SyriaTel Customer Churn Prediction Model

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Introduction

Introduction

Customer churn is the percentage of customers that stopped using company's product or service during a certain time frame.The goal of this project is to build a classifier to predict potential churning customers and suggest recommendations to keep the customers.

Business Problem

Business Problem

Customer churn is one of the most important metrics for a growing business to evaluate as it is much less expensive to retain existing customers than it is to acquire new customers. Customers in the telecom industry can choose from a variety of service providers and actively switch from one to the next.The technical progress and the increasing number of operators has raised the level of competition. Companies are working hard to survive in this competitive market depending on multiple strategies. This becomes a problem, as Telecom companies usually incur huge costs to attract subscribers.Since it is costly to lose customers, the goal is to use this data to build a classifier that can predict which customers will stop dealing with them for another provider, and identify how the company can avoid the loss of those customers.

Objectives

Objectives

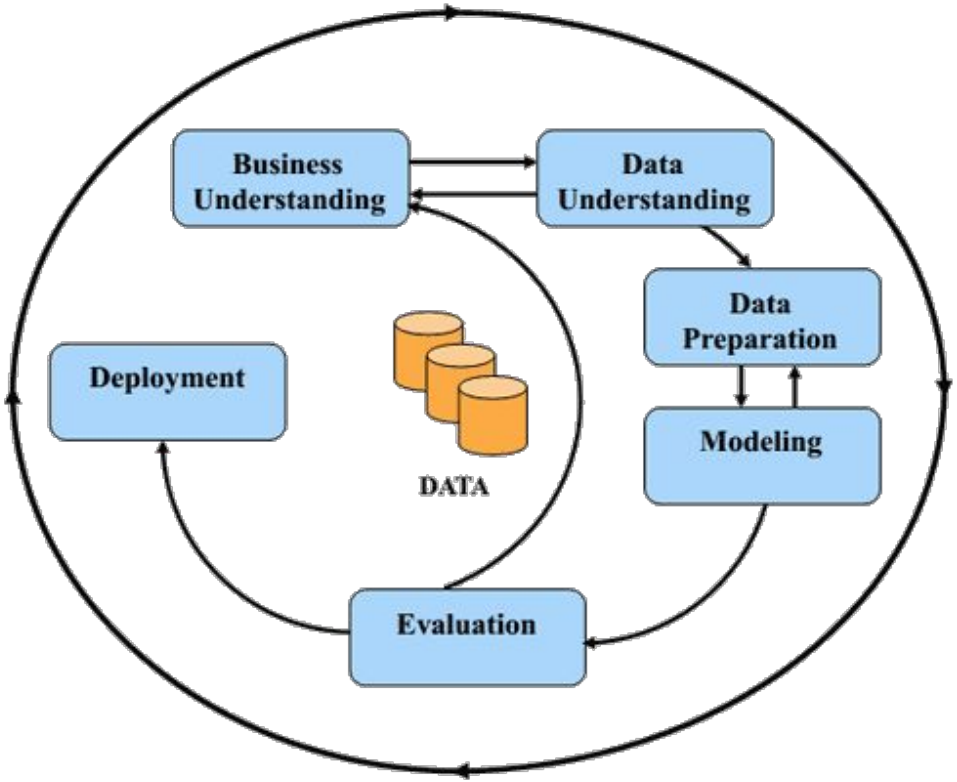
To build a ML model that predicts the customers that are most likely to churn with an acceptably high accuracy.

To compare different ML models predictions to achieve highest accuracy.

Identify customers that are likely to churn.

Advice the Company on best the strategy.

Methodology

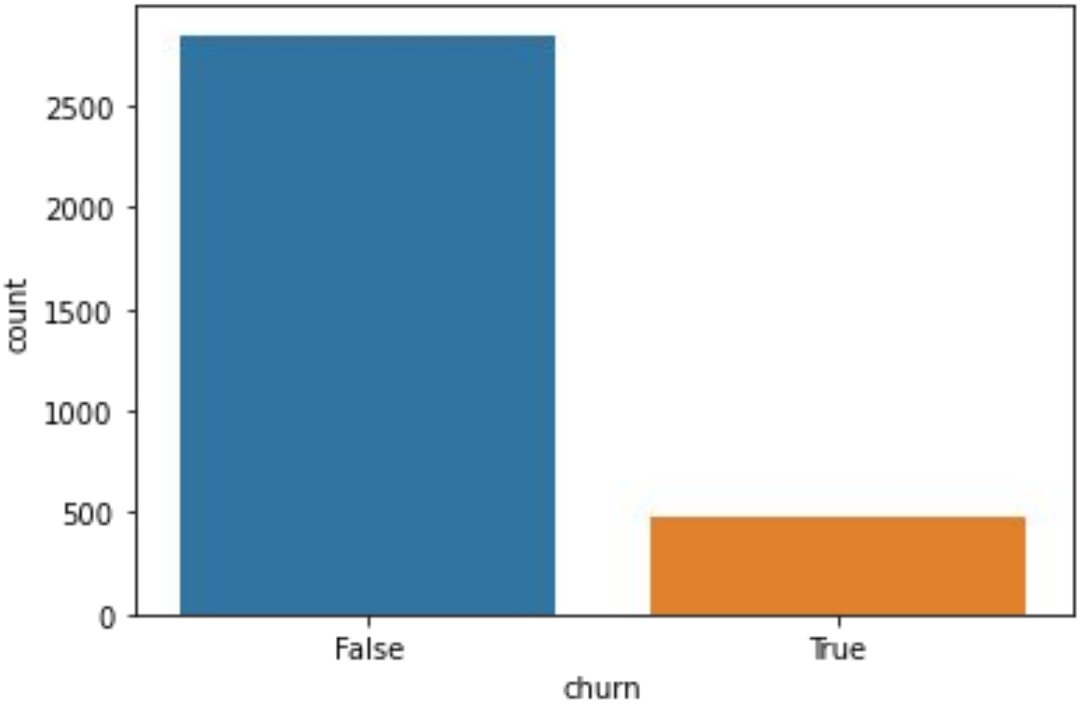


Results

Questions to be answered.

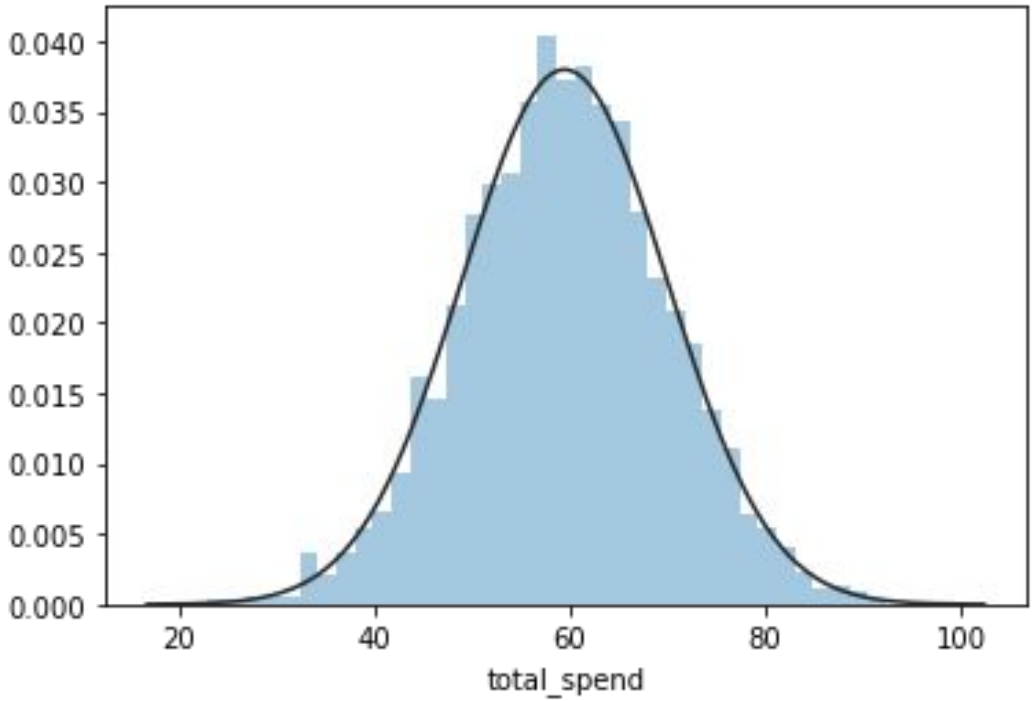
1. What is the total percentage of churn?
2. How much a client is charged for all phone call categories (international, evening, night, and day)?
3. What are the charges for day calls?
4. What is the relationship between customer service calls and customer churn?

What is the total percentage of churn?



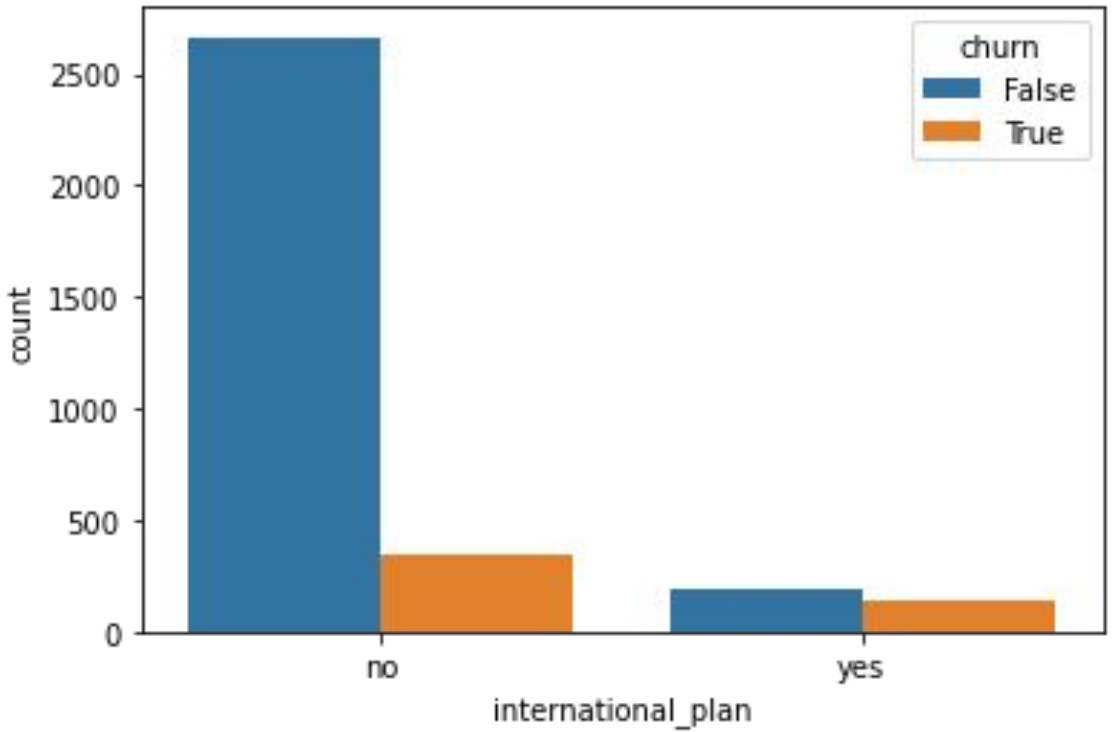
If this sample is a representative of the population of SyriaTel clients, churn is down to 14.5%, 6.5% below the average churn for most telecommunication companies.

How much a client is charged for all phone calls categories ,and day?(international, evening, night)



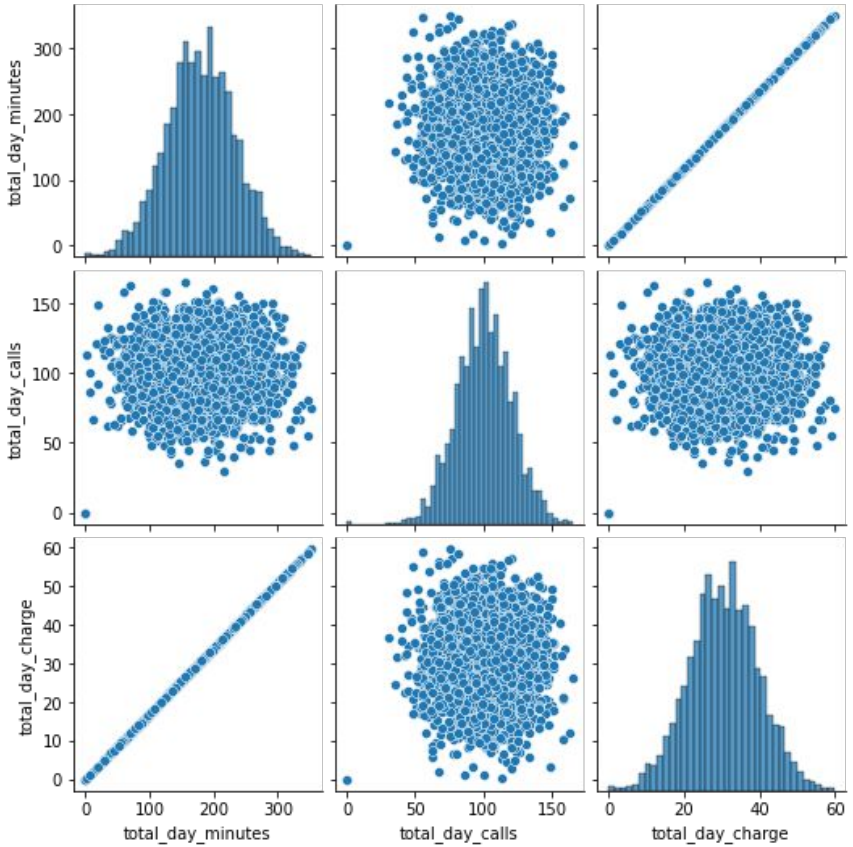
The curve is a normal distribution and alot of people spend $50 - $70

Does the relationship between customer churn behavior and international plan?



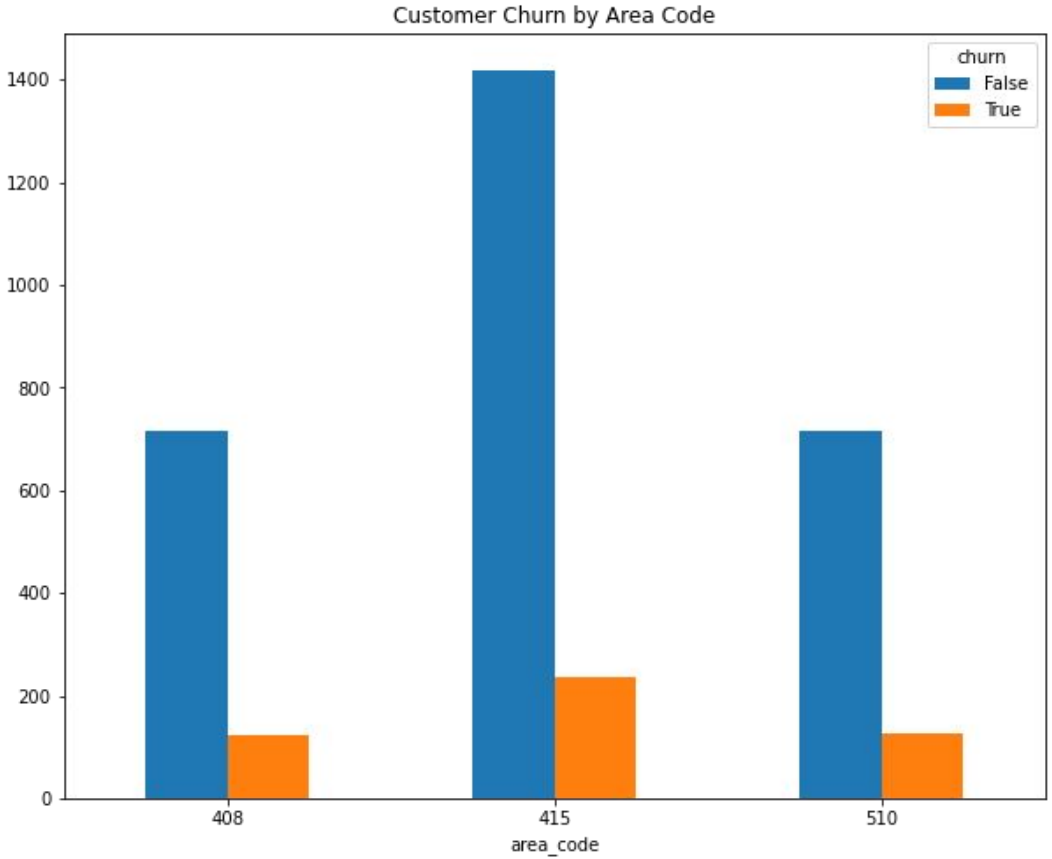
Customers who dont have an international plan tend to stay while those that have international plan tend to churn

Does the relationship between customer churn behavior and international plan?



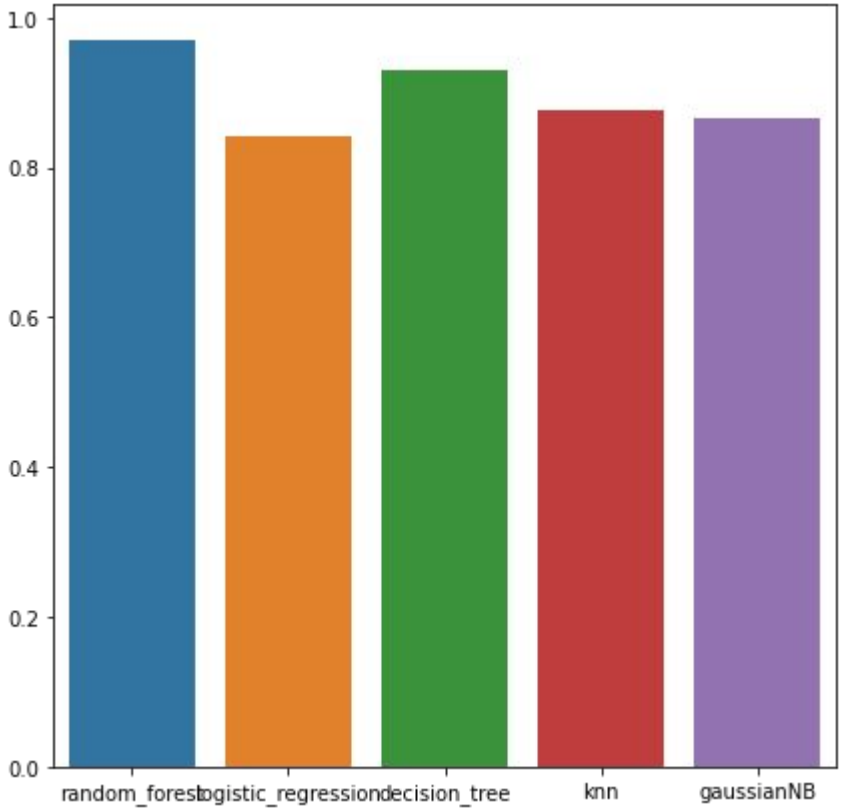
Strong positive correlation between Day charge and Day Mins. Total charge and total day charge have a linear relationship.

Does the relationship between Area code and churn?



Almost half of the customers have area code 415.

Modelling



Summary of results
1. Random Forest Classifier
- Train Accuracy = 100%
- Test Accuracy = 97%
2. Logistic Regression Classifier
- Train Accuracy = 85%
- Test Accuracy = 85%
3. Decision Tree accuracy
- Train Accuracy = 100%
- Test Accuracy = 93%
4. KNN accuracy
- Train Accuracy = 90%
- Test Accuracy = 88%
5. Gaussian accuracy
- Train Accuracy = 88%
- Test Accuracy = 87%

Conclusion and Recommendations

Conclusion

Customers who called customer service more than 3 times tend to leave.

-Customers who have international plan churn at a higher rate than the customers who has not.

-Account length doesn't play a crucial role determining customer churn behavior.

-Customer churn rate is higher for customers who pay more in total. Total charge and total day charge have a linear relationship.

Recommendations

- Customer service should follow-up with the customers who call 3 times and offer promotions or discounts like a free month.
- Syriatel should revisit its international plan and adjust the pricing.
- Syriatel should offer free voice mail plan for everyone.

Thank You :)
Any Questions?