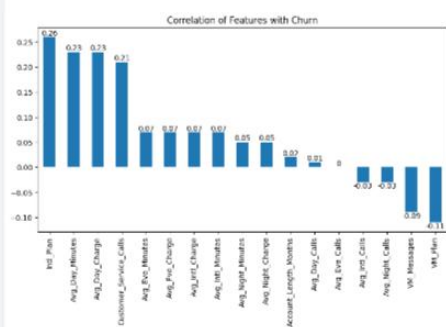
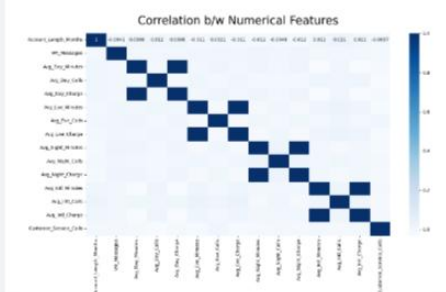
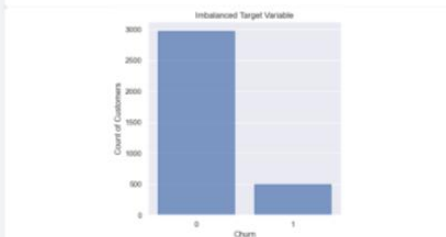
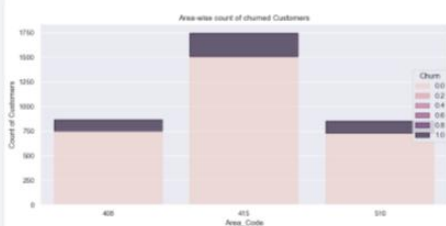


Graphs



Analysis

- Churn rates vary significantly between states
- The highest churn rate is in NJ, with 0.5 ; The lowest churn rate is in AK, with 0.06
- The average churn rate across all states is about 0.26

- Area code 415 has the highest number of customers (over 1500) and also the highest churn rate (around 0.8).
- Area code 510 has the lowest number of customers (around 500) and also a high churn rate (around 0.7).
- Area code 408 has a moderate number of customers (around 1000) and a low to moderate churn rate (around 0.2 to 0.4).

- The graph reveals a significant imbalance in the data, with a much higher number of customers having a churn value of 0 (over 2500) than 1 (less than 500).
- This indicates that a large proportion of customers are retained or satisfied (churn=0), while a smaller proportion have left or are dissatisfied (churn=1).

- There is a strong positive correlation among average day, evening, and night minutes with their respective charges. This indicates that as the number of minutes increases, the charge also increases.
- International calls and international call charges also have a strong positive correlation for similar reasons.
- There is little to no significant correlation between account length and other features.

- The graph reveals some of the factors that influence customer churn, such as service quality, pricing, and product features.
- customers are more likely to churn if they have a poor customer service experience, subscribe to an international plan, or do not use voice mail services.
- customers are less likely to churn if they use more voice mail messages, spend more time and money on day calls, or have a lower monthly charge.

Conclusions

- The company should prioritize the states with the highest churn rates and implement targeted interventions to retain customers and increase satisfaction.
- The company should learn from the states with the lowest churn rates and apply their successful strategies to other states.

- Focus on retaining customers in area code 415 as they have the highest potential for revenue and loyalty.
- To investigate the reasons for high churn in area code 510 and devise strategies to improve customer satisfaction and retention.

- Address the data imbalance to develop an accurate and unbiased predictive model.
- Another method is to resample the data to balance the classes, either by oversampling the minority class (churn=1) or undersampling the majority class (churn=0).

- Select the most relevant and important features based on the correlation with the target variable or the business problem.
- Transform or combine highly correlated features into new features that capture the essence of the original ones.

- The company should improve its customer service quality and responsiveness, as this is a major factor for customer satisfaction and retention.
- The company should review its pricing strategy for the international plan and see if it can offer more competitive or flexible rates to attract and retain customers who make international calls.