

# Capstone Project

## Hotel Booking Analysis

Submitted By:

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## Points for Discussion

- Data Summary & Necessary Steps(Data Wrangling)
- Data Analysis
- Analysis # 1: Status of Reservation and the Repeated Guest
- Analysis # 2: Country Name from where most of the Guests are coming
- Analysis # 3: Month Wise Bookings
- Analysis # 4: Bookings by Various Sources
- Analysis # 5: Monthly Cancellations
- Analysis # 6: Cancellations by Type of Customer
- Analysis # 7: Duration of Stay of People
- Analysis # 8: Comparison of Duration of Stay in both types of Hotel
- Analysis # 9: Most Booked Accommodation Type
- Analysis # 10: Booking Ratio of Type of Hotel

## Data Summary

This data set contains booking information for a city hotel and a resort hotel, and includes information such as when the booking was made, length of stay, the number of adults, children and the number of available parking spaces, among other things.

Following steps were taken to start the Analysis of the Data.

- Data Cleaning: Checking for missing or null values in any of the columns.
- Separating and generating distinct datasets for the two categories of hotels. (i.e., Resort and City Hotel)
- Analysis

# Data Wrangling

## Data Cleaning:

- The data cleaning process consist of checking for missing or null values in any of the columns.
- Replaced those null values with zero.

Data Cleaning : Checking for missing or null values in any of the columns.

```
df.isnull().sum()
```

```
hotel      0
is_canceled 0
lead_time  0
arrival_date_year  0
arrival_date_month  0
arrival_date_week_number  0
arrival_date_day_of_month  0
stays_in_weekend_nights  0
stays_in_week_nights  0
adults     0
children   4
babies     0
meal       0
country    488
market_segment  0
distribution_channel  0
is_repeated_guest  0
previous_cancellations  0
```

```
df['country'].fillna(0,inplace=True)
df['agent'].fillna(0,inplace=True)
df['company'].fillna(0,inplace=True)
```

```
[ ] df.isnull().sum()
```

```
hotel      0
is_canceled 0
lead_time  0
arrival_date_year  0
arrival_date_month  0
arrival_date_week_number  0
arrival_date_day_of_month  0
stays_in_weekend_nights  0
stays_in_week_nights  0
adults     0
children   4
babies     0
meal       0
country    0
market_segment  0
.. .. .
```

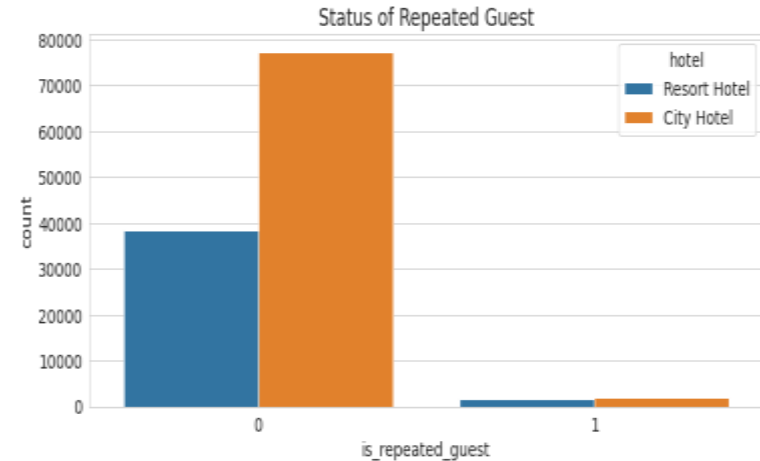
## Data Analysis

Motivation behind this project is to give the answer of following questions:

- How many bookings were cancelled?
- From which country most of the guest comes?
- which is the busiest month of hotel?
- which platform customer use to book a ticket. ie. source of booking.
- Monthly cancelation of ticket.
- Which type of customer cancel their ticket.
- how long people stay in the hotel.
- Ratio of booking of Both type of Hotels.

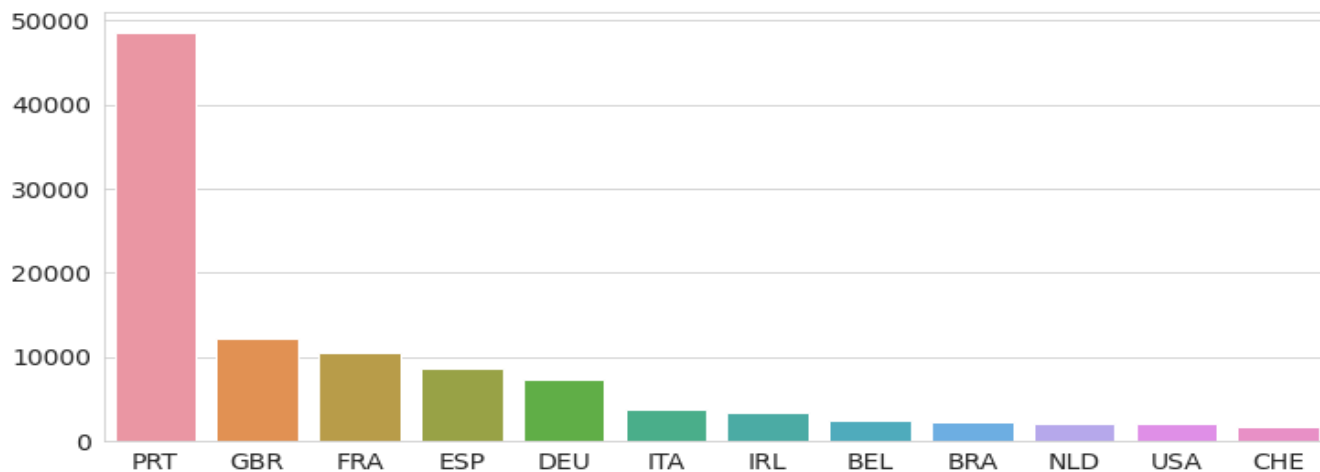
## Analysis # 1: Status of Reservation and the Repeated Guest

It helps the company to get the detail about the Check-out and Cancel Reservation Status.



## Analysis # 2: Country Name from where most of the Guests are coming

This Analysis helps company to make a custom or attractive packages for the country from where less guests are coming.



## Analysis # 3: Month Wise Bookings

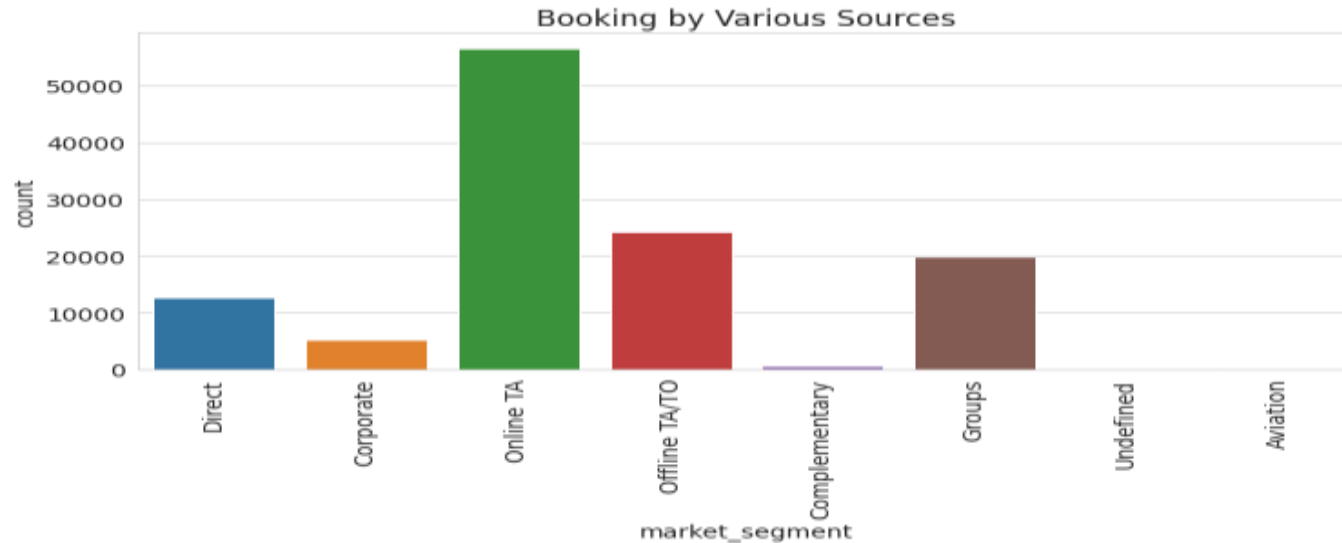
By this Analysis Company can figure Out which month have less no. of bookings, and provide some offers in that months to increase the sales.





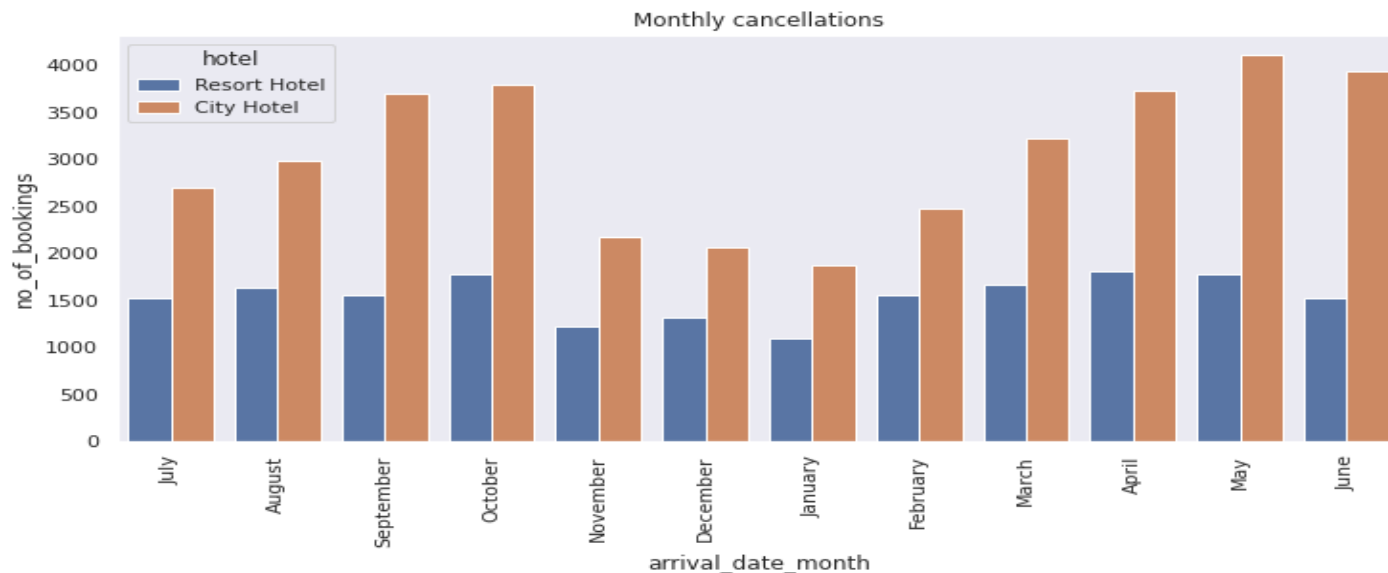
## Analysis # 4: Bookings by Various Sources

By this, Company can get the sources of Booking and get the Idea on which platform they have to focus.



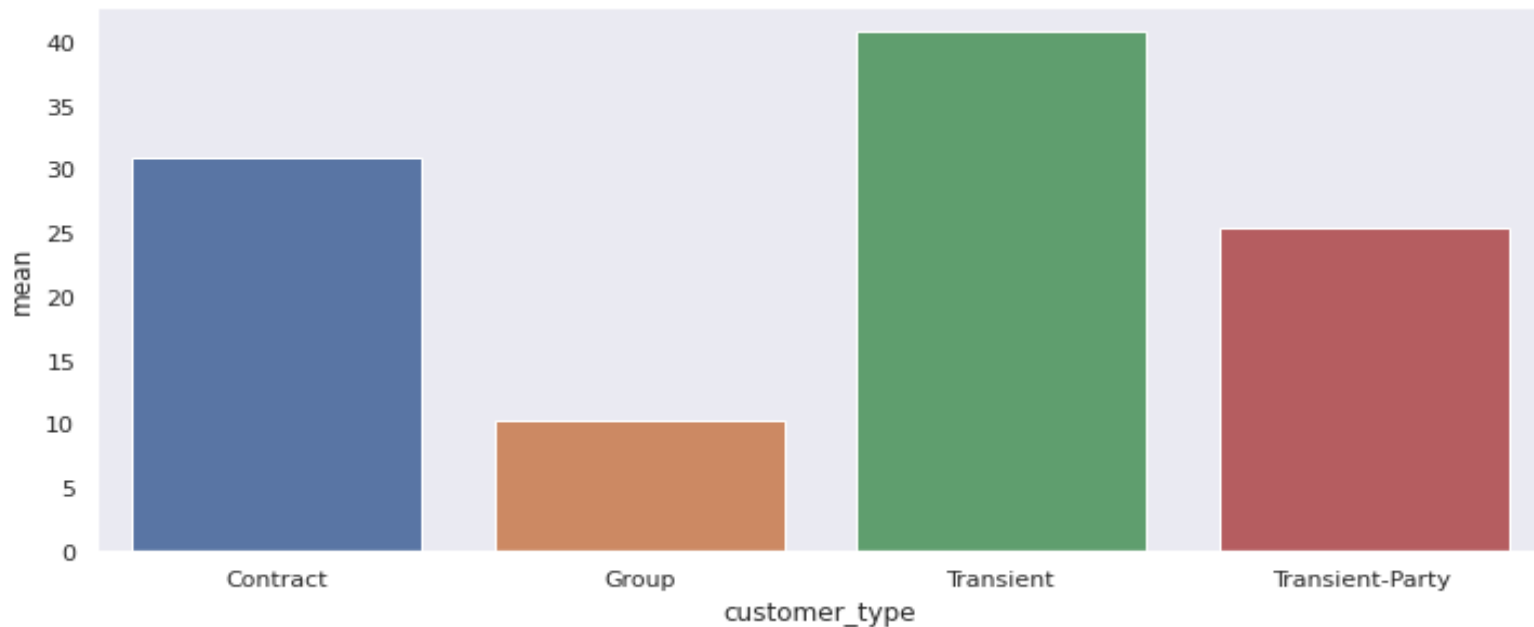
## Analysis # 5: Monthly Cancellations

By this Analysis Company can figure Out which month have max. number of cancellations so that they can have the Idea of Reason for Cancellation like month containing less holidays etc.



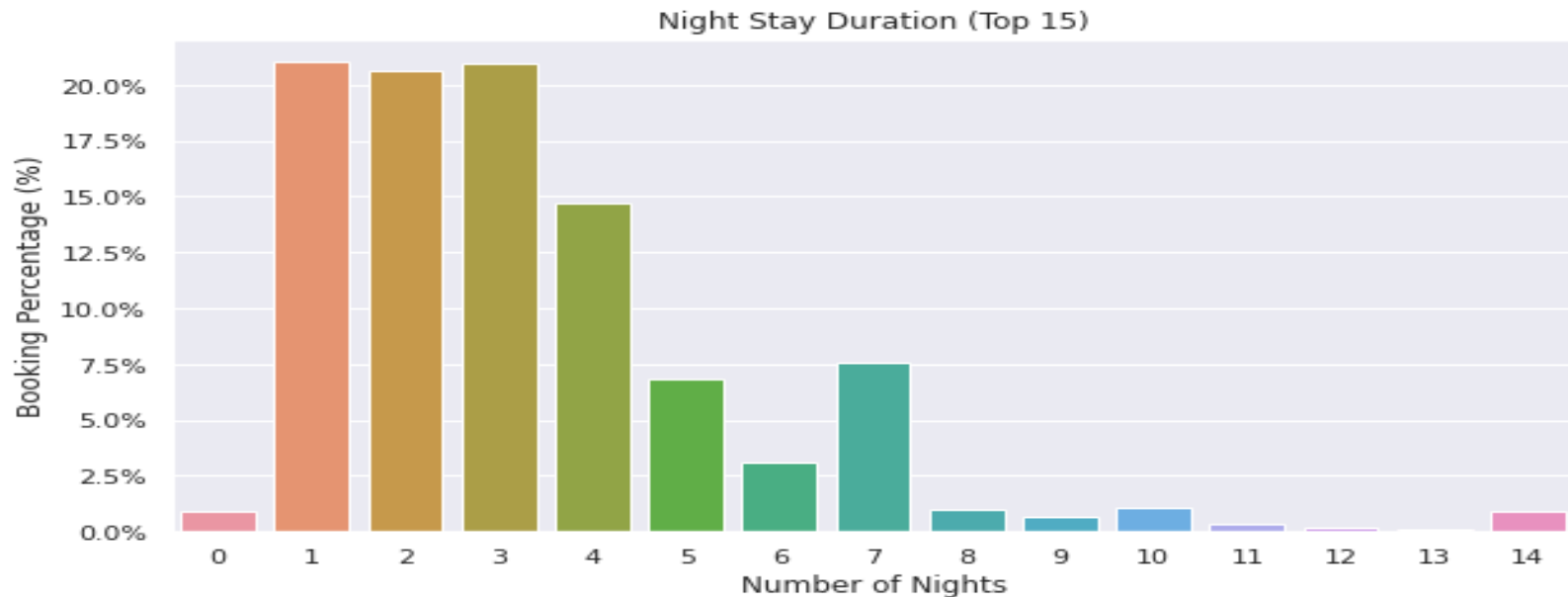
## Analysis # 6: Cancellations by Type of Customer

By this Insight, Company can easily focus on the type of Customers who cancel their Visit / Stay



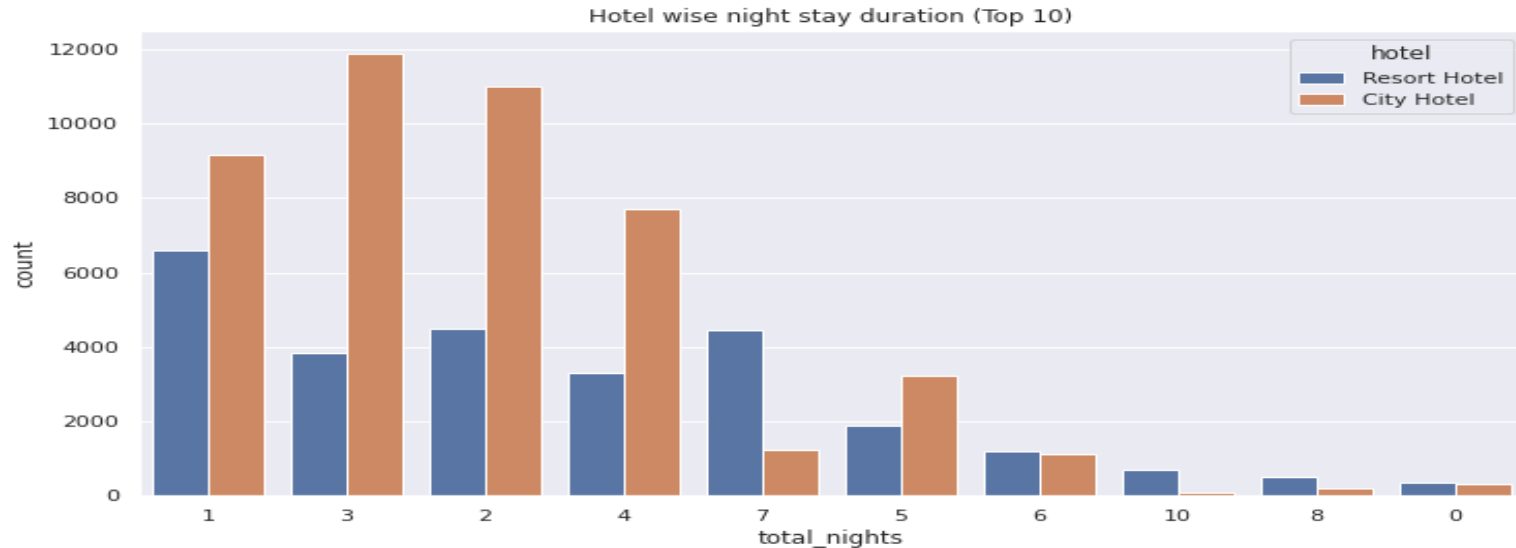
## Analysis # 7: Duration of Stay of People

This is just for Information of the Duration of Stay



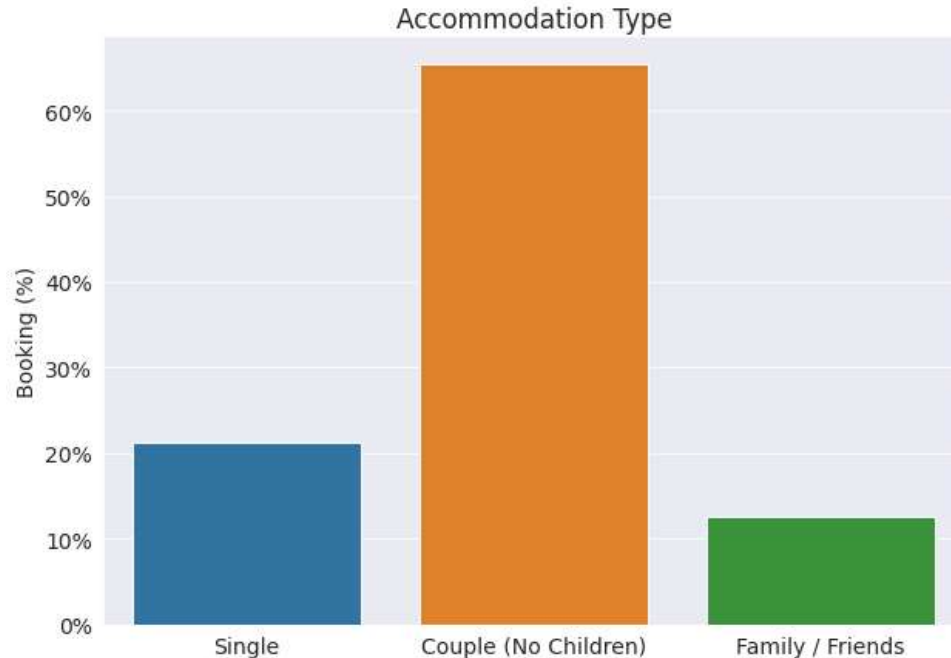
## Analysis # 8: Comparison of Duration of Stay in both types of Hotel

This Analysis provide the comparison by which company get to know that in which type of hotel, people like to stay more.



## Analysis # 9: Most Booked Accommodation Type

By this Analysis, company get to know, which accommodation type is highly booked, so that company can increase or decrease the types of accommodation in their property accordingly.



## Analysis # 10: Booking Ratio of Type of Hotel

Finally, by this analysis, company get the Ratio of booking of Both type of Hotels.



## Conclusion

- Resort hotel cancelation rate is low( approx 30%).Most of the time booking not cancelled.
- Most of the population booked the city hotel, also the percentage of repeated guest is high in City hotel.
- Portugal, GBR and FRA are the top countries from where most of the guest comes.
- Most bookings were made from July to August. And the least bookings were made at the start and end of the year.
- Guest uses different channel for making booking, out of which most preferred way were online through TA( Travel Agent).
- Both the Hotels can figure Out which month have max. number of cancellations so that they can have the Idea of Reason for Cancellation like month containing less holidays etc.
- monthly cancelation Analysis can figure Out which month have max. number of cancellations so that they can have the Idea of Reason for Cancellation like month containing less holidays etc.
- Both the hotel can easily focus on the type of Customers who cancel their Visit / Stay.



## Conclusion Cont..

- Both the Hotel Information of the Duration of Stay is available.
- After comparison of duration of stay in both hotel it is easily get to know that in which type of hotel, people like to stay more.
- Most booked accommodation type can increase or decrease the types of accommodation in their property accordingly.
- Booking ratio gives the ration of booking of both type of hotel.

## References

<https://medium.com/>

<https://www.geeksforgeeks.org/>

<https://www.researchgate.net>

<https://www.kaggle.com/>

<https://jovian.ai/>

**THANK YOU**