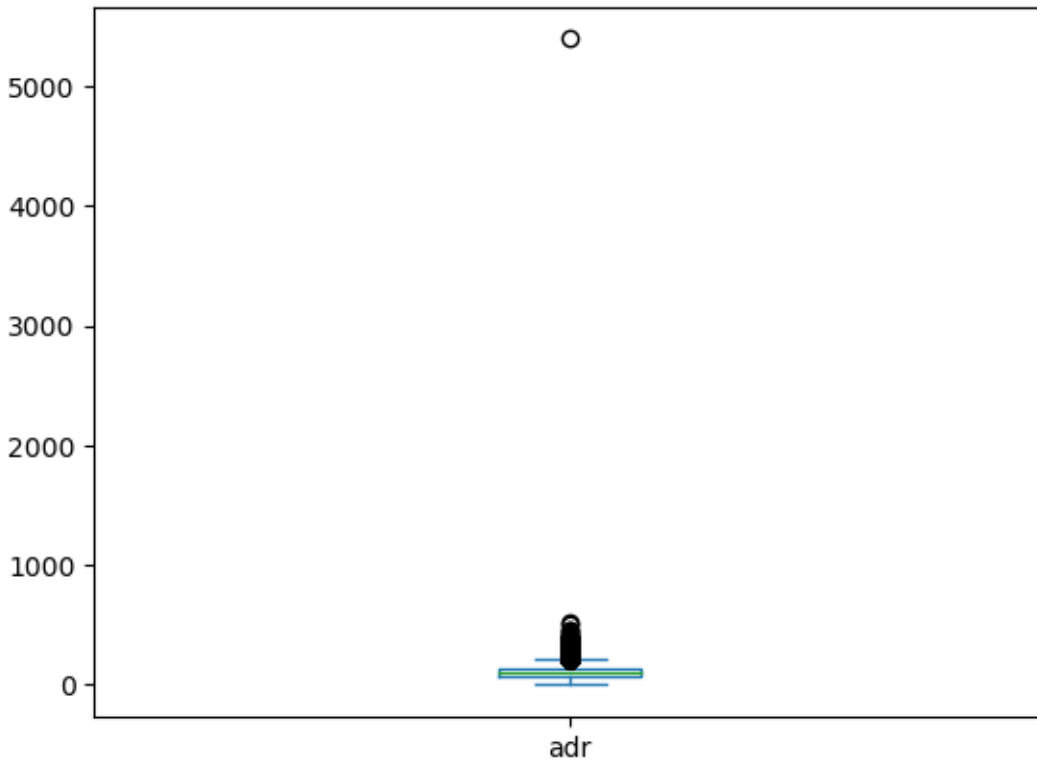
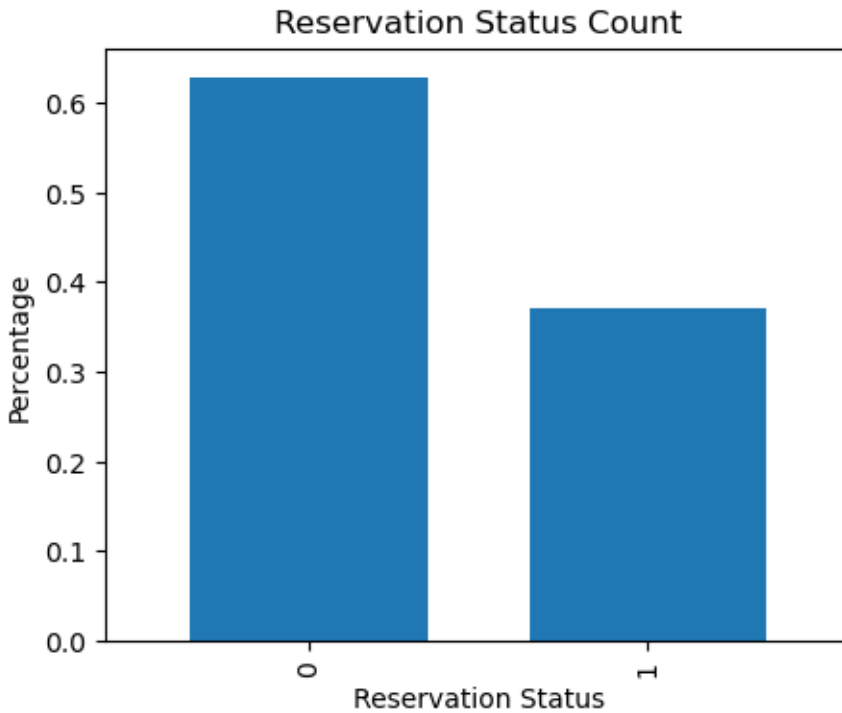


The Box Plot of Average Daily Rate (ADR)

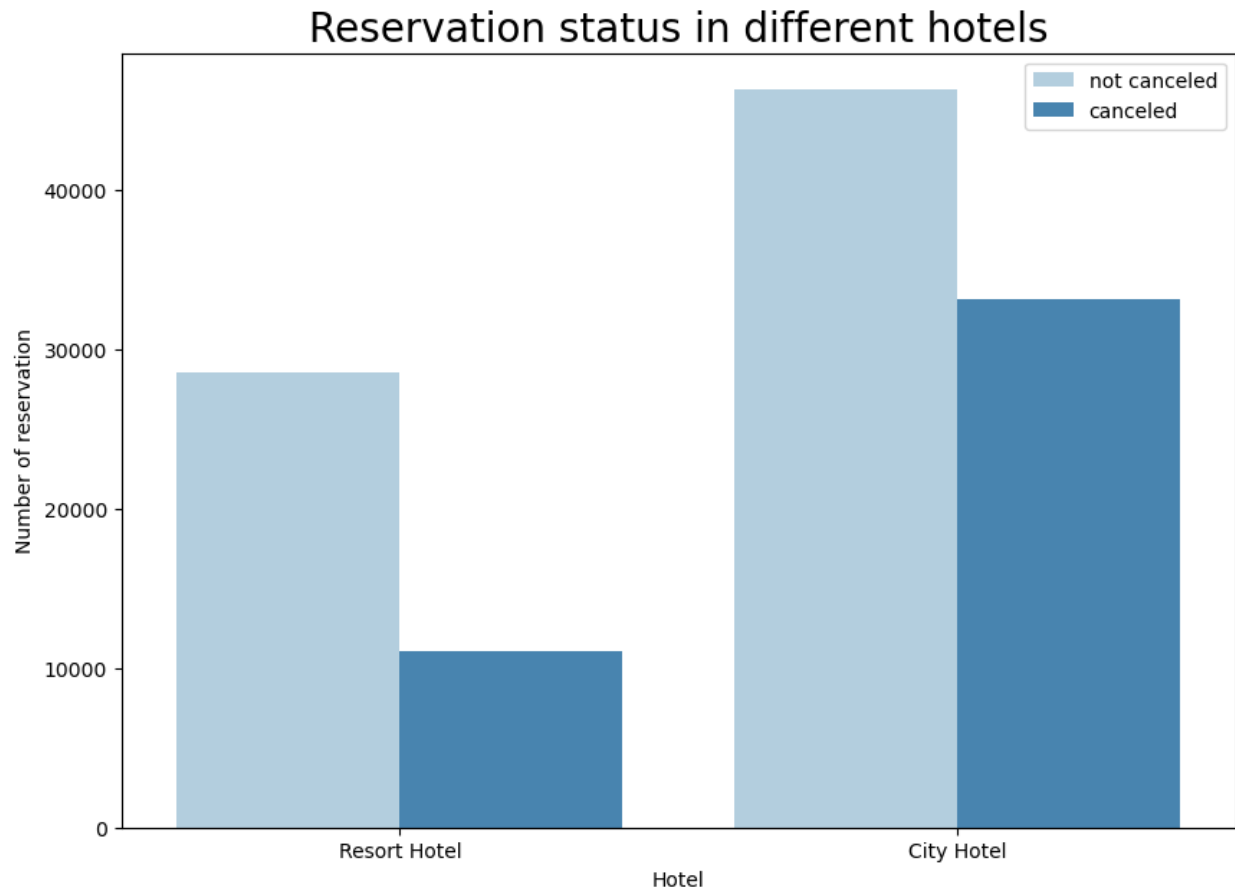


The box plot for Average Daily Rate (ADR) indicates a distribution with a median of 96, where 25% of the data falls below 70, and 75% falls below 126. The minimum ADR is observed at -6.38, and an outlier is identified at 5400, representing a potential extreme value. The interquartile range (IQR) spans from 70 to 126, showcasing the central 50% of the ADR values and highlighting the variability within this range.



According to this bar graph, approximately 62.87% of reservations were not canceled (status 0), while around 37.13% were canceled (status 1). It is obvious that there is still a significant number of reservations that have not been cancelled. There are still 37% of client who cancelled this reservation, which has a significant impact on the hotel revenue

This visualization provides a clear overview of the distribution of reservation statuses, offering valuable insights into the cancellation patterns for our client's business.



According to the graph, comparison to City hotel , Resort hotel has less bookings .It is possible that resort hotel re more expensive than those in cities. And it need to keep in mind that city hotel has all high number of cancellation.

For Resort hotel

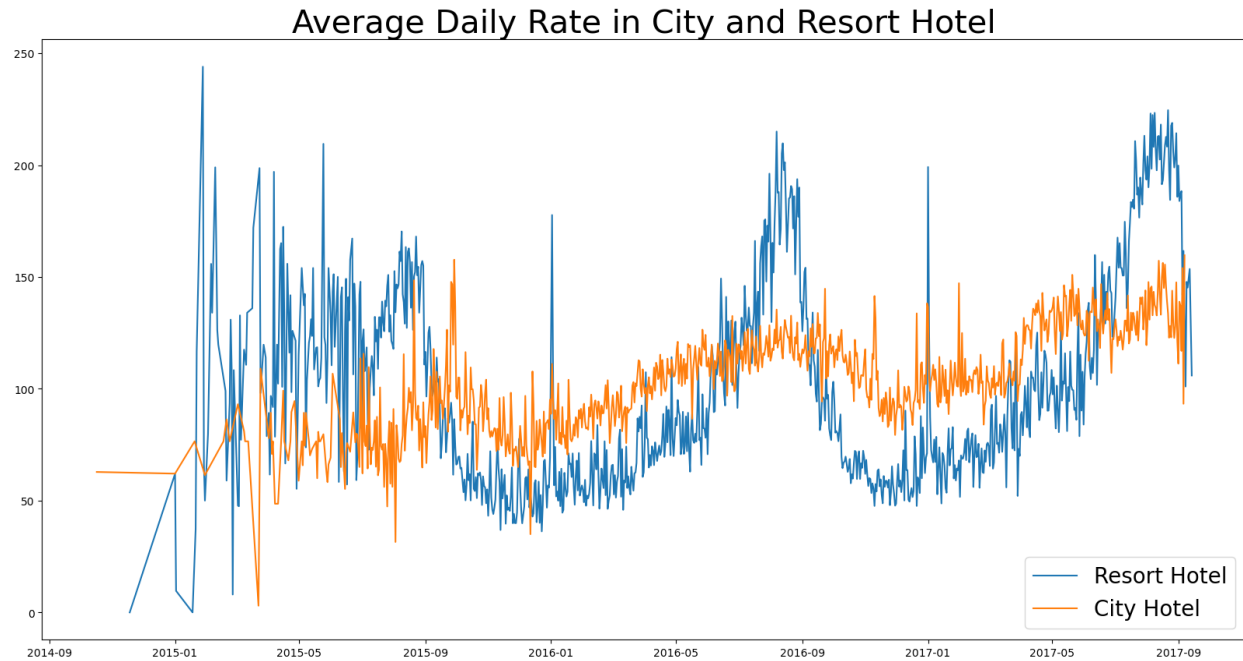
Not_cancelled percentage: 0.72025

Cancelled percentage: 0.27975

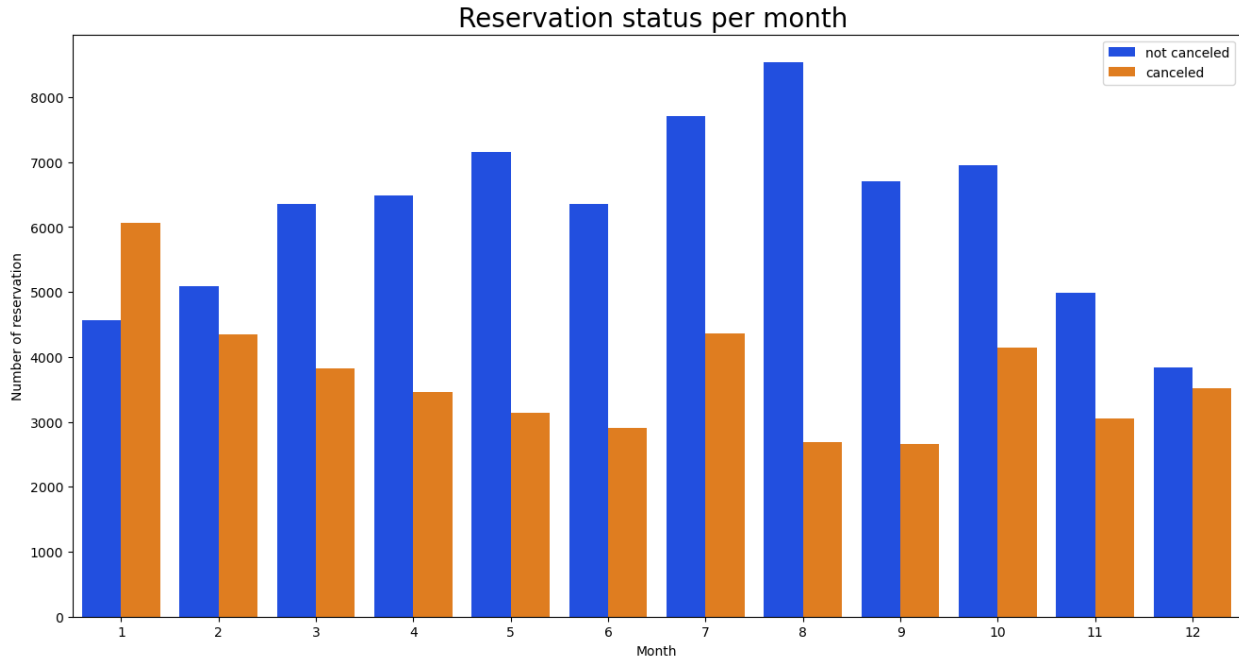
For City hotel

Not_cancelled percentage: 0.582918

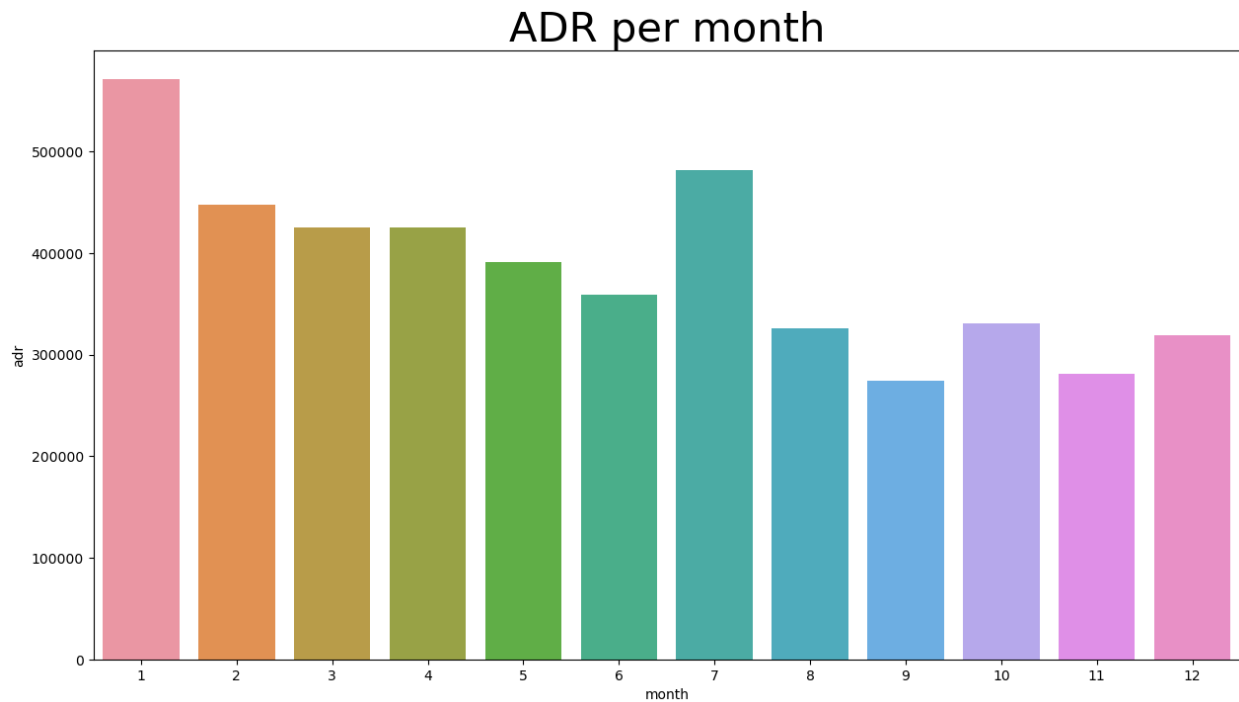
Cancelled percentage: 0.417082



The line graph above shows that, on certain days, the average daily rate for a city hotel is less than of a resort hotel, and on other days, it is even less. It goes without saying that weekends and holidays may see a rise in resort hotel rates



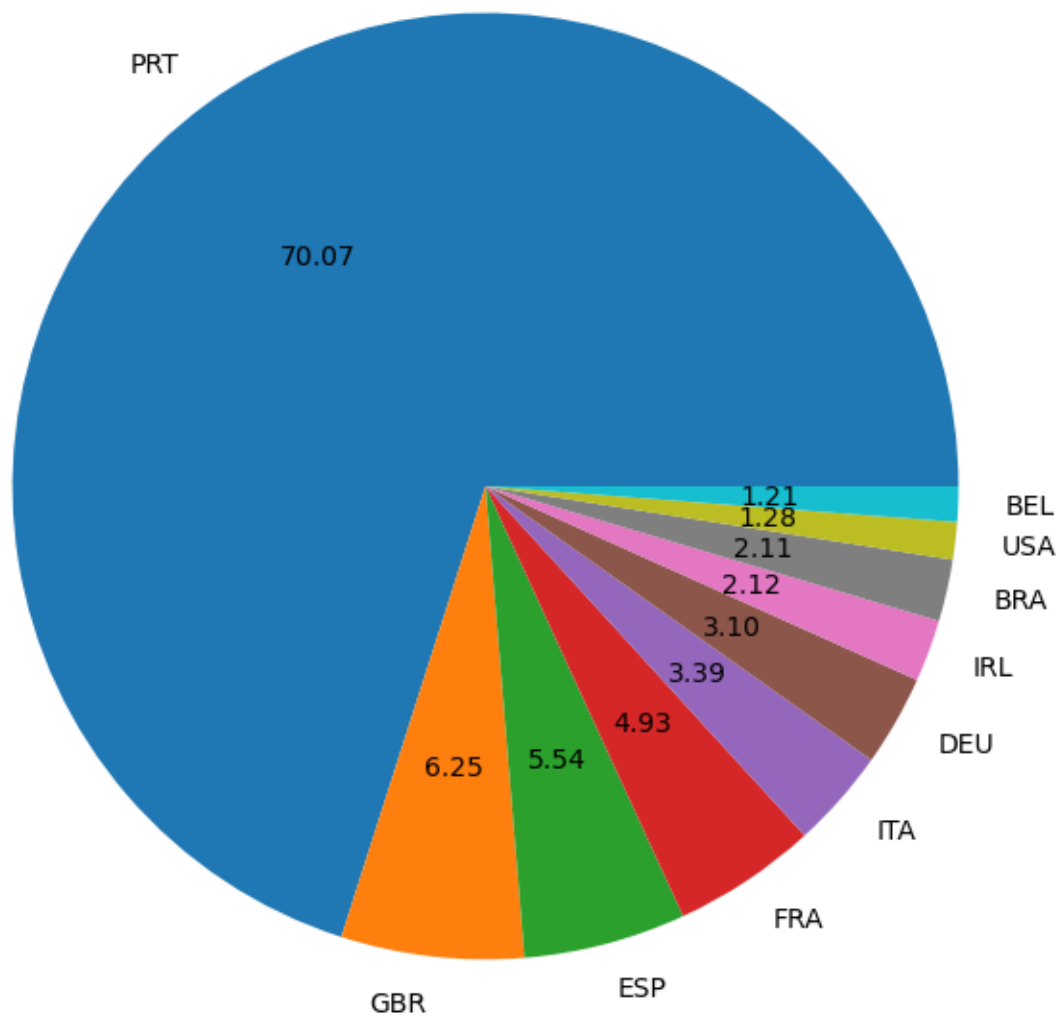
We have developed the grouped bar graph to analyze the months with the highest and lowest reservation levels according to reservations status. As can be seen, both the number of confirmed reservation and number of cancelled reservations are largest in the month of August where January is the month with the most cancelled reservations.



This bar demonstrates that the cancellations are most common when prices are greatest and are least common when they are lowest. Therefore, the cost of the accommodation is solely responsible for the cancellation.

Now, let's see which country has the highest reservation cancelled. The top country is Portugal with the highest number of cancellations.

Top 10 countries with reservation canceled



Let's check the area from where guests are visiting the hotels and making reservations.

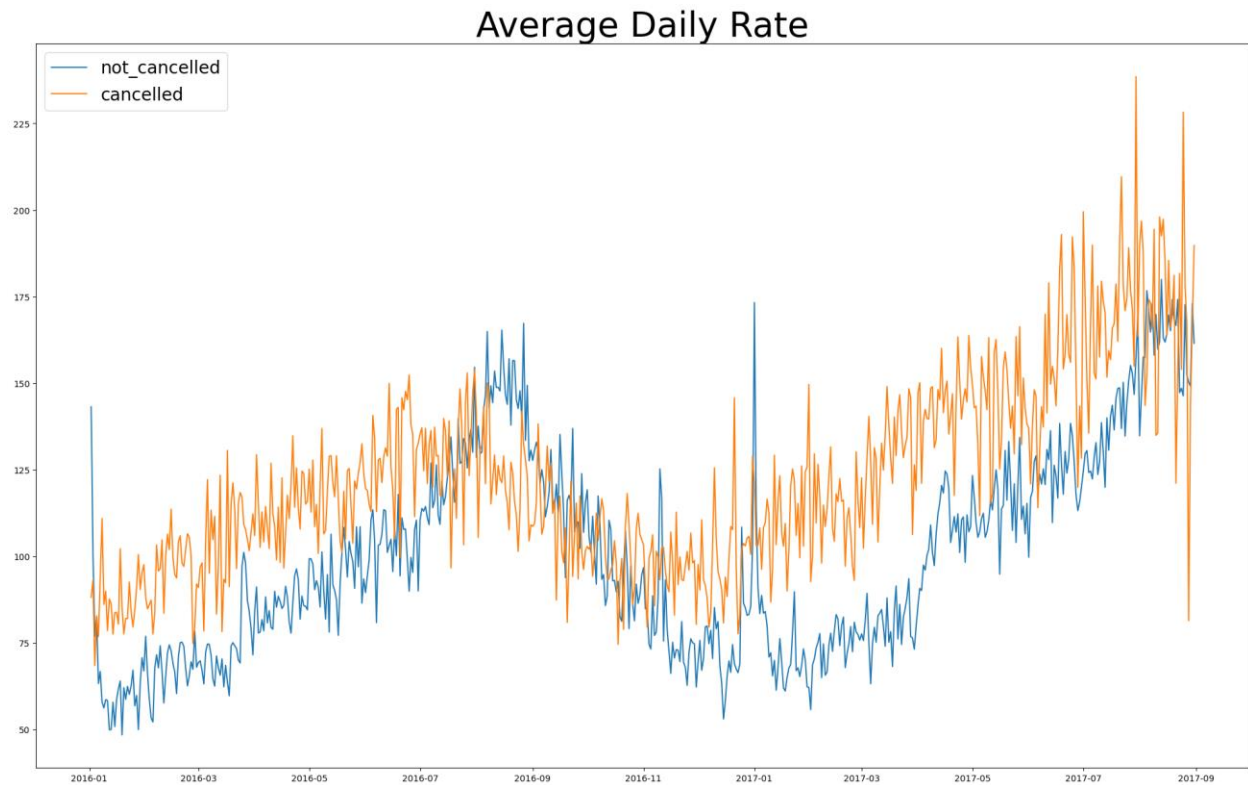
Online TA	0.474377
Offline TA/TO	0.203193
Groups	0.166581
Direct	0.104696
Corporate	0.042987
Complementary	0.006173
Aviation	0.001993

Around 47% of the client come from online travel agencies, whereas 20% come from offline travel agencies and around 16% and 10% of client are coming from groups and direct respectively and soon.

Now let's focus on canceled reservations, the distribution of market segments is as follows:

Online TA	0.469696
Groups	0.273985
Offline TA/TO	0.187466
Direct	0.043486
Corporate	0.022151
Complementary	0.002038
Aviation	0.001178

As from above data we can see that the number of cancellations is more on online TA. We can see that the area from where guests are visiting is more from online TA and also has high cancellation rate. This can be due to various factor.



As seen in the graph, reservations are cancelled when the average daily rate is higher than when it is not cancelled, proving all the above analysis, that the higher price leads to higher cancellation.

Suggestions:

- Cancellation rate rise as the price does. In order to prevent cancellations of reservations, hotels could work on their pricing strategies and try to lower the rate for specific hotel based on locations. They can also provide some discounts to the consumers.
- As the ratio of the cancellation and not cancellation is higher in the resort hotel than the city hotels. So, the hotels should provide a reasonable discount on the room prices on the weekends or on holidays.
- In the month of January, Hotels can start campaign or marketing with a reasonable amount to increase their revenue as the cancellation is highest in this month.
- They can also increase the quality of their hotels and their services mainly in Portugal to reduce the cancellation rate

