SYRIATEL CUSTOMER CHURN PREDICTION

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CUSTOMER CHURN

- Refers to when a customer stops using a company's product or service.

- In the case of SyriaTel, churn means a customer has left the telecom provider.

- Churn is a key business metric that shows how well a company retains customers.

BUSINESS PROBLEM

- Churn causes significant revenue loss for telecoms.

- **Objective:** Predict customer churn using usage and service data.

- Value: Retain at-risk customers through early intervention.

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DATA PROCESS STEPS

- Defining the Question
- Importing the required Libraries
- Importing the Data
- Tidying the Data
- Data Analysis
- Data Visualization

RESULTS

DATASET OVERVIEW

- 3333 customer records with 21 attributes.

- Key columns: international plan, voice mail plan, call minutes, charges, customer service calls.

- Target variable: churn (True/False).

CHURN DISTRIBUTION

- Approximately 14.5% of customers churned.

- Data is imbalanced — important to handle in modeling.
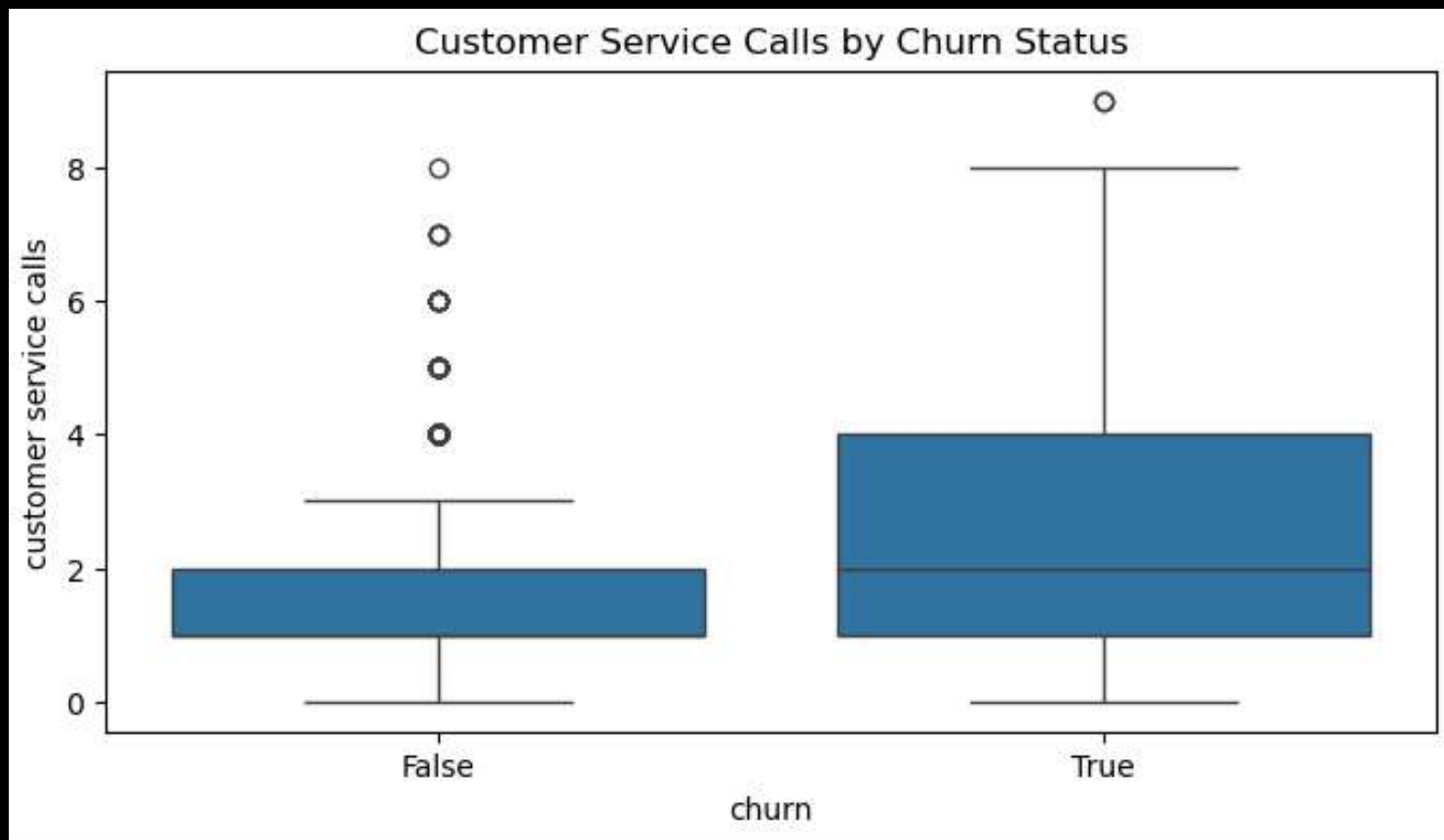
CHURN DISTRIBUTION: CHECK CHURN CLASS BALANCE
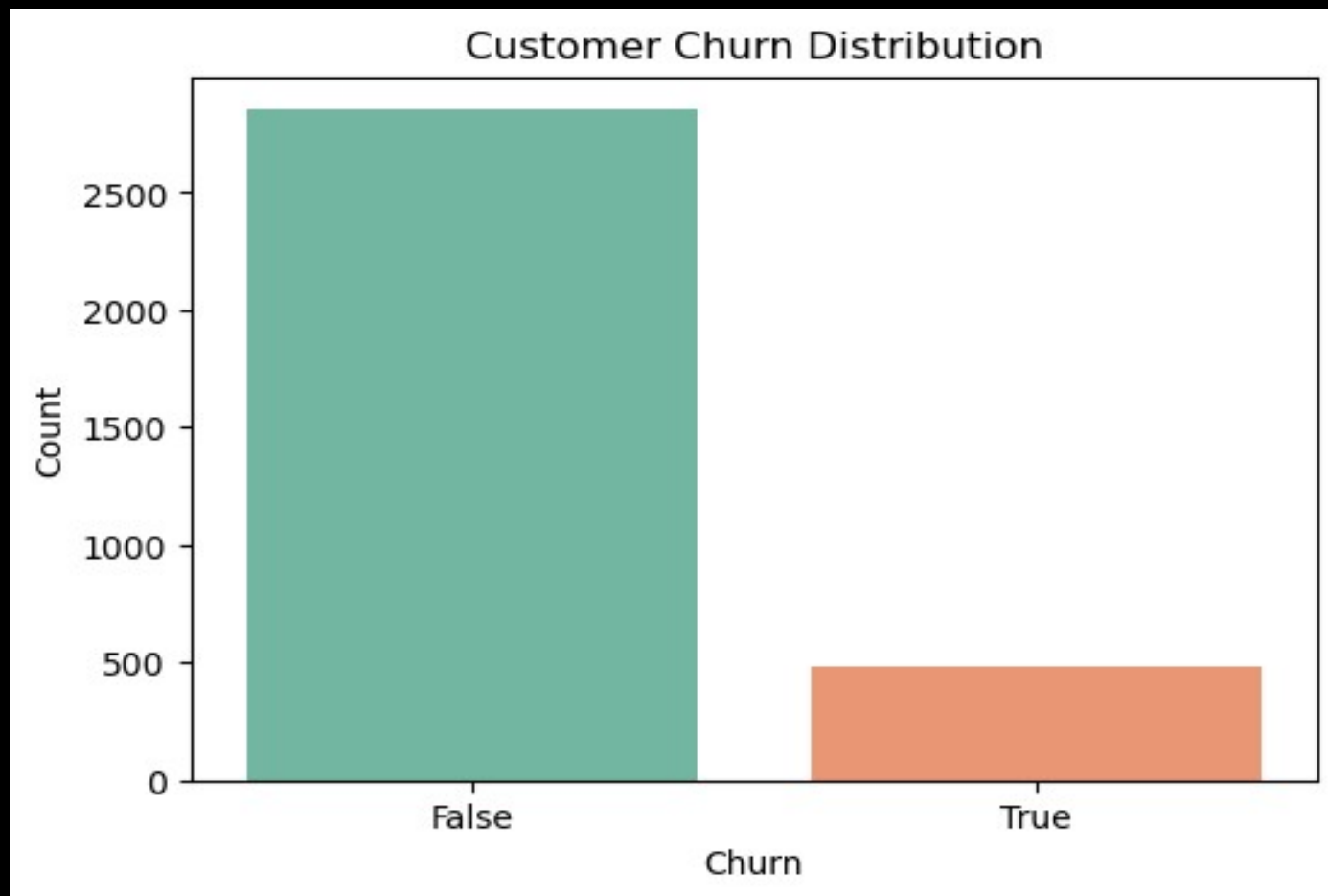
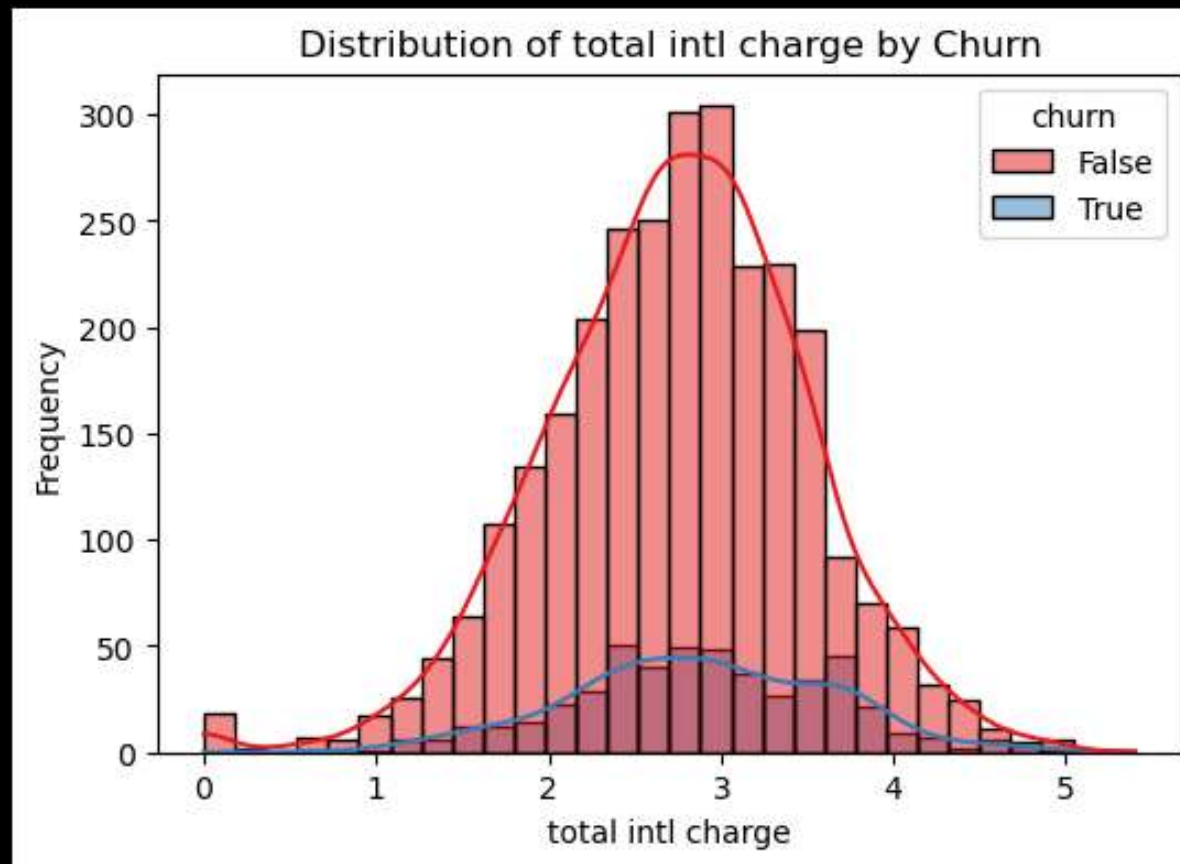# EDA HIGHLIGHTS

- International plan users churn more often.

- •Customers with >3 service calls are more likely to churn.

- High total day minutes associated with churn.

- • Voice mail plan may reduce churn likelihood.

CHURN RATE BY PLAN TYPE

Customer Service Calls by Churn Status
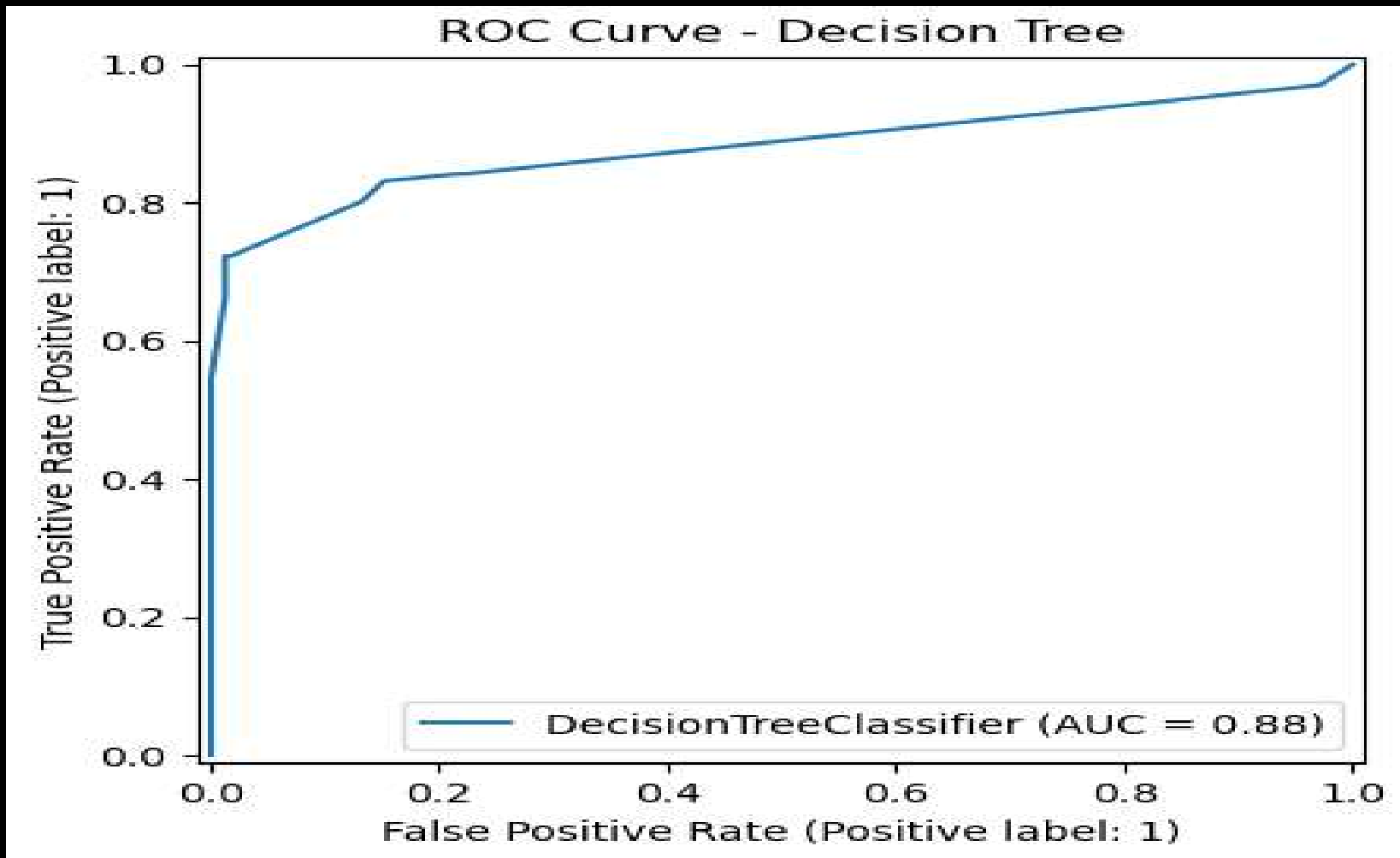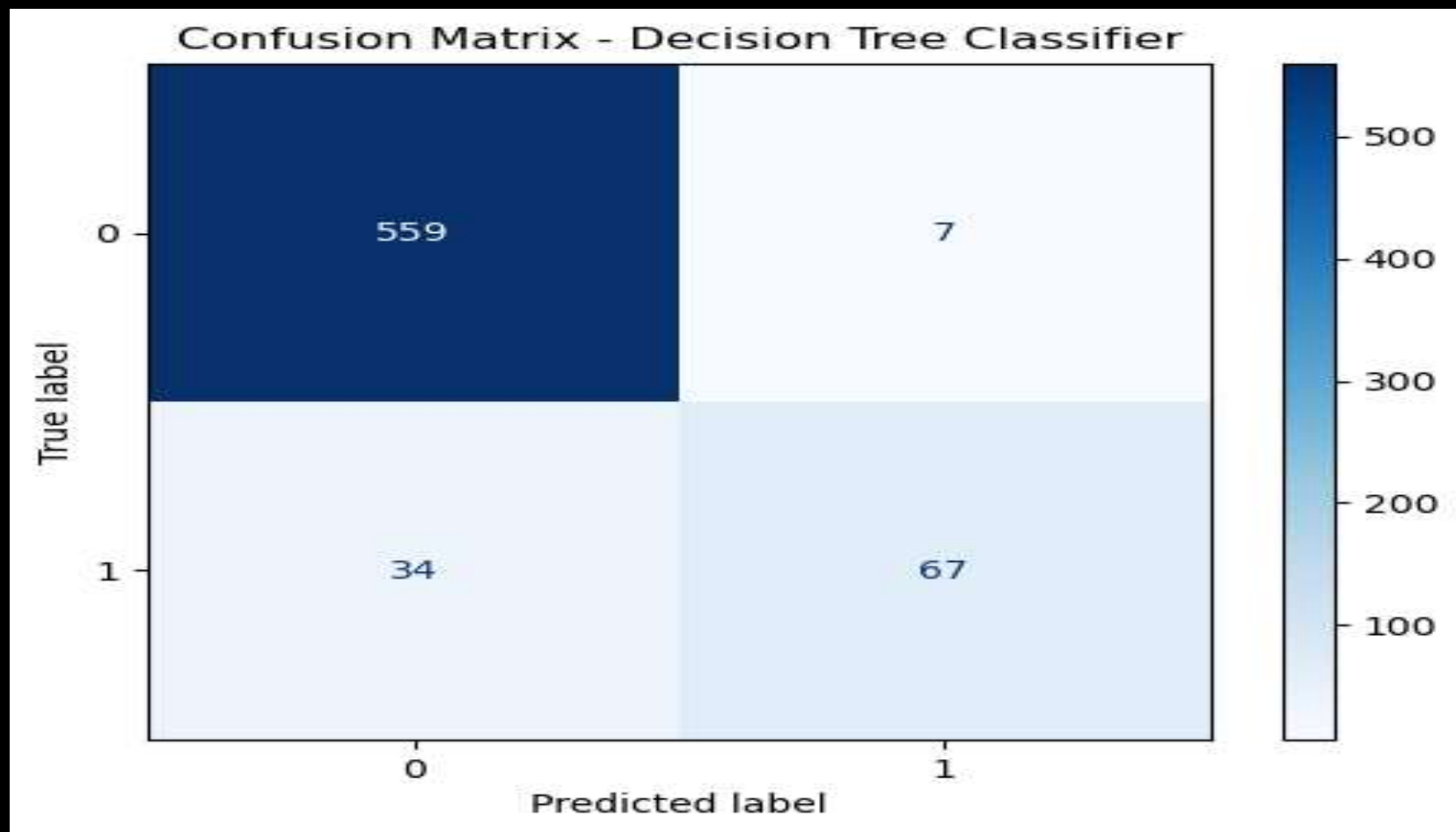
CHURN RATE

MODEL BUILDING

- Trained Decision Tree and Logistic Regression models.

- Focus on recall and ROC-AUC for better identification of churners.

- Data preprocessing: encoding, train-test split, optional scaling.

MODEL BUILDING USING LASSIC CLASSIFIERS:

DECISION TREE CLASSIFIER

DECISION TREE CLASSIFIER

MODEL EVALUATION

- Metrics evaluated: Accuracy, Precision, Recall, F1-Score, ROC AUC.

- Decision Tree and Logistic Regression both performed reasonably well.

- ROC curves were plotted to visualize classification thresholds.

FEATURE IMPORTANCE

- Top features from Decision Tree:
- - international plan
- - customer service calls
- - total day minutes
- - voice mail plan

THE CHART SHOWS THE TOP 10 FEATURES INFLUENCING CUSTOMER CHURN

Top 10 Feature Importances (Decision Tree)
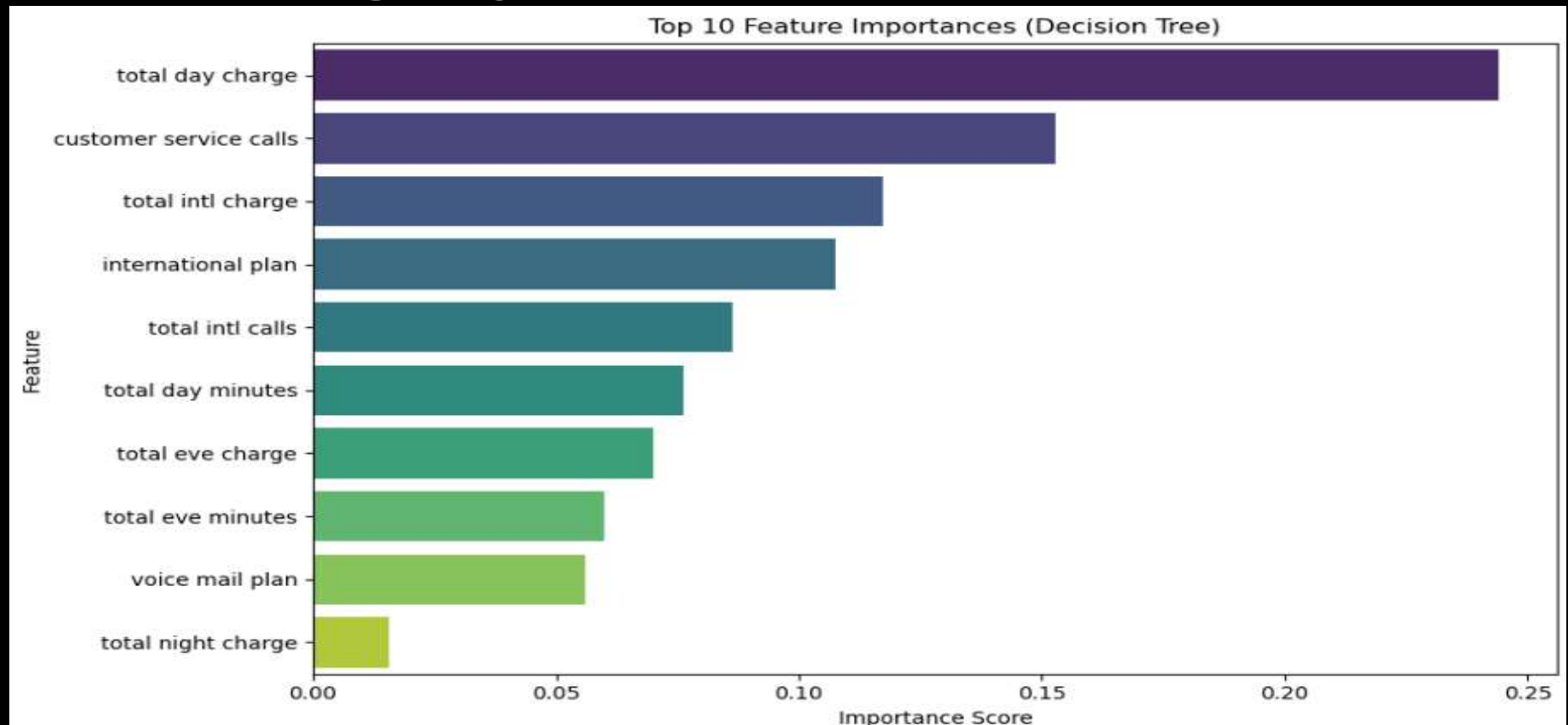
BUSINESS RECOMMENDATIONS

- Customers with frequent service calls → proactive support follow-up.

- International plan users → investigate satisfaction, consider retention offers.

- Voice mail plan users churn less → promote to at-risk customers.

NEXT STEPS

- Deploy churn prediction model for weekly scoring.
- Integrate predictions with CRM system.
- Track churn rates and adjust retention tactics monthly.

Q & A

Thank you!