Bank Churn Data Statistical Analysis

Assigned Date: 11/2/2023

Last Date To Submit: 11/8/2023

Note: some of the topics may not discussed in the classroom , but try to understand what it is and do practice accordingly.

1- What is the overall churn rate in the dataset, and how does it compare to industry benchmarks?
2- Can you identify any significant differences in spending patterns between churned and non-churned customers using measures of central tendency?
3- What is the dispersion in customer tenure for both churned and non-churned customers, and how does this affect the predictive modeling process?
4- How does feature scaling works on top of different features work with different techniques such as min-max,norm,standardization and interpret how each of them worked?
5- Can you visualize the distribution of customer demographics such as age, income, and location for churned and non-churned customers using histograms or density plots?
6- Is there a significant correlation between customer satisfaction scores and the likelihood of churn, and how does this influence the development of churn prediction models?
7- What are the key features that exhibit the highest variability between churned and non-churned customers, and how can you leverage this information for feature selection?
8- Are there any outliers in the dataset that could potentially skew the results of the churn prediction model, and how should you handle these outliers?
9- What is the distribution of customer churn across different demographic segments such as age groups, income levels, and geographical locations, and how does this influence the development of targeted retention strategies?
10- What is the range of customer satisfaction scores among churned customers, and how does this range compare to that of retained customers, indicating potential areas for improvement in service quality and customer experience
11- What is the correlation between the timing of customer interactions, such as the frequency of product usage or customer service contacts, and the likelihood of churn, and how can this information be leveraged to develop proactive customer retention interventions?
12- Are there any significant differences in the average account balances between churned and retained customers, and how do these differences impact the bank's revenue and customer retention strategies?
13- What is the range and standard deviation of customer credit scores or loan repayment histories among churned and retained customers, and how can this information guide the bank's risk assessment and lending practices?
14- Calculate the Interquartile Range (IQR) for the customer age variable in the Bank Customer Churn Prediction dataset. Then, identify any potential outliers in the age distribution, and discuss how these outliers may impact the bank's understanding of its customer demographics and their likelihood of churning.