PHASE 3 PROJECT

CUSTOMER CHURN PREDICTION

A sales and marketing perspective

WHY CHURN MATTERS

REVENUE LOSS

Revenue loss due to lost customers

CUSTOMER ACQUISITION

Cost of acquiring new customers is higher than retaining current ones

SUSTAINABILITY

Long-term profitability and market positioning

REPUTATION

Maintain brand reputation and investor confidence

DATA OVERVIEW

SyriaTel Customer Churn Dataset

- This dataset is from Kaggle:
  https://www.kaggle.com/code/becksddf/churn-in-telecoms-dataset
- Contains 3333 entries and 21 columns
- Includes customer information and service plans.

This data will inform churn prediction and retention strategies.

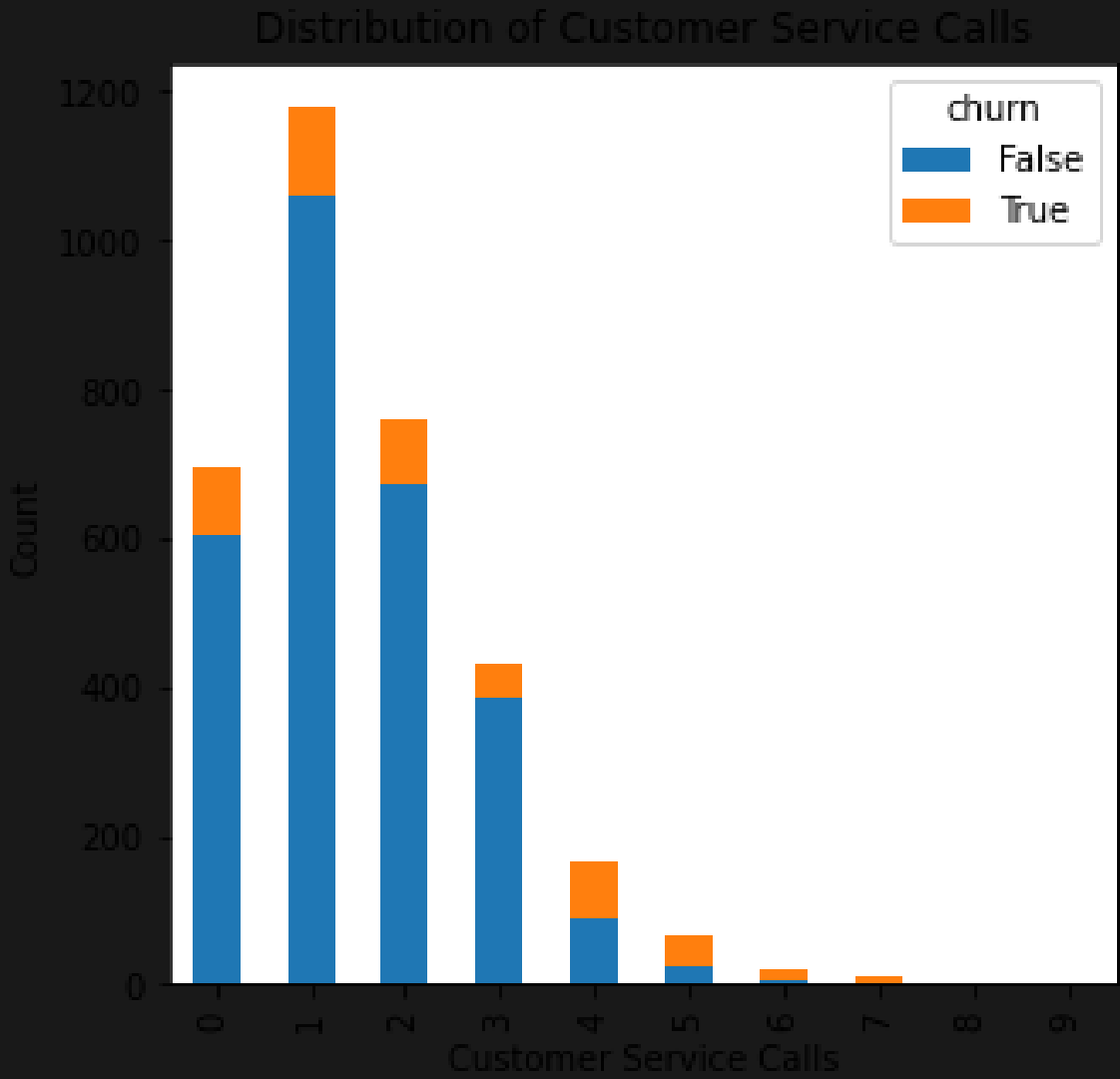# EDA: IDENTIFYING PATTERNS

CUSTOMERSLIKEY TO CHURN:

INTERNATIONAL PLAN

CUSTOMER SERVICE CALLS

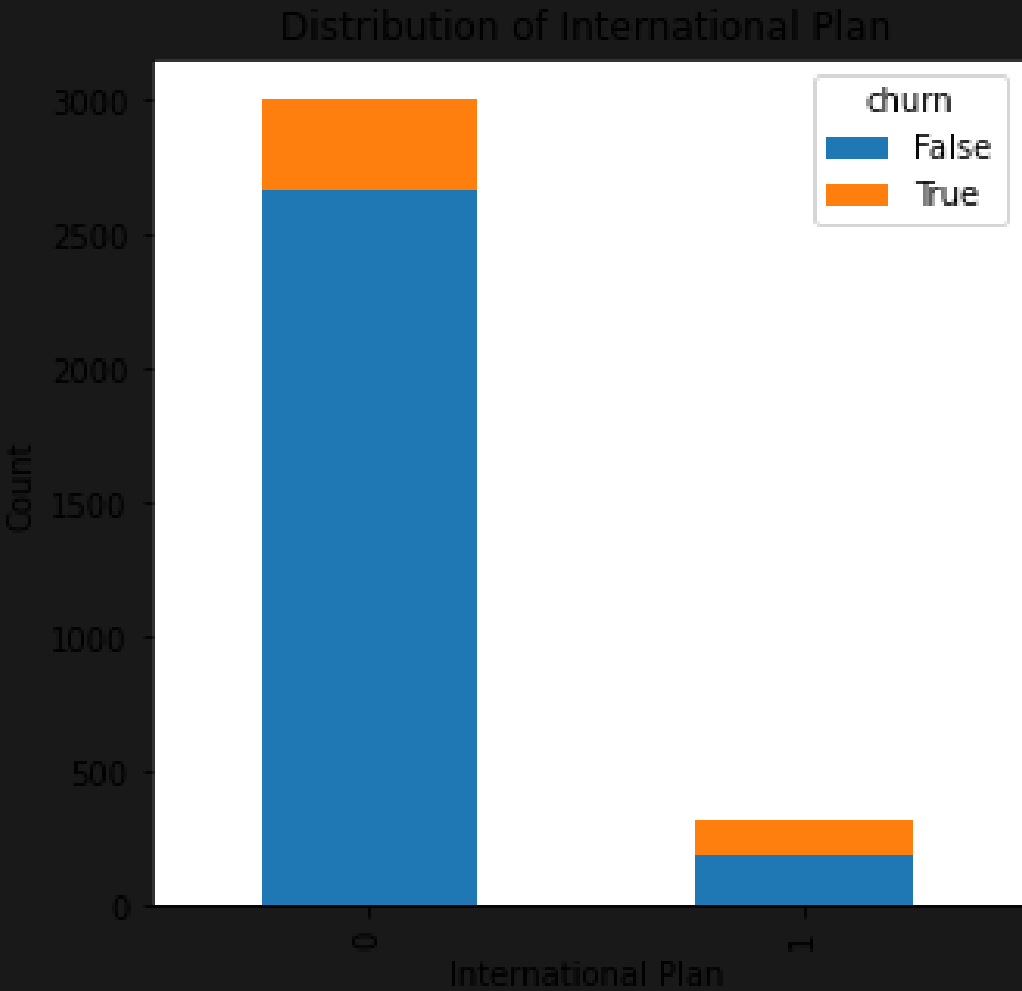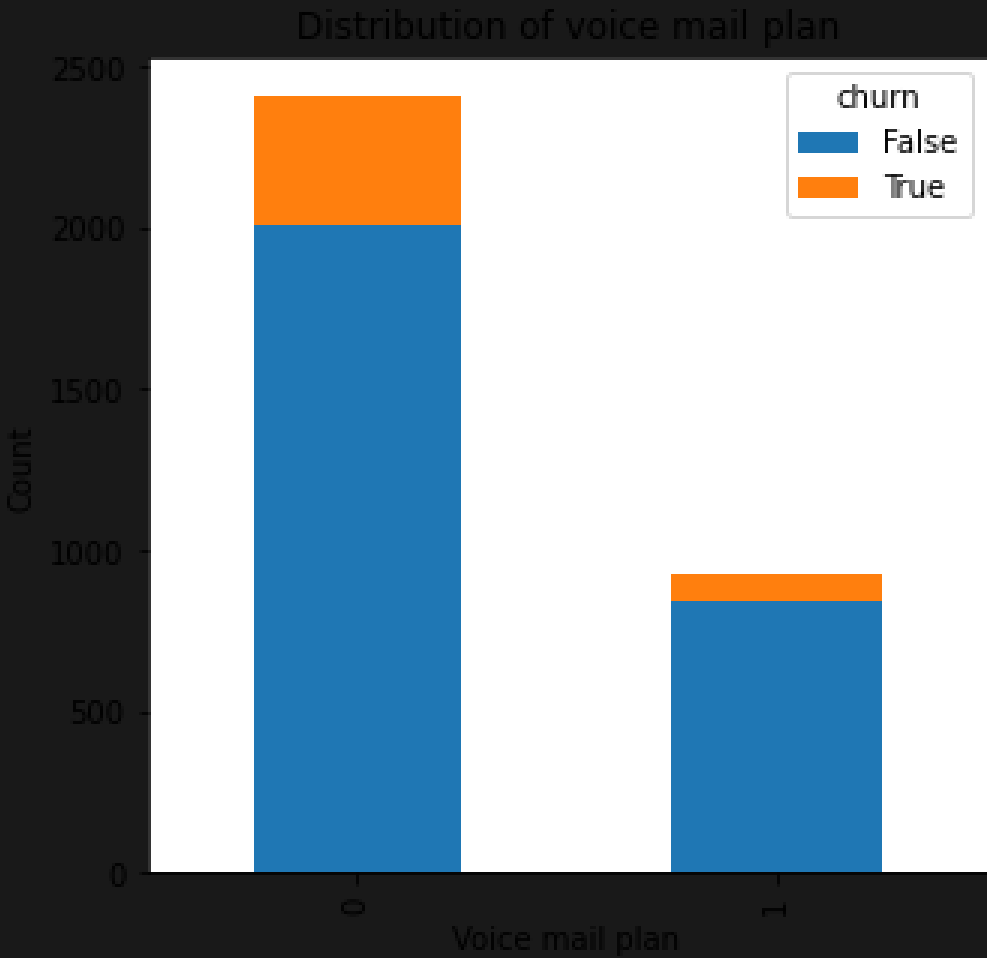**TOTAL DAY MINUTES AND CHARGES**

VOICEMAIL PLAN

DISTRIBUTION OF CUSTOMER SERVICE CALLS

DISTRIBUTION OF CUSTOMERS WITH INTERNATIONAL PLAN
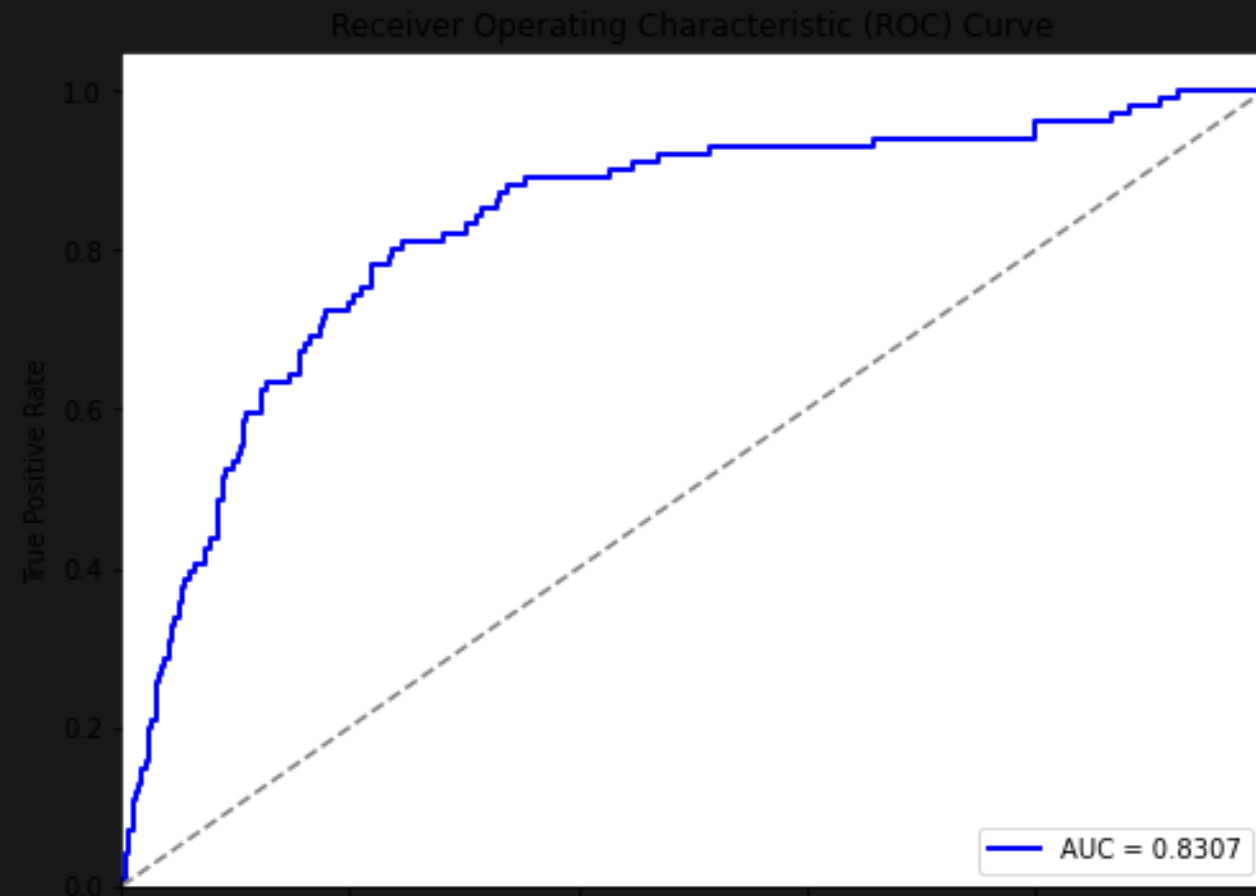
DISTRIBUTION OF CUSTOMERS WITH VOICEMAIL

PREDICTIVE MODELS

LOGISTIC REGRESSION : ROC AND AUC CURVES

Results from the simple logistic regression indicate that the model does not properly identify churned customers

RANDOM FOREST CLASSIFICATION

The model is more accurate at 94%, more precise as 0.95 is really close to zero. It however only captures 66% of churned cases

DECISION TREE CLASSIFICATION

The Decision Tree model performs reasonably well in predicting customer churn for Syria Tel. However, there is room for improvement, especially in recall (identifying more actual churn cases).

WHY RECALL MATTERS:

- Recall represents our model's capability to capture true churn cases. It measures the proportion of actual churners correctly identified by the system.

- A higher recall means we minimize the risk of overlooking customers who may leave our services.

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THE RANDOM FOREST MODEL WAS IMPROVED TO BETTER REFLECT CUSTOMER CHURN. WE CAN NOW PREDICT TWO THIRDS OF CUSTOMERS WHO CHURNED

MITIGATION STRATEGIES:

PROPOSALA TO REDUCE CHURN:
- PERSONALIZED OFFERS OR DISCOUNTS.
- IMPROVED CUSTOMER SERVICE.
- TARGETED MARKETING CAMPAIGNS.