

Capstone Project

Hotel Booking Analysis

by-Mohammed Rafid Deshmukh



Agenda:



Problem Statement and objective



Data Description



Data Cleaning



Exploratory Data Analysis(EDA)



Conclusion



Problem Statement and objective

- Hotel data set contains booking information for a city hotel and a resort hotel.
- **Analyze the Data**
- **Find Out The best time of year to book a hotel**
- **Discover important factors that govern the bookings**
- **Analyze to get the best daily rate.**





Data Description

- Hotel data set contains booking information for a city hotel and a resort hotel
- This dataset contain 31 variables describing the 119390 observations.
- Its have observation from 1st of July 2015 to the 31st of August 2017
- All data elements pertaining hotel or customer identification were deleted.



CSV



Data Cleaning

Data cleaning is the first block in data science. Before we do any analysis, we need to make sure our data is clean and credible.

- Replacing Null Values with zero and other

(there are some null value in country, company, agent and children)

- Dropping 31980 duplicate values.
- Treating Outlier in average daily rate (max ADR is 5400 after that 510)



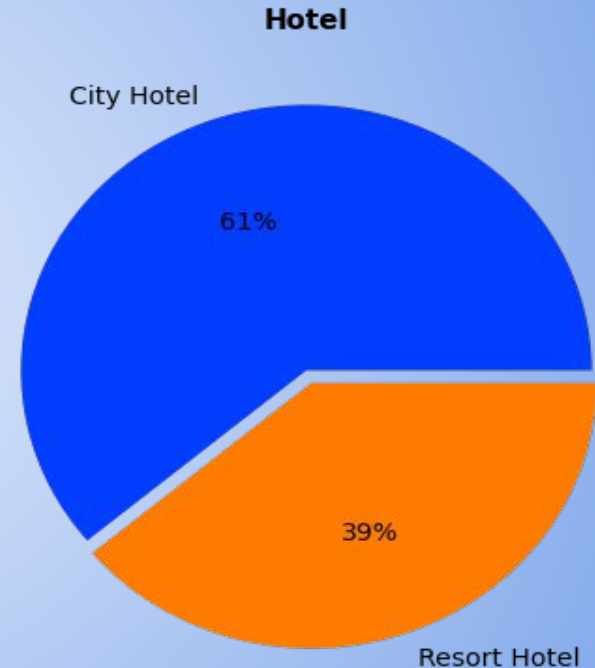


Exploratory Data Analysis(Hotel)

Exploratory Data Analysis refers to the critical process of performing initial investigations on data with the help of summary statistics and graphical representations.

Hotel: The database is divided into two types of hotels: "City" hotels and "Resort" hotels.

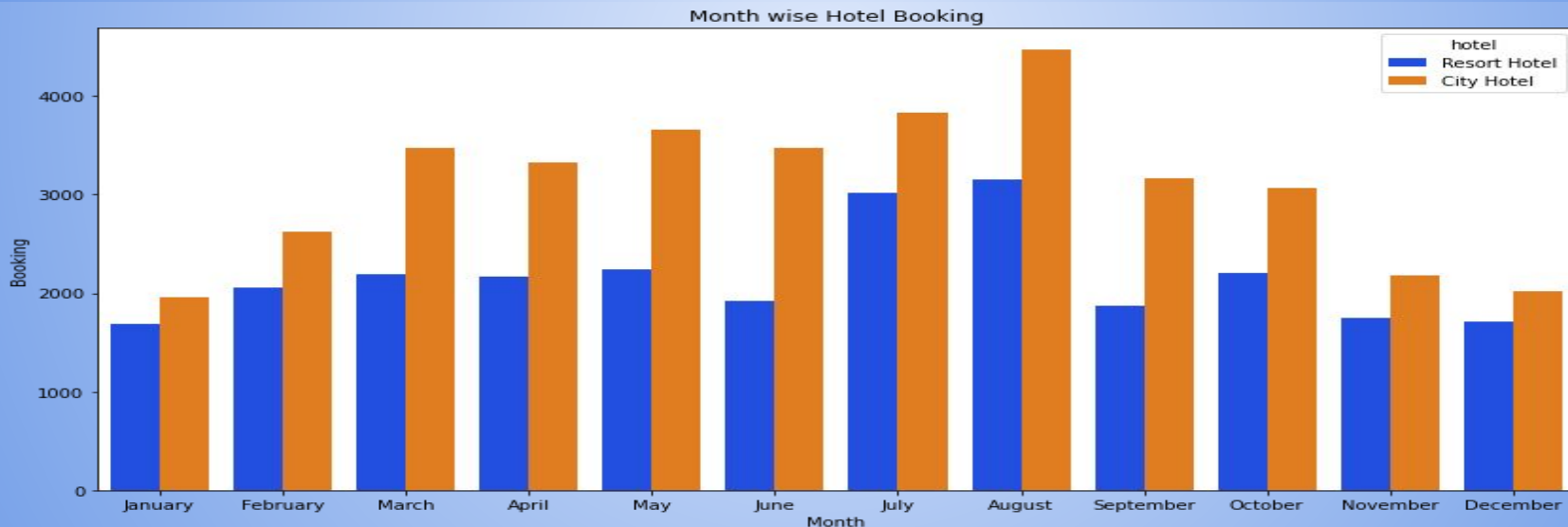
Almost 61% of the total guests opt for a city hotel instead of a resort hotel. but these include bookings that were both cancelled and not cancelled.





EDA(Month Wise Booking)

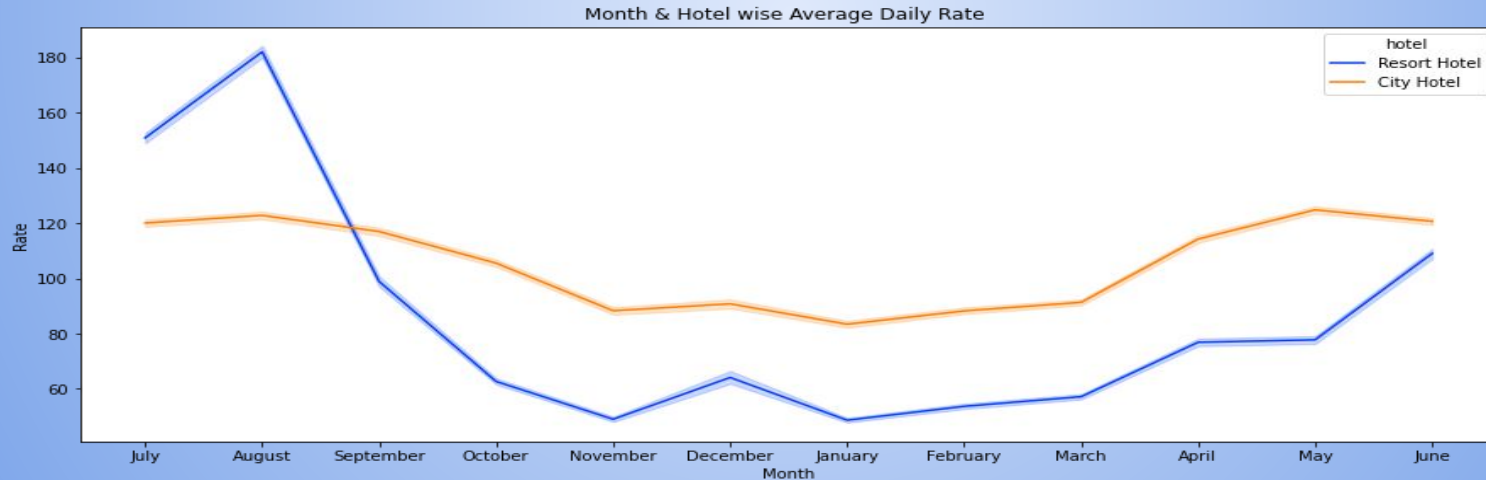
There was a slight trend with a higher number of arrivals during the summer months (June to mid-September) which could be due to summer holidays for the children and also just the nicer weather!





EDA(Month and hotel wise Average Daily Rate)

The average daily rate is equal to the average price for each hotel room sold for that day. The average daily rate fluctuates more for resort hotels than city hotels. This is especially evident during the summer months. The winter months have generally lower prices except that there is a little peak in December which is probably due to Christmas and New Years. Even with the seasonal prices, it is the city hotels that maintain a higher price with a higher mean and median throughout the year.





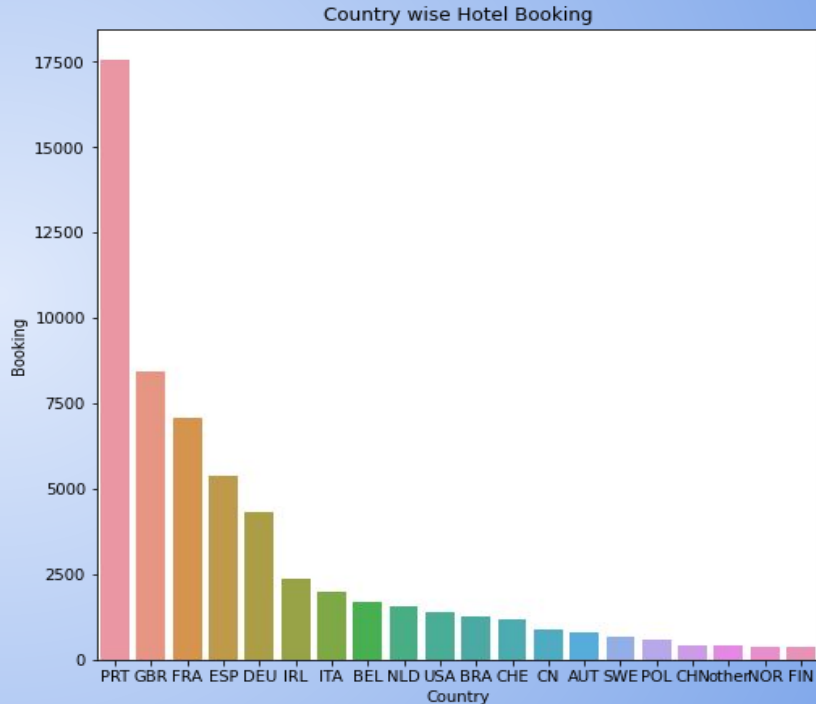
EDA(Country)

Oh yes, something to be pointed out is that these hotels are based in **Portugal!** So, most of the guests are local tourists, followed by the **British, French and Spanish.**

PRT - Portugal

GBR - British

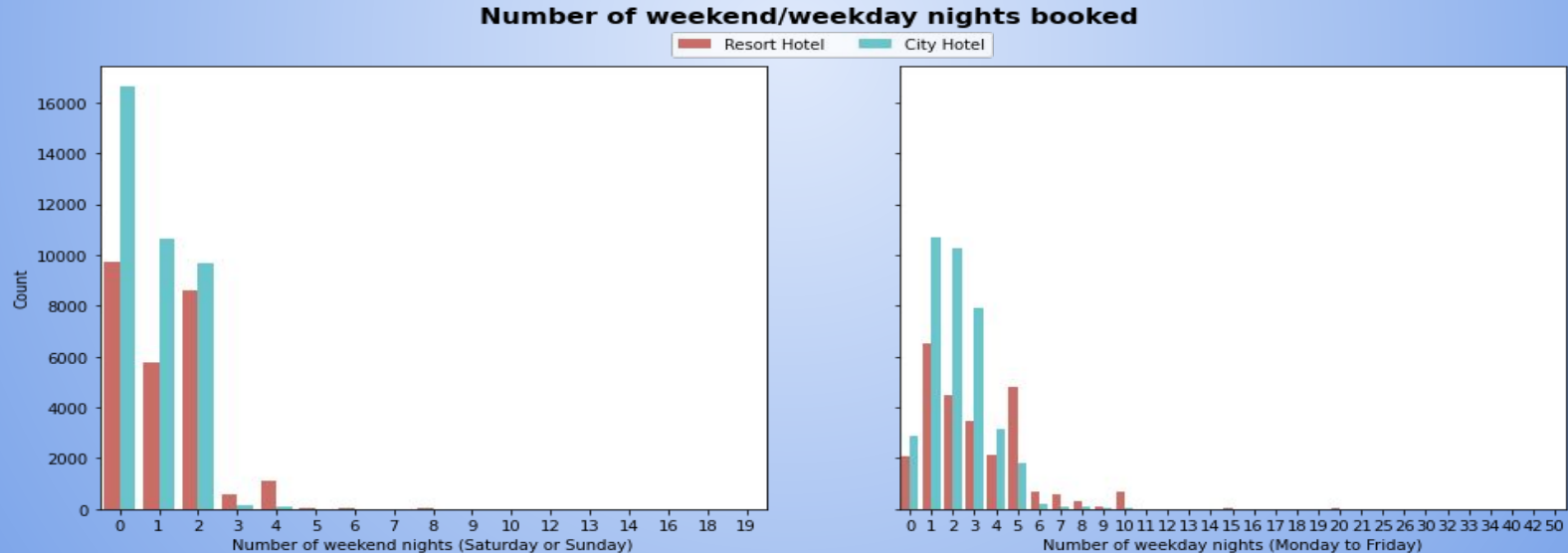
FRA - France





EDA(Number of weekend/weekday nights booked)

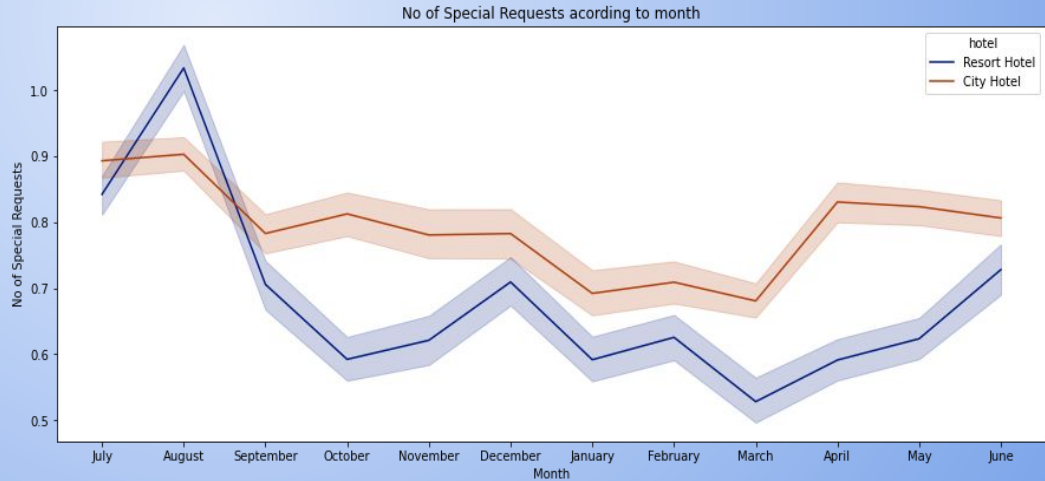
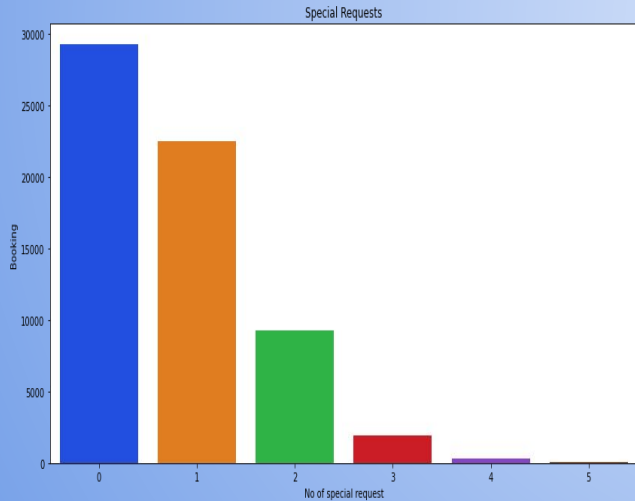
Guests are more likely to book a hotel over the weekday as majority of the guests don't even stay over for one weekend night, and the number of weekday nights booked even extends to 50! I guess some guests are having a really long holiday, and probably an expensive one too right?





EDA(Special Requests)

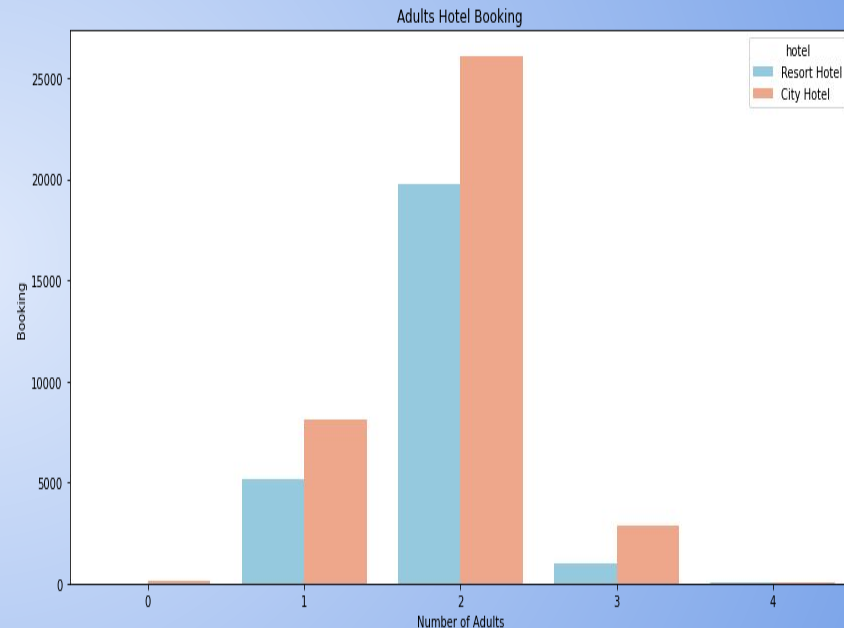
The number of special requests ranges from 0 to 5, with about half being 0. Special requests increase when booking increases. In august month there are more special requests, we can predict that in summer time (June to mid-September) special requests will max when number of booking are most so we can prepare accordingly





EDA(Type Of Guest)

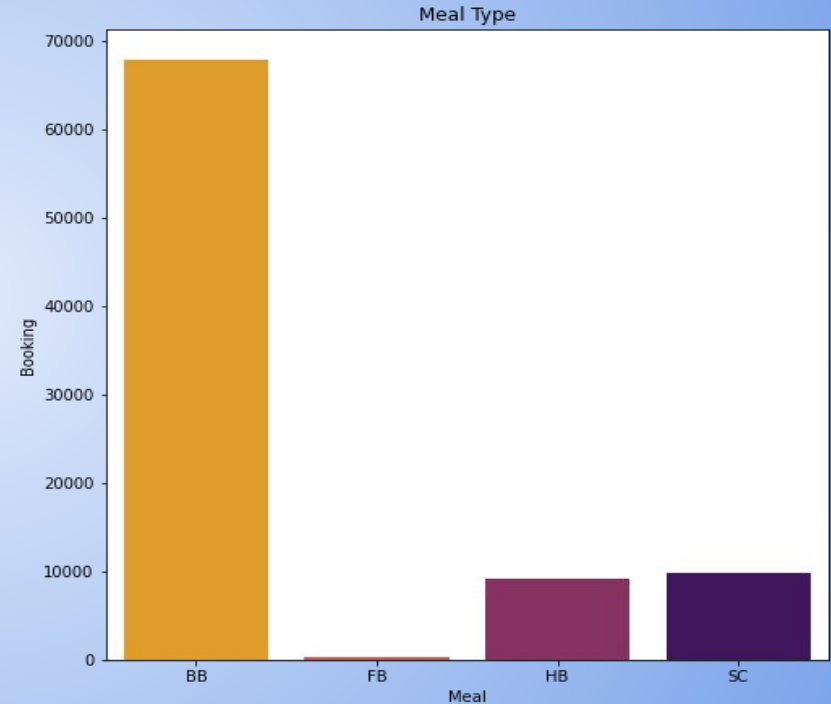
**Majority of the adults are pairs.
Almost all of the guest's holiday
without any children or babies, and
those that don't have too huge a
preference in terms of a resort or a
city hotel, perhaps just a slight lean
towards a city hotel.**





EDA (Types of meals booked)

Approximately 77% of the guests opt for bed and breakfast, followed by 12% for half board which is breakfast and one other meal (usually dinner), 10% for no meal, and the remaining 1% for full board which is breakfast, lunch and dinner.

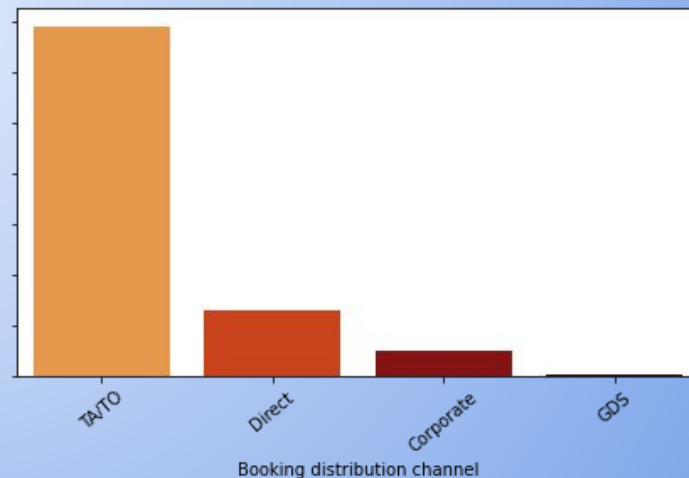
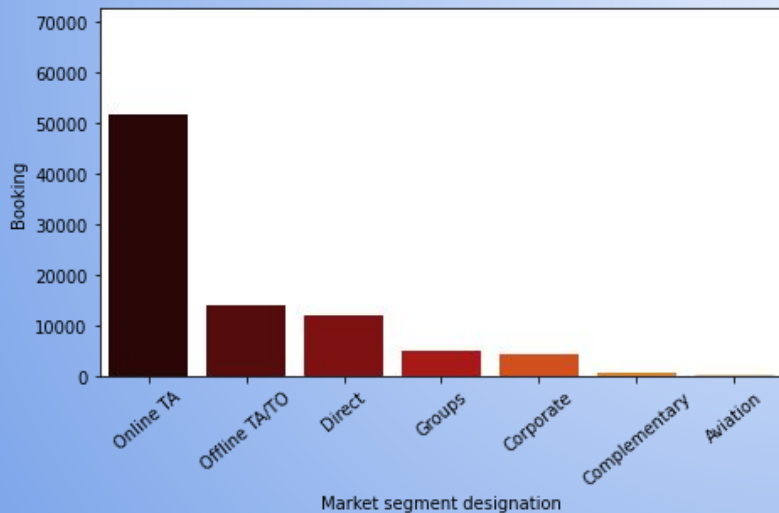




EDA(Market Segment & Booking Distribution Channel)

Majority of the guests booked the hotels through both online and offline travel agents and tour operators (i.e. Online TA, Offline TA/TO, TA/TO) as opposed to Direct bookings themselves and Corporate bookings

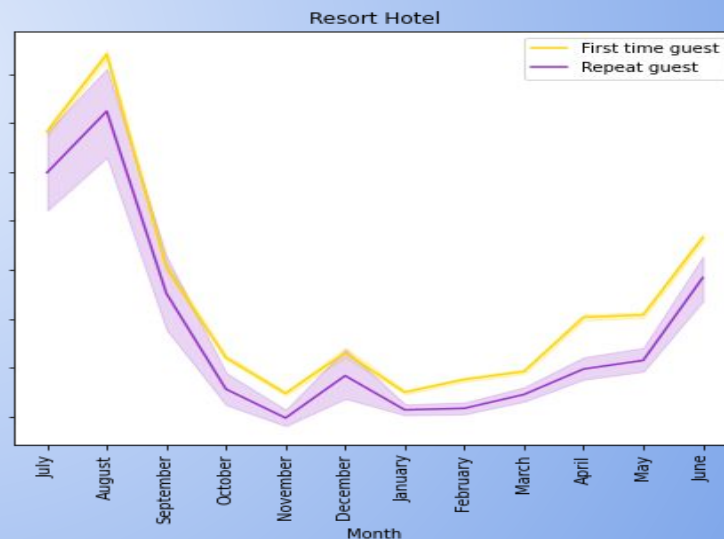
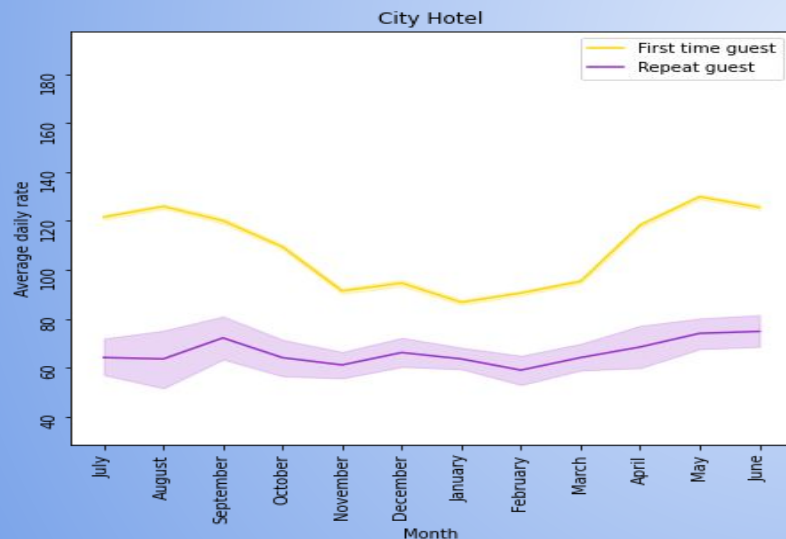
Market segments and distribution channels



EDA(Average daily Rate Repeat Guest)

Customer will get better deal if they are repeated guests regardless of whether they book a city or resort hotel! Perhaps it is time to join the hotel loyalty programme.

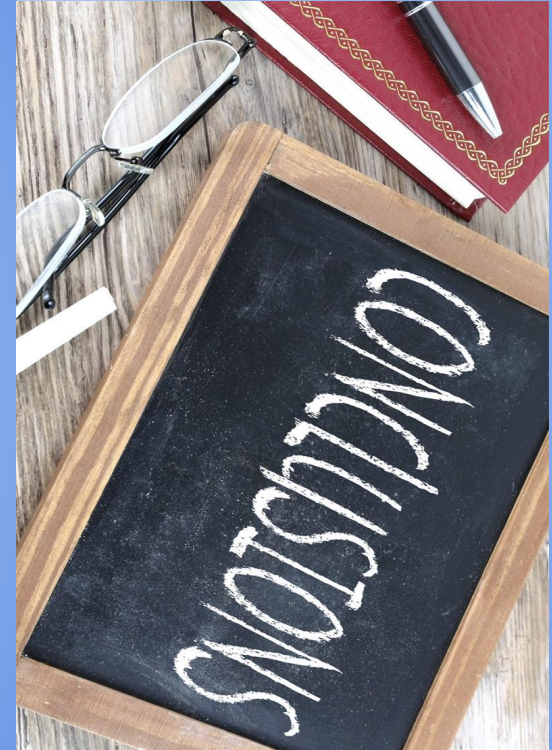
Average daily rate (Repeated Guest)





Conclusion

1. Almost 61% of the total guests opt for a city hotel instead of a resort hotel.
2. In both hotels 19% to 24% booking were cancelled.
3. Summer months(June to mid-September) are more expensive for resort hotels while the prices for city hotels don't really fluctuate throughout the year.
4. Special request increases in summer time when booking is high.
5. Almost all of the guest's holiday without any children or babies.
6. Majority of the guests booked the hotels through both online and offline travel agents and tour operators
7. To get the most bang for your buck you should book at least 175 days in advance, make the booking directly with the hotel and also join any loyalty programme.



A wooden-framed chalkboard with the words "Thank You" written in white chalk. The chalkboard is placed on a rustic wooden surface. To the left of the chalkboard is a vintage orange rotary telephone. To the right is a portion of a black typewriter. Above the chalkboard, a green leafy plant is partially visible.

Thank
You