

* Predicting SyriaTel Customer Churn



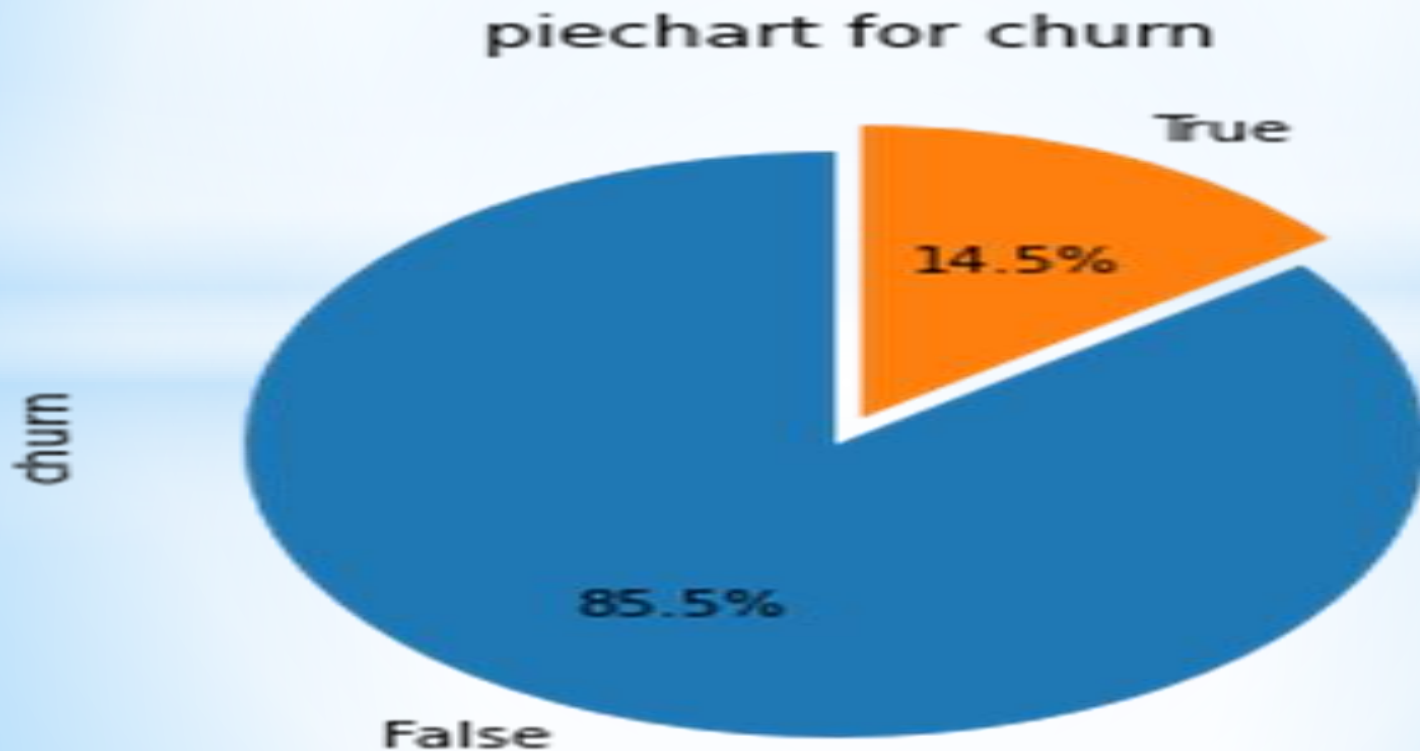
*Overview

SyriaTel, a telecommunications company aims to find out whether customers will churn. This project aims to provide SyriaTel with a model to help predict whether a customer churns with SyriaTel, a telecommunications company. In an article about churn reduction in the telecom industry by the Database Marketing Institute, the article states that "industry retention surveys have shown that while price and product are important, most people leave any service because of dissatisfaction with the way they are treated". With this in mind, we aim to highlight areas where customer service could be improved. Through research I find from this dataset, that SyriaTel has a churn rate of roughly 15% in customers who have been with the company for less than 245 days.

*Goals

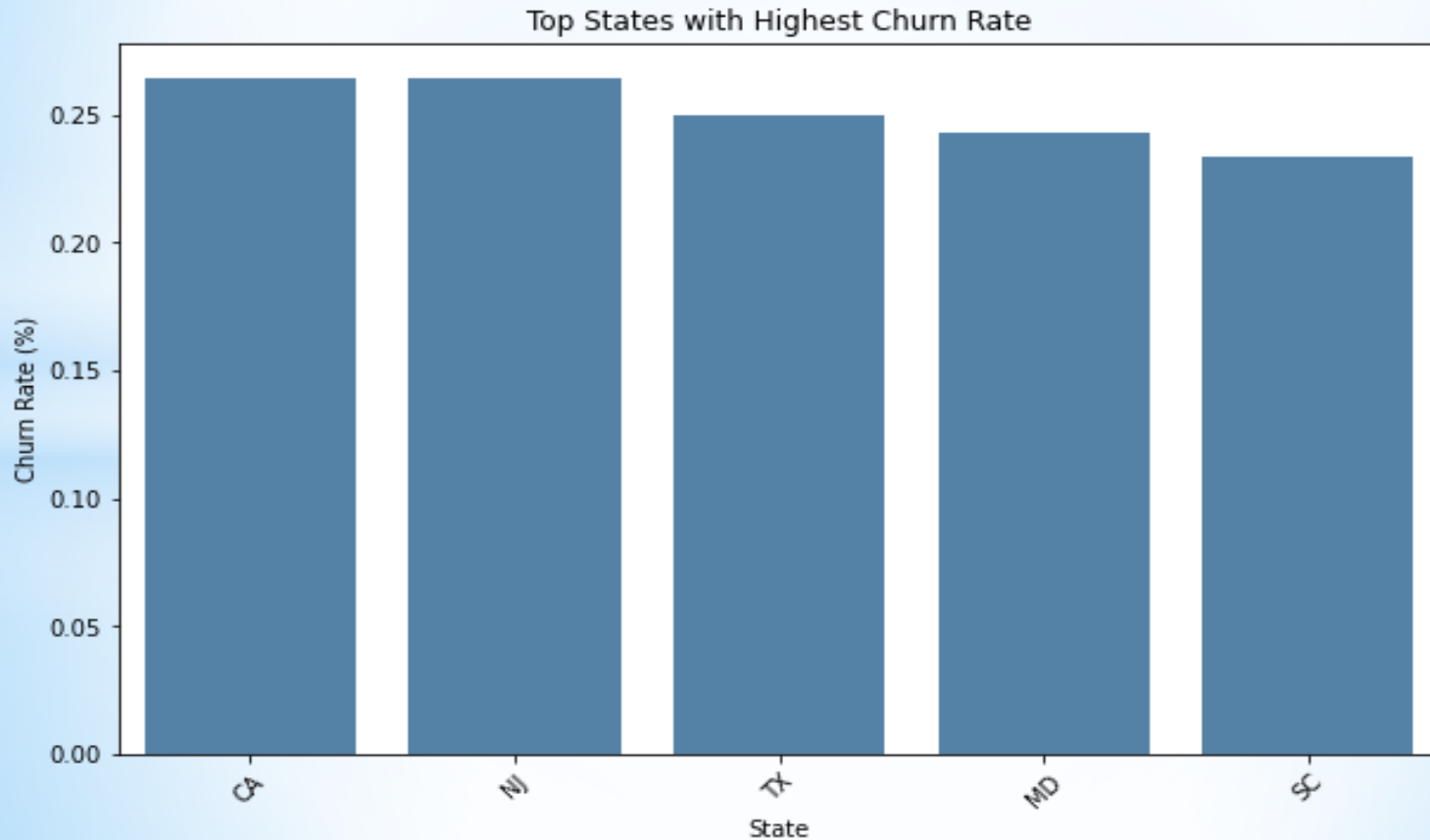
Based on the data being collected, predict which customers are churn candidates

* Piechart showing customer churn rate

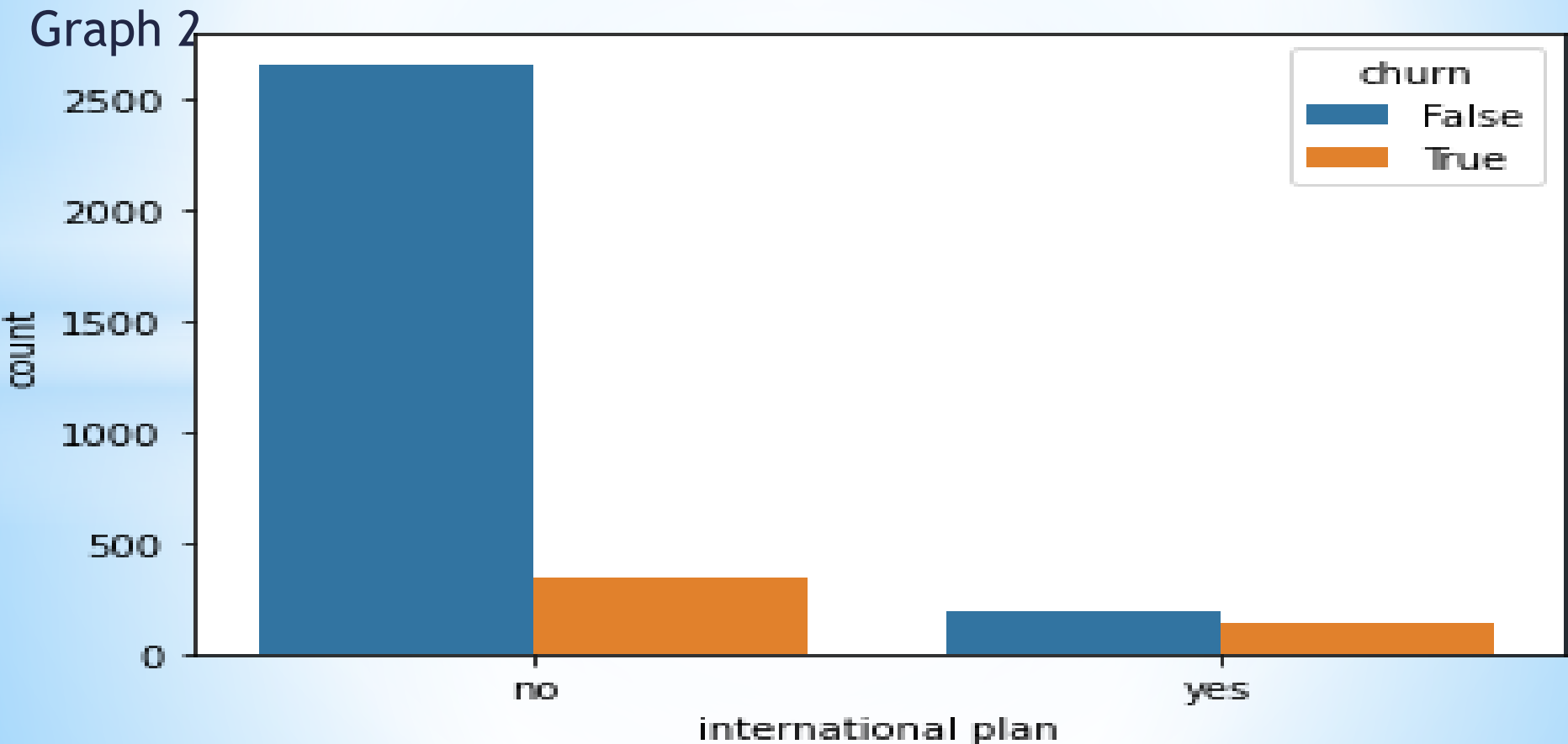




Top States with highest churn rate



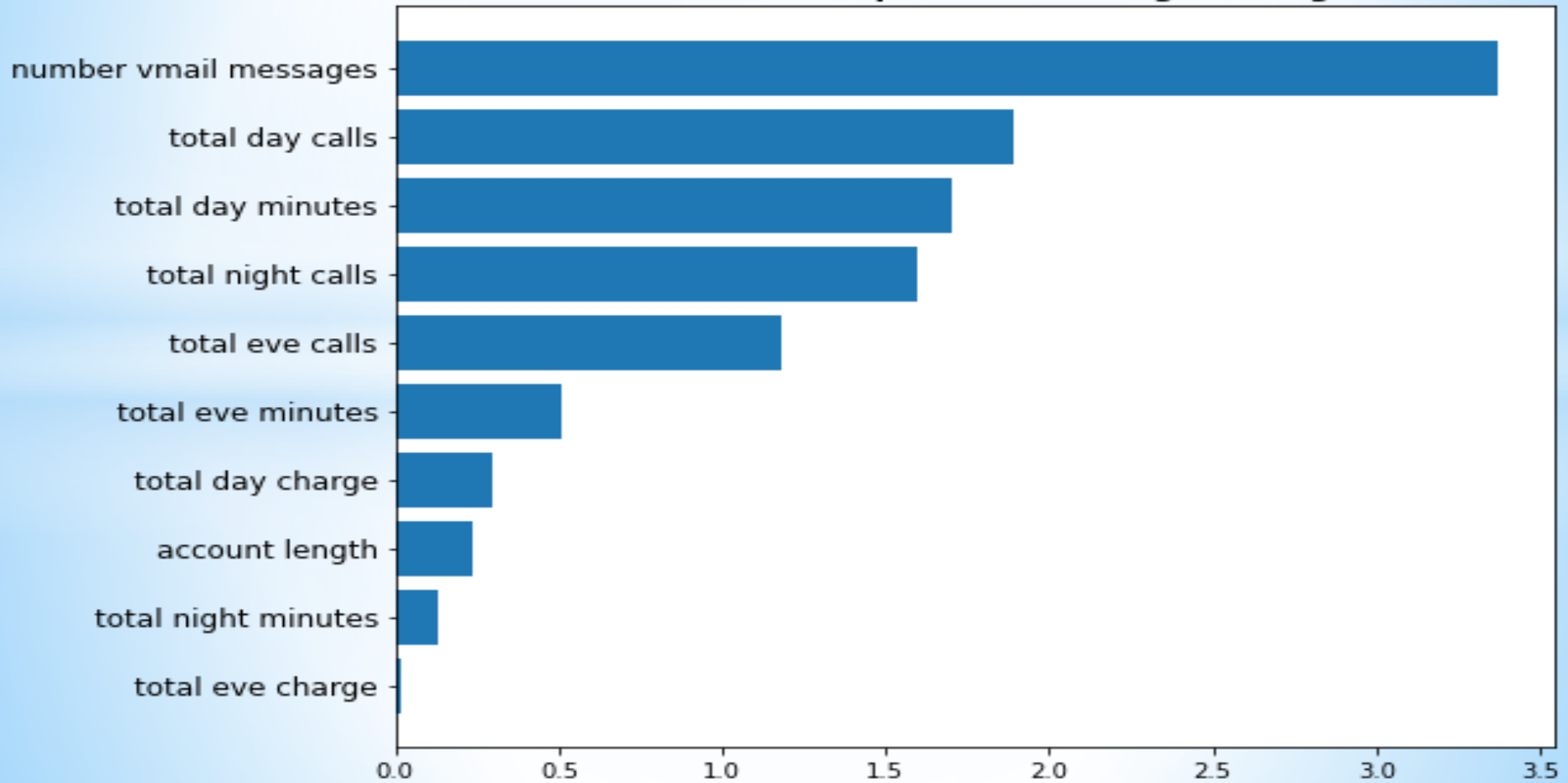
*International Plan graph





Most 10 Relative Feature Importance For Logistic Regression

Most 10 Relative Feature Importance for Logistic Regression Model



* Logistic Regression Classifier

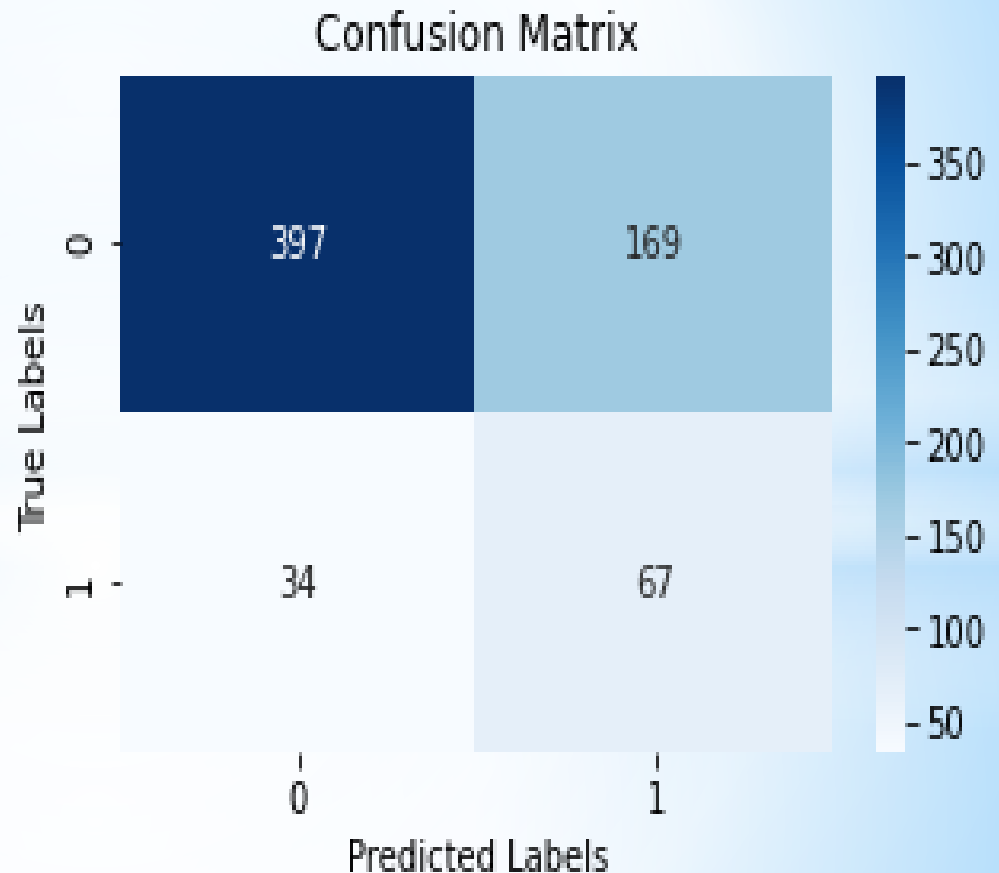
LOGISTIC REGRESSION CLASSIFIER MODEL RESULTS

Accuracy score for testing set: 0.69565

F1 score for testing set: 0.39763

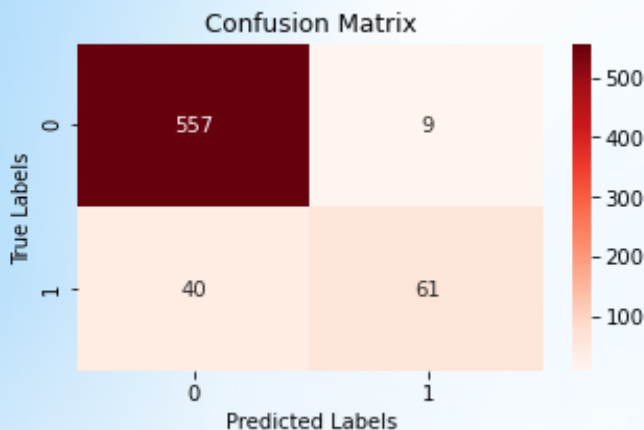
Recall score for testing set: 0.66337

Precision score for testing set: 0.2839





Random Forest Classifier



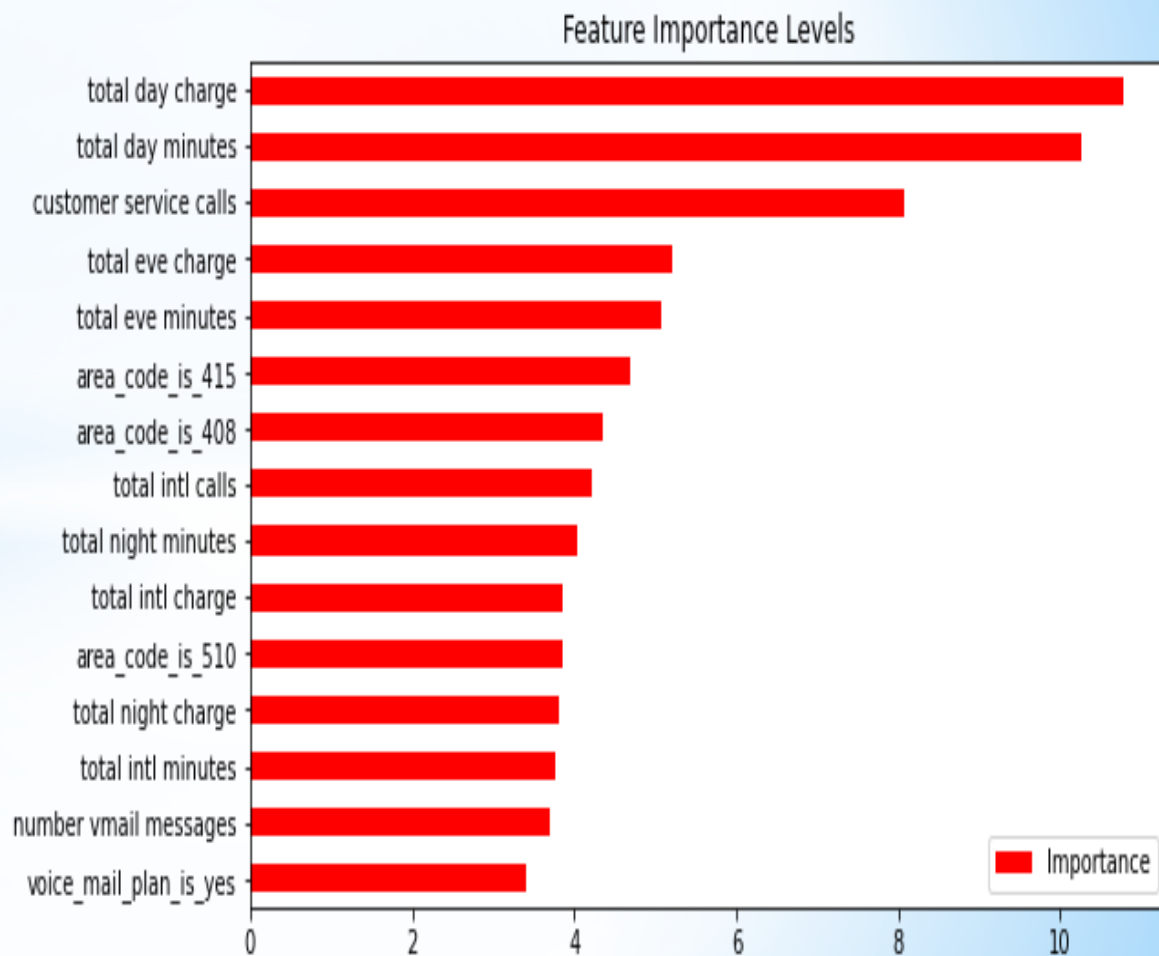
RANDOM FOREST MODEL RESULTS

Accuracy score for testing set: 0.92654

F1 score for testing set: 0.71345

Recall score for testing set: 0.60396

Precision score for testing set: 0.87143





Decision Tree Classifier

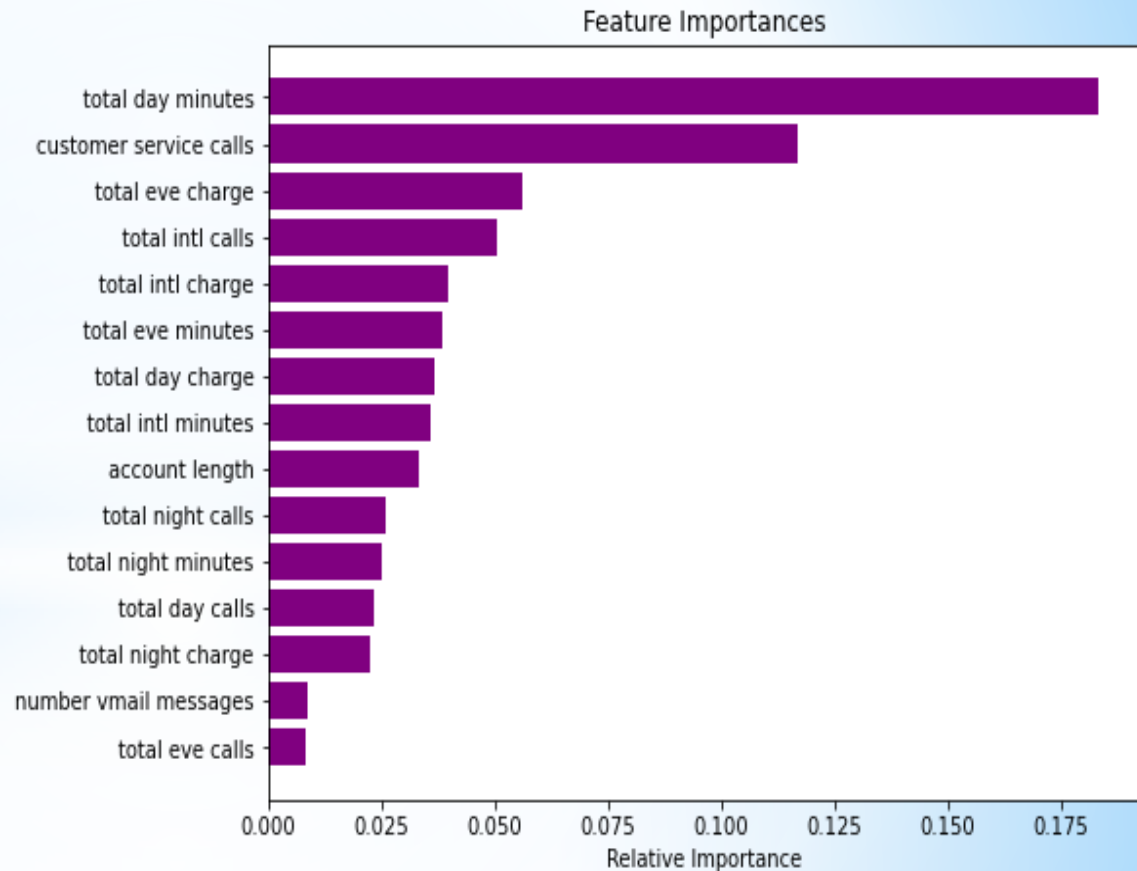
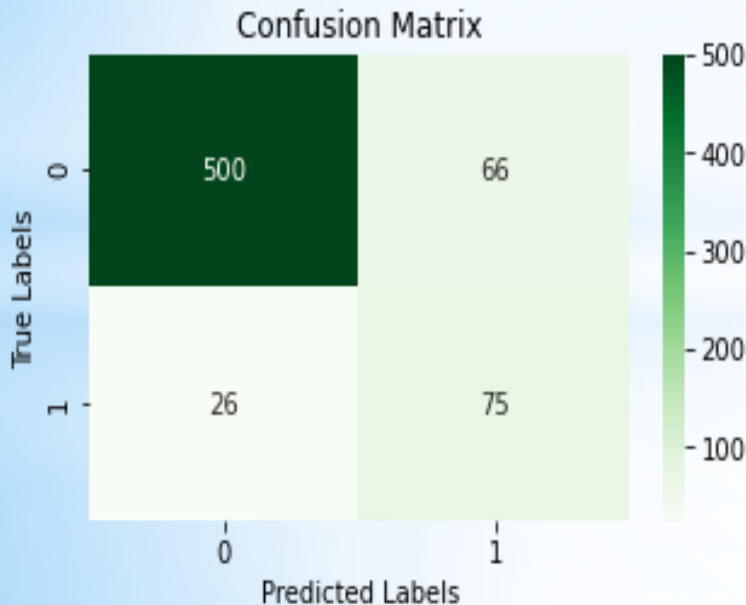
DECISION TREE CLASSIFIER MODEL RESULTS

Accuracy score for testing set: 0.86207

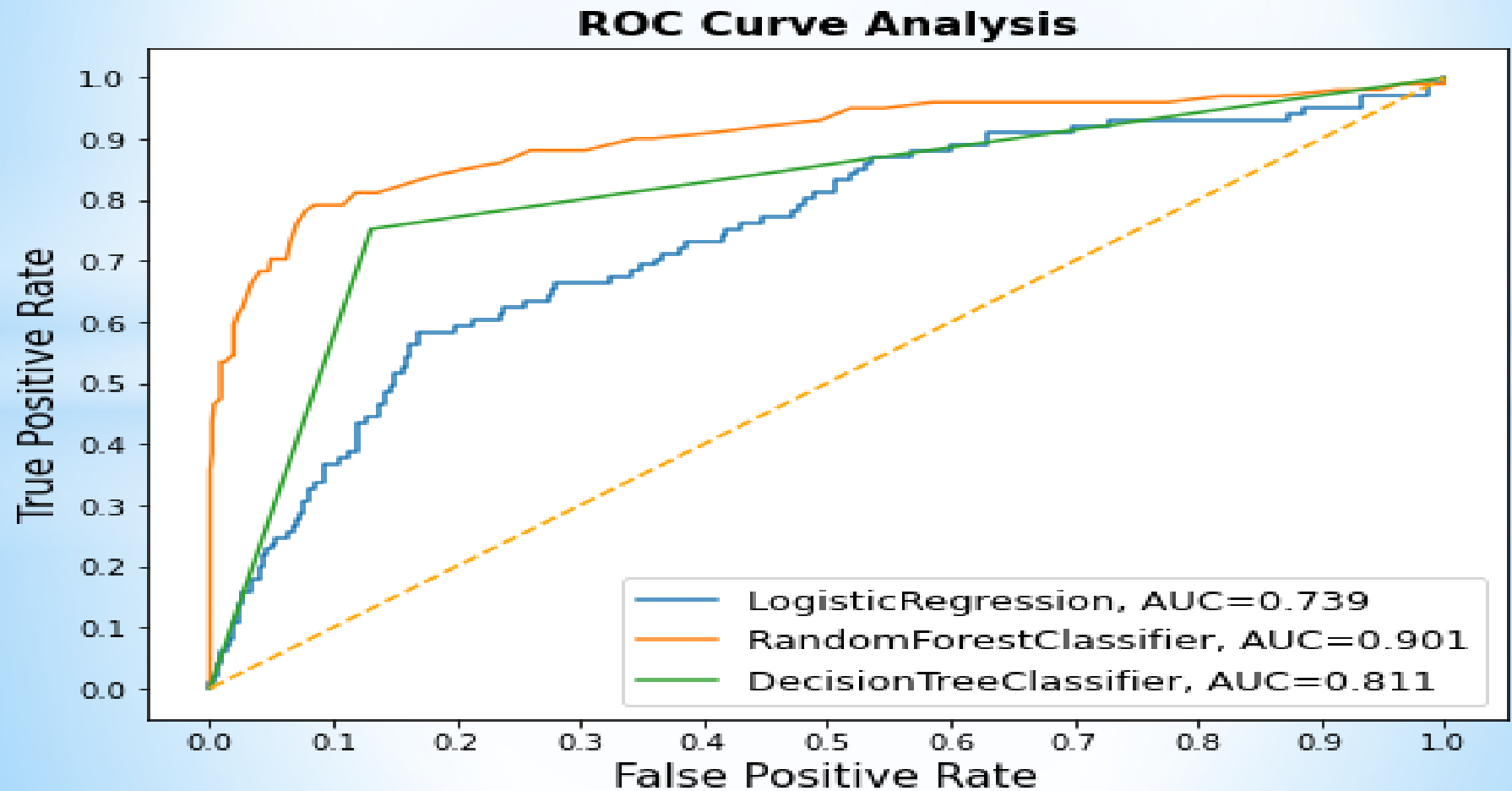
F1 score for testing set: 0.61983

Recall score for testing set: 0.74257

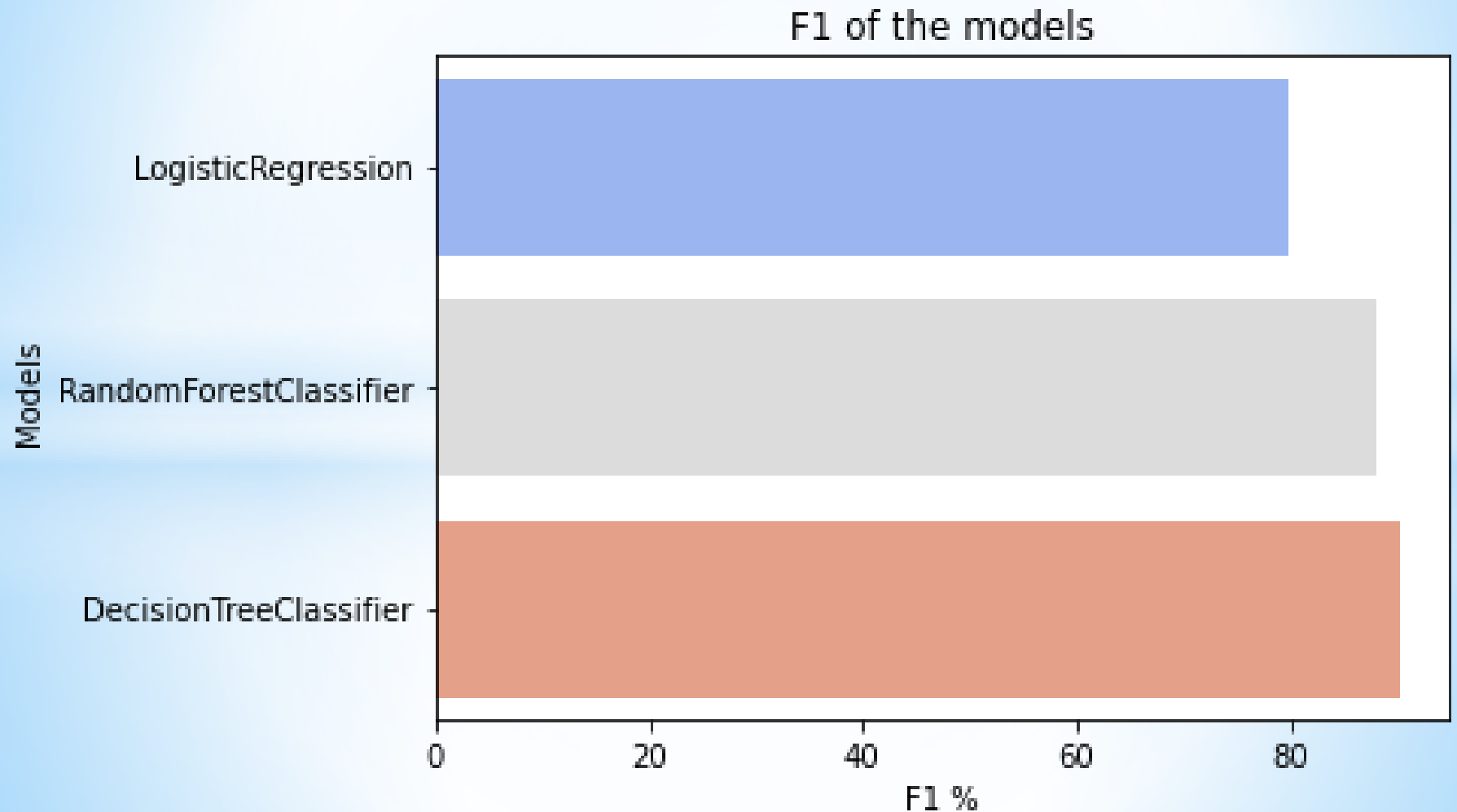
Precision score for testing set: 0.53191



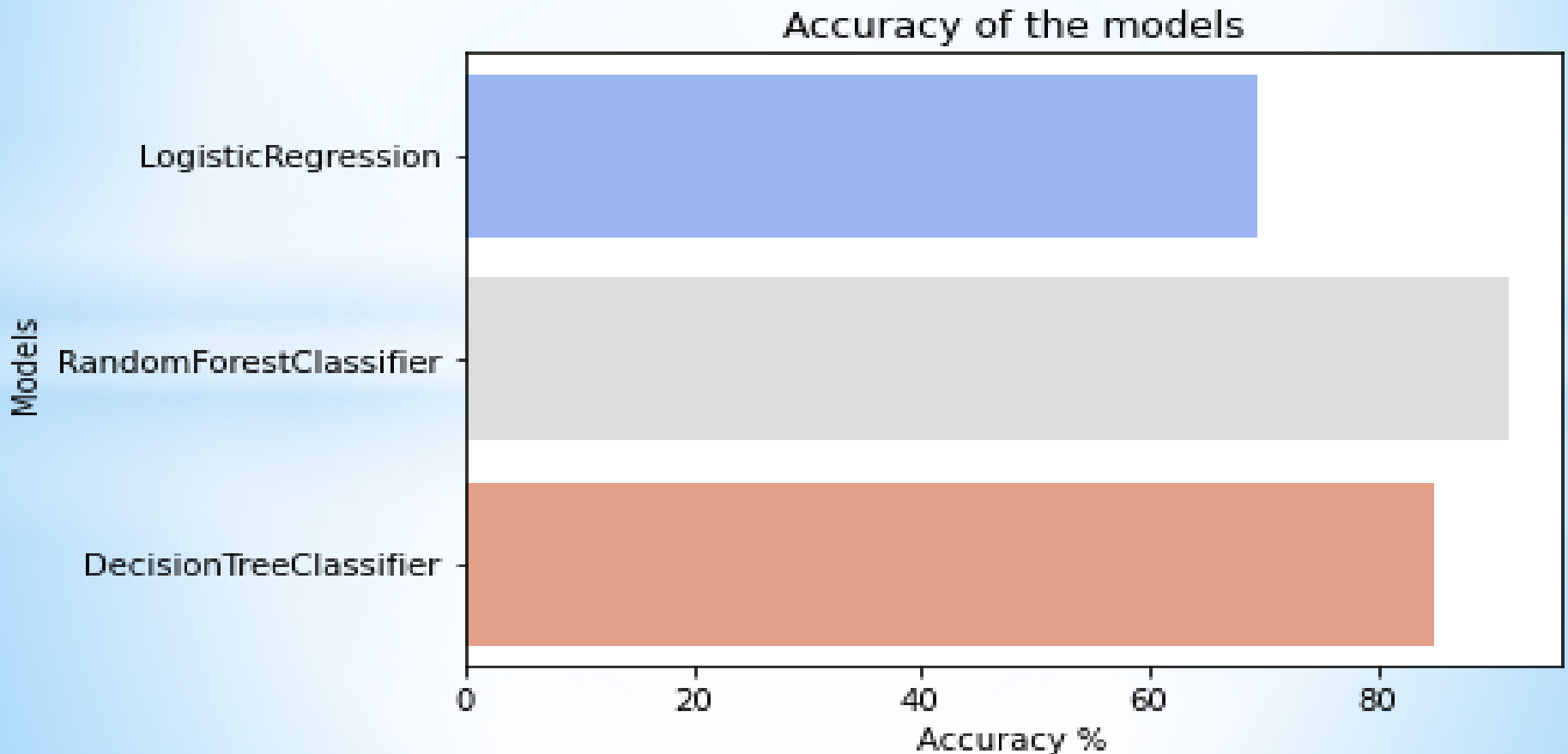
* Comparing Models using ROC Curve Analysis



* F1 Score Of the Models



* Accuracy of the Models



* Recommendations

1. Further investigate the characteristics of customers who made a high number of calls to customer service.
2. Given the high churn rate (over 42%) among international plan holders, focus on retention efforts for these customers.
3. Investigate the states with high churn rates to identify any specific trends or issues causing the churn. Analyze factors such as pricing, competition, network coverage, or customer satisfaction levels in these states.
4. Consider segmenting customers based on their characteristics, usage patterns, or preferences.
5. Focus on enhancing the overall customer experience across different touchpoints.
6. Implement proactive communication and outreach strategies to engage customers and address their needs.
7. Establish a system for continuous monitoring of key metrics and customer feedback.

*Next Steps

1. Evaluate the cost associated with acquiring new customers, including marketing expenses, sales efforts, and promotional activities. Assess the return on investment (ROI) for different acquisition channels and strategies to optimize resource allocation and identify cost-effective methods.
2. Analyze the reasons why customers need to make frequent calls to customer service. Identify pain points or areas of confusion in the customer journey that may lead to higher call volumes. Implement measures to address these issues, such as improving self-service options, enhancing online documentation, or providing proactive notifications to reduce the need for customer support.
3. With a high churn rate among international plan holders, investigate the factors contributing to their churn. Understand their specific needs, pain points, and preferences. Develop targeted retention initiatives for these customers, such as offering special discounts, enhanced international calling plans, or personalized customer support to incentivize them to stay with the company.
4. Identify the states with high churn rates and investigate potential trends or patterns that may contribute to customer attrition.
5. Evaluate the cost-effectiveness of retention efforts compared to customer acquisition. Assess the cost of implementing retention initiatives and compare it to the potential revenue generated from retaining customers. This analysis will help allocate resources efficiently and determine the most effective strategies for customer retention.
6. Continuously monitor and evaluate the effectiveness of customer acquisition and retention efforts. Track key metrics such as customer churn rate, customer lifetime value, acquisition costs, and retention rates. Regularly analyze the data to identify trends, patterns, and opportunities for improvement.

***THANK YOU**

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Github repo:<https://github.com/lavEche/phase-3-project.git>