Project Name: Hotel Booking Analysis and Guest Insights

Project Description: This project analyzes hotel reservation data to determine significant trends in guest activity, booking patterns, cancellation rates, and drivers of revenue. Utilizing visual dashboards, it provides high-season booking windows, customer activity, and areas of business improvement such as cancellation decline and enhanced guest retention initiatives.

Objectives:

- Study Booking Patterns: Identify seasonal trends, lead times, and booking trends to determine peak and off-peak seasons.
- Study Cancellation Rates: Study the impact of cancellations, booking trends over time, and the type of deposits for optimal revenue strategies.
- Learn About Your Guest Demographics: Study guest profiles, repeat stays, country-wise breakup, and family sizes to tailor marketing efforts.
- Monitor Revenue Metrics: Follow average daily rate (ADR) and total annual guests to evaluate pricing strategies as well as financial performance.
- Optimize Resource Allocation: Examine parking lot usage, meal plan take-up, and room type demand to maximize hotel operations and guest satisfaction.

Tools Used:

Kaggle: For dataset (https://www.kaggle.com/datasets/sraddhanjalibarik/hotel-booking-data-set?select=hotel_bookings.csv)

MS Excel: Utilized for cleaning, preprocessing, and transforming raw data into structured formats.

MS Power BI: Leveraged for creating interactive and visually appealing dashboards for data visualization.

MS Word: Used for generating detailed reports with data insights, analysis, and conclusions.

Key Metrics:

Hotel Insights:

Total Guests: The total number of guests is 234.99K, peaking in 2016 after a sharp growth from 2015, followed by a decline in 2017.

Average Lead Time: City Hotels have a longer average lead time (109.7 days) than Resort Hotels (92.7 days), perhaps due to business trips or holiday planning.

Booking Trends: Guest figures rose from 2015 to 2016 but fell in 2017, with highest bookings in the middle of the year.

Room Type Demand: The highest demand is for Room Type A, and others have low bookings.

Average Daily Rate (ADR): ADR is different, being the highest in December and March, perhaps due to holidays and high travel seasons.

Repeated Guests: Only a low 3.2% of visitors are repeat guests, which may suggest loyalty programs or offers could enhance loyalty.

Cancellation Rate: With a high 37% cancellation rate, issues like last-minute changes, policies, or rivalry may be involved.

Stay Duration Trends: Weekend stays are considerably lower, most likely due to business traveler's driving weekday bookings.

Guests Insights:

Total Guests Segmentation: 222K adults, 12K children, and 949 babies were recorded. Adult guests grew by 37% year over year, while baby guests rose by 76%, showing a rise in bookings by families.

Guests by Country: Portugal (PRT) is the country with the most guests, followed by GBR, FRA, and ESP, which means promotions aimed at these markets would be beneficial.

Guest Type Distribution: Most guests are transient individuals taking one stay only, with low group and contract-based bookings presenting a potential for attracting corporate or event-based clients.

Monthly Guest Pattern: Numbers of guests are rising steadily through January to August, peaking at 31K in August, indicating peak summer demand.

Meal Choice: The Bed & Breakfast (BB) is the favorite with 170,280 adults opting for it, followed by Full Board (FB) and Half Board (HB), which are less favored, indicating a need for freedom in meal choice.

Babies Reservation Status: Cancellations of baby reservations are increasing, possibly due to the lack of facilities for babies or changes in travel at short notice.

Booking from Agents: A rise in booking from specific agents reflects that some agencies are the principal drivers of most bookings, with stronger focus on more remunerative relationships with high-performing agents.

Parking Space Utilization: Transient visitors require most parking space, while groups, contract travelers, and transient-party visitors occupy much less space, which suggests most transient visitors travel by automobile.

Key Recommendations:

Reduce Cancellations: Implement stricter cancellation policies or offer incentives to reduce no-shows.

Increase Repeat Guests: Loyalty programs or exclusive promotions could attract more repeat guests.

Target High Booking Months: Focus marketing efforts on high seasons (August and December).

Maximize Meal Plans: Promote Half Board (HB) and Full Board (FB) to achieve high revenue from meal plans.

Maximize High-Demand Agents: Increase cooperation with high-yielding travel agents.

Family-Friendly Services: Increase amenities for families and infants to reduce cancellations in that market segment.

Conclusion:

The Hotel Booking Analysis provides valuable insights into guest behaviour, booking trends, and revenue-driving factors. The analysis highlights seasonal peaks, booking lead times, and high cancellation rates, allowing hotels to optimize pricing and marketing strategies. By understanding guest demographics and preferences, hotels can enhance customer experience and improve retention rates. Additionally, monitoring room type demand, meal

preferences, and parking space usage ensures efficient resource allocation. These insights help hotels make data-driven decisions, reduce cancellations, and maximize profitability while delivering a seamless guest experience.