

# Capstone Project

## Hotel Booking Analysis

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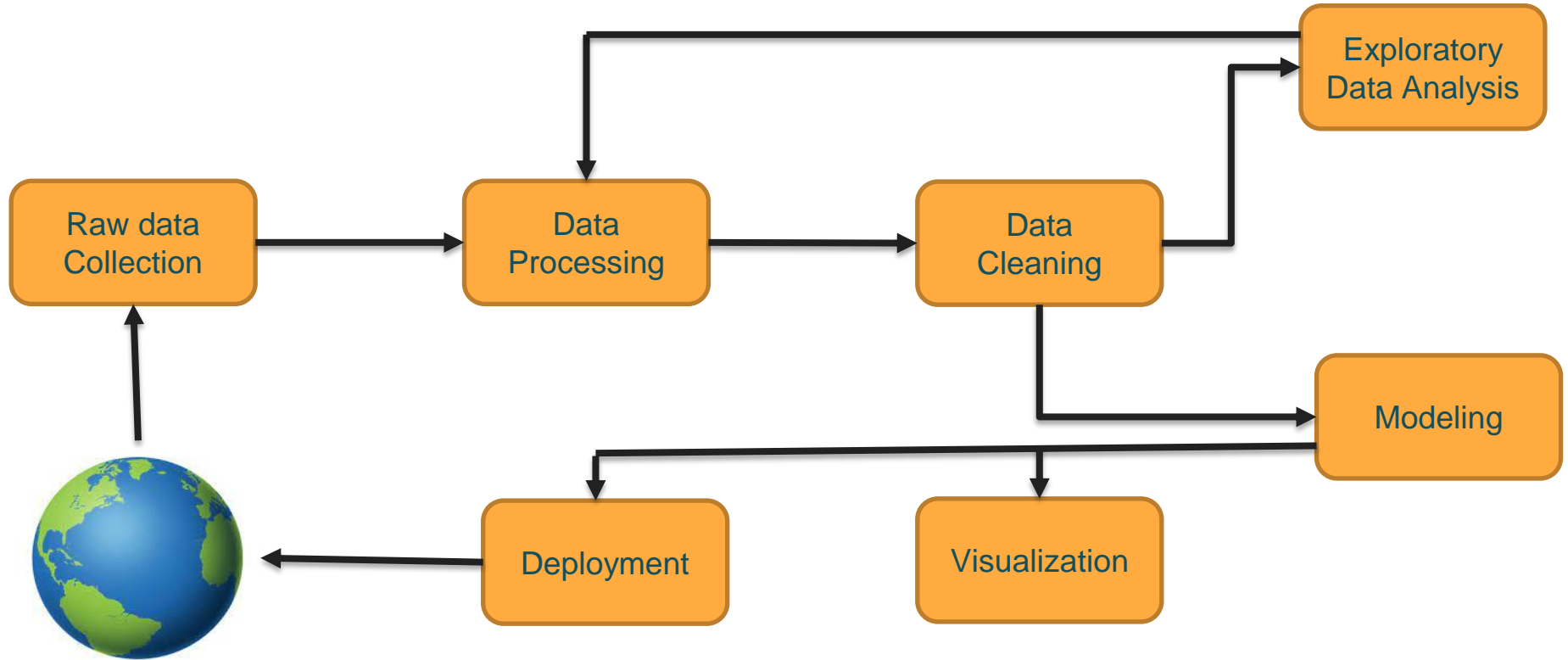
# Main Moto:

The main objective is to know the few facts about the hotel before booking so this hotel booking analysis is done for the given dataset(2015-2017)

We will be discussing correlation heat map, univariate analysis and some important questions which will help customer to understand few things before booking the hotel. The questions are

- Which type of the hotel is most preferred type?
- How many bookings got cancelled?
- Which is the busiest month for hotel?
- How long people can stay at hotel?
- Which meal is the most preferred meal
- Which is the most booked accommodation type? AND SO ON.....

# Data Analysis Process:



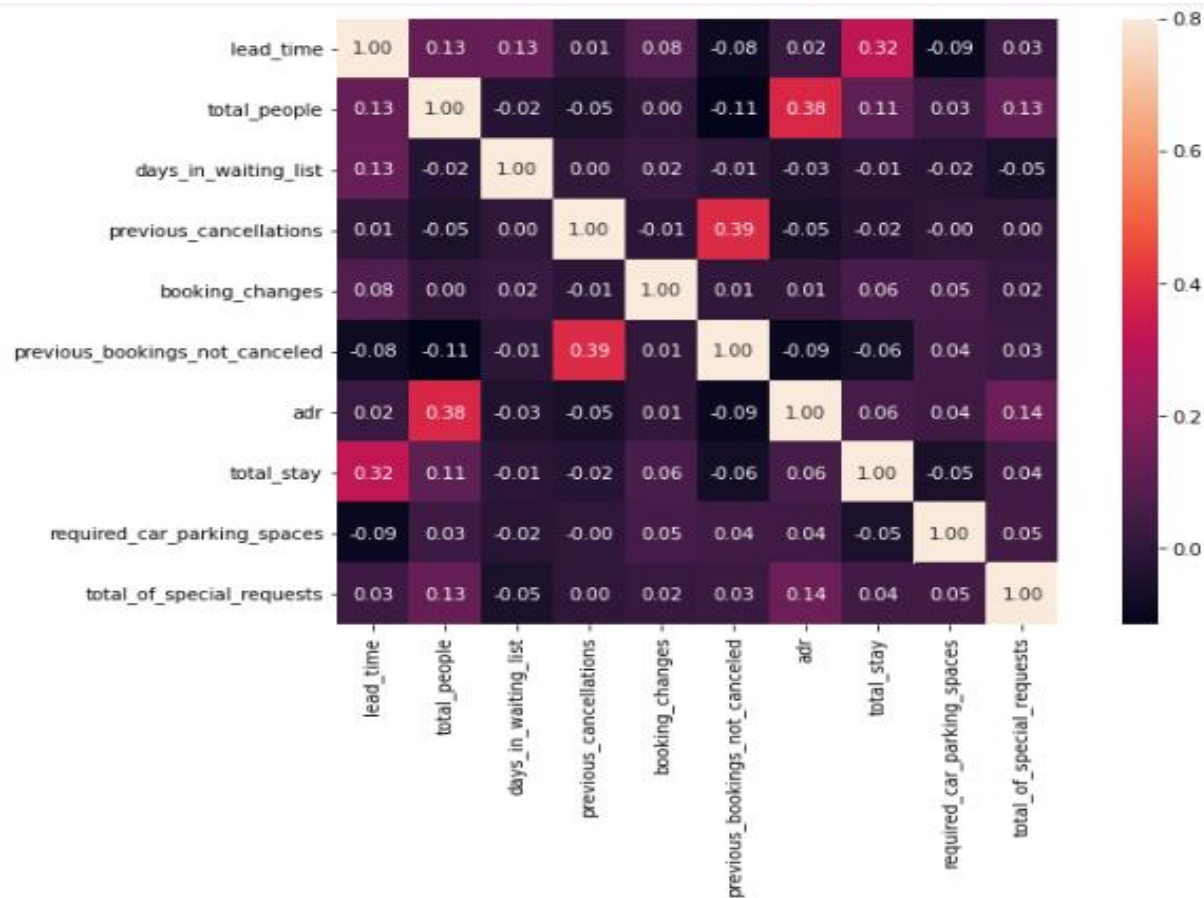
# Data Summary:

Hotel booking analysis is done for given data set which consist of number columns act as variables. We are going to see few important column name with description

- **Hotel:** There are two type of hotel one is city hotel and other is resort hotel.
- **Is cancelled :** This columns shows the booking got cancelled or not and indicated by 1 and 0.
- **Lead time :** The lead time is nothing but the time difference between actual arrival and reservation.
- **Stayed in weekend nights:** Total number of nights stayed in weekends per reservation.

- **Stayed in weekday nights:** Total number of nights stayed in week days per reservation.
- **Meal:** Type of the meal preferred per reservation.[BB,FB,HB,SC,Undefined]
- **Country:** From which country most of the guests are coming.
- **Market segment:** This column indicates how reservation was made and what is the moto of reservation. Eg, corporate means corporate trip, TA for travel agency.....AND SO ON.....

# Correlation Heat Map:



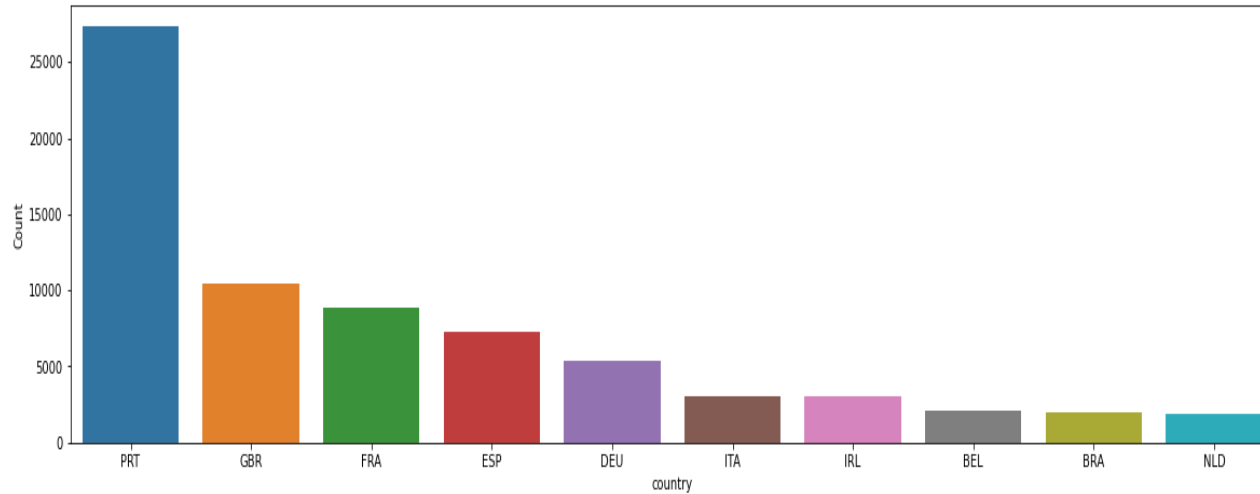
- From this visualization we can see that, Total stay and lead time is slightly correlated. which means, those who are planning to stay long prefers to book way in advance.
- adr and Total people columns are correlated which shows that, more the people will come, more the revenue will be generated

# Univariate Analysis:

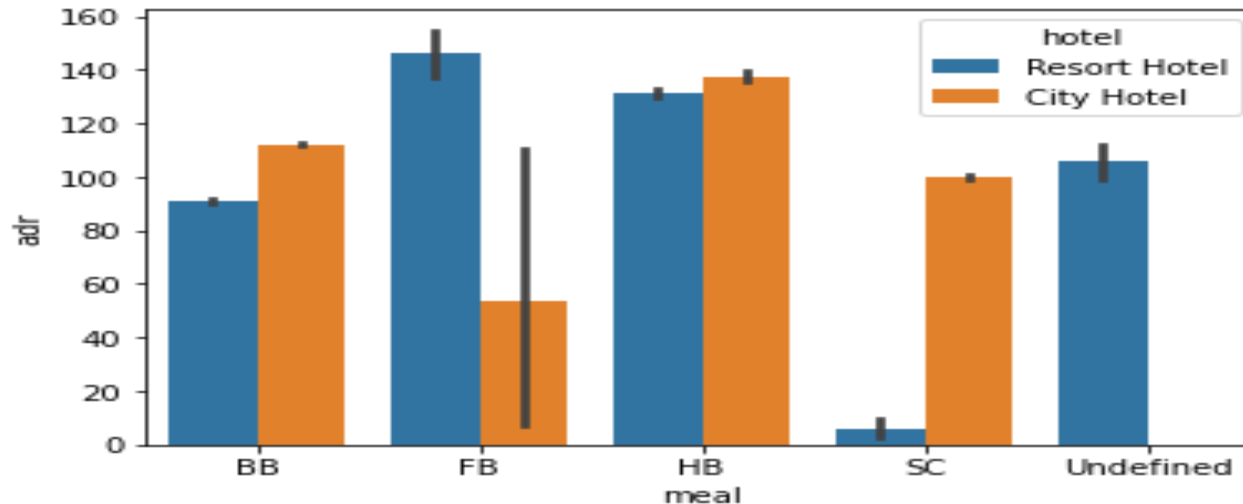
**Univariate analysis** is the simplest form of analyzing data. “Uni” means “one”, so in other words your data has only one variable. It’s major purpose is to describe: It takes data, summarizes that data and finds patterns in the data. The univariate analysis is done for the given data set of hotel booking analysis. We will be answering few questions while doing univariate analysis.

- a) From which country most of the guests are coming?
- b) What is the most preferred meal type for each reservation?
- c) Which room type is in demand? And highest average per day?

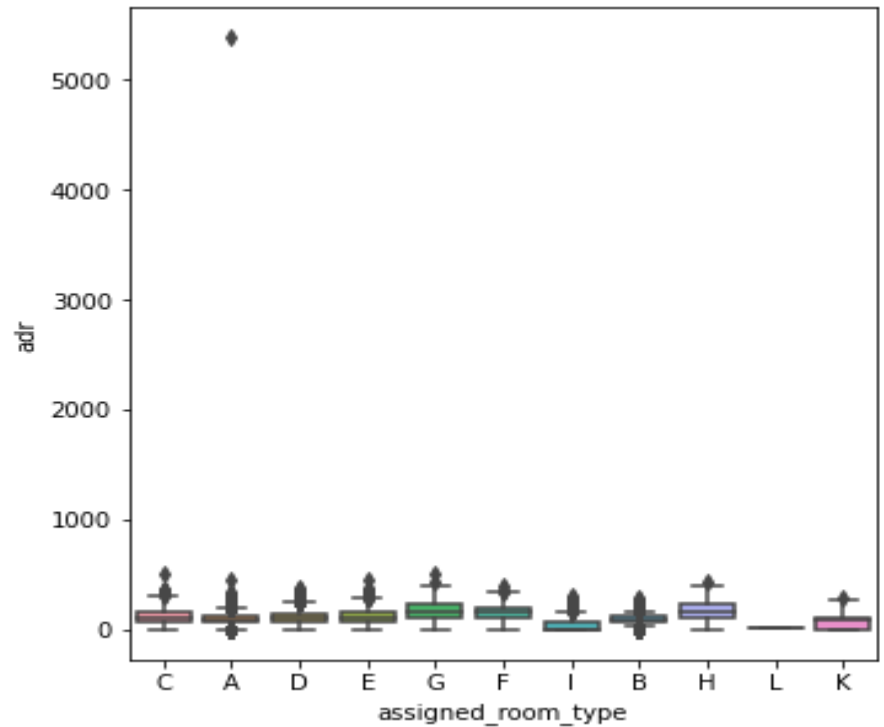
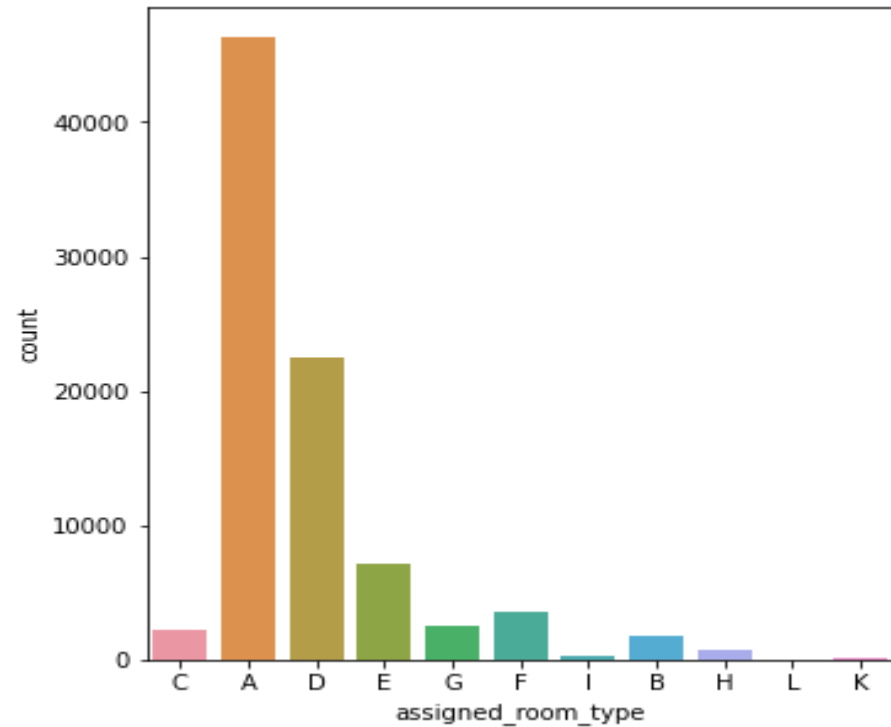




a) We can see that the most of the bookings has been done from Portugal, whereas from Netherlands least bookings has been occurred



b) From this visualization it's clear that people use to prefer full board (FB) meal at resort hotel and Half board (HB) at city hotel because of numerous options



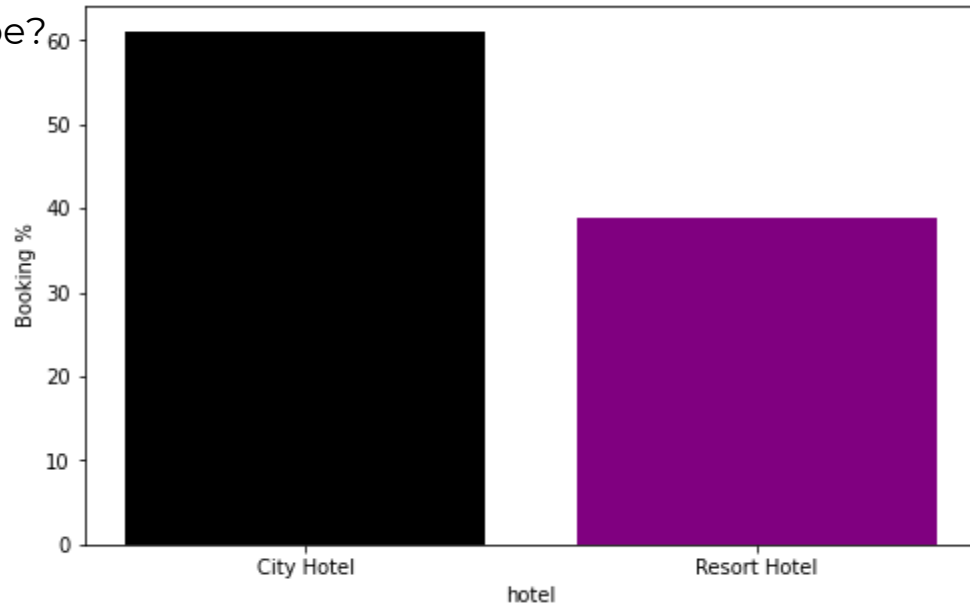
c) From the above plot, its clearly visible that, A and D type of rooms were getting booking mostly due to the affordability and the facilities provided by the management. Hence, hotel management need to work on other room types to attract more customer and C, G, H are highest average generating room types

# Important Questions:

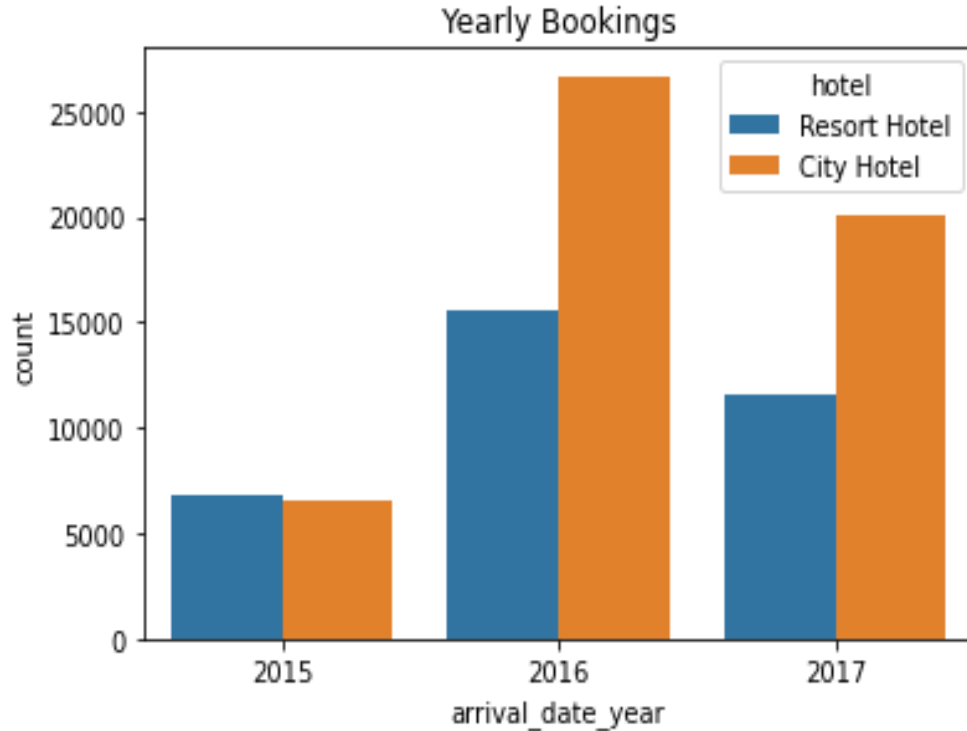
These few questions deals with Time wise analysis, Distribution channel wise analysis and hotel wise analysis. Lets see the questions and we will try to answer them with the help of visualization. This helps customer to know about the hotel before booking.

a) Which type of the hotel is most preferred type?

From the graph, it is clearly visible that, about 60% booking has been done in city hotels whereas 40% in resort hotels. hence, management of resort hotel should look to attract the people by providing some offers or discounts.



b) In which year most of the bookings happened?



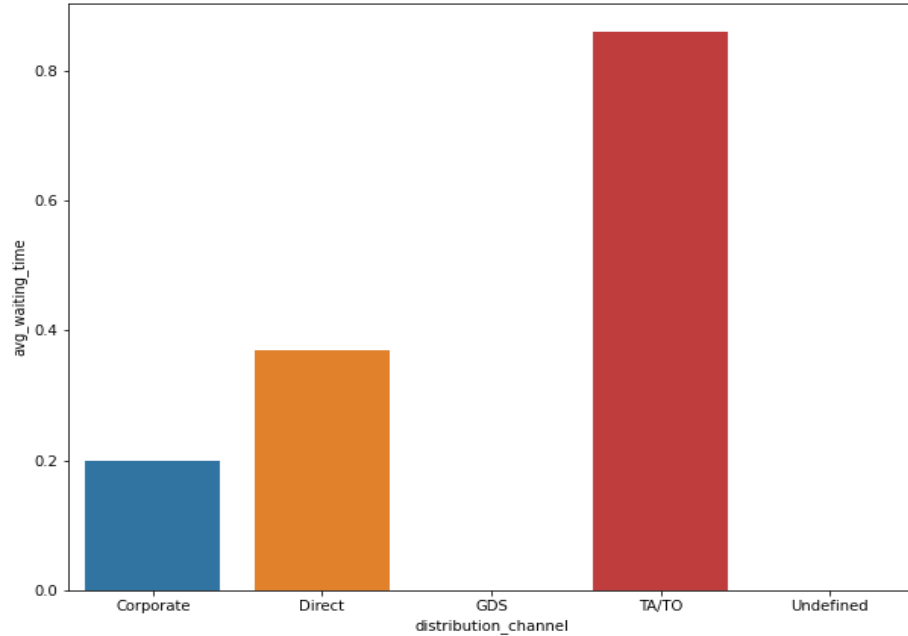
From above plot, 2016 was the busiest year for both city and resort hotels. Also, city hotel made brilliant bookings in calendar year than that of resort hotels

c) Which is the busiest month for hotel?

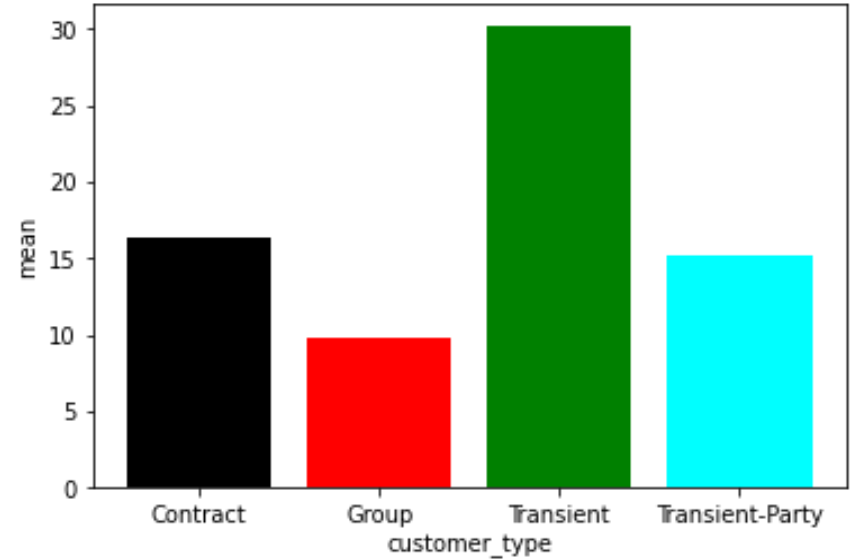


From the March to June month, city hotels had most of the bookings as hot summer days forces people to stay inside the city. whereas, we can see, during the rainy season means from the month of June to August, people desire to have enjoyment in resorts. Hence, resort hotel has considerably good no. of bookings in that period.

d) What is the waiting time while booking the hotel? e) How many bookings got cancelled vs type of customers?

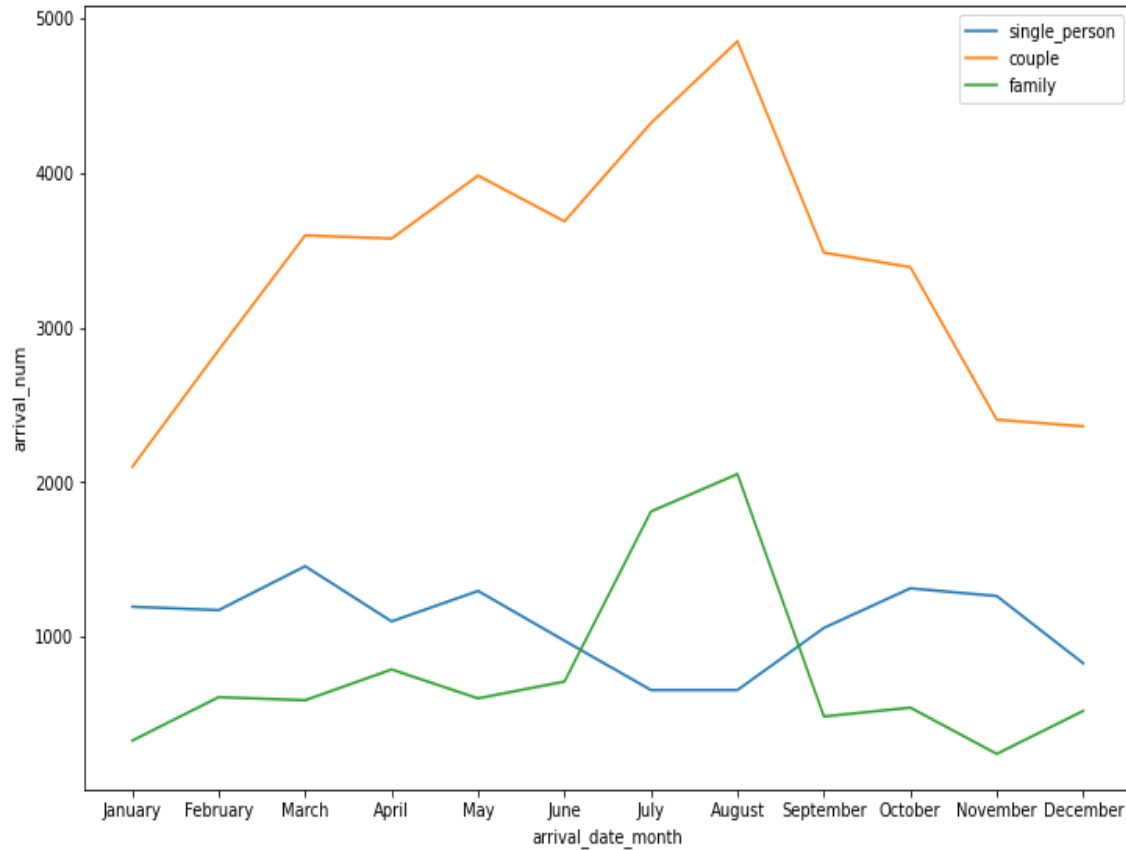


From visualization, although you will book in TA/TO mode, you have to face the waiting for a while.



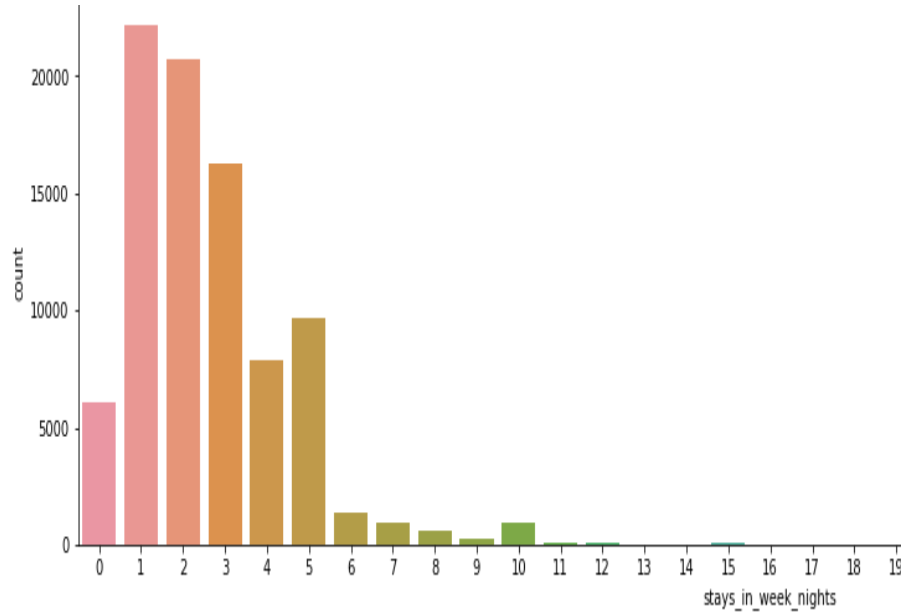
Transient type of customers possesses higher cancellation rate whereas group has less cancellation rates

f) Which is the most booked accommodation type?



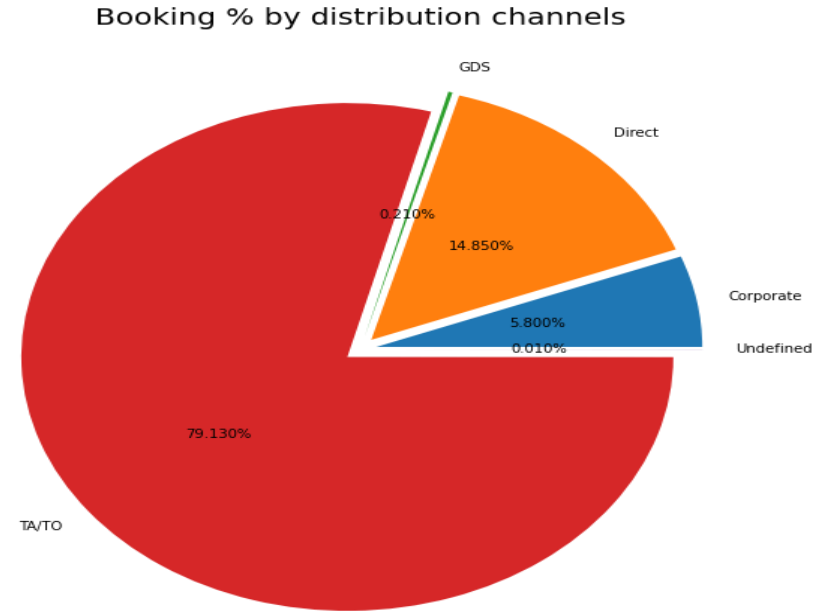
From this plot, we can see that, mostly couples used to book the hotels in every single month, whereas singles and family books occasionally.

g) How many days usually people stays at hotel?



From above graph we can see, people prefers to stay for 1 night to 3 nights mostly. It is rarely seen that people having stay more than 10 days.

h) Which channel is mostly used for early booking of hotel



From above bar graph, TA/TO type is mostly preferred for early booking of hotel. But, if sudden plan happened other type of bookings also occurs.



# Conclusion:

- Hotel booking analysis helps people to know about hotel before booking.
- Around 60% bookings are done for city hotel and 40% for resort hotel so based on this ratio we can conclude that crowd is more in city hotel than resort so average per day for city hotel is more.
- Guests who are planning to stay less than 5 days then city hotel is the best choice and for more than 5 days resort hotel is better based on price.
- Visualization help us to know that the most of the bookings has been done from Portugal, where as from Netherlands least bookings has been occurred.
- TA/TO type is mostly preferred for early booking of hotel. But, if sudden plan happened other type of bookings also occurs.

- Mostly couples used to book the hotels in every single month, whereas singles and family books occasionally. Transient type of customers possesses higher cancellation rate whereas group has less cancellation rates
- From the March to June month, city hotels had most of the bookings as hot summer days forces people to stay inside the city. whereas, we can see, during the rainy reason means from the month of June to August, people desires to have enjoyment in resorts. Hence, resort hotel has considerably good no. of bookings in that period.
- A and D type of rooms were getting booking mostly due to the affordability and the facilities provided by the management. Hence, hotel management need to work on other room types to attract more customer and C, G, H are highest average generating room types.
- 2016 was the busiest year for both city and resort hotels. Also, city hotel made brilliant bookings in calendar year than that of resort hotels.

***THANK YOU....***