SYRIATEL TELECOM

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BUSINESS AND DATA UNDERSTANDING

- SyriaTel is a prominent telecommunication company and is confronting the issue of customer churn.

- We have the dataset that gives us information on 3333 clients and their consumer behavior patterns.

- This project seeks to create a classification model that predicts customer churn by identifying the patterns and factors associated with it.

OBJECTIVES

- To build a robust predictive model using the provided dataset to classify customers as churned or not.

- To identify any discernible patterns or trends associated its customer churn.

- To provide actionable insights to SyriaTel to take proactive measures to retain customers once the model is developed.

- To evaluate the model performance using appropriate evaluation metrics such as accuracy, precision, recall and F1 score.
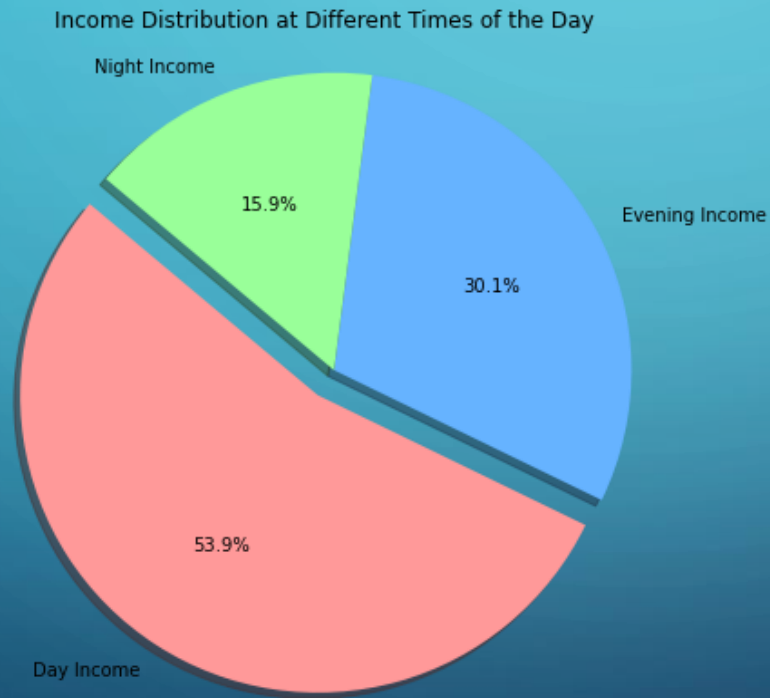
VISUALIZATION

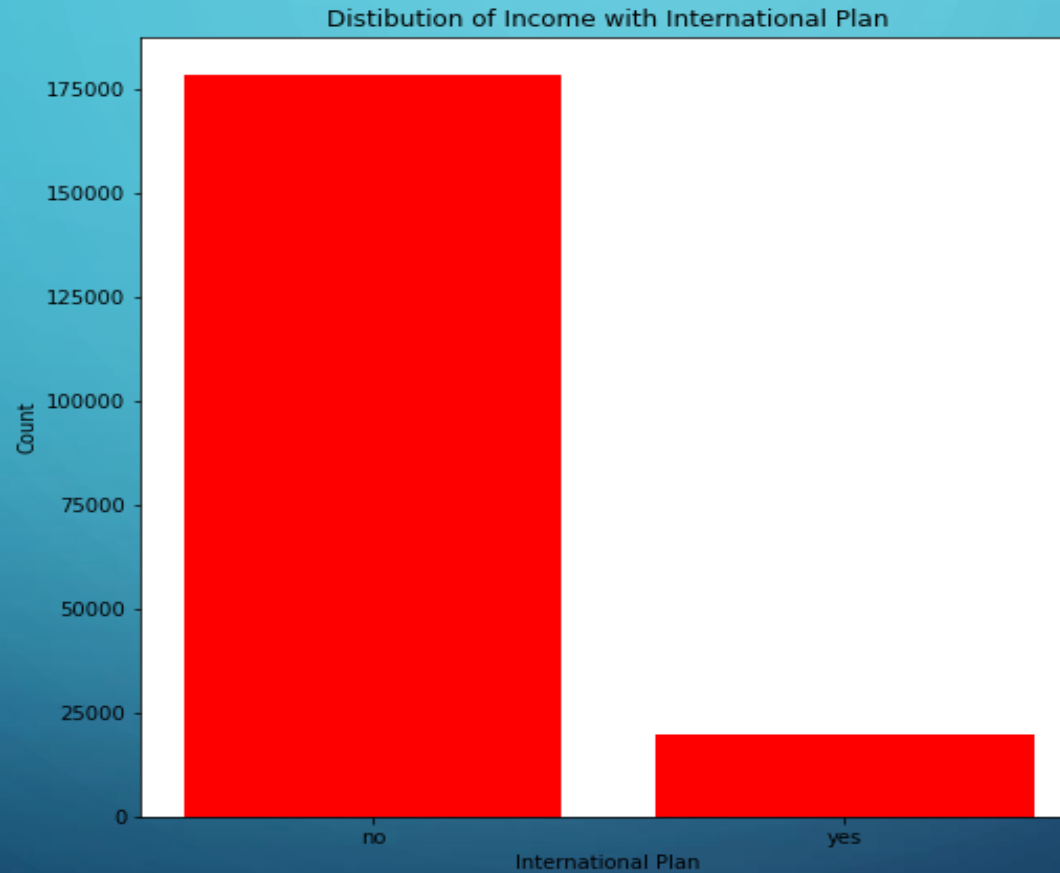The top five states that provide the highest income to SyriaTel.
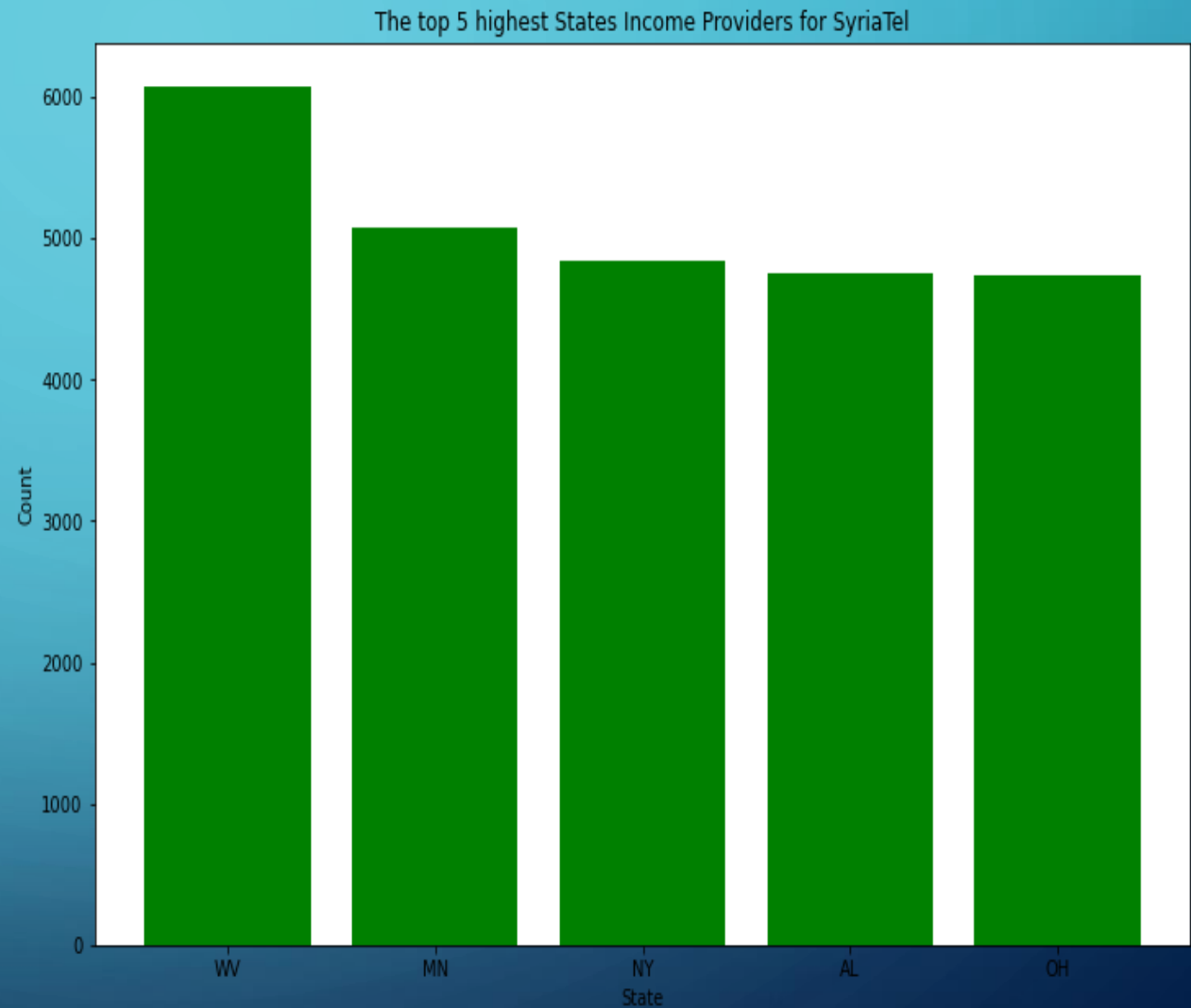
VISUALIZATION

- The time of the day that SyriaTel makes the most income.

Income Distribution at Different Times of the Day

VISUALIZATION

SyriaTel make more from those with international plan than those without the plan

Distibution of Income with International Plan

MODELLING

We used 3 different model algorithms that are the:

1.Logistic Regression Model

2. Decision Tress

3. KNN Classifier

We decided to go with the Decision Tree Classifier as it demonstrated the highest testing accuracy among the models we evaluated. Additionally, it exhibited the greatest area under the curve compared to the other models. Consequently, I believe it's the most suitable model for predicting customers who are likely to churn in the near future.

ROC CURVE COMPARISON
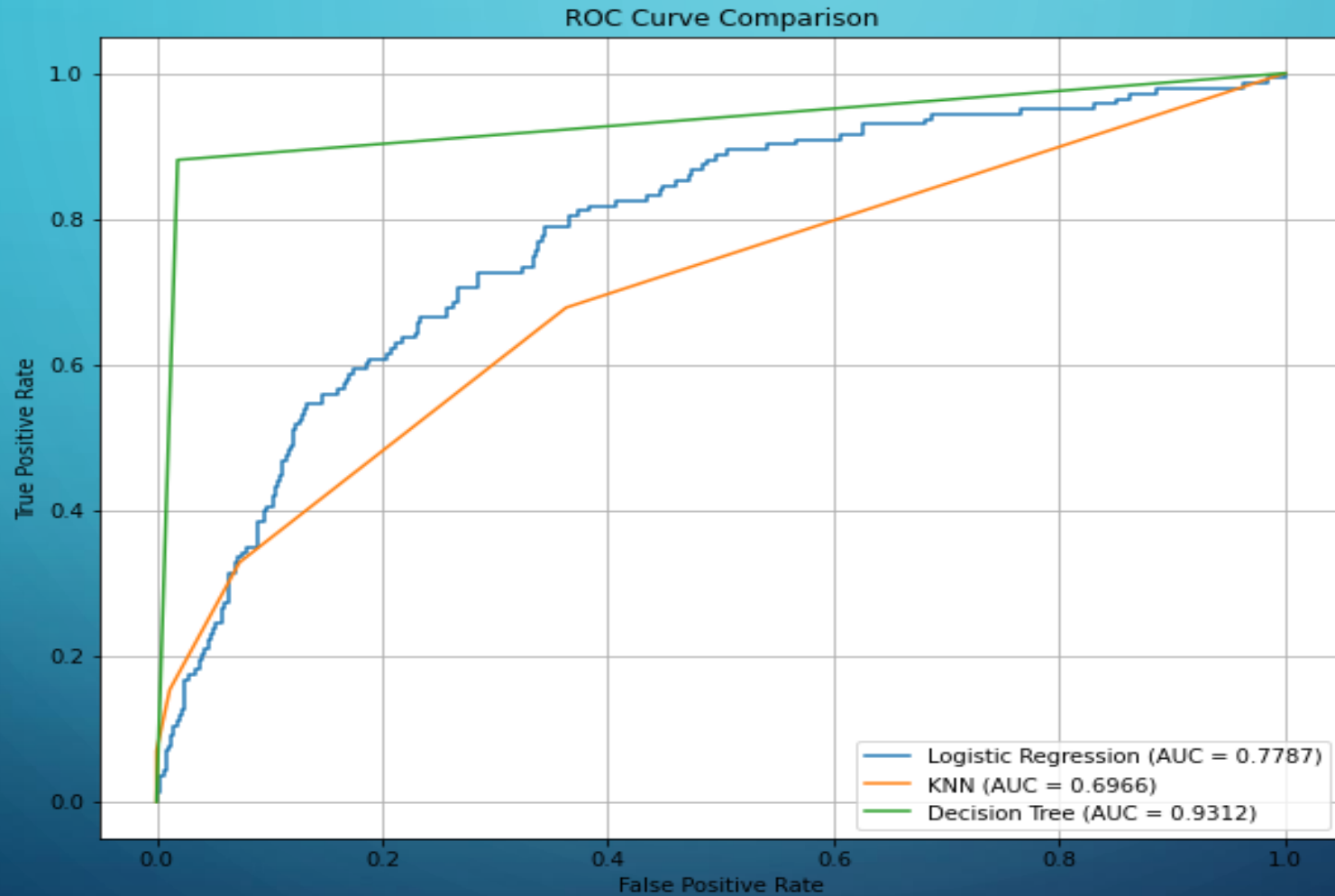
CONCLUSIONS

- **Churn Analysis** ; Churn Rate was at 14.5%, it highlights a notable customer departure rate.

- **Customer Behavior Insights** ; International Plan Impacted Customers showing higher churn rates, signaling a need for deeper analysis on dissatisfaction causes.

- **Service Usage Analysis** ; The distribution Analysis of service usage patterns, such as total day minutes and total evening minutes, did not show significant correlations with churn. However, further exploration may be warranted to understand the impact of these factors on customer retention

RECOMMENDATIONS

Customer service Experience → Pricing and usage plans → Service Quality → Geographical targeted campaigns → Continuous monitoring and Analysis