

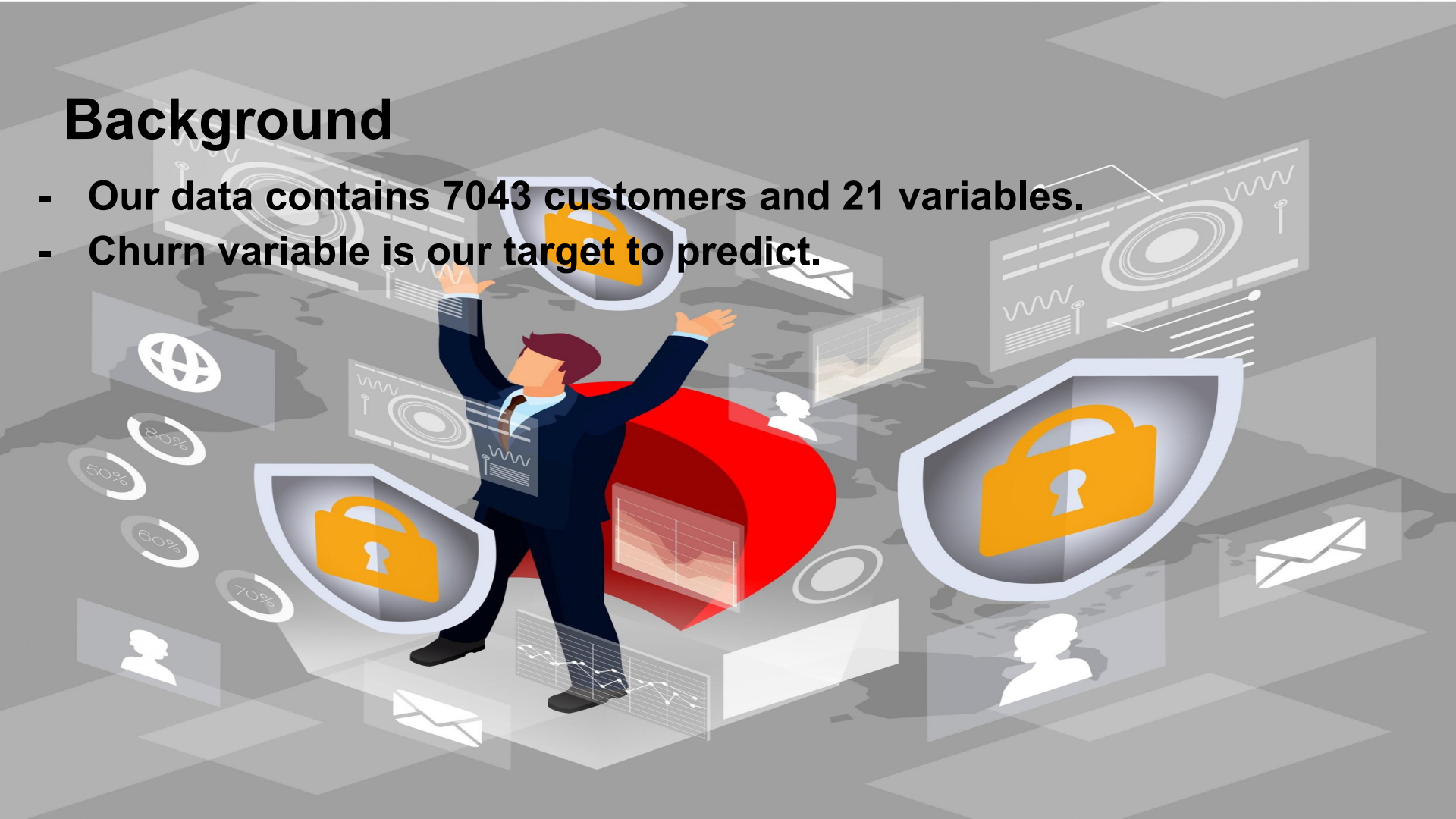
# Telecom Churn Prediction

By: Khulood Nasher



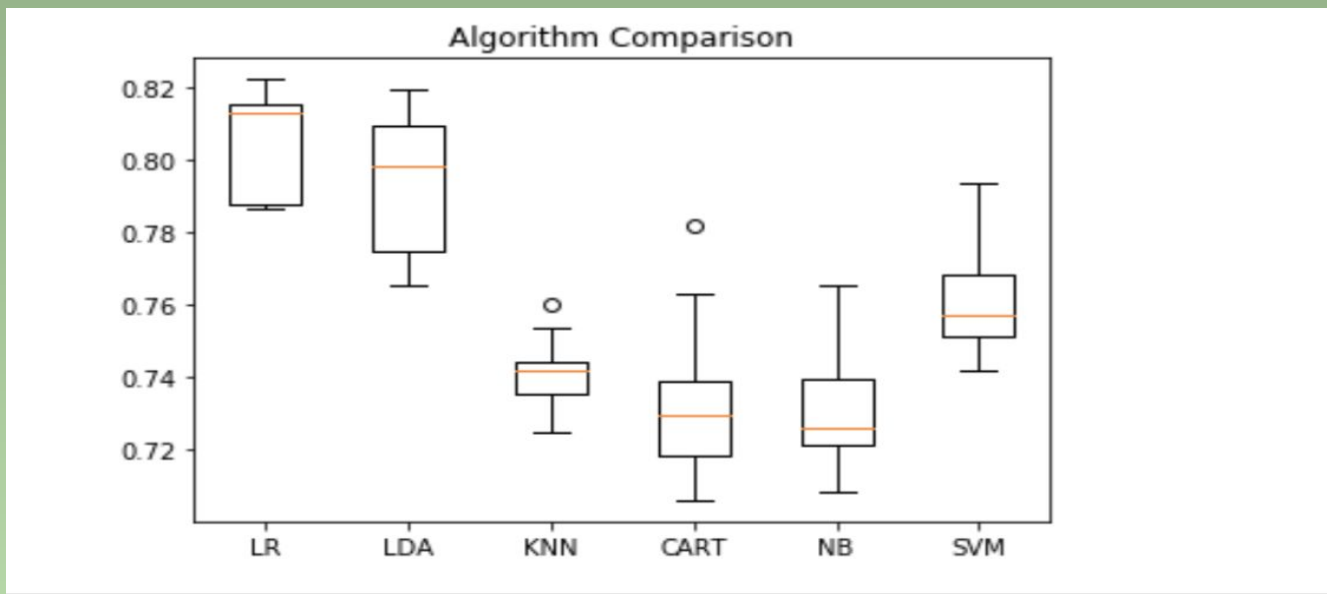
# Background

- Our data contains 7043 customers and 21 variables.
- Churn variable is our target to predict.



# Objectives

- To predict customer churn.
- Highlight the main variables causing customer churn.
- Recommendations to Telecom company to improve performance



# Problem:

- Customer Churns cause income loss
- Income Loss to bring new customers > keeping old subscribed customers.

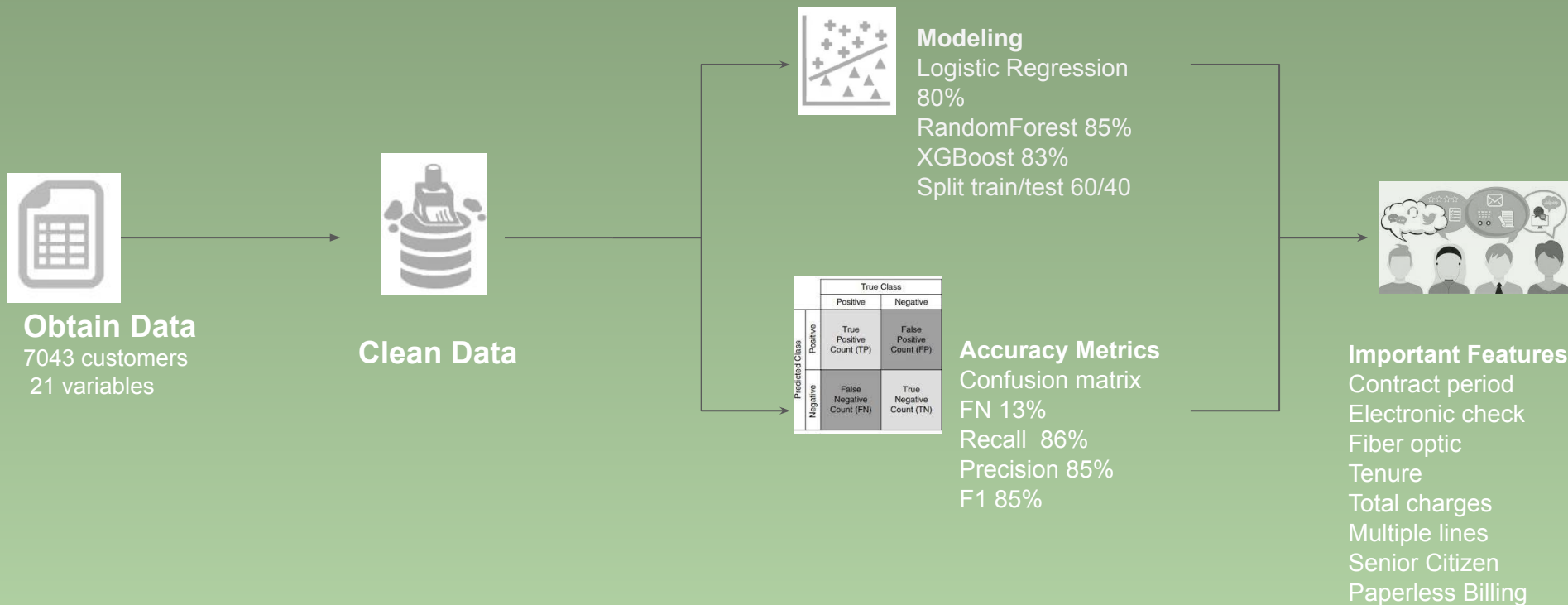


# Solution

- Consult a data scientist who will predict which customers will leave Telecom.
- I used machine learning algorithm that explains the prediction of churn customers, and what are the most important features that affect the customer's decision to churn.



# Methodology



# Important Questions:

**Q1: What percentage of customers churn?**

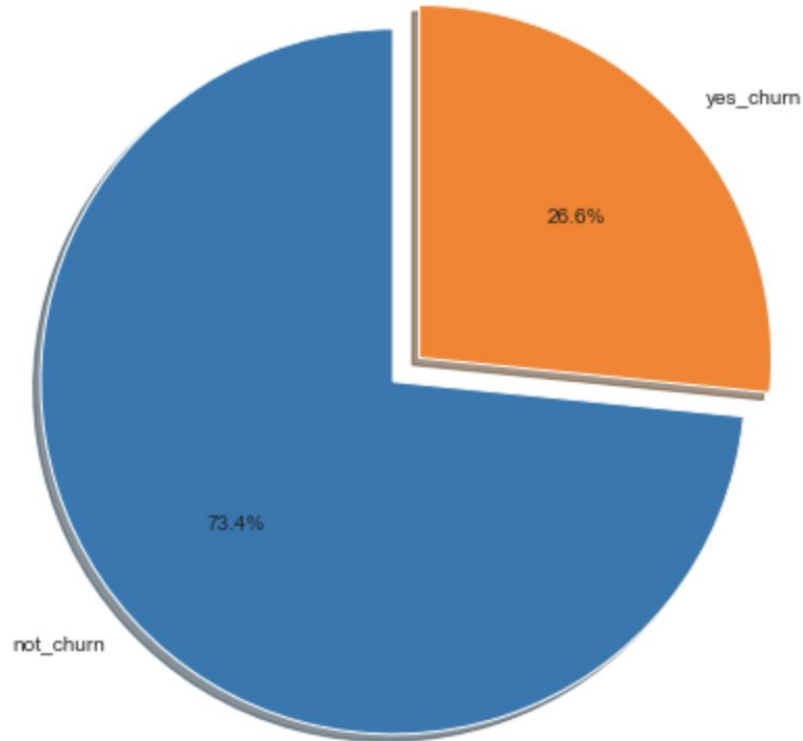
**Q2: What are common variables among churn customers?**

**Q3: What is the predicted percentage of customer churn?**

**Q4: How to reduce customer churn?**



# Q1: What percentage of customers churn?

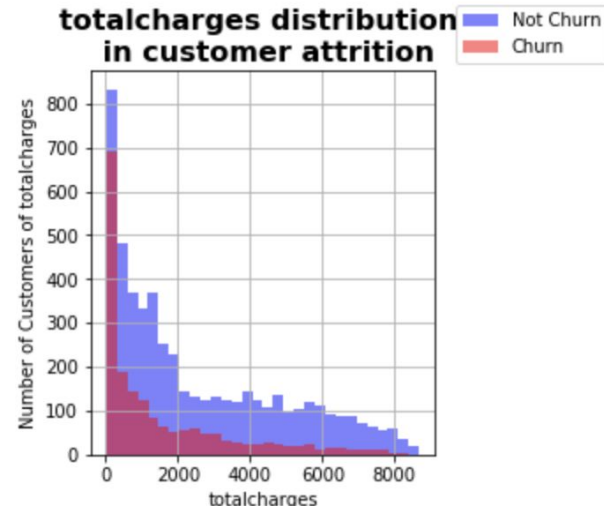
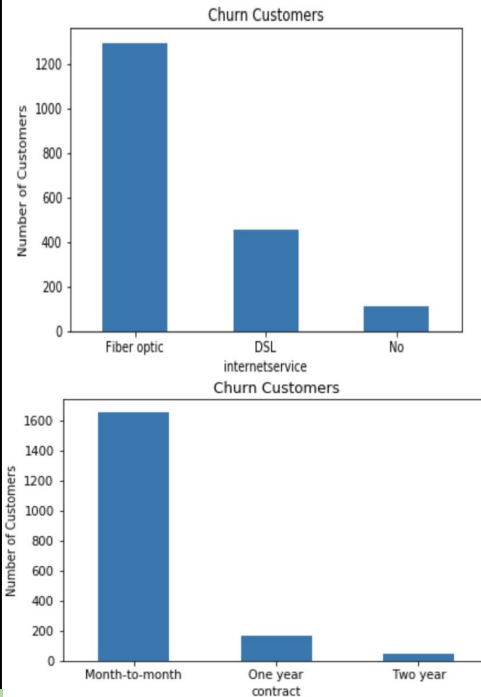
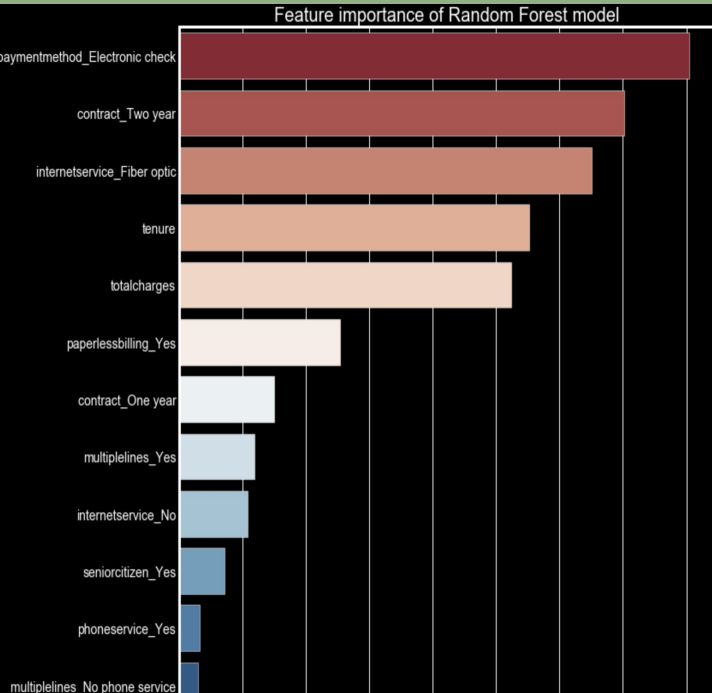




# Analysis Result:

## Q2: What are common variables among churn customers?

Electronic check, contract length, tenure, total charge, paperless billing, senior citizen, fiber optic.

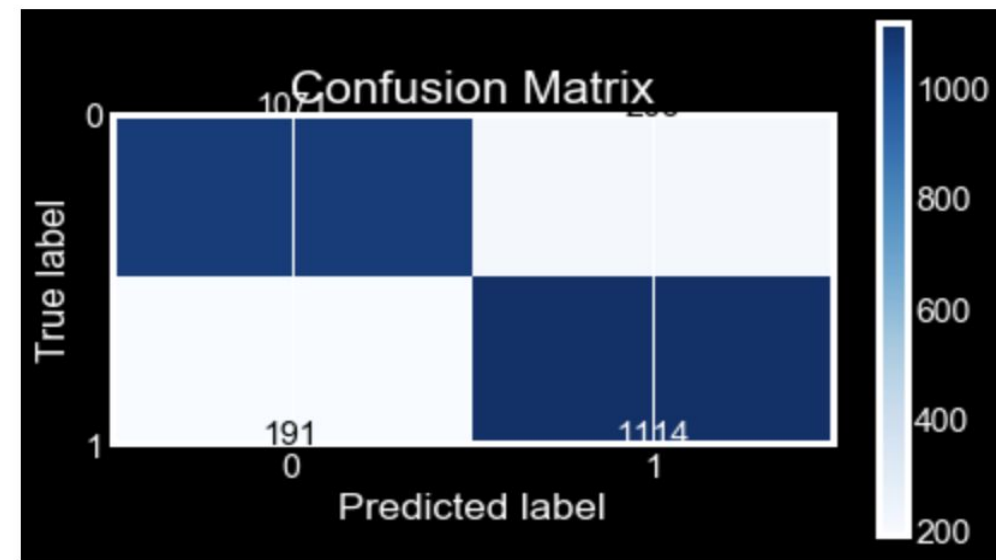


# Analysis Results

Q3: What is the predicted percentage of customer churn?

Randomforest Algorithm Predicts:

percentage of misclassified customers as not churn (FN): 14.1



test accuracy: 0.8462432223082882

train accuracy: 0.8481404958677686

# Recommendation

## Q4: How to reduce customer churn?

- Offer incentives for one/two year contract.
- Seasonal Incentives for multiple lines on monthly charges when bringing dependents/partners.
- Free services for non-churn such as streaming services
- Stay competitive with internet services.
- Special offers for senior citizens.
- Be Proactive when changing business plan.



# Further Work

- Request the Telecom company to provide the zipcodes of churn customer to search for local competitors and try to provide better offers in the zone of churn customers to bring them back.
- Investigate fiber optic internet further with regards to geographical distribution and its charges.
- Neural network modeling for better accuracy



Thank you  
Any Questions

