

# **SYRIATEL MOBILE TELECOM**

PRESENTATION

**CUSTOMER CHURN PROJECT**

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# **BUSINESS OVERVIEW**

**The Telecom industry is a very competitive market, these industries like SyriaTel experience an average of 15%-25% annual churn rate. Churn has a strong impact on the lifetime value of the customer because it affects the length of service and the future revenue of the company. Telecom companies spend hundreds of dollars to acquire a new customer and when that customer leaves, the company not only loses the future revenue from that customer but also the resources spent to acquire that customer.**

**This project aims to build predictive models to identify factors that contribute to churn.**

# Business Understanding

**Customer churn refers to the phenomenon where customers or subscribers end their relationship with a company or service provider. By identifying potential churners in advance, SyriaTel can take precautionary measures to retain these customers.**

**Such measures may include:**

- 1. Improved customer service.**
- 2. Addressing the issues that may lead to churn.**
- 3. Making targeted offers and,**
- 4. Targeted market campaigns among others.**

**Churn can have a great significant financial impact on the business as high churn leads to loss of recurring revenue and damage of brand's reputation among many other effects. This project aims to predict customer churn by developing an algorithm to predict the churn rate based on customer usage patterns.**

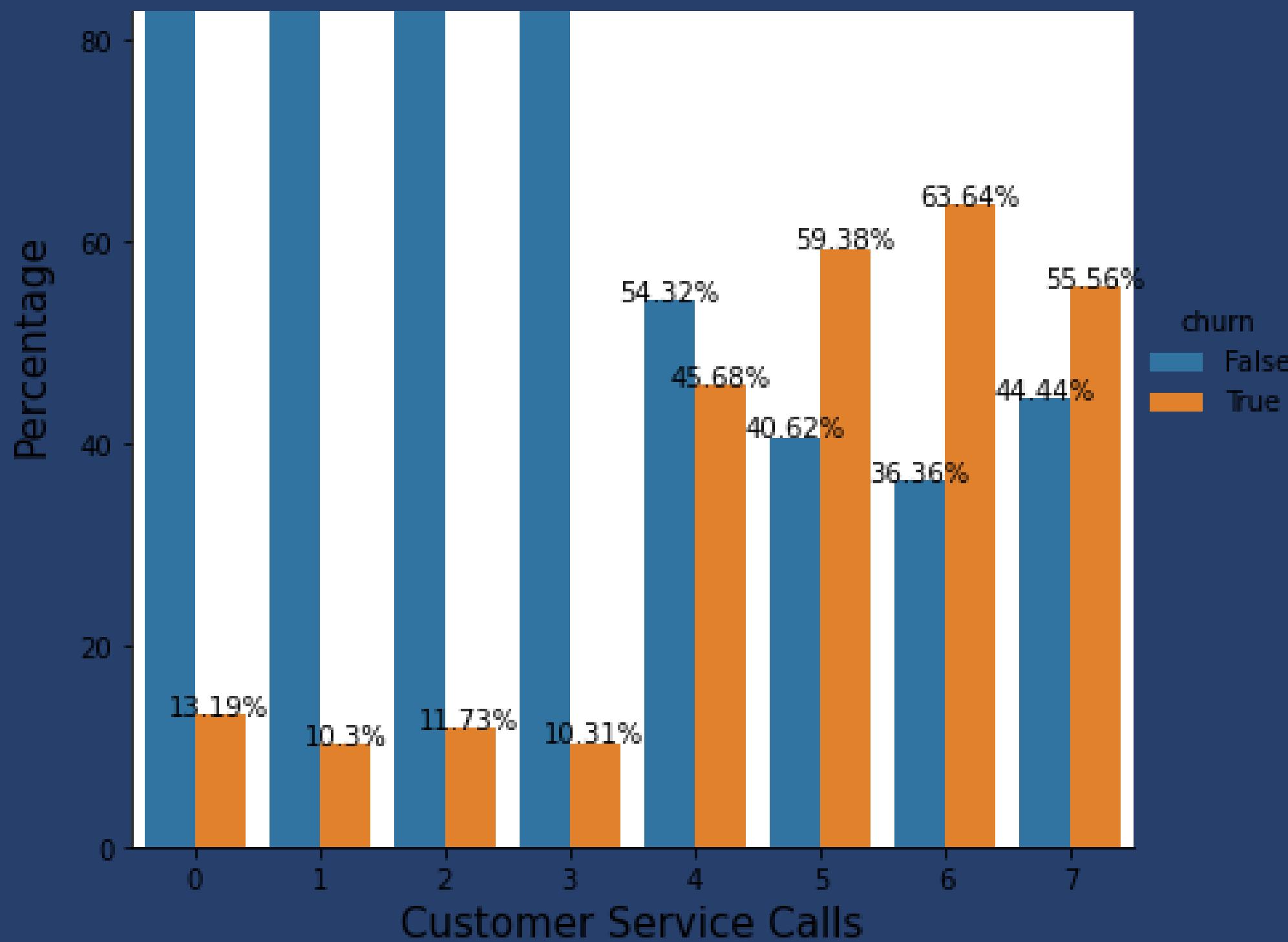
# DATA OVERVIEW

We had {3333 rows, 21 columns}

- The predictors in the dataset were {state, account length, area code, international plan, voice mail plan, voice mail messages, total day minutes, calls and charge, total evening minutes calls and charge, night minutes calls and charge, international minutes calls, and charge }
- The target variable is Churn.

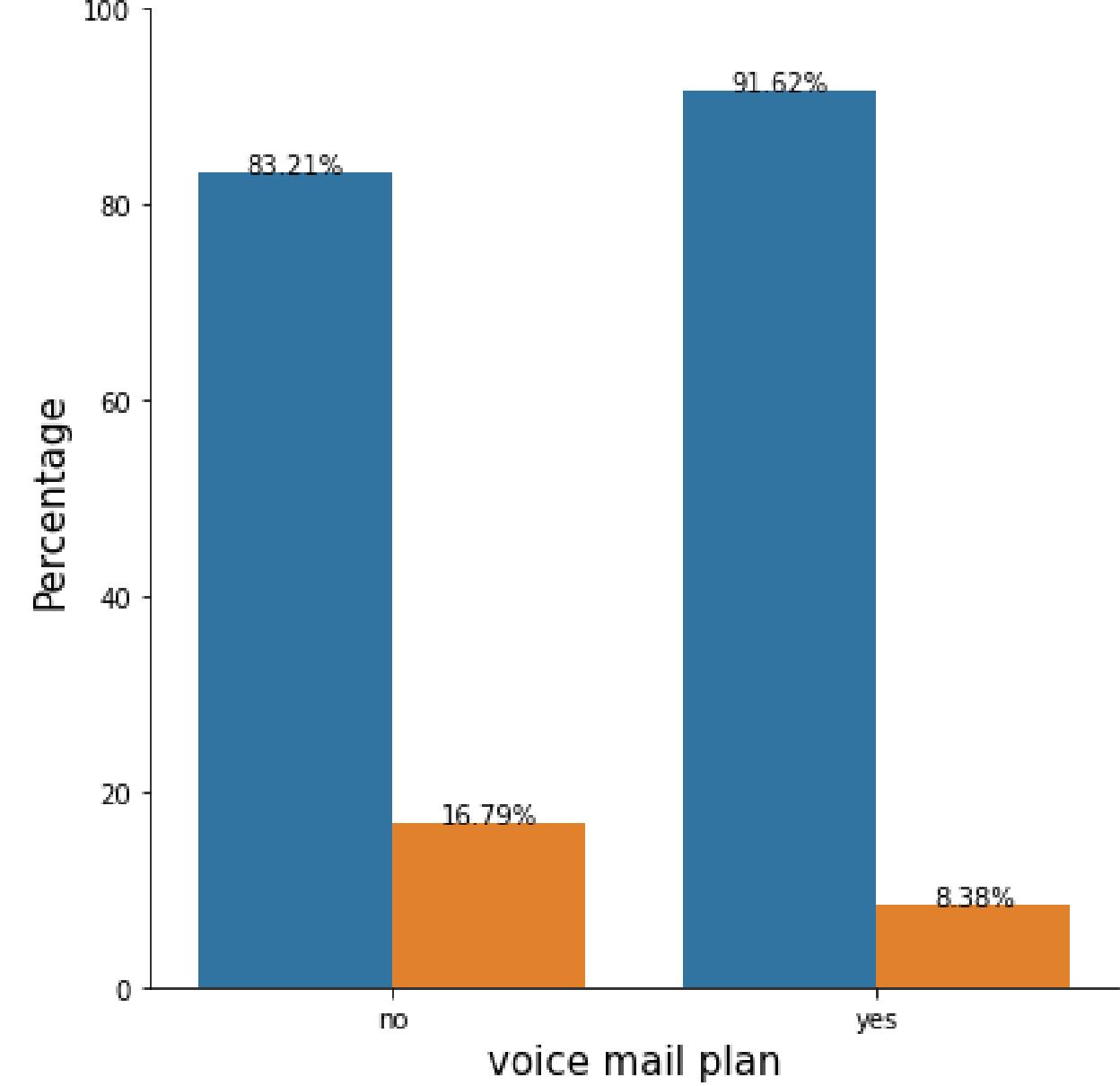
# DATA ANALYSIS

## CUSTOMER CHURN IN RELATION TO CUSTOMER SERVICE



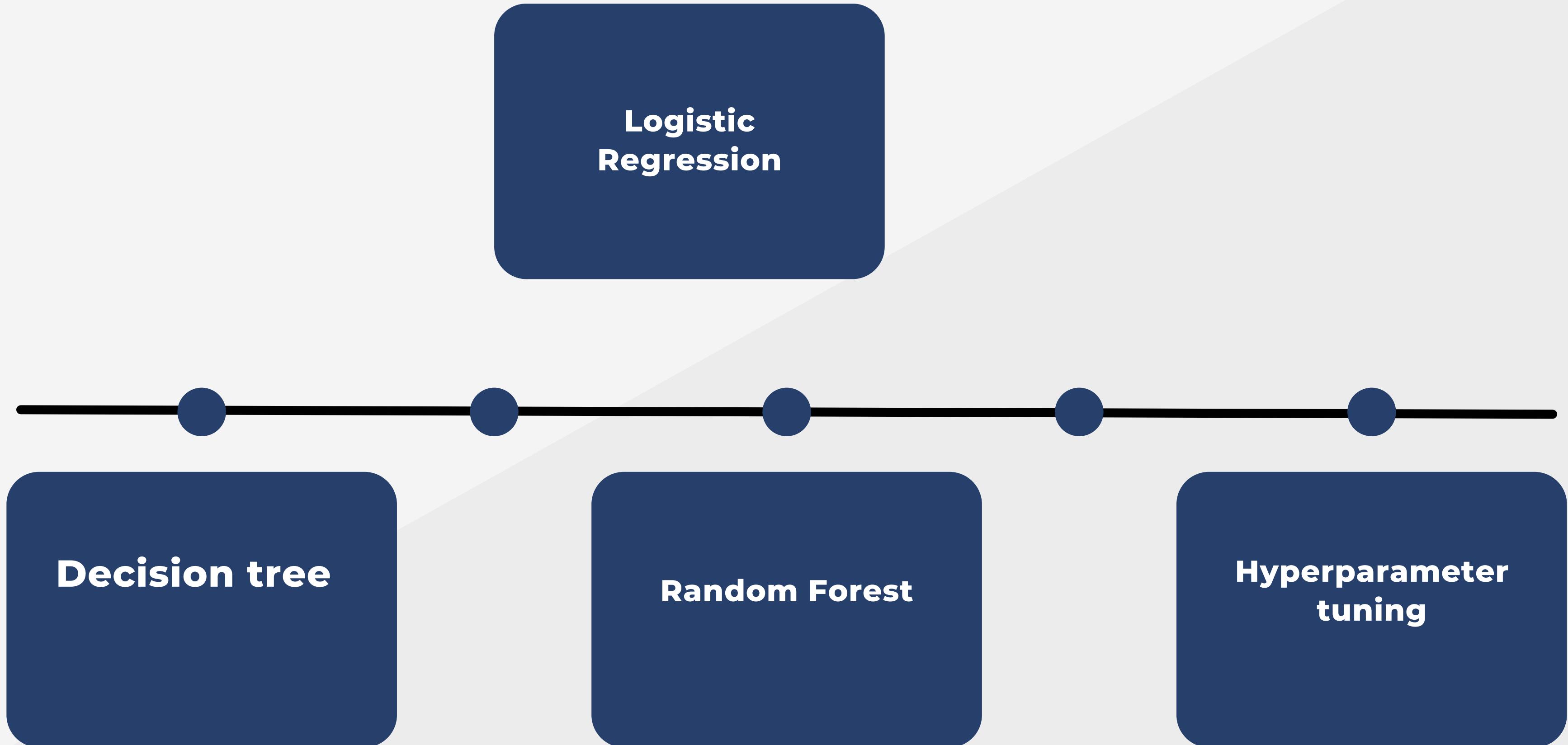
***CUSTOMERS WITH MORE CUSTOMER SERVICE A RE MOST LIKELY TO CHURN.***

Customer Churn with Total number voice mail plan



***CUSTOMERS WITH VOICE MAIL  
HAVE LOW CHURN RATE***

# Modeling



# **METRICS OF SUCCESS**

For evaluation, we use Recall as it measures the proportion of correctly predicted positive instances out of all actual positive instances. Recall focuses on the model's ability to correctly identify positive instances and is useful when the cost of false negatives is high.

# **MODEL EVALUATION**

I used three classification models to predict churn and a more tuned model to improve the evaluation metrics i.e:

- Logistic regression which had a: -Train Accuracy: 65% -Test Accuracy: 63% -Train Recall: 89% -Test Recall: 80%
- Decision Tree which had a: -Train Accuracy: 95% -Test Accuracy: 93% -Train Recall: 75% -Test Recall: 72%
- Random Forest with a: -Train Accuracy: 89% -Test Accuracy: 88% -Train Recall: 23% -Test Recall: 12%
- Tuned Random Forest with a: -Train Accuracy: 94% -Test Accuracy: 95% -Train Recall: 78% -Test Recall: 72%

The best parameters for random forest are criterion 'entropy', Maximum depth of 6, minimum sample leaf of 3, and a minimum sample split of 10



# FINDINGS

- Customers who had more customer service calls are most likely to churn.
- A higher percentage of the customers who churned had an international plan.
- High total day minutes spent potentially lead to a high churn rate.
- Total evening charges and night minutes also increased the churn rate.



A photograph of a man and a woman in professional attire looking at a smartphone together. The man is on the left, wearing a dark suit and white shirt, smiling. The woman is on the right, wearing a dark pinstripe blazer over a white top, also smiling. They appear to be reviewing something on the phone screen.

# **RECOMMENDATIONS**

**Based on the findings I would recommend the company to:**

- Improve the quality of customer service provided**
- Review the international plan.**
- Review the prices and how they charge customers based on the total number of minutes.**

# **NEXT STEPS.**

- 1. New features can be generated from the existing data to provide more insights.**
- 2. Gather additional data on customer churn that could be included in the model to improve the recall.**
- 3. Review the models to reflect the current factors that leads to customer churn.**



# THANK YOU

*We look forward to working  
with you*

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