

Capstone Project – I

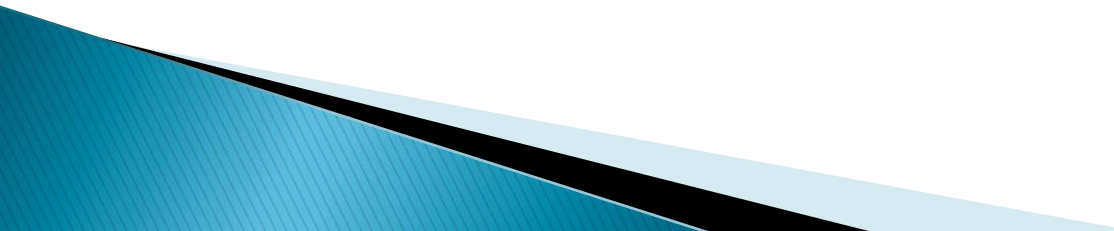
Hotel Booking Analysis

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Content:

- ❖ Problem Statement
 - ❖ Data Summary
 - ❖ Analysis of Data
 - ❖ Challenges
 - ❖ Conclusion
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Problem Statements

- ❖ Which month has least traffic.
 - ❖ Months of year having cheaper booking rates.
 - ❖ Country from where most guests are coming.
 - ❖ Which segment providing the most bookings.
 - ❖ What are the causes of booking cancellation.
 - ❖ Which type of hotels is mostly preferred by guest.
 - ❖ What is the number of repeated booking.
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Data Description

- ❖ **Hotel:** denotes hotel type
 - ❖ **Is_cancelled:** indicates booking canceled or not
 - ❖ **Lead_time:** number of days elapsed between booking and arrival
 - ❖ **Arrival_date_year:** year of arrival
 - ❖ **Arrival_date_month:** month of arrival
 - ❖ **Arrival_date_week_number:** week number of year of arrival
 - ❖ **Arrival_date_day_of_month:** day of arrival date
 - ❖ **Stay_in_weekend_nights:** number of weekend nights
 - ❖ **Stay_in_week_nights:** number of week nights
 - ❖ **Adults:** number of adults
 - ❖ **Children:** number children
 - ❖ **Babies:** number of babies
 - ❖ **Meal:** type of meal
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Data Description(Cont..)

- ❖ **Country:** country of origin
- ❖ **Market_segment:** market segment designation
- ❖ **Distribution_channel:** booking distribution channel
- ❖ **Is_repeated_guest:** is a repeated guest
- ❖ **Previous_cancellation:** number of previous bookings that were cancelled by the customer prior to the current booking
- ❖ **Reserved_room_type:** code of room type reserved
- ❖ **Assigned_room_type:** code for the type of room assigned to the booking
- ❖ **Booking_change:** number of changes made to the booking from the moment the booking was entered on the PMS until the moment of check in or cancellation.
- ❖ **Deposit_type:** no deposit, non-refundable, refundable

Data Description(Cont..)

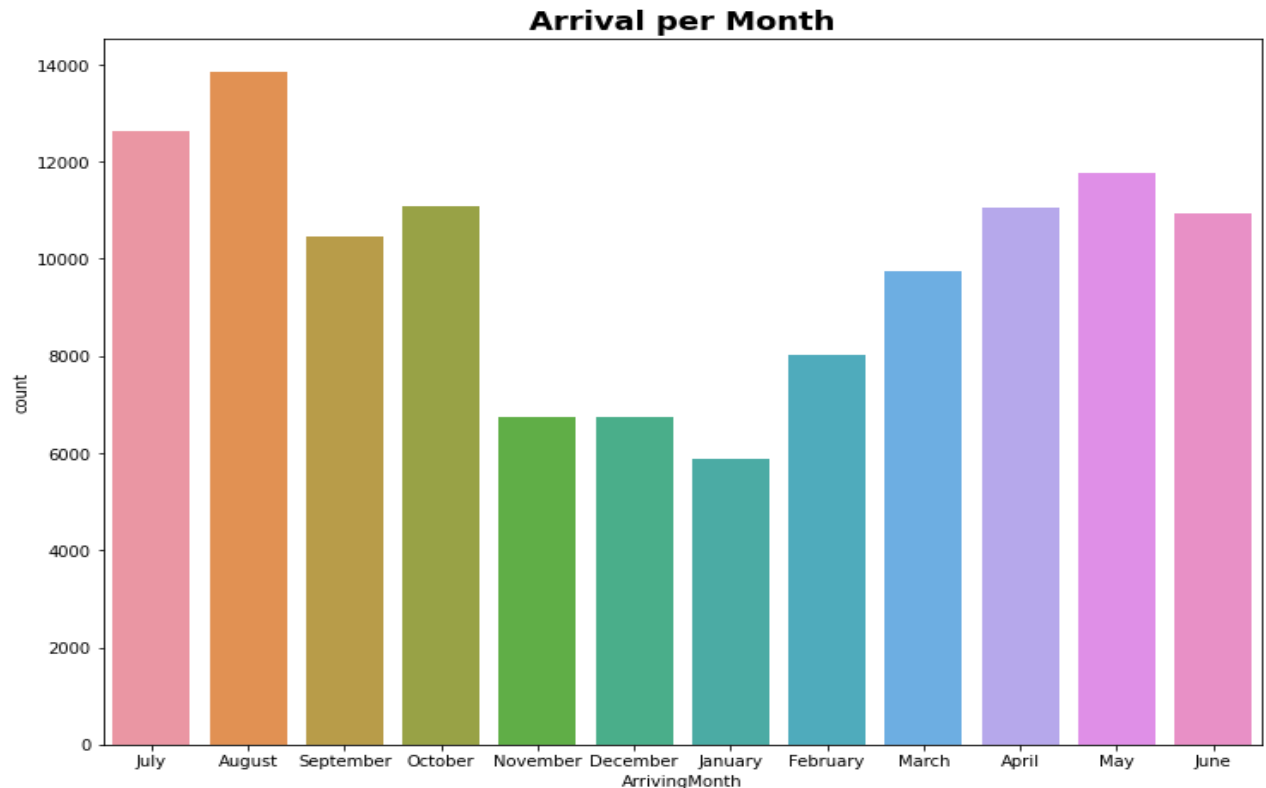
- ❖ **Agent:** ID of the travel agent that made the booking
 - ❖ **Company:** ID of the company/entity that made the booking
 - ❖ **Days_in_waiting_list:** Number of days the booking was in the waiting list before it was get confirmed to the customer
 - ❖ **Customer_type:** type of customer, contract group, transient, transient party
 - ❖ **ADR:** average daily rate as defined by dividing the sum of all lodging transactions by the total member of staying nights
 - ❖ **Required_car_parking:** number of car parking space required by the customer.
 - ❖ **Total_of_special_request:** number of special request made by the customer
 - ❖ **Reservation_status:** reservation last status
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Data Analysis

Which month have least traffic

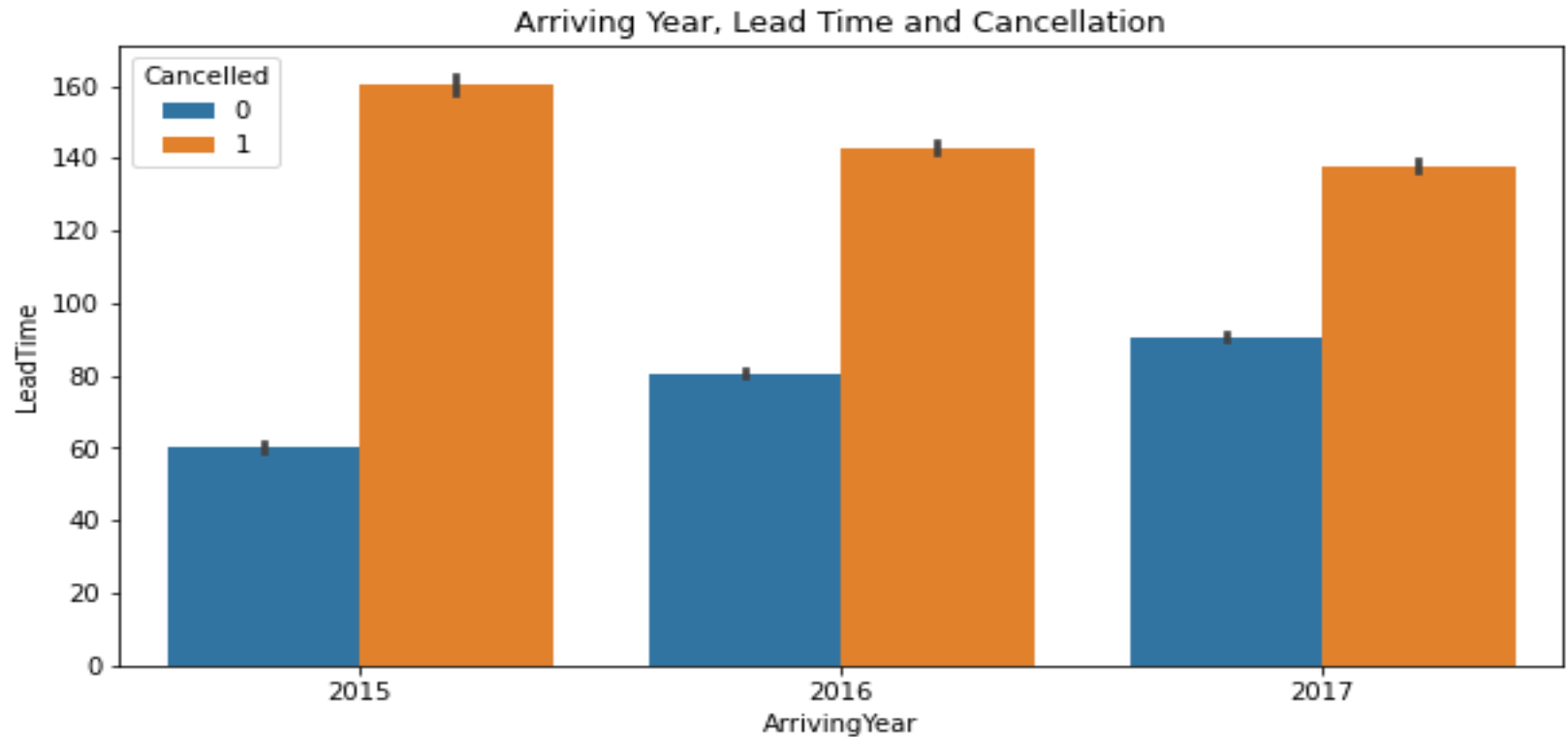
January is the most unoccupied month with 4.94% booking.

August 11.65
July 10.62
May 9.90
October 9.33
April 9.28
June 9.19
September 8.80
March 8.19
February 6.73
November 5.67
December 5.65
January 4.94



Data Analysis (Cont...)

Arriving year, lead time and Cancellation



All the 3 year, booking with a lead time less than 100 days have fewer chance of getting canceled, and lead time more than 100 days have more chance of getting cancelled.

Data Analysis (Cont...)

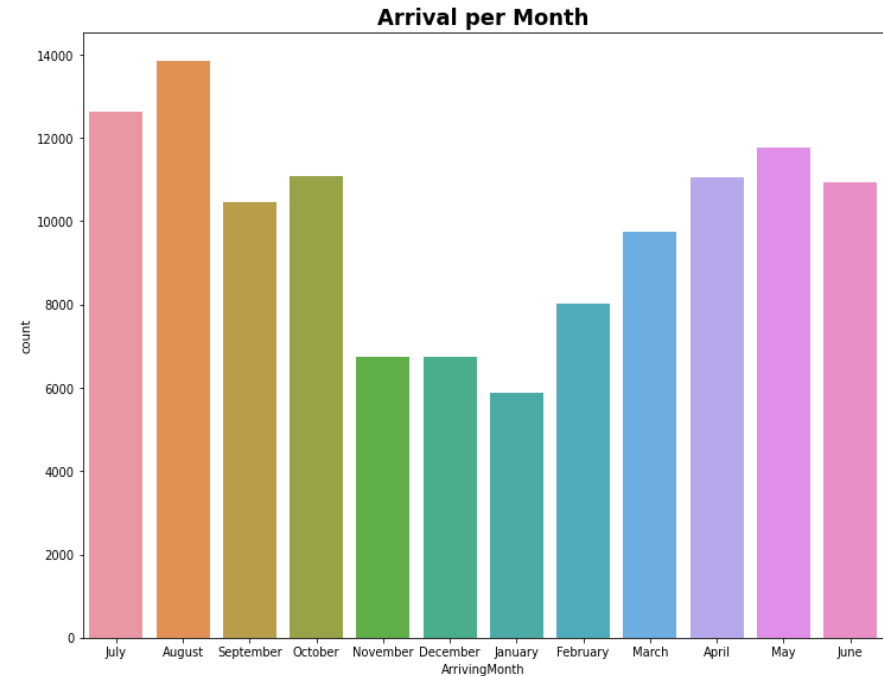
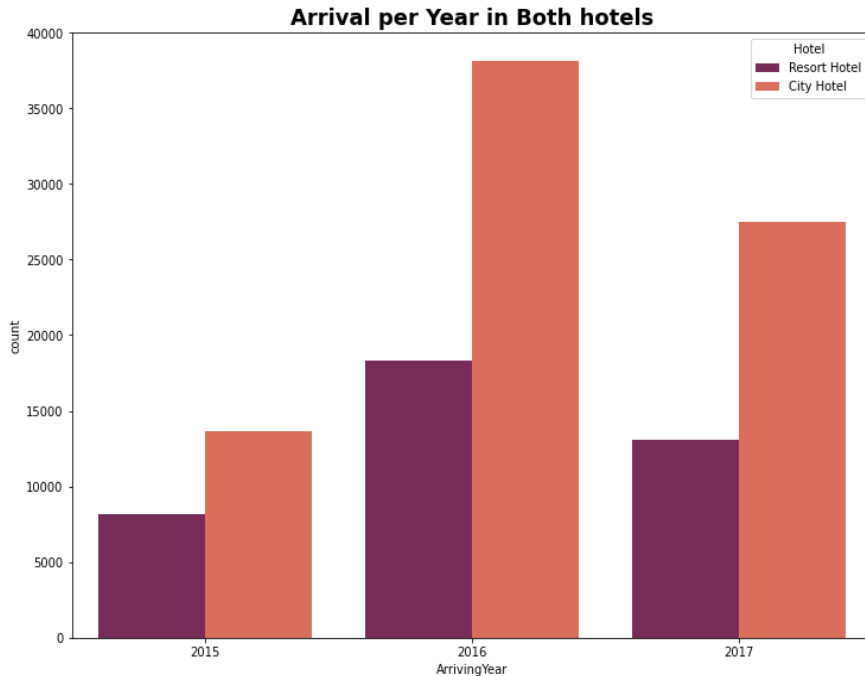
Cancellation ratio in City Hotel and Resort Hotel



Most bookings were in City Hotel, cancellation in Resort Hotel is less compared to City Hotels

Data Analysis (Cont...)

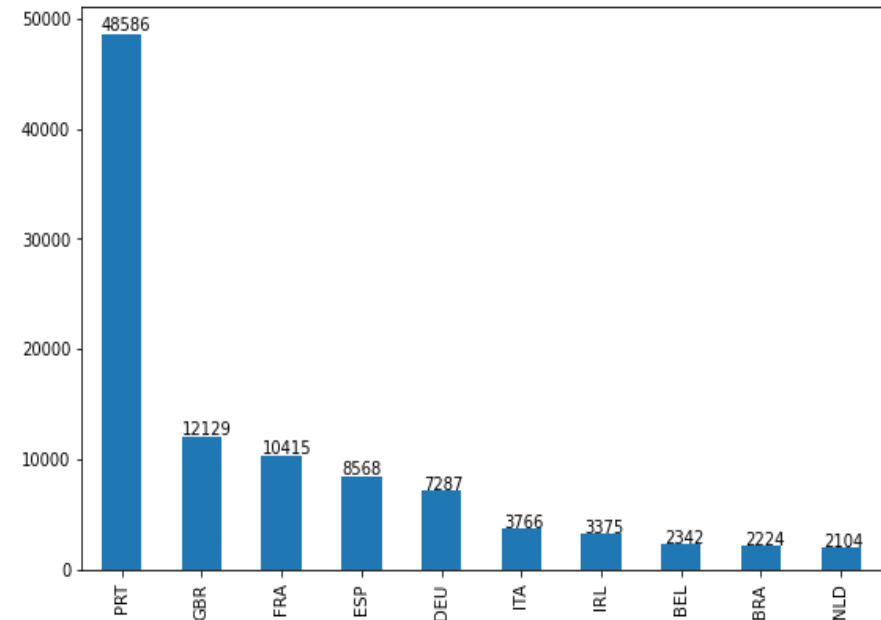
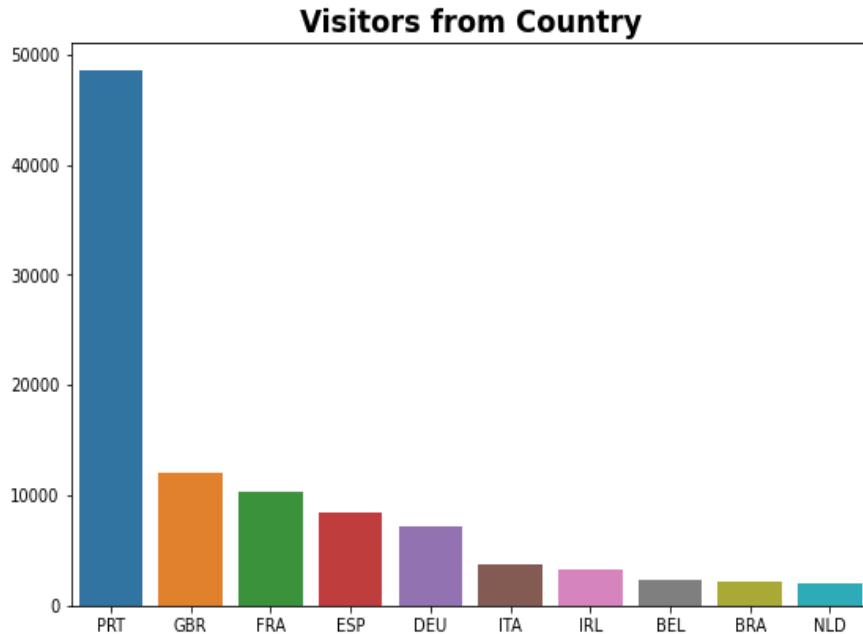
Arrival in months and year



- ❖ From above we can say most of the bookings are in the year 2016 and in City Hotels.
- ❖ Most of the bookings were done in the month of May, June, July and August

Data Analysis (Cont...)

From which country most guests are coming?

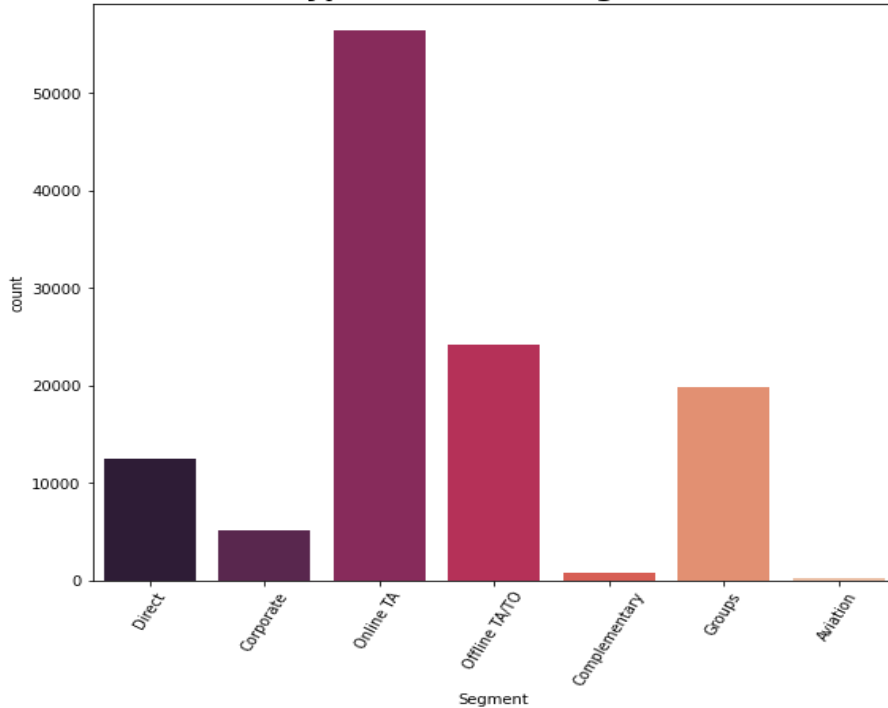


Most visitors were from western Europe and around 40% of all booking were booked from Portugal followed by Great Britain and France

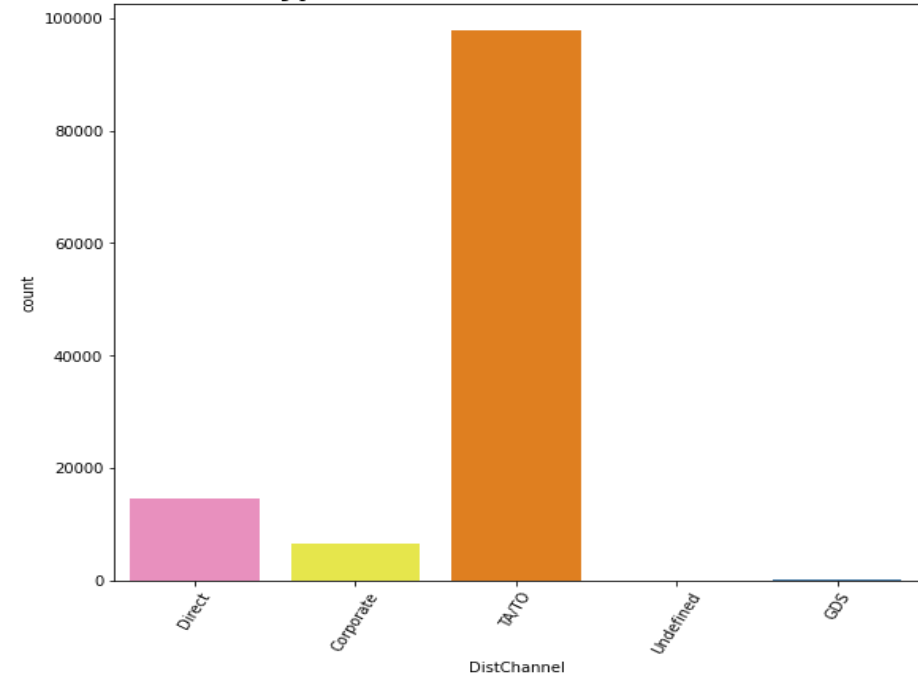
Data Analysis (Cont...)

Type of market segment and distribution channel

Types of Market Segment



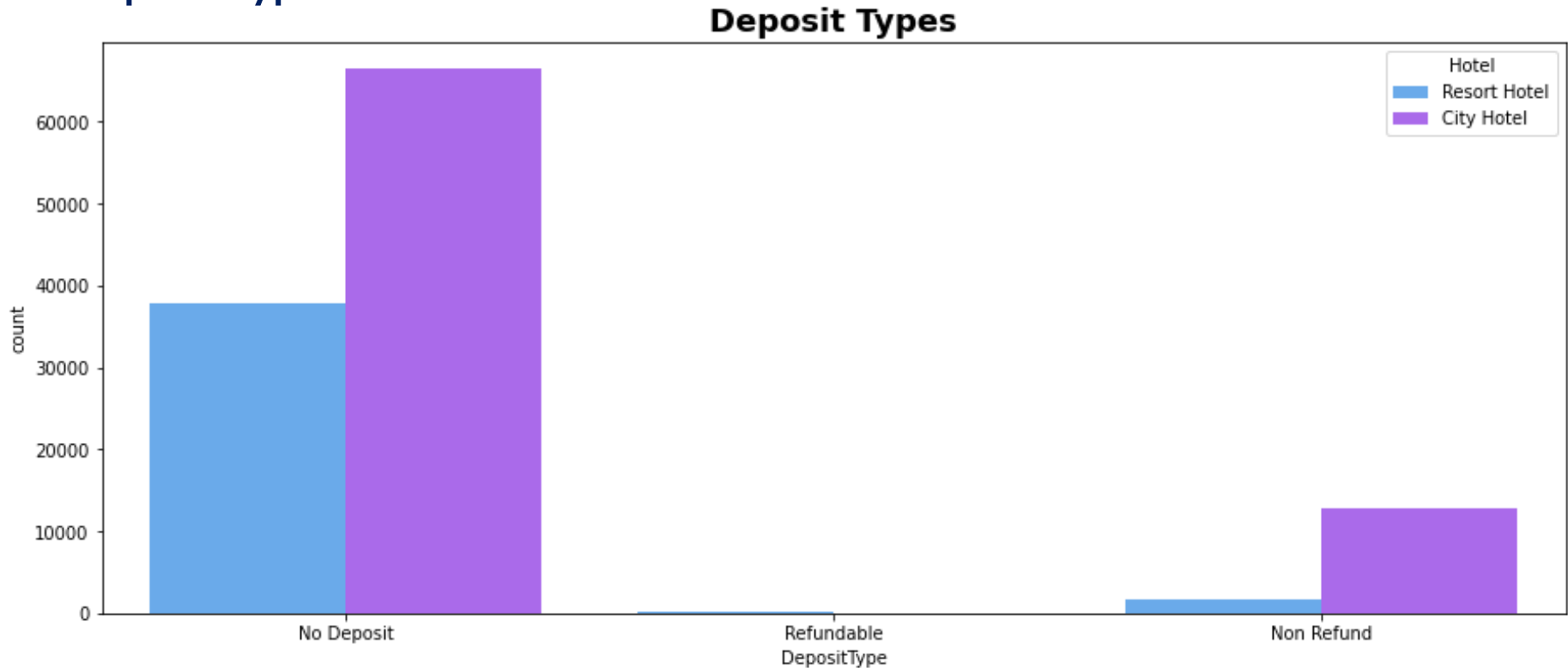
Types of Distribution Channel



Majority of the distribution channels and market segment were Travel Agencies and Travel Operators with offline/online

Data Analysis (Cont...)

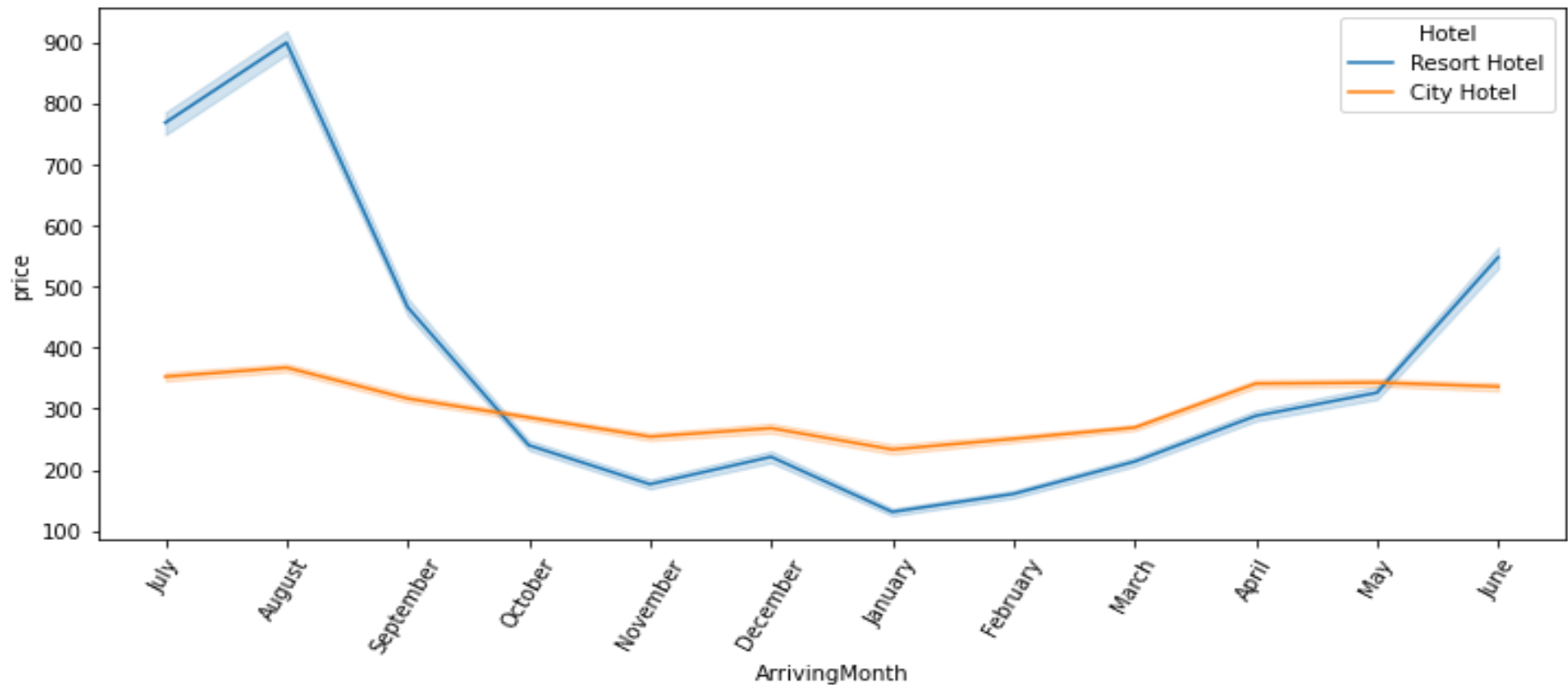
Deposit type



No deposit for city hotels whereas Resort hotels had some deposit. No deposit may lead to cancel the bookings.

Data Analysis (Cont...)

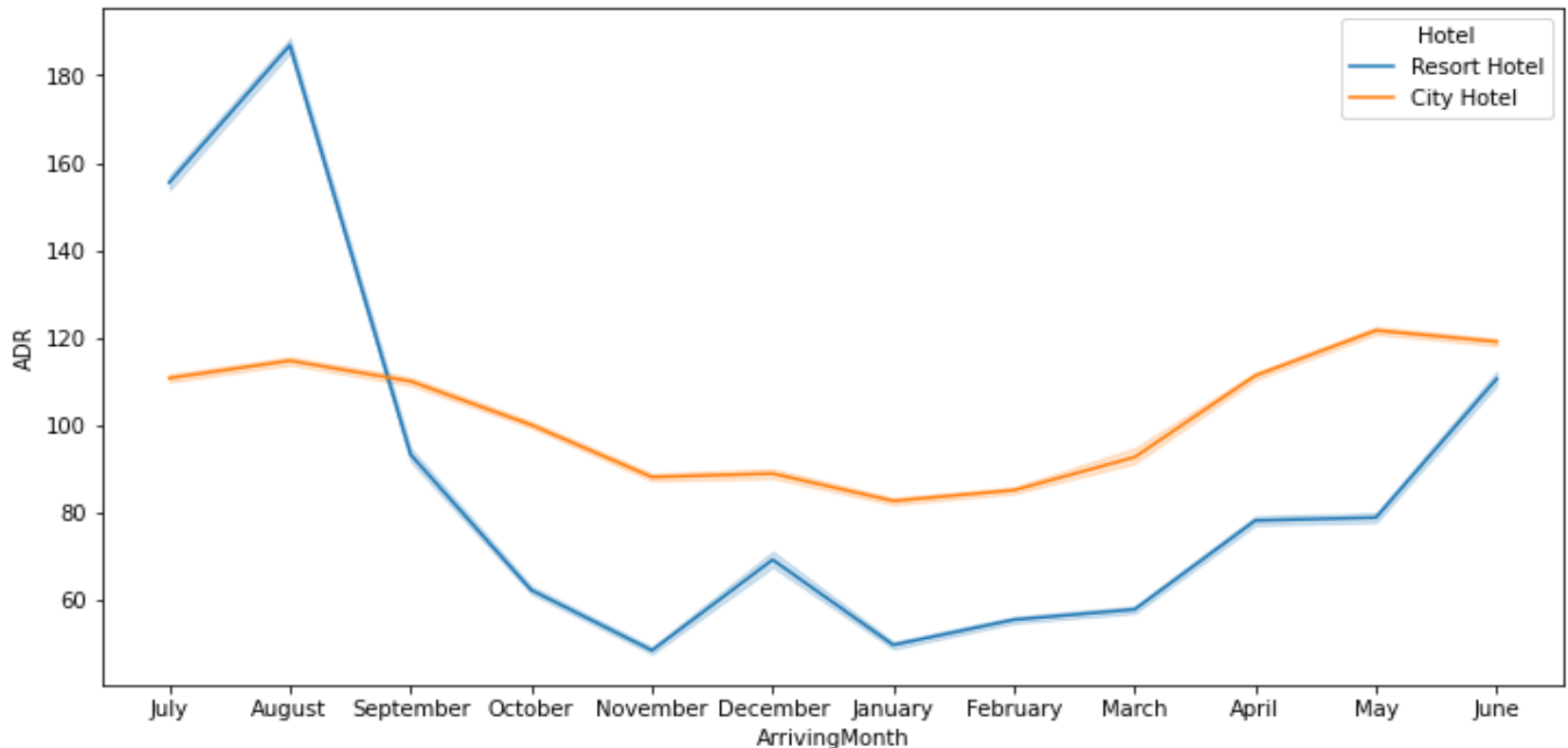
Price of both the hotels



Price of resort hotel are much higher and price of city hotel do not fluctuate that much.

Data Analysis (Cont...)

ADR in both the hotels

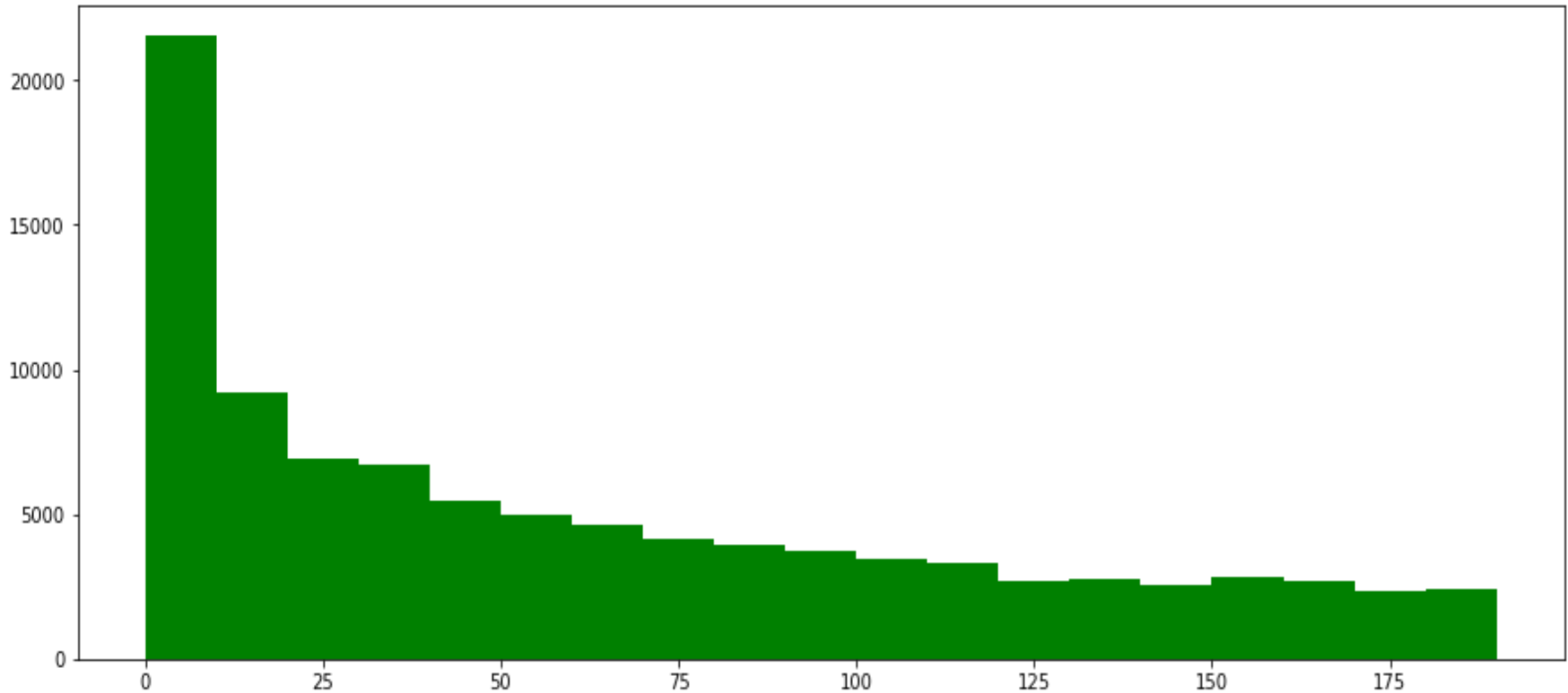


For Resort hotel, ADR is more expensive during July, August and September and for City Hotel, ADR is slightly more during May, June and July.

Data Analysis (Cont...)

Relation between lead time and cancellation

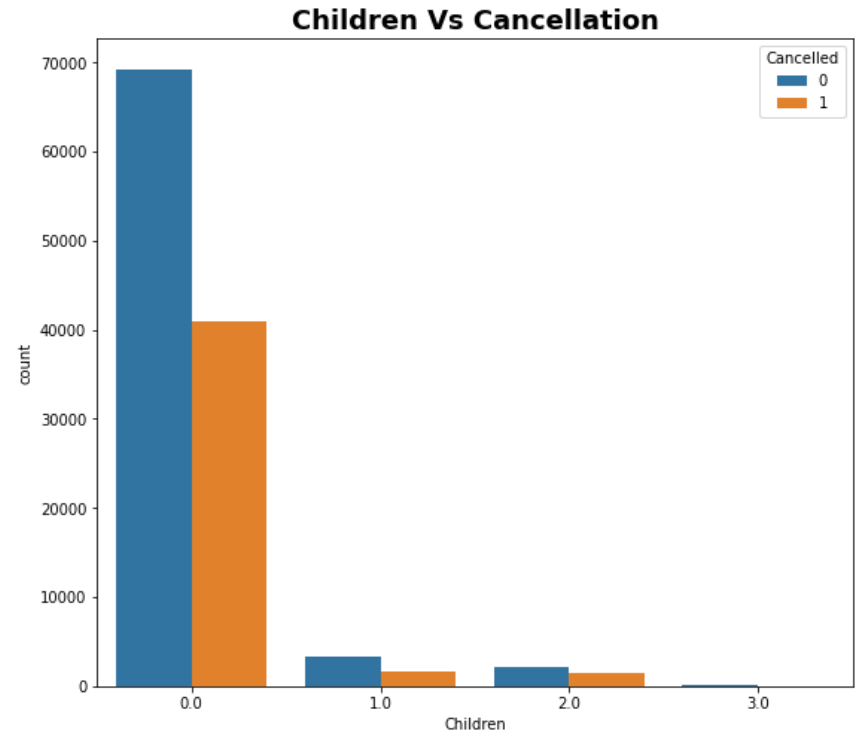
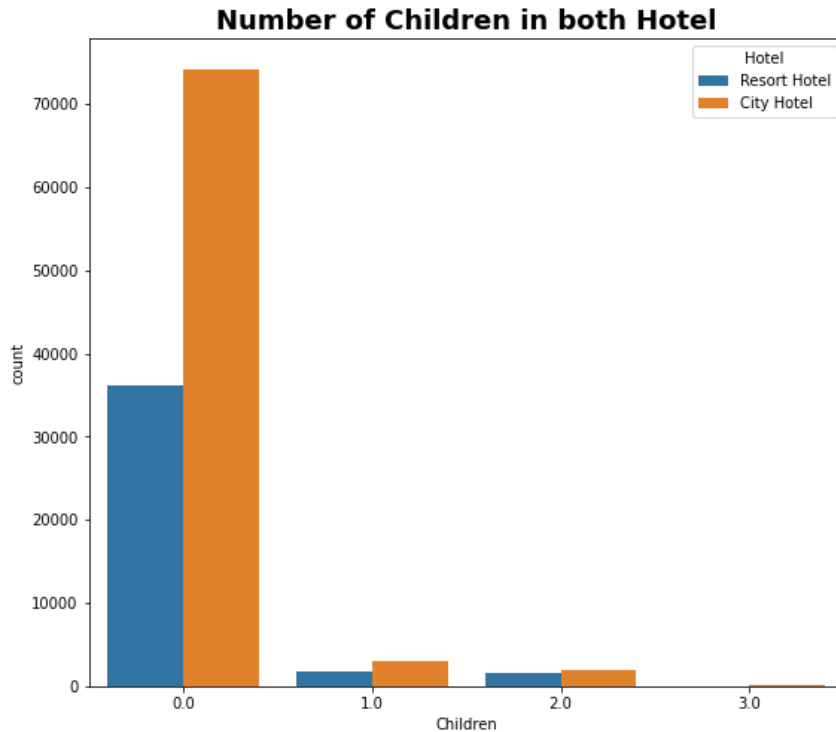
Relation between Lead Time and Cancellation



Lead time has a positive correlation with cancellation

Data Analysis (Cont...)

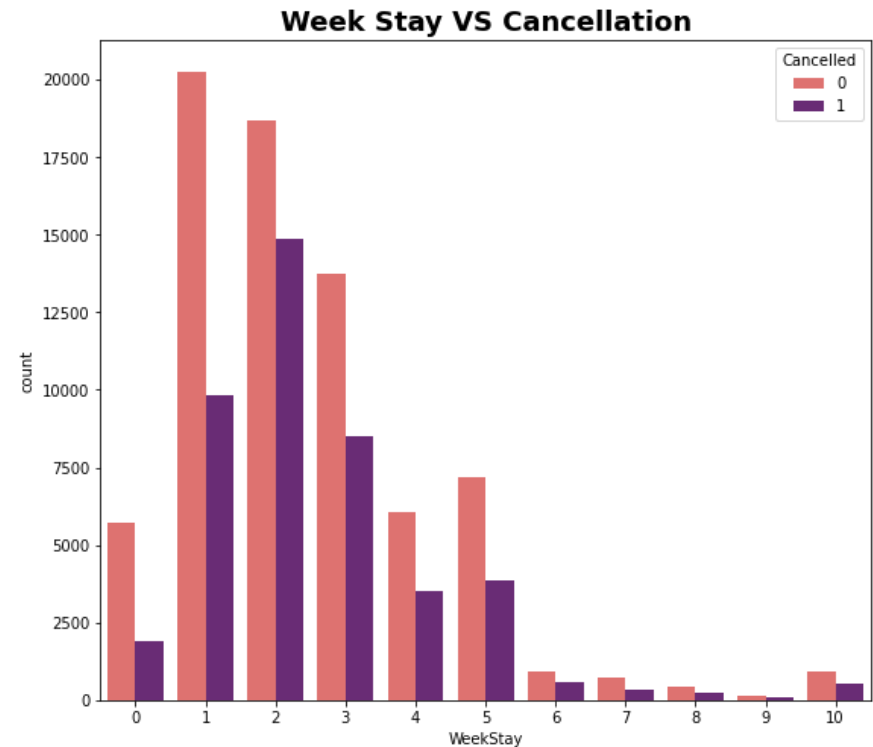
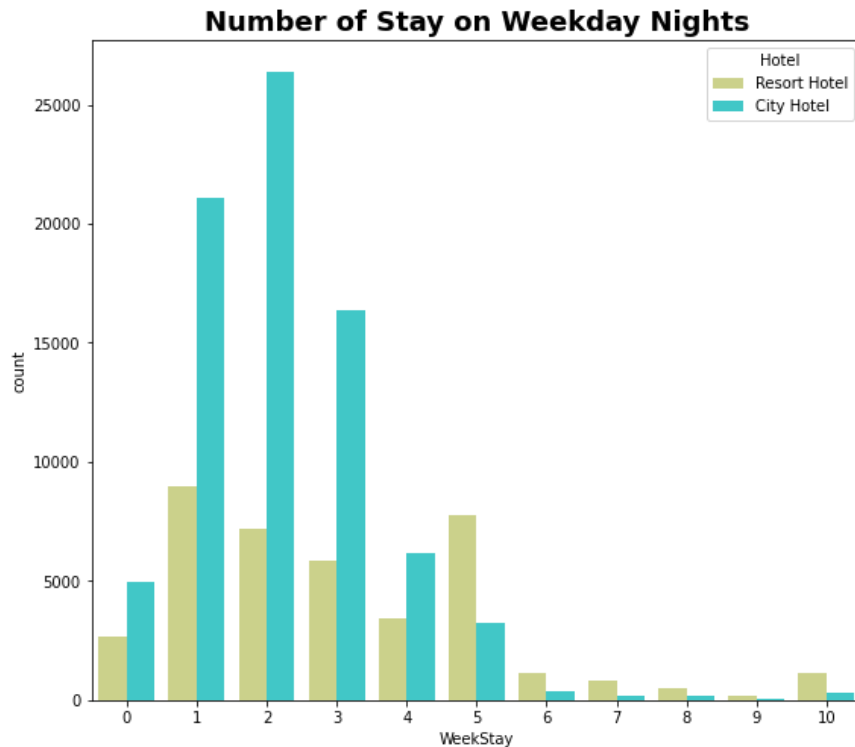
Babies in both the hotel and cancellation



Visitors with 2 children preferred city hotel and most visitor in pair comes with no children

Data Analysis (Cont...)

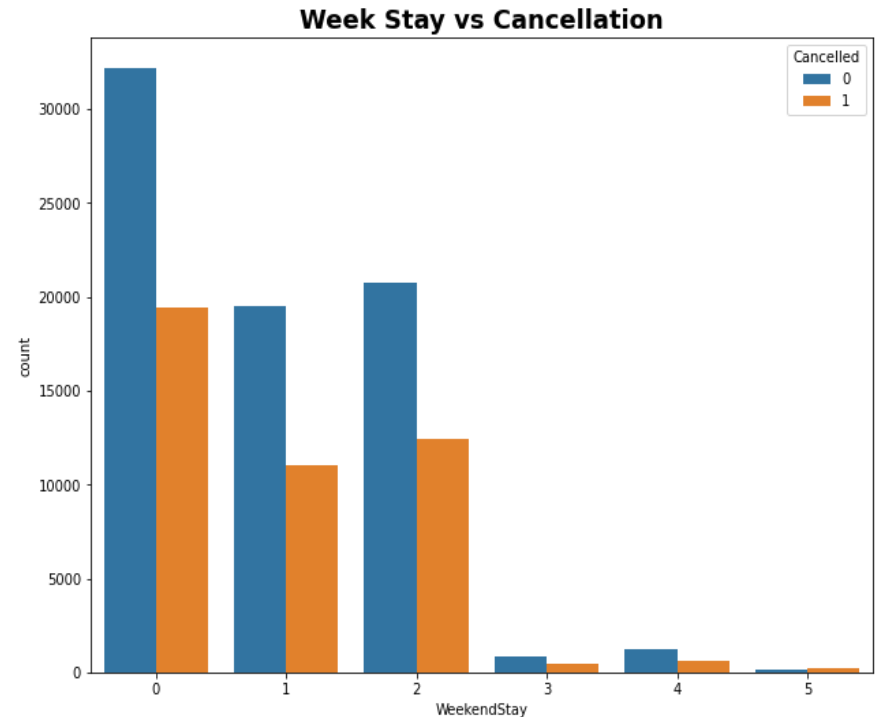
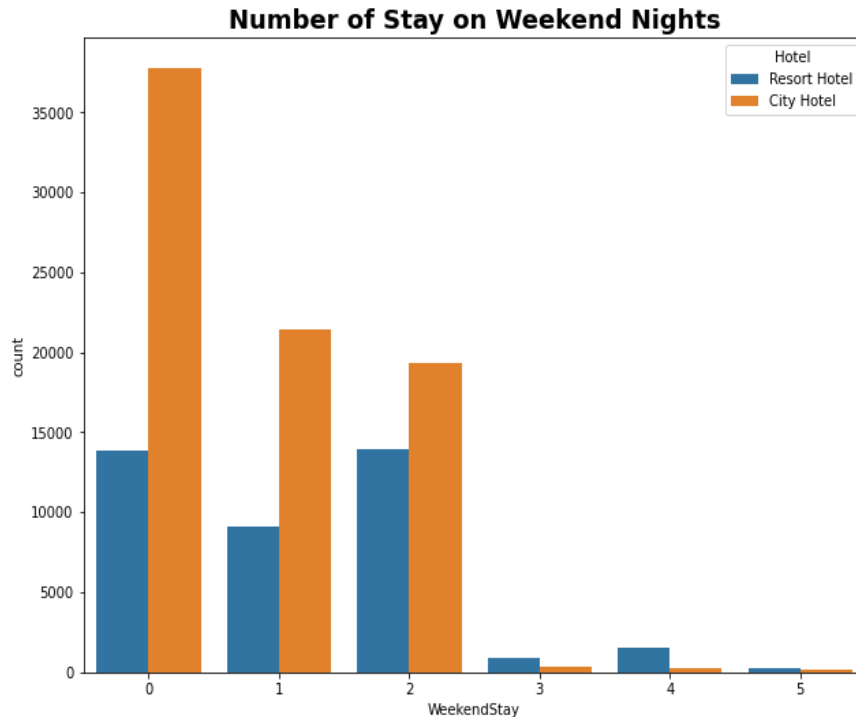
Weekday stay and cancellation



Weekday nights stay were more in city hotels and less cancellation observed

Data Analysis (Cont...)

Weekend stay and cancellation



- ❖ In the first graph it can be seen that most of the weekend nights were booked in city hotel
- ❖ Second plot indicates weekend nights which were booked were not cancelled

Conclusions

- ❖ Higher lead time has higher chance of cancellation. also previous cancellation increases chance of a cancellation.
- ❖ The city hotel has more guest during spring and autumn, when the price are also highest, in July and August there are less visitors, although prices are lower. Thus, customer can get good deal on booking in July and August in city hotels.
- ❖ Guest numbers for the Resort hotel go down slightly from June to September, which is also when the prices are highest. Thus, these months should be avoided for booking.
- ❖ April to August is the peak time of booking both in hotel have the fewest guest during the winter.
- ❖ No deposit cancellation are high compared to other categories but these should not be discouraged as booking in this category are also very high compared to non refundable type bookings.
- ❖ Cancellation are high when done through agents compared to direct booking. Hotels need to do marketing and give special incentives for direct booking as these may establish personal one to one relationship promoting customer loyalty.
- ❖ The majority of guests come from western Europe countries.
- ❖ The majority of reservations are for city hotels.
- ❖ The number of repeated guest is too low.
- ❖ The majority of reservations converts in to successful transitions.

Strategies to Counter High Cancellation at the Hotel

- ❖ Set Non-refundable Rates, Collect deposits and implement more rigid cancellation policies.
 - ❖ Encourage Direct booking by offering special discounts.
 - ❖ Monitor where the cancellations are coming from such as market segment, distribution channels, etc.
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