

# Capstone Project

## TELECOM CHURN ANALYSIS

### Team Members

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# Objective

**Explore and analyze the data to discover key factors responsible for customer churn and come up with recommendations to ensure customer retention.**

# Definitions



**Churn = describes customer loss for a company.**

**Churn rate = rate at which customers of a business are leaving within a specific time period.**

# Dataset information

**Orange telecom dataset description-**

**a) .csv file with 3333 non-null entries**

**b) 20 features**

**c) attributes related to state, charges, calls and services.**

**d) Churn a boolean(True/False) variable showing customer churned or not.**

# Exploratory Data Analysis

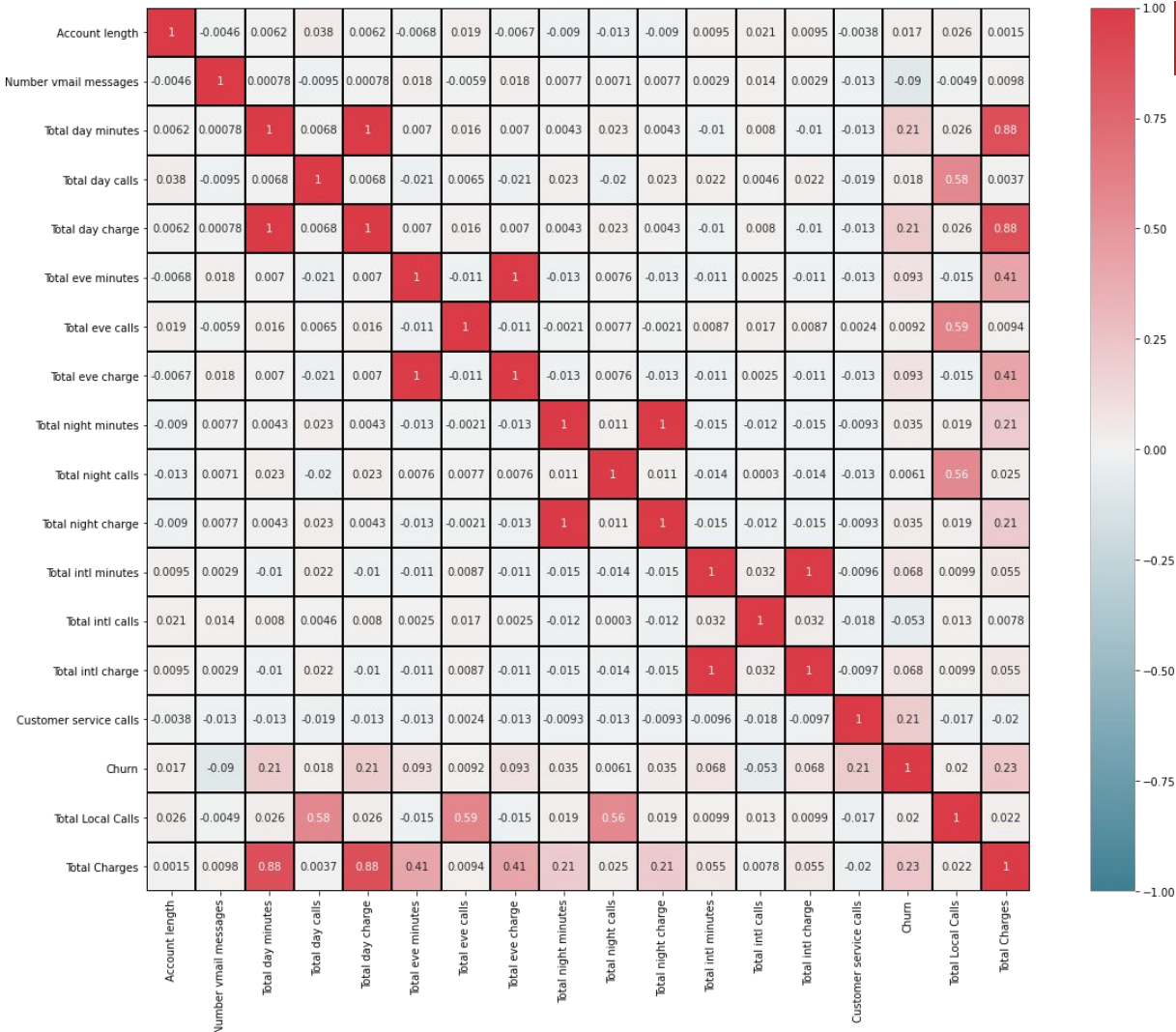
## Some key observations-

- Orange telecom provides services in 51 states.
- West Virginia having maximum and California with minimum observations.
- International plan (having 323 customers) and Voicemail plan (having 922 customers) are add-on services and we have a total of 3333 customers.

## EDA (contd..)

How everything in dataset is correlated?

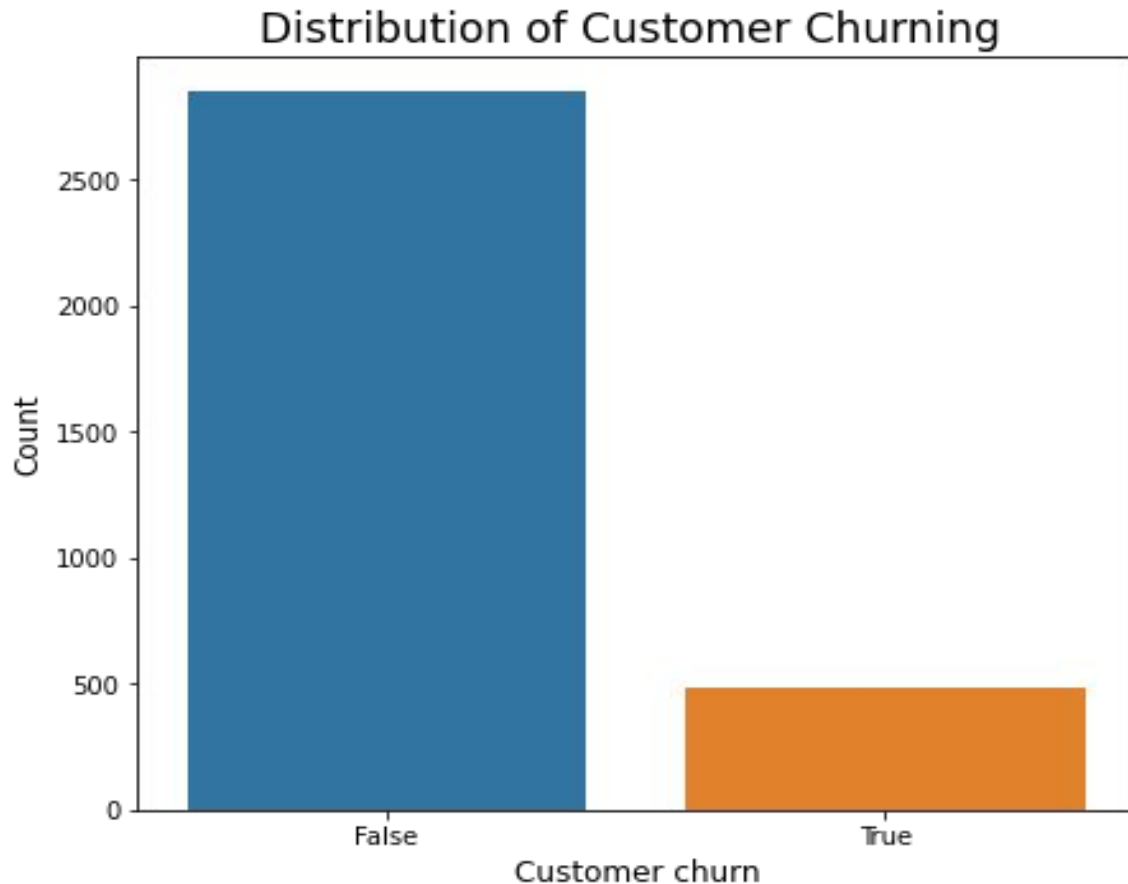
Charges & customer service calls are clearly leading to churn with same magnitude.



## EDA (contd..)

### Analysing churn-

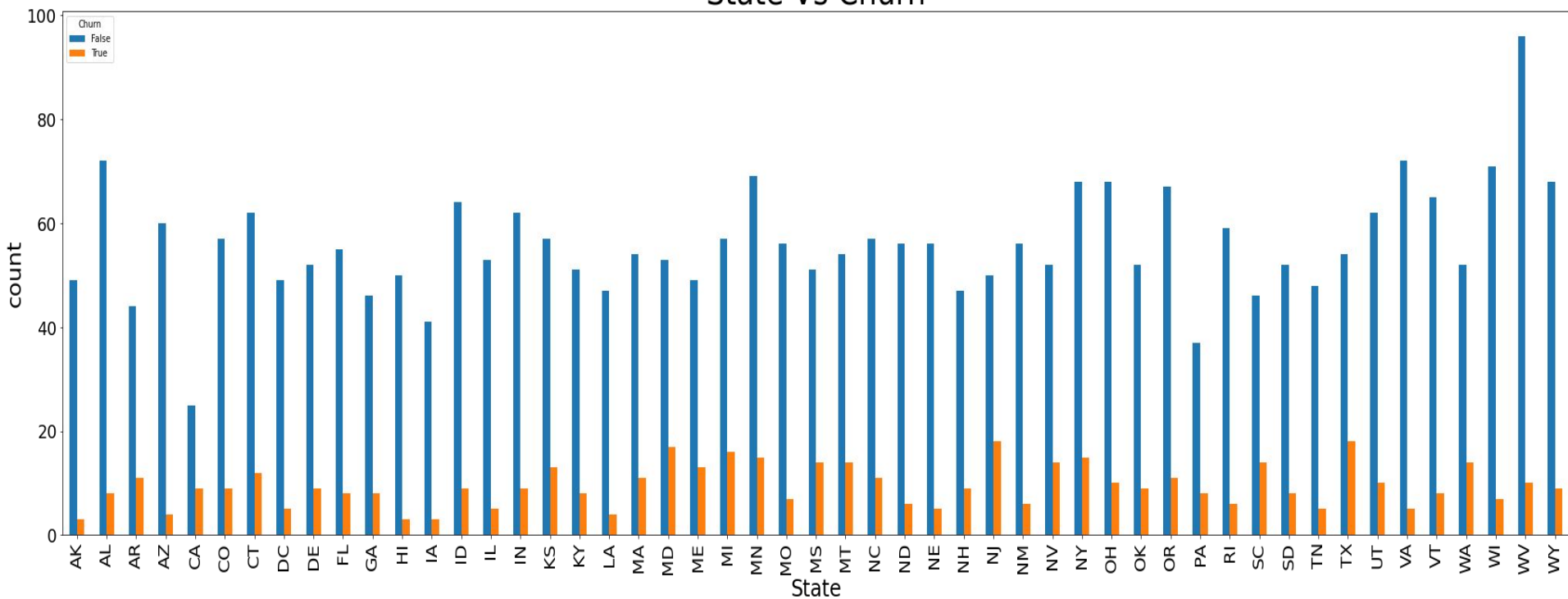
**483 out of 3333  
customers churned  
(14.49% loss)**



## EDA (contd..)

### Observing state wise trend of #subscribers and churn-

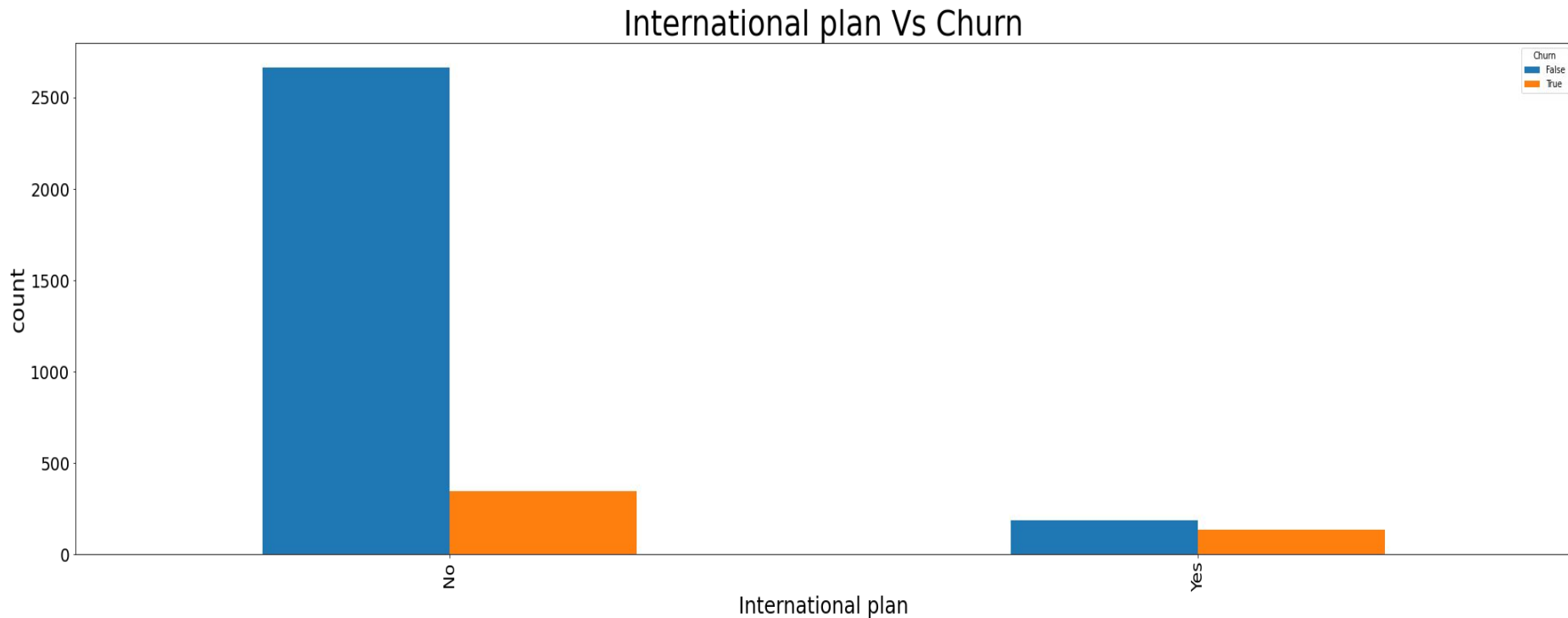
State Vs Churn





## EDA (contd..)

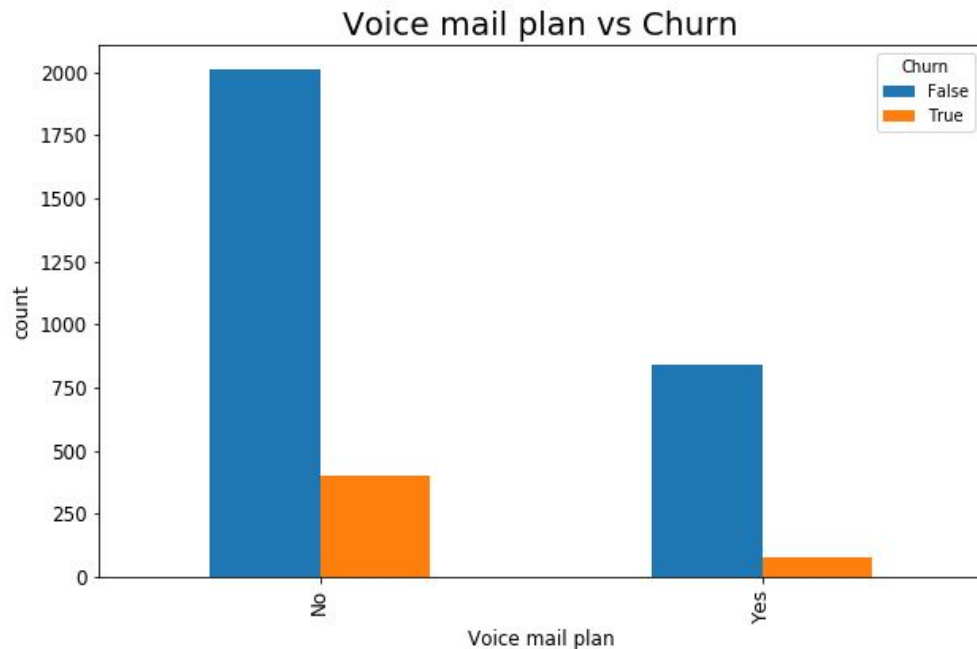
**Churning and add-on services analysis-  
323 customers opted for Intn'l plan but 137 churned i.e. 42.4% loss.**



## EDA (contd..)

**922 (28%) customers are using Voicemail services and 80 of them are churning. For this service domain we have 8.6% ~9% loss.**

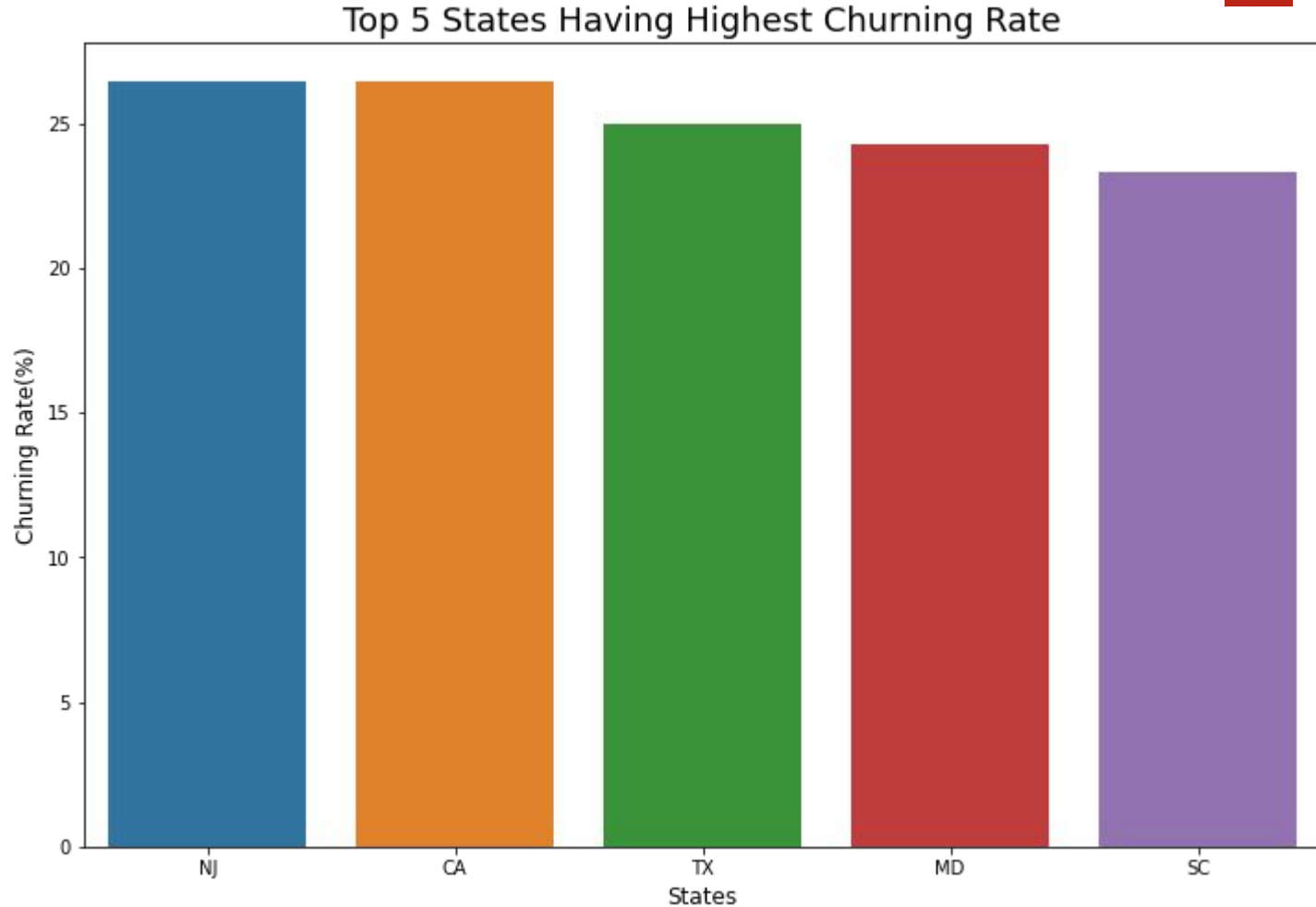
**Company need to focus on these add-on services.**



## EDA (contd..)

New Jersey  
California  
Texas  
Maryland  
South Carolina

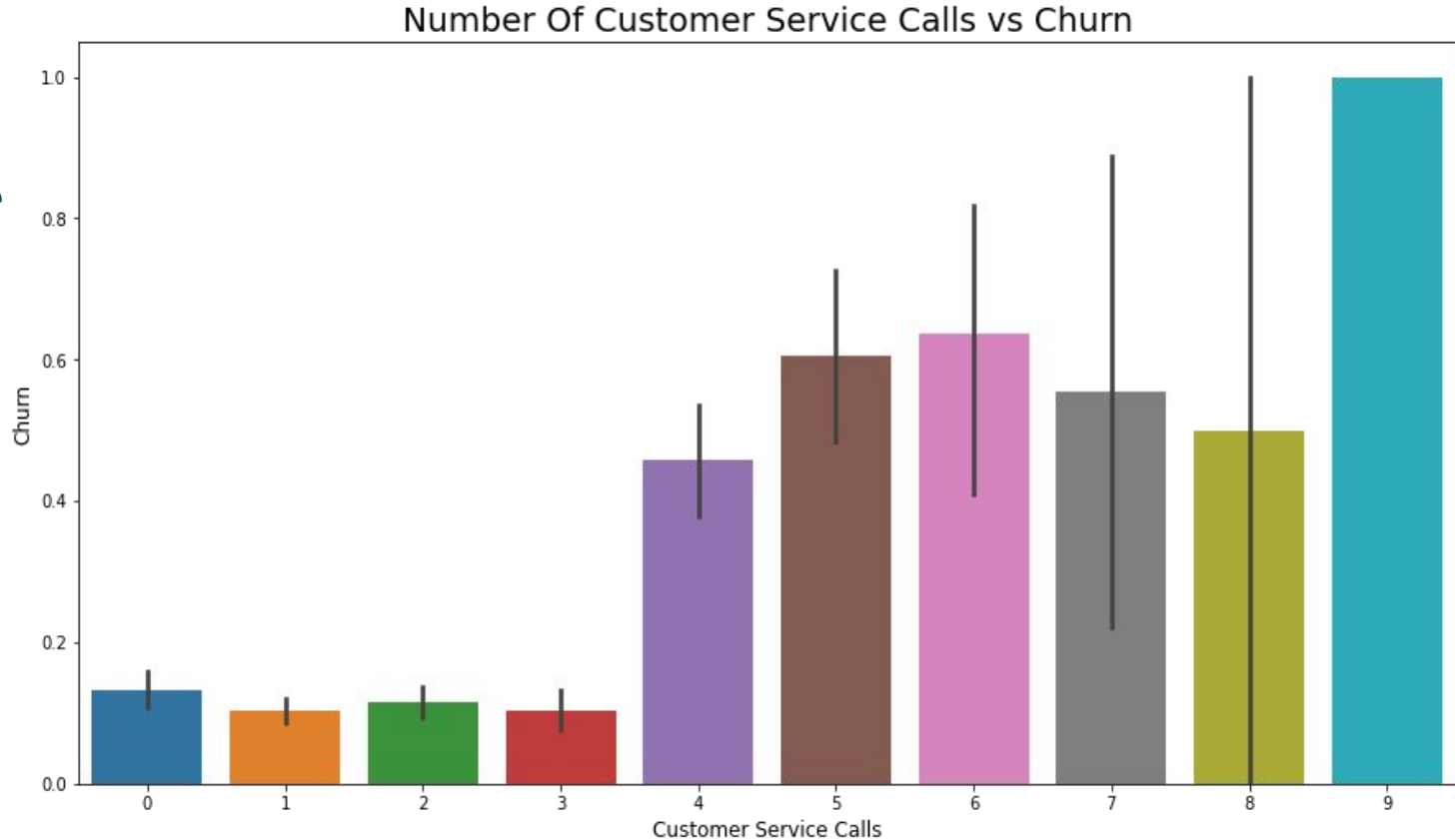
are the states  
where churning  
rates are high.



## EDA (contd..)

### Churning and company core services analysis-

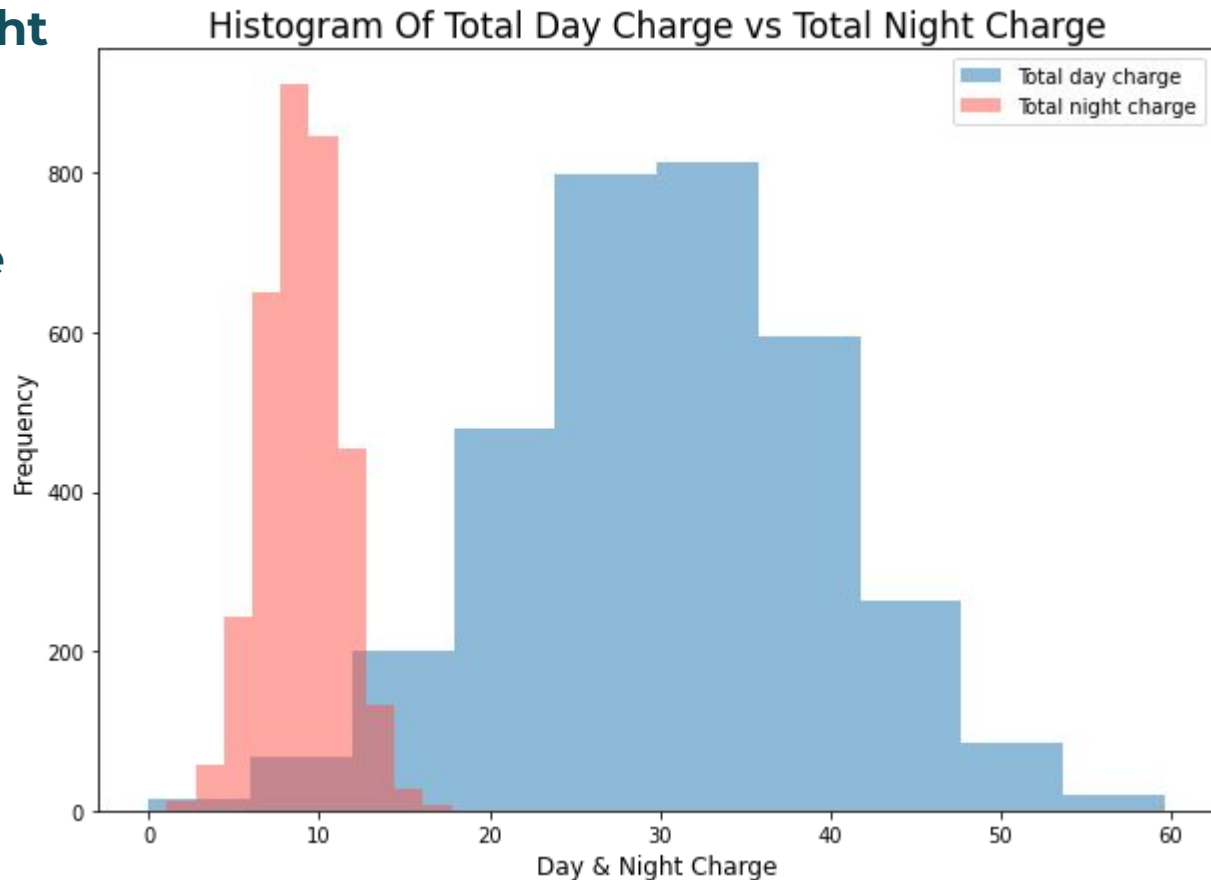
Customers calling in customer care services > 3 times are more likely to churn.



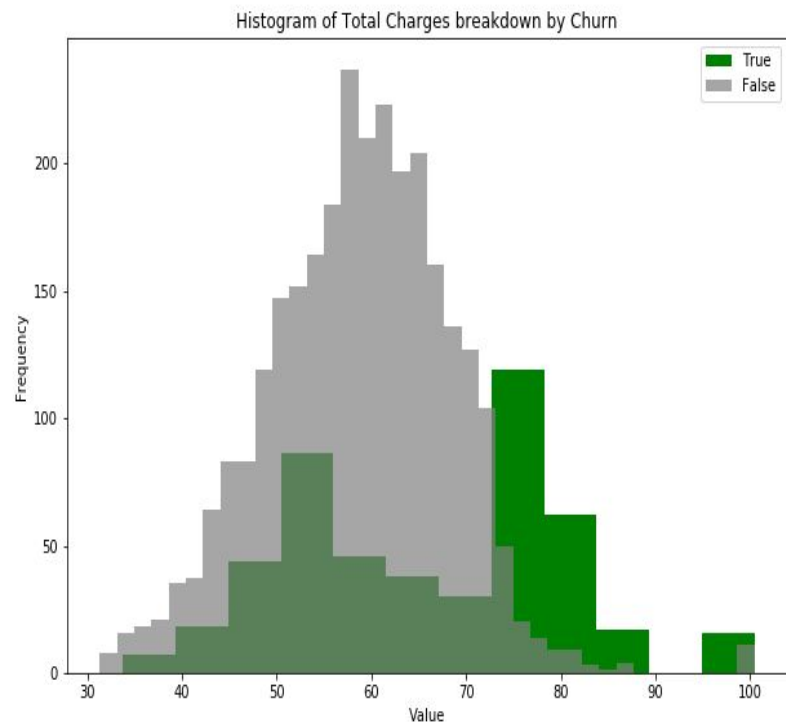
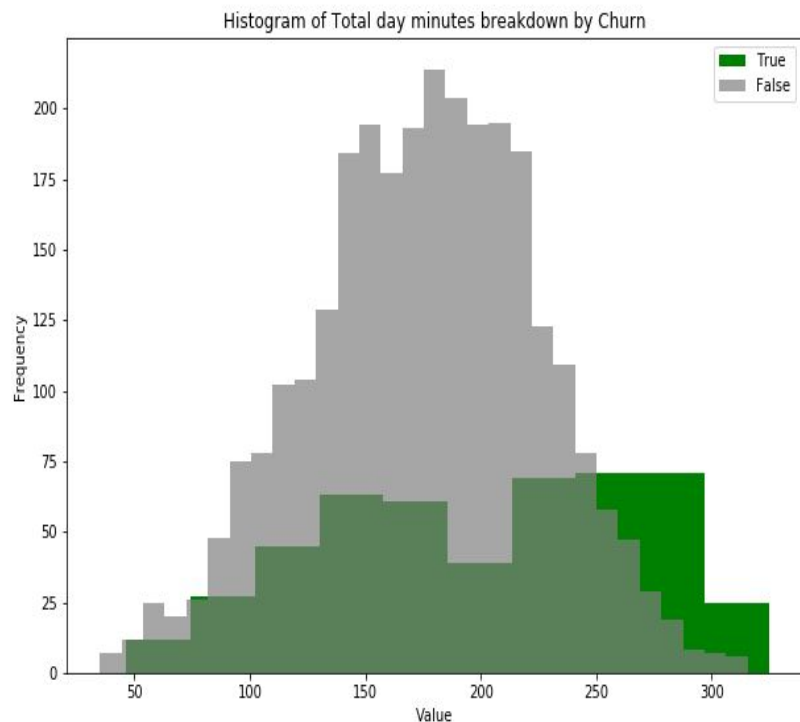
## EDA (contd..)

### Distribution of day & night charges

Most of the revenue comes from the daytime charges but this spectrum of customers churns frequently.



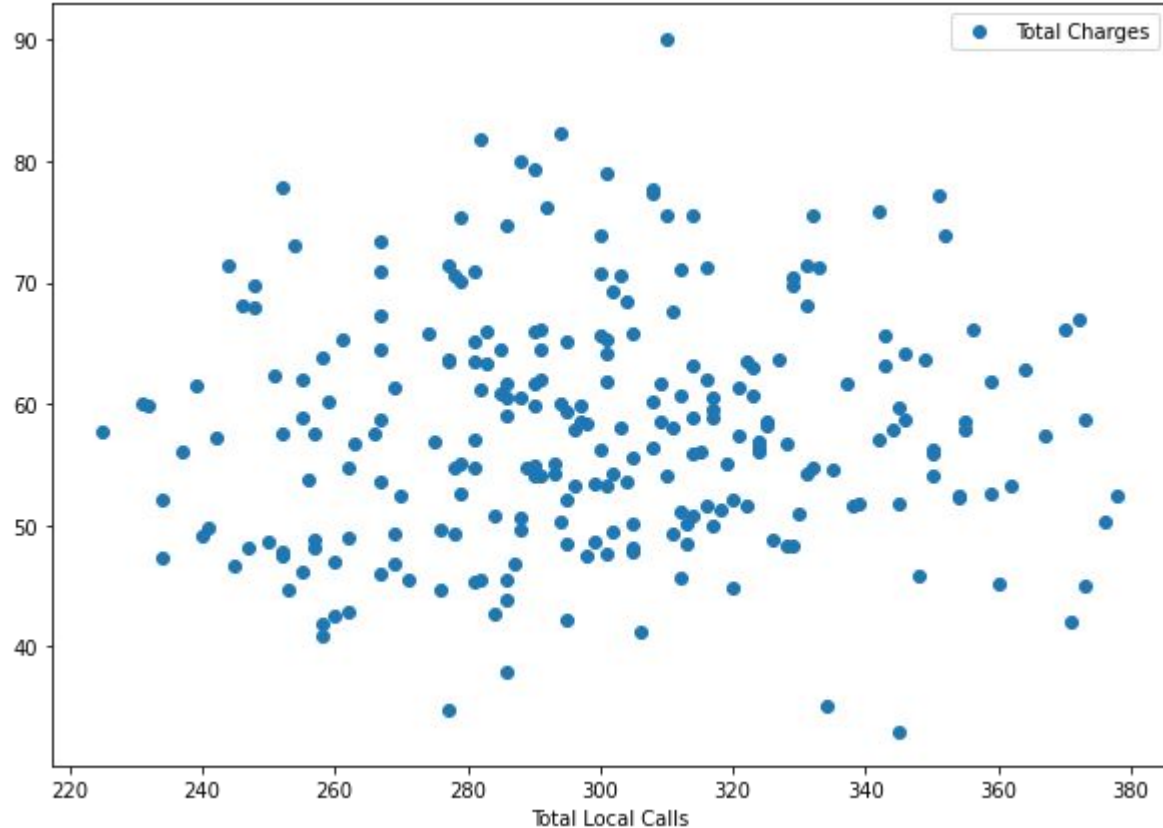
# Histogram of Total Day Minutes and Total Charges breakdown by Churn



## EDA (contd..)

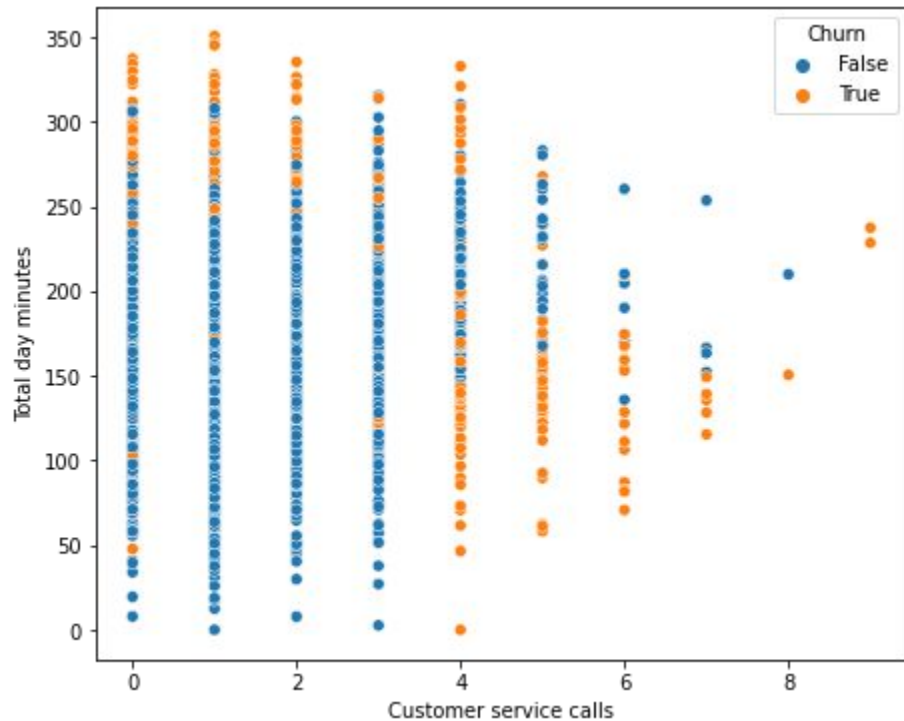
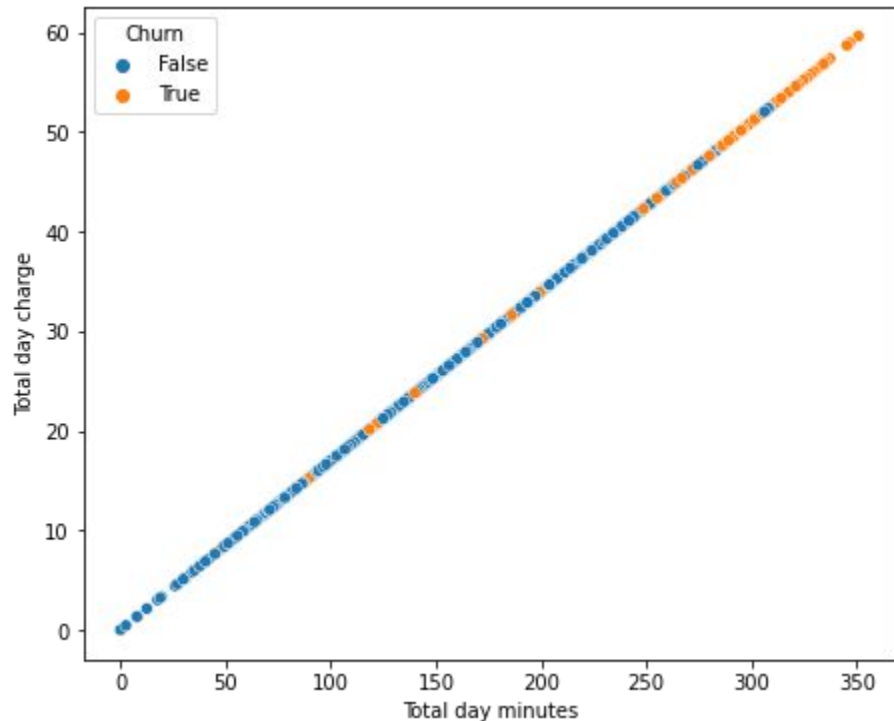
### Distribution of Total local calls & charges

More subscribers are making around 275-325 total local calls.



## EDA (contd..)

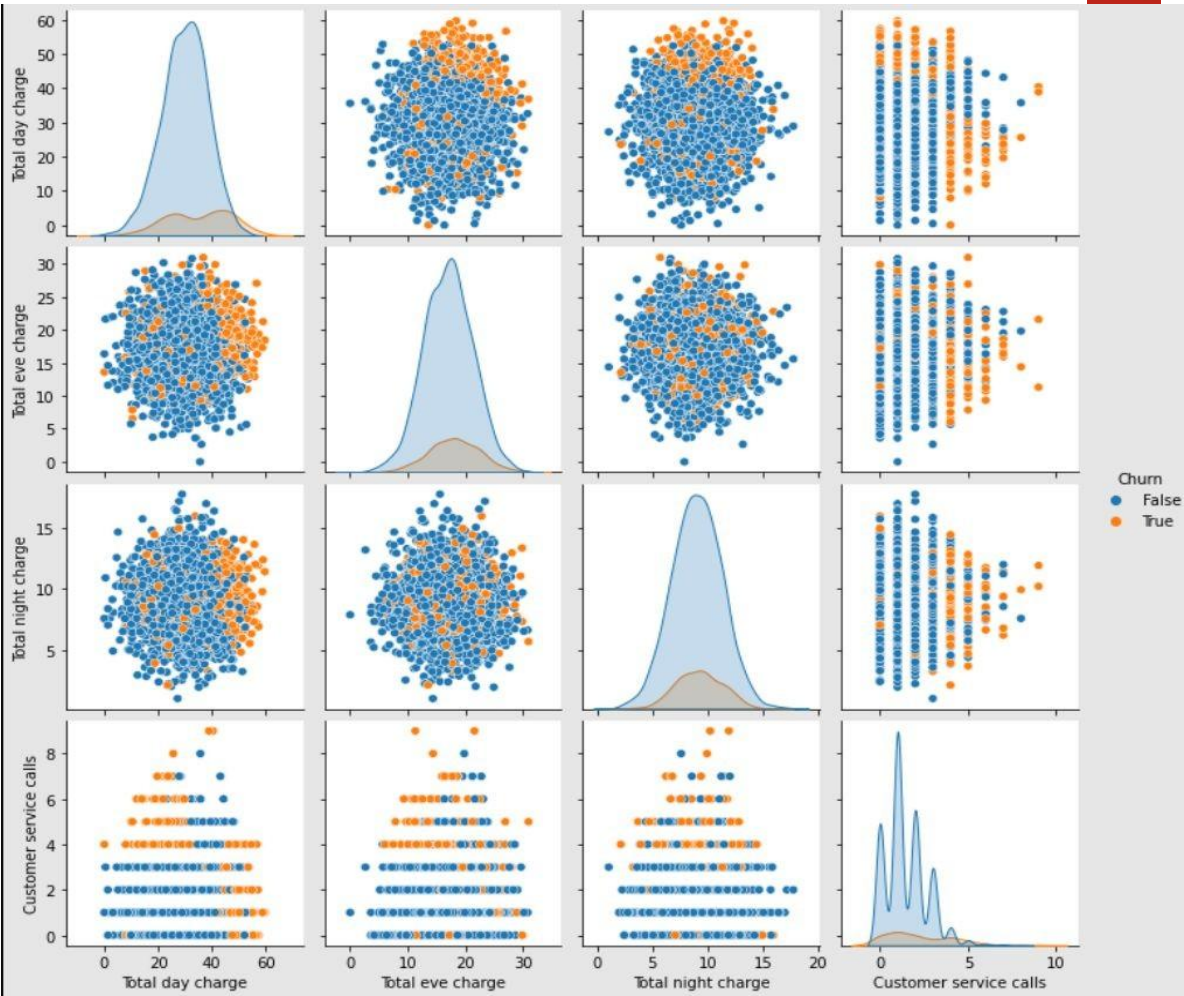
Churning association with charges and total day minutes-  
More charges are leading to more churning.





## EDA (contd..)

Visualisation of relationship between each variable for instant examination using pairplot.

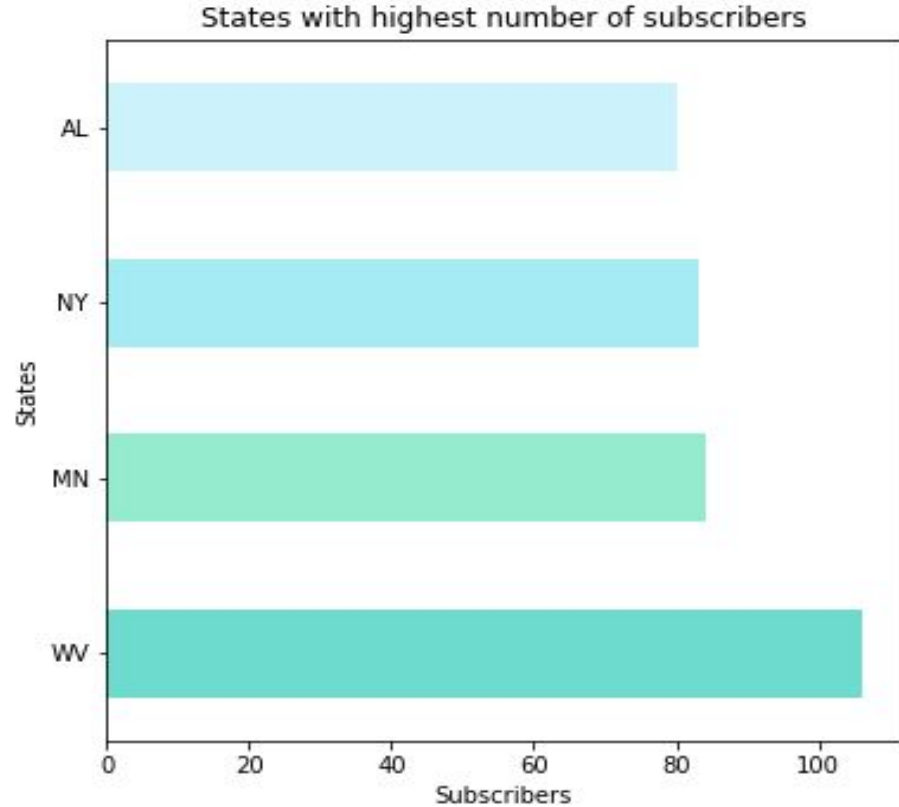


## EDA (contd..)

**These 4 states have highest number of customers.**

**West Virginia has highest number of subscribers.**

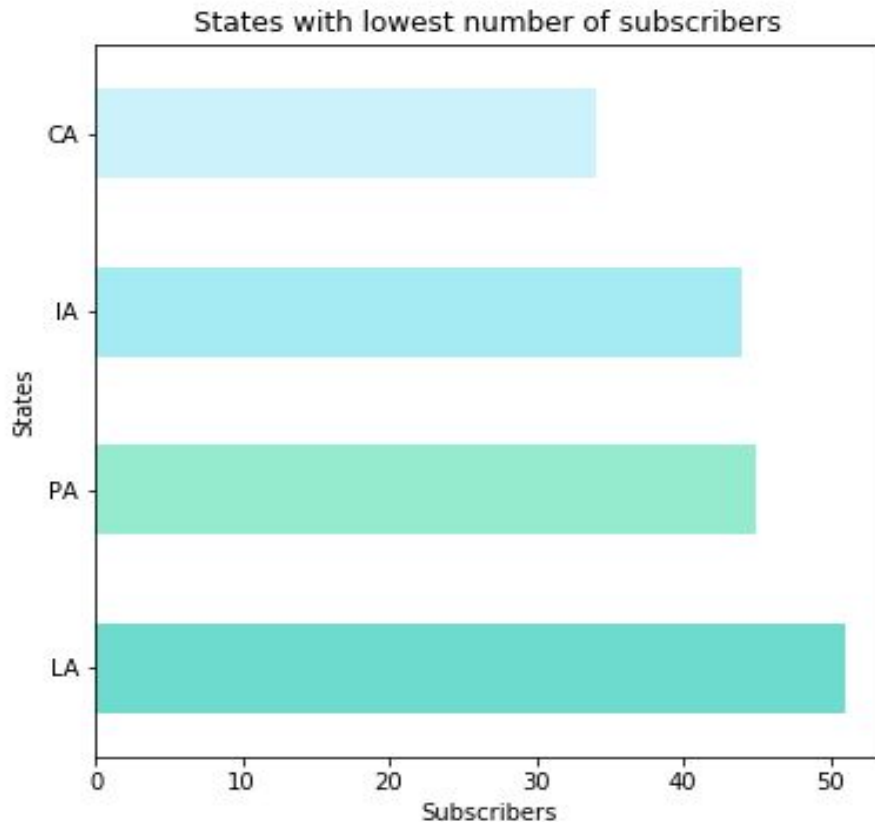
**Our analysis shows that NY is having 18% churning rate.**



## EDA (contd..)

**These 4 states have lowest number of customers.**

**California have only 34 customer but our analysis Shows that 9 churned (1 in every 4 customer is leaving).**



## Recommendations:-

- ◆ Orange telecom need more infrastructure in terms of marketing, technology and services in top 5 states having highest churning rate along with lowest customers especially in CA and also in NY to reduce churning.
- ◆ Orange telecom can introduce profitable market strategy such as exclusive offers.
- ◆ The company can reduce daytime calling charges.
- ◆ Add-on services like voicemail plan, international plan and customer care satisfaction are required to be revamp.

**Thank you!!**

