Hotel Reservation Cancelation Prediction

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Overview

1. Business Understanding
2. Data Understanding/Preparation
3. Modeling
4. Evaluation
5. Recommendations
6. Next Steps

Business Understanding

The Marriott Corporation deals with customers cancelling their reservations which creates:

- More open rooms in hotels
- Difficulties predicting/planning occupancy of hotels

Marriott needs help in predicting whether a customer will cancel their reservation
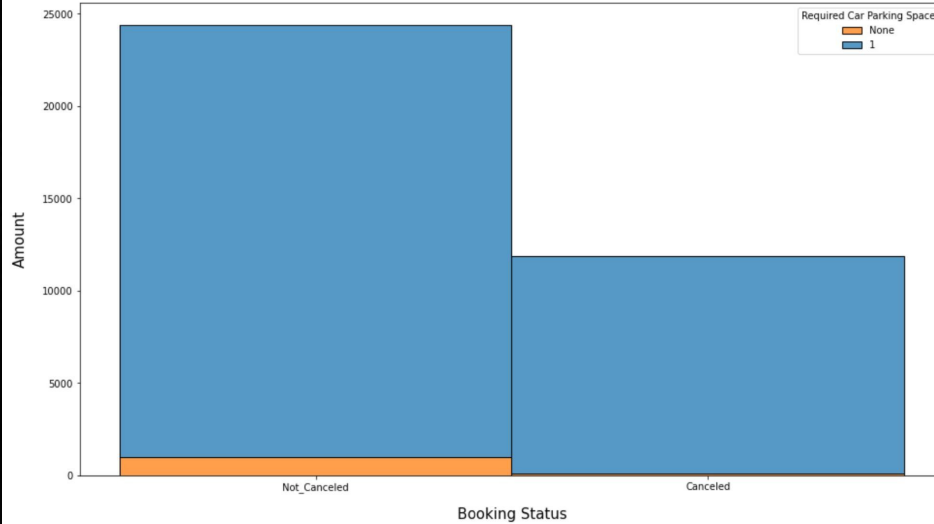
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Data Understanding

- Data is from Kaggle (Hotel_Reservations.csv)

- Includes 19 columns and 36,275 rows

- Target variable is booking status (cancelled or not cancelled)

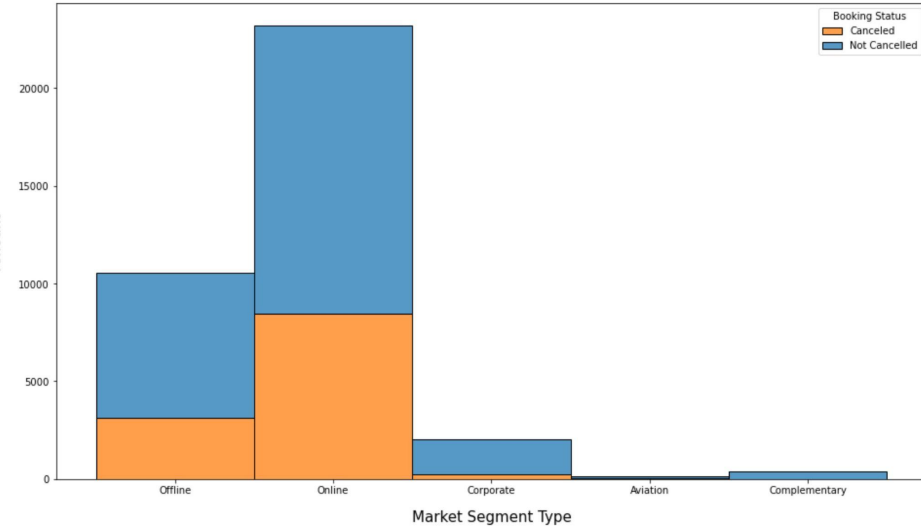- Columns include required car parking space and market segment
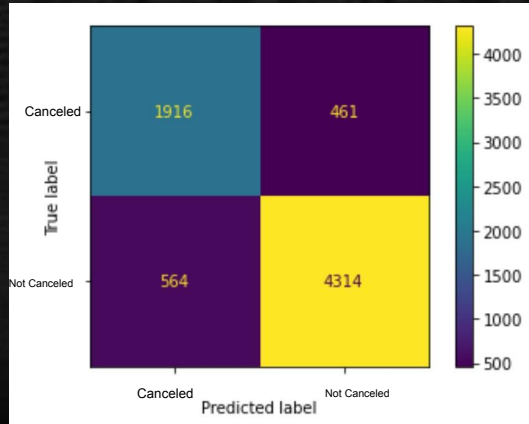
  type

Data Preparation

Modeling

Logistic Regression Base model → 87% Precision
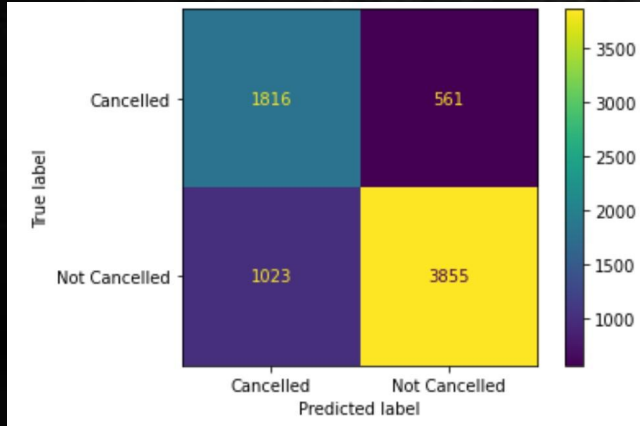
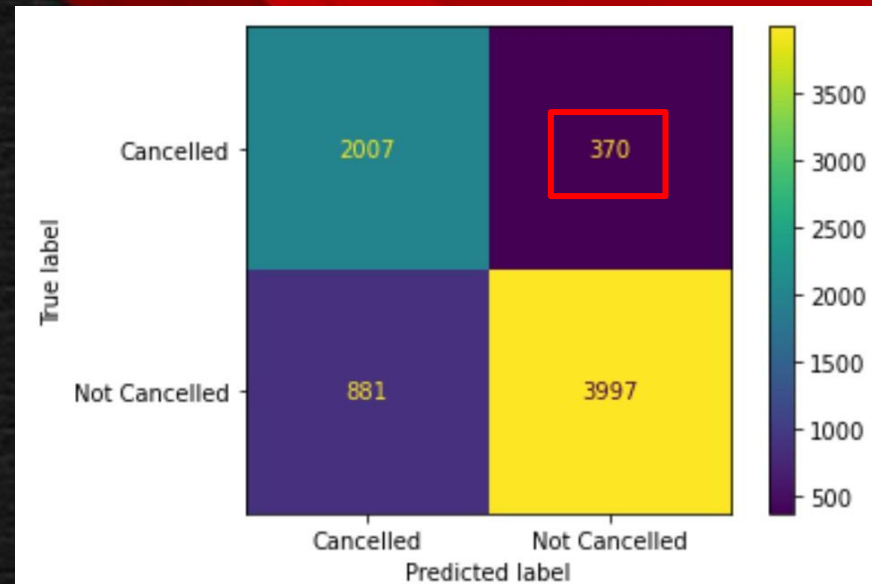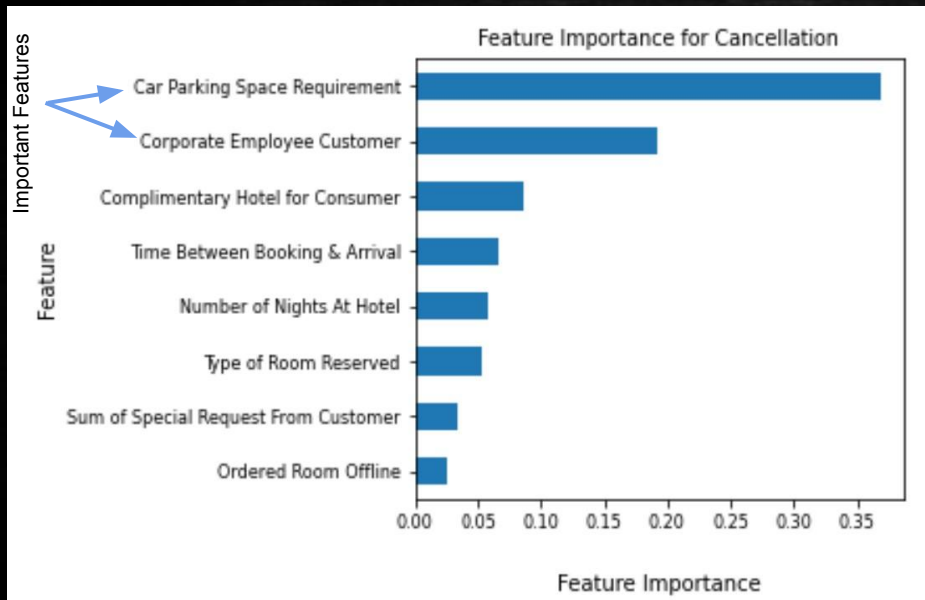

Random Forest model → 90% Precision

Evaluation

- Out of 7,255 values the model correctly identifies

  90% of the not cancelled reservations

- Most important features:

  - Amount of cars parked

  - Corporate employee consumers

  - Complimentary stay consumers

  - Time between booking and arrival

Evaluation

Feature Importance for Cancellation

- Out of 7,255 values the model correctly identifies 92% of the not cancelled reservations

	precision	recall	f1-score	support
Cancelled	0.69	0.84	0.76	2377
Not Cancelled	0.92	0.82	0.86	4878
accuracy			0.83	7255
macro avg	0.81	0.83	0.81	7255
weighted avg	0.84	0.83	0.83	7255

Recommendations

- Paid parking space → give a discount

- Corporate employees → less likely to cancel reservation

- Greater time between booking and check in → more likely to

  cancel reservation

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Next Steps

- Use the features that are the most important

- Look for other models that might give more accurate

  results

- Explore the data further

Thank You!

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https://www.linkedin.com/in/srinivasanr1/

Github:
https://github.com/srinir301?tab=repositories

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