



MWANZA IVY NDUNGE

SYRIATEL CUSTOMER CHURN



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Table of Contents



BUSINESS CASE



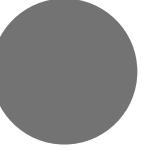
THE DATA



DATA PREPARATION



FINAL MODEL



RECOMMENDATIONS



FUTURE WORK





Business Case

A telecommunication company called SyriaTel has enlisted data scientists to create a model that predicts when the customers are leaving their business. The data scientist is expected to build an accurate model and report features that may be an indicator that the customer will be more likely to leave.

The Data



SOURCE

Dataset from
Kaggle



SHAPE

Over 3300 rows
and 20 columns



ISSUES

Pretty clean set,
only issue is
imbalance



OUTLIERS

No major outliers
that could skew the
models



Key Questions

1. Which plans are customers satisfied with?
2. Which factors lead to service discontinuation?
3. How can SyraTel retain customers?

Data Details

Churn telecom dataset provided:

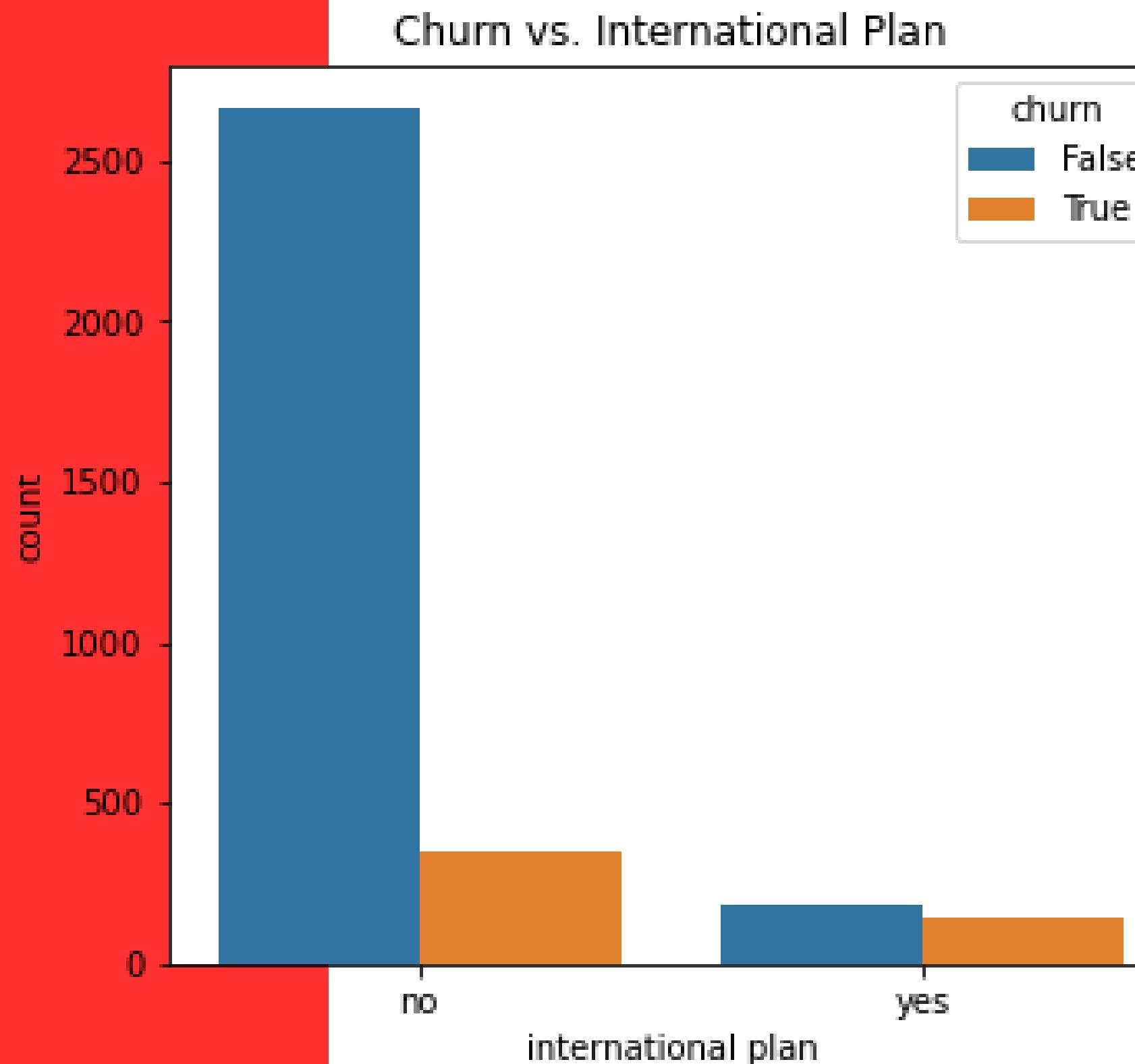
1. 3333 observations and 21 columns.
2. The 'churn' column is the target to predict.
3. There is a class imbalance, 483 customers churned and 2850 did not churn.
4. May require SMOTE.



Data Preparation

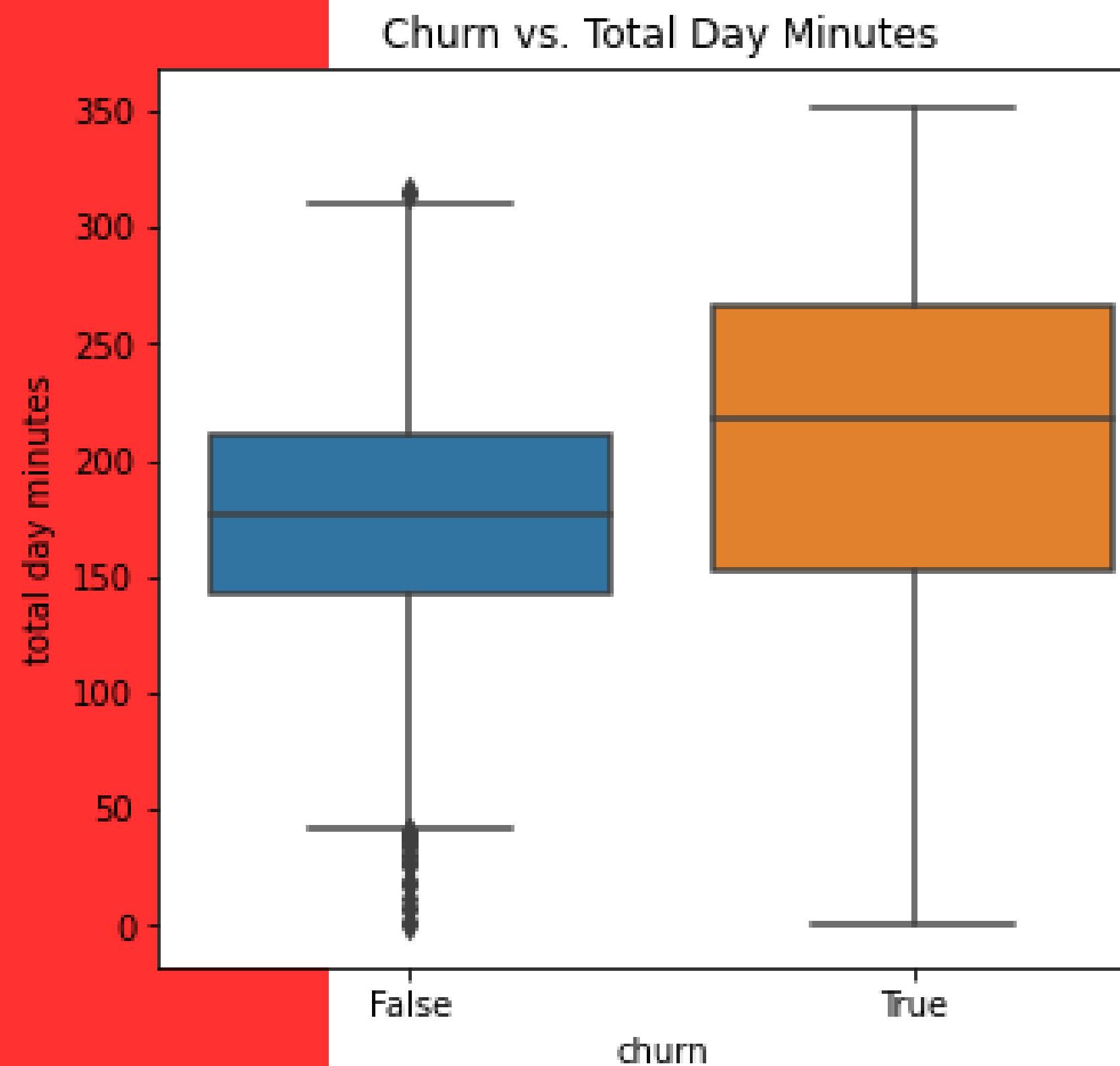
1. Exploratory Data Analysis
 2. Removed correlated columns
 3. Applied SMOTE to remove imbalance
-

Visualizations



People with international plans are way more likely to churn. Perhaps other companies are offering more competitive pricing.

Visualizations



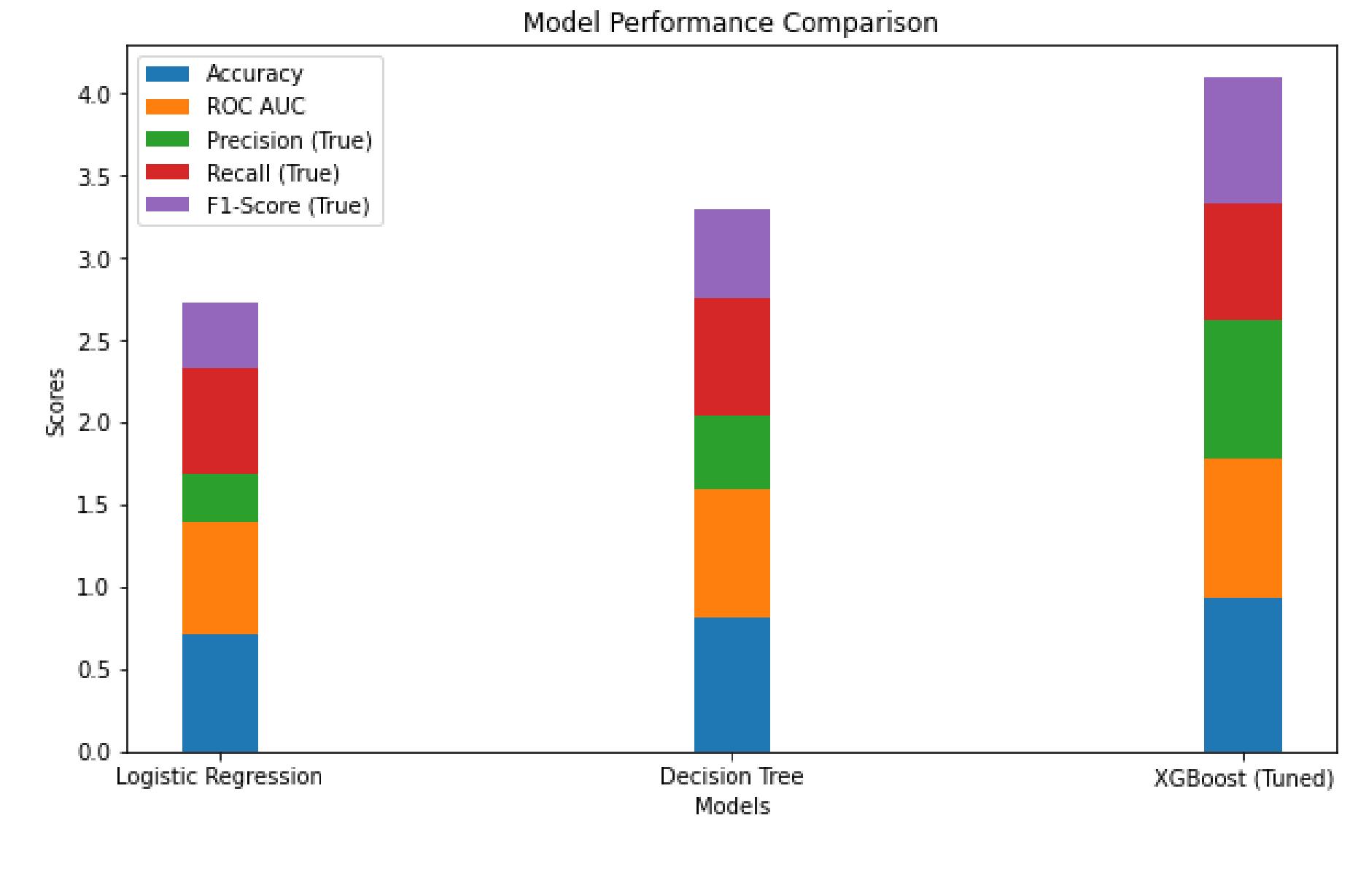
Minutes spent on the phone
during the day are
correlated with customers
leaving the service

Visualizations



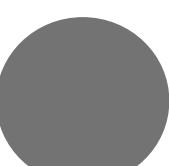
More than 3 customer service calls from a customer suggest that they are on the brink of leaving

Final Model



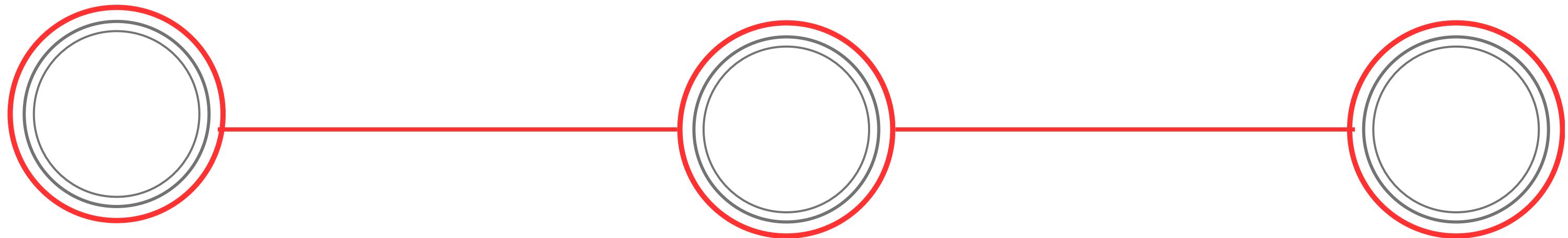
Best Model: XGBClassifier
Best Score (AUC): 0.9095239466280581

Recommendations

-  Increase the quality of customer service to reduce the amount of times called, especially focusing on customers who call repeatedly
-  Provide better plans for those who use more minutes like decreasing charge rate after hitting a cap of 240 call minutes instead of a flat rate per minutes
-  Give out some rewards or benefits for customers for their account length over time to promote customer loyalty
-  Implement customer retention strategies around key predictors like providing added benefits and incentives for customers with an international plan



Future Work



Delve into international call customers and investigate why they are leaving

Analyze coverage in different states and see if that has an impact on customer churn

Determine if the number of minutes per day is correlated due to some other factors or if it is playing a significant role in customer churning

Get more specific information on our clients and see if that can help us better predict whether they are more likely to churn or not



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Thank you!

For more details, visit my Github:

<https://github.com/mwanza00>