

Data Analysis End-to-End Project Report Using Python

Hotel Booking Analysis

About Dataset

Context

This dataset contains 119390 observations for a City Hotel and a Resort Hotel. Each observation represents a hotel booking between the 1st of July 2015 and 31st of August 2017, including booking that effectively arrived and booking that were cancelled. The data is originally from the article Hotel Booking Demand Datasets, written by Nuno Antonio, Ana Almeida, and Luis Nunes for Data in Brief, Volume 22, February 2019.

Business Problem

In recent years, City Hotel and Resort Hotel have seen high cancellation rates. Each hotel is now dealing with a number of issues as a result, including fewer revenues and less than ideal hotel room use. Consequently, lowering cancellation rates is both hotels' primary goal in order to increase their efficiency in generating revenue, and for us to offer thorough business advice to address this problem.

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



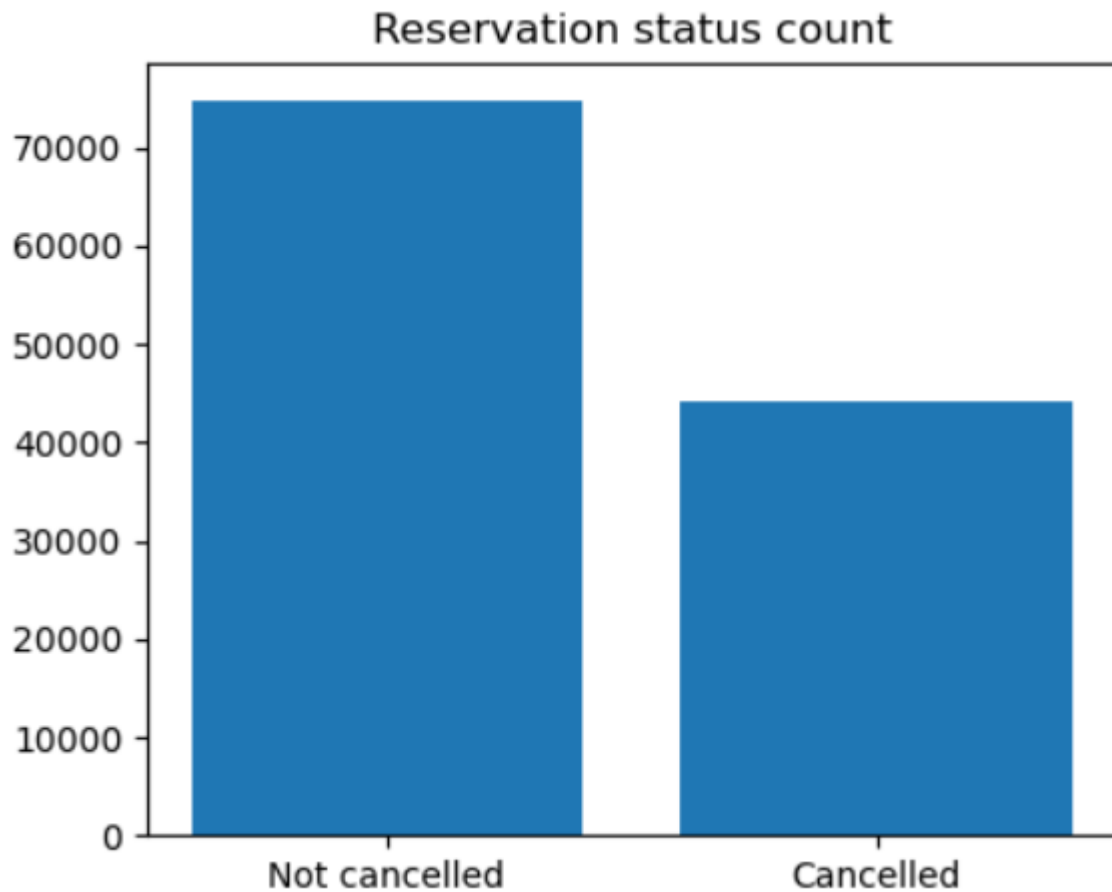
Research Question

1. What are the variables that affect hotel reservation cancellations?
2. How can we make hotel reservations cancellations better?
3. How will hotels be assisted 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 clients are coming from offline travel agents to make their reservations.

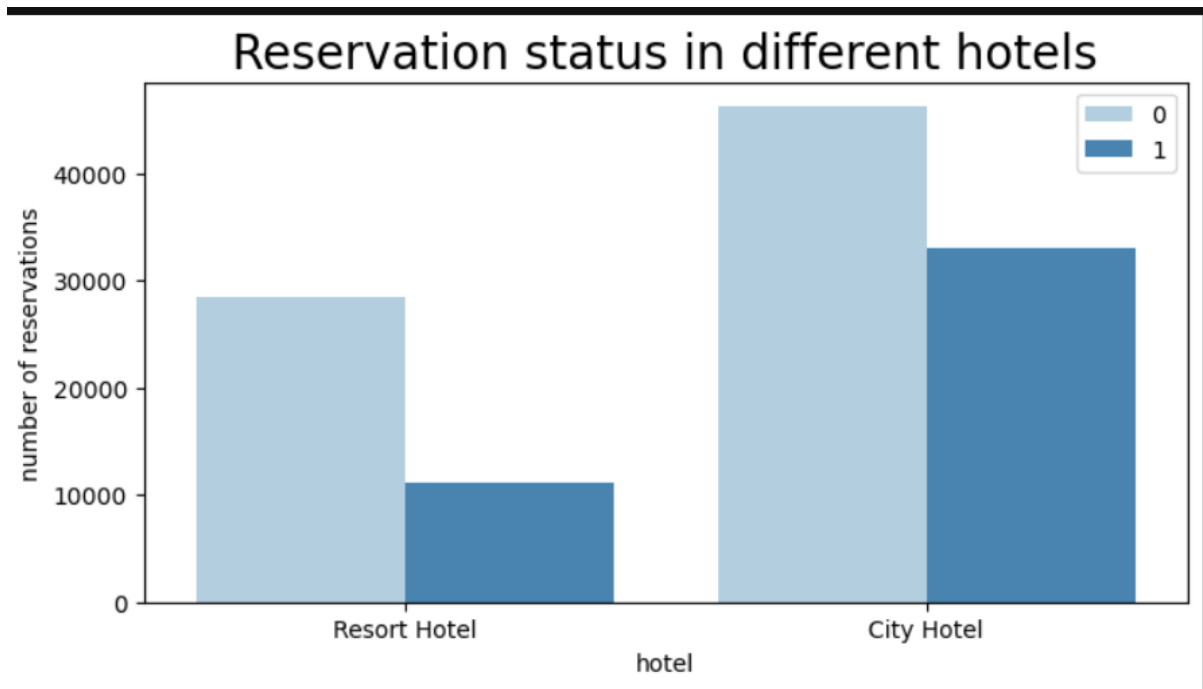
Analysis and Findings



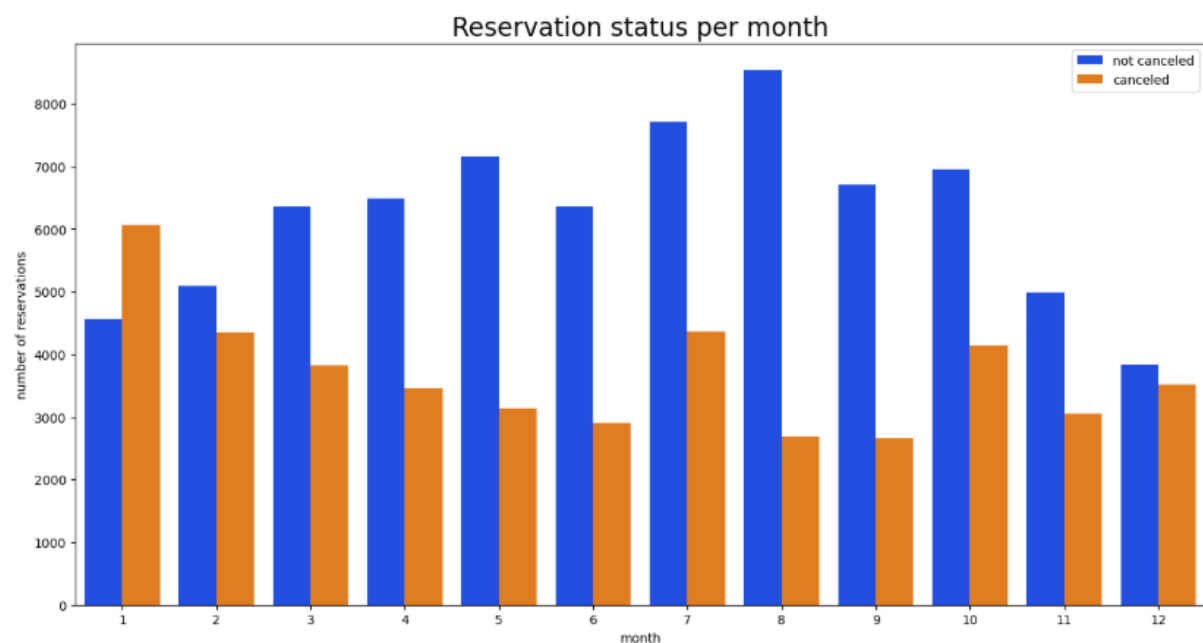
The accompanying bar graph shows the percentage of reservations that are cancelled and those that are not.

It is obvious that there are still a significant number of reservations that have not been cancelled.

There are still 37% of clients who cancelled their reservation, which has a significant impact on the hotels' earnings.

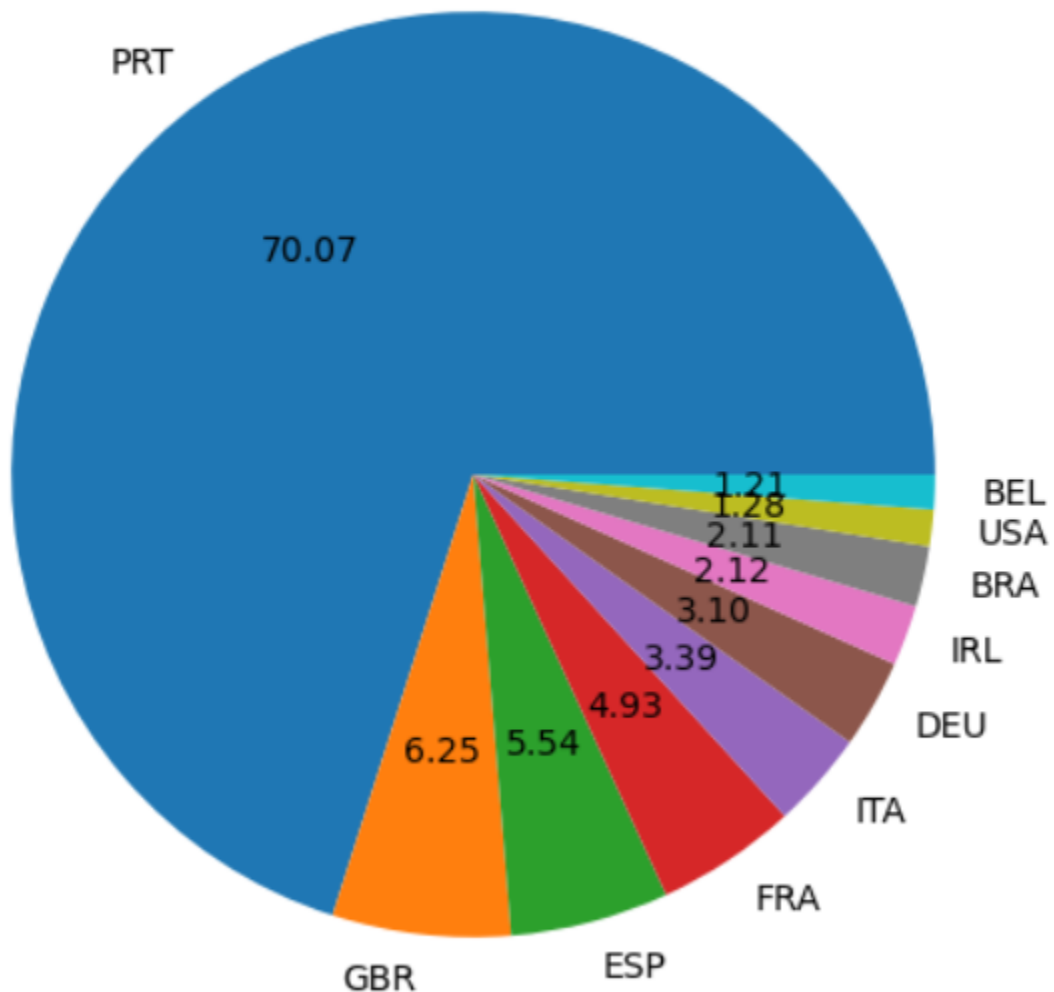


In comparison to resort hotels, city hotels have more bookings. It is possible that resort hotels are more expensive than those in cities.



1. January has the highest number of cancellations.
2. Summer months (June-August) see the highest number of bookings.
3. Cancellations are generally lower towards the end of the year, especially in December.

Top 10 countries with reservation cancelled



1. Most cancellations come from Portugal (PRT), making up about 70% of all canceled reservations.
2. United Kingdom (GBR) and Spain (ESP) follow but with much smaller shares, around 6% and 5% respectively.
3. Other countries like France, Italy, and Germany contribute minimally to cancellations compared to Portugal.

Suggestions

Adjust Pricing Strategies: Cancellation rates tend to rise with higher prices. Hotels can optimize pricing by offering discounts or flexible rates for specific locations and customer segments to reduce cancellations.

Offer Discounts for Resort Hotels: Since resort hotels show a higher cancellation ratio than city hotels, providing weekend or holiday discounts could encourage more confirmed bookings and reduce cancellations.

Target January with Marketing Campaigns: As January records the highest cancellation rate, hotels can run targeted promotions or campaigns to attract and retain customers during this slow period.

Improve Service Quality in Portugal: With Portugal showing the highest number of cancellations, hotels should focus on enhancing service quality, guest experience, and communication to increase customer satisfaction and loyalty.

THANK YOU