PHASE 3 PROJECT

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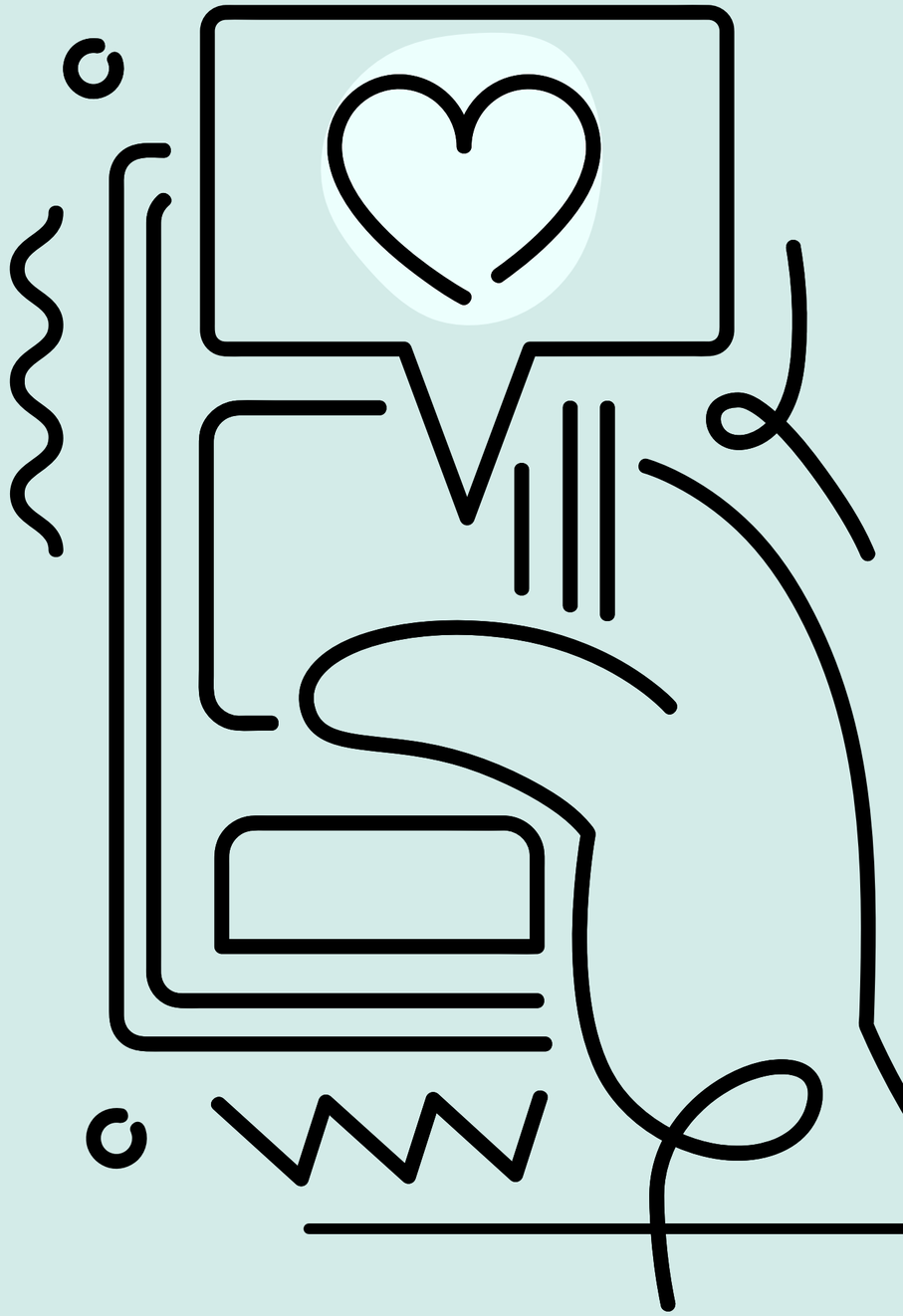


SYRIATEL CUSTOMER CHURN

The data has a target variable called churn
and several features

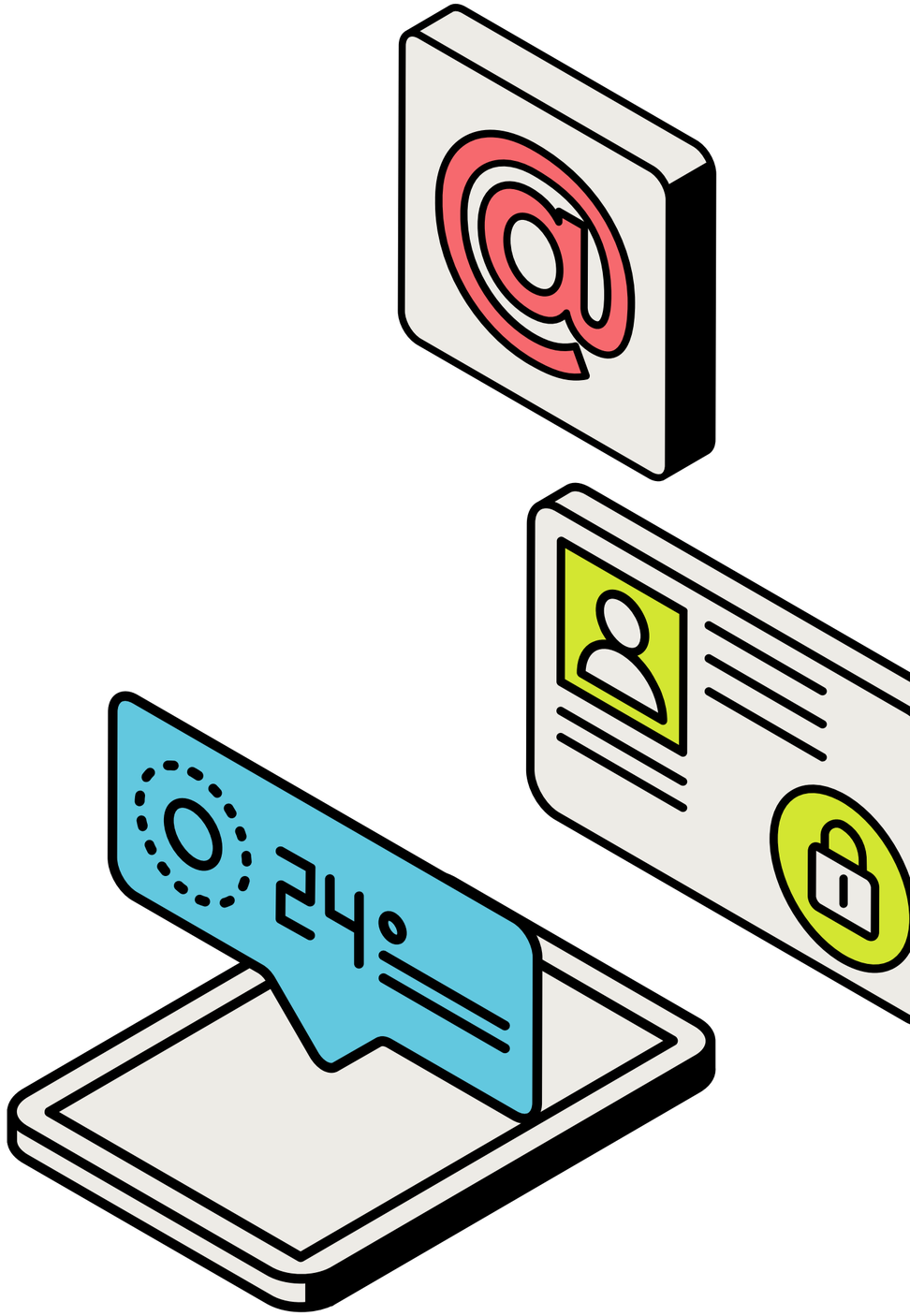
DATA SET

The dataset is a binary classification

This dataset has 3,333rows and 21 columns

Project Overview:

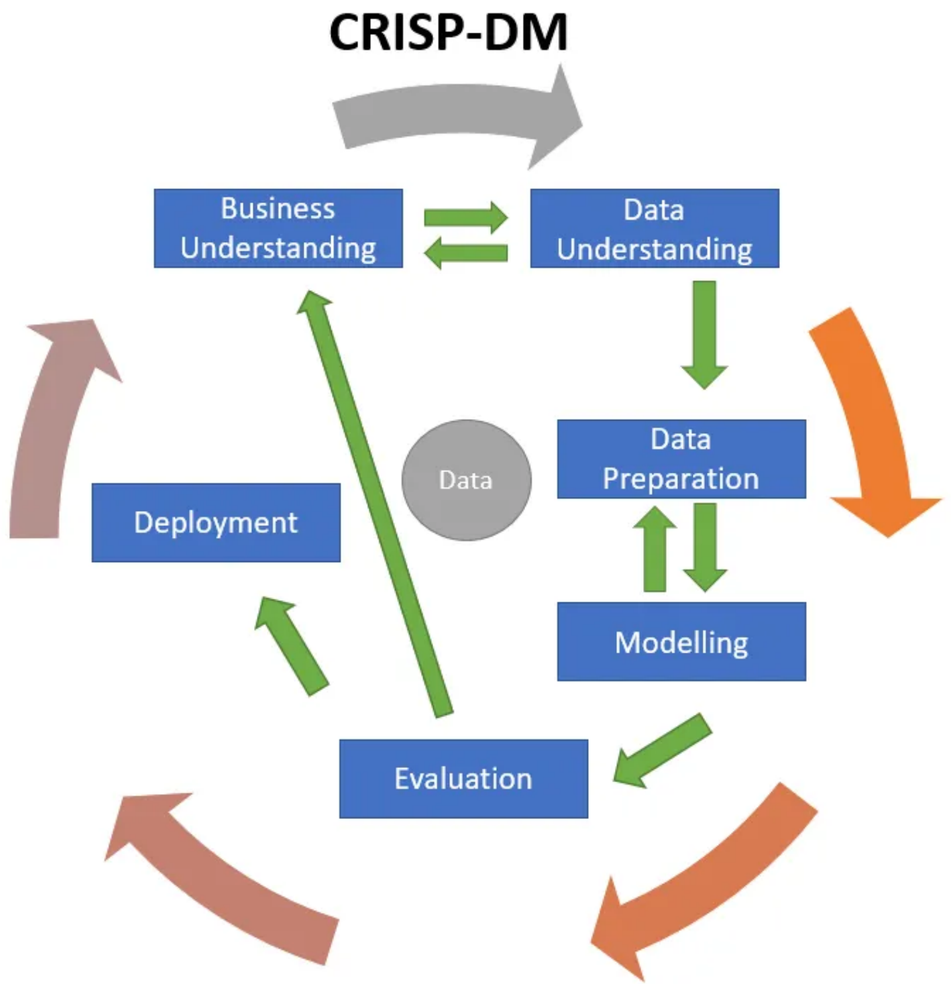
The project aims at analysing SyriaTel data and use machine learning algorithm in building models that predict whether a customer will churn or not.



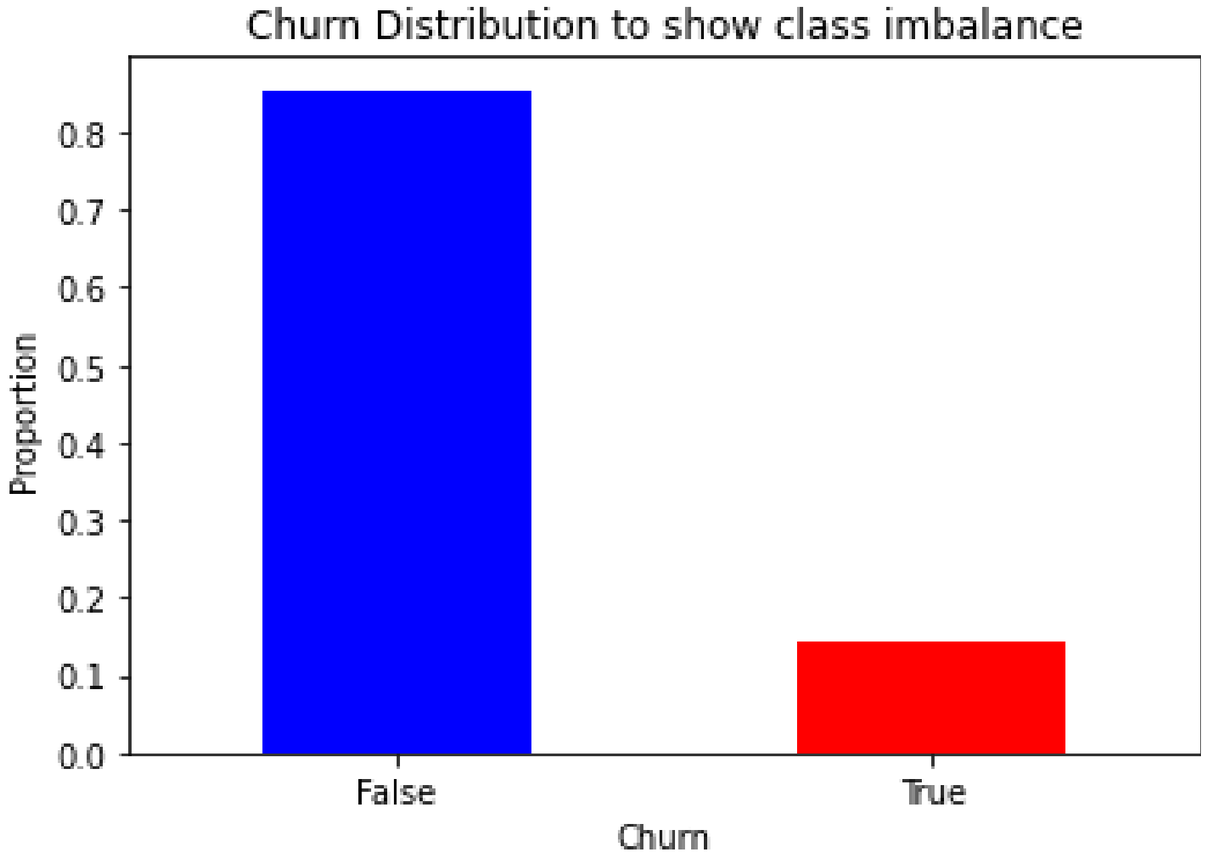
Business Problem:

SyriaTel, a telecommunications company, is facing the challenge of customer churn. The company wants to predict whether a customer is likely to stop doing business with them in the near future. Reducing customer churn is essential for maintaining revenue and profitability.

Method used


CRISP-DM
Business Understanding
Data Understanding
Data Preparation
Modelling
Evaluation
Deployment
Data

Target Variable



The distributions shows class imbalance

85% of customer have churned and 14% have not churned

MODELLING:

Machine learning models to use for predicting customer churn in the telecom company.

Logistic Regression

Random Forest

Decision Tree

RESULTS

LOGISTIC REGRESSION

Accuracy: 0.74

RANDOM FOREST MODEL

Accuracy: 0.96

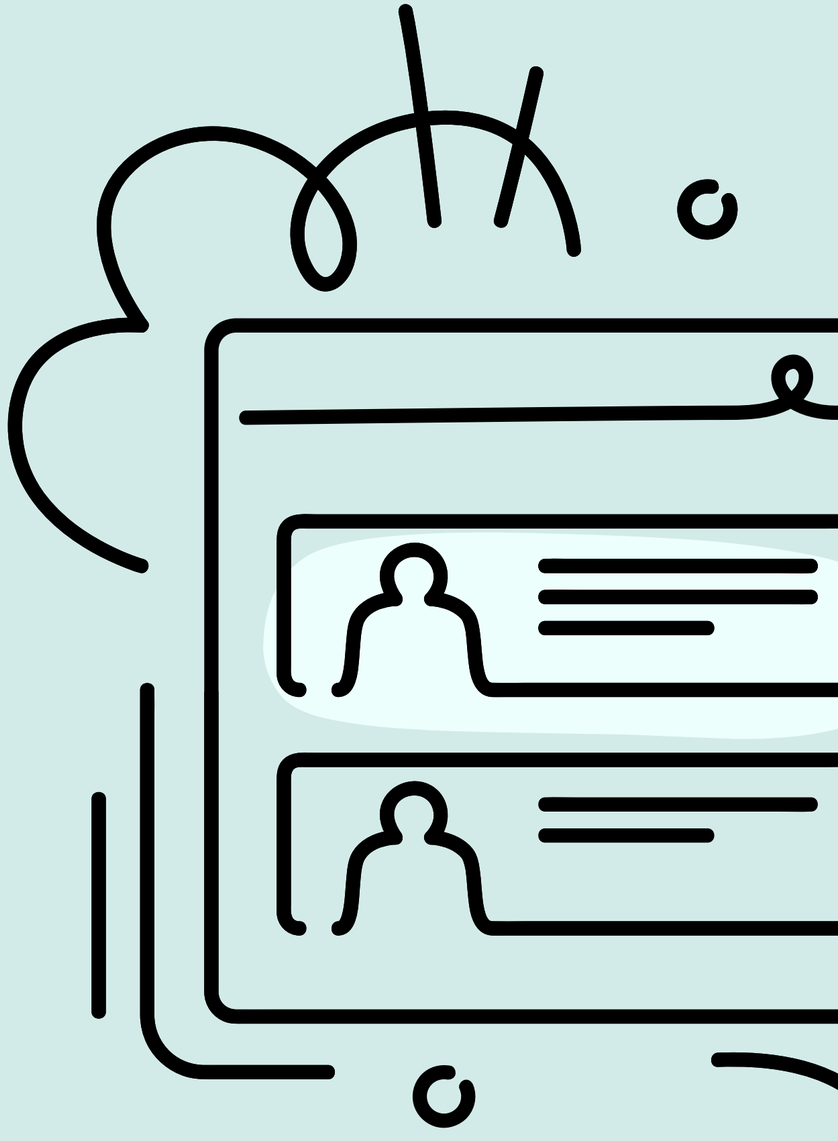
DECISION TREE:

Accuracy: 0.93

Random Forest is the best model with a striking balance in the 3 metrics of evaluation.

CONCLUSION

The Random Forest model outperforms both Logistic Regression and the Decision Tree with tuned hyperparameters in terms of accuracy, precision, recall, and F1-Score. It achieves the highest overall accuracy and a well-balanced F1-Score, indicating robust performance in predicting customer churn.



RECOMMENDATION: CHURN RETENTION STRATEGIES

Utilize the predictions from random forest model to implement customer retention strategies for identified churners. Develop specific marketing or service offers to reduce churn among high-risk customers.

The high-performance model should be deployed for predicting customer churn within the telecom company.

THANK YOU