

CUSTOMER CHURN PREDICTION FOR SYRIATEL PROJECT



Introduction

- Telecommunications companies, such as SyriaTel, confront the challenge of retaining their customer base in the face of intense market competition.
- Customer churn, characterized by the termination of subscriptions or migration to competitors, poses a substantial threat to revenue and operational sustainability.

objective



Develop a robust binary classification model to accurately predict customer churn, thereby facilitating proactive retention strategies.

Customer Satisfaction

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Data understanding

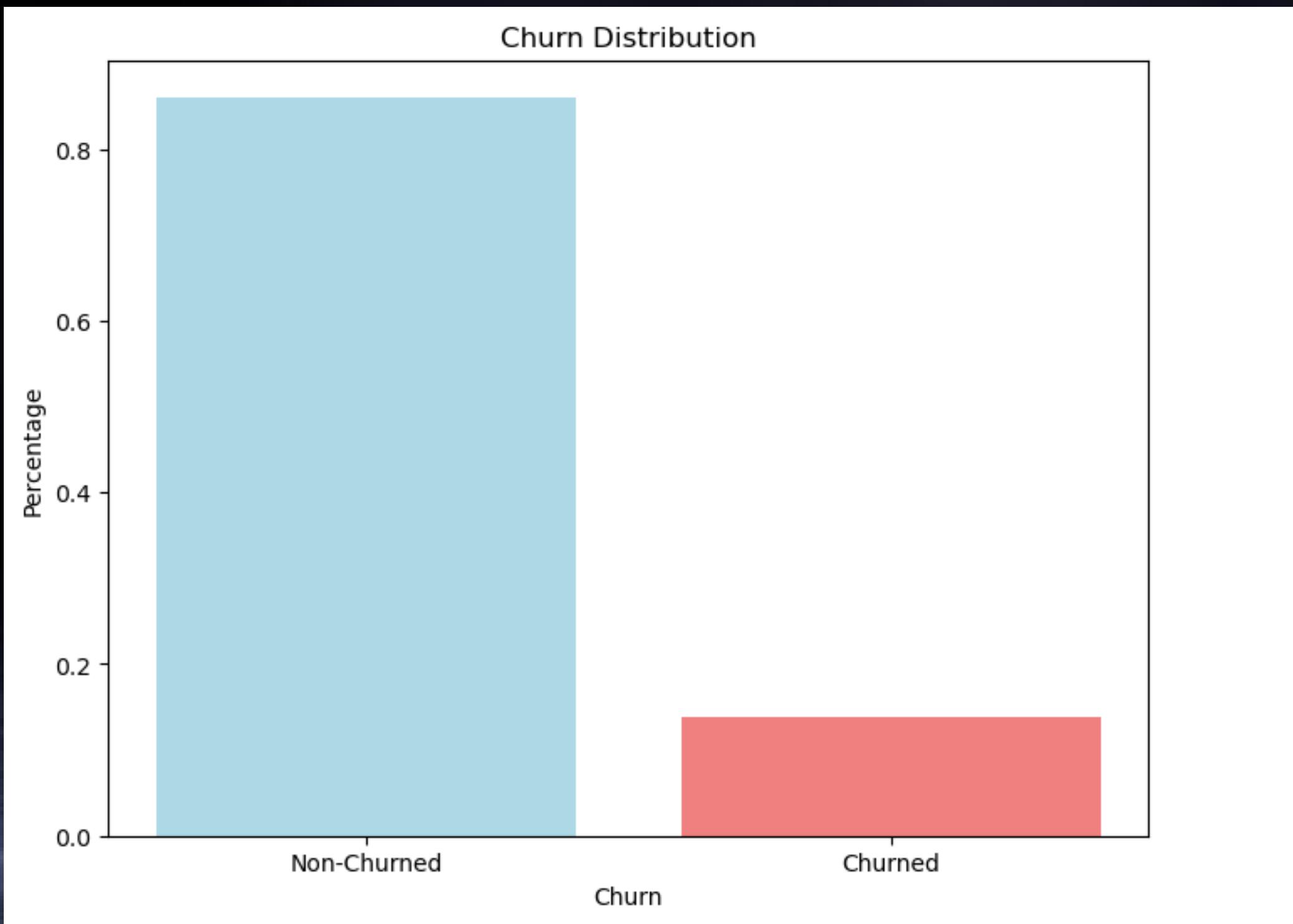
- The dataset provided contains comprehensive information about customers of the telecommunications company SyriaTel. It encompasses a wide range of features, including demographic details (state, account length, area code), service plan information (international plan, voice mail plan), usage metrics (number of voicemail messages, total minutes/calls/charges for different times of the day and international calls), and customer interaction data (number of customer service calls). Notably, the dataset includes the target variable "churn," indicating whether a customer has terminated their subscription with SyriaTel or not.
- This rich dataset offers valuable insights into customer behavior, usage patterns, and the factors influencing customer loyalty or attrition. It can be leveraged to develop predictive models for customer churn, enabling SyriaTel to identify at-risk customers proactively and implement targeted retention strategies. Additionally, the dataset facilitates in-depth analysis of customer demographics, service subscriptions, and usage trends, allowing for informed decision-making and service optimization.
- the dataset consists of 3,333 rows (customers) and 21 columns (features), with a mix of numerical and categorical variables.
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Business understanding

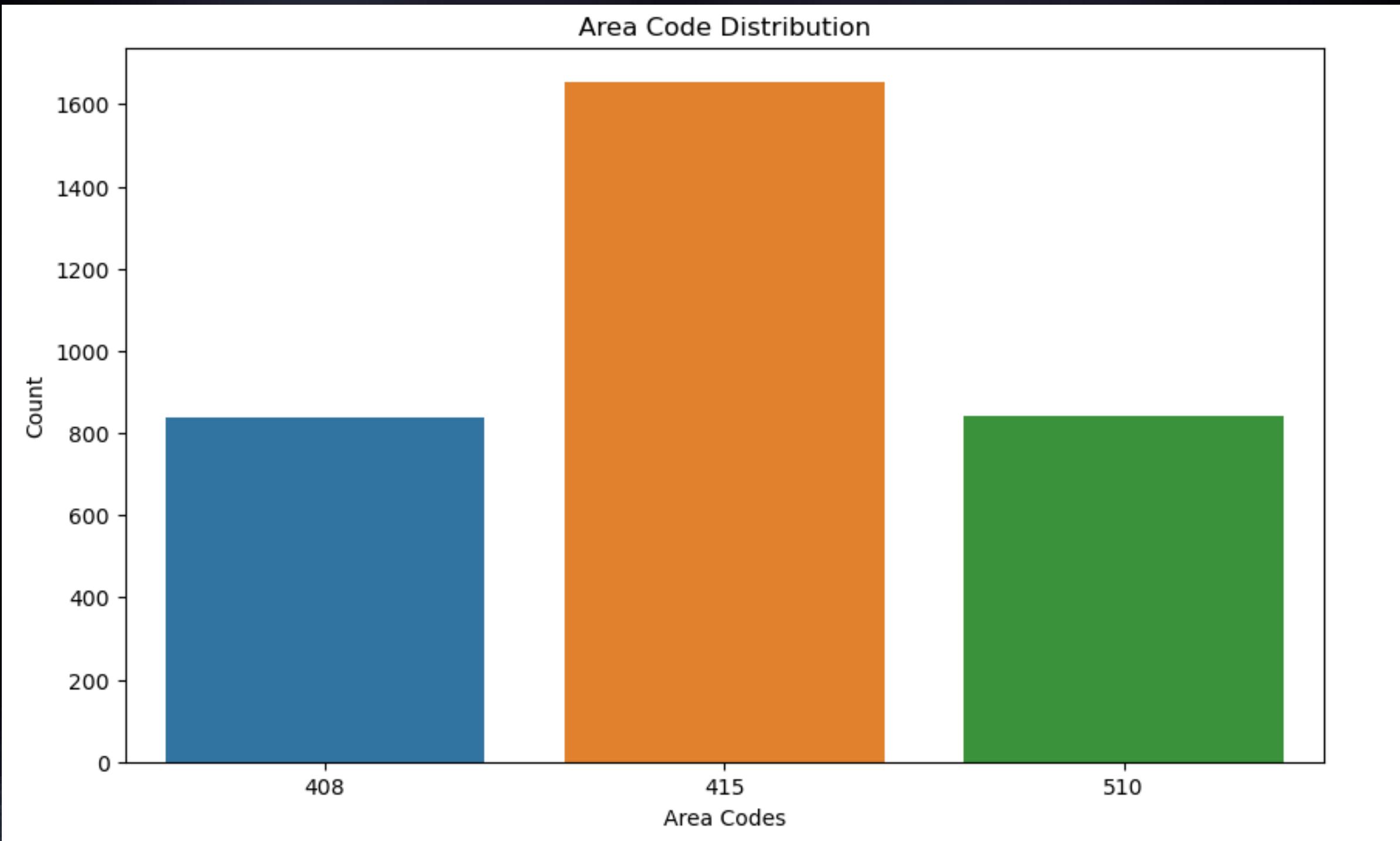
SyriaTel, is grappling with customer churn, where subscribers terminate their services or switch to competitors. This issue leads to revenue loss and increased acquisition costs for new customers. To tackle this challenge, SyriaTel aims to develop a robust predictive model capable of accurately identifying customers likely to churn in the near future. The available comprehensive dataset, encompassing customer demographics, service details, usage patterns, billing records, and interaction data, will serve as the foundation for building this churn prediction model. Successful implementation will enable SyriaTel to proactively implement targeted retention strategies, personalized incentives, and tailored offers, thereby mitigating customer attrition, retaining existing revenue streams, reducing acquisition costs, and ultimately enhancing profitability and long-term sustainability. However, ethical considerations such as mitigating biases and protecting customer privacy must be addressed during model development and deployment.

EXPLORATORY DATA ANALYSIS

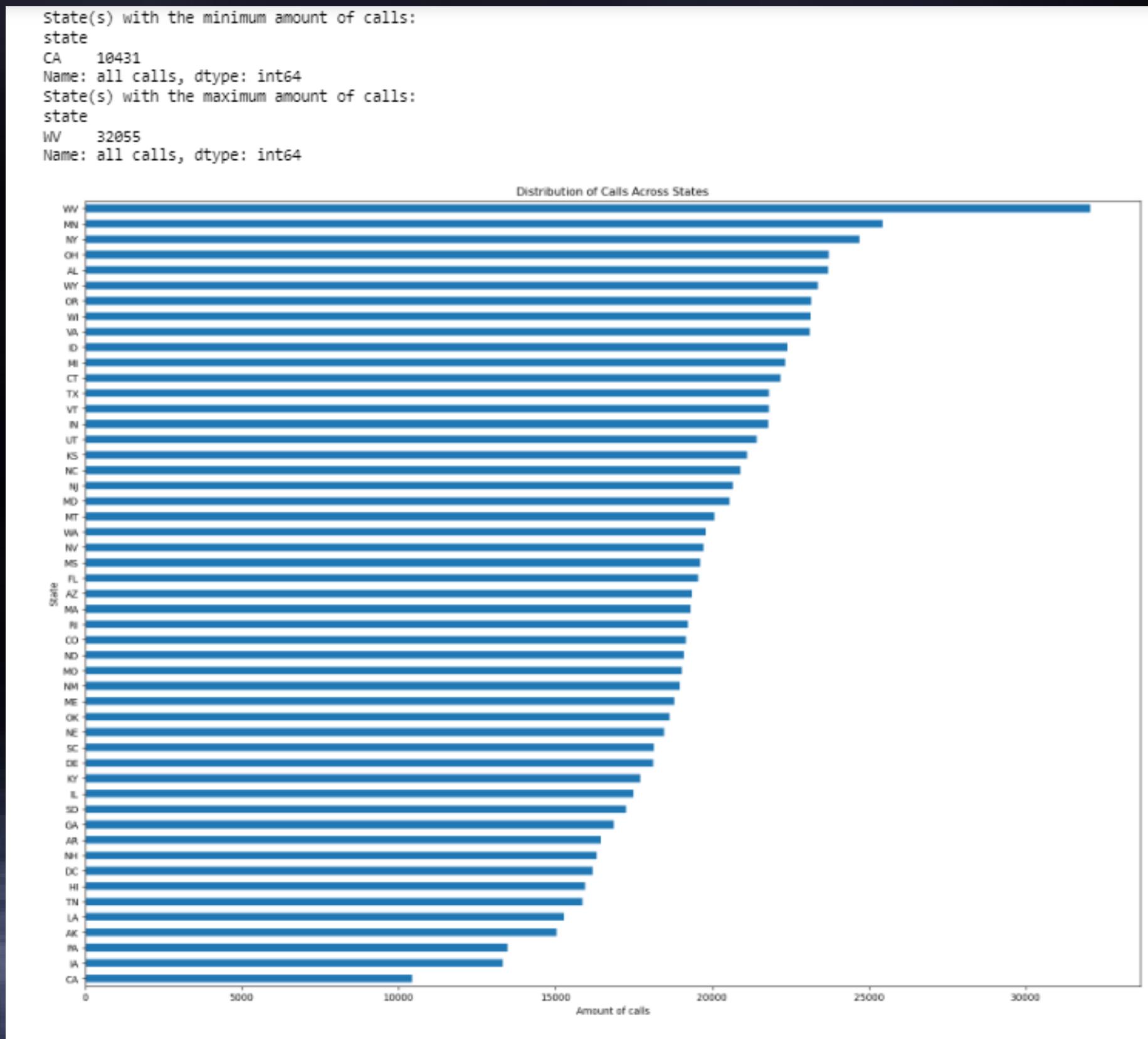
- **Churn Distribution:** Analysis revealed an imbalance in churn rates, with 86.1% of customers classified as non-churned and 13.9% a churned.



- **Area Code Analysis:** Examination of customer distribution across different area codes provided insights into geographical patterns.



- **State Analysis:** Evaluation of call patterns across states offered further insights into customer behavior.



FINDINGS

Customer Churn Analysis:

Approximately 14.5% of the customers in the dataset have churned (terminated their subscription with SyriaTel), while the remaining 85.5% are still active customers.

This reveals an imbalance in the target variable "churn," where the number of churned customers is significantly lower than the number of non-churned customers.

Area Code Analysis:

The dataset includes customers from three different area codes: 408, 415, and 510.

The area code 510 has the highest number of customers, while 415 has the lowest. Customers who churned are more likely to have area codes 415 or 510.

State-wise Call Analysis:

The state with the highest total number of calls (across day, evening, and night) is West Virginia (WV), indicating that residents of this state tend to talk on the phone more frequently.

The state with the lowest total number of calls is California (CA), suggesting that residents of this state have lower call volumes.

Categorical Feature Analysis:

The majority of customers (90%) do not have an international plan, while only 27.6% have a voice mail plan.

Conclusion and Recommendations

1. Proactive Retention Strategies: Implement proactive retention strategies targeting customers identified as at-risk of churn by the predictive model. These strategies could include personalized offers, loyalty rewards, or targeted marketing campaigns to incentivize continued usage of SyriaTel services.
2. Enhanced Customer Support: Improve customer support services to address issues identified through customer service calls, which have been found to have a significant impact on churn. Investing in training for customer service representatives and streamlining the resolution process can enhance overall customer satisfaction and reduce churn rates.
3. Service Plan Customization: Offer customizable service plans tailored to individual customer needs and usage patterns. This can include flexible pricing options, additional features, or discounts based on usage volume to increase customer satisfaction and loyalty.
4. Feedback Mechanisms: Implement feedback mechanisms to gather insights from customers regarding their experiences with SyriaTel services. This can be done through surveys, feedback forms, or online forums, allowing the company to address customer concerns and improve service quality proactively.
5. Data Monitoring and Analysis: Establish a robust data monitoring and analysis system to continuously evaluate customer behavior, service usage patterns, and churn indicators. Regularly updating the predictive model with new data and monitoring its performance can help SyriaTel stay ahead of changing customer preferences and market dynamics.

**Customer
SERVICE**



Thank You

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