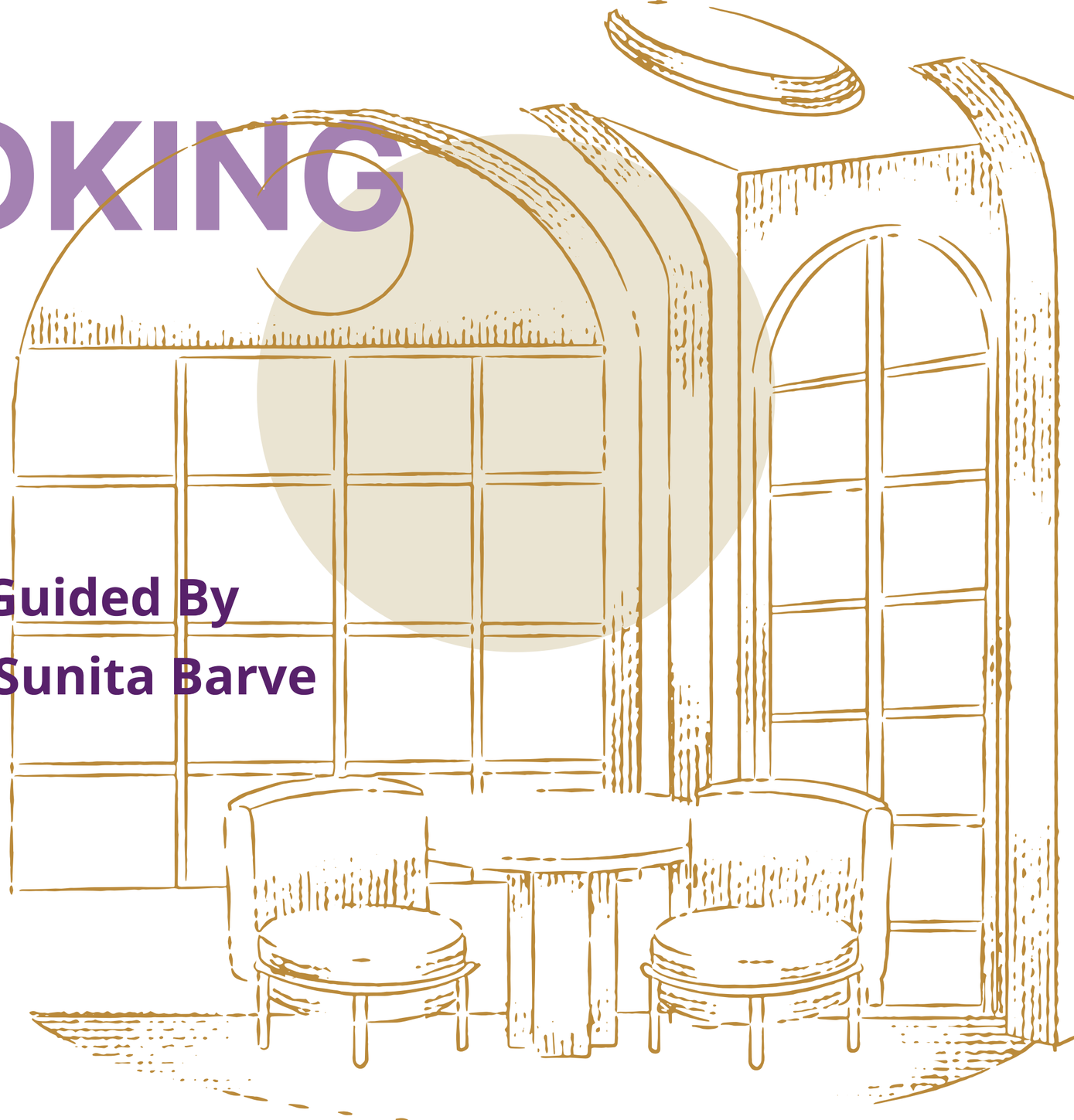
HOTEL BOOKING SYSTEM



Guided By

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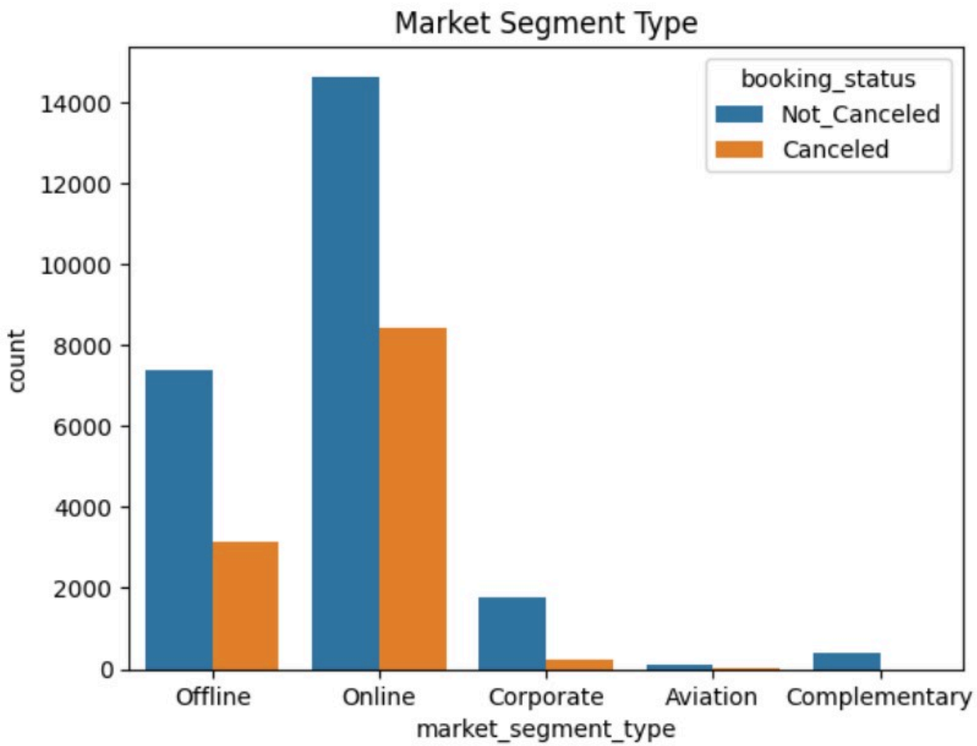
INTRODUCTION

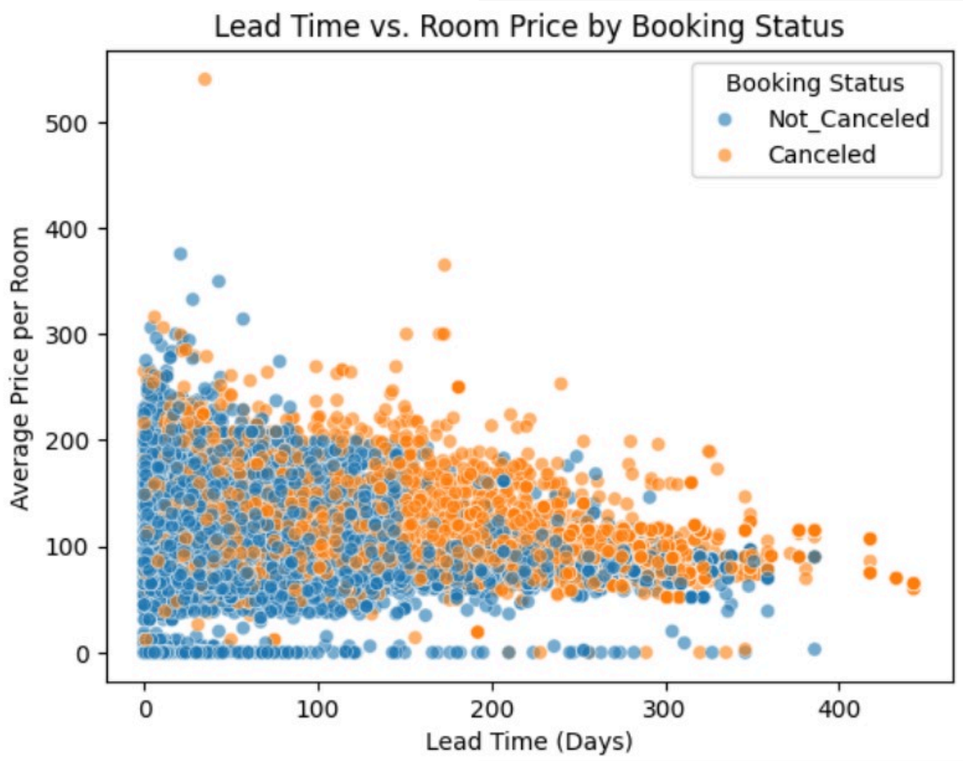
PROBLEM STATEMENT

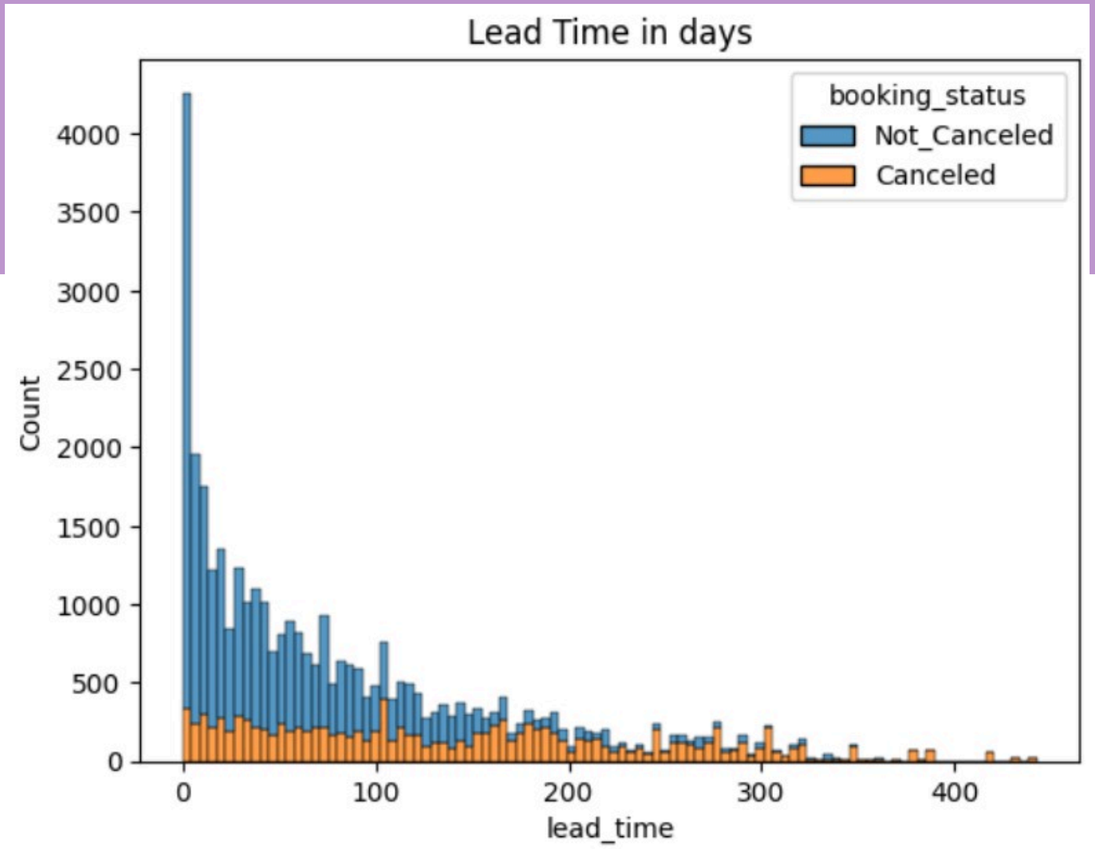
DATA COLLECTION AND PREPROCESSING

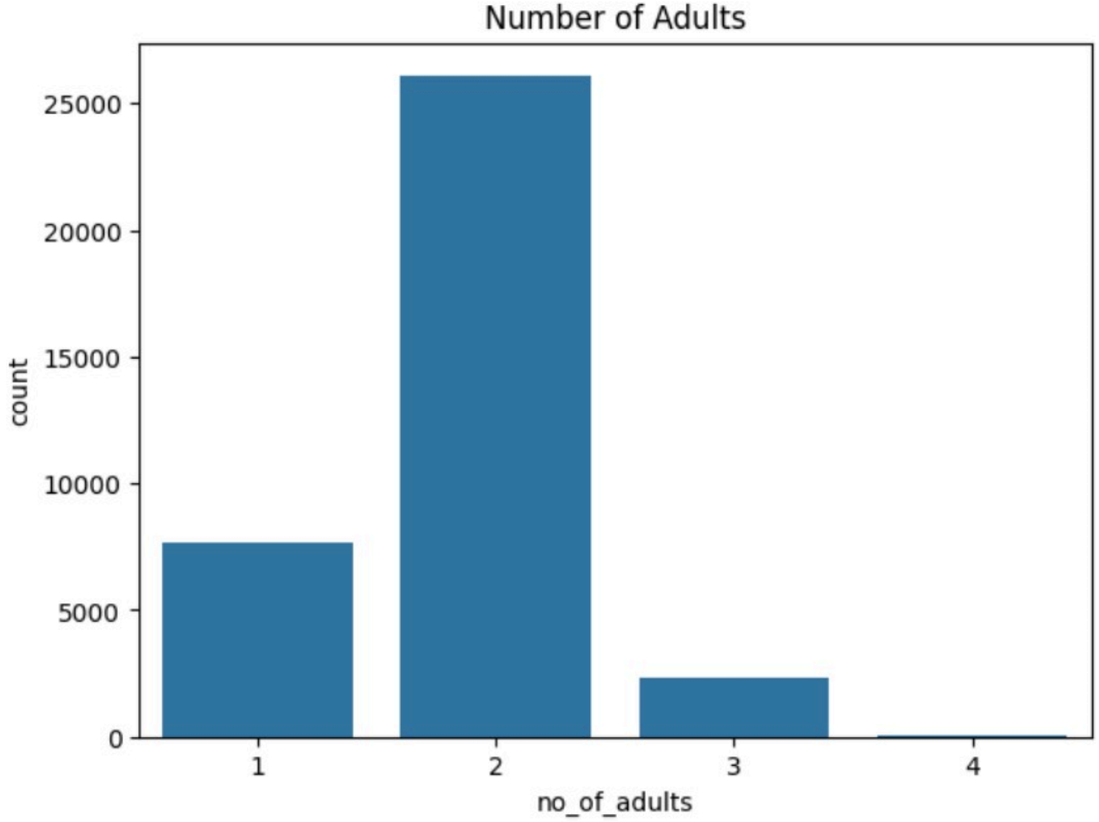
MODEL BUILDING & EVALUATION

EDA (EXPLORATORY DATA ANALYSIS)

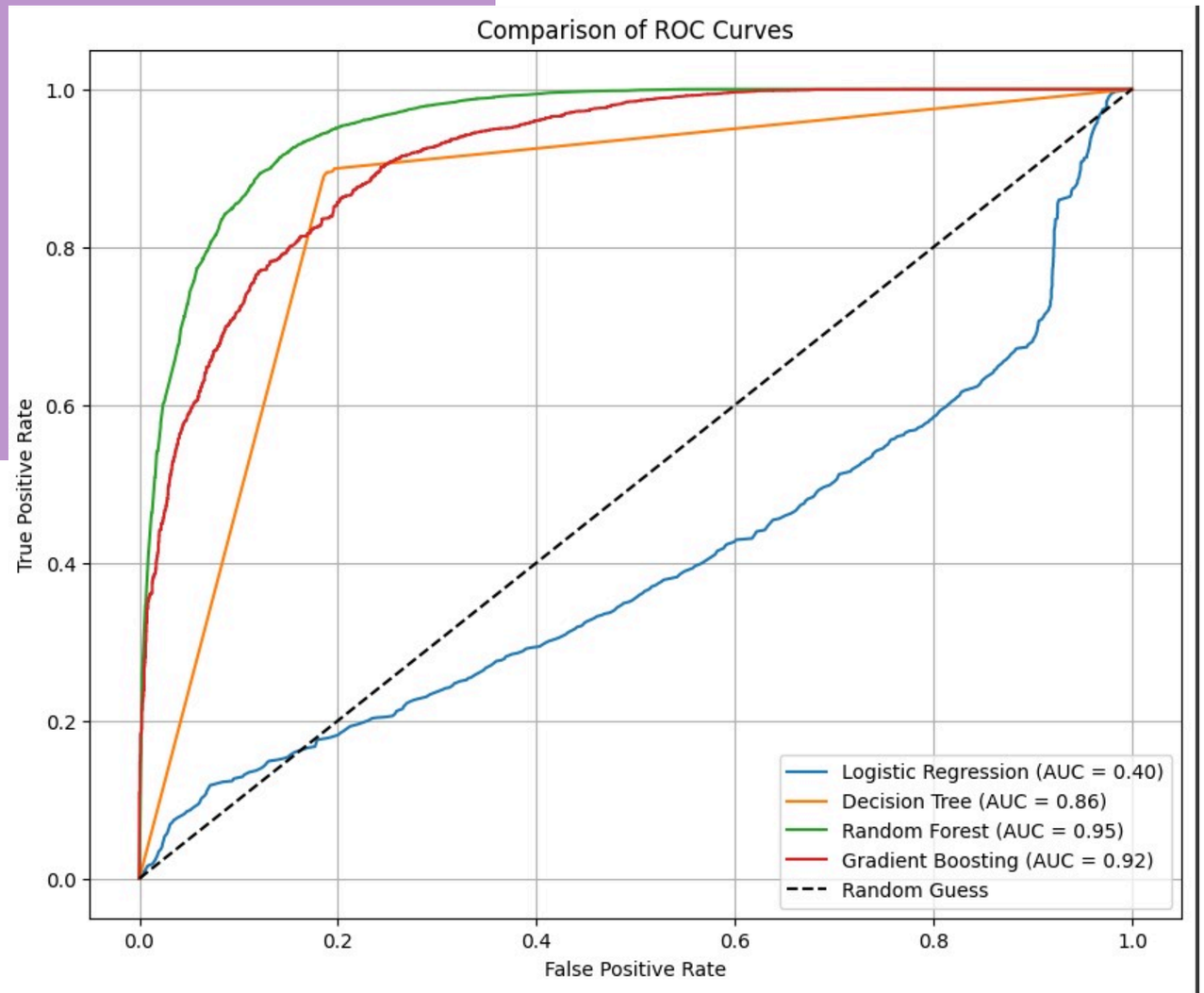





Lead Time in days
booking_status
Not_Canceled
Canceled
Count
lead_time
0
500
1000
1500
2000
2500
3000
3500
4000
0
100
200
300
400

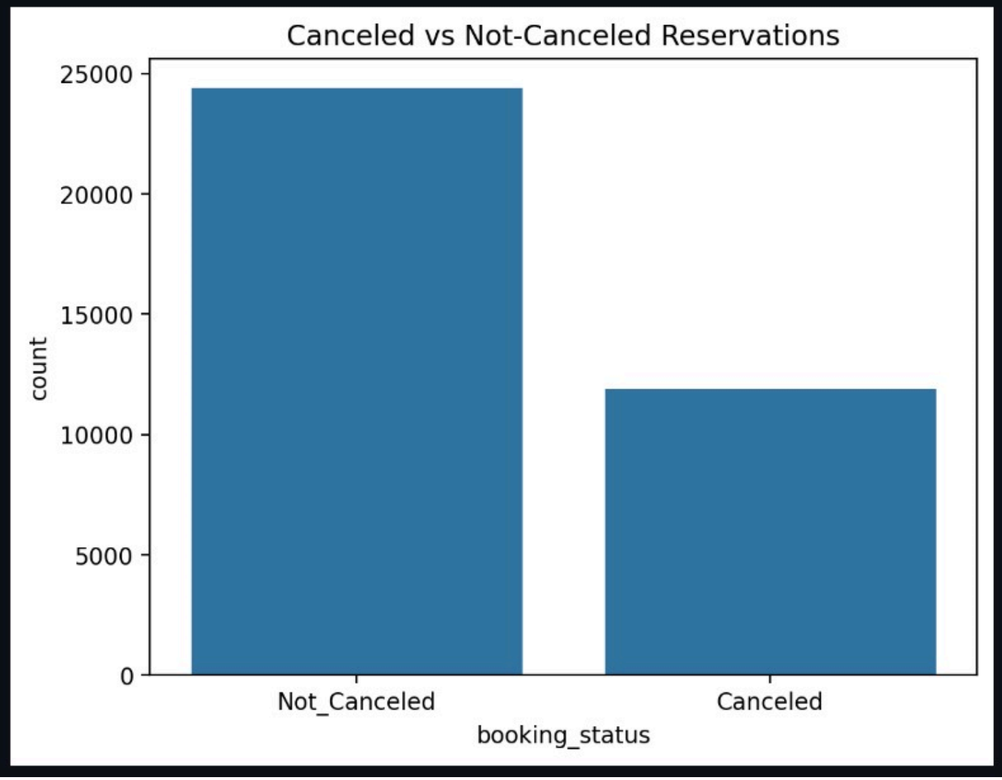

Number of Adults
count
no_of_adults
0
5000
10000
15000
20000
25000
1
2
3
4

MODEL PERFORMANCE AND EVALUATION



DEPLOYMENT

Cancellation Distribution



Make a Prediction

Number of Adults

2

Number of Children

0

Number of Weekend Nights

1

Number of Week Nights

2

Lead Time (days)

50

Number of Special Requests

0

Type of Meal Plan

Meal Plan 1

Room Type Reserved

Room_Type 1

Market Segment Type

Offline

Average Price per Room

100.00

CONCLUSION

This project developed a predictive model for hotel reservation cancellations using machine learning algorithms like Logistic Regression, Decision Trees, Random Forest, and XGBoost. The model was fine-tuned using Grid Search and Random Search to optimize performance. Evaluation metrics such as Precision, Recall, F1-Score, and ROC-AUC were used to assess model accuracy. The ensemble methods, particularly Random Forest and XGBoost, proved to be the most effective in predicting cancellations. The model provides valuable insights that can help hoteliers implement strategies like dynamic pricing, overbooking, and targeted marketing, ultimately improving resource allocation, reducing revenue loss, and enhancing customer satisfaction.

THANK YOU