SUMMARY

**HOTEL BOOKING AND CANCELLATION DATA ANALYSIS**

The dataset contains hotel booking information, including details on room preferences, customer types (couple, family, single), monthly bookings, cancellations, and hotel types (city or resort). I first cleaned the data by removing null values and duplicates to ensure accuracy. Then, I created pivot tables to analyze cancellation patterns across different categories like room types, customer segments, and booking months. Finally, I developed a dashboard to visually represent the key findings using charts and graphs, highlighting trends in cancellations and providing actionable recommendations to reduce the overall cancellation rate.

**Summary of Analysis:**

1. **Total Reservations and Cancellations**:
   * **Total Reservations**: 119,311
   * **Total Cancellations**: 44,224 About 37% of the total reservations were canceled, indicating a significant cancellation rate.
2. **Room Allotment Analysis**:
   * **Desired Rooms**: Out of 104,473 bookings, 43,422 were canceled (~41%).
   * **Undesired Rooms**: Out of 14,917 bookings, 802 were canceled (~5%). Desired rooms are clearly in higher demand, but they also experience a high cancellation rate. Customers might be canceling due to availability or preferences not being met.
3. **Customer Type Analysis**:
   * **Couples**: Out of 81,557 bookings, 32,421 were canceled (~40%).
   * **Families**: Out of 15,526 bookings, 7,248 were canceled (~47%).
   * **Singles**: Out of 22,577 bookings, 6,555 were canceled (~29%). Families and couples show a high cancellation rate, possibly due to flexibility in plans or mismatches in expectations.
4. **Month-on-Month Analysis**:
   * High cancellations are observed in **May** (4,677 cancellations) and **August** (4,882 cancellations), which are peak booking months.
   * Cancellation rates are lower in **February** and **December**, which might indicate less travel flexibility in those months or fewer overall bookings.
5. **Hotel Type Analysis**:
   * **City Hotel**: 79,330 bookings, 33,102 cancellations (~42%).
   * **Resort Hotel**: 40,060 bookings, 11,122 cancellations (~28%). City hotels show a significantly higher cancellation rate compared to resort hotels, likely due to the transient nature of city travelers, who may cancel more frequently.
6. **Country-Wise Analysis**: Some countries have higher cancellation rates, which could indicate specific issues related to customer behavior or expectations.

**Recommendations to Reduce Cancellation Rate:**

1. **Improve Room Allotment Flexibility**: For **desired rooms**, offer early booking discounts or non-refundable booking options to secure commitment. If customers book a desired room, provide more flexibility in cancellations or offer upgrades to reduce cancellations.
2. **Family and Couple-Centered Offers**: Since families and couples make up a large portion of the cancellations, introduce special offers or tailored packages to make the booking more appealing. For example, offer free meal packages or spa discounts for families and couples to encourage them to stick with their booking.
3. **Address Peak Season Cancellations**: During high cancellation months like May and August, offer promotional rates or early-bird discounts for non-cancellable bookings. You could also send reminders and special offers closer to the booking date to encourage customers to confirm their stay.
4. **Increase Engagement for City Hotels**: As city hotels have a higher cancellation rate, consider offering perks for early check-in, special city tours, or free transport from airports to reduce cancellations. Sending personalized emails or reminders before the booking date can also help reduce cancellations.
5. **Country-Specific Marketing**: For countries that show higher cancellation rates, develop targeted marketing campaigns or promotional offers that address specific customer concerns. This could include clearer cancellation policies or incentives for completing their stay.