

Capstone1: Hotel Booking Cancellation Analytics & Prediction_Bhargavi

Problem Statement:

The hotel is facing substantial losses due to last-minute booking cancellations. This project aims to analyze historical reservation data to identify key patterns and causes of cancellations, helping the business reduce no-shows and optimize revenue.

Cases

Case 1 : Booking Trends Over Time

- Analyze reservation patterns month-wise or quarter-wise.
- **Visual:** Line chart with color-coded lines for *Canceled* vs *Not Canceled* bookings.

Case 2: Lead Time vs Cancellation

- Explore the relationship between how early customers book and the likelihood of cancellation.
- **Visual:** Box Plot or Scatter Plot for *lead_time* vs *booking_status*.

Case 3: Meal Plan Preferences

- Identify the most and least preferred meal plans and their cancellation rates.
- **Visual:** Stacked Bar Chart for *type_of_meal_plan* segmented by *booking_status*.

Case 4: Room Type Impact

- Which room types are most booked? Which have highest cancellation?
- **Visual:** Clustered Column Chart: *room_type_reserved* vs *booking_status*.

Case 5: Booking Channel Efficiency

- Compare *Online* vs *Offline* bookings and their cancellation behaviors.
- **Visual:** Pie chart or Treemap of *market_segment_type* and their % canceled.

Case 6: Price Influence

- Is there a correlation between average price per room and cancellation behavior?
- **Visual:** Histogram or Box Plot of *avg_price_per_room* split by *booking_status*.

Case 7: Family vs Solo Travel Patterns

- Analyze if bookings with children or more adults are more likely to cancel.
- **Visual:** Heatmap of *no_of_adults/no_of_children* against cancellation.

Case 8: Arrival Date Heatmap

- Which time of the year sees most cancellations?
- **Visual:** Calendar Heatmap (*arrival_date* vs *booking_status*).

Case 10: RLS – Hotel Manager View Restriction

Objective: Restrict visibility of bookings to only hotel managers for their specific properties or regions.

- **Use Case:**
 - Regional managers see only bookings from their areas.
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