

Customer Churn Analysis

Understanding Customer Retention Through Data.

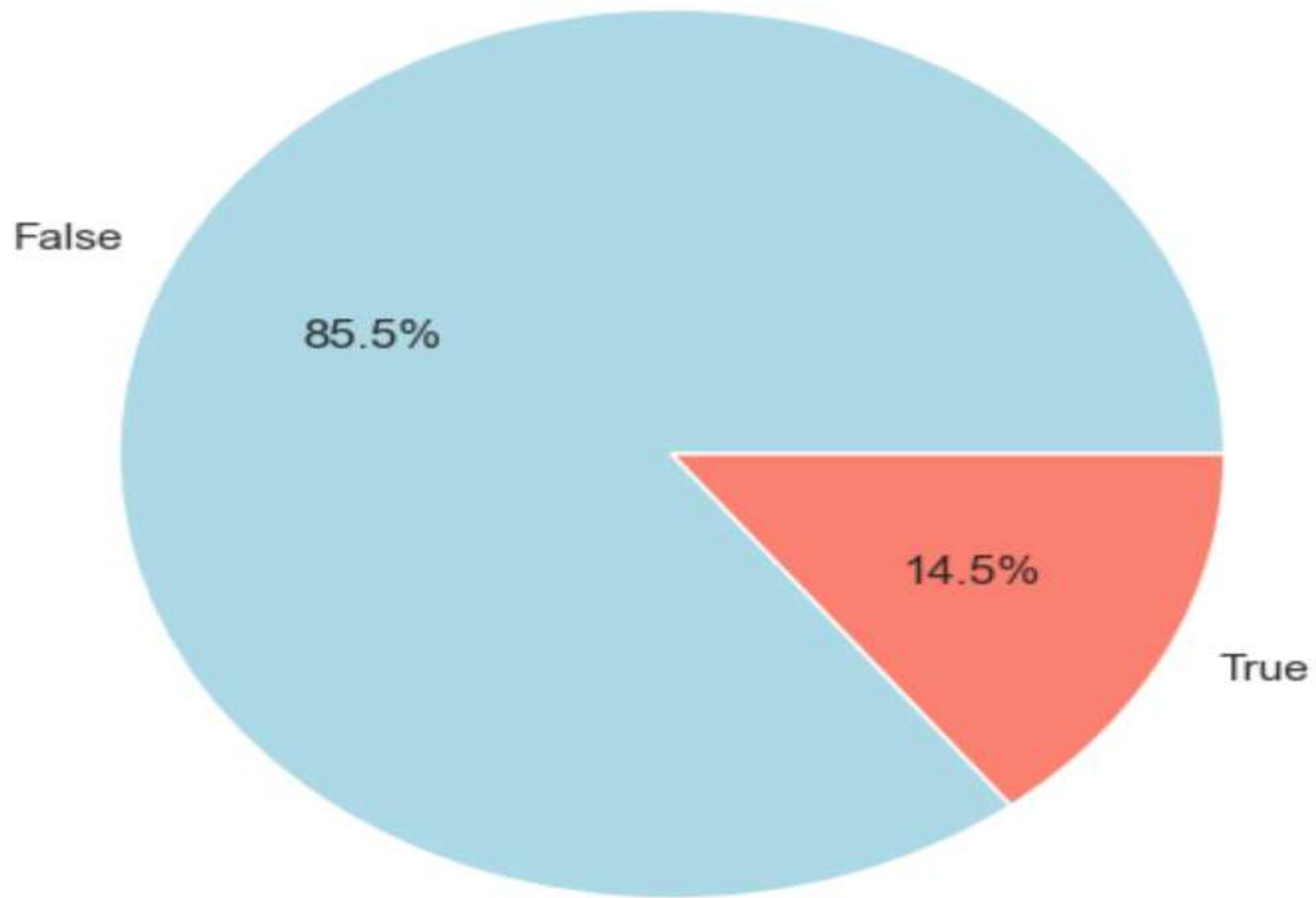
Introduction.

- Churn refers to customers who leave the service provider after a period of time.
- Churn Analysis is important because high churn means loss of revenue and increased costs to acquire new customers.
- The primary goal of churn analysis is identifying and anticipating churnable customers as soon as possible.
- Understanding customer behavior and predicting churn is important for customer retention.

Dataset Overview

- The real name of the telecom company behind the data is anonymized.
- The data has 20 predictor variables that are mostly about customer usage patterns.
- The dataset has 3333 records with 483 customers being churners and the remaining 2850 being non-churners.
- Therefore, the ration of churners in the dataset is ~14%

Customer Churn Distribution

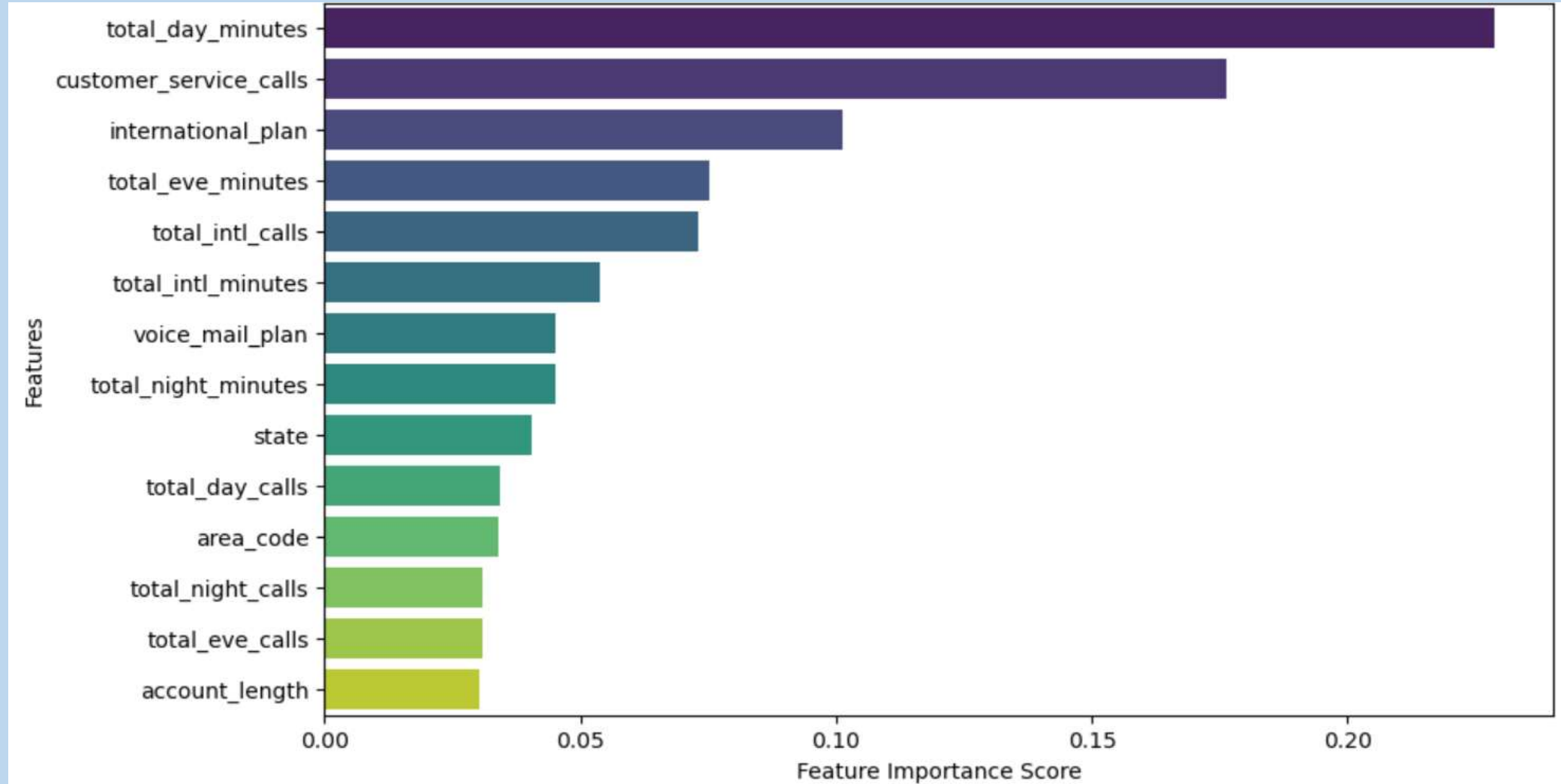


Key Findings.

Factors that contribute most to Churn:

- Customers with more service calls are more likely to churn.
- Customers without a voicemail plan churn more
- Higher international charges correlate to higher likelihood of churning.

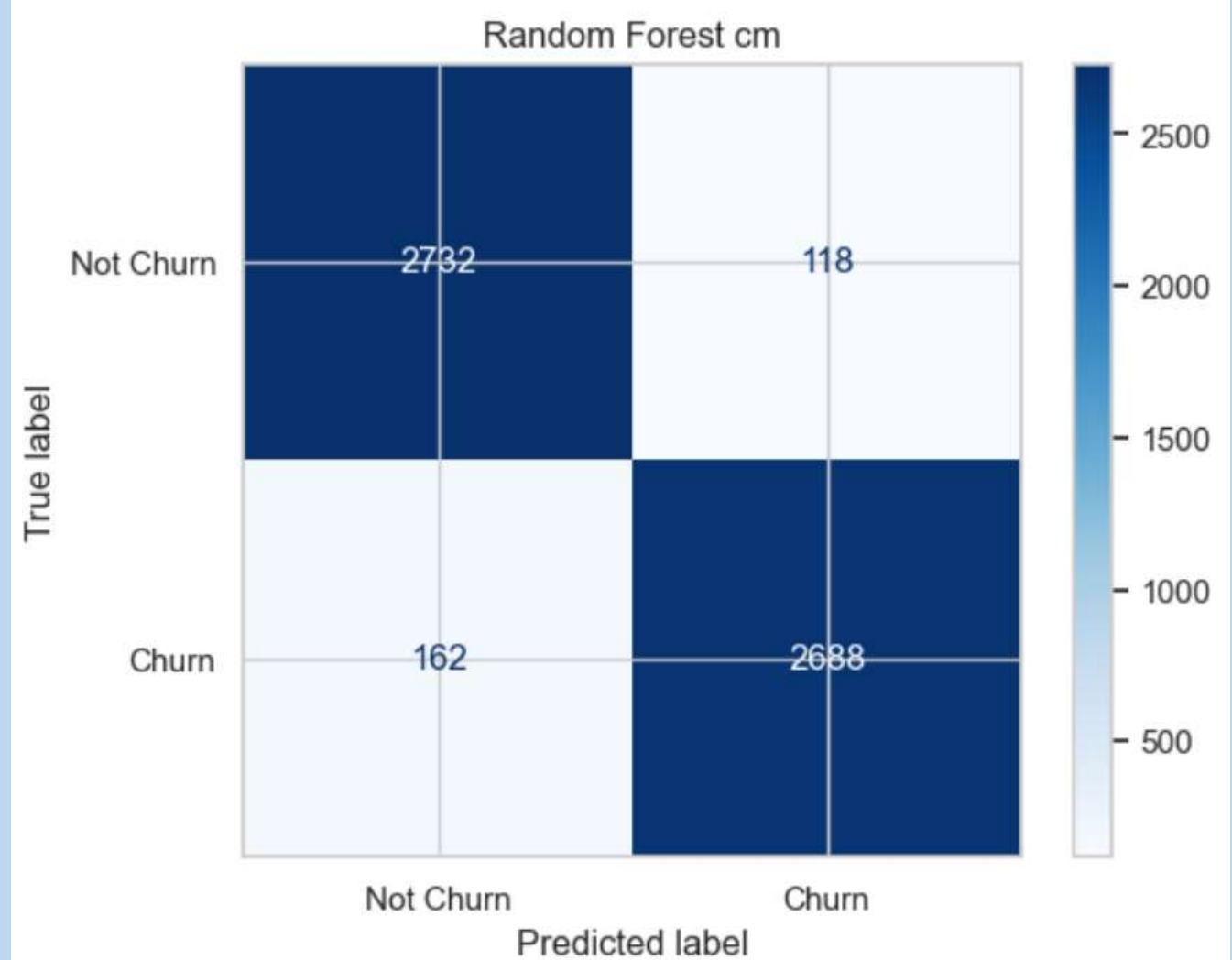
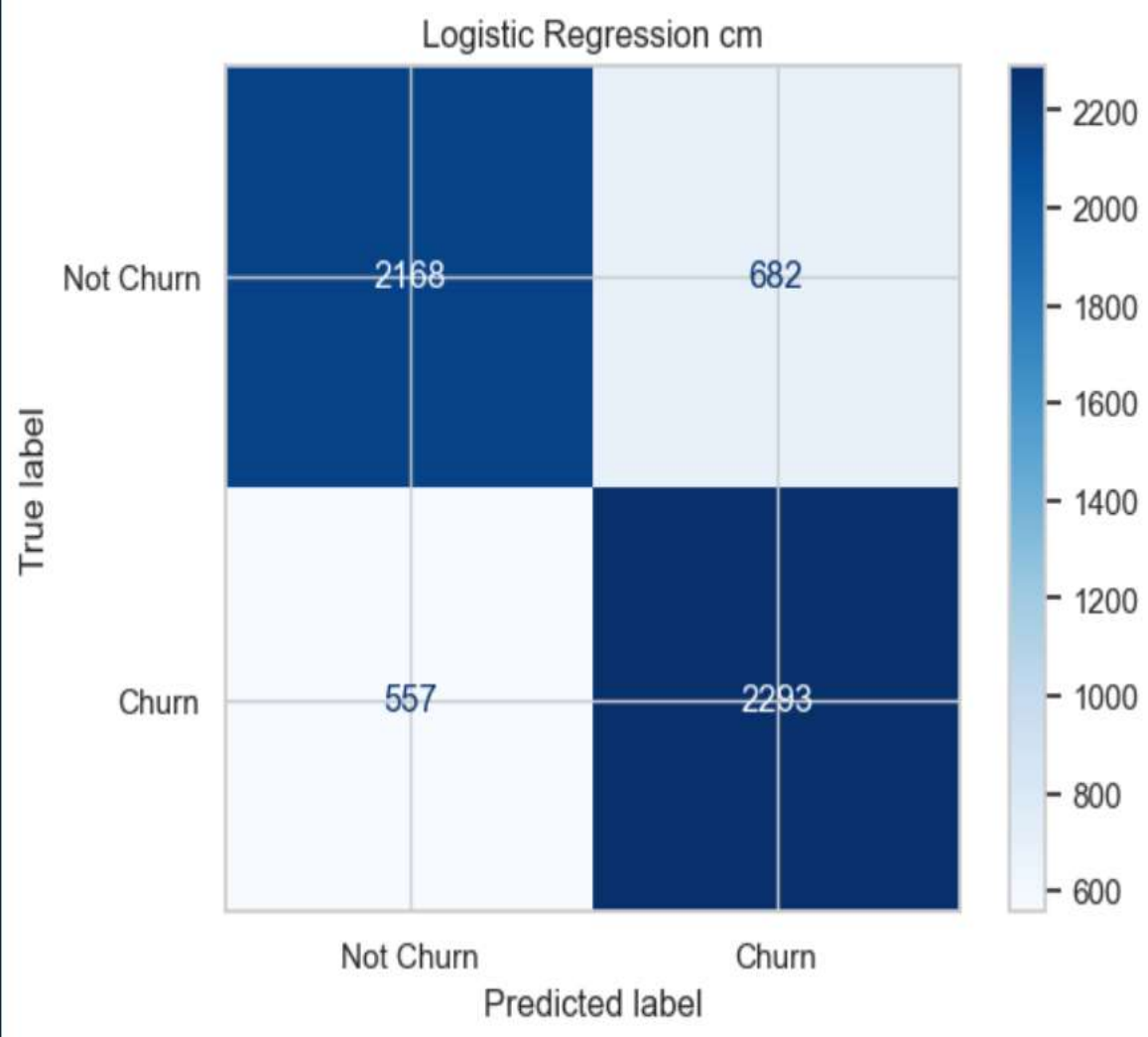
Feature Importance in predicting Churn



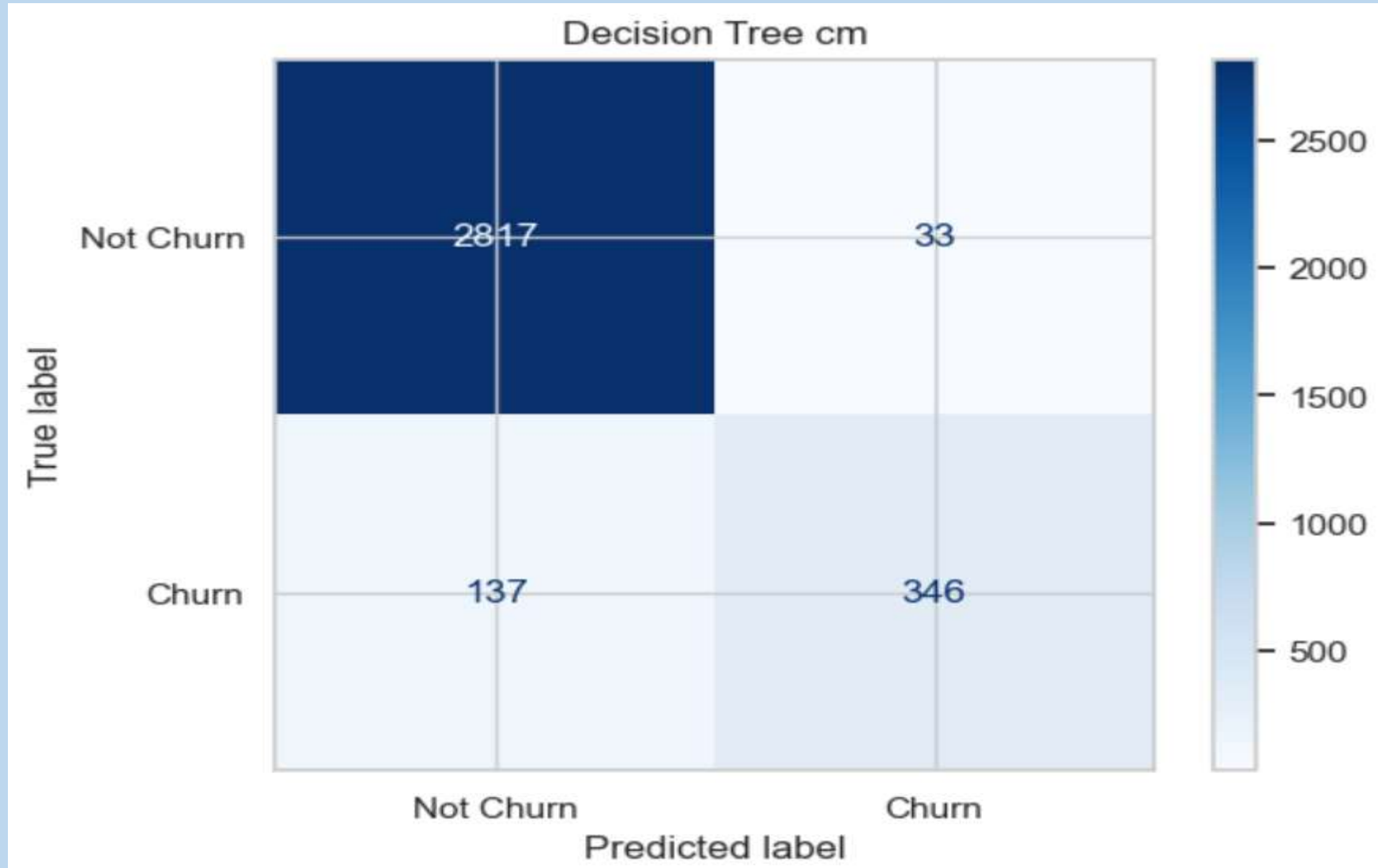
Model Performance

- The different models tested were: Logistic Regression, Random Forest, and Decision Tree.
- The best performing model was Random Forest.
- The metrics used for model performance comparison were:
 - Accuracy.
 - Precision.
 - Recall.
 - AUC score.

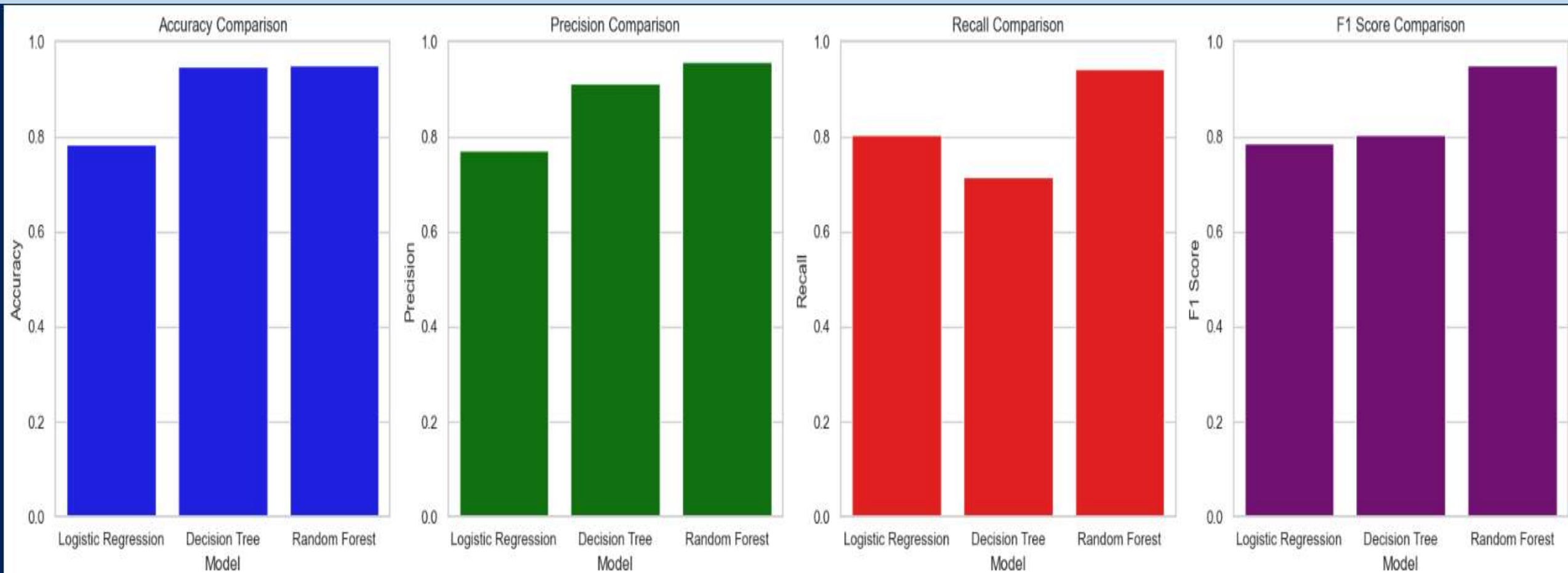
Model Performance



Model Performance



Model Performance



Key Business Insights.

- Customer service interactions are a key indicator. A possible solution to this is improving support strategies.
- Customers with international usage are at risk. The company could introduce targeted offers.
- Subscription plans (such as voicemail plan) impact customer retention. The company could optimize pricing and feature offerings as a solution to this.

Next Steps and Recommendations

- **Retention Strategy:** Identifying at-risk customers early and offering personalized incentives.
- **Improve Customer Service:** Churn can be reduced by addressing customer complaints effectively.
- **Loyalty Program:** Rewarding long-term customers can help increase their retention.