سيريتل
SYRIATEL

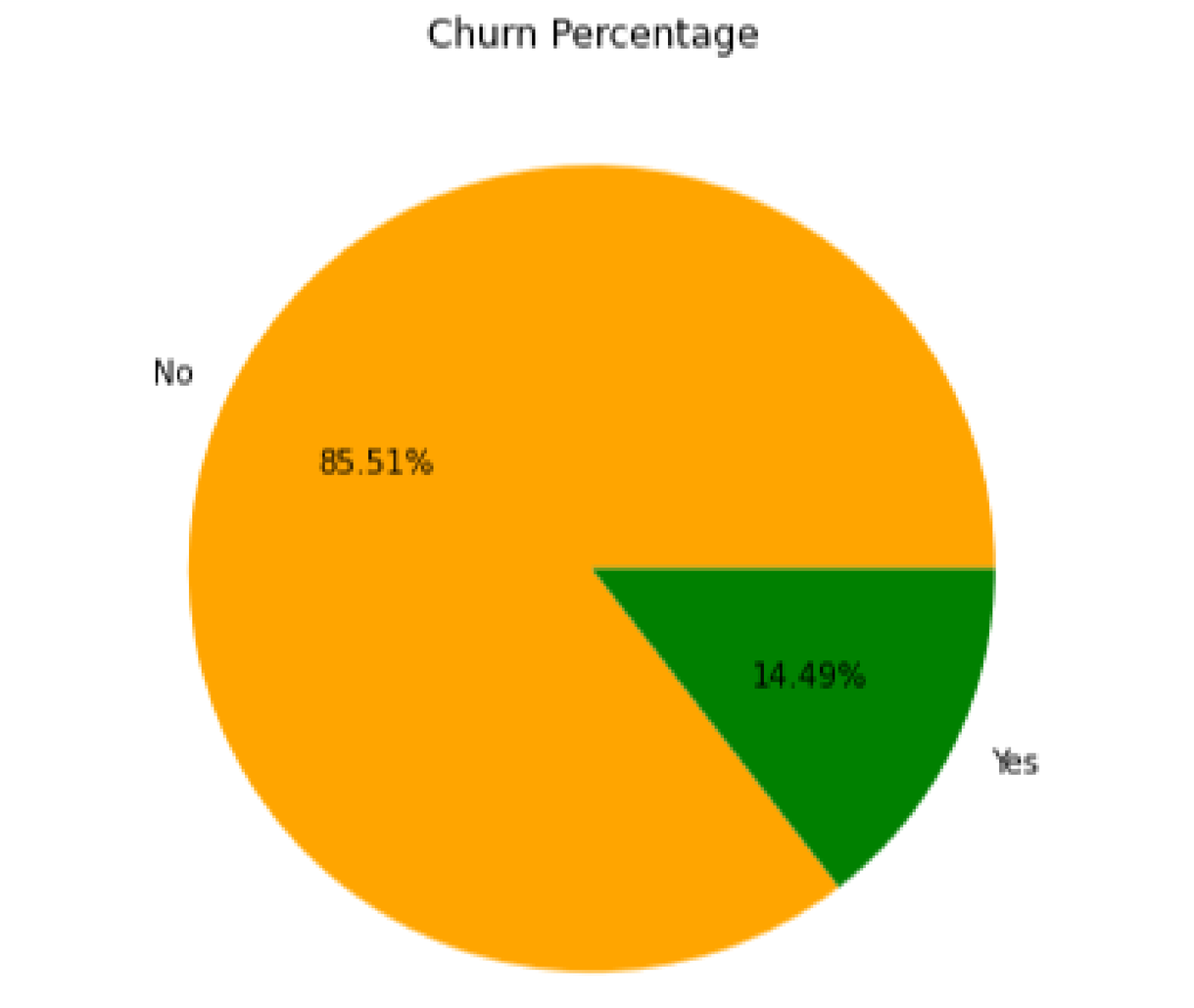
Business Problem

Syriatel is a mobile network provider in Syria. It is one of the only two providers in Syria. The stakeholders would like to reduce money lost by customers who do not stick around for long.

Business Objective

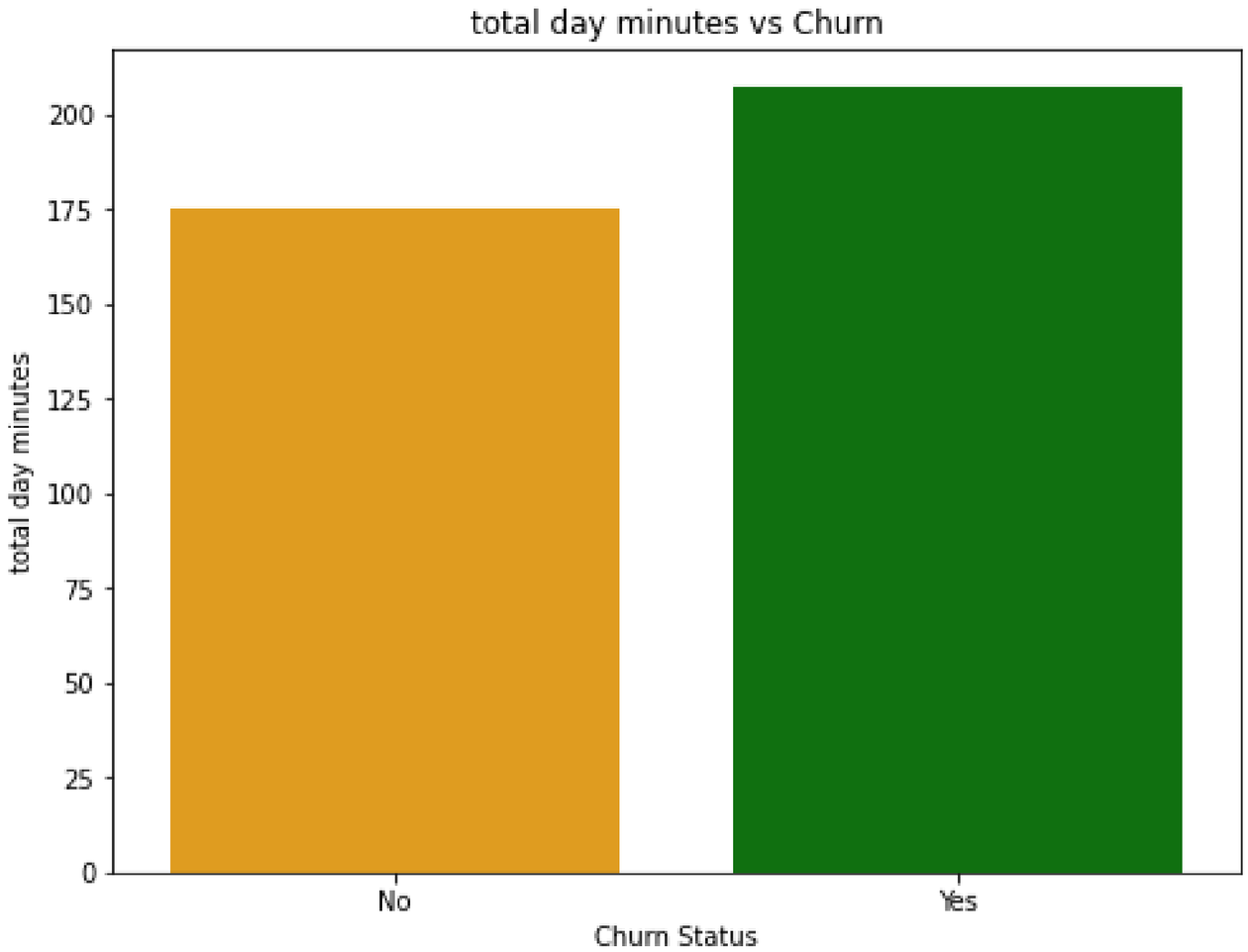
The aim of this project is to analyze customer minutes, calls, charge and other variables to predict whether a customer will churn doing business or not with Syriatel.

Distribution of customer churn



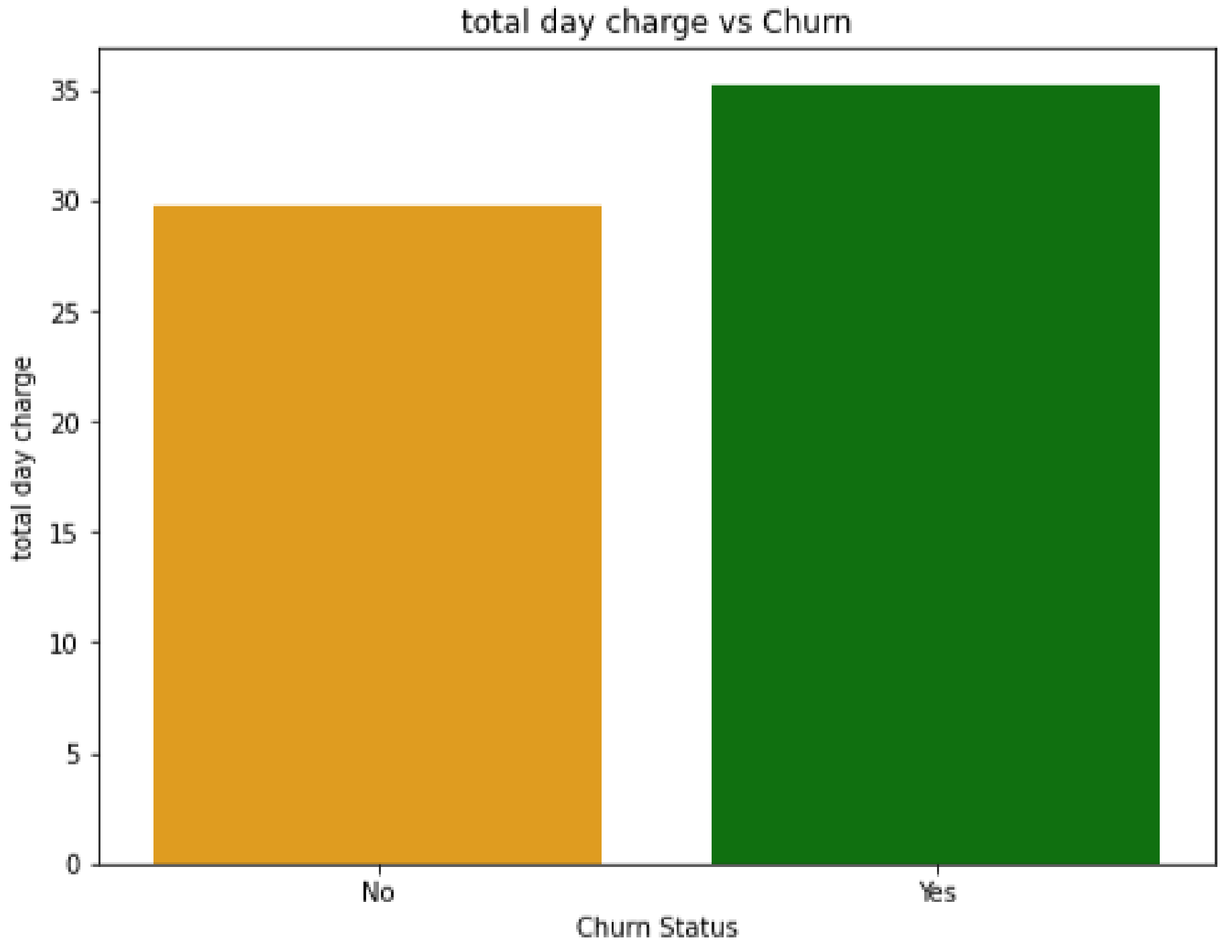
14.49% of the customers would churn the business while 85.51% would not churn.

Total Day minutes vs Churn



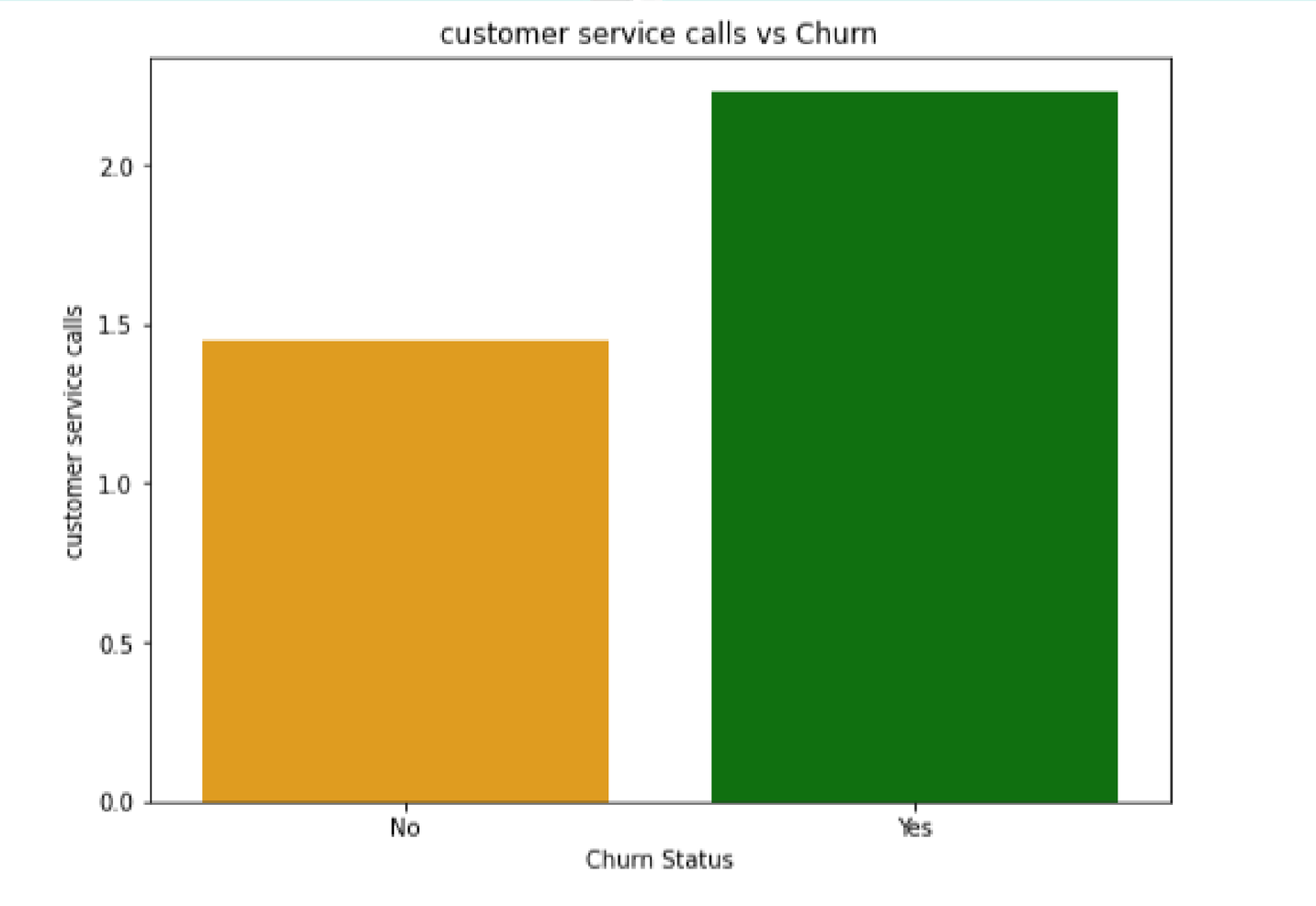
Customers with high number of minutes used during the day are more likely to churn.

Total Day charge vs Churn



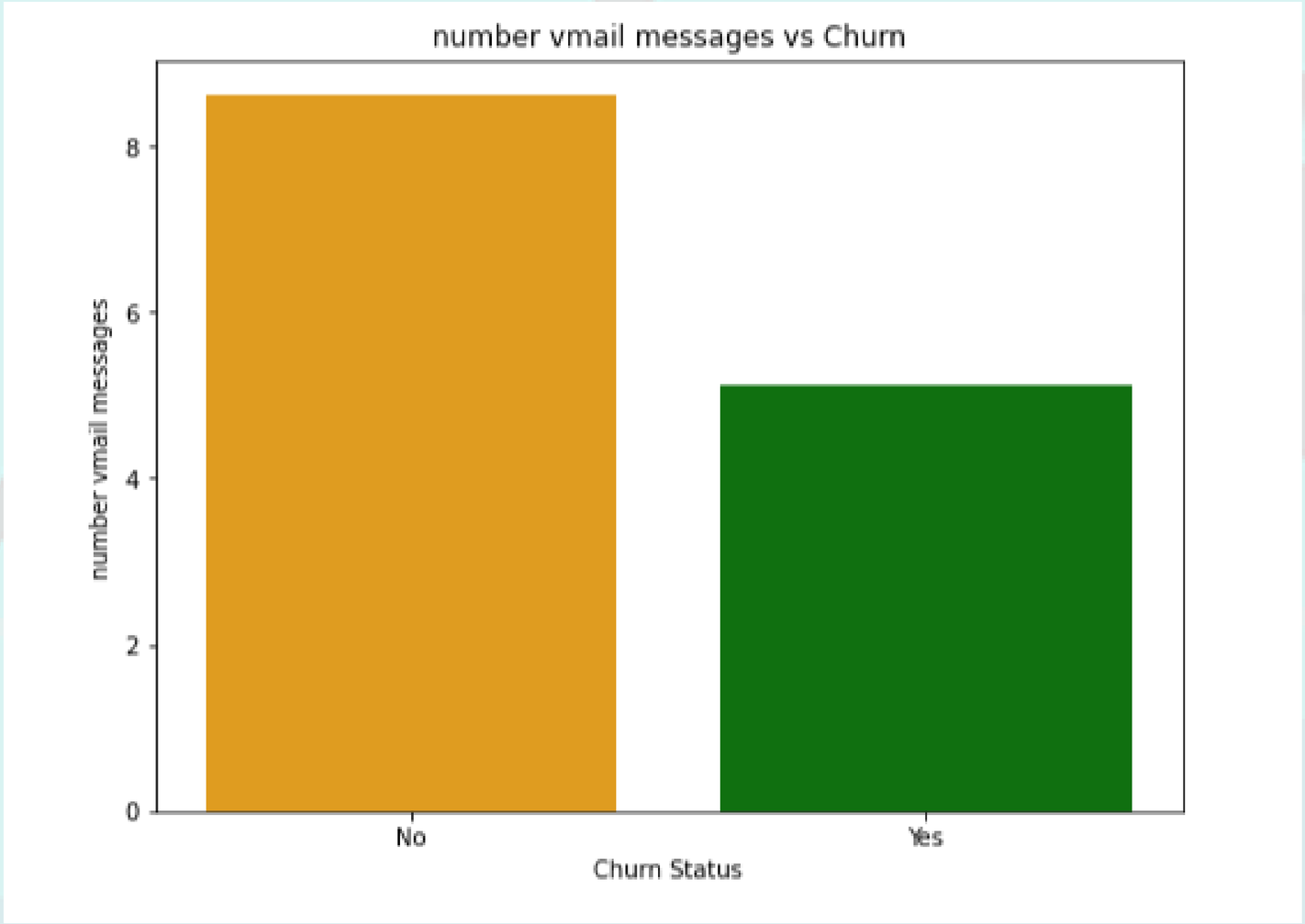
Customers with a high charge on day time usage are more likely to churn.

Customer Service Calls vs Churn



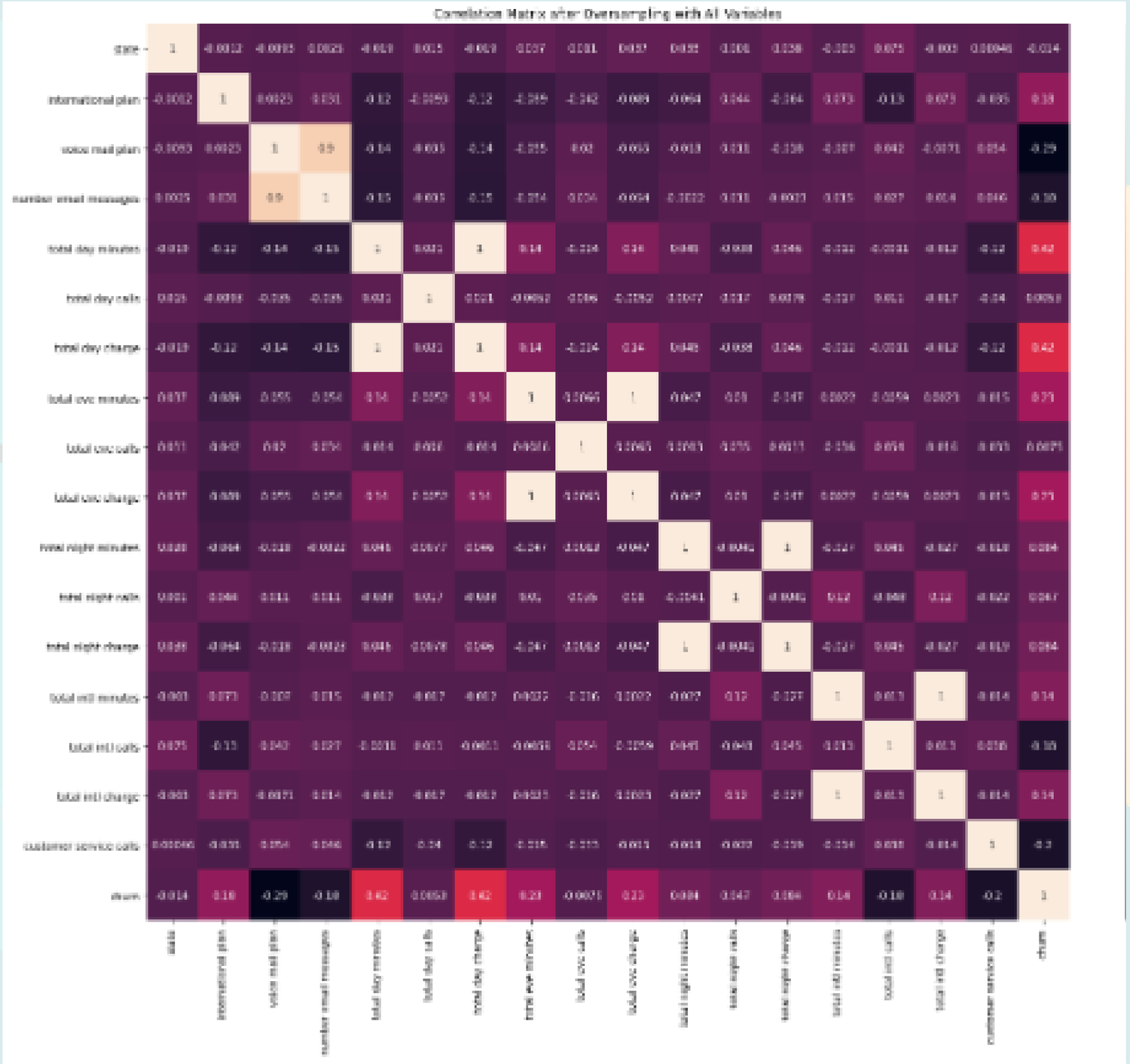
Customers who made more customer service calls are more likely to churn.

Number of Voice Mails vs Churn

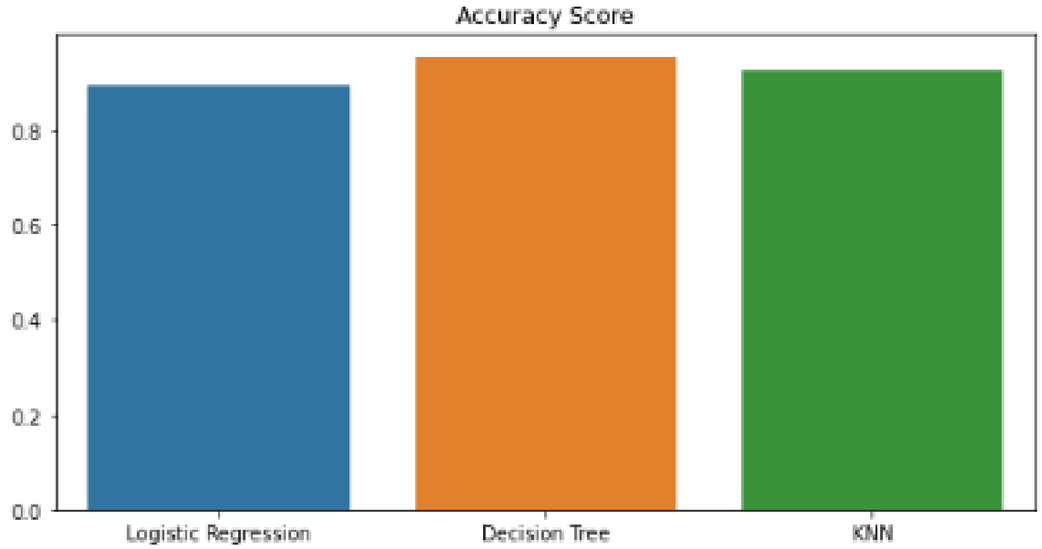


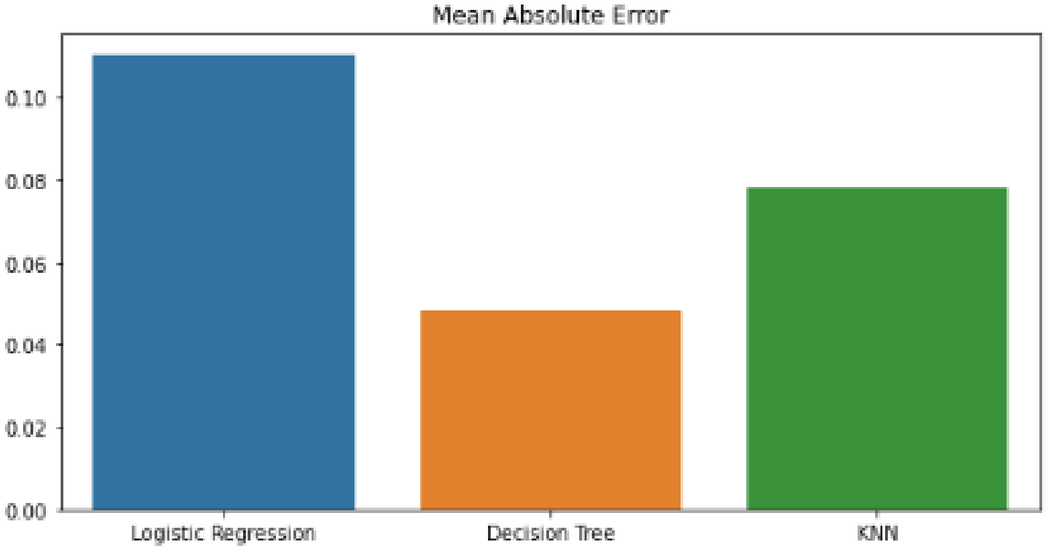
Customers with high number of voice mails are less likely to churn.

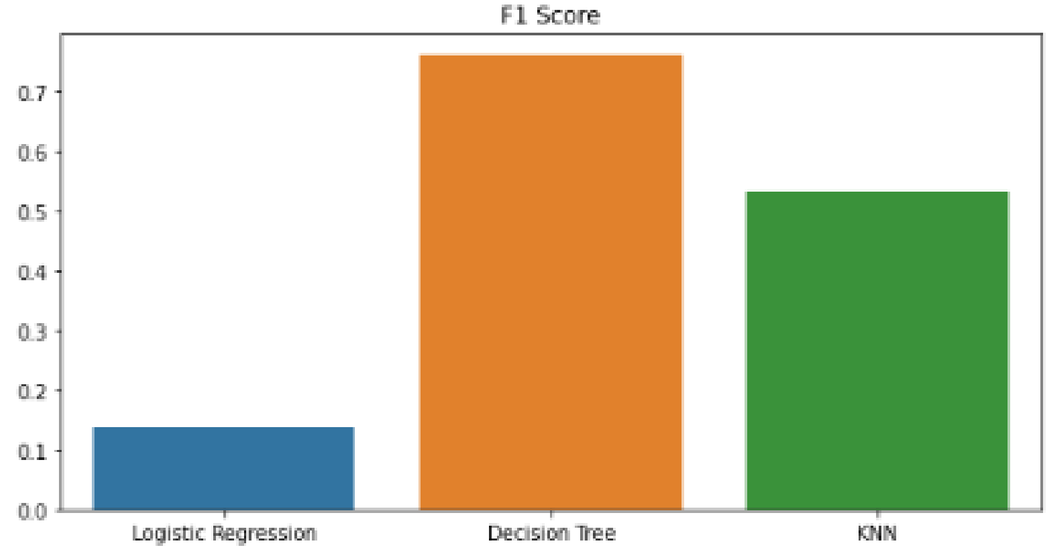
Relationship of all variables



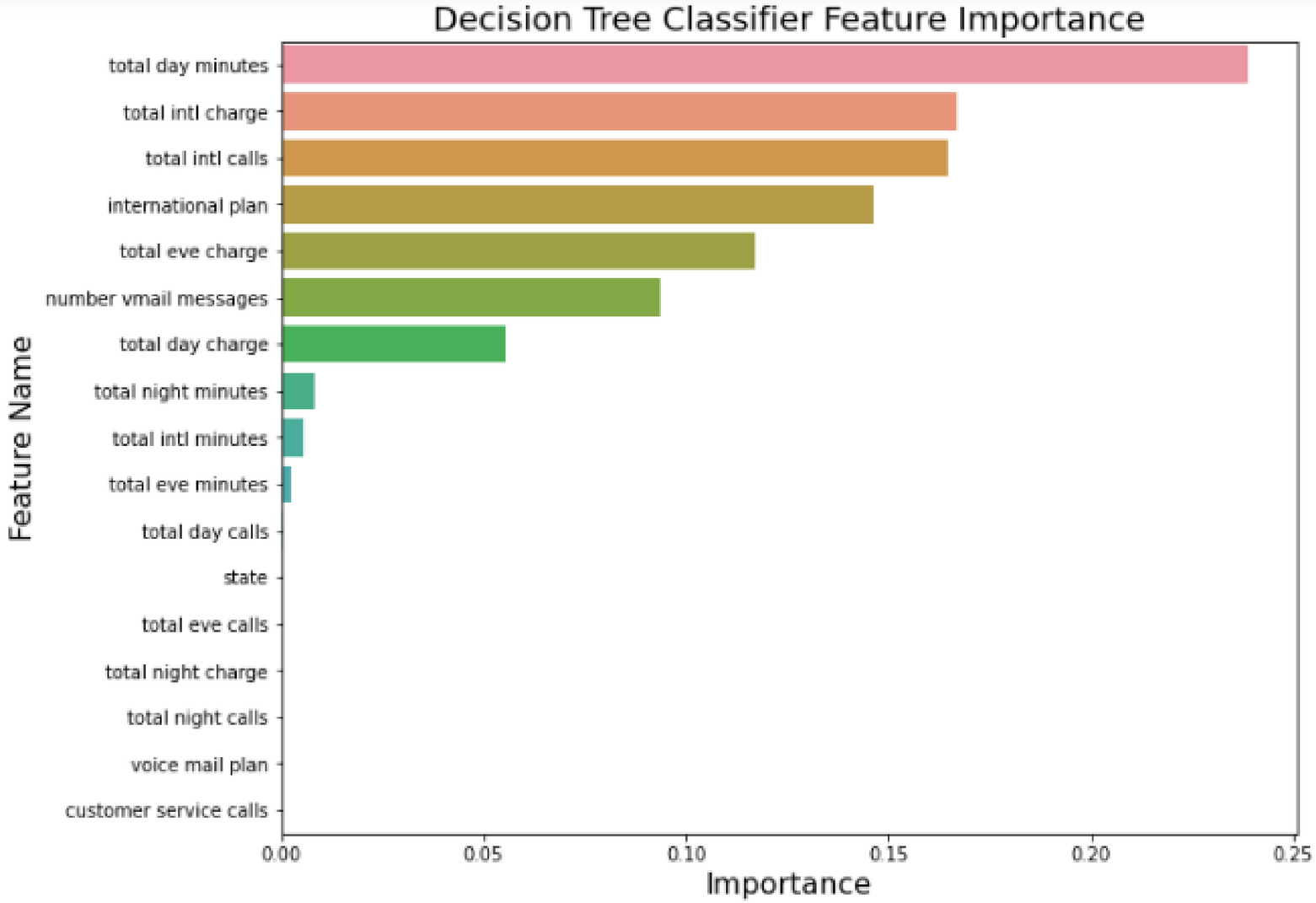
Model Performance





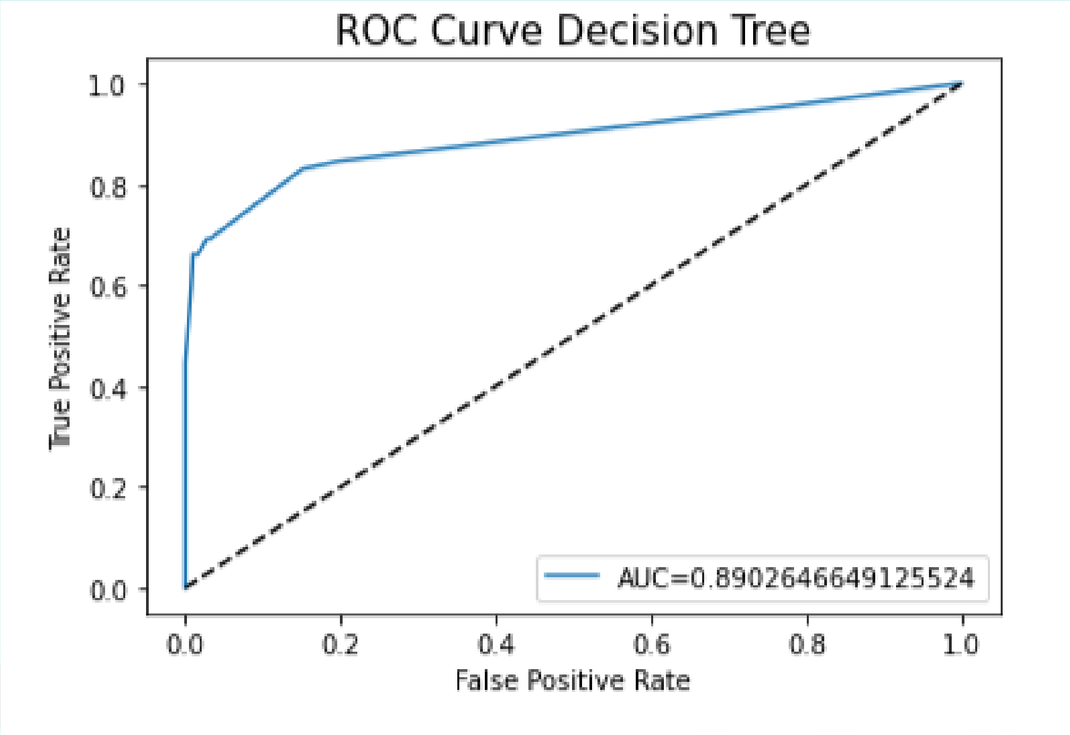


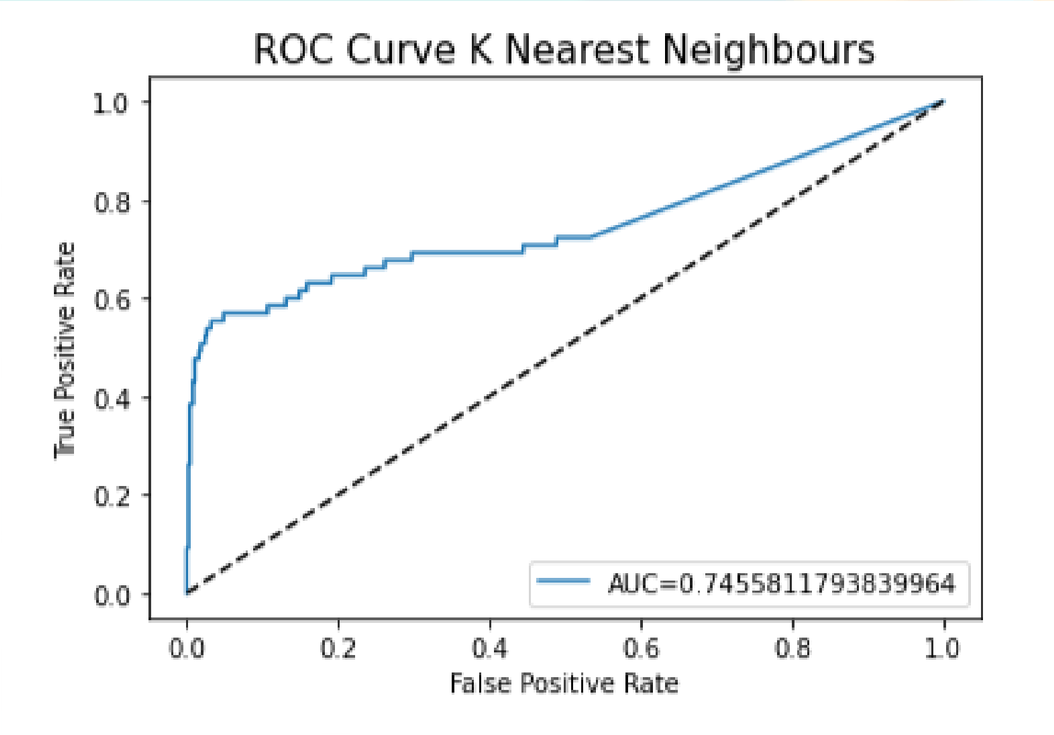
Feature Importance



To curb customer churn, focus on key features: total day minutes, total int'l charge, and total int'l calls, as indicated by the Decision Tree Classifier.

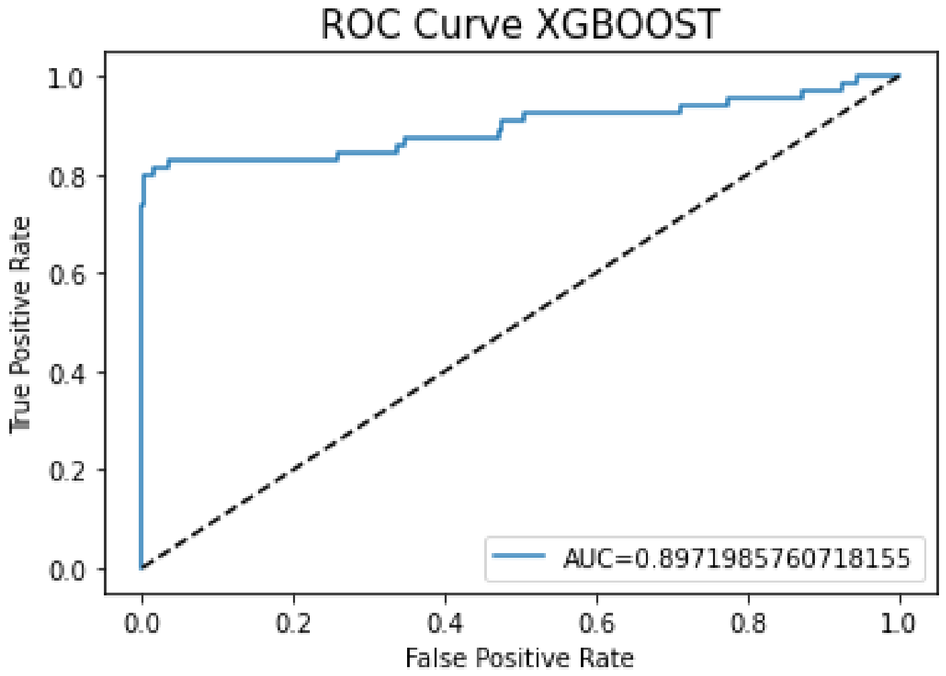
ROC & AUC





The Decision Tree model is performing relatively well with a higher AUC, indicating strong discriminatory power. The KNN model has a lower AUC but is still acceptable.

XGBOOST

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F-1 Score: 0.9733096085409253
Precision Score: 0.9733096085409253
Recall Score: 0.9733096085409253
Jaccard Score: 0.9480069324090121
Log Loss: 0.9620192185707428
```

After using XGBoost to increase our model performance the AUC increased a little from 0.890 to 0.897 and an accuracy score 97.33% in comparison to Decision Tree with an accuracy score of 95.2%.

Conclusion and Recommendations

Insights from EDA:

- High international calls correlate with lower churn.
- High day minutes and charges increase churn.
- More customer service calls lead to higher churn.
- Customers with more voice mails are less likely to churn.

Recommendations:

- Promote international calls.
- Lower day charges.
- Focus on customer service resolution.
- Encourage voice mail usage.

Conclusion and Recommendations Cont’

Decision Tree Model:

- Highest accuracy and F1 score.
- Key features: total day minutes, total intl charge, total intl calls.
- Good fit for predicting churn.

XGBoost Improvement:

- AUC increased to 0.897.
- Accuracy improved to 97.33%.
- Outperformed Decision Tree (95.2%)

EXIT
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