**Capstone Project Submission**

**Instructions:**

i) Please fill in all the required information.

ii) Avoid grammatical errors.

| **Team Member’s Name, Email, and Contribution:** |
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| Contributor Roles: -  1. Pranav Rajmane:  1.Data Wrangling:  1.Churn dataset  2.State,Customer service calls, voice mail  2.Analyze state-wise churn and plot the graph.  3. Analyze the relation between voice mail and churn and plot the graph.  4. Analyze the relation between ‘Customer service calls’ and churn  5. Technical documentation  2. Sayali Mandhare:   1. Data Wrangling:   1.Churn dataset  2.State, Total minutes, calls and charges  2.Analyze total minutes, calls and charges during day  3. Analyze total minutes, calls and charges at evening  4. Analyze total minutes, calls and charges at night.  5.Analyze the relation between calls placed during different time of the day  and churn and plot the graph.  6. Technical document  3. Prathamesh Kalambe:  1. Data Wrangling:  1. Churn dataset  2. State, area code, and international plan.  2. Analyze state-wise churn and plot the graph.  3. Analyze the relation between area code and churn and plot the graph.  4. Analyze the relation between ‘International plan’ and churn  4. Dayanand Katkade:  1.analysis of data  2.churn analysis of states  3.churn analysis according to area code  4.management of graph  5.ppt formulation  5. Pavan Malvay:  1. Data Wrangling:  1. Churn dataset  2. State, area code  2. Churn Analysis of state wise  3. Churn Analysis of area code  4. Churn Analysis of account length  5. PPT, PDF |
| **Please paste the GitHub Repo link.** |
| GitHub Link:- <https://github.com/CoderPranavRaj/Telecom-churn-analysis>  :-<https://github.com/prathamesh122/telecom-churn-analysis>  :-[Dayanandkatkade3/Telecom-churn (github.com)](https://github.com/Dayanandkatkade3/Telecom-churn)  :-<https://github.com/pmal1/Telecom-churn-analysis> :-<https://github.com/SayaliMandhare/EDA-Capstone-project-1--Telecom-Churn-Analysis> |
| **Please write a short summary of your Capstone project and its components. Describe the problem statement, your approaches, and your conclusions. (200-400 words)** |
| **In the telecom churn analysis, we have 51 states and 3 Area codes. In this EDA capstone project, we were provided various data sets like (State, Account length, Area code, International plan, Voicemail plan, Number email messages, Total day minutes, Total day calls, Total day charge, Total eve minutes, 'Total eve calls, Total eve charge, Total night minutes, Total night calls, Total night charge, Total intl minutes, Total intl calls, Total intl charge, Customer service calls.**  **First step, we perform data wrangling over raw data. We divided the project into seven parts i.e (1) The churn column-wise analysis (2) State-wise analysis (3) Area code-wise analysis (4) International plan-wise Analysis (5) Customer service calls-wise analysis (6) Account length analysis (7) Total day, night, and evening calls, and Total day, evening, and night call charges.**  **In the churn-wise analysis, after analyzing the churn column, we can say that almost 14% of customers have churned. Now analyze the other related data to churn.**  **In the ‘State-wise’ analysis,** **After Analyzing the state column, we can say that CA, NJ, TX, MD, SC, and MI states have the most churn rate of more than 21.**  **The reason for this churn rate from a particular state can be due to the low coverage of the cellular network.**    **In the ‘Area code’ analysis, we can see there are only 3 unique area codes, and their churn rate is almost the same. We don't think there is any relation between area code and churn due to the customer leaving the operator, but number wise area code 415 has the highest churn.**  **In the ‘International plan’ analysis, we can see that the number of customers with an active international plan is 323, however, when 137 of those customers cancel the service, the churn rate is very high at 42.4148614%. Improving international call quality and providing offers and discounts to customers can help in reducing the churn rate.**  **In the ‘Customer Service calls’, it is observed from the analysis that, mostly because of bad customer service, people tend to leave the operator.**  **The data indicates that for those customers who called the service center 5 times or above the customer churn percentage is higher than 60%, And customers who have called once also have a high churn rate indicating their issue was not solved in the first attempt. Improving customer service and taking feedback can help in reducing this churn rate.**  **In Total day, evening, night calls,charges and minutes analysis, we understand the graph x-axis is the total charges and the y-axis is the number of calls during each time of the day. Comparing the charges for calls during the day, evening, and night it can be observed that the charges for calls during the day are very high followed by evening and night. The average rate at which customers are placing calls during the day ranges between 20 - 40, for the evening it is approx 15 - 19 and for the night is 5.5 - 11.**  **Analyzing the Account length, we see that the churn rate keeps rising till account length is 125 and keeps reducing after, by this we understand that there are more chances of a customer to churn while his account length is less than 125. More offers and discounts must be provided to customers of account length less than 125 as an effort to retain them.**  **The charges might be one of the possible reasons for customer churn, providing discounts and offers can help in reducing this churn rate.**  **If the company already has a wide range of plans then it might be another possibility that the customers are not aware of those plans. More advertisements can help with raising customer awareness.** |
| * **After performing exploratory data analysis on the data set, this is what we have incurred from the data:**   **Conclusion: -**  **After performing exploratory data analysis on the data set, this is what we have incurred from the data:**  **There are some states where the churn rate is high as compared to others may be due to low network coverage. Area code and Account length do not play any kind of role in the churn rate so, it’s redundant data columns \*In the International plan those customers who have this plan are churn more and also the international calling charges are also high so the customer who has the plan unsatisfied with network issues and high call charge. Total day call minutes, the total day calls, Total day charge, Total eve minutes, Total eve calls, Total eve charge, Total night minutes, Total night calls, and Total night charge, these columns didn't play any kind of role regarding the churn rate. In international calls data shows that the churn rate of those customers is high, those who take the international plan so it means that in international call charges are high also there is a call drop or network issue. In Customer service calls data shows us that whenever an unsatisfied customer called the service center the churn rate is high, which means the service center didn't resolve the customer issue.**  **Recommendation: -**  **Improve network coverage churned state**  **An international plan provides some discount plan to the customer**  **Improve the voicemail quality or take feedback from the customer**  **Improve the service of the call center and take frequently feedback from the customer regarding their issue and try to solve them as soon as possible** |