HOTEL RESERVATION ANALYSIS REPORT

➢ Objective:

The purpose of this analysis is to understand reservation patterns, particularly focusing on cancellation behavior, and how various factors such as hotel type, country of origin, ADR (Average Daily Rate), and seasonal trends influence

cancellations. This report also aims to propose strategies to reduce cancellation rates and optimize revenue.

➢ Problem Statement:

The hotel experiences a high number of reservation cancellations, affecting revenue prediction, occupancy planning, and operational efficiency. This analysis investigates key trends and patterns in reservation behavior to identify causes and solutions for high cancellation rates.

➢ Assumptions:

- The dataset accurately represents hotel booking records.
- `is_canceled = 1` correctly mark cancelled reservations.
- ADR (Average Daily Rate) is correctly calculated and reflects actual pricing.
- Each reservation is an independent observation.
- No external disruptions (e.g., pandemics) are directly factored into the data.
- Hotel types (Resort vs. City) are subject to similar macro-environmental conditions

➢ Hypotheses:

- The number of cancelled reservations is significantly higher than non-cancelled reservations.
- Resort hotels tend to have a higher cancellation rate than city hotels.
- ADR for resort hotels is higher than for city hotels.
- Reservation cancellations increase in specific months, indicating seasonality.
- ADR fluctuates by month due to changing demand.
- Certain countries have higher cancellation rates, possibly due to travel or visa constraints.
- Cancelled reservations are more likely to have higher ADRs.

➢ Visual Insights:

Reservation Status Counts
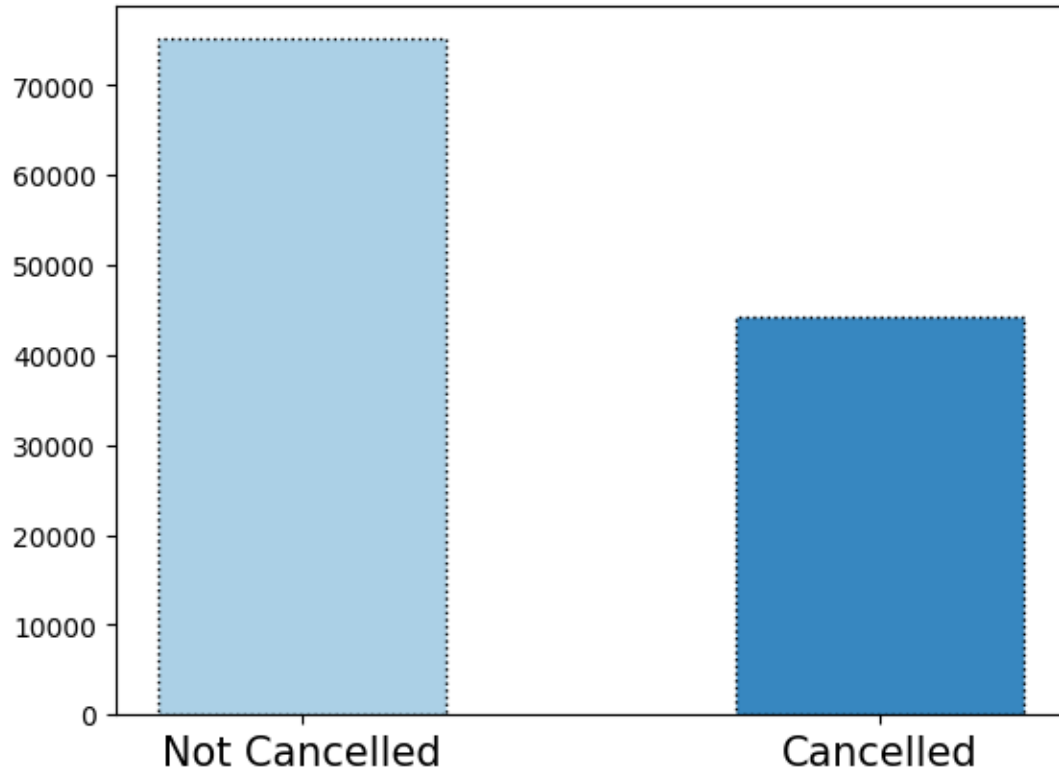
This chart shows how many reservations were cancelled compared to those that went through as planned. Most of the bookings were not cancelled, but a noticeable portion — around 37% — did get cancelled. This gives us a clear overview of how often cancellations happen and sets the stage for exploring why customers might be cancelling their reservation

Reservation Status On Different Hotels
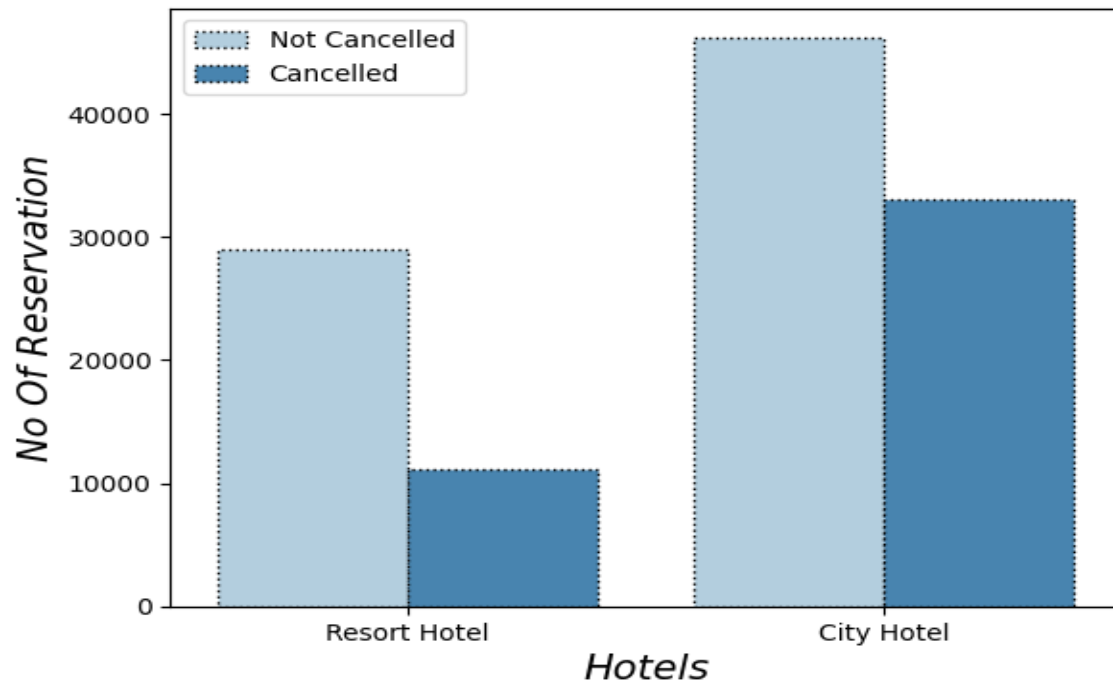
This chart compares the number of cancelled and not cancelled reservations for two hotel types: **City Hotel** and **Resort Hotel**. It shows that City Hotels had more reservations overall and a higher number of cancellations. Both types of hotel experienced cancellations, but the volume differed based on the type of hotel.

ADR Comparison: Resort vs City Hotel
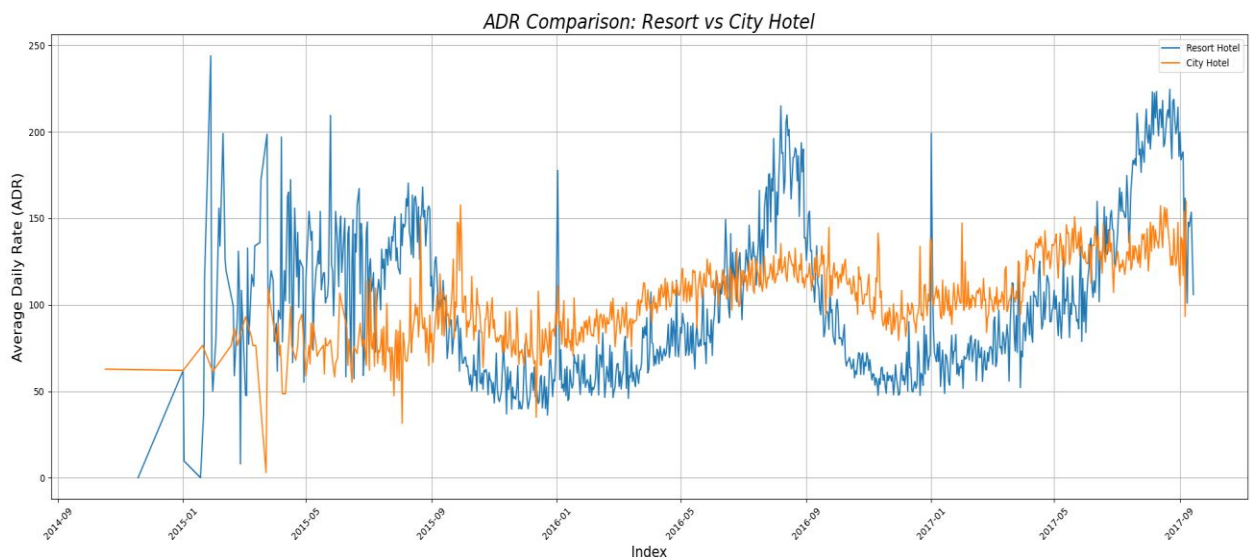
This line chart illustrates the **Average Daily Rate (ADR)** trends over time for both **Resort Hotels** and **City Hotels**. It shows how the ADR fluctuates across different reservation dates for each hotel type. Both hotels display varying pricing patterns over time, with noticeable spikes and drops. The comparison helps visualize how pricing strategies or seasonal demand may differ between the two hotel types.

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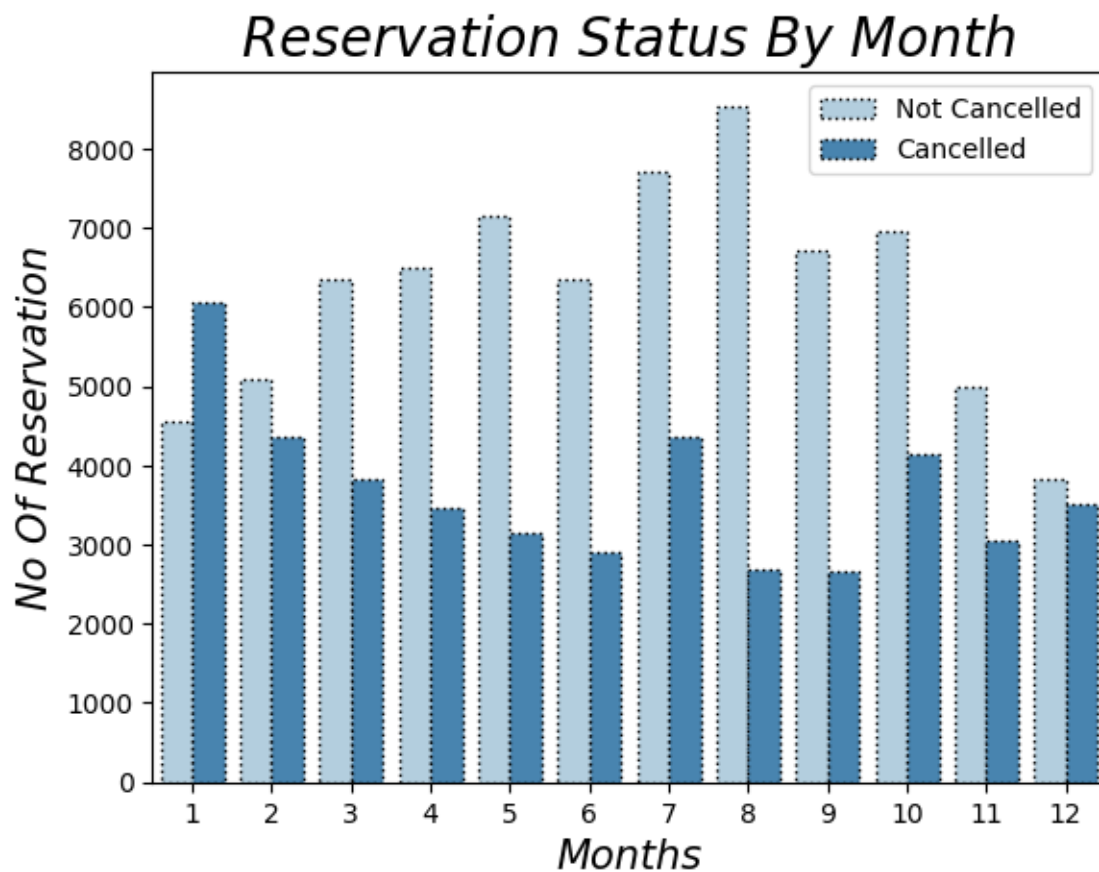
This chart shows the number of cancelled and not cancelled reservations across each month. It highlights monthly variations in booking activity and cancellation patterns. Some months show a higher volume of cancellations, while others have more completed stays. The comparison helps visualize how reservation behavior changes throughout the year

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ADR Per Month
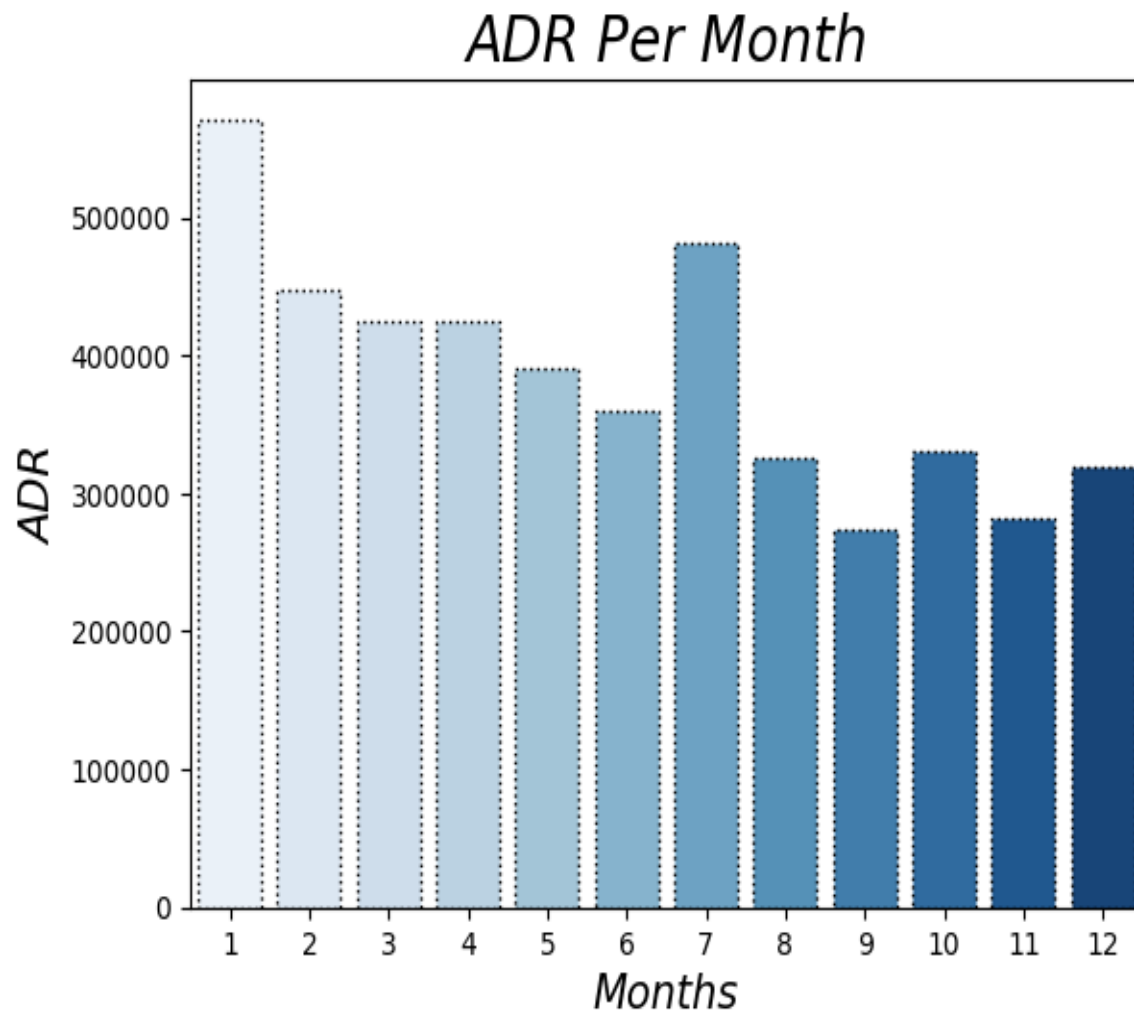
This bar chart shows the **total Average Daily Rate (ADR)** for **cancelled reservations** across each month. It highlights how ADR values vary over time, indicating that the cost of cancelled bookings fluctuates from month to month. Some months have noticeably higher ADR totals, reflecting periods when cancelled reservations were more expensive.

Top 10 Countries With Reservation Callenced
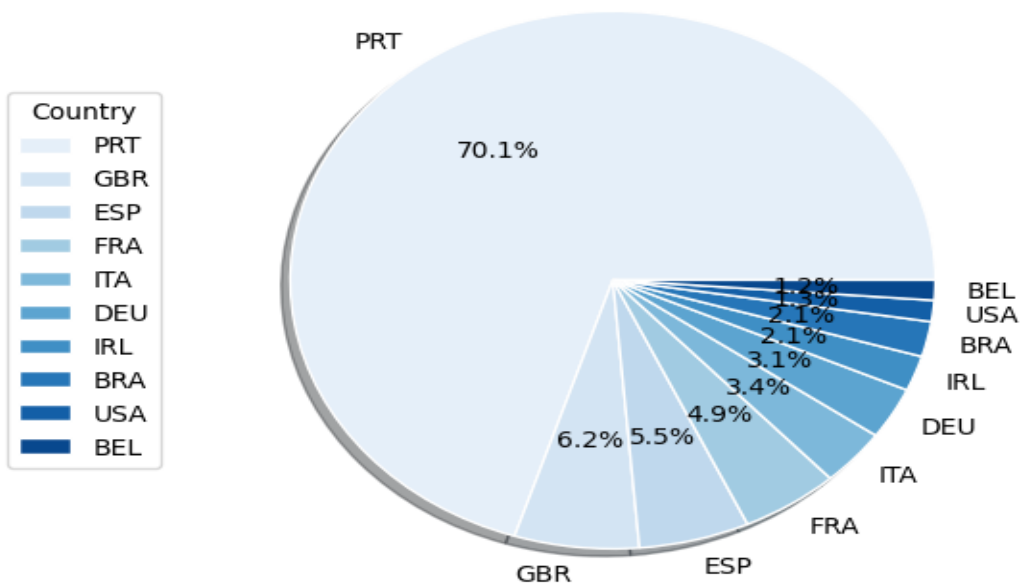
This pie chart represents the top 10 countries with the highest number of cancelled reservations. Each slice shows the proportion of cancellations from a specific country relative to the top 10. The chart provides a clear view of which countries contribute most to the overall cancellation volume within the dataset.
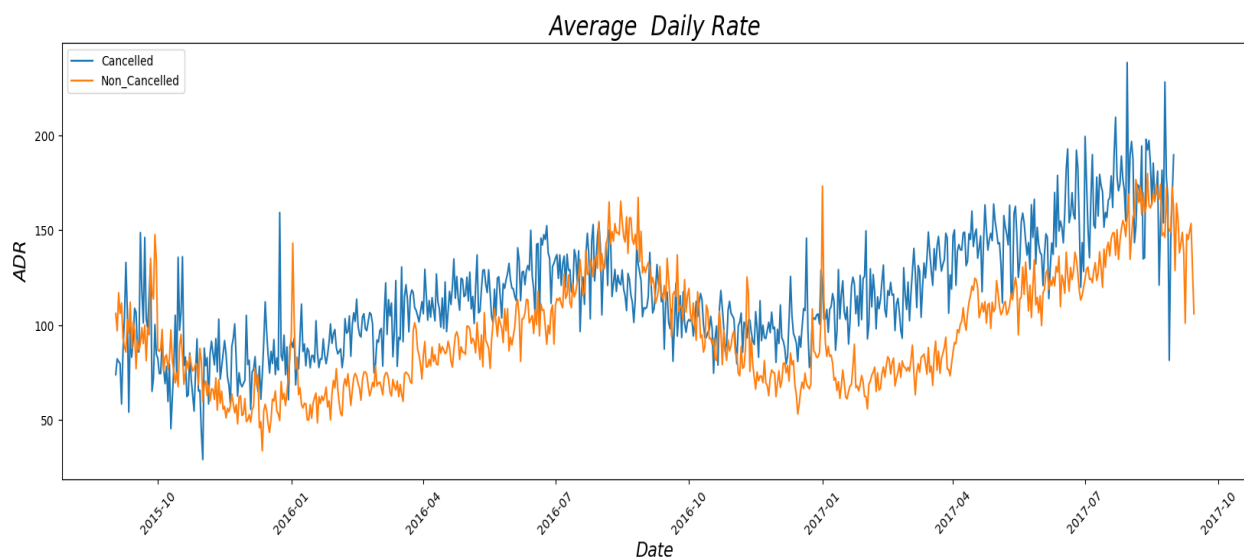
This line chart compares the **average daily rate (ADR)** over time for **cancelled** and **non-cancelled** reservations. It shows how the pricing behavior differs between the two groups across various dates. Both lines fluctuate over time, with some visible peaks and dips. The chart helps visualize how ADR trends evolve for each type of reservation and highlights the pricing dynamics around cancellations.

➢ Suggestions:

- **Flexible Seasonal Pricing:** Adjust ADRs based on monthly demand patterns.

- **Incentives for Non-Cancellation:** Offer benefits for non-refundable or confirmed bookings.

- **Country-Specific Strategies:** Impose stricter policies or offer tailored communication for high-cancellation countries.

- **Stronger Resort Booking Rules:** Introduce deposits or shorter cancellation windows for resort hotels.

- **Booking Channel Analysis:** Focus on more reliable booking channels and promote direct bookings.

- **Lead Time Engagement:** Monitor and reduce long lead times through email reminders or booking limits.

- **High-ADR Booking Follow-ups:** Contact high-value customers before check-in to reduce no-shows.

- **Monthly Dashboards:** Use real-time dashboards to monitor cancellations and pricing performance.

➢ Conclusion:

This analysis provides clear evidence that cancellation behavior is influenced by hotel type, season, ADR, and customer origin. By applying the recommended strategies, the hotel can proactively reduce cancellations, increase customer retention, and improve revenue forecasting.