

# DATA ANALYSIS IN TELECOM CHURN

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USING CLASSIFICATION ALGORITHM WE ANALYSE THE RATE OF  
CUSTOMER CHURN IN A TELECOMMUNICATION COMPANY

# WORK PLAN:

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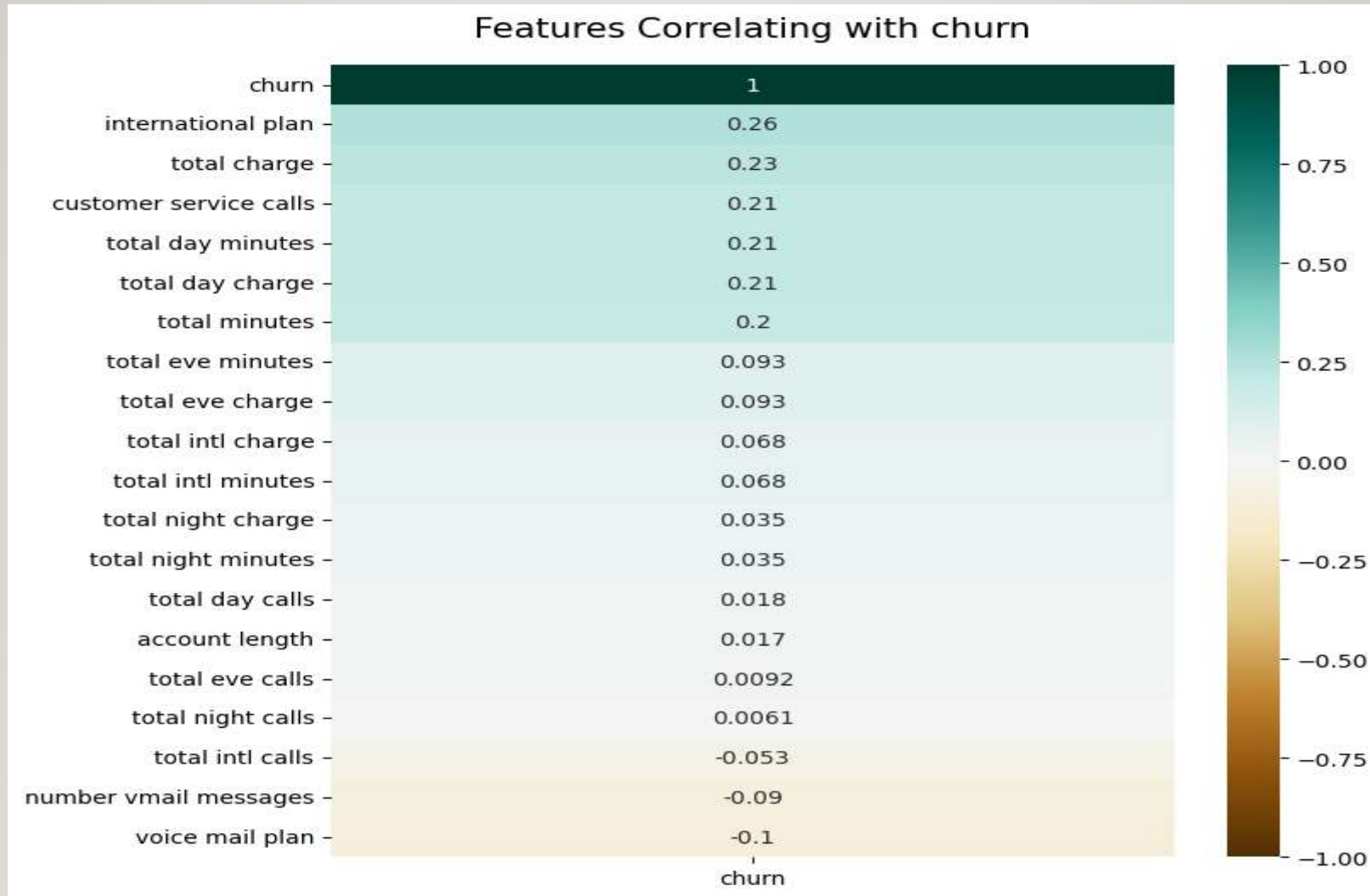
- 1) loading the dataset
- 2)reading the dataset
- 3)checking for missing values
- 4)checking for outliers
- 5) cleaning of the data
- 6)checking for correlation
- 7)adding two more columns.
- 8)checking the mean of the target variable(churn)
- 9) converting categorical variables to numeric.

# CORRELATION WITH THE TARGET VARIABLE:

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- In the next slide I did a graph to show the correlation of other variables with the target variable.
- Our target variable is churn, the correlation was high between international plan and the added column total charge.
- This was after converting the target variable from an object to a string.

# VISUALIZATION:



# MODELLING:

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- In the modelling , I used the classification algorithms , with the following accuracy rate:
- logistic regression – 85%
- Decision tree classifier-95%
- Random forest classifier -98%
- Adaboost-91%

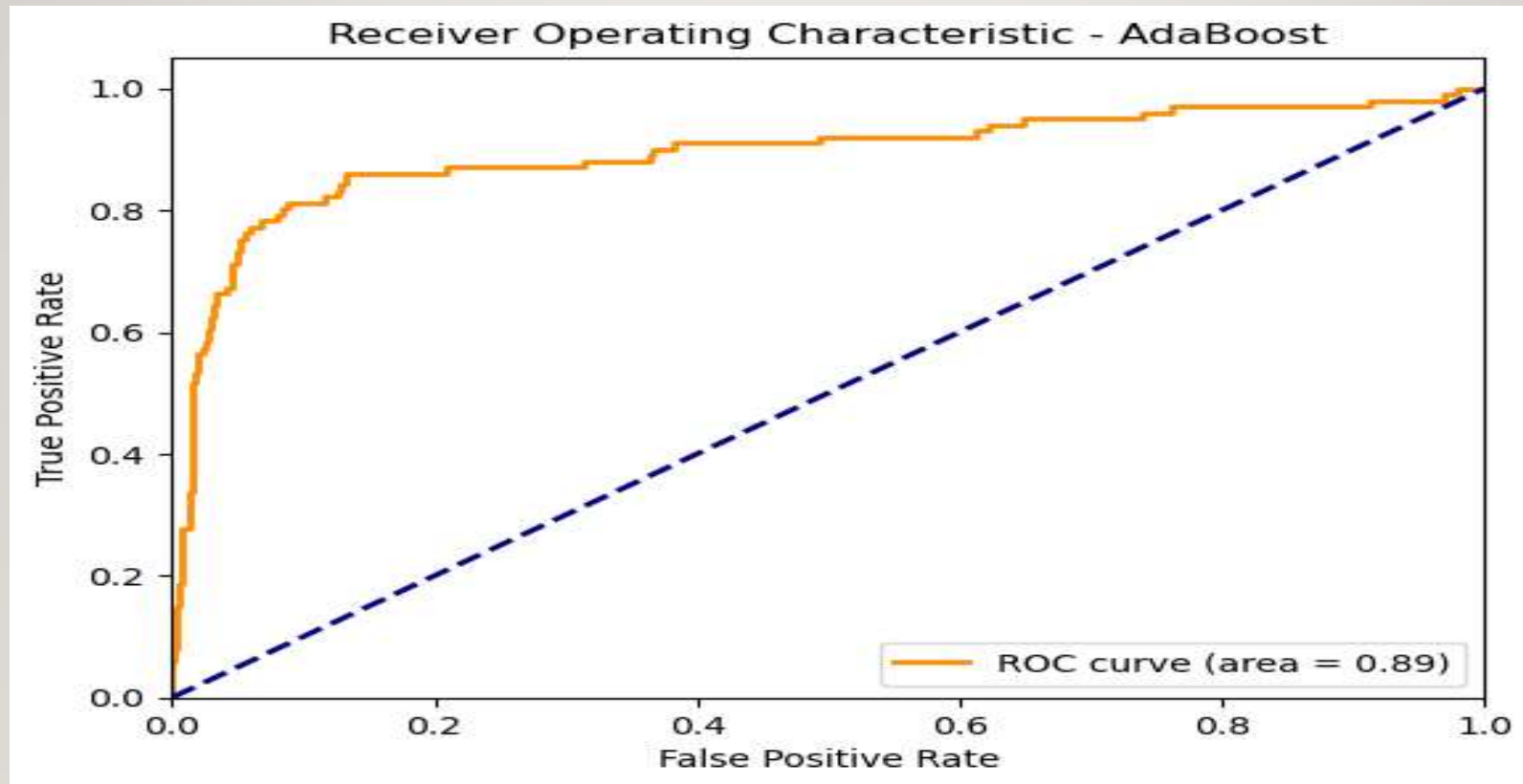
- My model improved significantly from the 1<sup>st</sup> model to the last.

The decision tree helped increase the accuracy of our model, indicating that it correctly predicts the churn status for a large proportion of the samples. From there I did the adaboost and the RCO curve which was 89%



# ADABOOST VISUALIZATION:

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# CONCLUSION:

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- I did a bar graph showing the churn rate of clients with and without the international plan.
- Those without the international plan the churn rate was low, those with an international plan the churn rate was high around 40%.
- This indicates dissatisfaction with clients with an international plan
- Also as the customer service calls increase the higher the rate of customer churn.
- Also clients with a higher total charge are likely to churn

# RECCOMENDATION:

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- 1. Create a better international plan with good value, standard cost, and service quality. , so as to increase customer satisfaction hence reducing churn.
- 2. Address issues raised on customer service calls immediately so as to reduce the number of times a client has to call and report an issue hence reducing churn.
- 3. Create a standard total charge rate so as to reduce churn on clients with a high total charge.