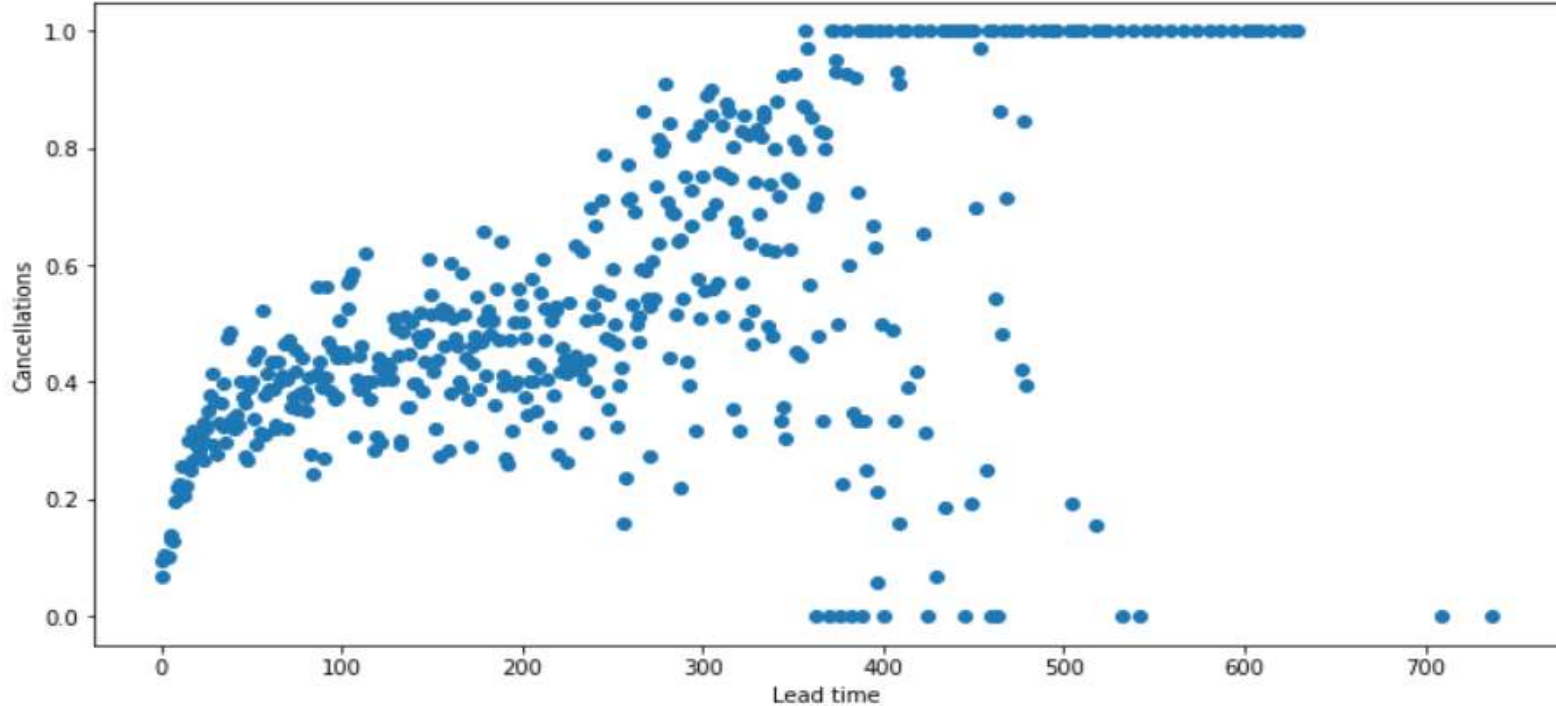
Cancellation_rate

arrival_date_month	Cancellation_rate
June	41.457172
April	40.797186
May	39.665847
September	39.170156
October	38.046595

Percentage of Cancellations for different customer type
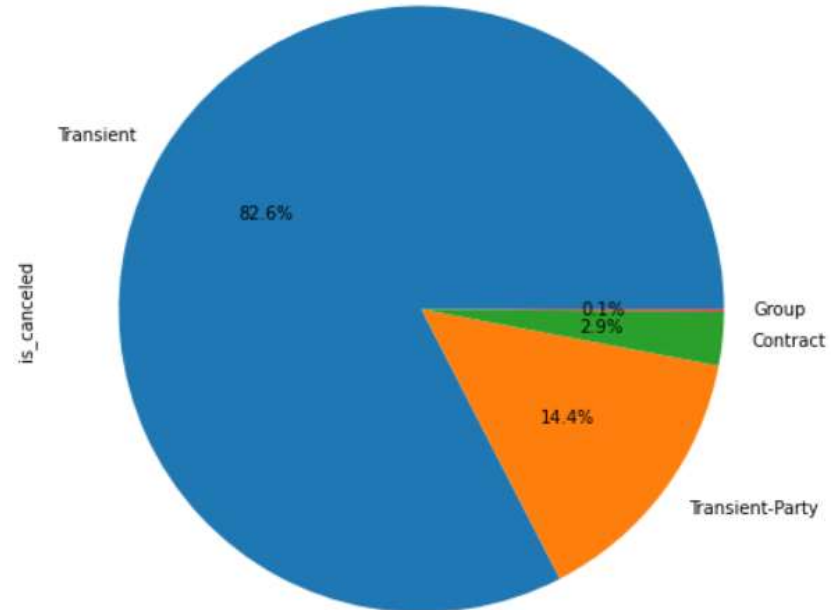
Analysis on Cancelled Bookings

Conclusion : We can see there is positive correlation between lead time and cancellations. Bookings with lead time less than 100 days have fewer chances of getting cancelled and lead time more than 100 days have more chances of getting cancelled

Analysis on Cancelled Bookings



Cancellations per Deposit type
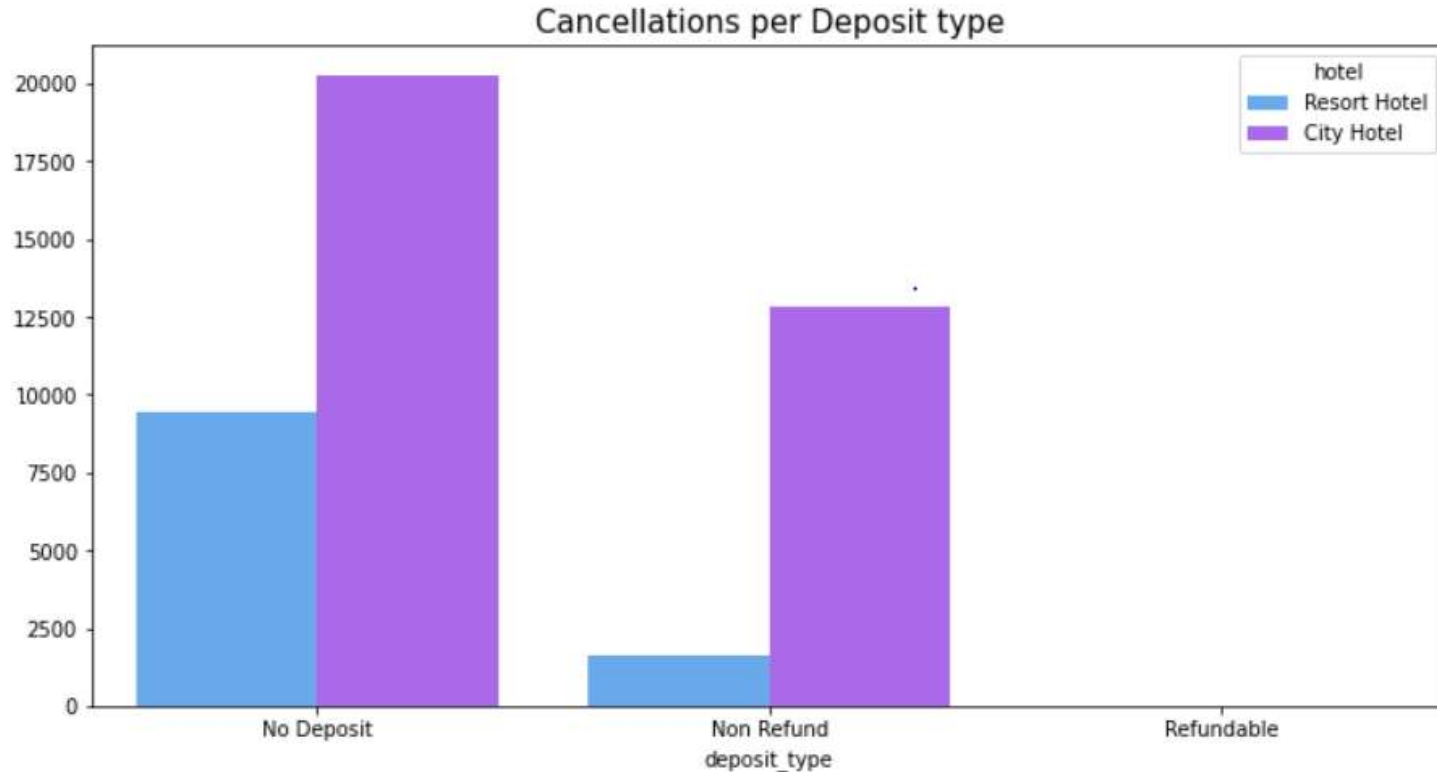
Conclusion : Majority of the bookings were cancelled by guests with No deposit. Also it is interesting to note that non-refundable deposits had more cancellations than refundable deposits. Logically one would have assumed that refundable deposits have more cancellations as the hotel rates are usually high for refundable deposit type rooms

Market Segment-wise Bookings
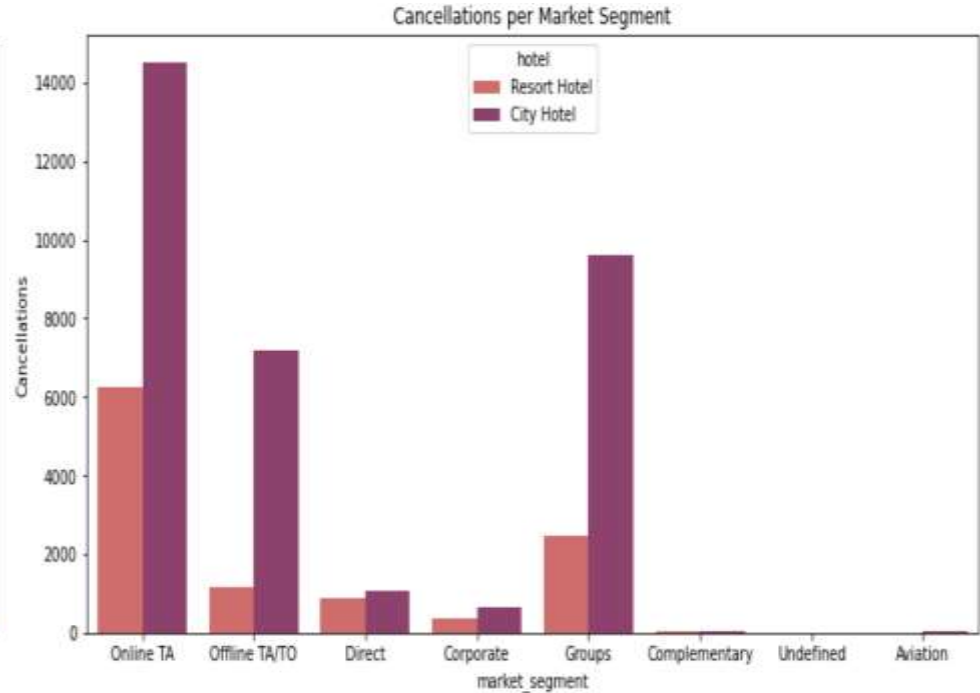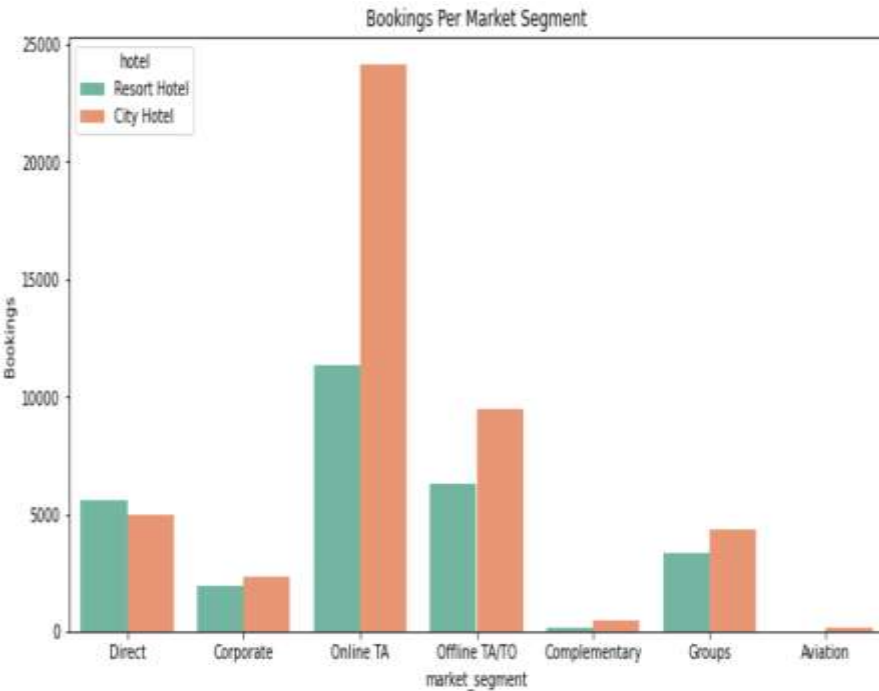
Conclusion : Bookings through Online / Offline travel agents are higher when compared to direct bookings and same in the case of cancellations also, but surprisingly bookings through groups have more number of cancellations than confirmed bookings.

Distribution Channel-wise Bookings
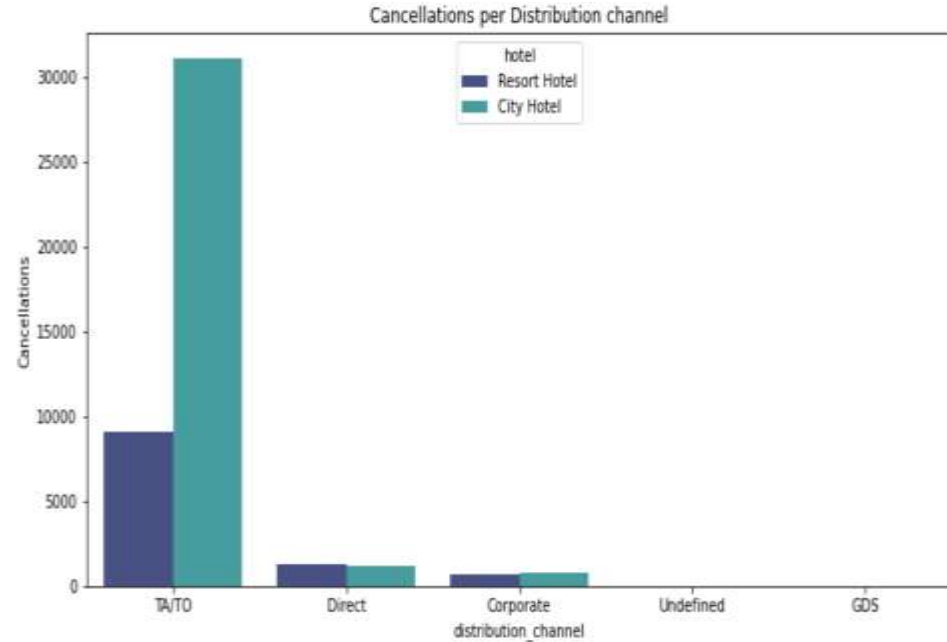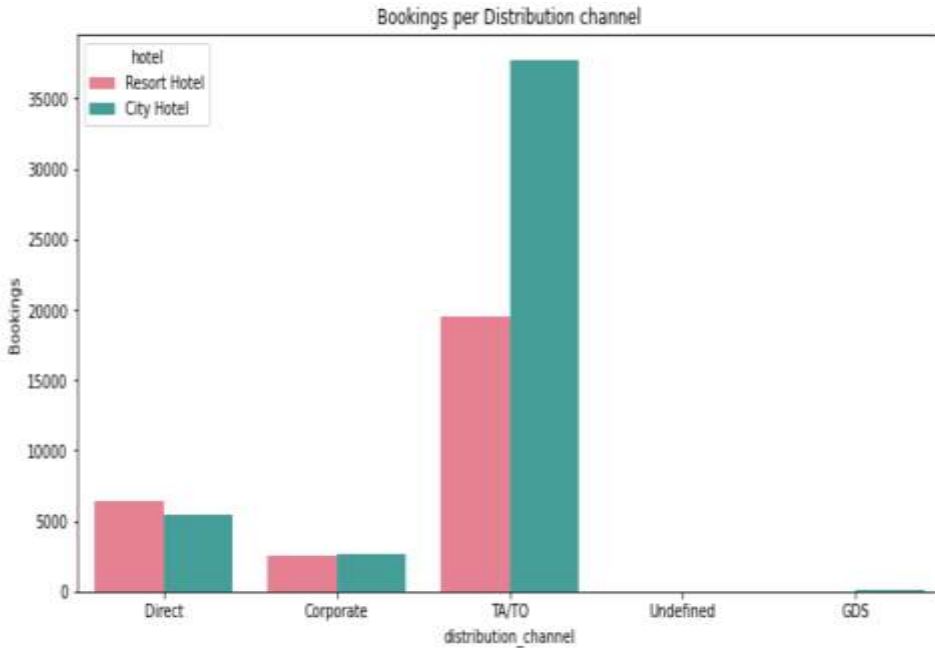
Conclusion : TA/TO has high distribution rate when compared to other channels. TA/TO has high cancellation rate, Therefore bookings via TA/TO is 30% likely to get cancelled
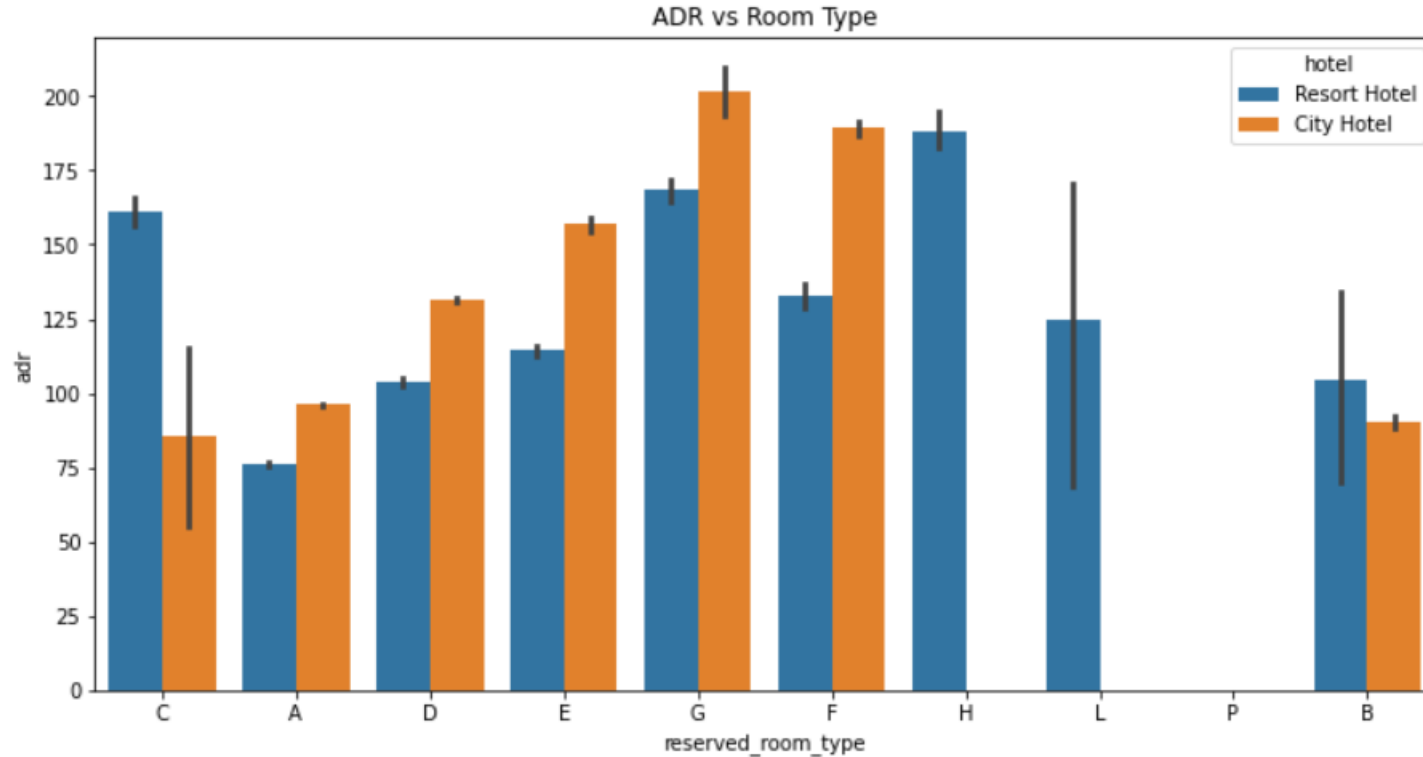
Analysis on Average Daily Rate (Adr)

ADR per Month
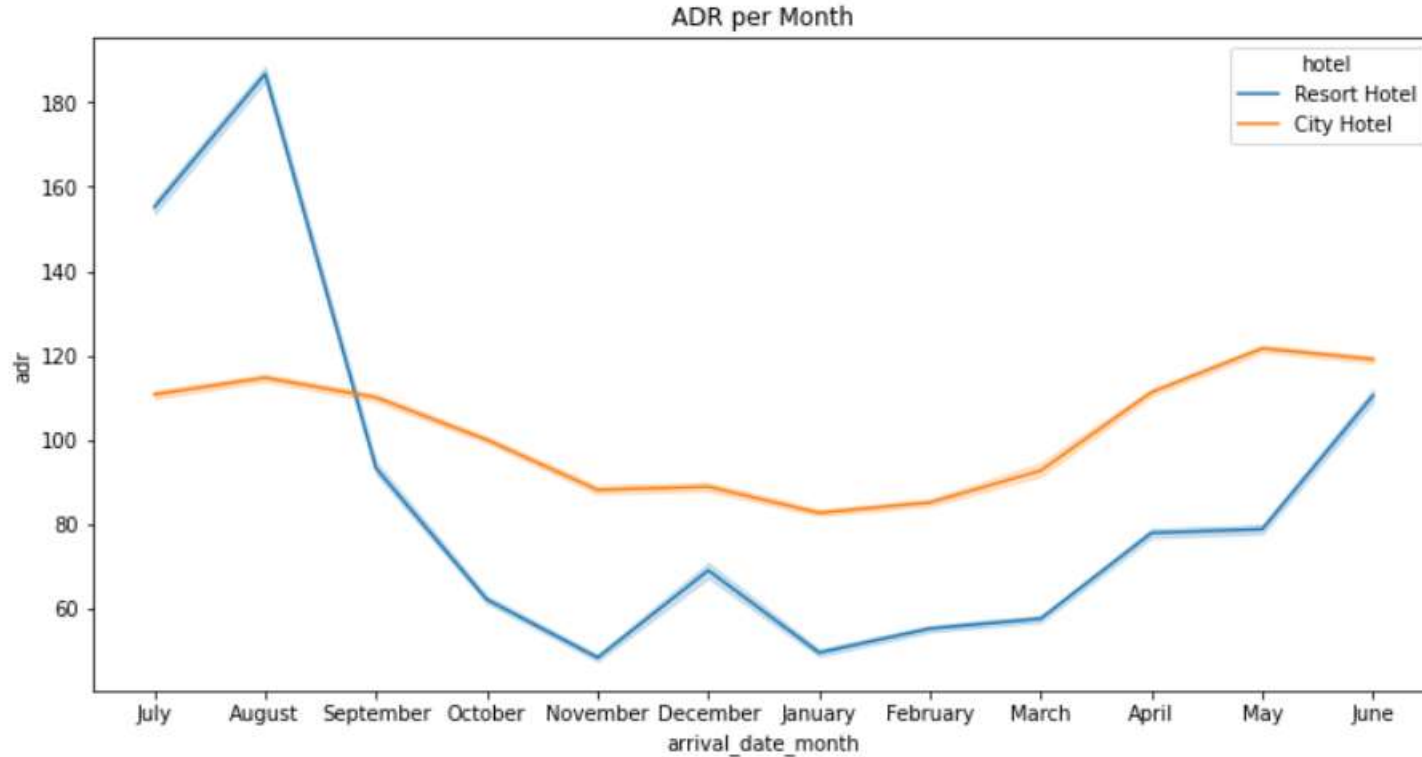
Conclusion : Prices in resort hotel are much higher in the months July and August , Whereas prices in city hotel doesn't vary much . Both hotel have cheaper rates in the months November to January
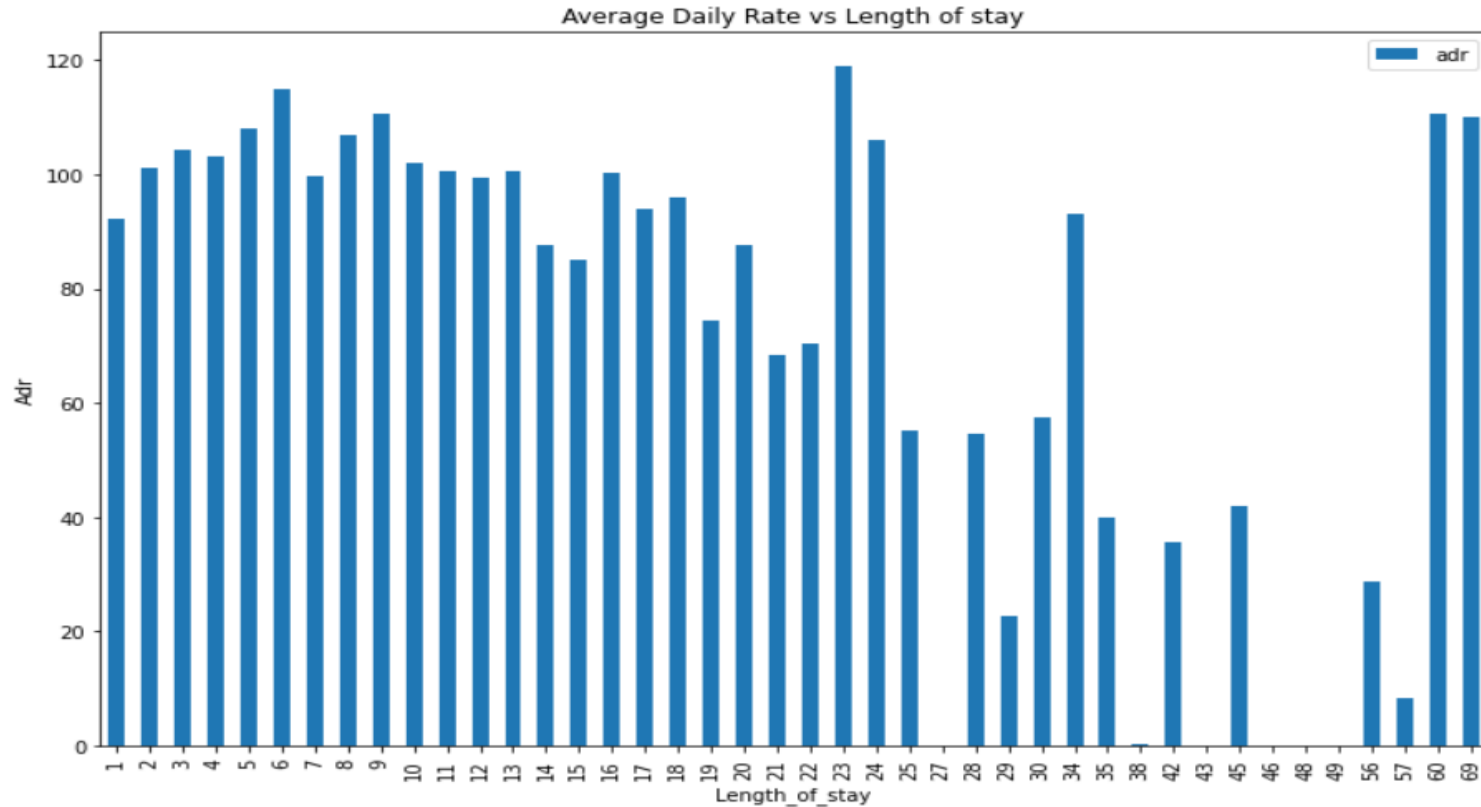
Analysis on Average Daily Rate (Adr)

- 'G' type is the most expensive room and 'B' type room is the cheapest room in City hotel

- 'H' type room is the most expensive room and 'A' type room is the cheapest room in resort hotel

Analysis on Average Daily Rate (Adr)

Average Daily Rate vs Length of stay

- Average daily rate is less for the length of stay between 25 to 30 days

- Average daily rate is less for length of stay of 1 week , 2 weeks , 3 weeks ……… so on
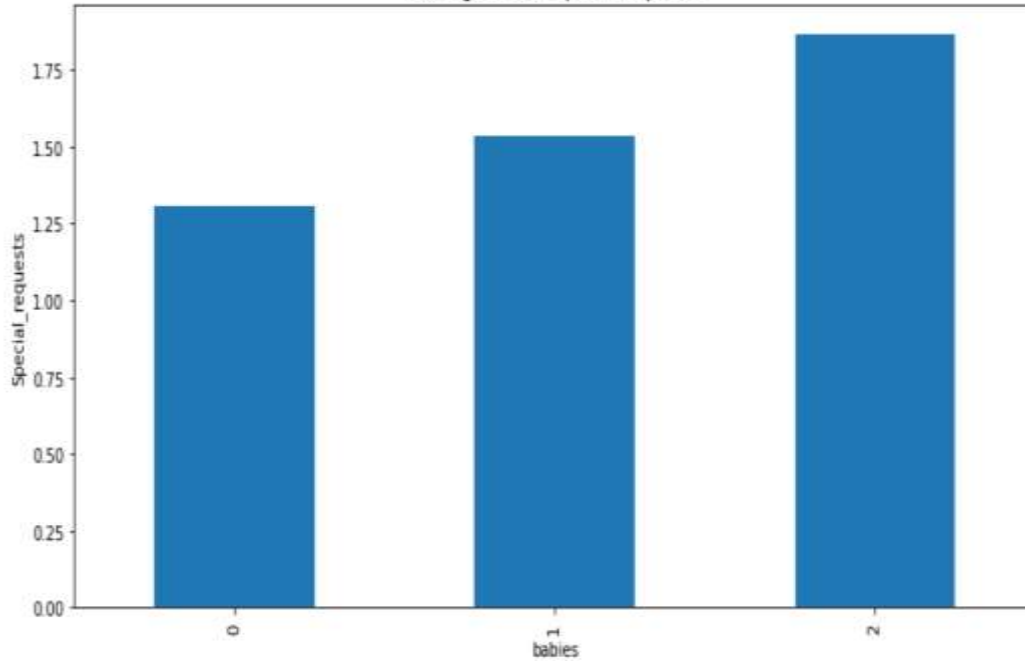
Bookings by Customer Type
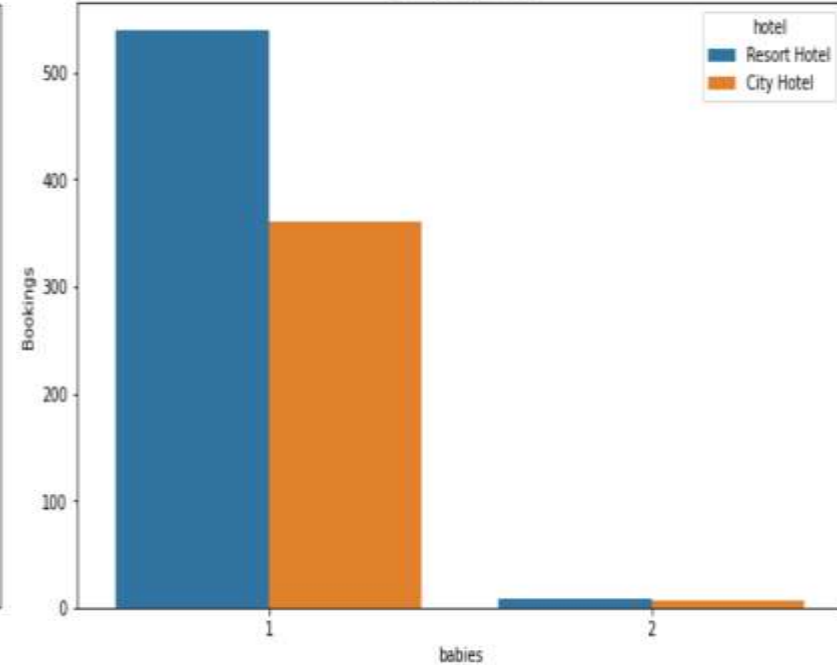
Bookings per Customer type
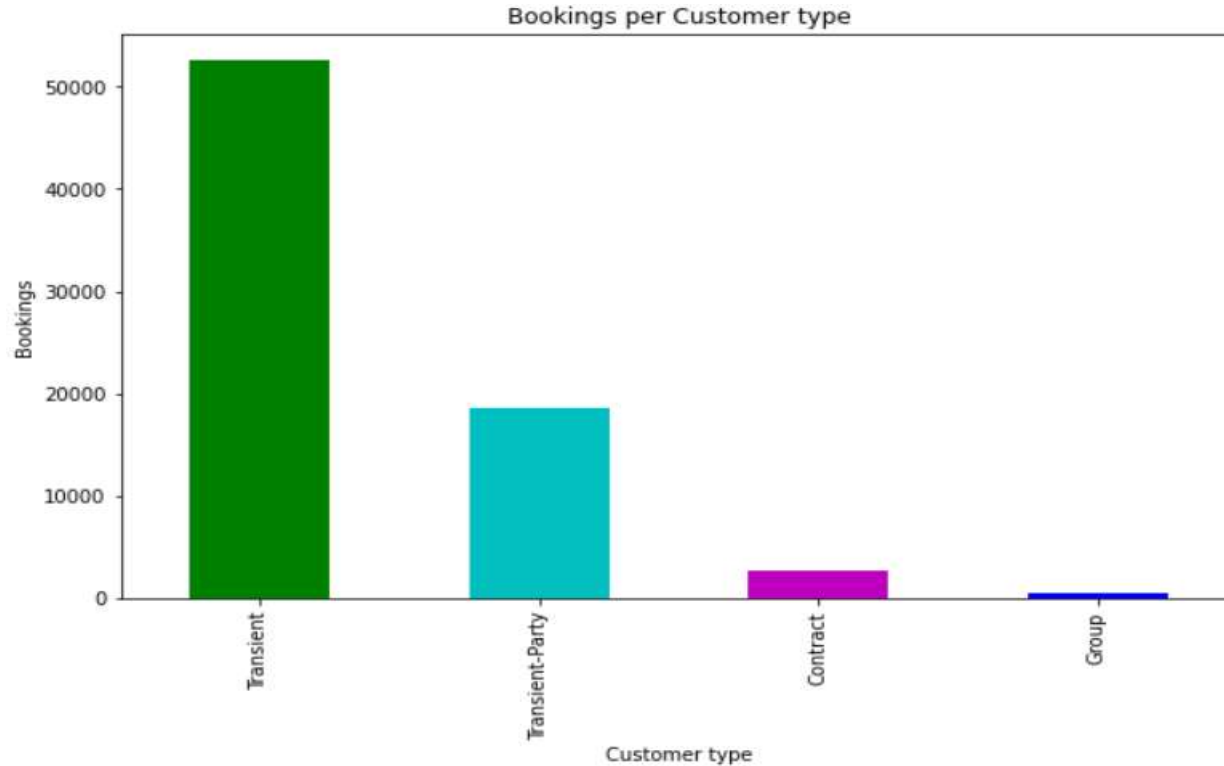
- Majority of the bookings are from Transient type customers which is about 75%

- 97% of the total bookings are from Transient and Transient-party customers

Overall Analysis
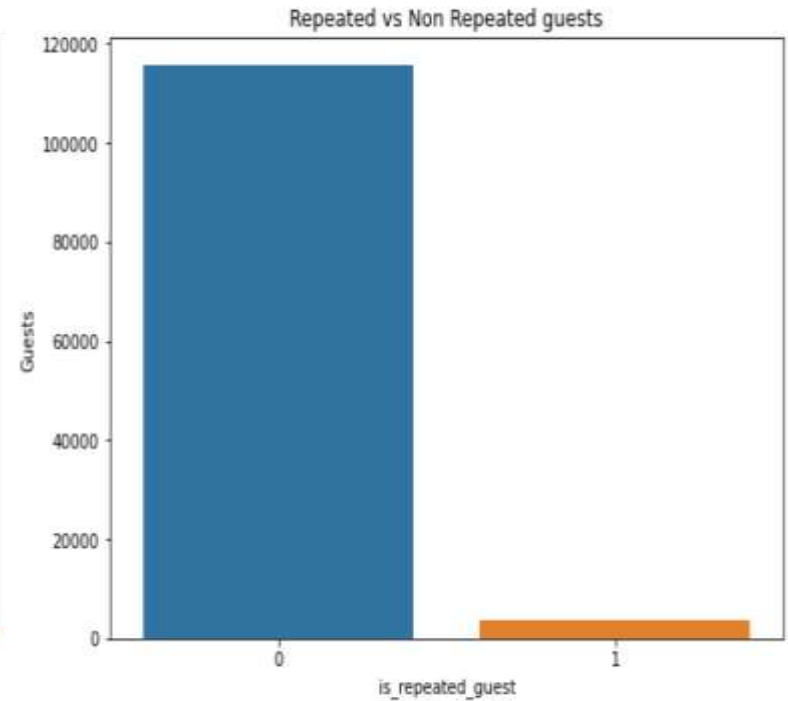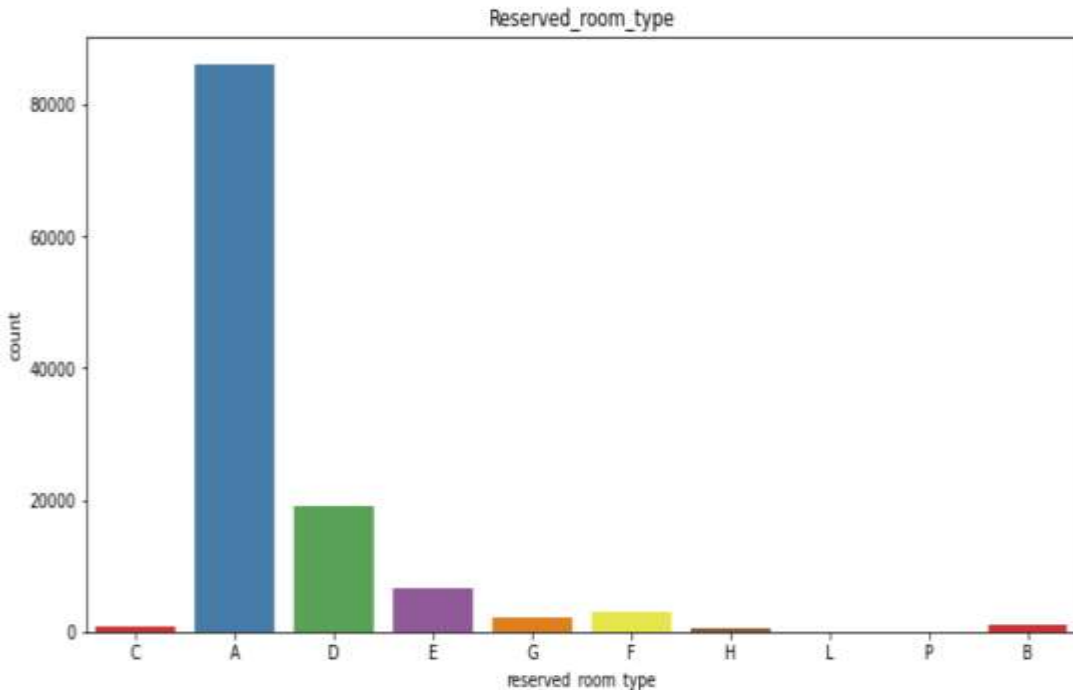

- **Conclusion :** Guests with 1 or 2 babies prefer resort hotel over city hotel and also guests with babies are more likely to make special requests

Overall Analysis

Conclusion :

• Majority of the visitors prefer 'A' type room. 'H' type room has less number of bookings it is the most expensive room in resort hotel

• Repeated guests are very less which is about 3%

Conclusion

- Majority of the bookings are for City Hotel and most of the guests come from western european countries

- Bookings are at peak during the summer season from May to August which is also when the room prices are highest. Both hotels have the fewest guests in winter. Thus , customers can get good deals on bookings during winter

- The higher the lead time the higher the chances of cancellations. Also, history of previous cancellations increases chances of cancellation

- 'No Deposit' policies lead to higher cancellation rate. Surprisingly 'Non-refund' policies have higher cancellation rate than Refundable policy

- Cancellations are high when booking is done through Online / Offline travel agents compared to direct bookings. So hotels should encourage Direct bookings by offering discounts.

- The optimal Length of stay is between 25 to 30 days to get the best daily rates for both hotel types

- Guests with babies prefer resort hotel over city hotel and they are more likely to make special requests

- There are very less number of repeated guests. Hotels should focus on customer retention by providing discounts / cash backs for their next booking.

Thank You