

# ChurnShield

A PREDICTIVE ANALYTICS FRAMEWORK TO  
COMBAT CUSTOMER ATTRITION AT SYRIATEL



# Overview

- ▶ **Goal:** *Prevent customer churn using data.*
- ▶ **Why it matters:** *Retaining customers is cheaper than acquiring new ones.*
- ▶ **Solution:** Predict who might leave, why, and how to stop them.



# Business Problem

- ▶ **Churn is rising at SyriaTel.** Every lost customer = lost revenue.
- ▶ **Goal:** Predict who might leave, why, and how to stop them.



# Stakeholders



- ▶ **Executives:** *Protect revenue.*
- ▶ **Customer Experience Teams:** *Address dissatisfaction.*
- ▶ **Retention Teams:** *Create targeted offers and campaigns.*

# Understanding the Data

- ▶ *Source: SyriaTel dataset (via Kaggle).*
- ▶ *Key Attributes:*
  - ▶ *- Demographics*
  - ▶ *- Service Plans*
  - ▶ *- Call Behavior*
  - ▶ *- Target: Has the customer churned*



# Data Preparation

- ▶ *Steps Taken:*
- ▶ - *Cleaned missing/duplicate data*
- ▶ - *Removed irrelevant columns*
- ▶ - *Balanced the dataset*
- ▶ - *Encoded text data*
- ▶ - *Scaled numerical features*

# Exploratory Analysis

- ▶ *Key Insights:*
- ▶ - *>3 Customer service calls → High churn*
- ▶ - *International Plan → Higher churn risk*
- ▶ - *Higher charges → Higher churn*
- ▶ - *Voice mail → Less churn*

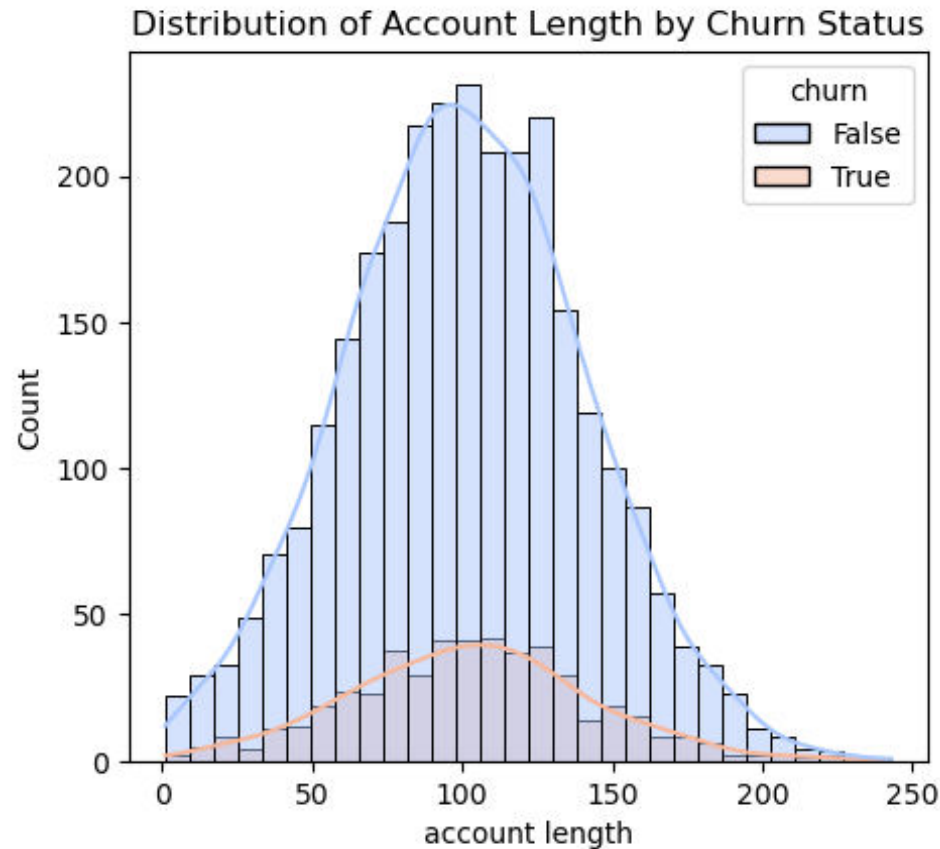
# Why Classification?

- ▶ **We're answering a Yes/No question:** 'Will the customer churn?'
- ▶ **Classification** helps us filter likely churners.
- ▶ It's a smart **alert system** for retention.

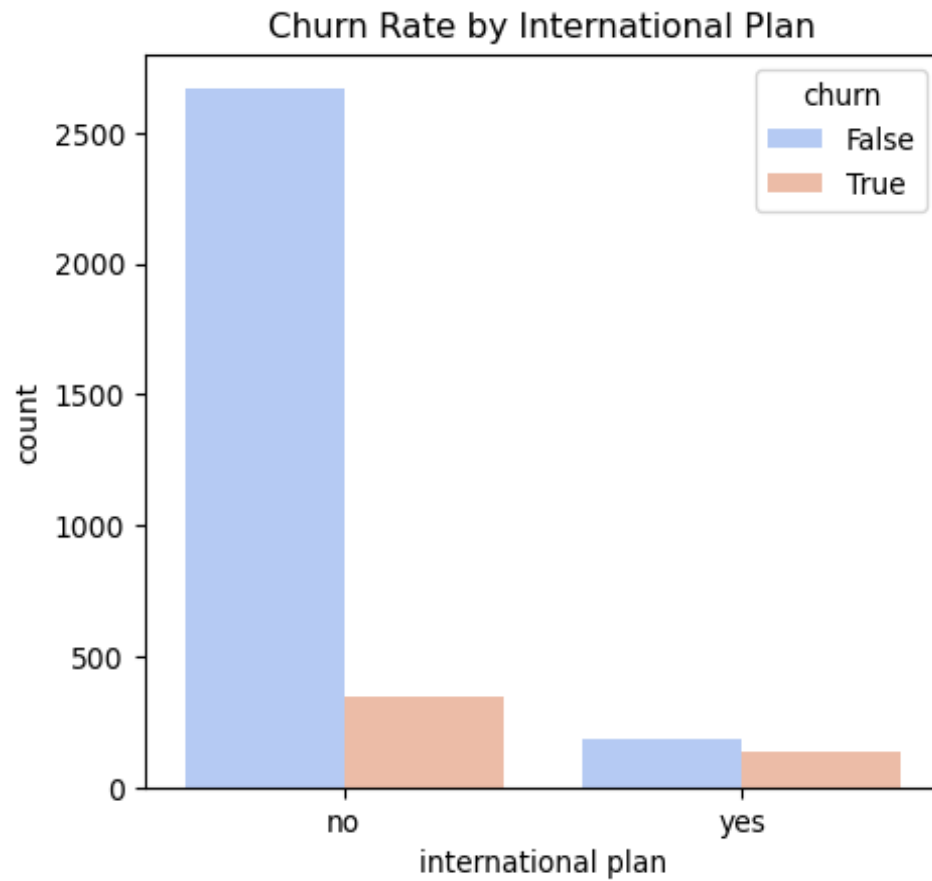




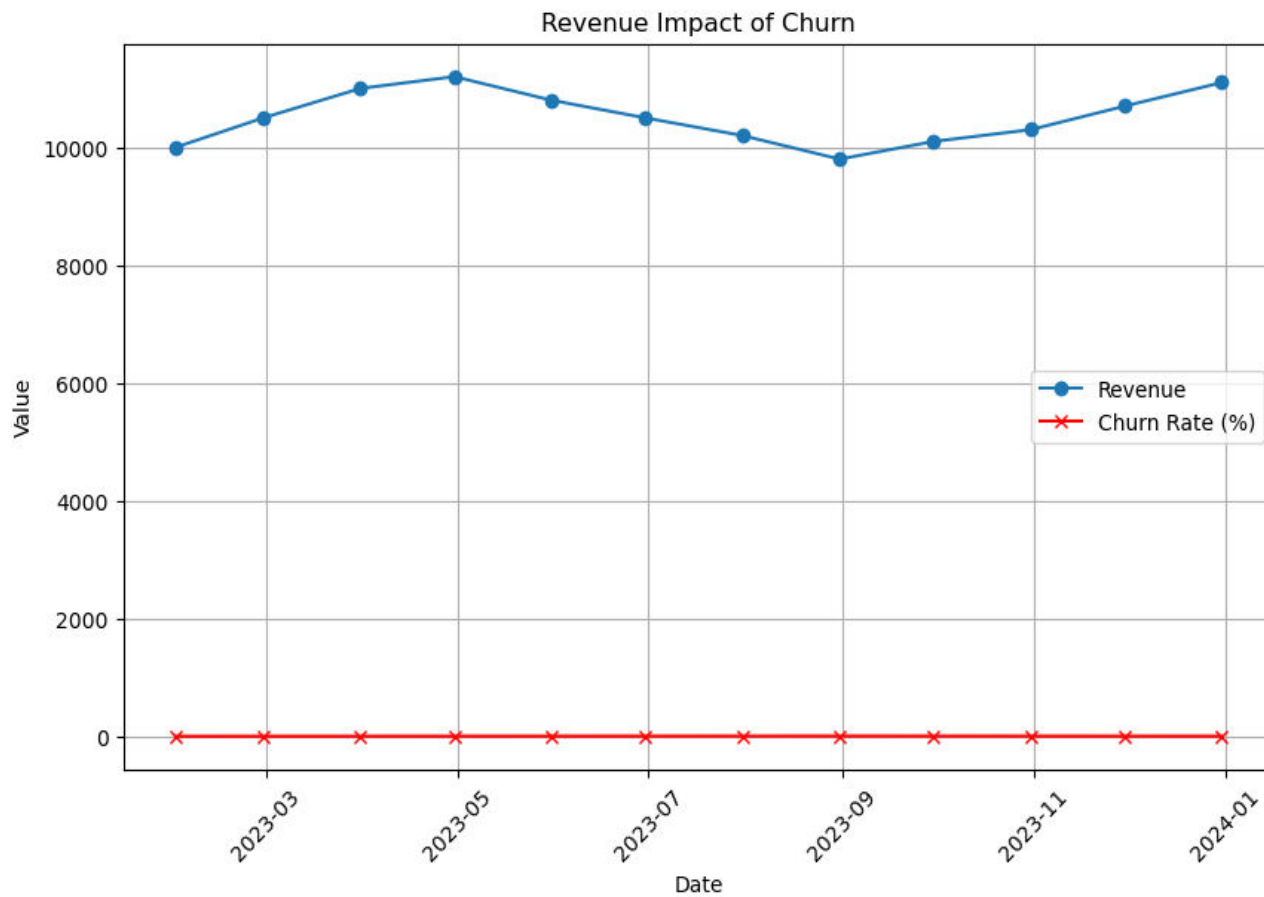
# Distribution of Account length by Churn Status .



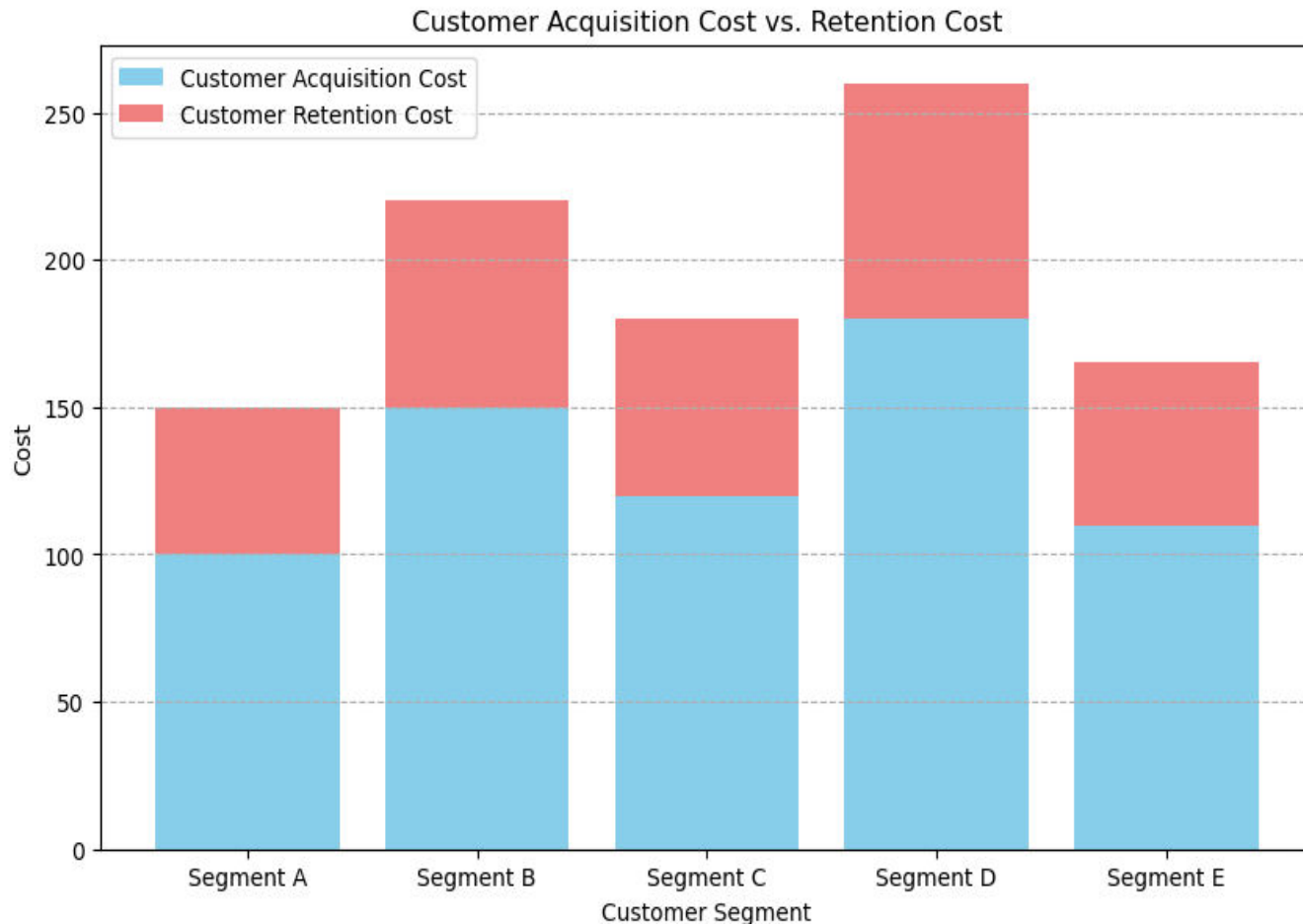
# Churn Rate by International Plan.



# Revenue Impact Churn.

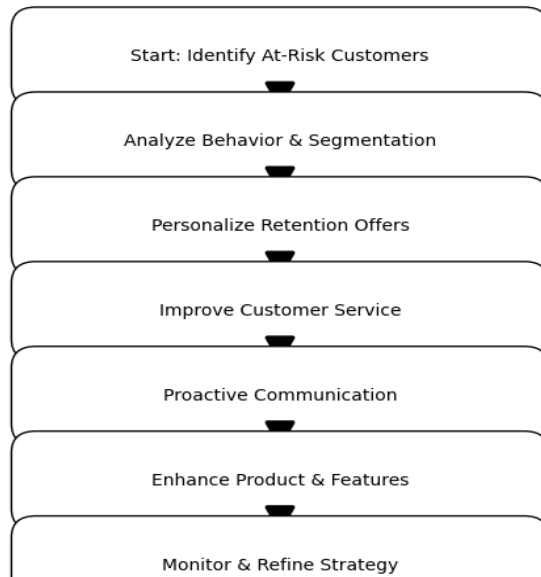


# Customer Acquisition Cost vs Retention Cost.



# Churn Prevention Flowchart.

Churn Prevention Flowchart



# Models Used

- ▶ *Models we tested:*
- ▶ - *Logistic Regression (simple)*
- ▶ - *Decision Tree (strong)*
- ▶ - *Gradient Boosting (best performance)*



# Model Results (Simplified)

- ▶ *Best Model: Gradient Boosting*
- ▶ - **Accuracy: 92%**
- ▶ - **Precision: 90%**
- ▶ - **Recall: 94%**
- ▶ *Conclusion: We can confidently flag most customers who are likely to churn.*



# Recommendations

- ▶ - Target users with international plans or >3 service calls
- ▶ - Offer personalized loyalty packages
- ▶ - Act early to improve satisfaction



# Next Steps

- ▶ - *Pilot a campaign with predicted churners*
- ▶ - *Measure churn reduction*
- ▶ - *Add model to CRM*
- ▶ - *Keep improving as data grows*

# Thank You

- ▶ *Questions contact !*
- ▶ *Let's keep your customers happy—and loyal.*