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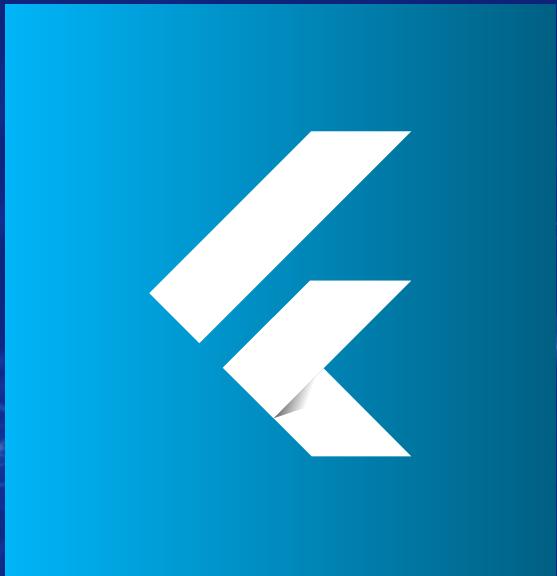


SYRIATEL COMPANY



OVERVIEW

This project aims to address the inefficient management of customer churn within SyriaTel's subscriber base, where traditional churn prediction methods have proven suboptimal, leading to ineffective resource allocation and missed opportunities for retaining valuable customers. To solve this problem, the project leverages advanced analytics and machine learning techniques to develop a predictive model that accurately identifies customers at risk of churn.



BUSINESS UNDERSTANDING

SyriaTel, a telecommunications company, is experiencing high customer churn rates (meaning customers are stopping their service and going to competitors). This leads to lost revenue and potential decline in market share. The company wants to reduce customer churn to increase their revenue and customer retention, which will be done through analysing historical customer data and using advanced analytics and predictive modelling. By predicting which customers are likely to leave, SyriaTel can take proactive measures to retain them, strengthening its position in the telecommunication industry.

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Syria Tel wants to predict customer churn based on historical data to identify customers at risk of leaving the service. By doing so, the company can implement targeted retention strategies to reduce customer attrition and improve overall customer satisfaction.



STAKEHOLDERS



SyriaTel Management whose interests are strategies to reduce churn.



Marketing Team whose interests are holding campaigns for customer retention towards the atrisk customers.



OBJECTIVES



Objective 1

Analyse the historical Data: Performing a thorough analysis of SyriaTel's historical customer data, which include usage patterns, service interactions, and churn records, to identify key features and trends associated with potential churn.

Objective 2

Develop a Predictive Model: Using advanced analytics and machine learning algorithms, such as logistic regression and ensemble methods, to construct a predictive model with high accuracy for forecasting customer churn.

Objective 3

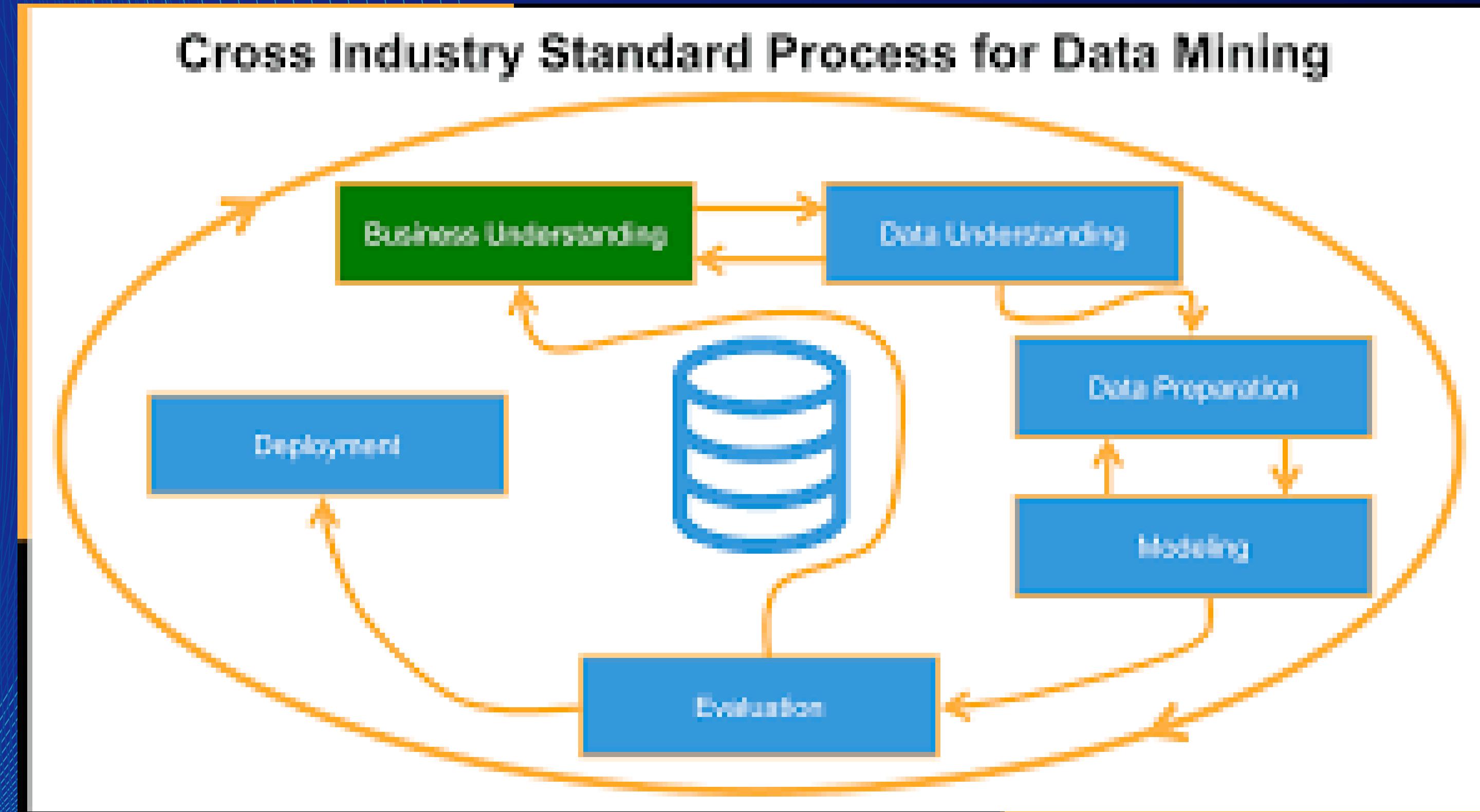
Develop and Implement Retention Strategies: Integrating the predictive model into SyriaTel's operational framework to facilitate real-time detection of at-risk customers. Developing and also implementing personalised retention strategies based on the model's predictions to effectively reduce churn.



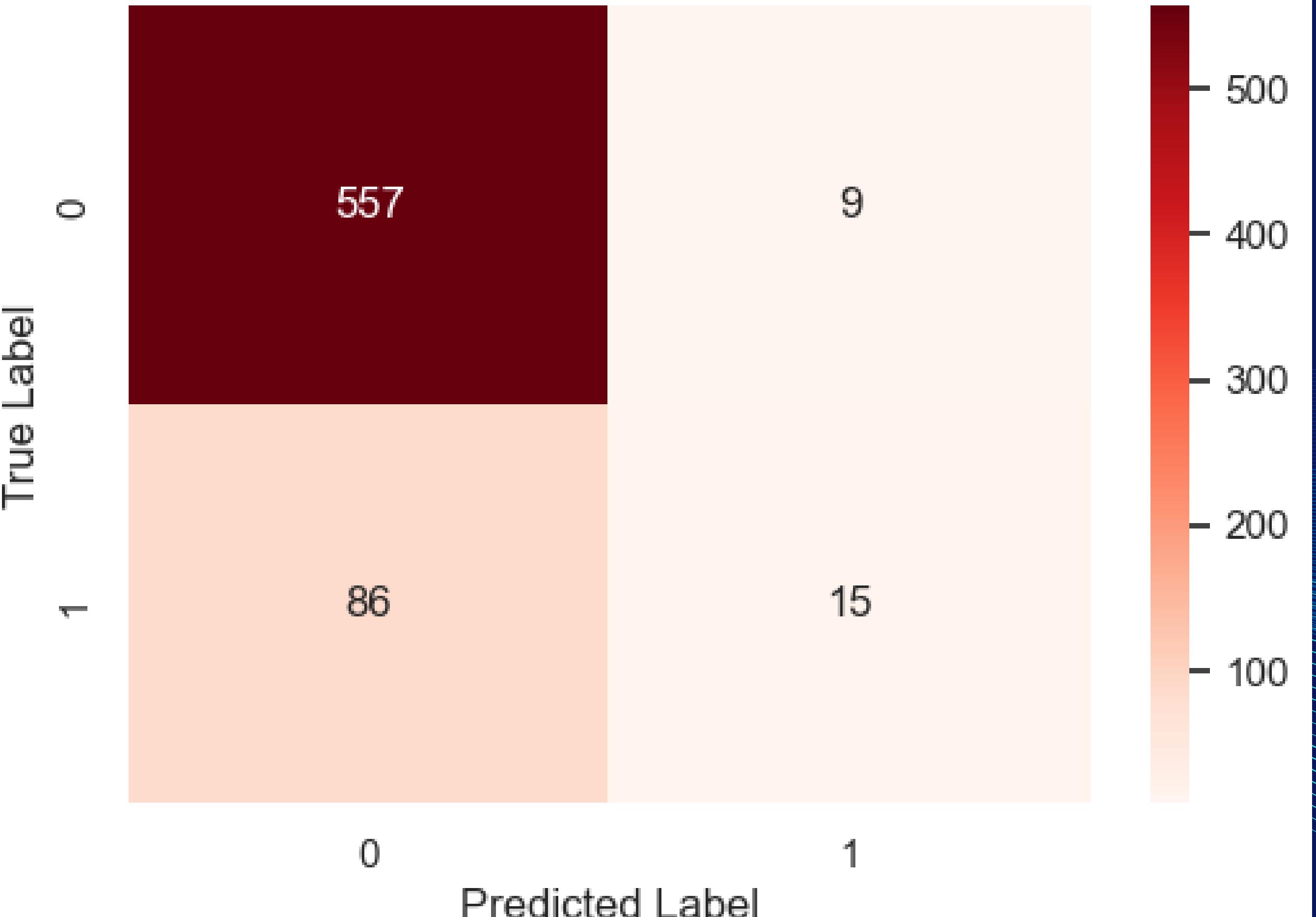
DATA UNDERSTANDING

The dataset is sourced from [Kaggle](#). It provides information on the customers behaviors which enables analysis and prediction of the churn patterns. It contains 3333 entries and 21 features. All features, except for Phone number and State, contain numerical values, while the remaining features are categorical or binary.

DATA PREPARATION



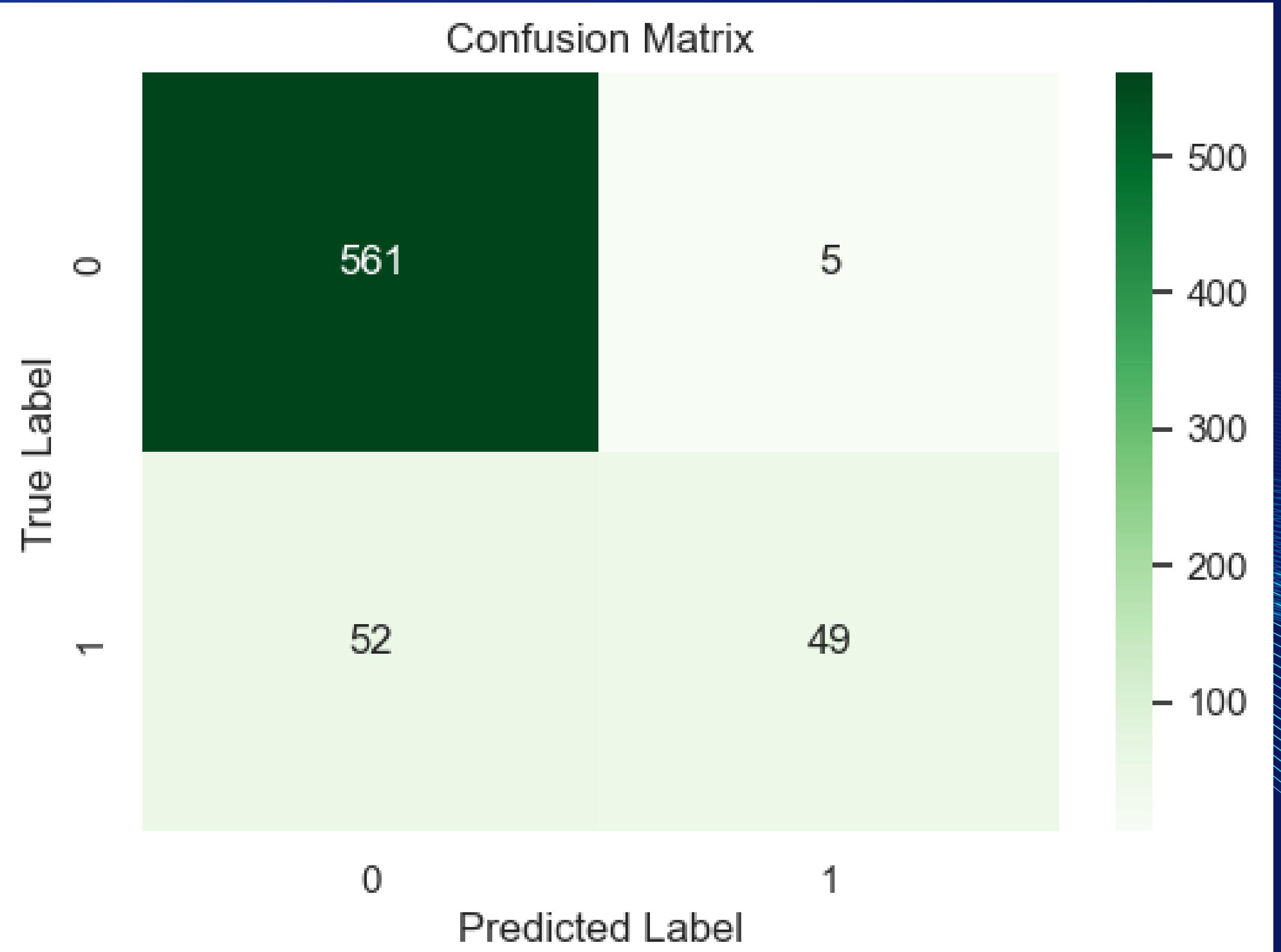
Confusion Matrix



BASELINE MODEL:LOGISTIC REGRESSION

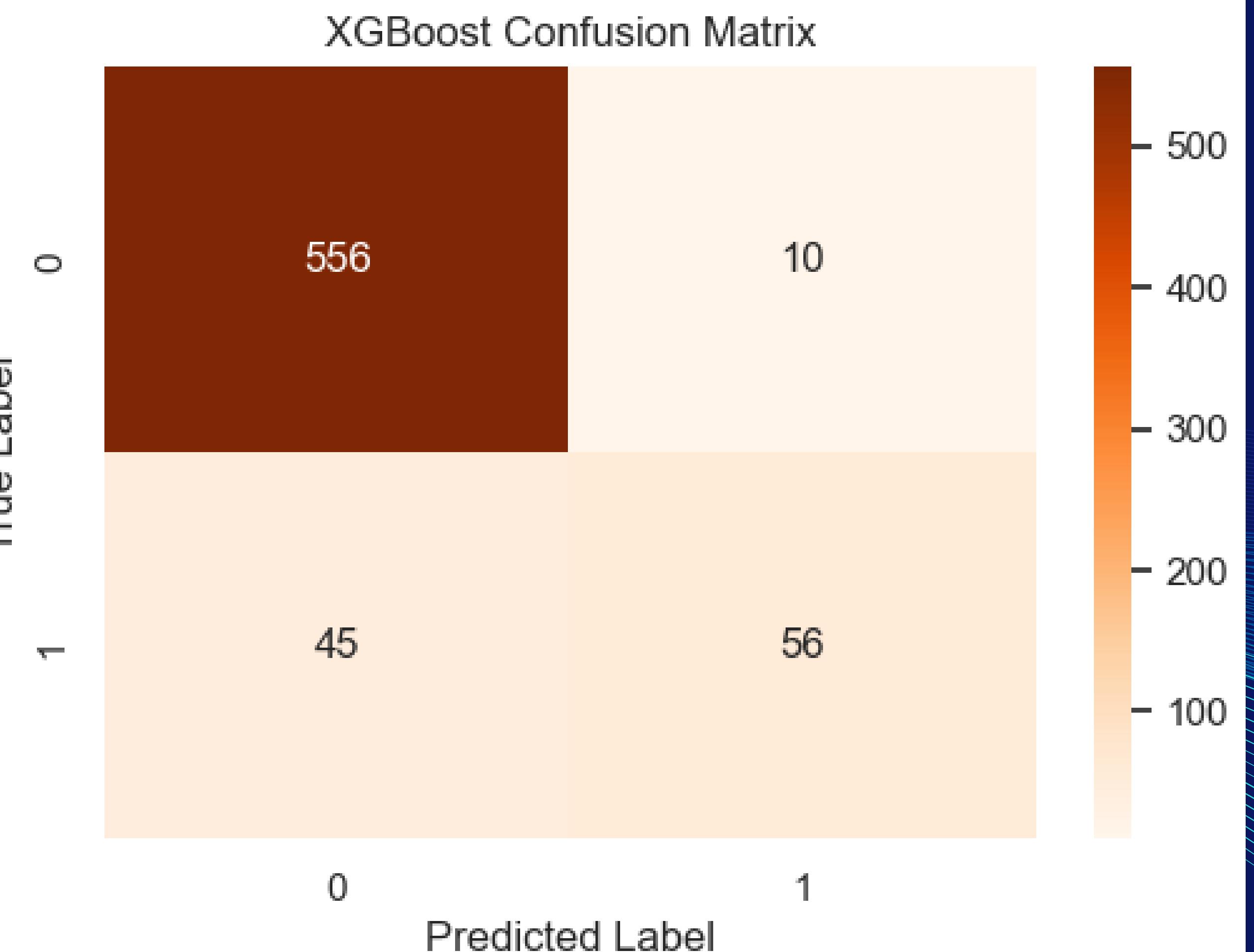
- The model achieves an overall accuracy of about 84.56%
- The Precision is 0.46 meaning that 46% of the instances predicted as positive are actually positive.
- The model performs well in identifying true negatives but has difficulty predicting true positives.

2. Gradient Boosting Model



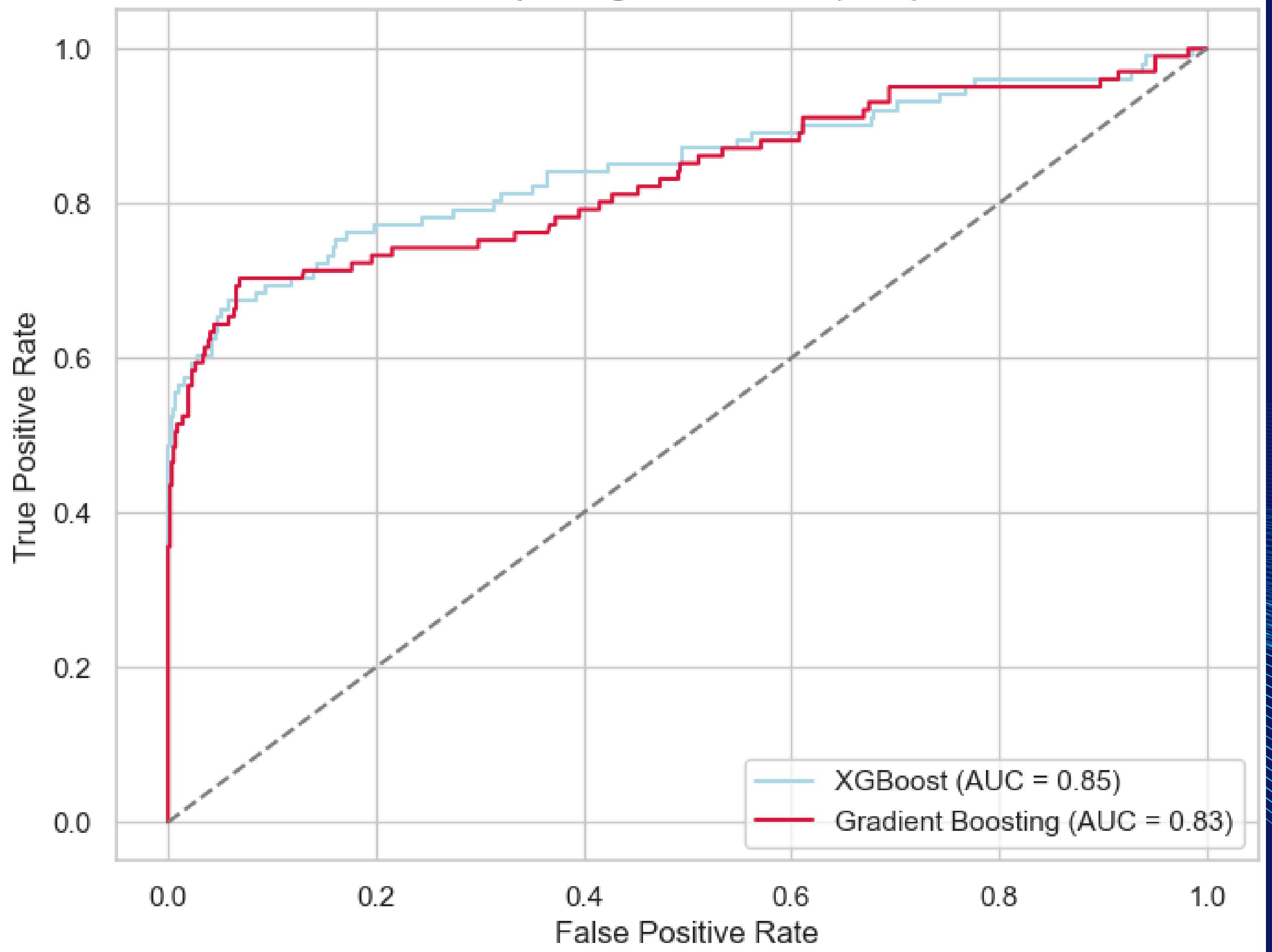
- The model has an overall accuracy of around 88.16%
- The precision is 0.78, meaning that 78% of the instances predicted as positive are correct.
- The model excels at predicting true negatives (non-churners) but struggles with accurately predicting churners.

3. XGboost Classifier



- The model has an overall accuracy of around 87.71%
- The precision is 0.69, meaning that 69% of the instances predicted as positive are correct.
- The model excels at predicting true negatives (non-churners) but struggles with accurately predicting churners.

Receiver Operating Characteristic (ROC) Curve



TUNING BEST TWO MODELS

- The optimal ROC curve in the graph corresponds to the Gradient Boosting model, indicating its superior performance by achieving the best balance between correctly identifying positive instances and minimizing false positives



RECOMMENDATIONS

- Introduce Loyalty programs and Offers.
- Maintain Regular communication.
- Customise customer experience.
- Predict and prevent churn.
- Collect customer feedback.



NEXT STEPS



Expand Data collection



Deploy the Model



Monitor and update the Model





CONTACT US

Incase of further clarification feel free to contact us via the following plattforms:

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THANK YOU

