

# PHASE 3 PROJECT

# Syriatel Customer Churn Classification Project

# BUSINESS UNDERSTANDING

- ▶ Syriatel's major challenge is losing customers leading to revenue loss, negative brand perception and increased acquisition costs. It aims at reducing customer churn .
- ▶ The management would like to understand the factors that drive churn and create a model that predict it accurately hence helping Syriatel take targeted actions to retain valuable customers.

# BUSINESS OBJECTIVES

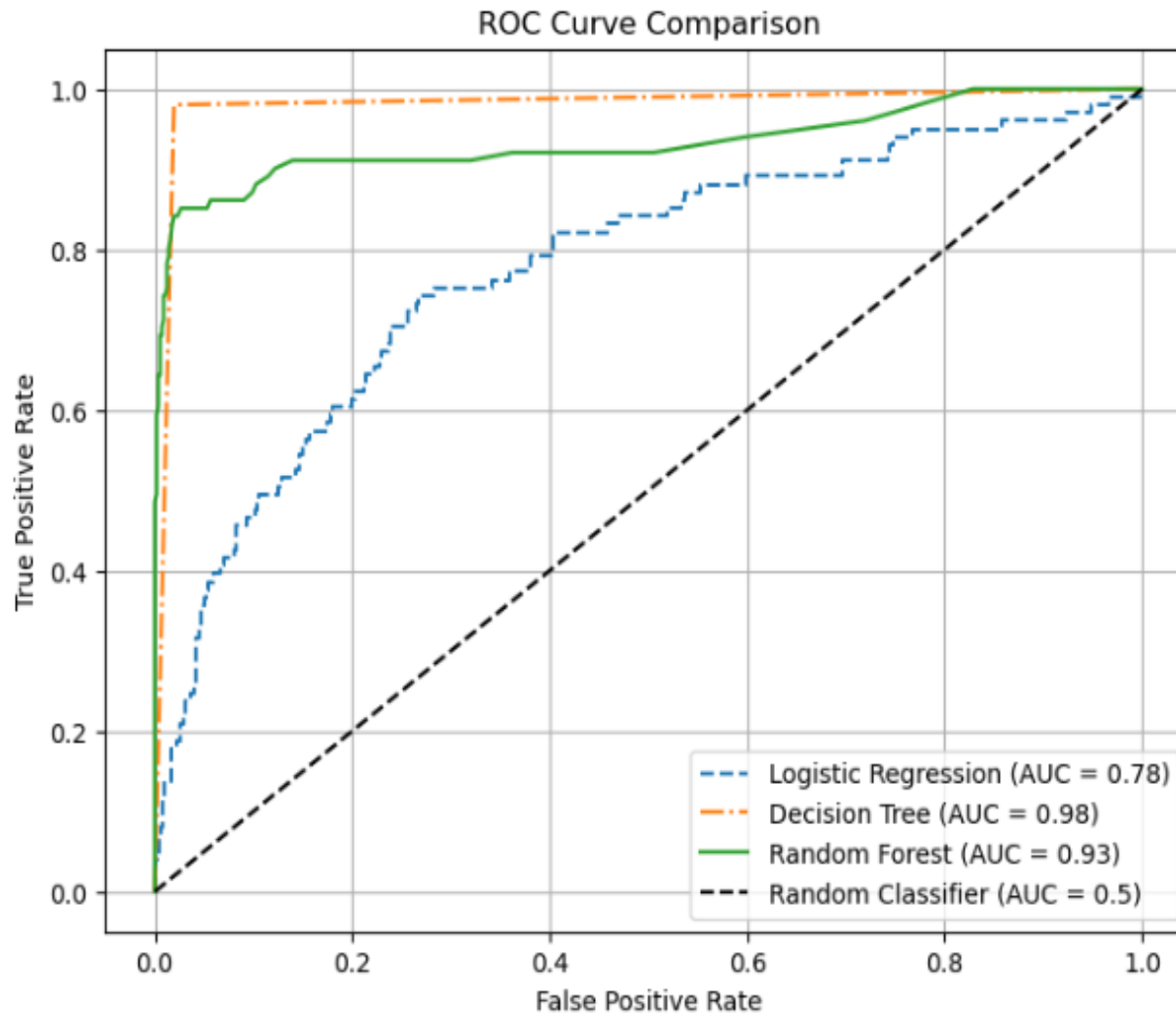
- Identify the key factors driving customer churn.
- Develop a predictive model to classify customers at risk of leaving.
- Enable Syriatel to take proactive actions to improve customer retention.
- Enhance customer satisfaction and business sustainability.

# DATA PREPARATION

- Data cleaning
- Data Analysis (Univariate Analysis , Bivariate Analysis and Multivariate Analysis)Handled missing values and removed duplicate records.
- Standardized numerical features using standard scaler.
- Encoding categorical variables using Label Encoding.
- Splitting the dataset into training (80%) and testing (20%) sets

# MODELING AND EVALUATION

- The dataset was analyzing presents a binary classification challenge aimed at predicting churn, i.e., whether a customer will leave or not.
- My approach involves utilizing a basic logistic regression model, with evaluation based on the recall score. Success criteria are set at achieving a recall score of 75% or higher. I employed the algorithms below;
  - ✓ Logistic Regression
  - ✓ Decision Tree
  - ✓ Random Forest



- **Decision Tree (AUC = 0.98):**  
Best at distinguishing churners but may be overfitting.

- **Random Forest (AUC = 0.93):**  
Strong performance with better generalization.

- **Logistic Regression (AUC = 0.78):**
  - Struggles with complex patterns in the data.



# CONCLUSION

- **Focus on Recall:** Prioritized identifying high-risk churners to reduce misclassification.
- **Best Model:** Random Forest outperformed others, offering strong accuracy and stability.

- **Key Churn Factors:**

- ✓ High Total Day Charge
- ✓ Frequent Customer Service Calls
- ✓ Number of Voicemail Messages

- **Next Steps:**

- ✓ Explore additional customer behaviour patterns.
- ✓ Continuously refine the model for better accuracy.
- ✓ Implement targeted retention strategies.

# RECOMMENDATIONS

- Offer discounts or loyalty programs for high-risk customers.
- Improve customer support to reduce dissatisfaction.
- Encourage long-term contracts by offering incentives.
- Monitor high-churn segments and take proactive retention measures.

THANK YOU