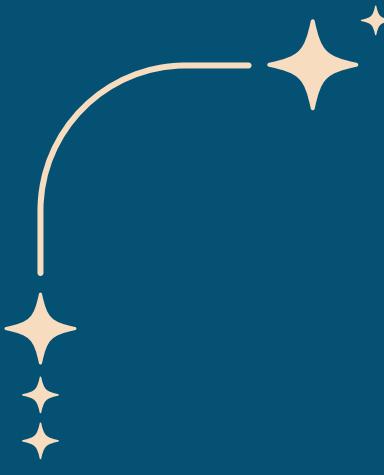


# SYRIATEL CUSTOMER CHURN

Group 9  
September

2025



# our team

01 Vincent Toroitich

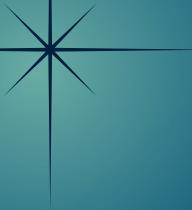
02 Marion Mengich

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# INTRODUCTION



- SyriaTel is a telecom company that provides mobile services.
- Like many telecoms, they face the problem of customer churn.
- Churn = when customers leave the company and move to a competitor.
- Retaining existing customers is cheaper and more profitable than finding new ones.

# PROJECT GOAL

- Use data to predict which customers are likely to churn.
- This helps the company act early to keep those customers.
- Also, understand why customers churn (the main reasons).

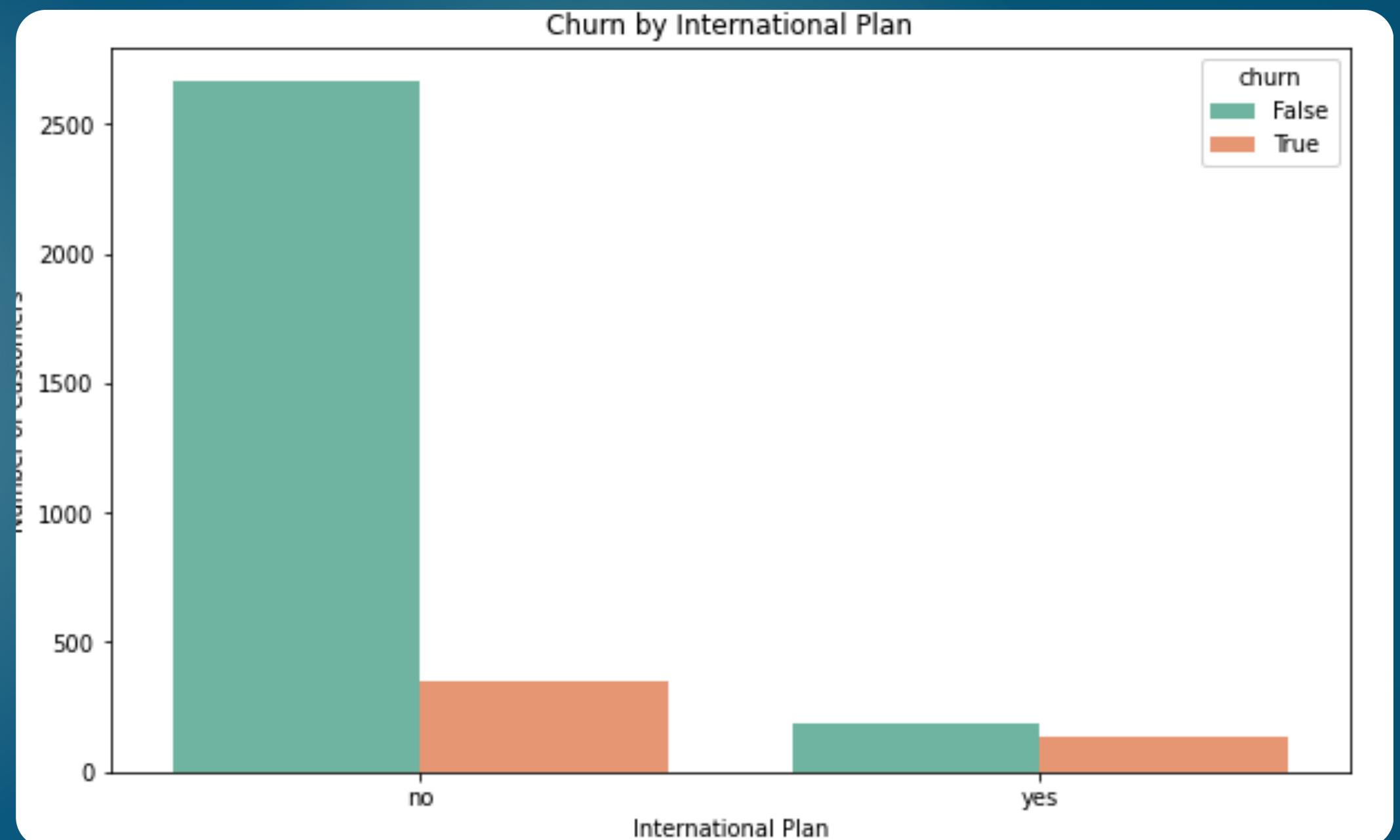


# WHY THIS MATTERS

- Customer loss = lost revenue.
  - Early warning system helps:
  - Save money through retention.
  - Improve customer satisfaction.
  - Plan targeted offers for at-risk customers.
- 

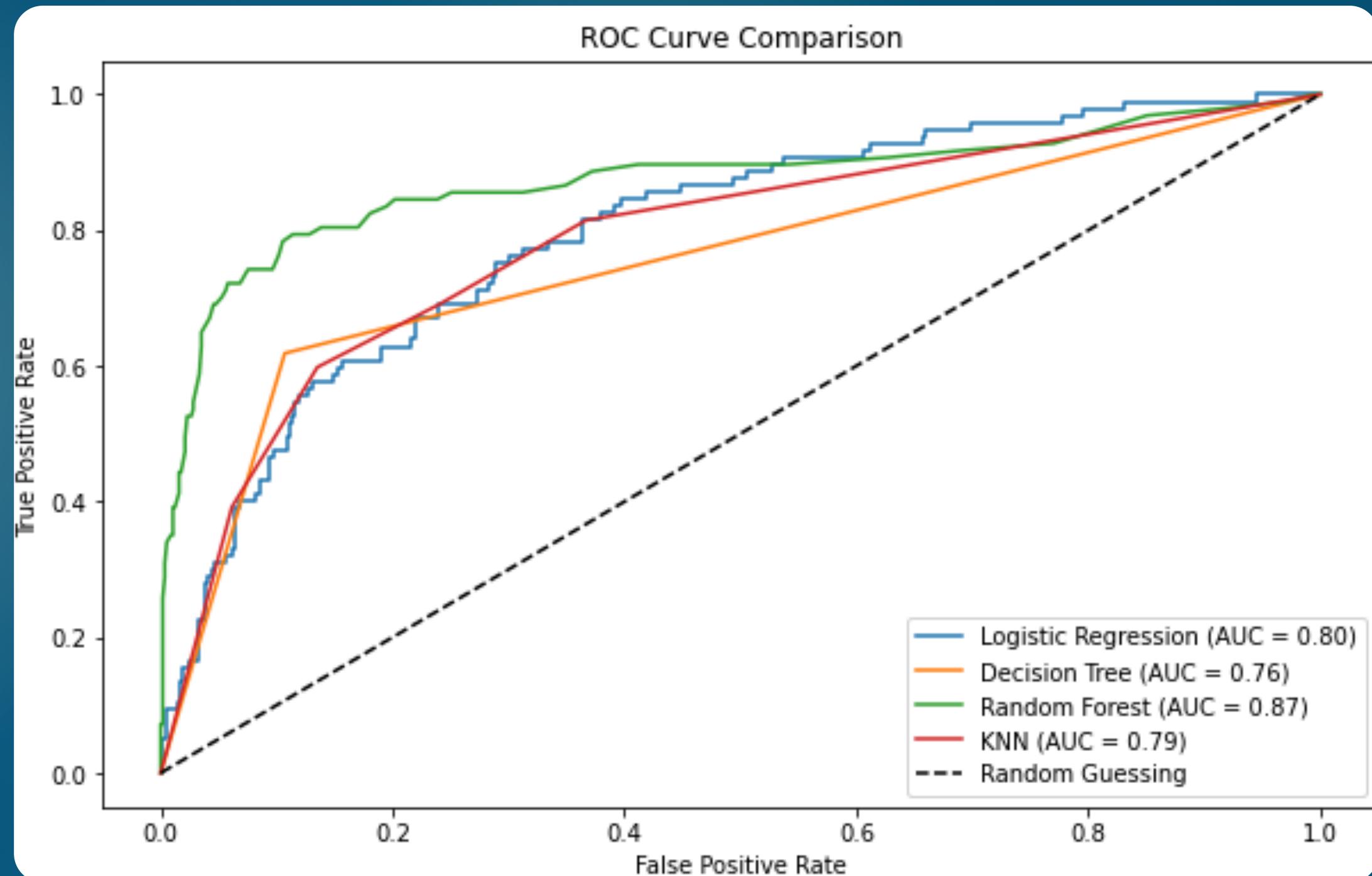
# DATA USED

- We used customer data provided by SyriaTel, which included:
  - Demographic info (e.g. location, plans).
  - Service usage (minutes, calls, messages).
  - Billing/financial details (charges, fees).
  - Customer service records (complaints, calls).
- Label: Did the customer churn? (Yes/No).



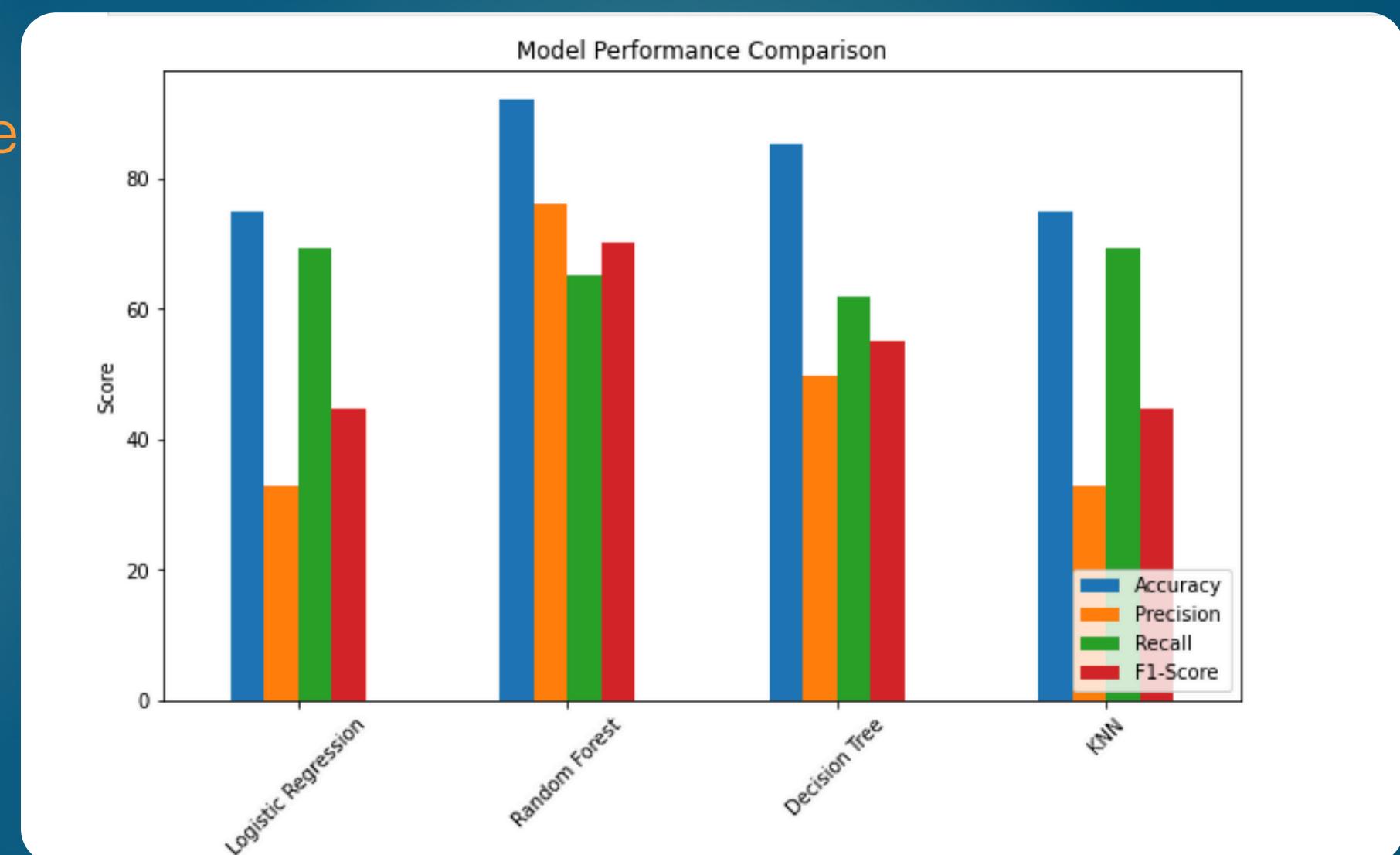
# ROC CURVE COMPARISON

A better model will have a curve that closely follows the upper-left corner, indicating high true positive rate and low false positive rate. In our case, the Random Forest classifier is the best performing model, as its ROC curve is closest to the top left and an AUC of 0.87, indicating strong discrimination between churners and non-churners.



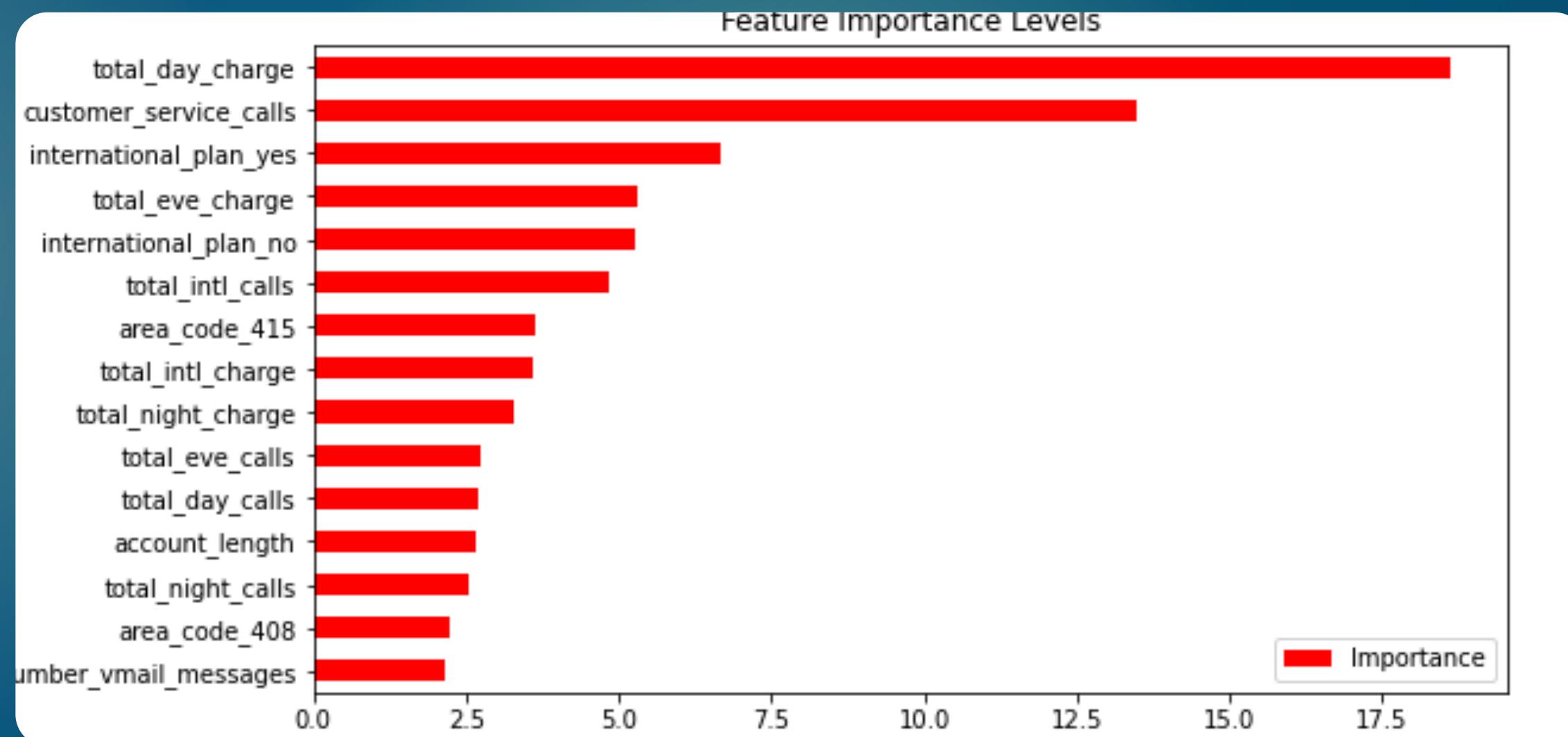
# MODEL PERFORMANCE COMPARISON

Random Forest achieved the best performance with 91.9% accuracy and an F1-score of 70%. This suggests it is the most effective model for predicting churn in our dataset.



# FEATURE IMPORTANCE LEVELS

According to the random forest classifier, total day charge, customer service calls and "international plan is yes" features have the highest impact on the model.



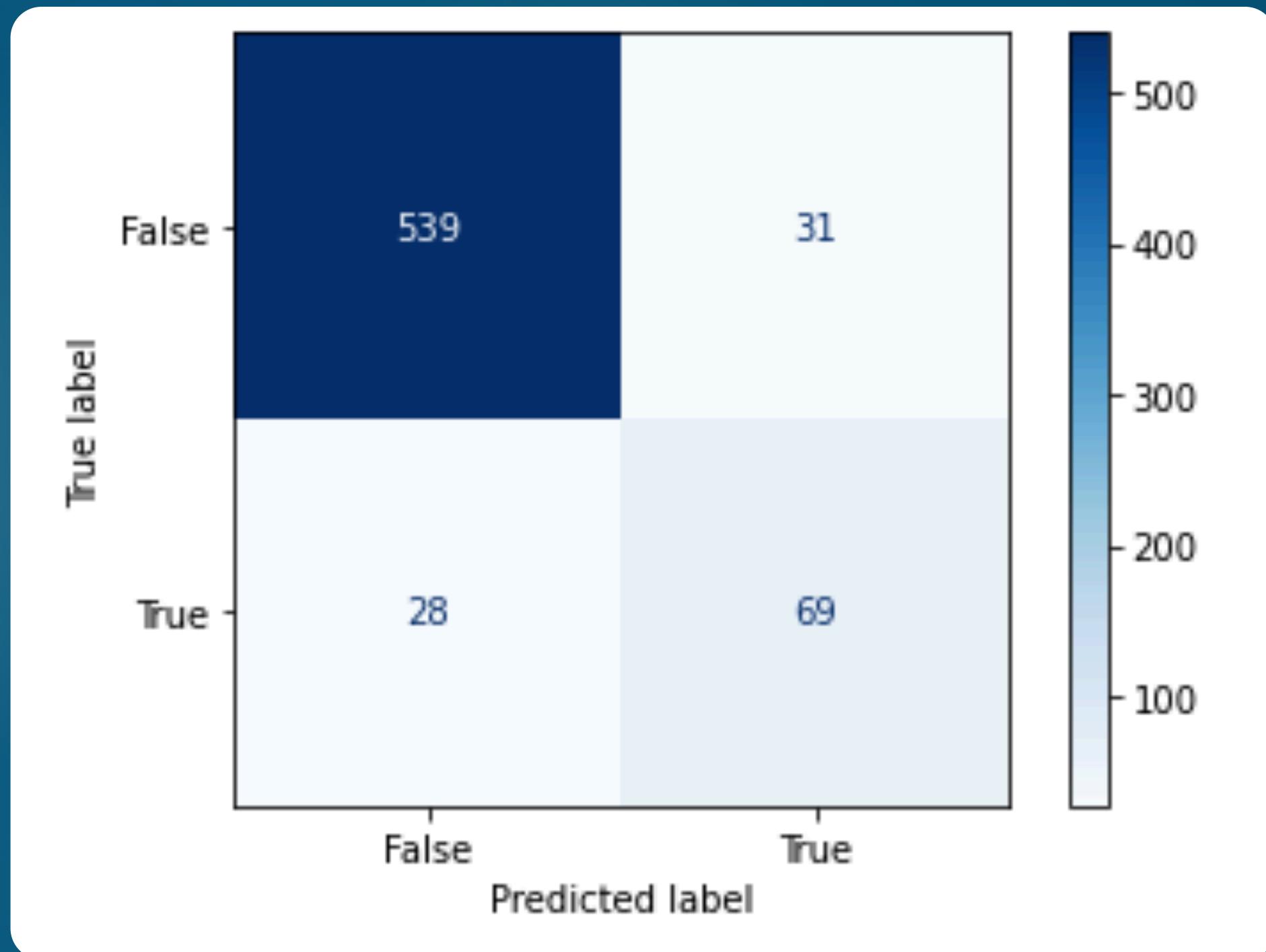
# OPTIMIZED CONFUSION MATRIX

Top-Left (539): True Negatives – The model correctly predicted 539 customers would not churn.

Top-Right (31): False Positives – The model incorrectly predicted 31 customers would churn when they actually did not.

Bottom-Left (28): False Negatives – The model incorrectly predicted 28 customers would not churn when they actually did.

Bottom-Right (69): True Positives – The model correctly predicted 69 customers would churn.



# FINDINGS

01

- Total Day Charge: The strongest predictor, indicating that customers with higher daytime calling costs are at significantly greater risk.

02

- Number of Customer Service Calls: A very strong indicator, directly correlating customer frustration and problem escalation with a higher likelihood to churn.

03

- International Plan Subscription: Customers with an international plan are a high-risk segment.
- Total Eve Charge: A contributing factor to churn risk.

# RECOMMENDATIONS

- 1 Deploy the Random Forest Model: Its high accuracy and recall ensures reliable predictions. This allows the retention team to prioritize customers with the highest risk scores.
- 2 Offer loyalty discounts or personalized plan reviews to high spending customers to ensure they feel they are receiving value.

# RECOMMENDATIONS

- 1 Customer Service Improvement Focus on customers who contact customer service often. Provide better training for agents and faster issue resolution.
- 2 For International Plan Subscribers, conduct a competitive analysis of international plans. Proactively communicate with these customers to ensure plan satisfaction and consider value-added perks.

# CONCLUSIONS

- The analysis showed that customer behavior and service interactions (such as frequent calls to customer service and usage patterns) strongly influence churn.
- By identifying customers at risk early, the company can take proactive steps to retain them, such as offering better support or tailored services.
- This approach helps the business save money, maintain loyalty, and reduce churn in the long run.

# THANK YOU

Presented by  
Group 9

