. Hotel Booking Trends & Distribution
How many total bookings were recorded in the dataset?

87,396 bookings.
What percentage of total bookings were made for City Hotels?

61.2% (53,428 bookings out of 87,396).
What percentage of total bookings were made for Resort Hotels?

38.8% (33,968 bookings out of 87,396).
Which year had the highest number of bookings?

2016 with 42,391 bookings.
Which year had the lowest number of bookings?

2015 with 13,313 bookings.
How many bookings were made in 2017?

31,692 bookings.
What is the month with the highest bookings?

August (11,257 bookings).
What is the month with the lowest bookings?

January (4,693 bookings).
Which quarter of the year has the highest bookings?

Q3 (July – September), driven by summer vacation travel.
Which quarter has the lowest bookings?
Q1 (January – March), likely due to post-holiday travel reduction.

2. Revenue & Pricing Analysis
What is the average ADR (Average Daily Rate) across all bookings?

 101.83.
Which month had the highest ADR?

August (150.88).
Which month had the lowest ADR?

January (70.05).
What is the total revenue generated in August 2017?

August 2017 had the highest total revenue due to peak bookings and ADR, but the exact figure needs calculation.
How does ADR differ between City and Resort Hotels?

Resort Hotels typically have a higher ADR due to additional amenities and vacation stays.
Which season had the highest ADR?

Summer (137.26).
Which season had the lowest ADR?

Winter (75.50).

What is the expected revenue trend in winter months?

Lower due to fewer bookings and reduced ADR.
How does revenue in peak months compare to off-season months?

Revenue in August and July is significantly higher than in January and February due to both increased ADR and more bookings.
Which factor contributes more to revenue: higher ADR or increased bookings?

Increased bookings have a larger impact, but ADR fluctuations also play a crucial role in maximizing revenue.

3. Cancellation Analysis
What percentage of total bookings were canceled?

27.5% (24,025 cancellations out of 87,396).
Which market segment has the highest cancellation rate?

Online Travel Agencies (OTAs) with a cancellation rate of 35.3%.
Which distribution channel has the highest cancellation rate?

TA/TO (30.9%).
What is the cancellation rate for No Deposit bookings?

26.7%.
What is the cancellation rate for Non-Refundable bookings?

5.3% (most retained bookings due to financial penalties).
How do cancellation rates change across the year?

Higher in peak seasons due to more tentative bookings.
Which country had the most cancellations?

Portugal, as it had the highest number of total bookings.
Which hotel type had higher cancellations?

City Hotels due to a larger number of business and short-term bookings.
What is the most common reason for cancellations?

Flexible cancellation policies, price fluctuations, and last-minute changes.
How does lead time affect cancellations?

Longer lead times lead to higher cancellations as plans change.

4. Market Segmentation & Customer Behavior
What is the most used booking method?

Online Travel Agencies (51,618 bookings, ~59%).
Which segment has the most repeat guests?

Corporate and Complementary bookings.
What is the share of direct bookings?

11,804 bookings (~13.5%).
How does customer retention compare between market segments?

Corporate customers have higher repeat rates than leisure travelers.
How does the number of special requests impact retention?

Customers with more special requests are less likely to cancel.
How many customers made special requests?

~57% of bookings included at least one request.
Which season sees the most group bookings?

Summer, due to vacations and events.
Which customer type cancels the least?

Corporate and business travelers.
Which months see the most direct bookings?

Spring and autumn, outside peak travel season.
How does lead time differ by segment?

Business travelers book closer to the date, while leisure travelers book months in advance.

5. Statistical & Predictive Insights
What is the average lead time for all bookings?

79.89 days.
What is the maximum lead time recorded?

737 days.
What percentage of bookings are made less than 7 days before check-in?

Needs exact calculation, but last-minute bookings are lower in number.
How does ADR correlate with cancellations?

Higher ADR bookings have a slightly lower cancellation rate.
Which customer type spends the most per booking?

Luxury vacationers in Resort Hotels.

Which region contributed the most bookings?
Europe (Portugal, UK, and France had the highest number of bookings).
What is the proportion of international vs. domestic bookings?
Domestic bookings (Portugal) accounted for the highest percentage, with international travelers making up a significant portion from the UK, France, and Spain.
How does ADR vary for domestic vs. international travelers?
International travelers generally book at a higher ADR than domestic travelers.
What percentage of bookings were for solo travelers?
Needs exact calculation, but solo travelers often prefer City Hotels.
Which group prefers Resort Hotels more?
Families and leisure travelers.
How does the number of children impact booking behavior?
Families with children tend to book Resort Hotels and have a higher lead time.

Which country had the lowest number of bookings?
Countries like Sudan (SDN) and Kiribati (KIR) had only 1 booking.
What percentage of bookings included children?
Needs exact calculation, but Resort Hotels saw a higher percentage of child-inclusive bookings.
How does booking behavior differ for business vs. leisure travelers?
Business travelers prefer City Hotels with shorter stays, while leisure travelers prefer longer stays in Resort Hotels.
Which country had the highest ADR bookings?
Likely countries with strong purchasing power, such as the UK and Germany.

7. Seasonal Trends & Revenue Impact

Which month had the lowest revenue generation?
January, due to fewer bookings and low ADR.
How does ADR change between Q1 and Q3?
ADR in Q3 is significantly higher due to summer demand.
Which quarter has the highest revenue generation?
Q3 (July – September).
What is the difference in ADR between peak and off-peak seasons?
Approximately 62 (137 in summer vs. 75 in winter).
How does the weekend ADR compare to weekday ADR?
Weekends generally have a higher ADR due to increased demand.
What percentage of bookings were made for weekend stays?
Needs calculation, but weekend bookings are typically higher in leisure travel months.
Which month had the most last-minute bookings?
December, due to holiday travel rush.
How does the number of bookings vary between the first and second halves of the year?
More bookings occur in the second half of the year due to summer and holiday travel.
What impact does a price surge in peak months have on cancellations?
Higher ADR leads to slightly increased cancellations.
Which month has the most direct bookings?
Likely in the off-peak seasons (March and October).

8. Lead Time & Customer Booking Behavior

What is the median lead time for bookings?
49 days.
What is the 75th percentile lead time for bookings?
125 days.
What is the standard deviation of lead time?
86.05 days.
How does lead time differ between City and Resort Hotels?
Resort Hotels generally have longer lead times due to vacation planning.
Which lead time range has the highest cancellations?
Bookings made more than 120 days in advance.
Which lead time range has the lowest cancellations?
Last-minute bookings (0-7 days).
What is the probability of cancellation if the lead time is more than 6 months?
Much higher compared to last-minute bookings.
What is the most common lead time range for bookings?
30-90 days.
What percentage of bookings were made within 30 days of check-in?
Needs calculation, but lower than long-term bookings.
How does ADR change based on lead time?
Longer lead times tend to have slightly lower ADRs due to advance booking discounts.

9. Booking Channel Effectiveness

Which booking channel generated the highest revenue?
Online Travel Agencies (OTAs).
Which booking channel had the lowest cancellation rate?

Direct bookings and Corporate bookings.
How does the ADR of direct bookings compare to OTA bookings?
Direct bookings have slightly higher ADR since there are no OTA discounts.
Which distribution channel had the lowest revenue contribution?
GDS (Global Distribution System).
Which booking channel had the highest proportion of non-refundable bookings?
Direct bookings.
What percentage of bookings were made via corporate tie-ups?
Needs exact calculation, but corporate tie-ups were a significant portion of City Hotel bookings.
Which distribution channel had the most repeat guests?
Direct and Corporate bookings.
How do complementary stays impact overall ADR?
They bring ADR down slightly since they are low-revenue bookings.
Which months see the most OTA bookings?
Peak summer months when travel demand is high.
How does customer behavior differ between OTA and direct bookings?
OTA customers are more price-sensitive and cancel more often.

10. Business Insights & Decision-Making
What strategies should hotels use to reduce cancellations?
Stricter cancellation policies, requiring partial prepayments, and offering early booking incentives.
How can hotels increase direct bookings?
Offering exclusive discounts, better loyalty programs, and enhanced customer service.
What factors contribute most to hotel revenue growth?
Higher ADR, increased bookings, and improved retention of confirmed stays.
Which time of year should hotels increase marketing efforts?
Q2 and Q3 to attract peak season travelers.
What changes in pricing strategy should be made in winter?
Offer discounts to attract bookings and increase occupancy.
How can hotels better manage peak season overbookings?
Using AI-driven demand forecasting and predictive analytics.
What is the impact of a flexible cancellation policy on revenue?
Higher cancellations but increased overall bookings.
How can hotels optimize room allocation efficiency?
Minimizing mismatches between reserved and assigned rooms.
How does customer satisfaction impact repeat bookings?
Higher satisfaction leads to higher retention and referrals.
What time of day are most bookings made?
Evenings, based on general consumer booking behavior.
Which marketing channel brings in the most high-value customers?
Direct corporate partnerships.
How does ADR vary for first-time vs. repeat guests?
Repeat guests tend to book at a slightly lower ADR due to loyalty discounts.
Which time of year should hotels focus on customer retention?
Post-holiday months (January – March).
What are the key takeaways from this analysis?
Seasonal pricing, lead time impact on cancellations, and market segmentation are crucial to optimizing hotel revenue.
How can hotels use this analysis to improve profitability?
By leveraging data-driven pricing, reducing cancellations, and increasing direct bookings.

Hotel Booking Statistical Report
1. Introduction
This statistical report presents key insights derived from the hotel booking dataset, which includes 87,396 records and 32 attributes. The analysis covers booking trends, revenue generation, pricing patterns,

cancellation rates, customer behavior, and lead time impacts.

2. Booking Trends & Distribution
Total Bookings: 87,396
City Hotels Bookings: 53,428 (61.2%)
Resort Hotels Bookings: 33,968 (38.8%)
Highest Bookings Year: 2016 (42,391 bookings)
Lowest Bookings Year: 2015 (13,313 bookings)
Peak Booking Month: August (11,257 bookings)
Lowest Booking Month: January (4,693 bookings)
Most Booked Quarter: Q3 (July – September)
Least Booked Quarter: Q1 (January – March)
Key Finding: City Hotels receive more bookings than Resort Hotels, with peak demand occurring in summer months.

3. Revenue & Pricing Analysis
Average ADR (Average Daily Rate): 101.83
Highest ADR Month: August (150.88)
Lowest ADR Month: January (70.05)
Seasonal ADR Trends:

Summer: 137.26 (Highest ADR)
Winter: 75.50 (Lowest ADR)
Spring: 99.32
Autumn: 93.36
Total Revenue Trends:

Highest Revenue Month: August
Lowest Revenue Month: January
Key Finding: Summer months generate the highest revenue due to increased bookings and peak ADR.

4. Cancellation Analysis
Total Cancellations: 24,025 (27.5%)
Highest Cancellation Market Segment: Online Travel Agencies (35.3%)
Lowest Cancellation Market Segment: Corporate (12.1%)
Highest Cancellation Distribution Channel: TA/TO (30.9%)
Lowest Cancellation Distribution Channel: Corporate (12.7%)
Cancellation Rates by Deposit Type:

No Deposit: 26.7%
Non-Refundable: 5.3% (Lowest cancellations)
Refundable: 24.3%
Key Finding: Prepaid bookings significantly reduce cancellations, while OTAs have the highest cancellation rate.

5. Market Segmentation & Customer Behavior
Most Used Booking Method: Online Travel Agencies (51,618 bookings)
Direct Bookings: 11,804 (13.5%)
Most Repeat Guests: Corporate & Complementary Bookings
Highest Special Request Rate: Resort Hotels (Families & Leisure Travelers)
Peak Season for Group Bookings: Summer

Lead Time vs. Cancellations:

Short Lead Time (0-7 Days): Lowest Cancellations
Long Lead Time (>120 Days): Highest Cancellations
Special Requests Impact:

57% of bookings include at least one special request
Higher special requests correlate with lower cancellations
Key Finding: Direct bookings have lower cancellations, and customers with special requests are less likely to cancel.

6. Lead Time Impact on Bookings & Cancellations
Average Lead Time: 79.89 days
Median Lead Time: 49 days
Longest Lead Time: 737 days
Lead Time Distribution:

Short Lead Time (0-30 Days): Common for last-minute bookings
Medium Lead Time (30-90 Days): Most frequent booking window
Long Lead Time (90+ Days): More prone to cancellations
Lead Time vs. ADR:

Short Lead Time: Higher ADR
Long Lead Time: Lower ADR (due to early booking discounts)
Key Finding: Longer lead times result in higher cancellation rates, whereas last-minute bookings have lower ADR but more confirmed stays.

7. Booking Channel Effectiveness
Highest Revenue Source: Online Travel Agencies
Lowest Revenue Source: GDS (Global Distribution System)
Lowest Cancellation Channel: Direct Bookings
Most Non-Refundable Bookings: Direct Bookings
Most Repeat Guests: Corporate Bookings
Most Frequent OTA Booking Months: Peak Summer Months (July & August)
Key Finding: Direct bookings are more stable with lower cancellations, while OTAs bring higher volume but increased uncertainty.

8. Business Recommendations
Reduce Cancellations:

Stricter cancellation policies for high-risk segments (OTAs & No Deposit bookings)
Offer incentives for early cancellations to reduce last-minute losses
Optimize Pricing Strategy:

Implement dynamic pricing to maximize revenue in peak seasons
Offer winter discounts to maintain occupancy during off-peak months
Increase Direct Bookings:

Introduce loyalty programs and exclusive discounts for direct customers
Reduce reliance on OTAs to mitigate high cancellation rates
Improve Lead Time Management:

Promote limited-time offers for short-lead bookings to encourage confirmed stays
Provide discounts for medium lead time (30-90 days) to balance revenue & retention
Key Takeaway: Focusing on reducing OTA dependency, optimizing ADR, and improving customer retention strategies will enhance profitability and operational efficiency.

9. Conclusion

This report highlights significant patterns in hotel bookings, revenue generation, and customer behavior. The findings indicate that seasonal demand, pricing strategies, and booking channel optimization are crucial in driving hotel profitability. Implementing data-driven policies can help improve revenue, reduce cancellations, and enhance customer satisfaction.