

Hotel Booking Management System – Data Analytics Report

1. Introduction

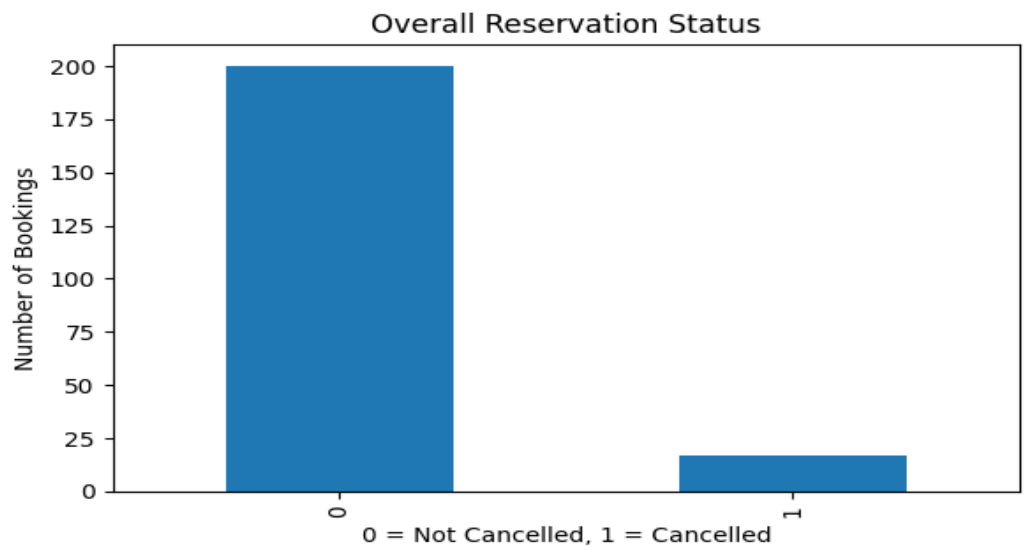
This project is based on a real-world Hotel Booking Management System dataset. The main objective of this analysis is to understand booking behavior, identify key reasons behind booking cancellations, and provide data-driven business insights that can help hotels reduce cancellation rates and improve overall revenue.

2. Dataset Overview

The dataset contains more than 100,000 hotel booking records for both City Hotels and Resort Hotels. It includes information such as booking dates, customer type, market segment, hotel type, lead time, ADR (Average Daily Rate), and reservation status.

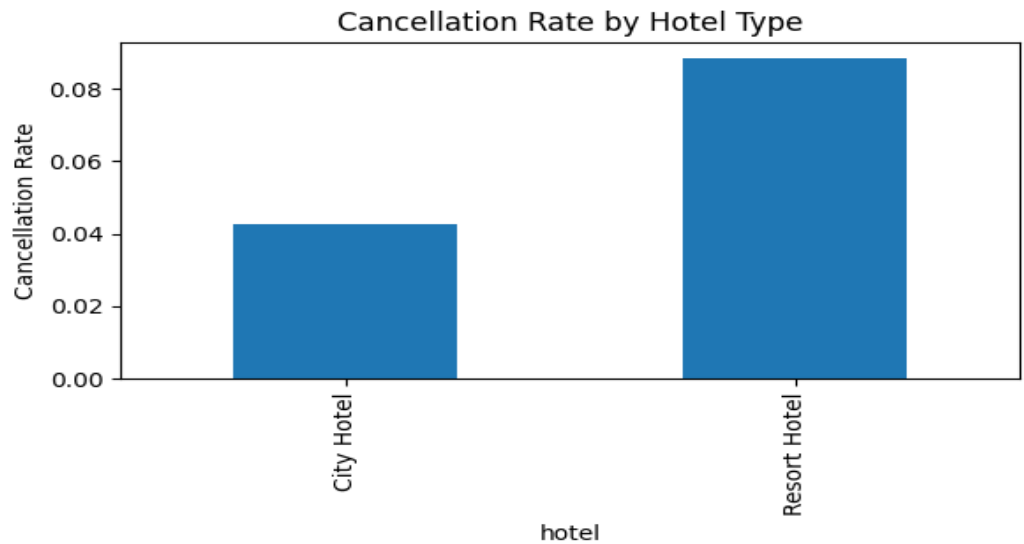
3. Exploratory Data Analysis & Visualizations

Overall Reservation Status



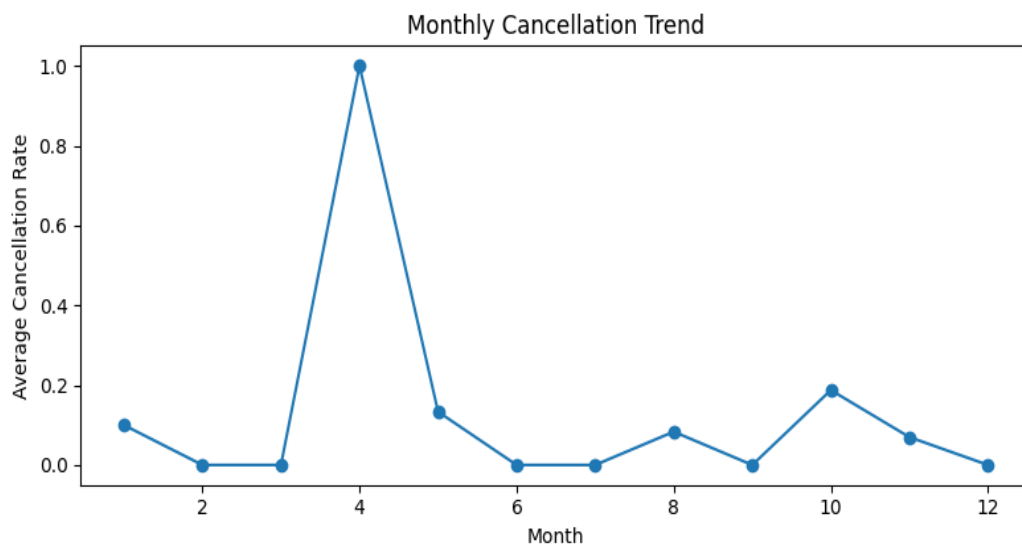
This graph compares cancelled and non-cancelled bookings. It clearly shows that a significant portion of bookings are cancelled, which directly impacts hotel revenue and occupancy planning.

Cancellation by Hotel Type



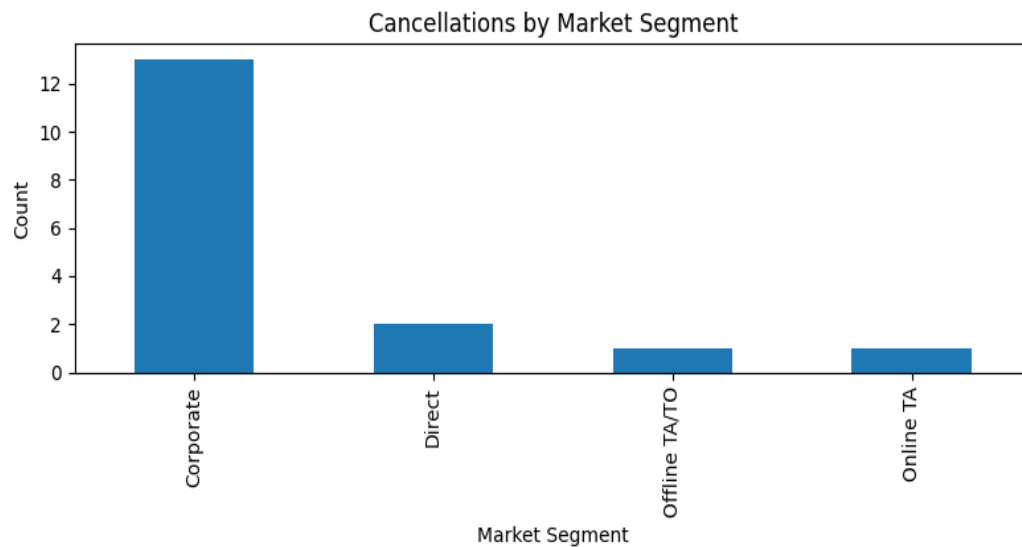
This visualization highlights that City Hotels experience a higher cancellation rate compared to Resort Hotels. This may be due to business travel uncertainty and shorter booking commitments in city locations.

Monthly Cancellation Trend



This trend analysis shows seasonal behavior in cancellations. Certain months consistently show higher cancellation rates, indicating the importance of seasonal pricing and booking policies.

Cancellations by Market Segment



Online Travel Agents (OTA) contribute the highest number of cancellations. This suggests that indirect booking channels have lower customer commitment compared to direct bookings.

4. Business Recommendations

- Introduce partially non-refundable booking policies during high-cancellation months.
- Encourage direct bookings by offering discounts or loyalty benefits.
- Apply dynamic pricing strategies based on seasonal demand and cancellation risk.
- Reduce dependency on Online Travel Agents by improving the hotel's official website.
- Send reminder emails and confirmation incentives to customers with long lead times.

5. Conclusion

This Hotel Booking Management System analysis demonstrates how data analytics can be used to solve real business problems. By identifying high-risk months, hotel types, and booking channels with high cancellation rates, this report provides actionable insights to reduce cancellations and optimize revenue. The findings of this project can help hotel management make informed decisions, improve operational planning, and enhance customer retention. This project showcases practical data analysis, visualization, and business storytelling skills and is suitable for inclusion in a professional data analytics portfolio.