



CUSTOMER CHURN PROJECT

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OVERVIEW

A Churn is someone who stops to use a given service. The goal of this project is to predict churn ,and what may be features that can lead to customer churning. Accurately predicting , it will help business owners to find insights and come up with a marketing strategy . This will help them to understand ways they can retain customers for profitability



INTRODUCTION

Customer churn is a significant issue faced by companies, especially those in service-based industries like telecommunications. Understanding and analyzing customer churn rates is crucial as it allows for insights into customer behaviour, identification of churn-contributing factors, and implementation of effective retention strategy. The beginning of a relationship can be exciting. It's something new! There's so much to learn. But when it comes to business, that initial honeymoon period too frequently ends after a customer has been successfully on-boarded. There's an over-confidence that gives marketers the false assumption that just because an initial sale was made, additional sales to the same customer will follow. What marketers can fail to realize is that relationships need to be actively and repeatedly nurtured. Awareness of and occasional engagement with a brand is not enough to create a loyal customer strategy.

Challenges

- . The following are causes of customer churn
 - 1. High charges
 - 2 .poor onboarding
 - 3. Weak relationship building
 - 4 .Poor customer services

Solutions

- The solution for churn reduction rate includes:
 - 1 Quality Customer service
 - 2 Affordable charges
 - 3 Show customers their values



PROBLEM STATEMENT

The telecom industry is characterized by high customer churn rates, where customers switch from one service provider to another in search of better services or lower charges. Understanding the factors contributing to this churn is crucial for telecom providers to tailor their services and retain their customers.

This study aims to use different models to predict and identify the key factors contributing to customer churn, and ultimately help the business owners to improve the marketing strategy ,hence customer retention



GOALS AND OBJECTIVES

General Objective

- To develop and implement a ML based solution that leverages data analytics and predictive models to give accurate insights to business owners to enable them make sound decision based on customer churn

Specific Objectives

- To develop a churn prediction model
- To identify the features that contribute to customer churn
- To identify how customer service calls impact on customer churn
 - How does the daily charges impact on customer churn
 - To provide an acumen recommendation based on my analysis

Business Understanding

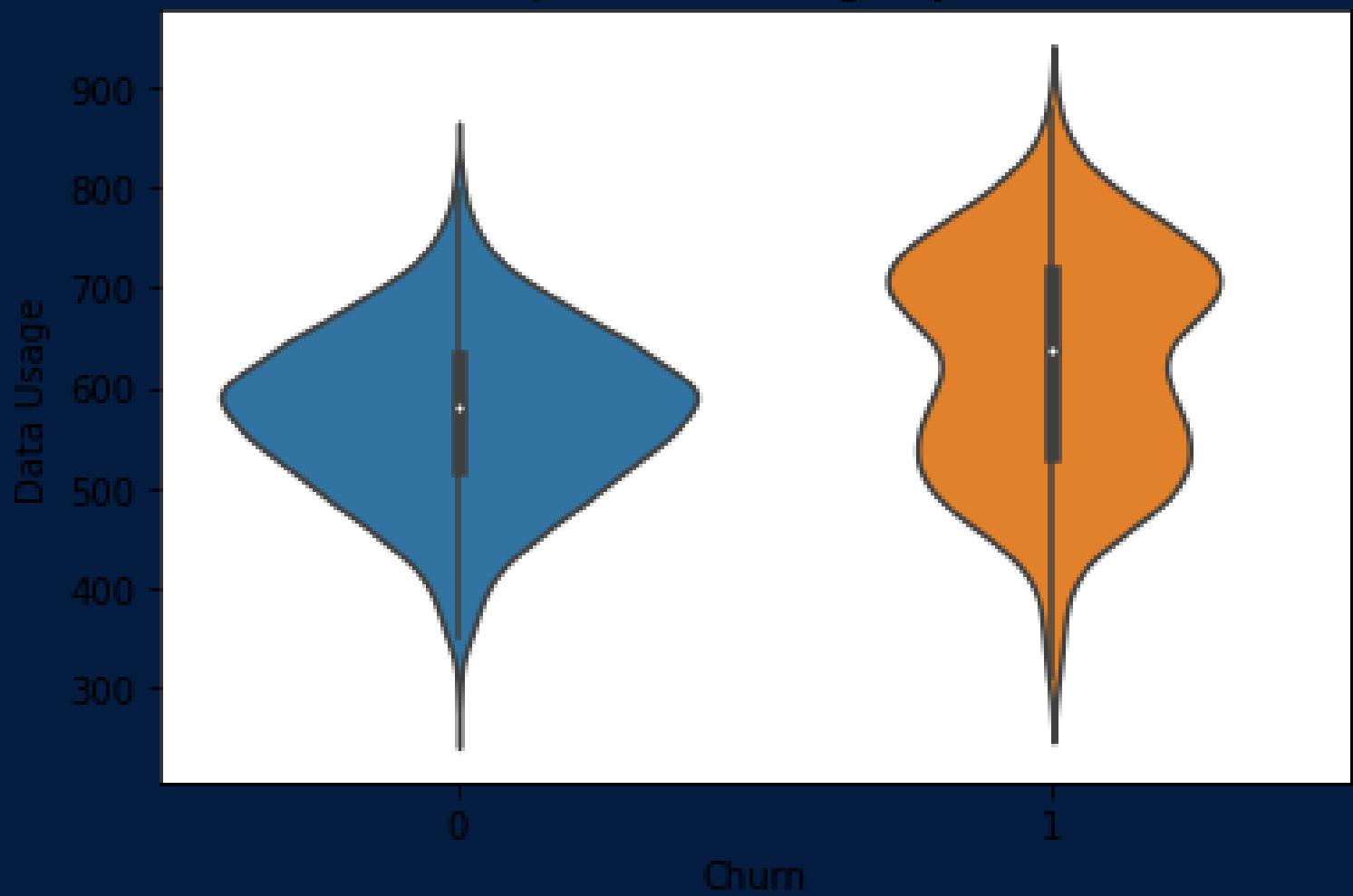
- In this Modeling I'm most interested in figuring out what features affect customer churn more in the dataset. The main focus is how international plan, Data usage, Daily charge, Day minutes, and customer service calls determine if the customer will stay or leave the telecom company.

Data understanding

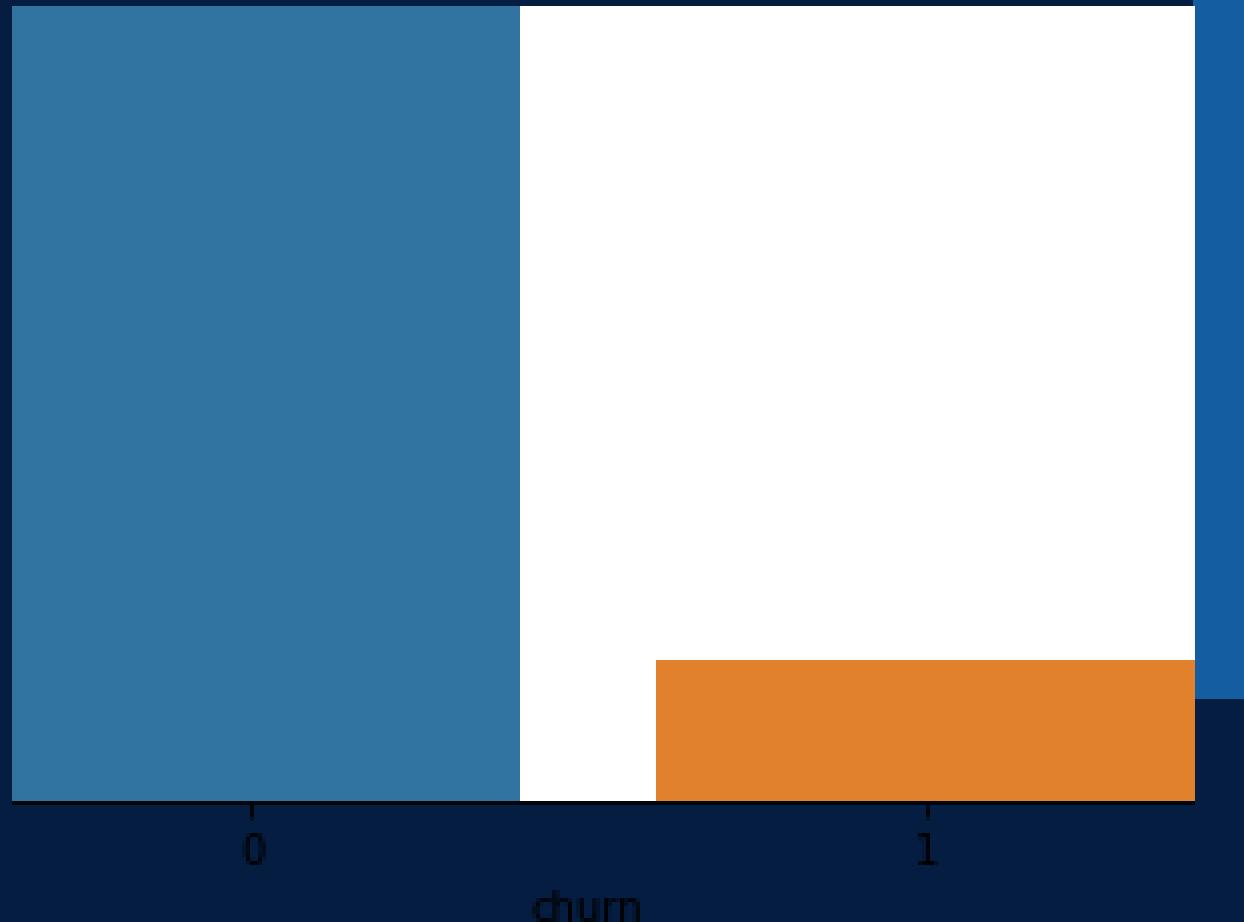
The dataset contains 3333 row with 22 columns
The target is the churn column, where(0 no churn, 1 is churn)
The dataset has no missing values, duplicates and outliers.
The categorical columns i converted them to numeric by .map function.
The data source was from kaggle and the name is telecom churn.
The features/ columns were not in the same scale i had to scale for easier modeling

Data Analysis

violinplot: Data Usage by Churn



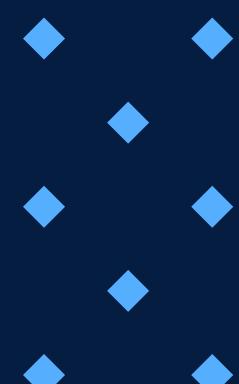
Customers with high data usage left the service
As compared to customers with low data usage



The percentage of customer who left the service were small compared to those who didnt churn

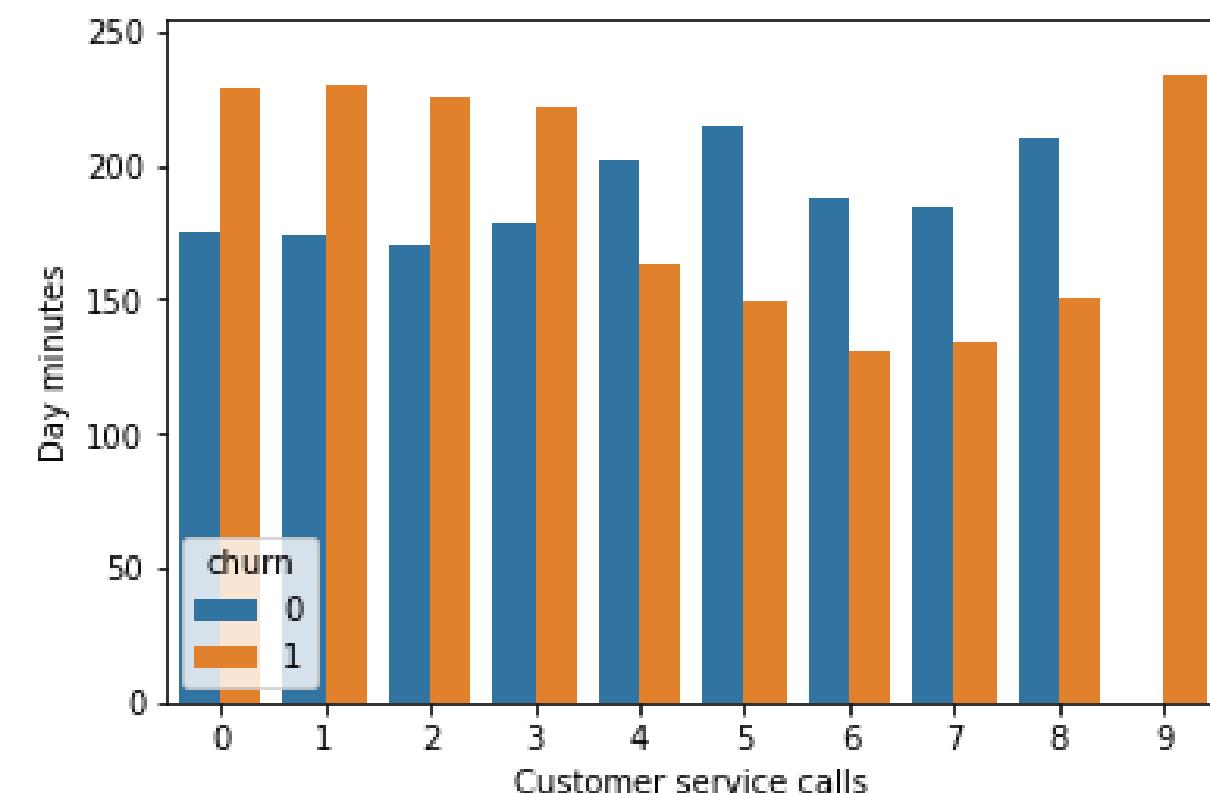
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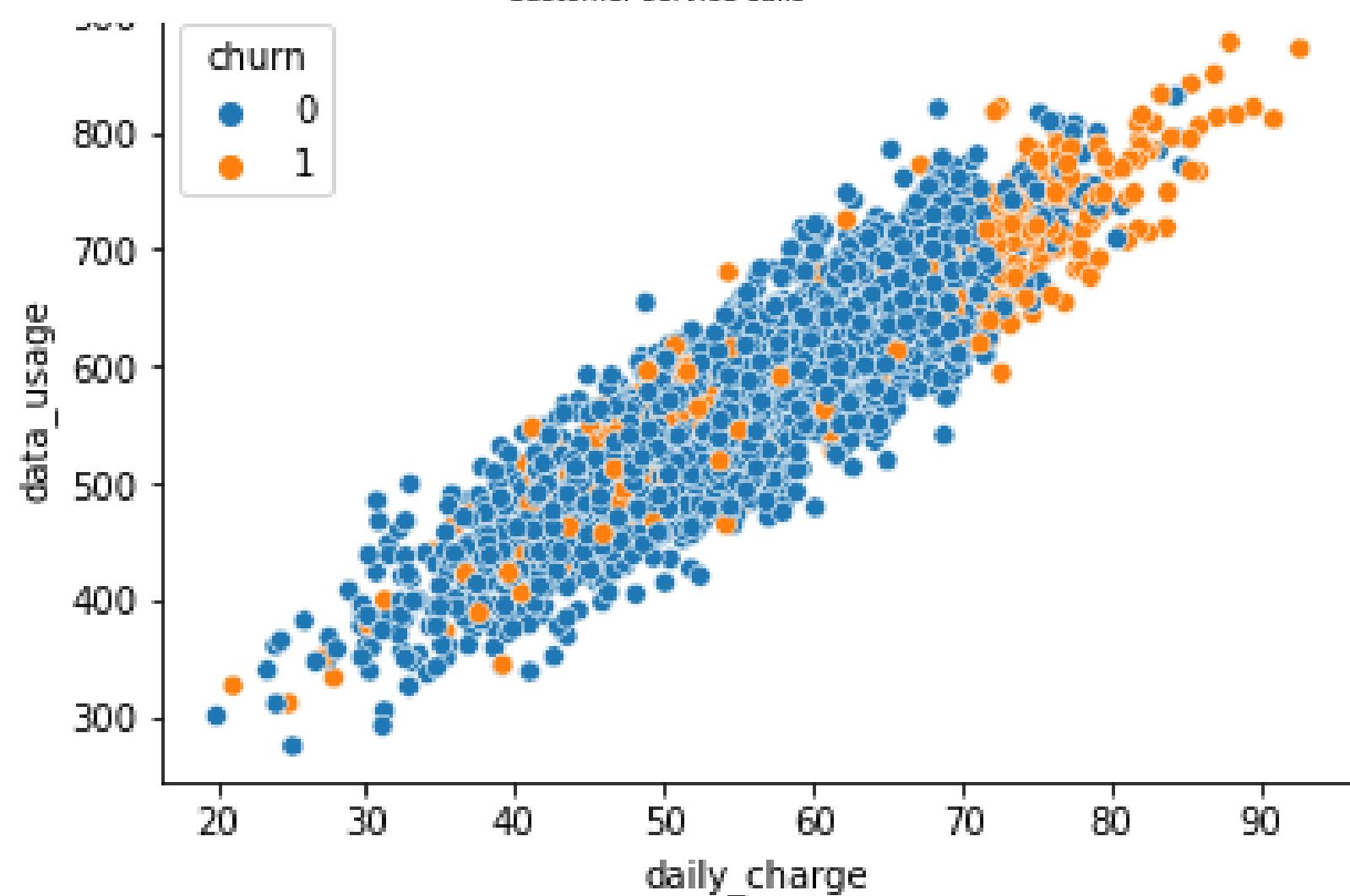
Data analysis on customer services calls vs Day minutes vs churn

Customers with high day minutes and many customers service calls churned



Data analysis on daily charge vs data usage vs churn

As the daily charge increase, so that the data usage leading to customer churn



MODELING

Logistic Regression

Accuracy Score :
Testing data:69.9%
Training data:
70.1%

Decision Tree Classifier

Accuracy score:
Testing data: 89%
Training data: 88%

Random Forest Classifier

Accuracy score :
Testing data : 92.8%
Training data :92%

Voting Classifier

Accuracy score :
Testing data :92%
Training data: 91%

Final Model SMOTE

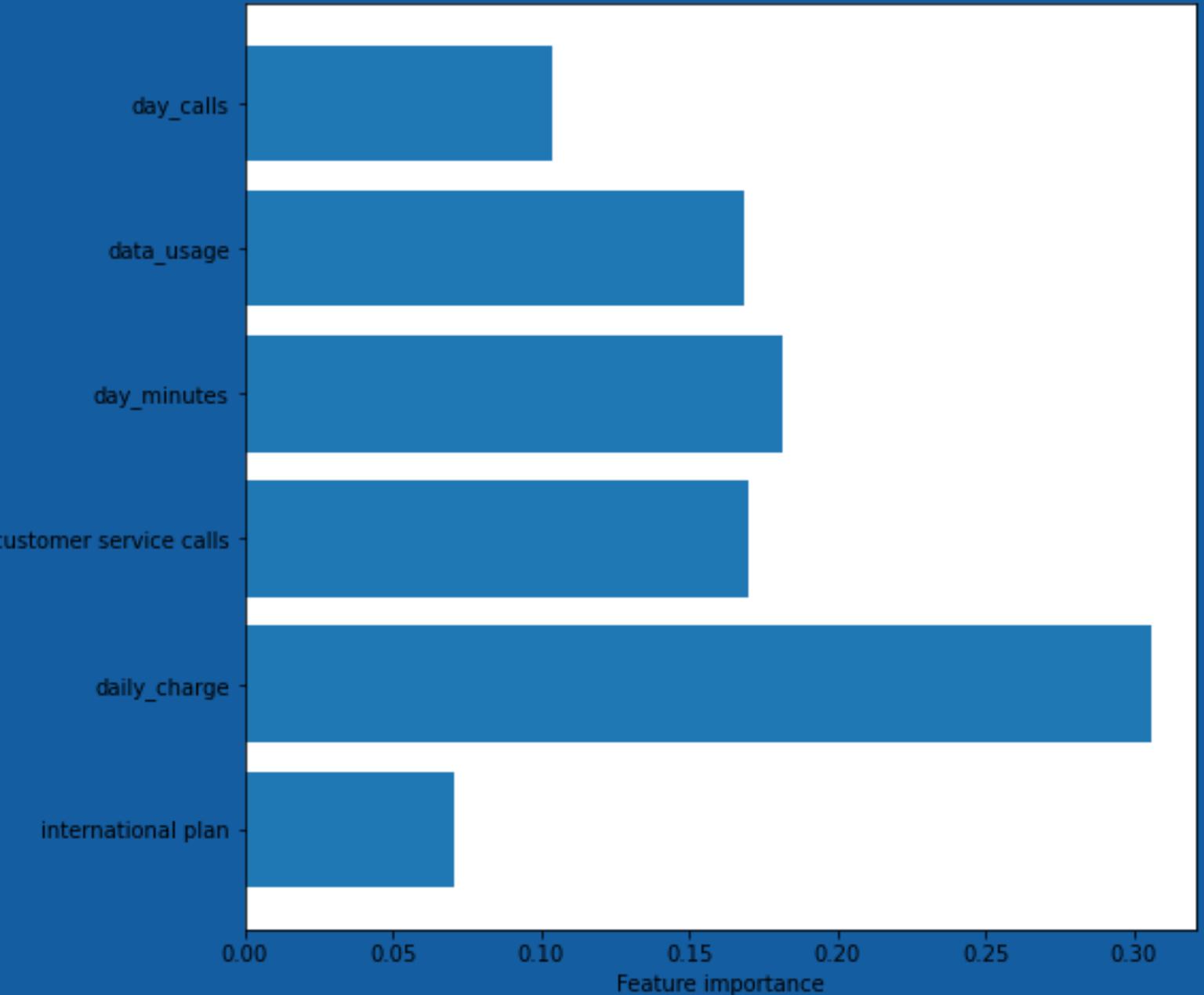
Accuracy score :
Testing data :90%
Training data: 90%

Conclusions

Key features effecting customer churn

Daily charge, customer service calls, day minutes

- Customers with high data usage churned as compared to low data usage .
- The higher the daily charges the higher the customer churn.
- The customer service calls lead to customer churn mostly when the calls were man
- Customers with international plan and data usage was high left the service , almost the same proportion to those who didn't have plan



A photograph showing a group of five people in a modern office environment. They are seated around a long white conference table, engaged in a discussion. One person in the foreground is looking at a laptop screen displaying code. The office has large windows and a high ceiling with exposed ductwork.

RECOMMENDATION

- There is need for improvement on customer service calls for customer retention
- The business owners should revise there charges imposed on customers.
- Business owners should maximize on international plan , to help them identify patterns that contribute patterns that contribute customer satisfaction



Next Steps

- Provide a more balanced data
 - Work on Customer Value
 - Investigate on why 0 to 2 customers service calls had a high impact on customer churn
 - Maximize on customers with no international plan since they didn't churn
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Thank's For Watching

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