



HOTEL DATA ANALYSIS

Through Python via Jupyter Notebook
using Pandas, Matplotlib & Seaborn



BUSINESS PROBLEM

In the recent years, City Hotel and Resort Hotel have seen high cancellation rates. Each hotel is dealing with a number of issues as a result, including fewer revenues and less than ideal hotel room use.

Consequently, lowering cancellation rates in both hotels' primary goal in order to increase their efficiency in generating revenues, and for us to offer thorough business advice to address this problem.

The analysis of hotel booking cancellations as well as other factors have no bearing on their business and yearly revenue generation are the main topics of this report.



ASSUMPTIONS

1. No unusual occurrences between 2015 & 2017 will have a substantial impact on the data used.
2. The information is still current and can be used to analyze a hotel's possible plans in efficient manner.
3. There are no unanticipated negatives to the hotel employing any advised technique.
4. The hotels are not using any of the suggested solutions.
5. The biggest factor affecting the effectiveness of earning income is booking cancellations.
6. Cancellations result in vacant rooms for the booked length of time.
7. Clients make hotel reservations for the same year they make cancellations.



RESEARCH QUESTIONS

1. What are the variables that affect hotel reservations cancellations?
2. How can we significantly reduce hotel reservation cancellations?
3. How will hotels be assigned in making pricing and promotional decisions?

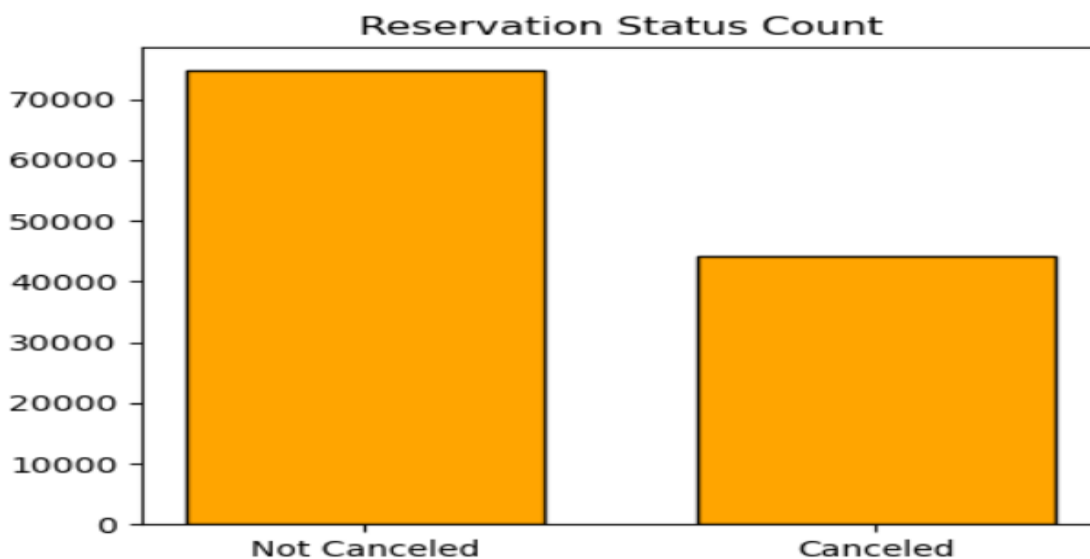


HYPOTHESIS

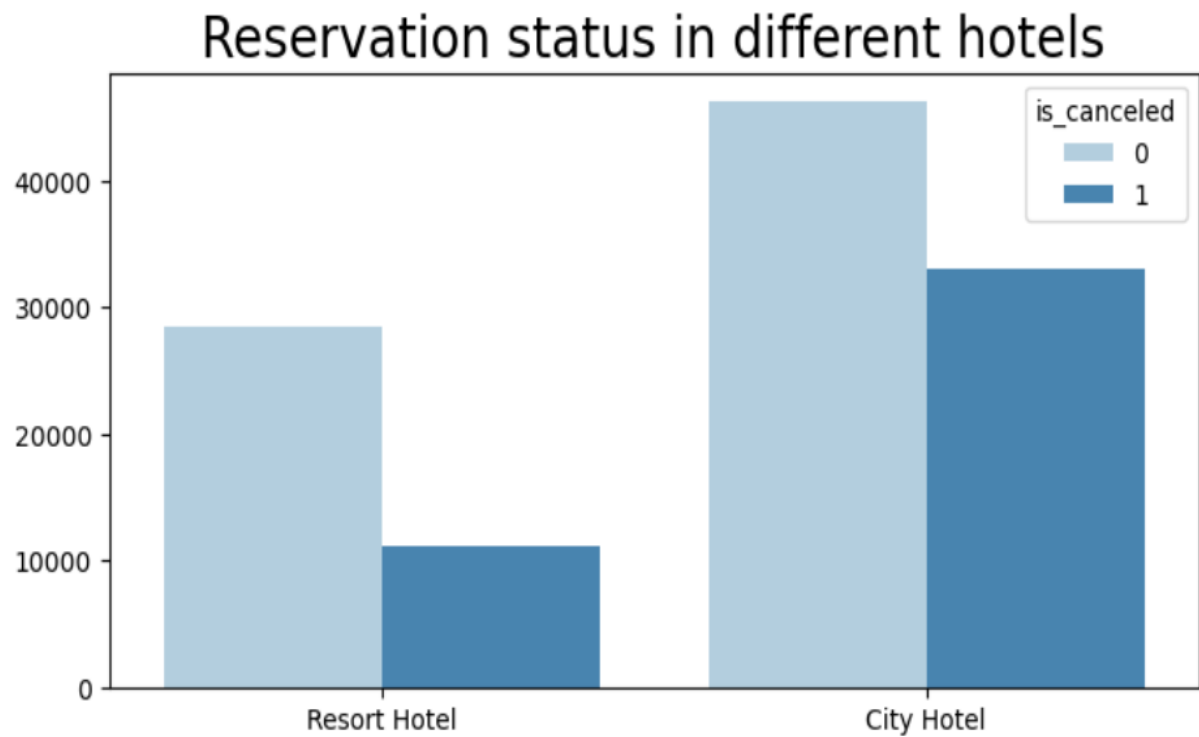
1. More cancellations occur when prices are higher.
2. When there is a longer waiting list, customers tend to cancel more frequently.
3. The majority of the clients are coming from offline travels agents to make their reservations.



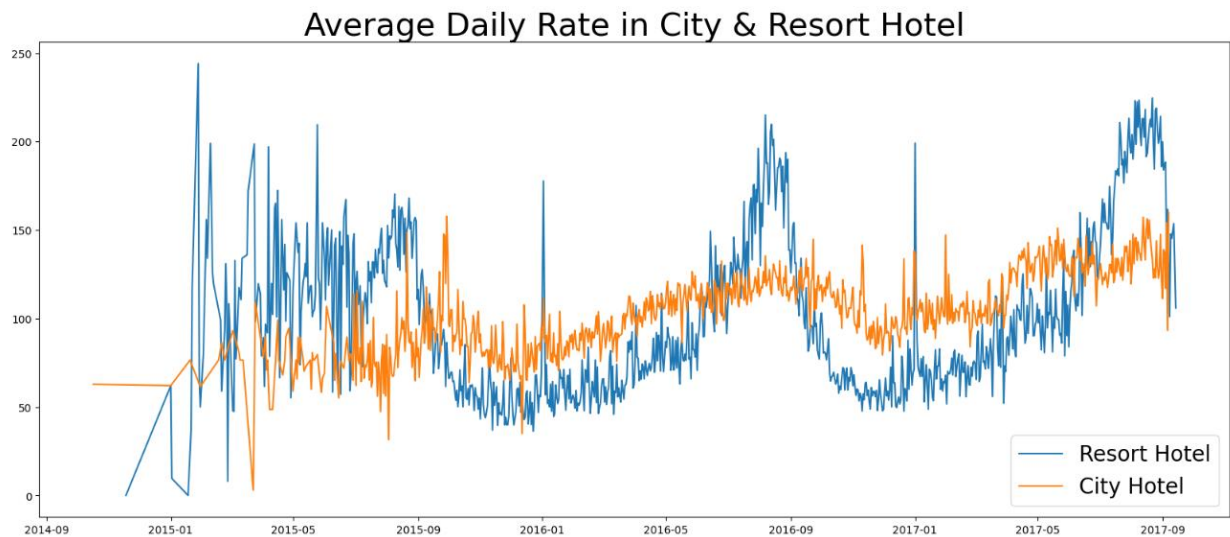
ANALYSIS & FINDINGS



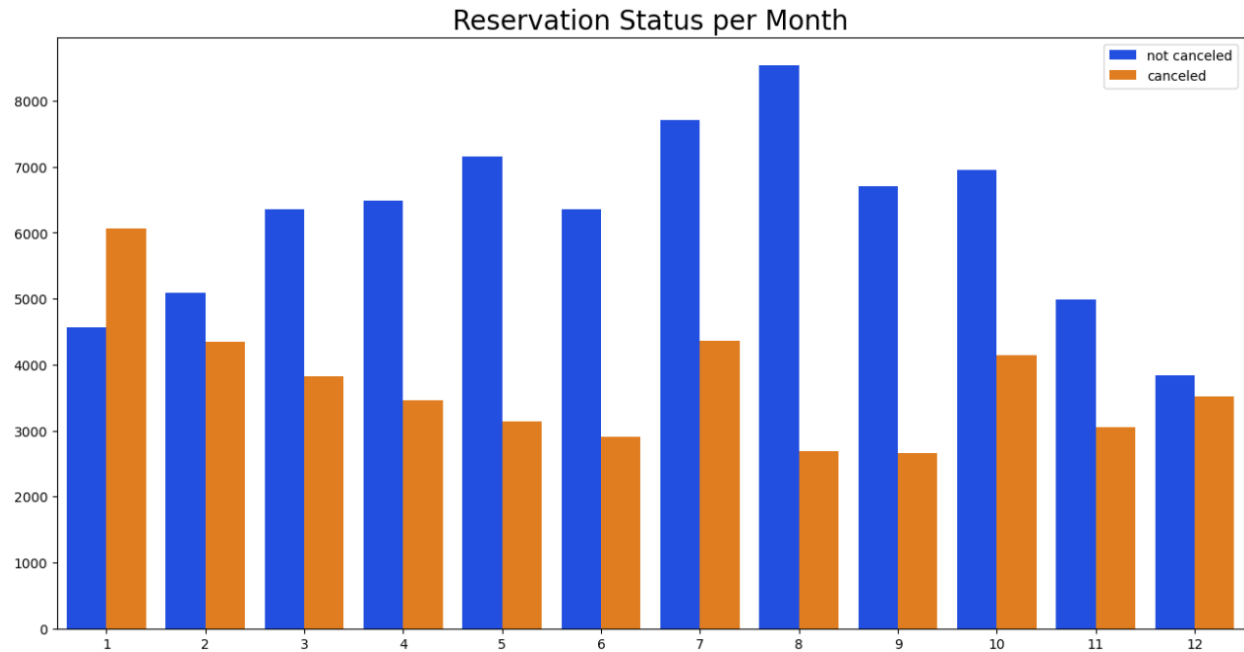
The accompanying bar graph shows the percentage of reservations that are cancelled and those that are not cancelled. Although 63% are not cancelled but the cancellation rate of 37% i.e. more than one-third of the total bookings is alarming and gravely affecting the revenues and profitability.



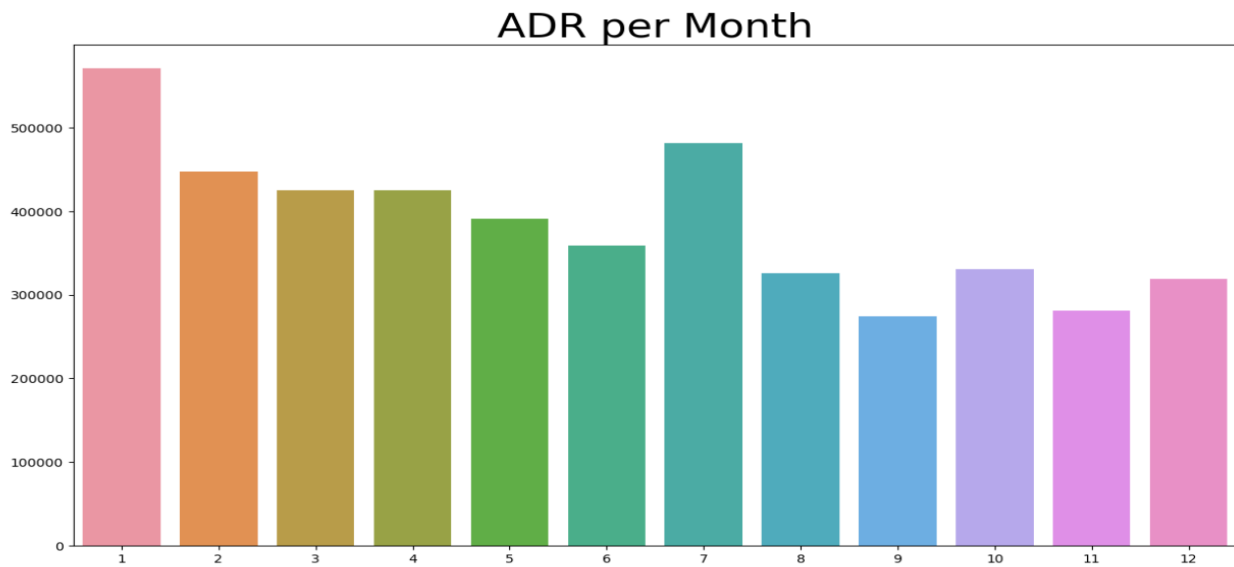
In comparison to resort hotel, city hotel has more booking as well as more cancellation. Whereas, the cancellation percentage in city hotel is also higher than resort hotel. The reason for more city hotel booking is that resort hotel are more expensive as well as catering a certain section to tourists.



The line graph above show that average daily rate of city hotel is less than resort hotels. Whereas, resort hotel daily rates are showing more variation. Hence, it is anticipated that resort hotels business increases on weekends and holidays.

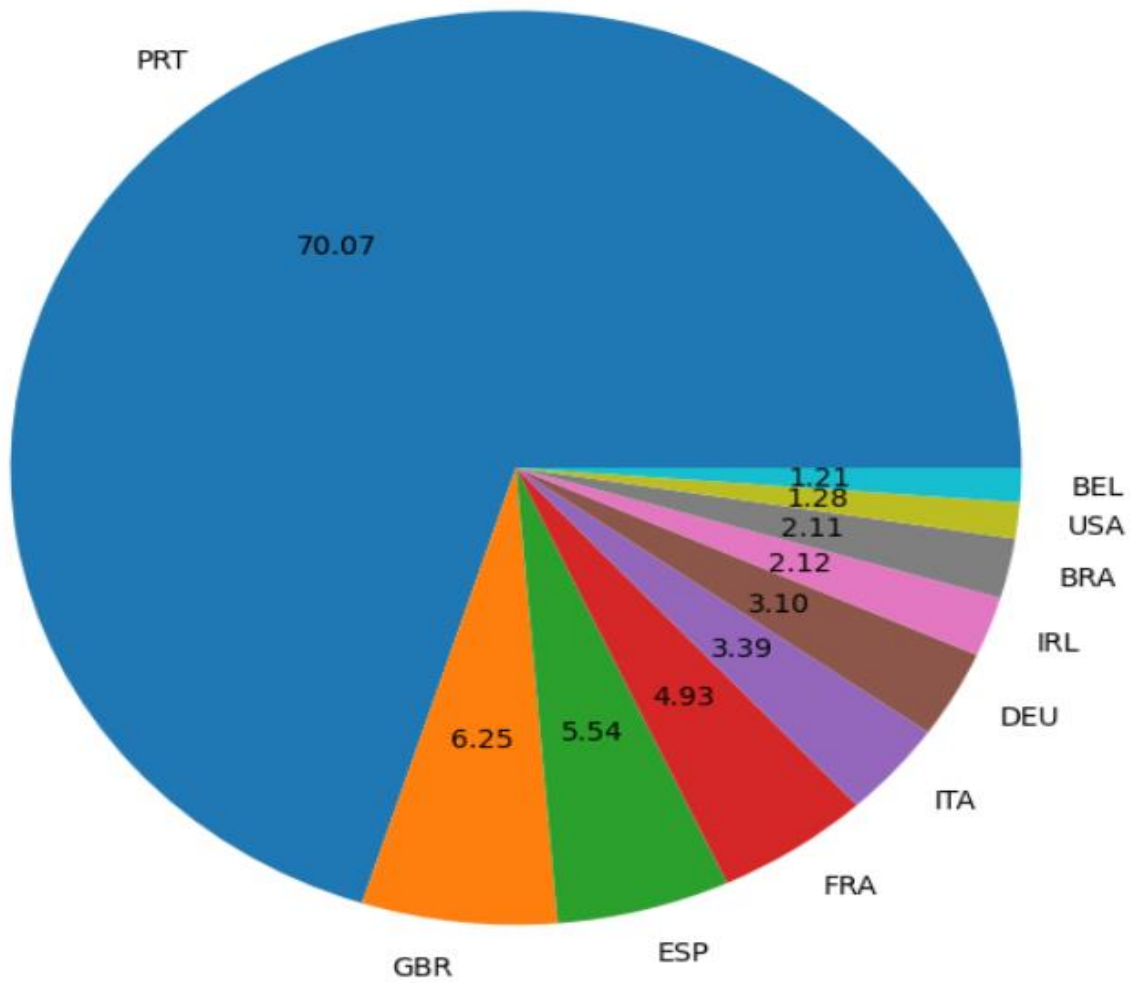


We have developed the grouped bar graph to analyze the months with the highest and lowest reservation levels according to reservation status. As can be seen, August has the highest number of not cancelled reservations as well as lowest canceled reservations. Whereas, January has the highest cancelled number as well as cancellation ratio.



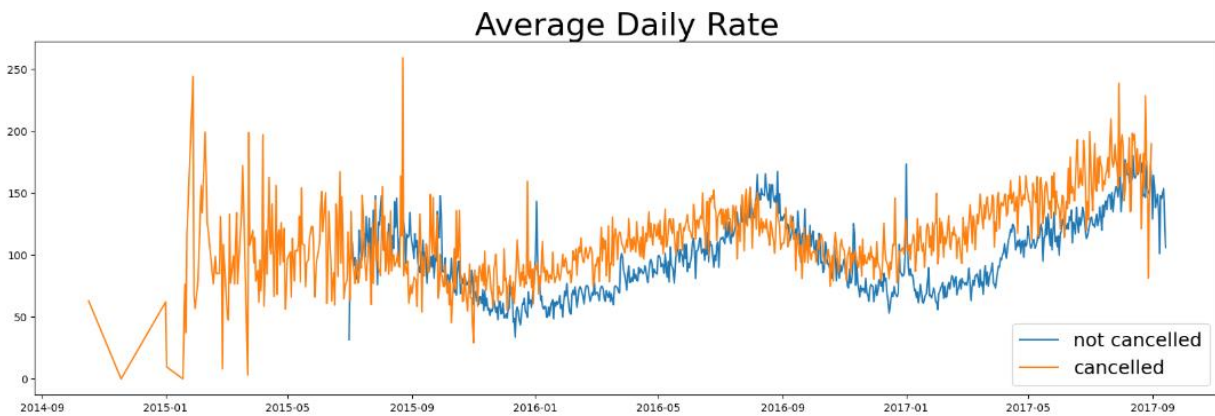
The above two graphs clearly demonstrate that cancellation is directly proportional to ADR i.e. higher the ADR higher the cancellation rate. Whereas, booking rate is inversely proportional with ADR i.e. higher the ADR lower the bookings and vice versa.

Top 10 Countries with Reservations Canceled



While seeing the cancellation rate among countries, Portugal has the highest cancellation rate accounting more than 70% of total cancellations.

While reviewing the channel through which customers are booked it is revealed that contrary to our hypothesis online travels agents have the highest share of 47% following by offline travels agents by 20%. Groups share is 17% and only 10% customers visit directly.



As seen in the graph, reservations are cancelled more when ADR is higher which affirms that higher prices leads to higher cancellations.



1. Portugal has the majority share among the cancellation rate, however, it also has the highest booking rate as well. However, its cancellation rate is almost 60%, hence, if cancellation rate of only Portugal is managed, overall cancellation rate will automatically decrease.
2. The reason for high cancellation in Portugal could be huge load as compared to capacity resulting in mismanagement, poor service, miss-commitments, miss-communication & negative publicity. Therefore, management's primary focus should be Portugal.
3. Overall pricing strategies to be reviewed / revised to reduce / manage cancellations.
4. In the months having low booking and higher cancellation such as January & December, the company may offer schemes and privileges.
5. Management may focus in improving their services as well as review their marketing strategies to manage cancellations to an acceptable level.