Predicting SyriaTel Customer Churn

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Business Case

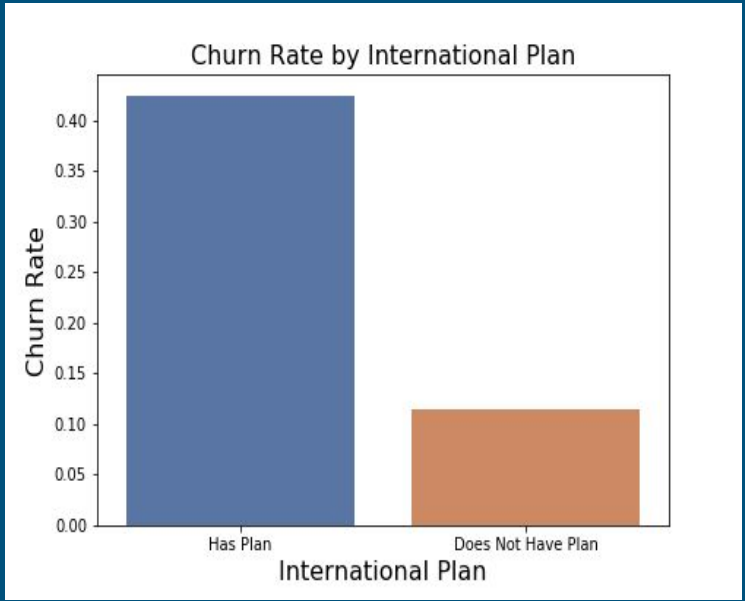
- Why Does SyriaTel have such a high rate of churn?
- Industry Standard - 3-4%
- SyriaTel - Over 14%!
- But Why?

Dataset

- Kaggle
- 3,333 observations and 20 features
- Significant Class Imbalance (Churn is Minority Class)

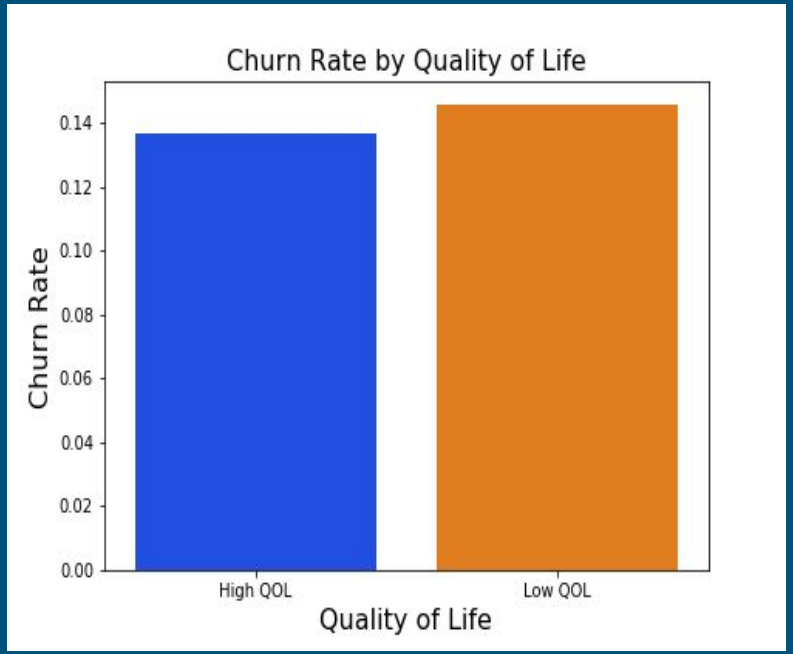
EDA/Statistical Testing

- International Plan
- Proportion Test
- Test Statistic of 15
- P Value of 7.15x10^-51



EDA/Statistical Testing Continued

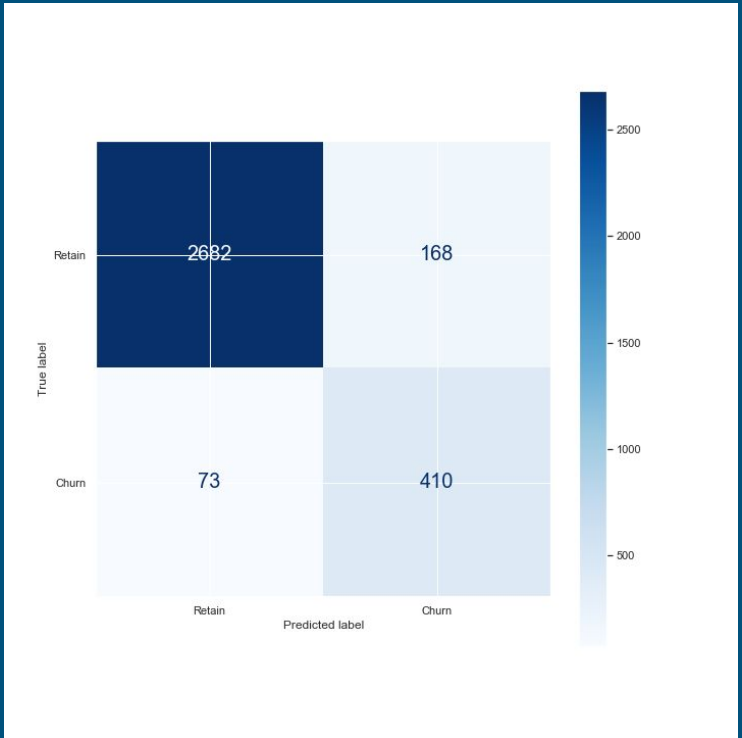
- Feature Engineering
- Quality of Life
- Proportion Test
- Test Statistic of -.40
- P Value of .689
- Dropped!



Modeling

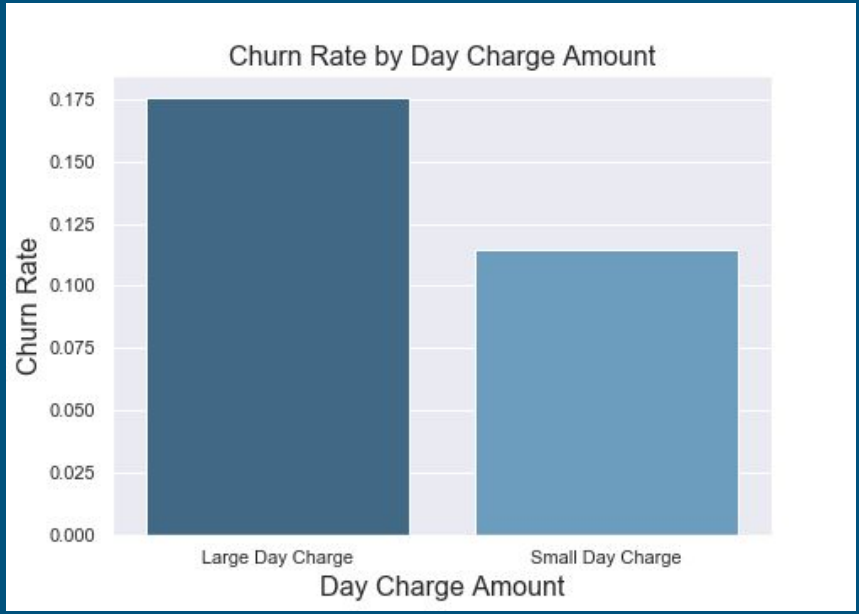
Model Type	Recall Score
Baseline Model	.172
KNN	.369
Decision Tree	.762
Random Forest	.820
XGBOOST	.754

Confusion Matrix



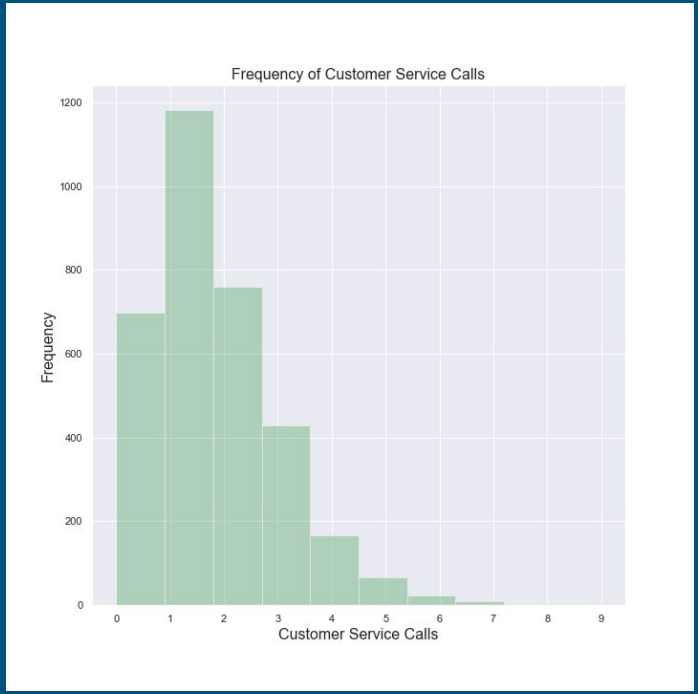
Post-Modeling Analysis/Conclusions

- Total Day Charge
- High Churn Rate
- Possibly Lower Rates?



Conclusions Continued

- Customer Service Calls
- Why are there so many?
- Poor Service?
- Billing Issues?



Next Steps

- Improve Precision Score
- Create a model to predict customer service calls to investigate what causes SyriaTel customers to call customer service so frequently

Any Questions?