

## **Business Problem**

High cancellation rates have been reported for City Hotel and Resort Hotel. As a result, each hotel is currently coping with a variety of problems, such as decreased revenues and less-than-optimum hotel room usage. In order to boost their effectiveness in producing income, hotels must thus cut cancellation rates, and we must provide extensive business counsel to solve this issue.

The major subjects of this research are an investigation of hotel booking cancellations as well as other reasons that don't affect their business or yearly income creation.

## **Assumptions**

- No exceptional events will significantly affect the data utilized between 2015 and 2017.
- The data is still up to date and may be effectively utilized to examine potential hotel developments.
- The hotel's use of any suggested strategy has not resulted in any unexpected drawbacks.
- None of the alternatives that were recommended are now being used by the hotels.
- Booking cancellations are the main element impacting the efficacy of money generation.
- Cancellations leave unoccupied rooms for the duration of the reservation.
- Customers cancel bookings at hotels the same year they make them.

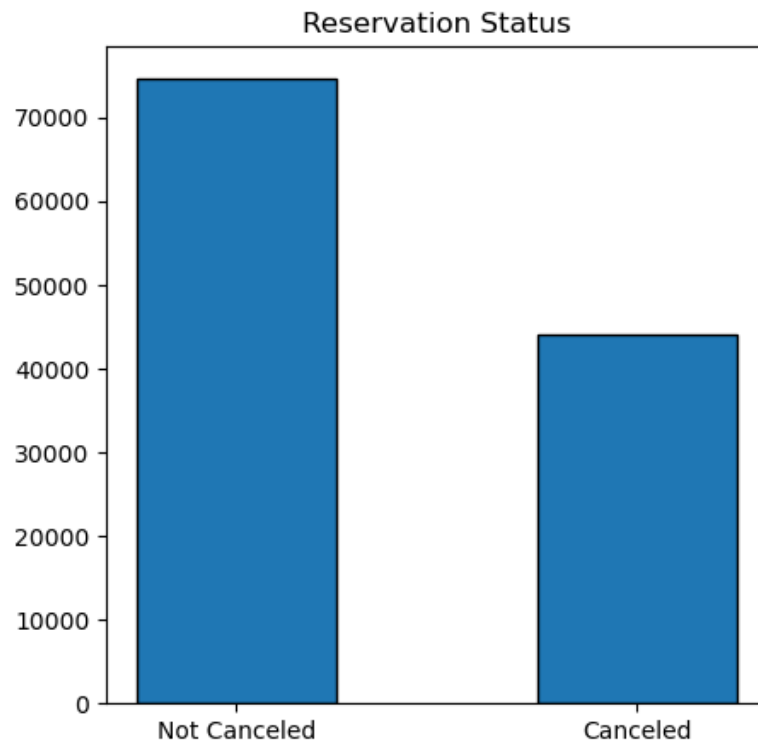
## **Research Questions**

- What factors influence the cancellation of hotel reservations?
- How can we improve the cancellation of hotel reservations?
- How will hotels be supported in choosing their prices and marketing strategies?

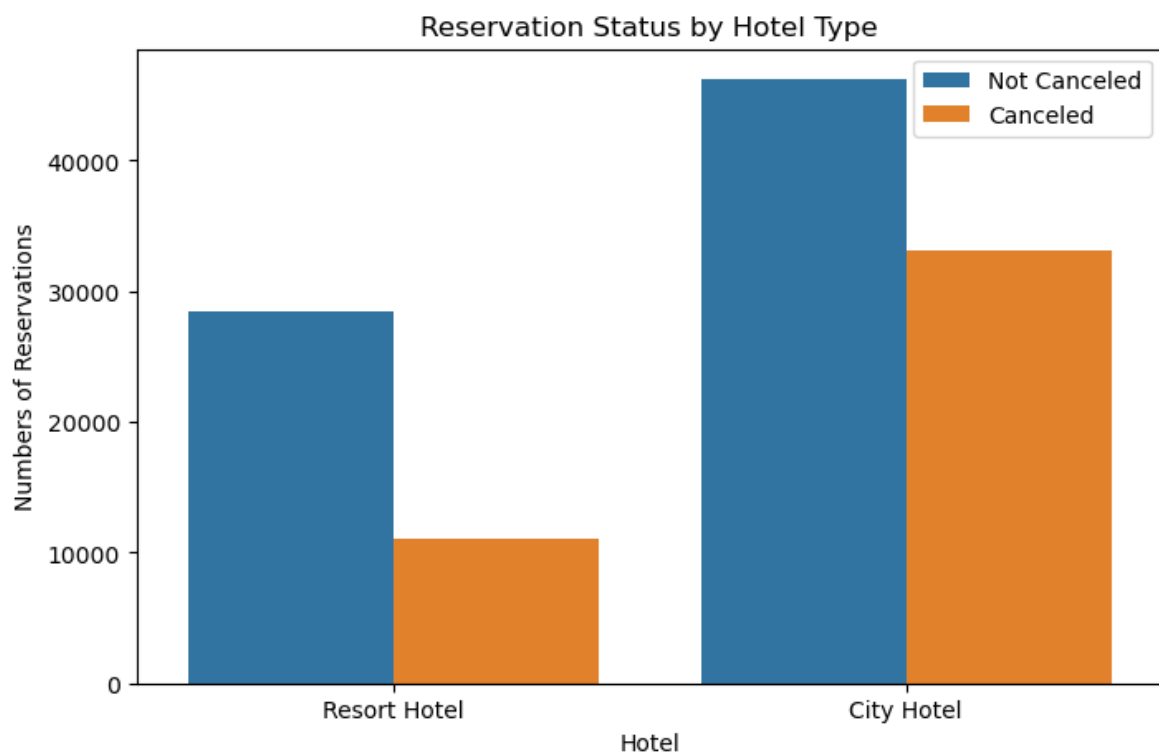
## **Hypothesis**

- When prices are higher, there are more cancellations.  
Customers have a tendency to cancel more frequently when there is a larger waiting list.
- Most customers are using offline travel agencies to book their bookings.

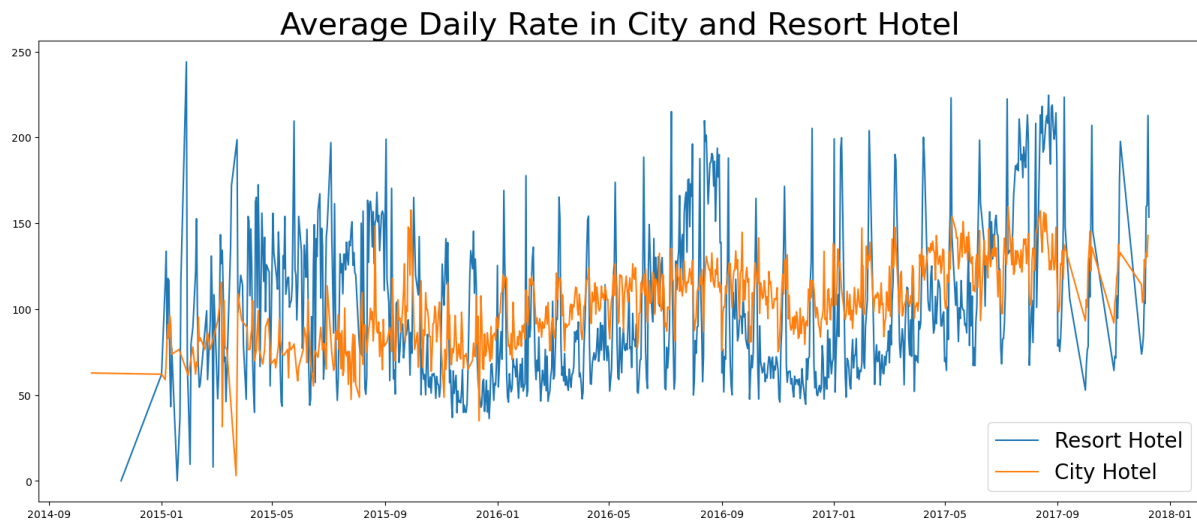
## Analysis and Findings



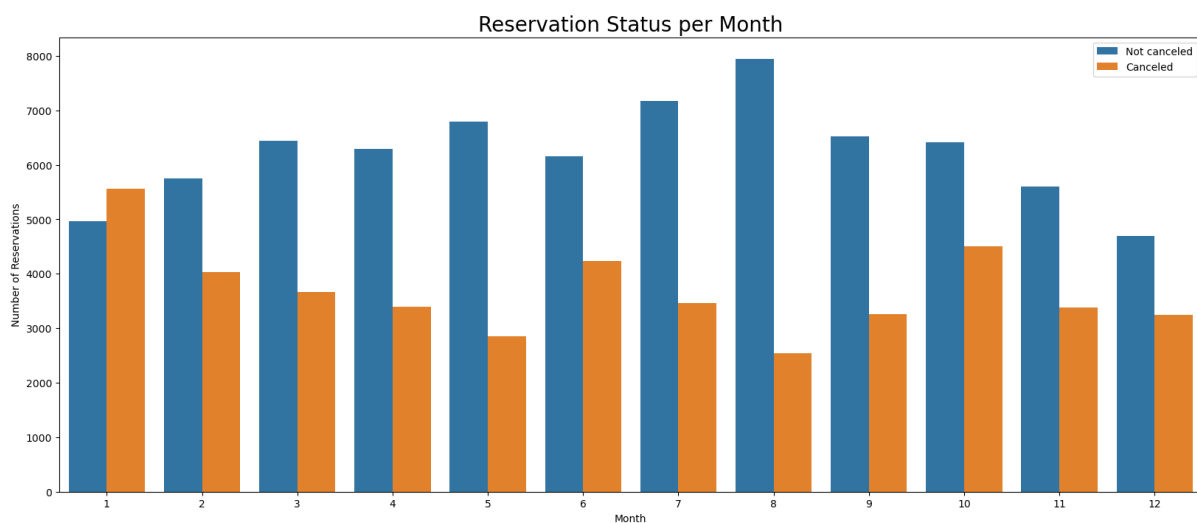
The percentage of bookings that are canceled against those that are not is represented in the accompanying bar graph. It is clear that a significant number of bookings still have not been canceled. Nonetheless, 37% of customers canceled their reservations, which has a big impact on the hotel's revenue.



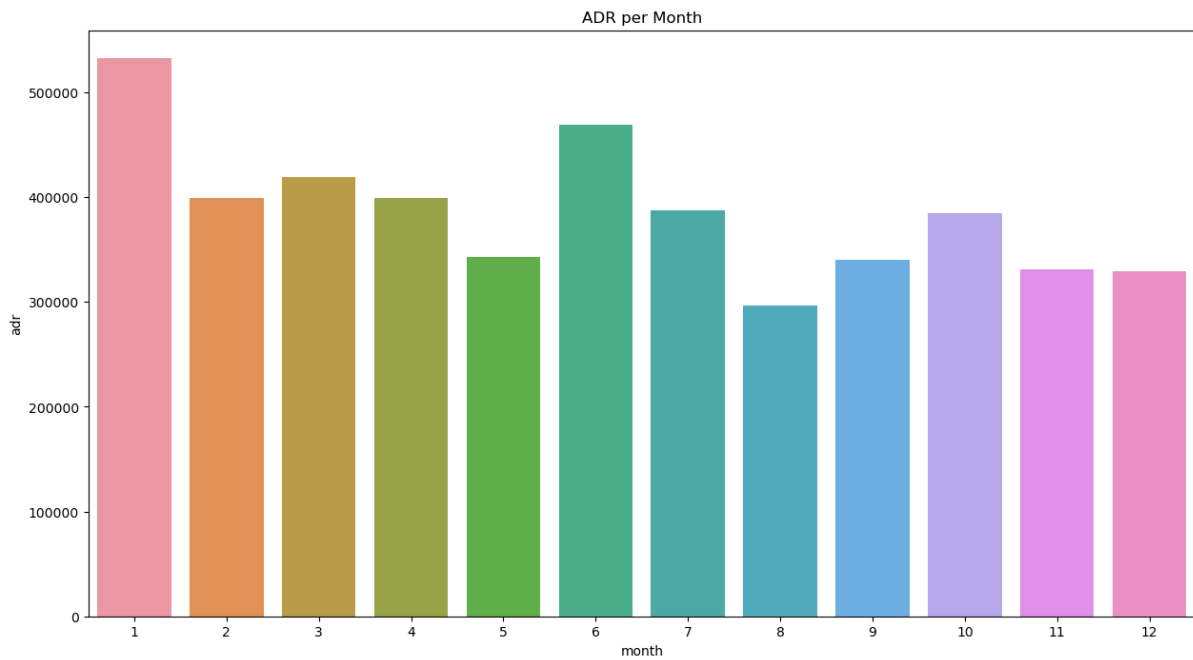
City hotels have more reservations than resort hotels do. The cost of hotels at resorts could be higher than in cities. However, it's clear that city hotels have a very high cancellation-to-no-cancellation ratio.



The line graph up top demonstrates that, on certain days, a city hotel's average daily price is less than a resort hotel's, and on other days, it is even less. It goes without saying that resort hotel rates may increase on weekends and during holidays.

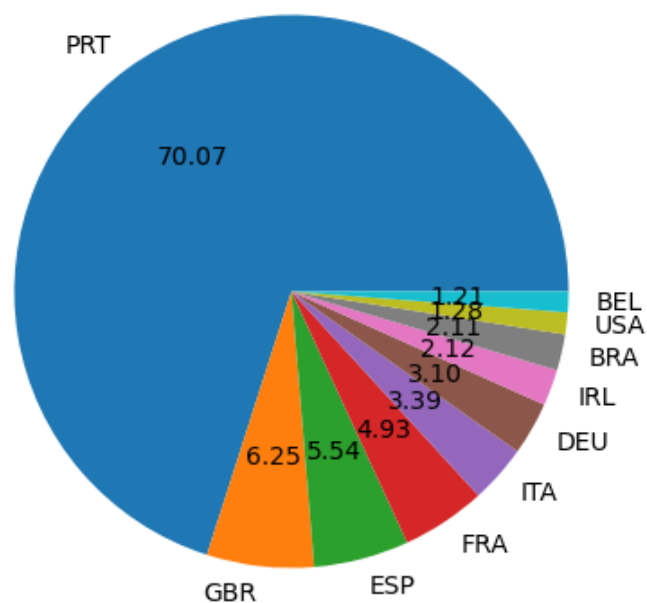


In order to evaluate the months with the highest and lowest reservation levels according to reservation status, we created the grouped bar graph. As can be seen, August is the month with the most confirmed bookings as well as the least canceled reservations. The majority of canceled reservations, however, occur in January.



This bar graph shows that cancellations occur more frequently when prices are highest and less frequently when prices are lowest. Hence, the only cause of the cancellation is the price of the accommodation.

#### Top 10 Country with Cancelled Reservation



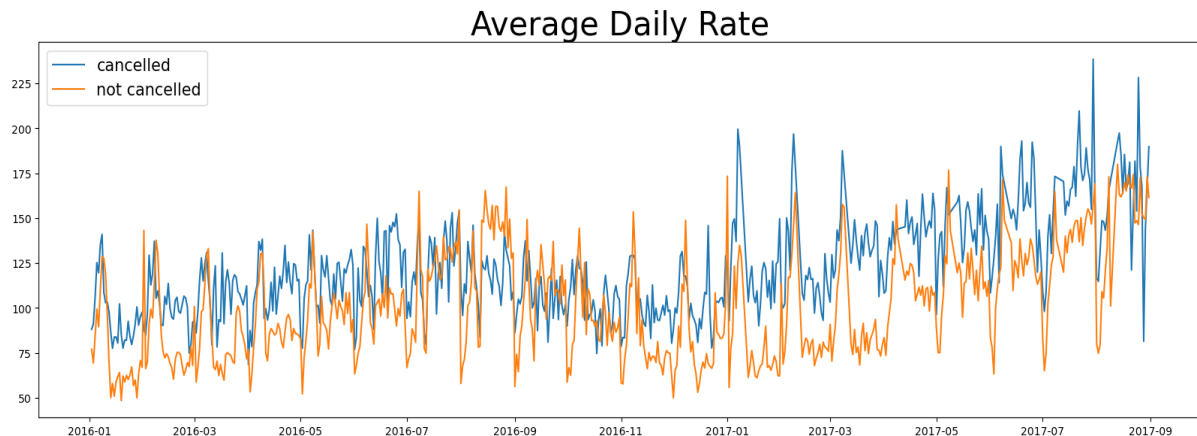
Let's look at the countries with the most canceled reservations now. The top country with the most cancellations is Portugal.

```
df.market_segment.value_counts(normalize=True)
```

```
Online TA      0.474377
Offline TA/TO  0.203193
Groups         0.166581
Direct         0.104696
Corporate      0.042987
Complementary  0.006173
Aviation       0.001993
Name: market_segment, dtype: float64
```

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Let's look at the region from where visitors to hotels are coming and making bookings. Is it coming from offline or online travel agents, direct or groups? 27% of the customer's groups, while 46% come via online travel agencies. Just 4% of customers make direct reservations at hotels by going there in person.



The graph shows that bookings are canceled more frequently than they are not, depending on the average daily pricing. That fully supports the prior study that higher prices result in more cancellations.

## Recommendations

1. When prices increase, so do cancellation rates. Hotels should improve their pricing tactics and attempt to cut the costs for particular hotels based on locations in order to prevent cancellations of reservations. The customers may also receive certain discounts from them.
2. Compared to city hotels, the ratio of cancellations to non-cancellations at resort hotels is greater. Hence, on weekends and during holidays, hotels should provide a fair reduction in room rates.
3. While cancellations are at their greatest in January, hotels might launch campaigns or marketing with a modest budget to boost income.
4. To lower the cancellation rate, they can also improve the standard of their accommodations and services, particularly in Portugal.