Customer Churn Prediction

Overview

- Customer churn is a significant challenge for businesses, particularly in the telecom industry.

- Understanding the factors that contribute to customer churn and being able to predict it can help companies develop strategies to retain customers and reduce revenue losses
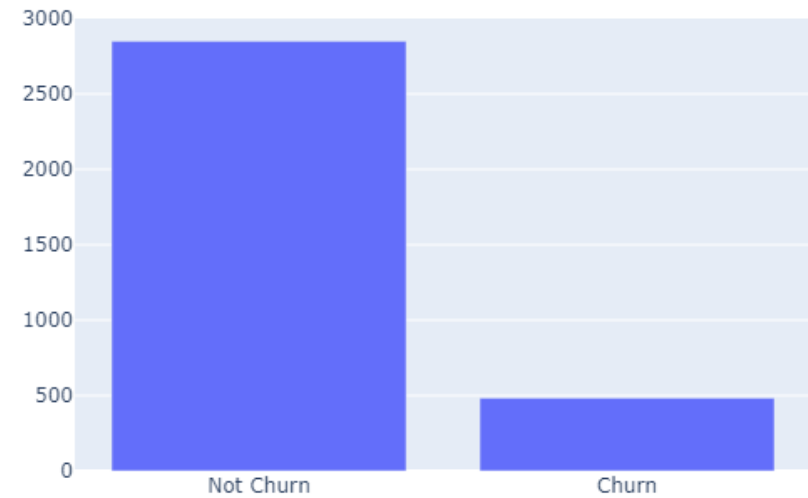
Problem statement

- Syriatel, a telecommunications company, is facing a high churn rate, with many customers discontinuing their services and switching to competitors
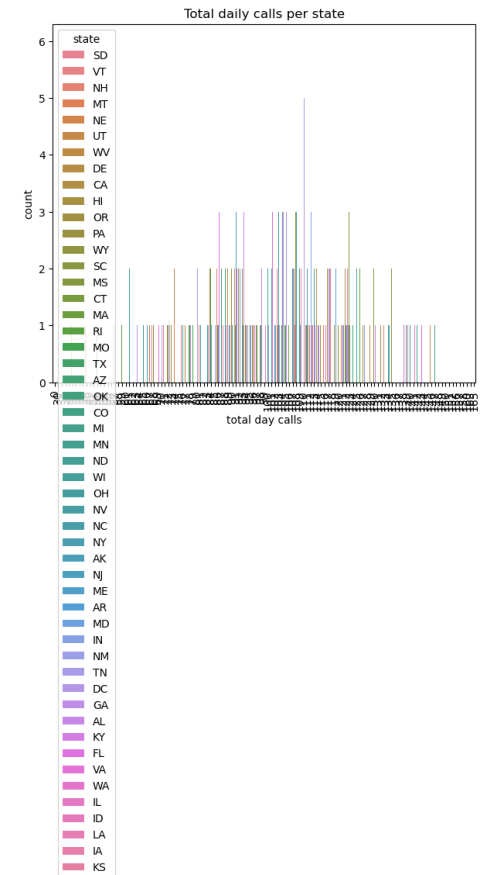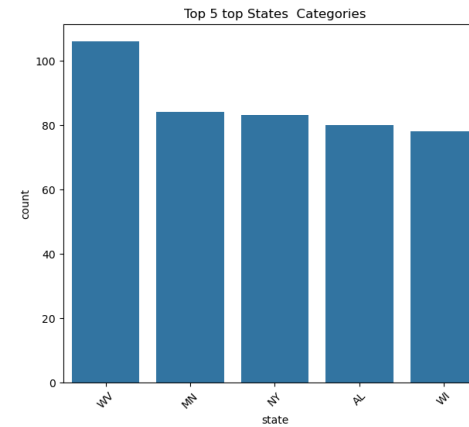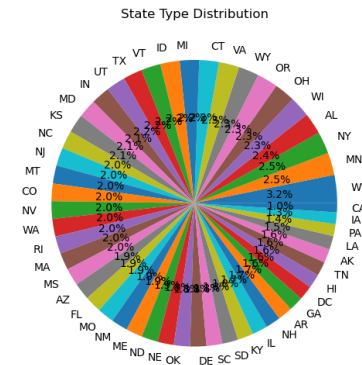
Distribution of customers who were churned and not churned.

- Total number of customers were 3,333 . Out of the 3,333, 2850 were not churn while 483 were churn.

Churn Distribution

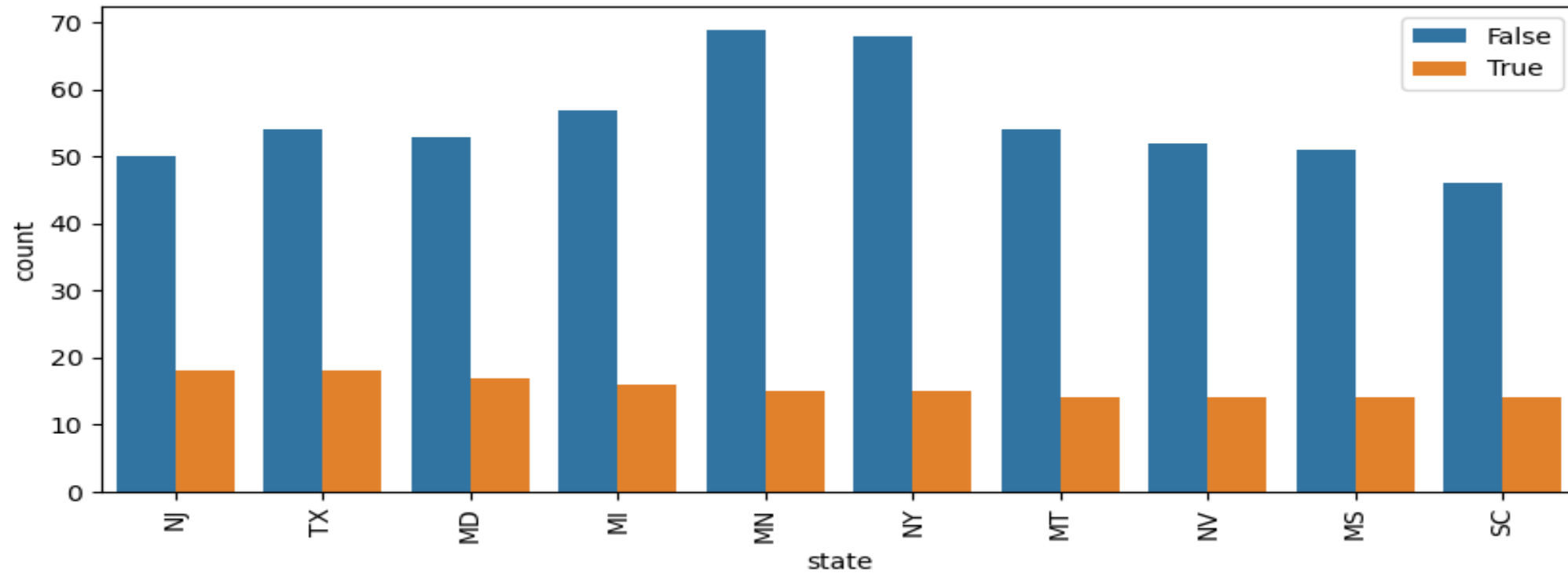How customers were distributed in different countries

State Type Distribution

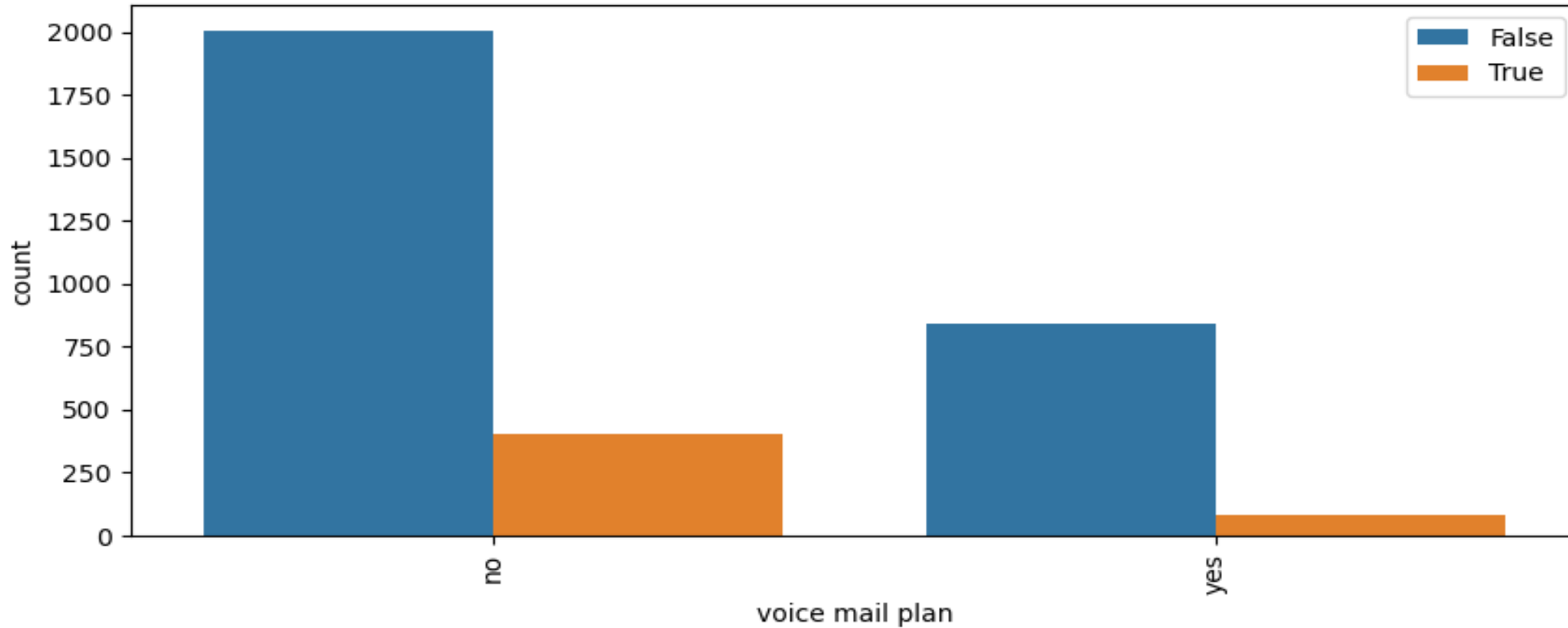Top 5 top States Categories

Total daily calls per state
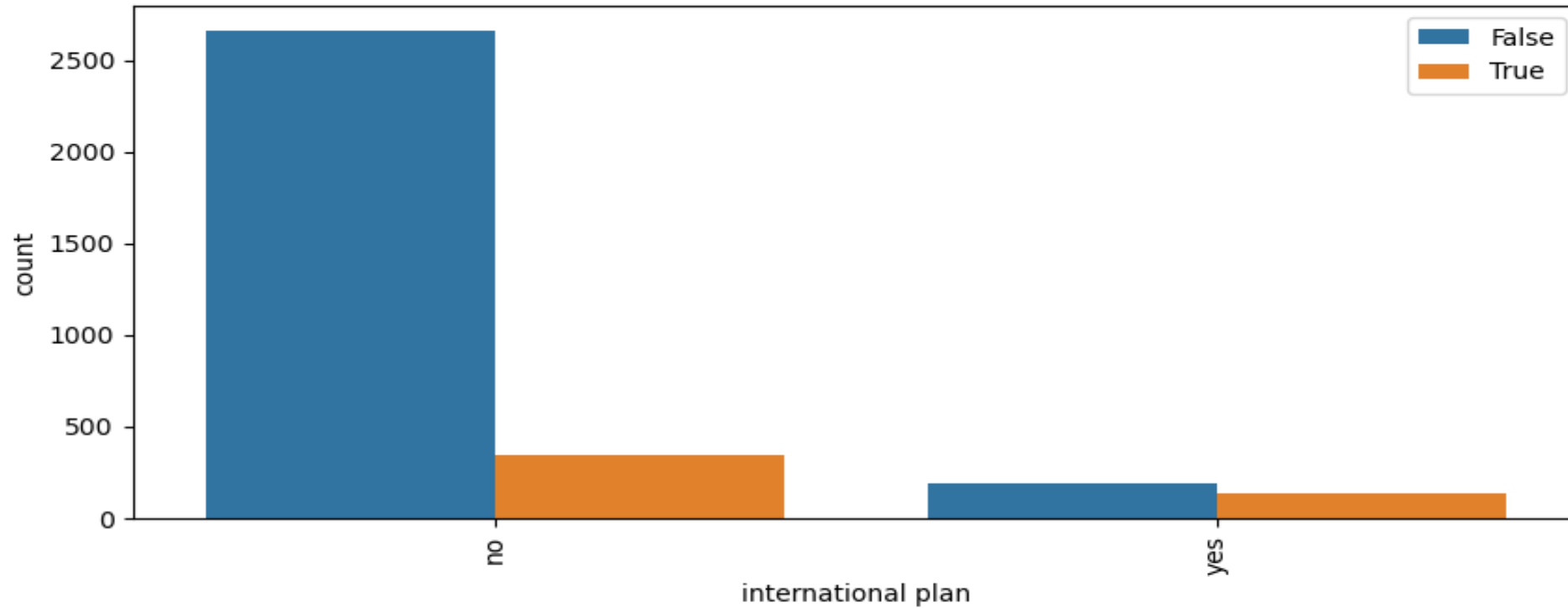
States that have highest churn rate

Ney York and Miami are leading followed by
Maryland, New jersey and Texas.

Customers on voice mail churn rate

Of the 483 customers that churned, majority did not have a voicemail plan
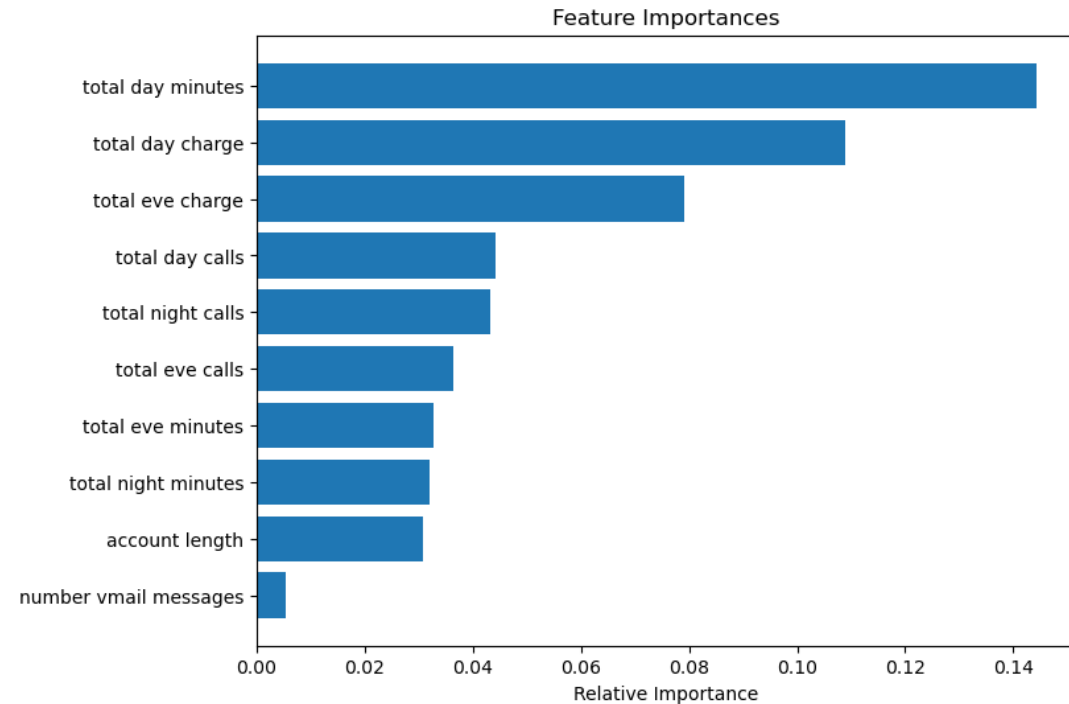
Customers on international plan churn rate

From the 483 customers that churned, majority did not have
an international plan

Features that have impacted churn rate according to our model

- **Total day minutes**; customers who made more calls during the day churned the most.

- **Total day charge**; customers who had more charges during the day churned the most.

- **total evening charge**; customers who had more charges during evening time churned the most.

Feature Importances

total day minutes

total day charge

total eve charge

total day calls

total night calls

total eve calls

total eve minutes

total night minutes

account length

number vmail messages

0.00   0.02   0.04   0.06   0.08   0.10   0.12   0.14

Relative Importance

Conclusion and recommendations.

- Total day minutes, total day charge and total day minutes are the most important features when determining customer churn.

- The model was able to predict churn on customers correctly showing it's a fitting model with a high accuracy score and f1- score.

- Improving customer service quality and focusing on customer retention strategies in states with higher churn rates, such as Texas, New Jersey, Maryland, Miami, and New York will be benefiting to the company. This can involve targeted marketing campaigns, personalized offers, or improved customer support tailored to the specific needs and preferences of customers in those states.