

Capstone Project

Hotel Booking Analysis

Individual project:

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Overview

- This project is based on the data of hotel bookings made between the durations of 2015 and 2017
- This dataset contains 119,390 observations for a City Hotel and a Resort Hotel. Each observation represents a hotel booking between the 1st of July 2015 and 31st of August 2017, including booking that effectively arrived and booking that were canceled
- Hotels tend to change their prices in order to generate the maximum revenue. These fluctuations in prices could be based on the different factors which will be explored later in this presentation

Agenda



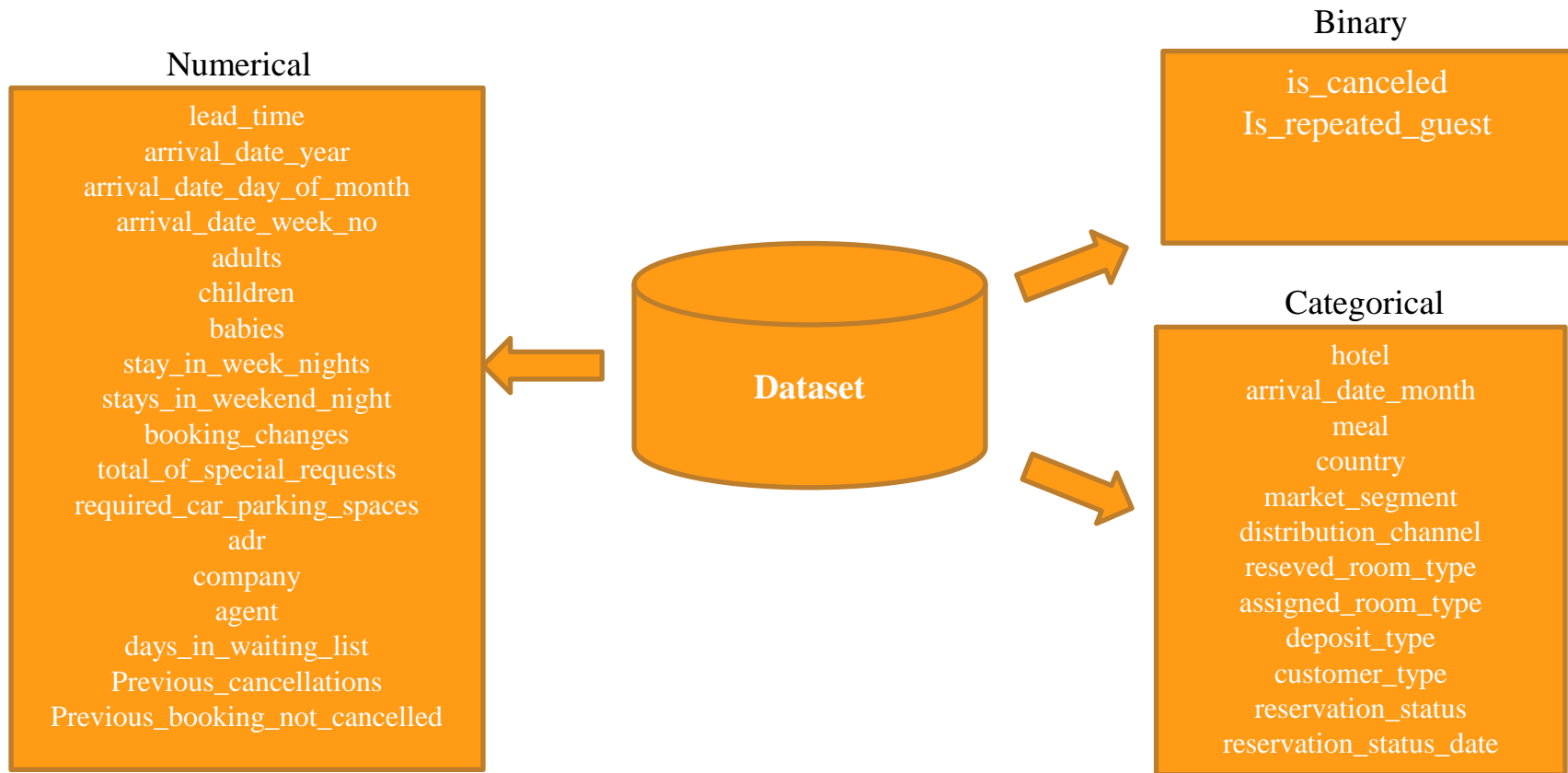
To discuss the analysis of given hotel bookings data set from 2015-2017.

We'll be doing analysis of given data set in following ways :

- ❖ Analysis on the basis of hotel
- ❖ Analysis on the basis of booking and cancellation
- ❖ Analysis on the basis of ADR(Average Daily Rate)
- ❖ Analysis on the basis of distribution channel
- ❖ Analysis on the basis of deposit type
- ❖ Analysis on the basis of meal type
- ❖ Analysis on the basis of customer type
- ❖ Analysis on the basis of room type
- ❖ Analysis on the basis of country

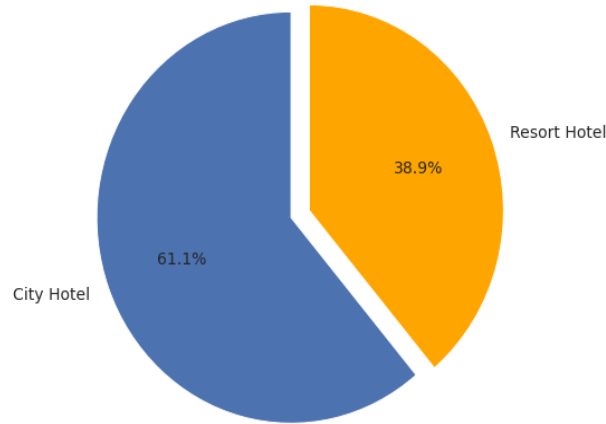
By doing this we'll try to find out key trends and patterns in the hotel bookings.

Data Summary

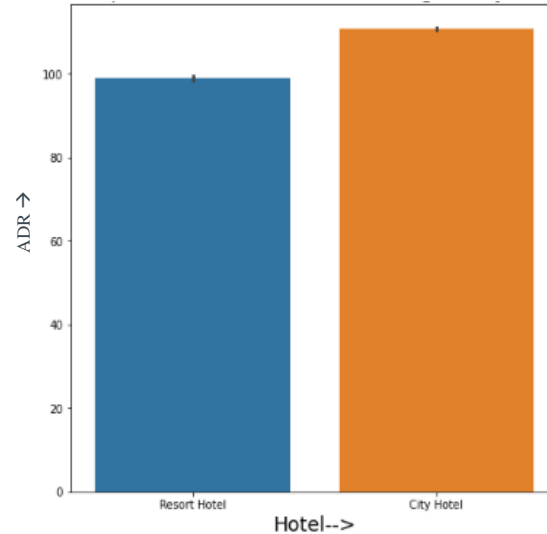


Analysis on the basis of Hotel type

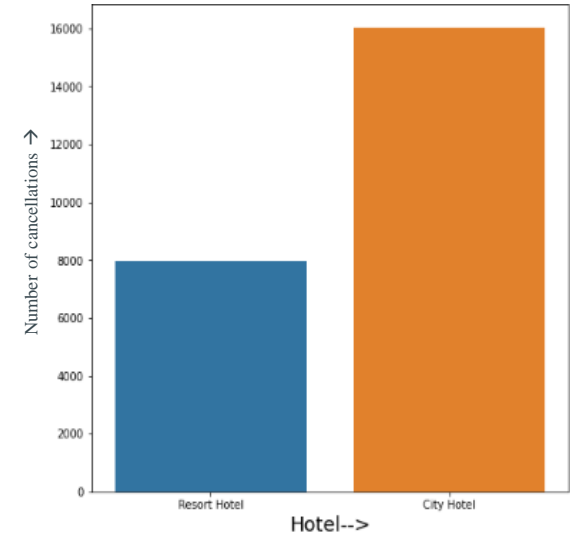
Bookings based on hotel type



ADR by hotel type

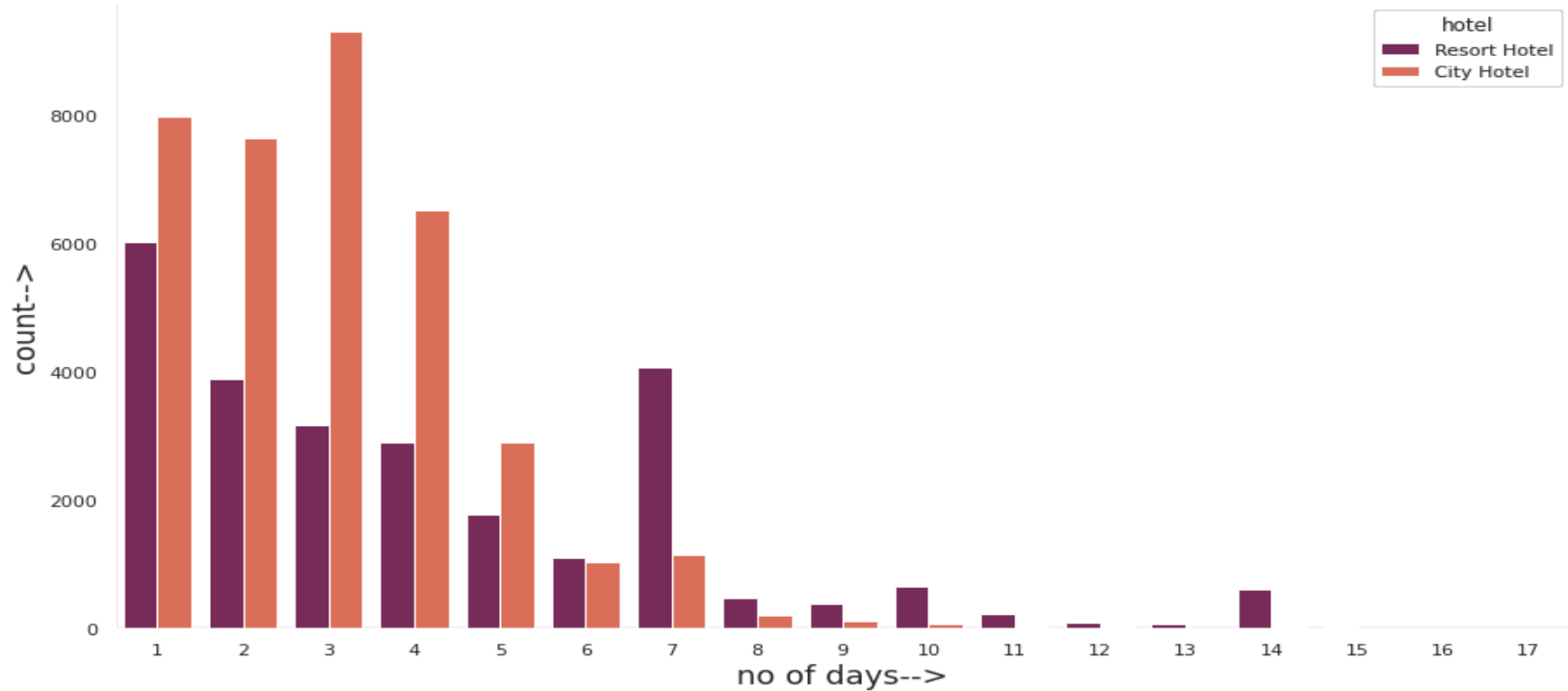


Booking cancellations by hotel type



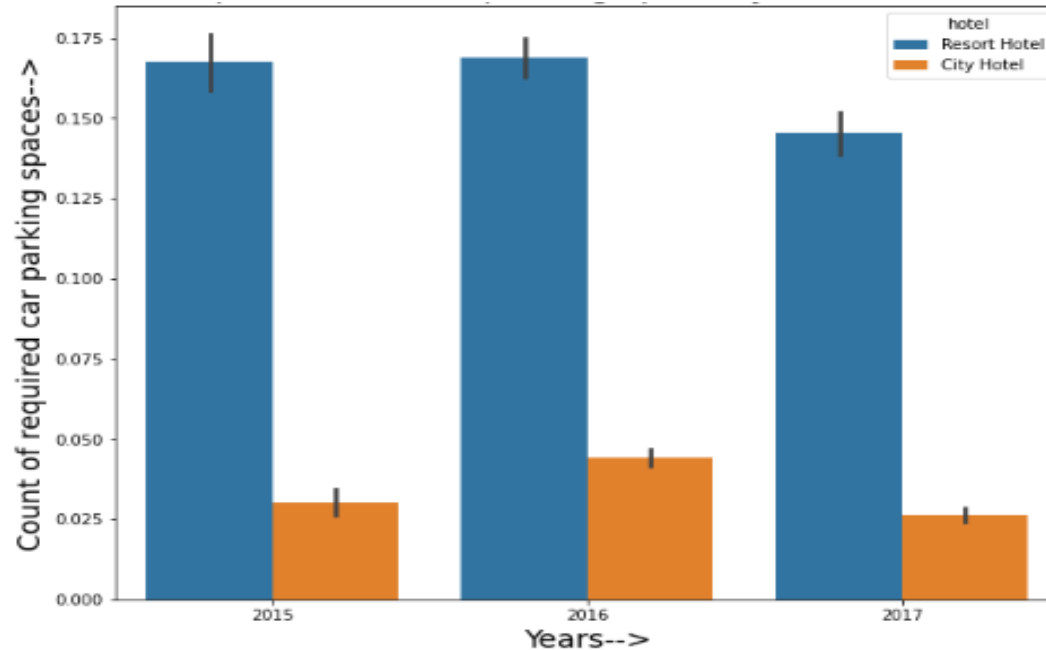
- In the given pie chart, **around 61% of people booked City Hotel and 39% people booked Resort Hotel**. On the basis of percentage, we can assume that the City hotel is more popular compared to Resort Hotel.
- **ADR (Average daily rate) of Resort hotel is lower** than that of City hotel. Hence, City hotel seems to generate more revenue compared to Resort hotel.
- **More number on booking cancellations are seen in City hotels** compared to Resorts hotels.

Duration of stay based on hotel type



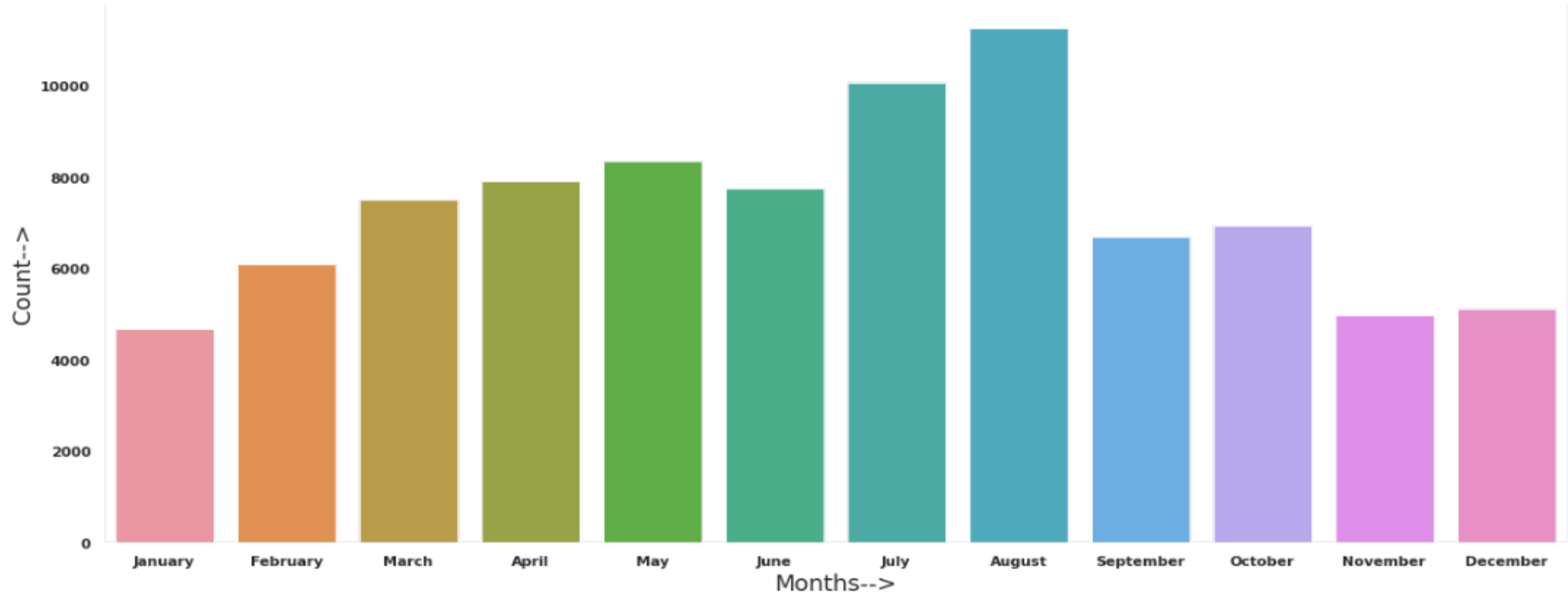
- On the basis bar graph, we can analyze that people prefer City Hotels for **shorter duration** which is around **1-4 days**.
- Resort Hotels customer prefer to stay for a **longer duration** that is for a **week (7 days)**.

Car parking analysis



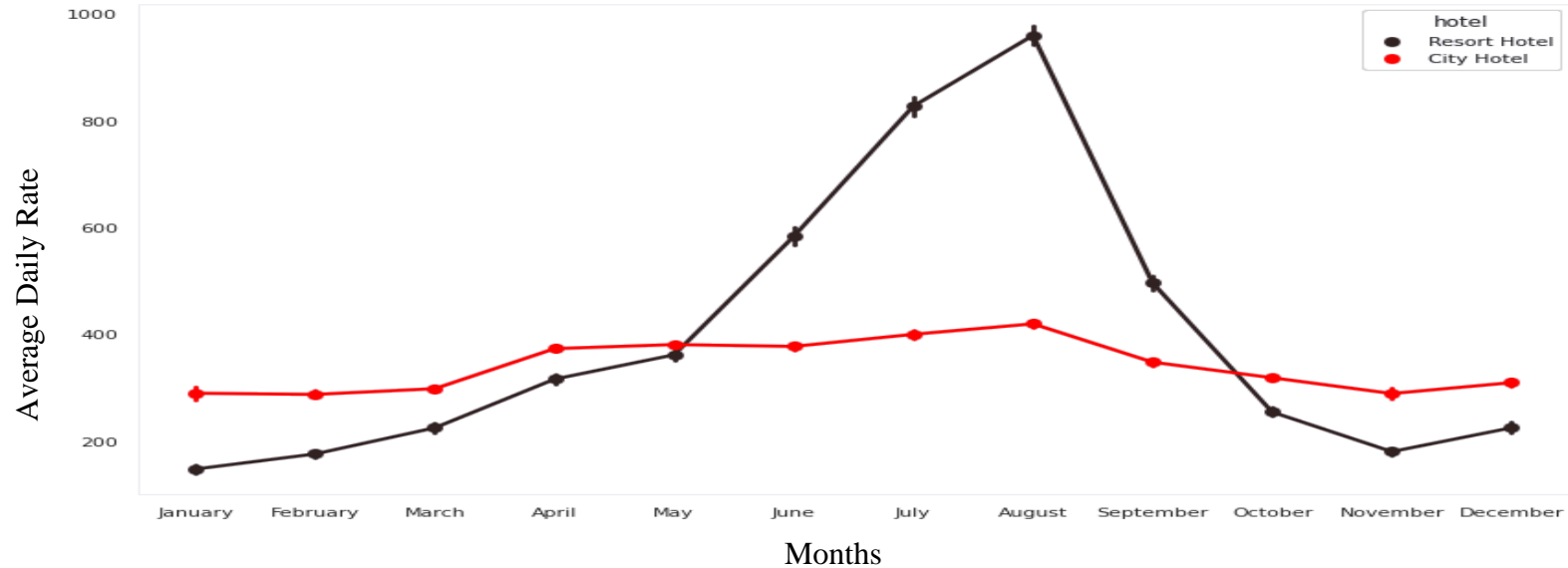
- According to the graph, every year, **Resort hotels require more parking space** compared to City hotels.

Month wise analysis in terms of bookings



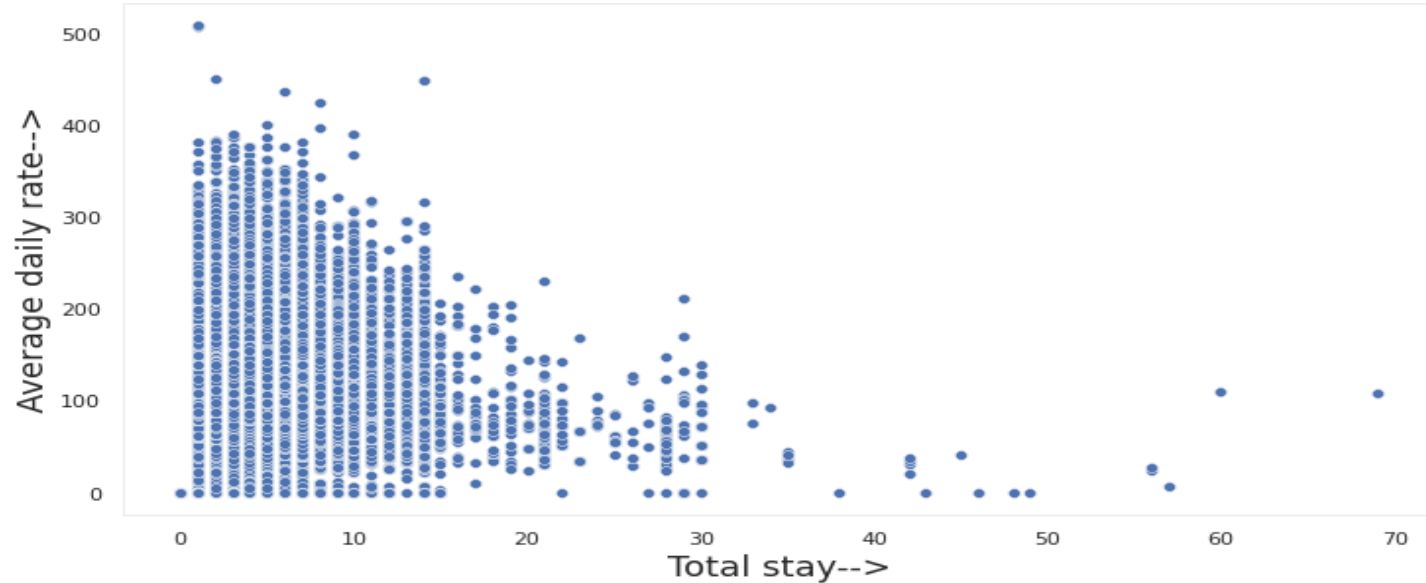
- According to the chart, the busiest months for hotels are **July and August**.

Month wise ADR analysis



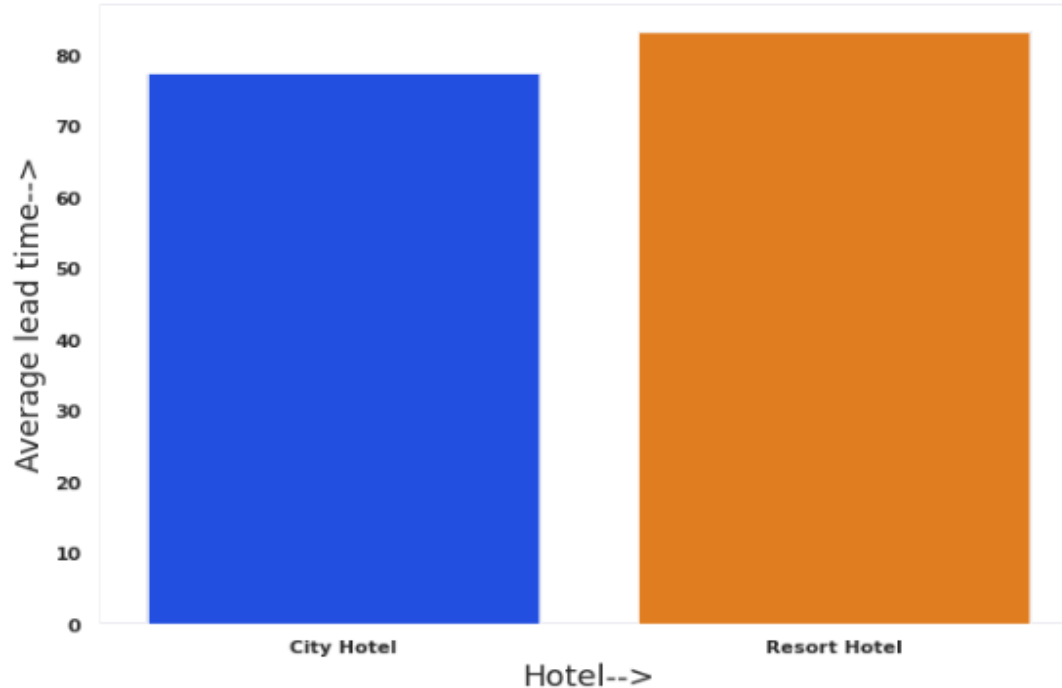
- Highest ADRs are generated in the months of **July and August** for both City hotel and Resort hotels. Resort hotels generate much more revenue than City Hotel in months of July and August.
- According to the point chart, the ADR is **lowest in January** for Resort Hotel and **January and February** for City Hotel, these months are the best deal for hotel booking.

Relation between ADR and total stay



- As per the plot, there is a **negative correlation** between the Total stay and the ADR, which means as the length of total stay increases the ADR decreases.

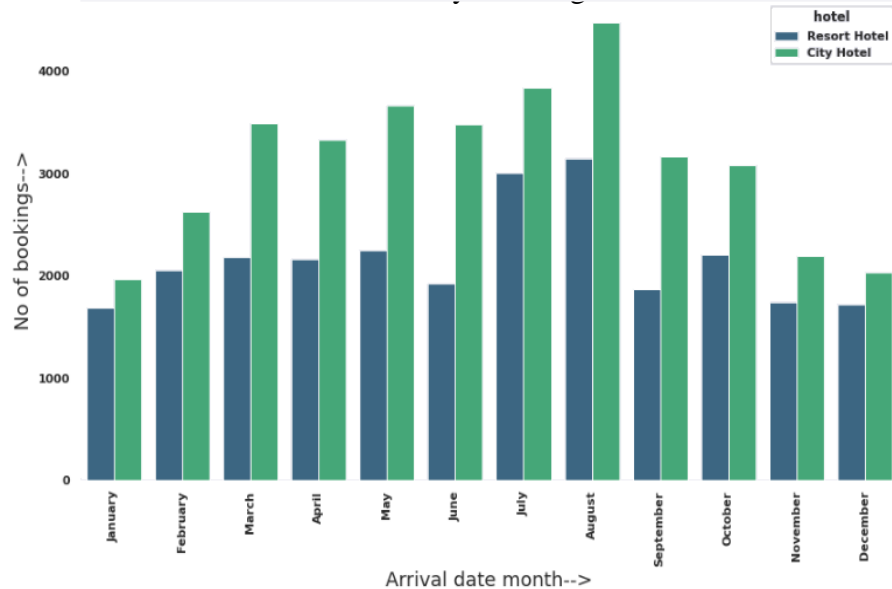
Average lead time based on hotel type



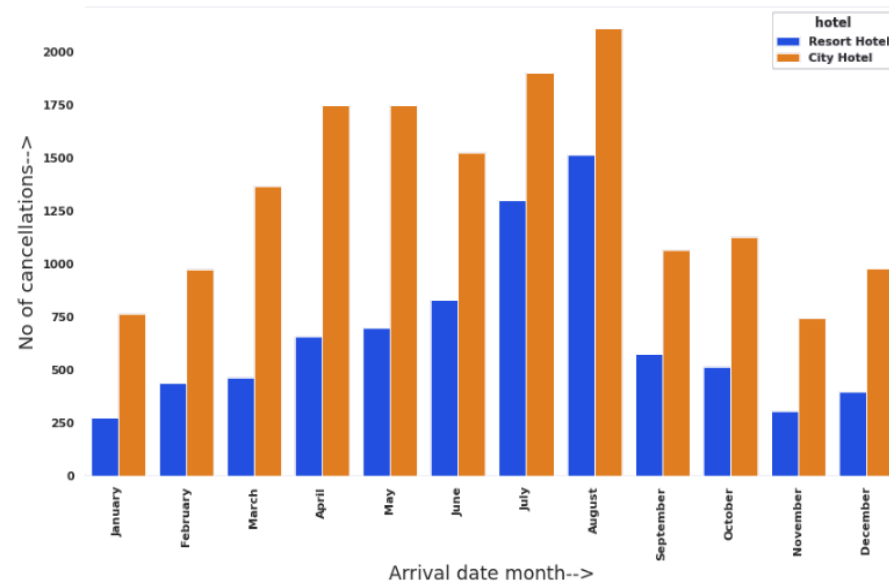
- According to the chart, **Resort Hotel has the higher average lead time** compared to City hotel.
- Hence, for a Resort hotel the number of days in between the time a guest books a room and the time guest arrives at the hotel is greater compared to city hotel

Month wise analysis basis of bookings and cancellations

Monthly Bookings

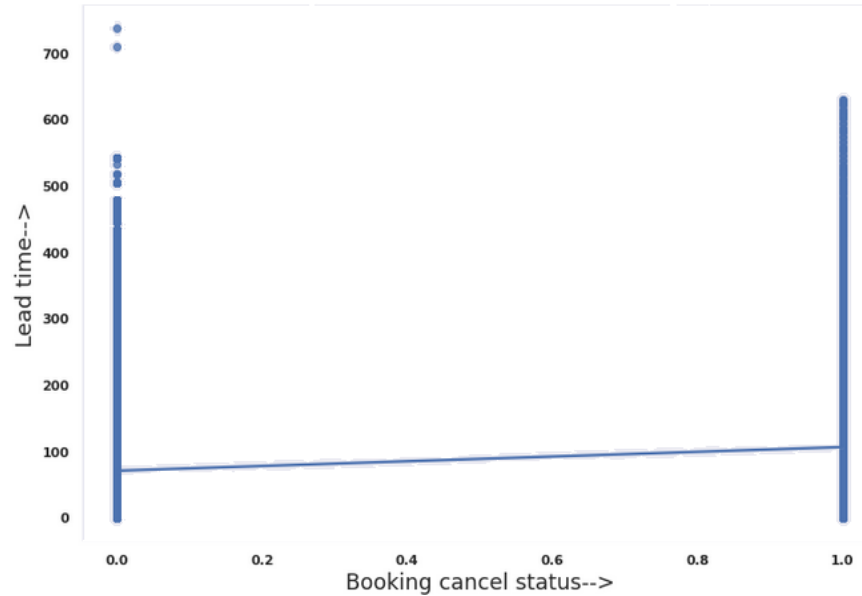


Monthly Cancellations



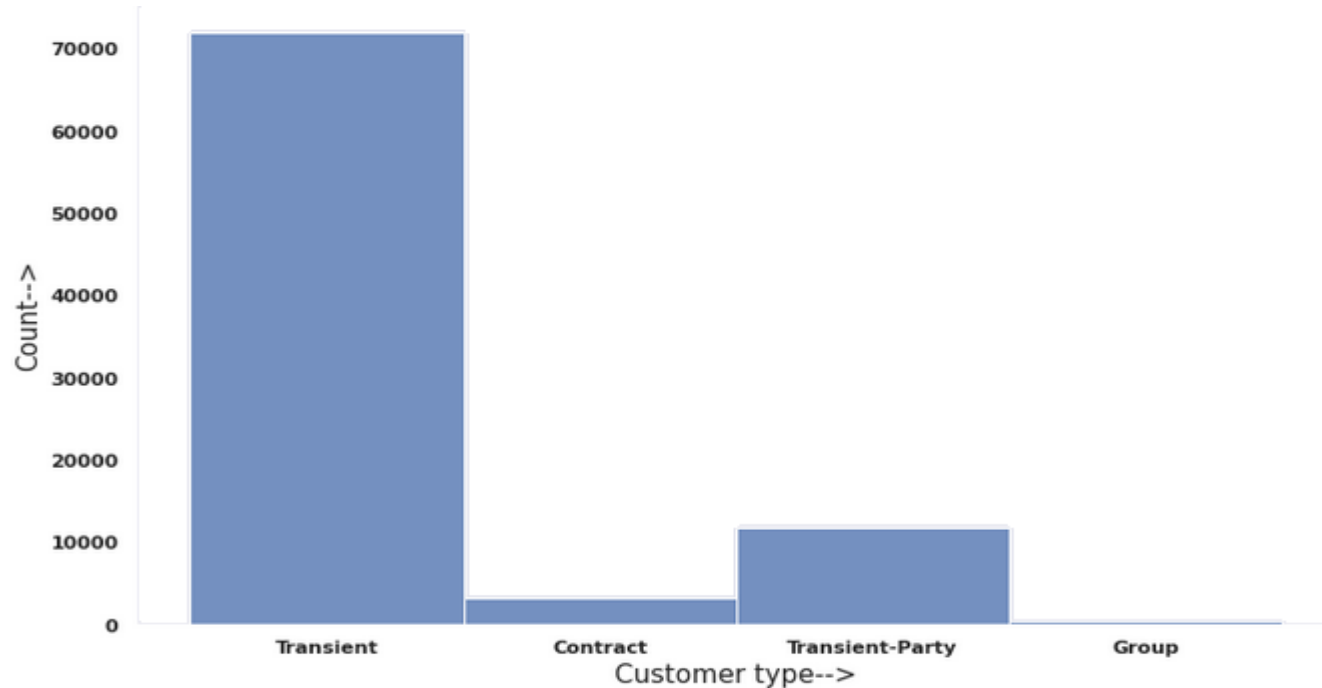
- In City hotels and Resort hotels, bookings and cancellations are high during **July and August**.
- The lowest bookings and cancellation for City and Resort hotels are observed in **January**.

Relation between lead time and booking cancellation



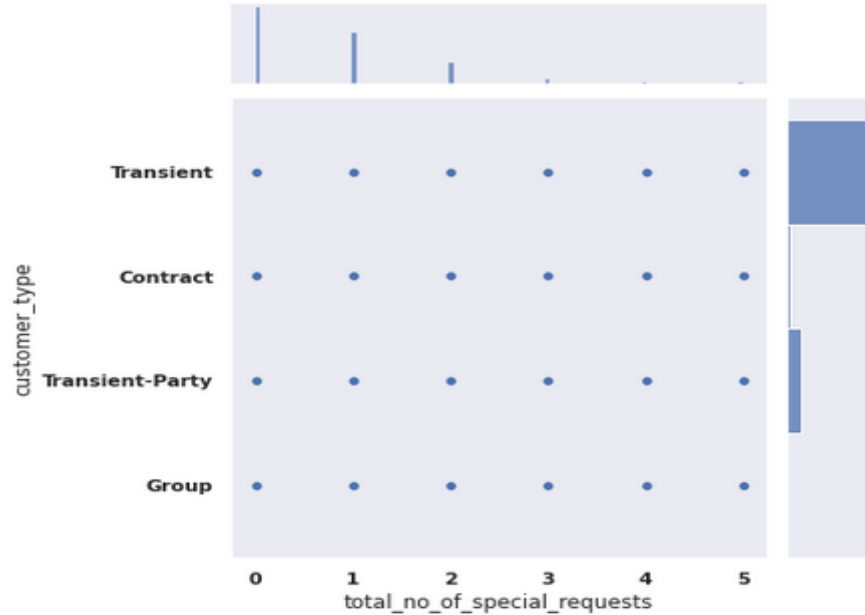
- According to the chart, **higher lead time leads to high booking cancellations** and **lower lead time lead to low booking cancellations**.

Hotels booked by different type of customers



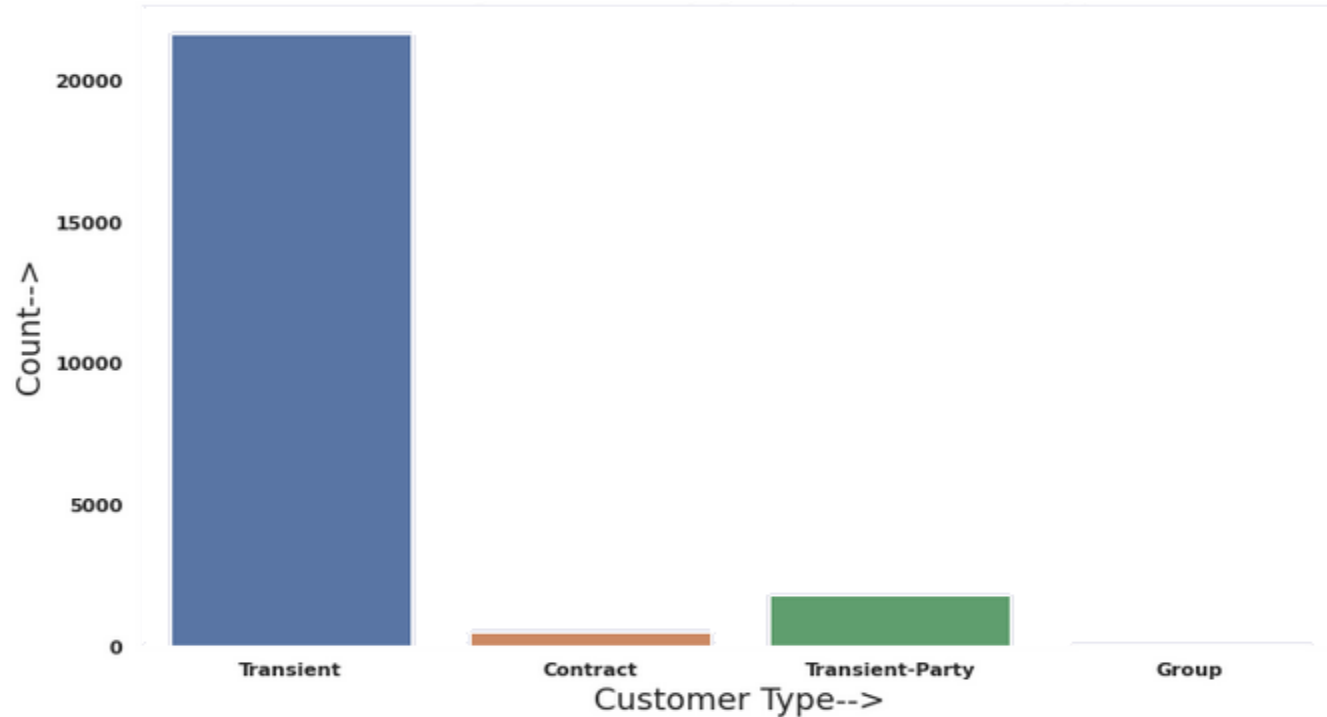
- According to histogram chart, **transient customers type** make most bookings (Transient guest means an overnight lodging guest who does not intend to stay for any permanent length of time).

Special request by different type of customers



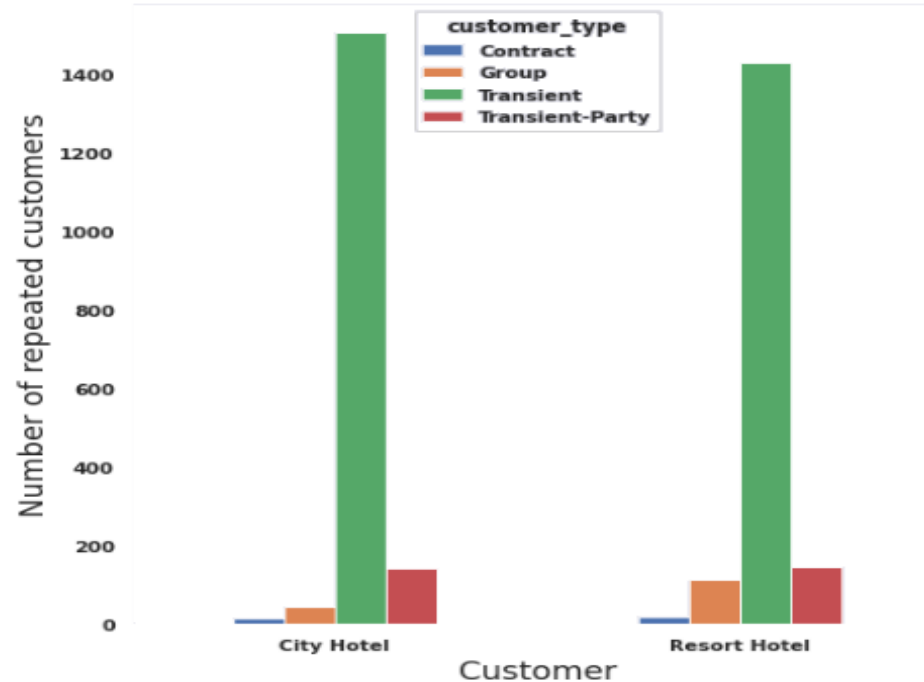
- According to joint chart, Most number of special requests comes from **Transient customers**.

Booking Cancellation On The Basis Of Customer Type



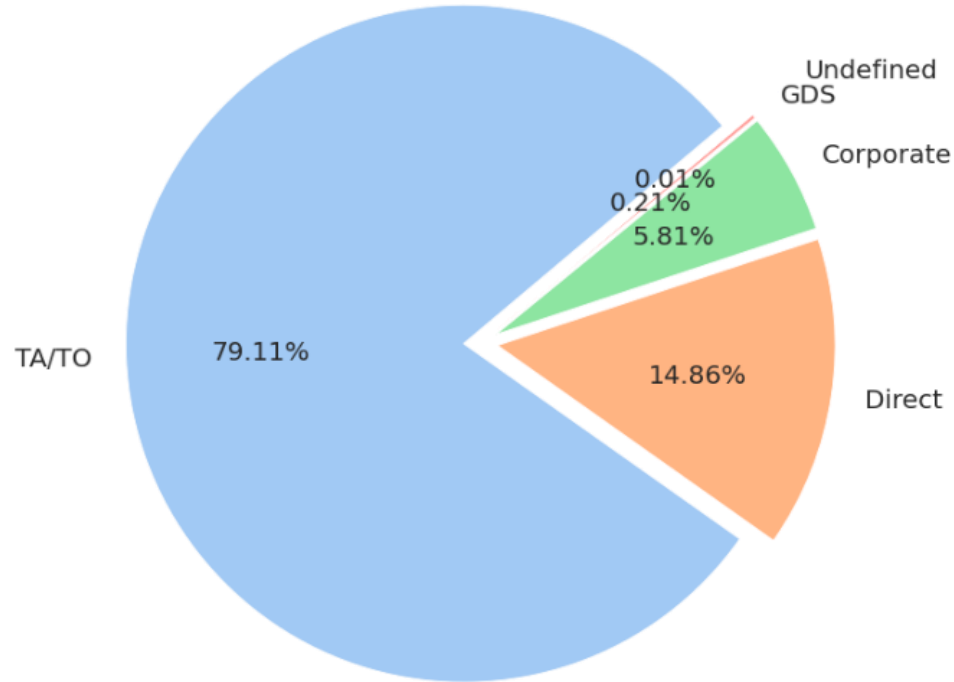
- According to chart, booking cancellation is greater for **Transient customer**.

Customer retention analysis



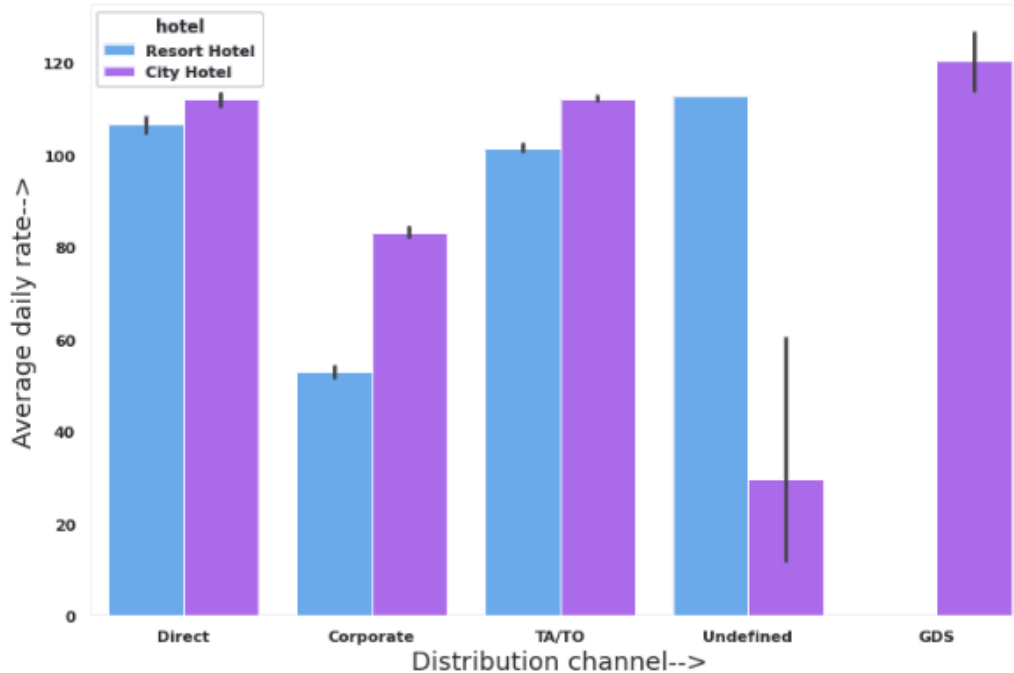
- According to customer retention graph, **transient customer** is most repeated customer in both City and Resort hotels
- **City hotels have more repeated transient customers** than Resort hotels'

Distribution channel analysis



- According above pie chart, **79.11% bookings are made by TA/TO**(Travel agent/Travel operators), so we can say most guests making the reservations through TA/TO channel.
- The least preferred distribution channel is GDS(Global Distribution System)

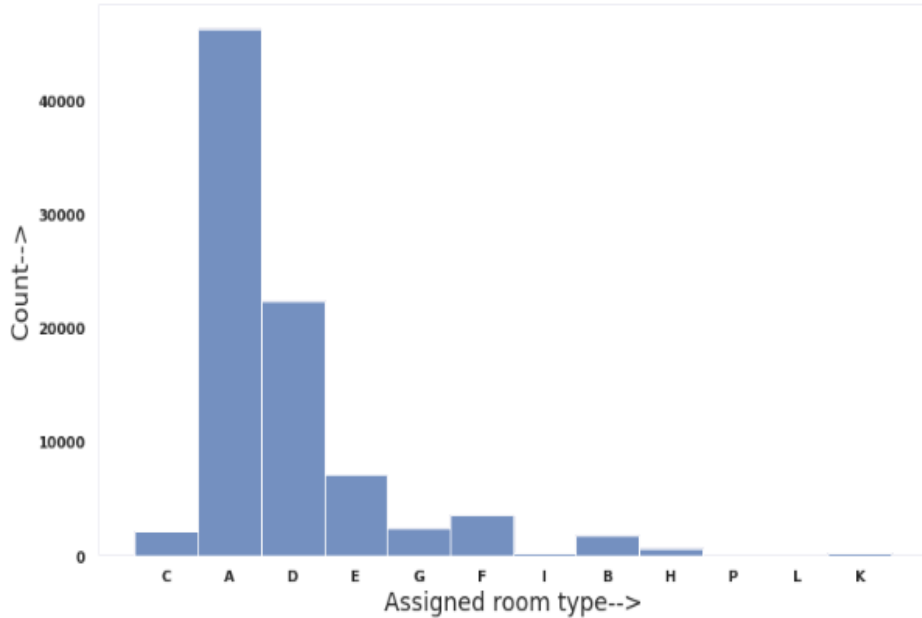
Distribution channel analysis



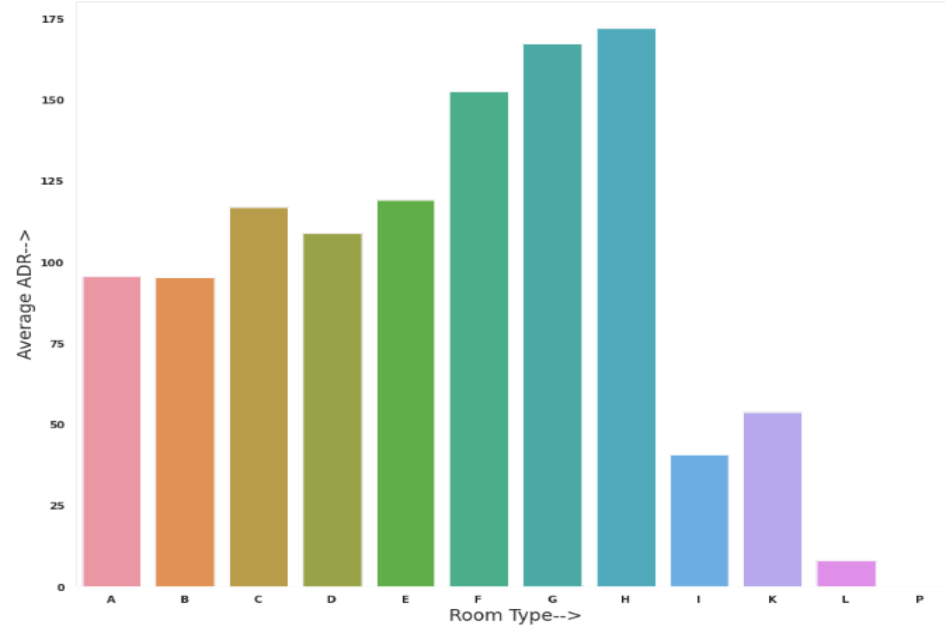
- **GDS channel brings higher revenue generating deals for City hotel**, in contrast to that most bookings come via TA/TO. City Hotel can work to increase outreach on GDS channels to get more higher revenue generating deals.
- **Resort hotel has more revenue generating deals by direct and TA/TO channel.**

Analysis based on room types

Bookings based on room type

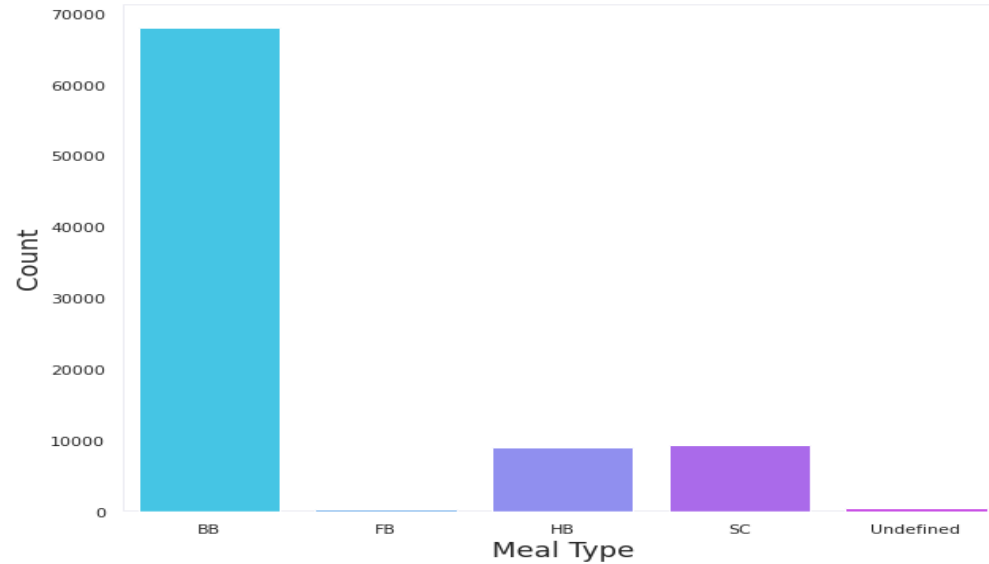


Relation between ADR and room type



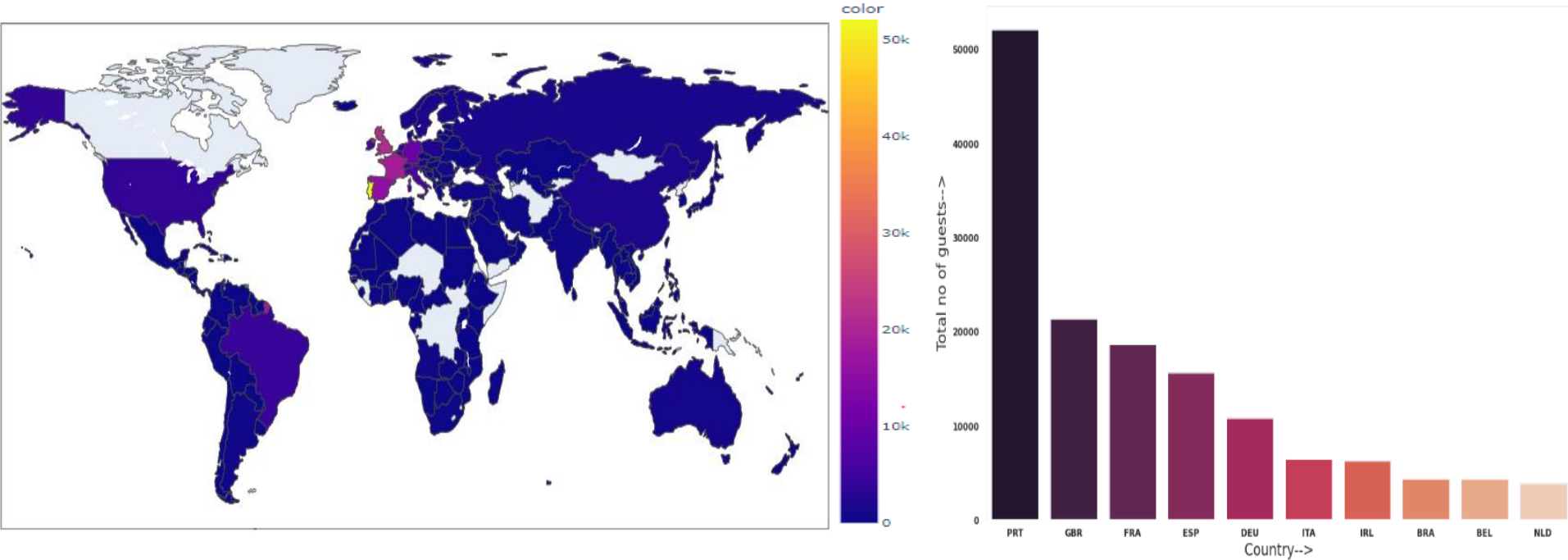
- **Room type A** is most demanded by the customers
- **Room types F, G and H** are some of the highest ADR (Average Daily Rate) generating rooms

Analysis on the basis of meal type



- On the basis of the meal type, the bar graph clearly represents that the most preferred meal type is '**BB**' i.e. Bed and Breakfast and the least preferred one is 'FB' i.e. FB: Full Board(breakfast, lunch, and dinner).

Analysis based on country



- On the basis on map and chart we can say that most guests come from **Southern Europe**.
- **PRT** (Portugal) has the highest number of guests.

Conclusion



- ❖ City hotels have more bookings and cancellations compared to Resort hotels
- ❖ The revenue generated by City hotels is more than Resort hotels
- ❖ Guest stay at City Hotels for shorter duration which is around 1-4 days and for Resort Hotels customer prefer to stay for a longer duration that is for a week (7 days)
- ❖ Resort hotels require more parking space compared to the City hotels
- ❖ July and August are the busiest months in terms of hotel bookings. Also most ADR is generated in these months
- ❖ There is a negative correlation between the Total stay and the ADR, which means as the length of total stay increases the ADR decreases
- ❖ Resort Hotel has the higher average lead time compared to City hotel.
- ❖ Higher lead time leads to high booking cancellations and lower lead time leads to low booking cancellations.
- ❖ Transient customers make most hotel bookings and are most repeated in both City and Resort hotels
- ❖ Most guests are making the reservations through TA/TO channel
- ❖ GDS channel brings higher revenue generating deals for City hotel. Resort hotel has more revenue generating deals by direct and TA/TO channel
- ❖ Room type “A” is most demanded by the customers. Room types F, G and H are some of the highest ADR (Average Daily Rate) generating rooms
- ❖ The most preferred meal type is ‘BB’
- ❖ Most guests come from Southern Europe. Portugal has the highest number of guests

Thank You