TELECOM CHURN PREDICTION

Presented by

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INTRODUCTION

- Churn is a problem for telecom companies because it is more expensive to acquire a new customer than to keep your existing one from leaving.

- Churn Prediction is one of the most popular Big Data use cases in business. It consists of detecting customers who are likely to cancel a subscription to a services.

- Wireless companies today measure voluntary churn by a monthly figure, such as 1.9% or 2.1%.

PROJECT OBJECTIVE

- To predict Customer Churn.
- Highlighting the main variable or factors influencing customer churn.
- Use various ML algorithms to build prediction models, evaluate the accuracy and performance of these models.
- Finding out the best model for our business case & providing executive summary.
- There are many ways: better products, better delivery methods, lower prices, building satisfactory customer relationships, etc.

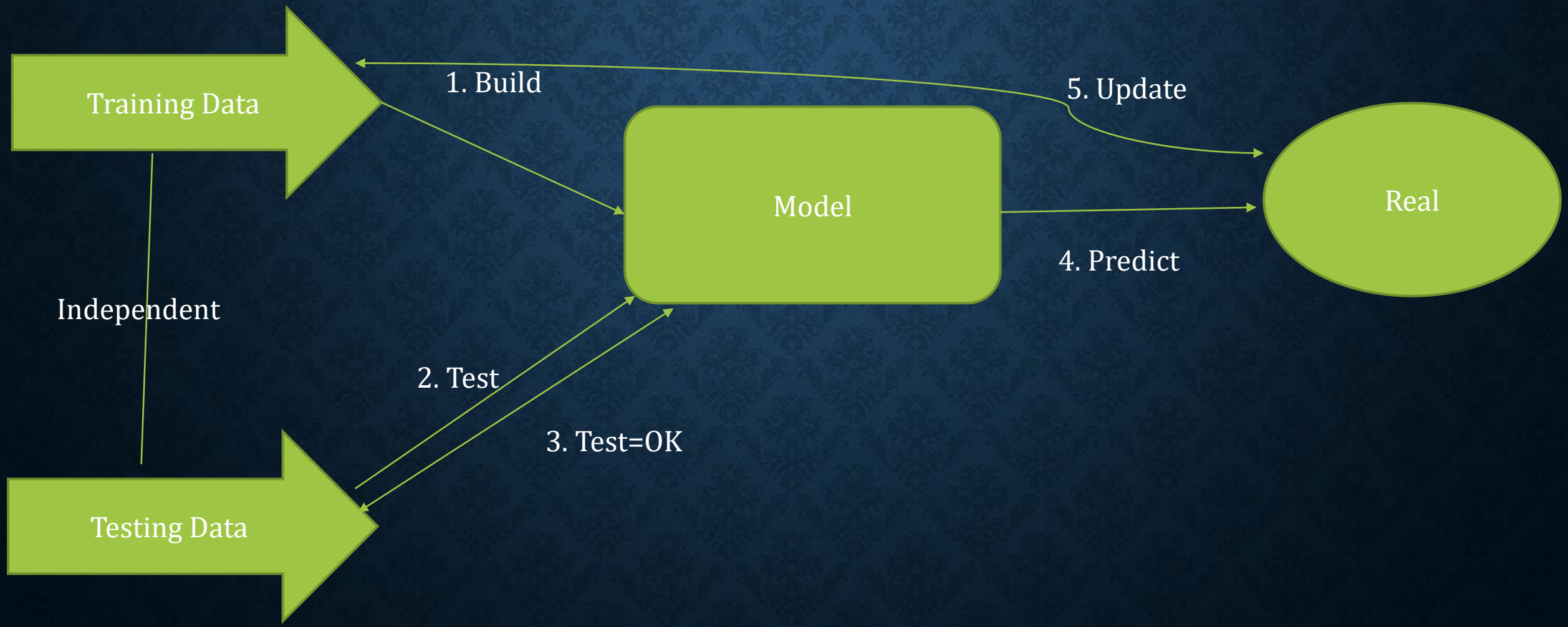
DATASET DESCRIPTION

- Source dataset is in CSV format.
- There is no missing values for the provided input dataset.
- Churn is the variable which notifies whether a particular customer is churned or not.
- Developing models to predict attributes which help the business understand indicators of churn.

METHODOLOGIES

- EDA : The dataset consist of 12 variables in all. A few are continuous, rest are categorical. The control variable was customer.
- Model Building which includes defining the purpose if model, determine the model boundary, build the model, create an interface and export the model.
- Evaluating machine leaning algorithm is an essential part of this project.

CHURN PREDICTION MODEL

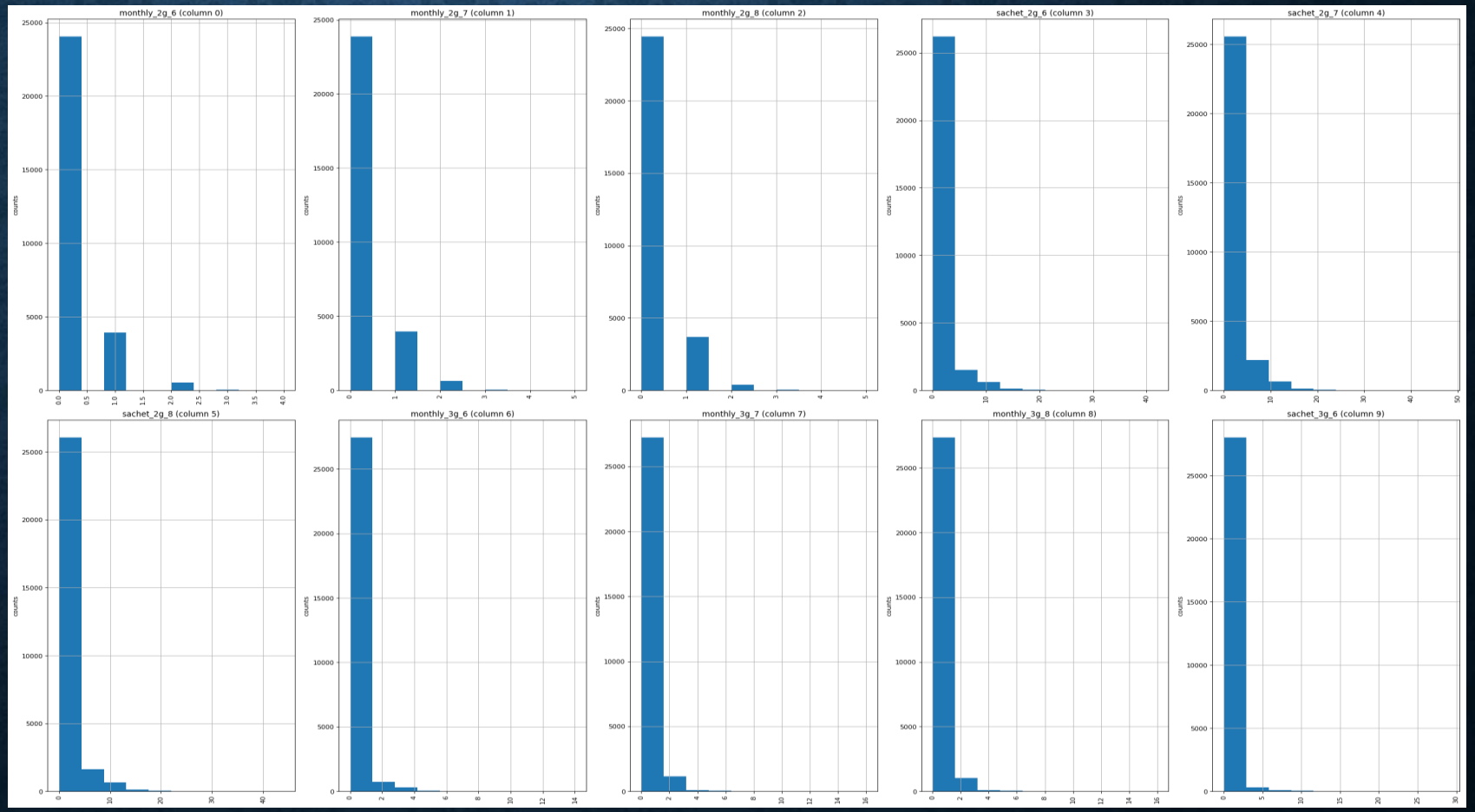


EXPLORATORY DATA ANALYSIS

- Data visualisation using seaborn and matplotlib.
- Exploratory Data Analysis (EDA) is an approach to analyse datasets 8and to summarize their main characteristics, often with visual methods.
- A Statistical model can be used or not, but primarily EDA is for seeing what the data can tell us beyond the format modelling or hypothesis.

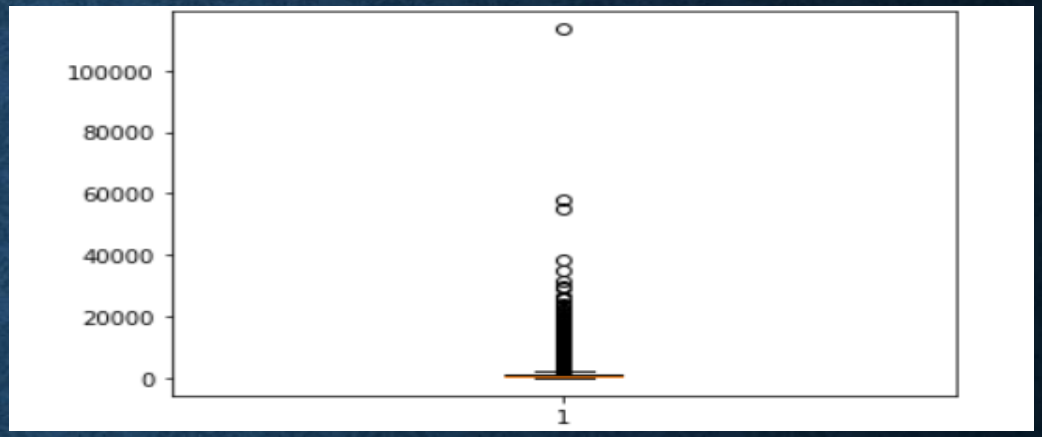
BAR GRAPH

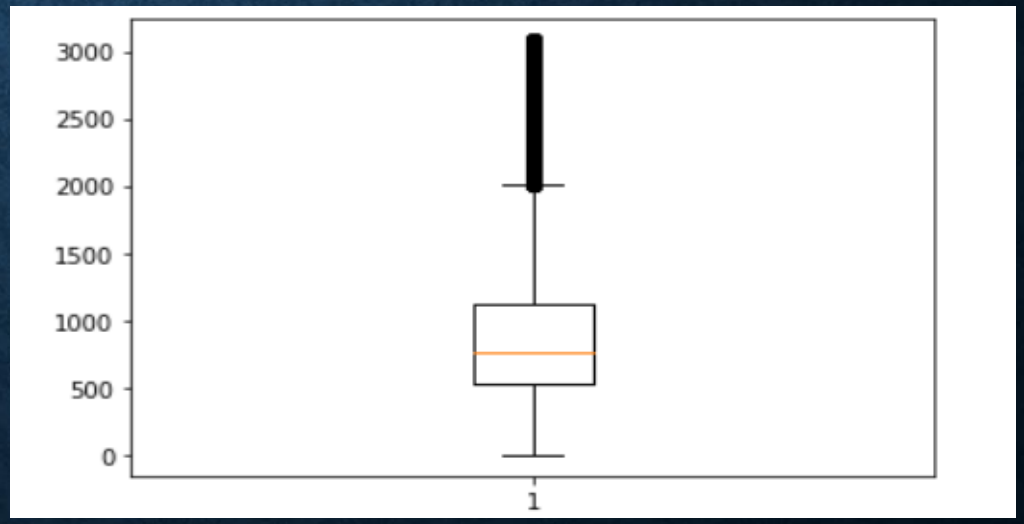
- Plot shows that the users from the data are likely to be Continuing their subscription plan (>70%).



BOX PLOT

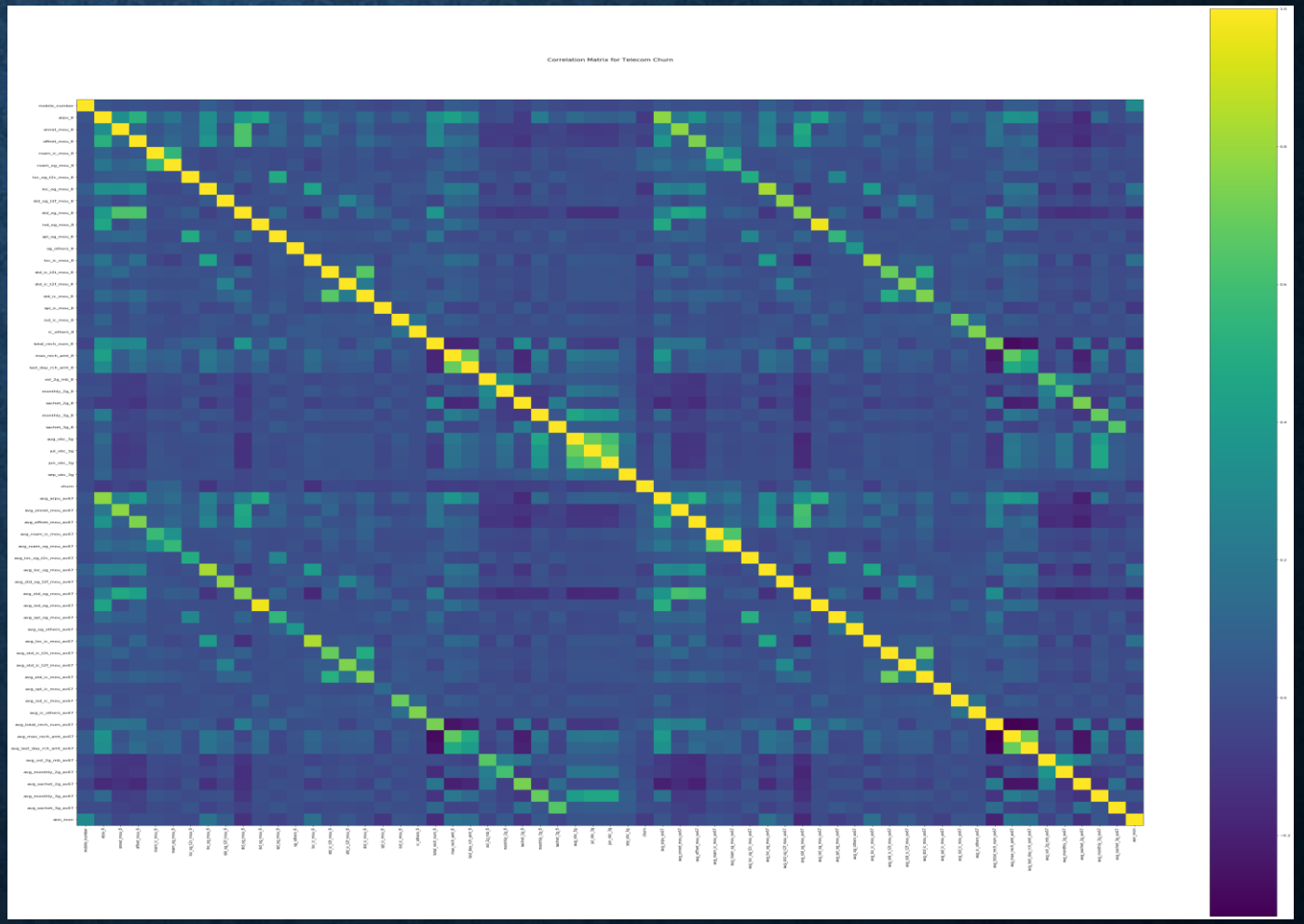
- We found outliers in exiting customers which is out of whiskers.
- An outlier is an observation that is numerically distant from the rest of the data.
- Using skew () method we found that Churn data is inconsistent with tenure.
- Customers who disconnecting their subscription plans are selecting short tenure telecom company need to offer plans for those customers who choose short tenures.





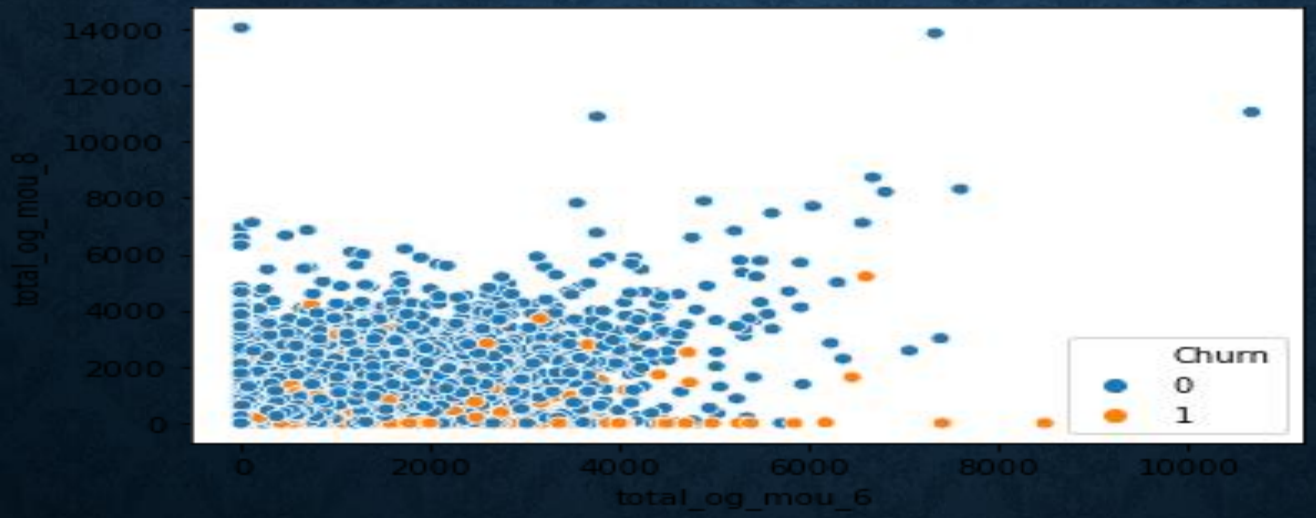
HEAT MAP

- Correlation : Dependence is any statistical relationship, whether causal or not, between two random variables or bivariate data.
- Least dependency of variable for predicting churn are tenure and contract.
- Churn variable is depending more on monthly charges.



SCATTER PLOT

- Customers paying high monthly charges for short tenures are disconnecting.
- Customers paying high monthly charges for long tenures continuing with their subscription plans, as it is reasonable cost.



ACCURACY OF VARIOUS MODELS

MODELS	ACCURACY
KNN	62%
SVM	76%

METRICS EVALUATION

CONFUSION MATRIX	
2589	26
825	92

Accuracy : 76.12%
Precision : 77.96%

REDUCE TO CUSTOMER CHURN

- Lean into your best customers.
- Be proactive with communication.
- Define a roadmap for your new customers.
- Offer incentives.
- Ask for feedback often.
- Analyse churn when it happens
- Stay competitive.

FINDINGS AND RECOMMENDATIONS

- Try to offer the better service for the churn customers, see how much this impact before and later. Some may use service better move then to your active customers.

- Take the feedback and suggestions with in period of time and improve it, strive for better communication.

- When your are taking the any change in plan of your business just predict the positive and negative share of the plan. If it is negative prepare the solution before so you can handy easily.

CONCLUSION

- The importance of this type of research in the telecom market is to help companies make more profit.
- It has become known that predicting churn is one of the most important source of income to Telecom companies.
- This research aimed to build a system that predict the churn of customers in telecom company.
- These prediction models need to achieve high AUC values. To test and train the model, the sample data is divide into 70% for training and 30% for testing.

THANK YOU