Capstone Project – EDA

Telecom Churn Analysis

Individual Project

Uthaman A

Content

- Business Problem Overview
- Objective
- Analysis Based on:
  - **Area Code**
  - **States**
  - **International Plan**
  - **Voice Mail Plan**
  - **Customer Service Calls**
- Challenges
- How to Reduce Customer Churn
- Conclusion

Business Problem Overview

- Customer churn prediction is extremely important for any business as it recognizes the clients who are likely to stop using their services.
- In the telecom industry, customers are able to choose from multiple service providers and actively switch from one operator to another. In this highly competitive market, the telecommunications industry experiences an average of 15-25% annual churn rate.
- For many incumbent operators, retaining high profitable customers is the number one business goal.
- To reduce customer churn, telecom companies need to predict which customers are at high risk of churn.
- In this project, you will analyse customer-level data of a leading telecom firm, do exploratory data analysis to identify the main indicators why customers are leaving the company.

Objective

- Finding factors which influence customers to churn.
- Retain churn customers by applying strategy.
- Providing offers based on influencing factors.
- Control churn rate and improve the image in the in the market.

Data Summary

Data set : Telecom Churn dataset of Orange S.A., formerly France Telecom S.A.

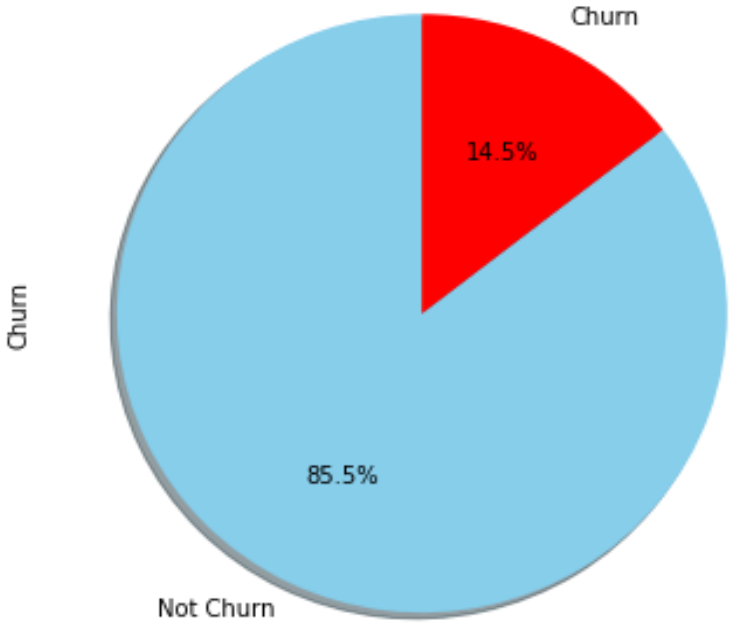
Shape:

-- Rows – 3333

-- Columns – 20

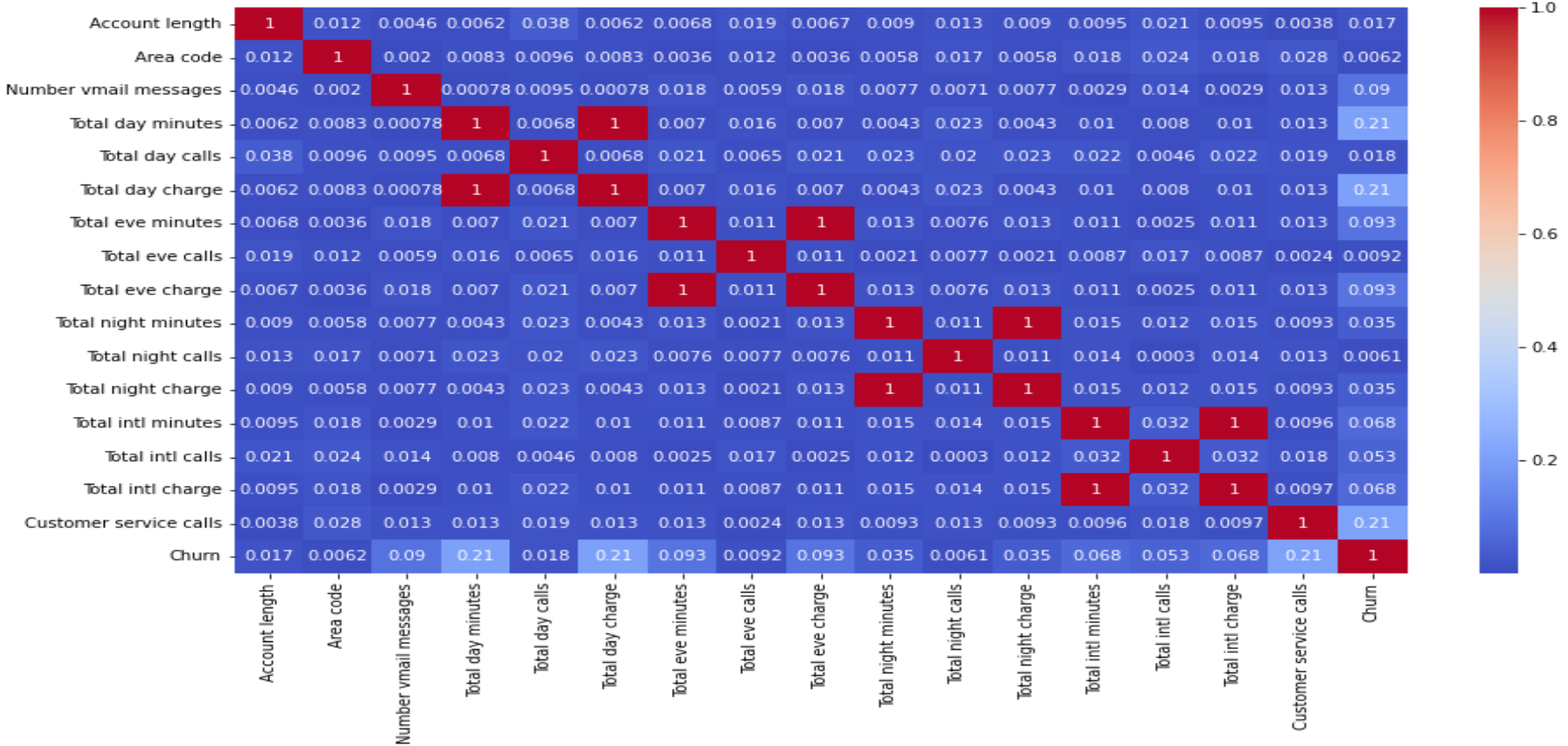
Important Columns : State, Area code, International plan, Voice mail plan, churn, Customer service calls, Total eve calls, Total day calls, Total night calls, Total intl calls.(Probably all columns are important)

Churn Information

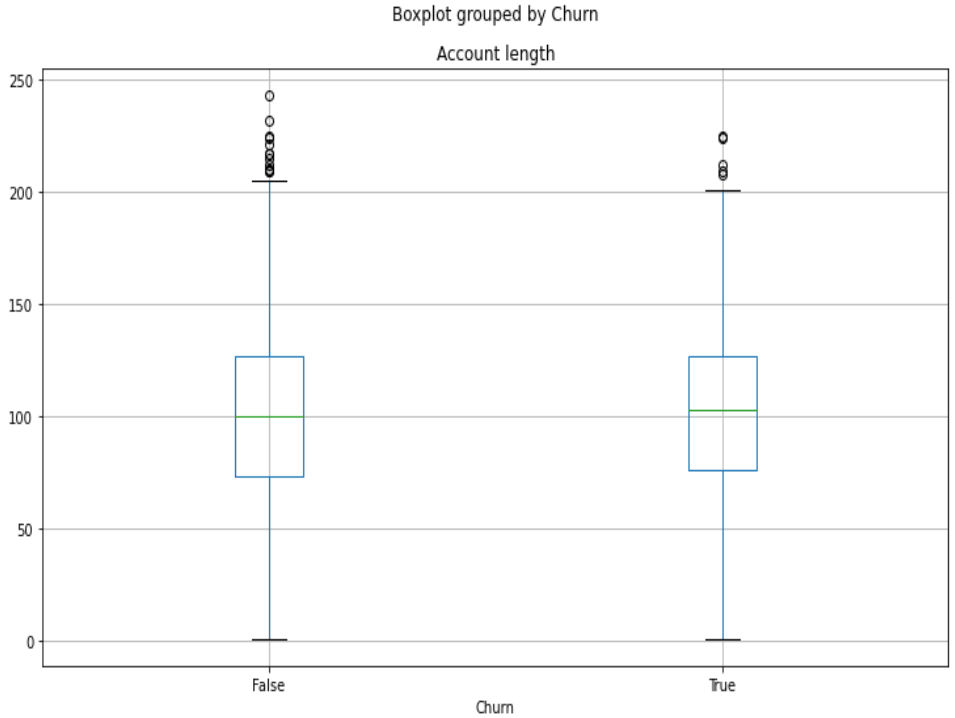


Total Users were 3333.
2850 – Non churn (85.5%)
483 – Churn (14.5%)

Correlation

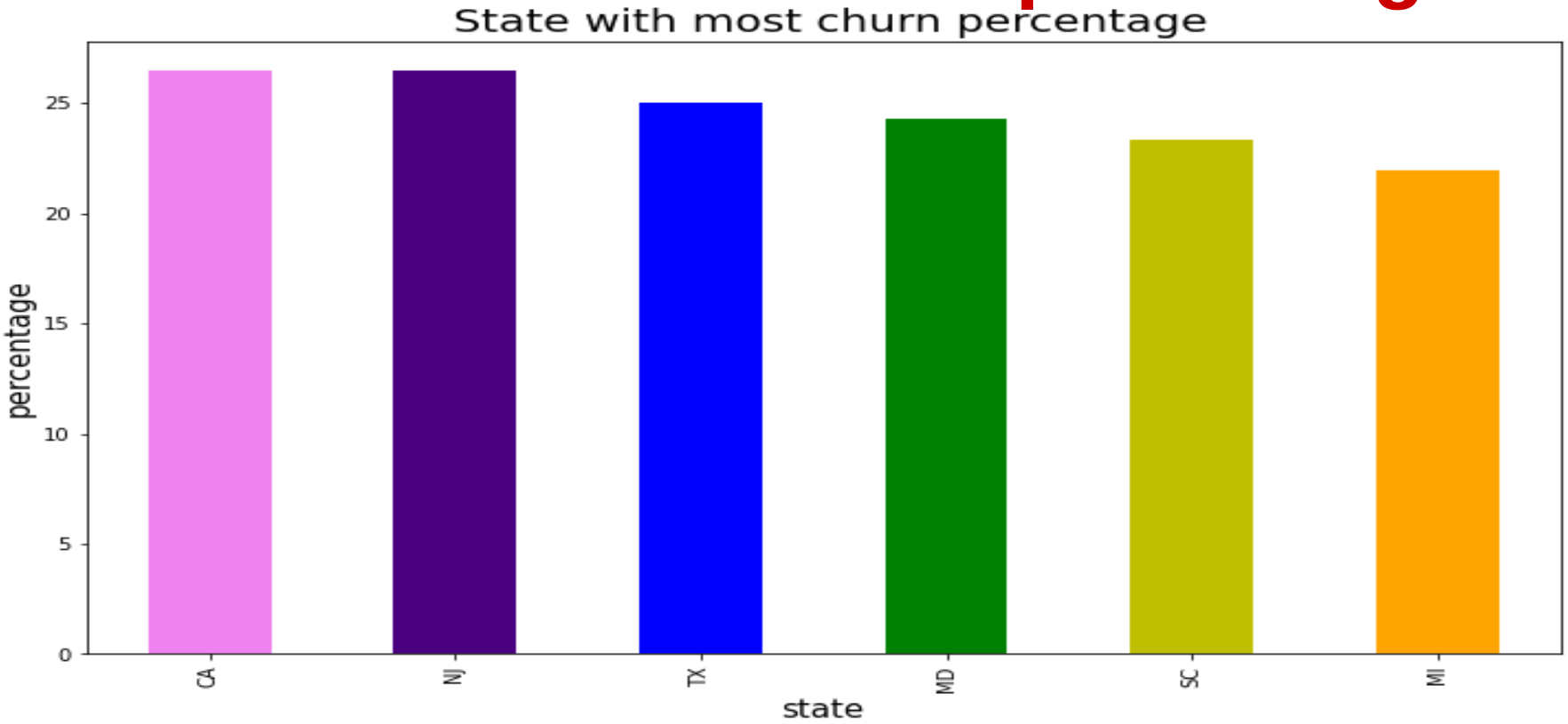


Analysis based on Account Length

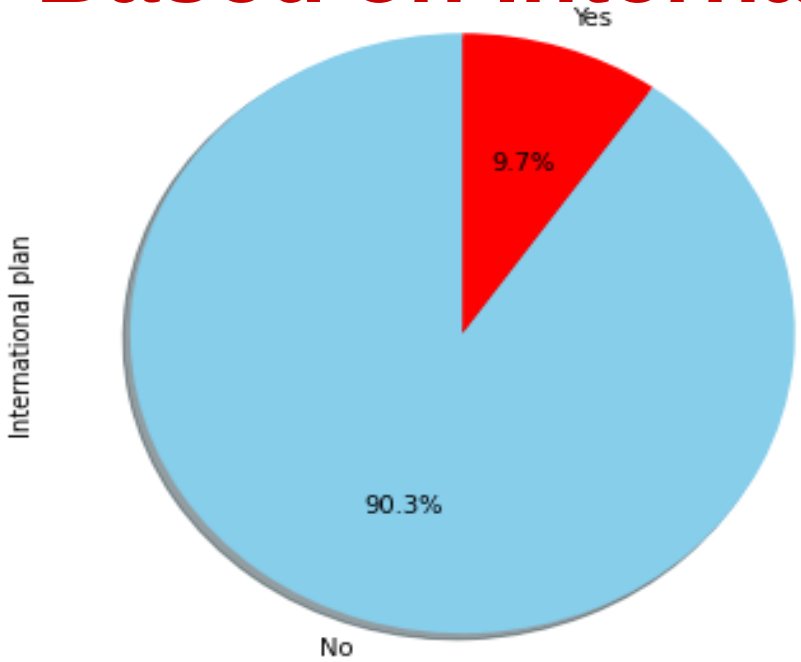


The mean of Account length is almost similar for both churn groups.

State with most Churn percentage

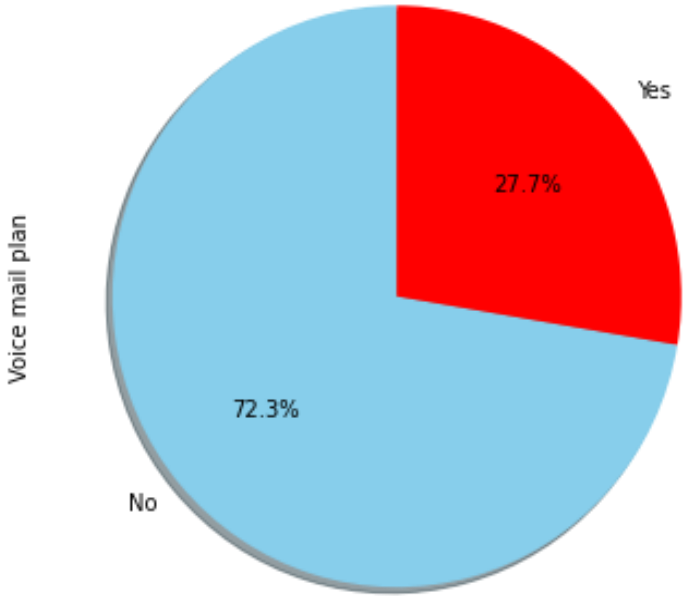


Analysis Based on International Plan



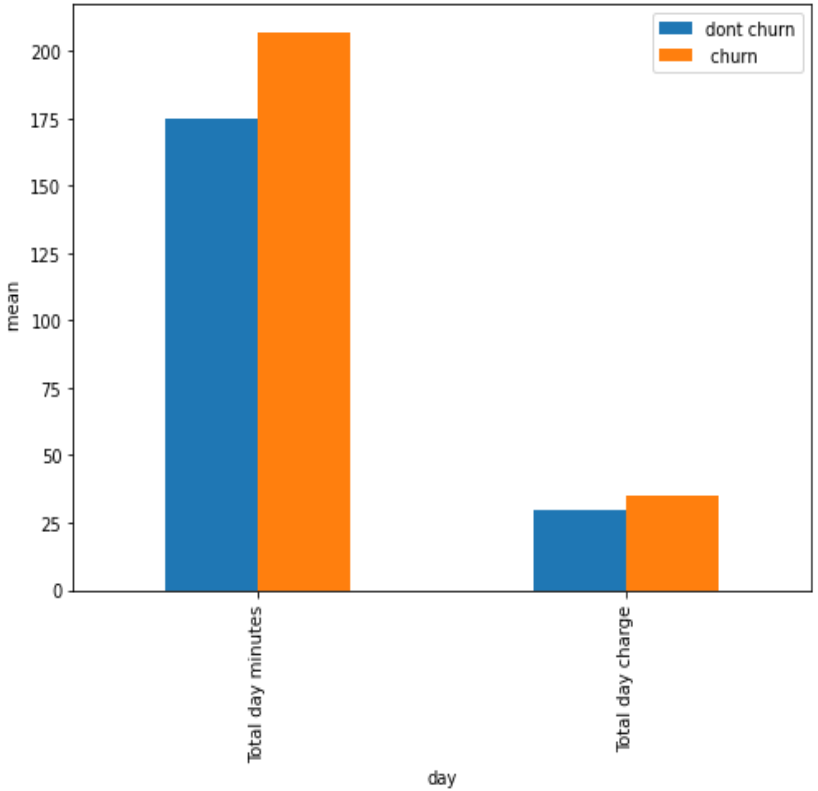
Out of 3333 people only 323 have International Plan, rest 3010 do not have Plan

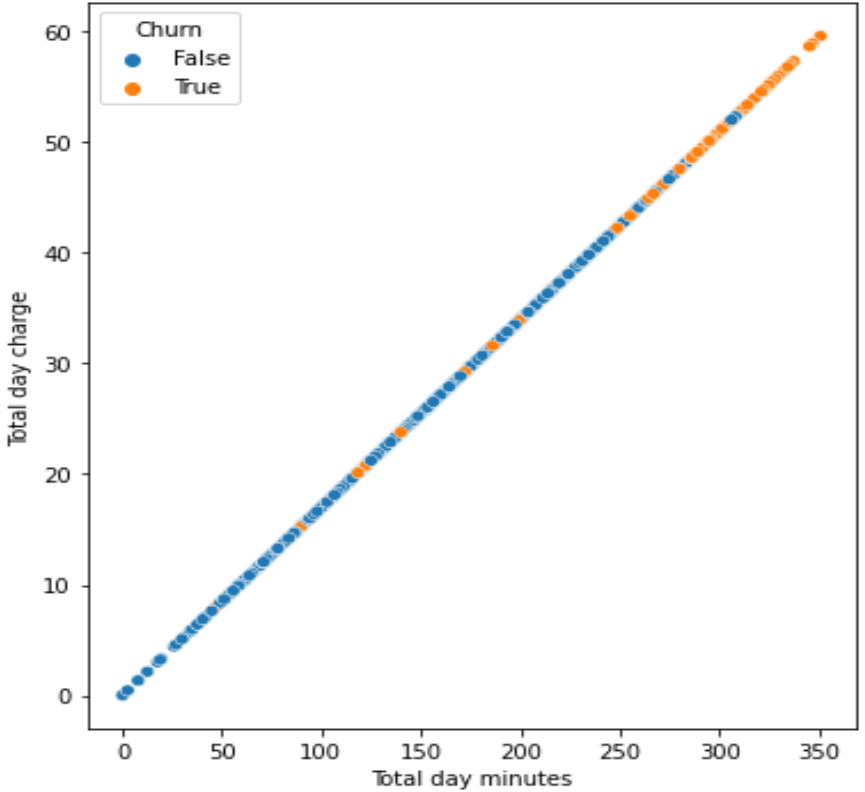
Analysis Based on Voice mail



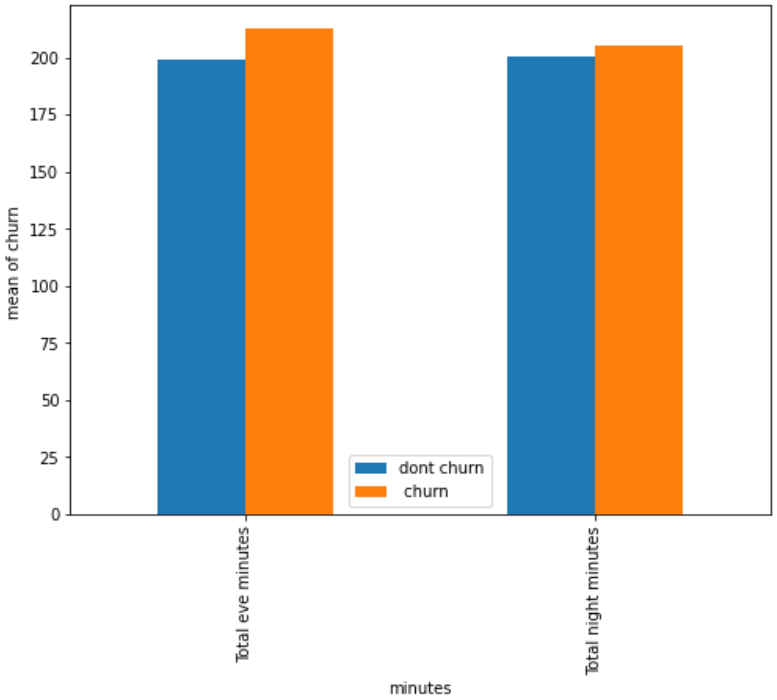
Out of 3333 people 922 having Voice mail plan, rest 2411 do not have any Voice mail plan.

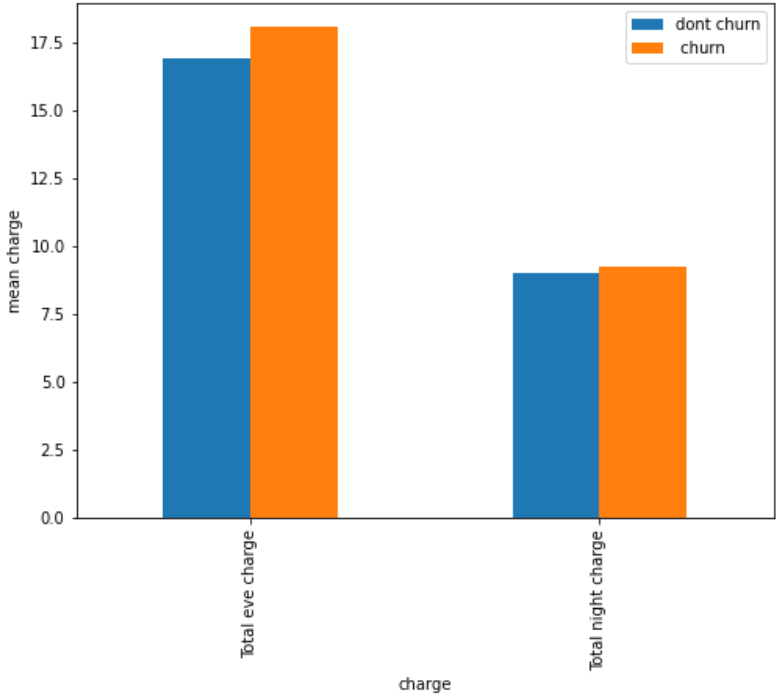
Analysis based on Day Calls



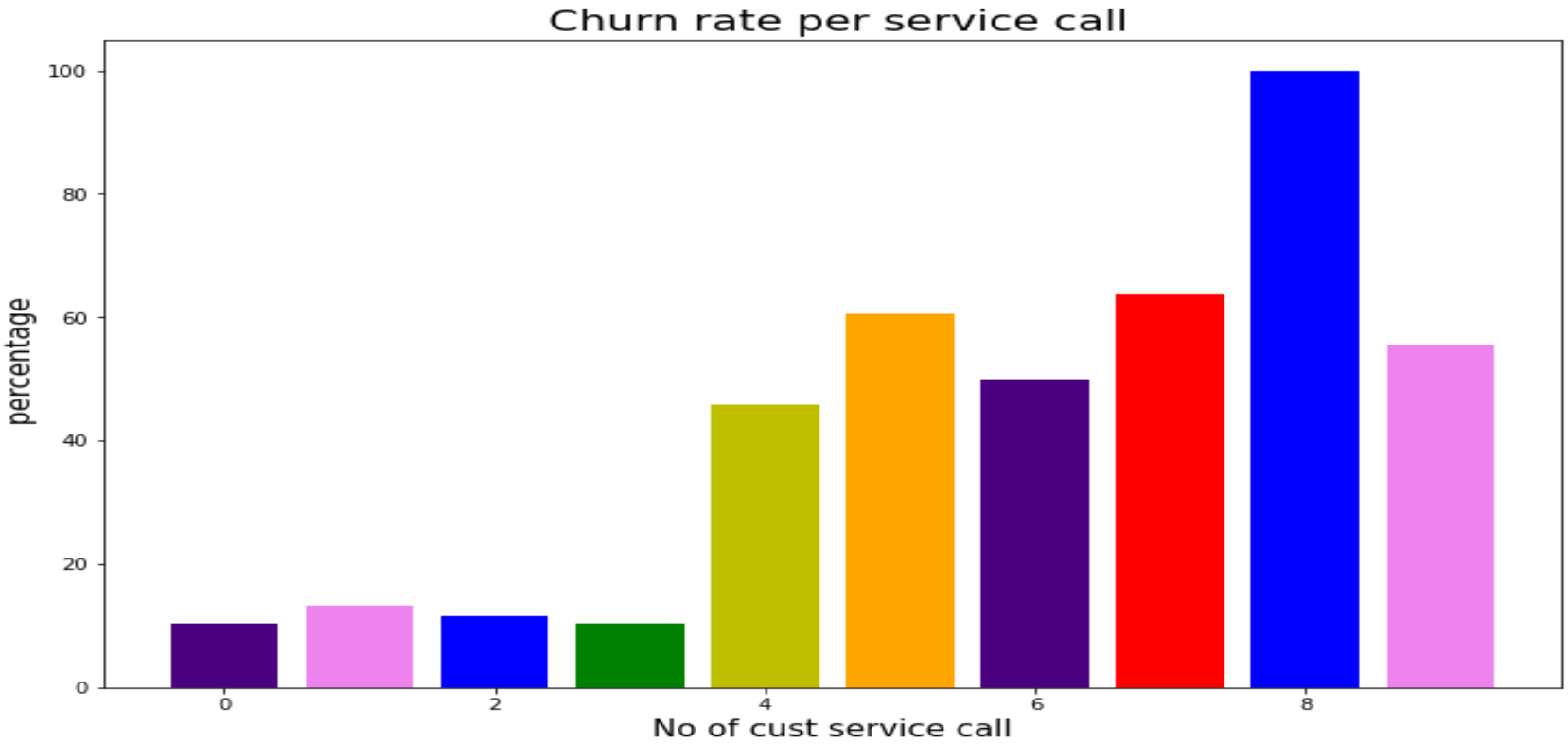


Analysis based on eve/night calls





Churn Rate as per Service Call



Challenges

- Difficult to recognise columns like- (Account Length, Number vmail massages . Etc.) as while subset these we got of possibilities of true churn and have to work for each possibilities.

- Need to plot lot of Graph for different States as well as different Area codes to understand the data and handling the data.

- Need to subset for respective State having respective Area code till it reaches a dozen of customers.

Solution to Reduce Customer Churn

- Modify International Plan as the charge is same as normal one.
- Be proactive with communication.
- Ask for feedback often.
- Periodically throw Offers to retain customers.
- Look at the customers facing problem in the most churning states.
- Learn into best customers.
- Regular Server Maintenance.
- Solving Poor Network Connectivity Issue.
- Define a roadmap for new customers.
- Analize churn when it happens.
- Stay competitive

Conclusion

- The four charge fields are linear functions of the minute fields.
- The area code field and/or the state field are anomalous, and can be omitted.
- Customers with the International Plan tend to churn more frequently.
- Customers with four or more customer service calls churn more than four times as often as do the other customers.
- Customers with high day minutes and evening minutes tend to churn at a higher rate than do other customer.

There is np obvious association of churn with the variables evening calls, night calls, international calls, night minutes, international minutes, account length.