Operations Analyst Case

Section 2-Credit Risk:-

1. **Of the different model scores (FICO, Score1, Score2) which one does a better job of separating good accounts and bad accounts?**

After Analyzing Correlation and different Graphs, I have concluded that FICO Score has a Negative Correlation with Bad Account, which Means it is Inversely Proportional to BadFlag, While Score1 and Score2 having Positive Correlation with BadFlag, means they are Directly Proportional to the BadFlag, the Efficient Score is Score2 According to Correlation Aspect, but if Score2 Increasing, the Chances to be Bad Account is increased by 33%, but there can be more factors for Increasing Score2, but FICO Score is Decrease, with the increase of Bad Account Probability, it is About 19%, I have Concluded that FICO Score is Being more Efficient than Any Other Score.

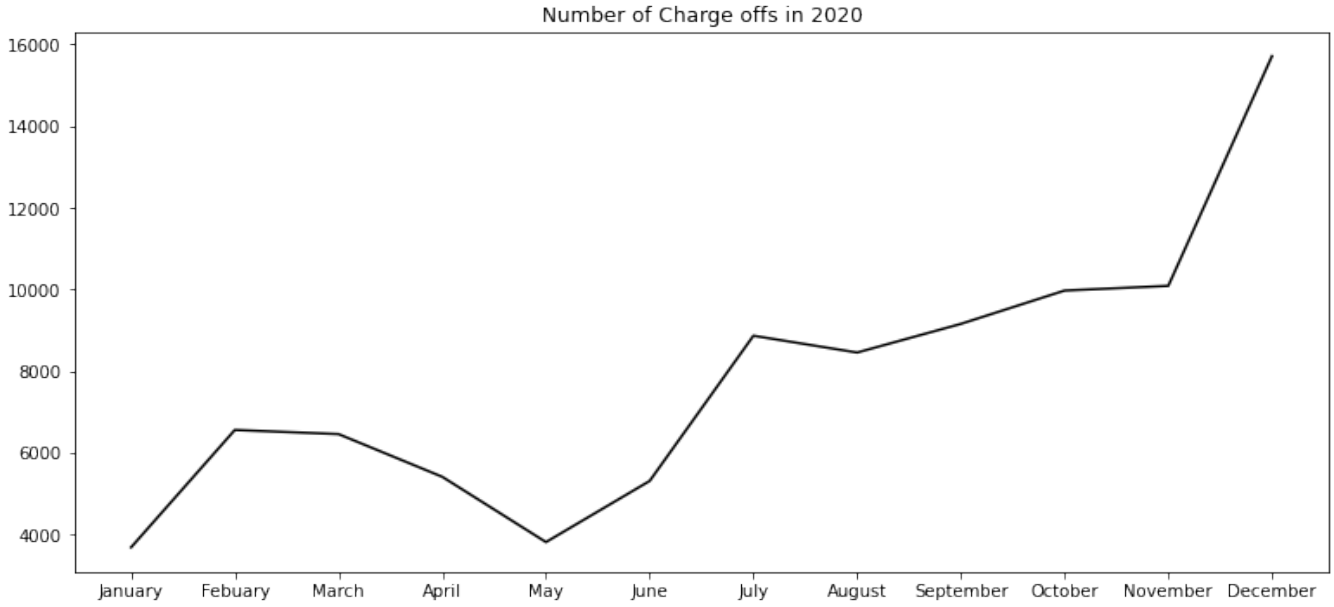
2. **Are CreditCardBalance and InquiriesInLast6Months predictive of risk in addition to the best score you identified from the last question?**

CreditCardBalance is not very Efficient for Predicting Risk, Because the Correlation of CredictCardBalance is nearly 0, and there is not any Pattern noticed in Different Charts, But InquiriesInLast6Months is More Efficient in Predicting Risk, as Compare to CreditCardBalance. Correlation of InquiriesInLast6Months is Positive, Means, If the Greater Number of Inquiries In Last 6 Months, the Higher Chances to be Bad Account.

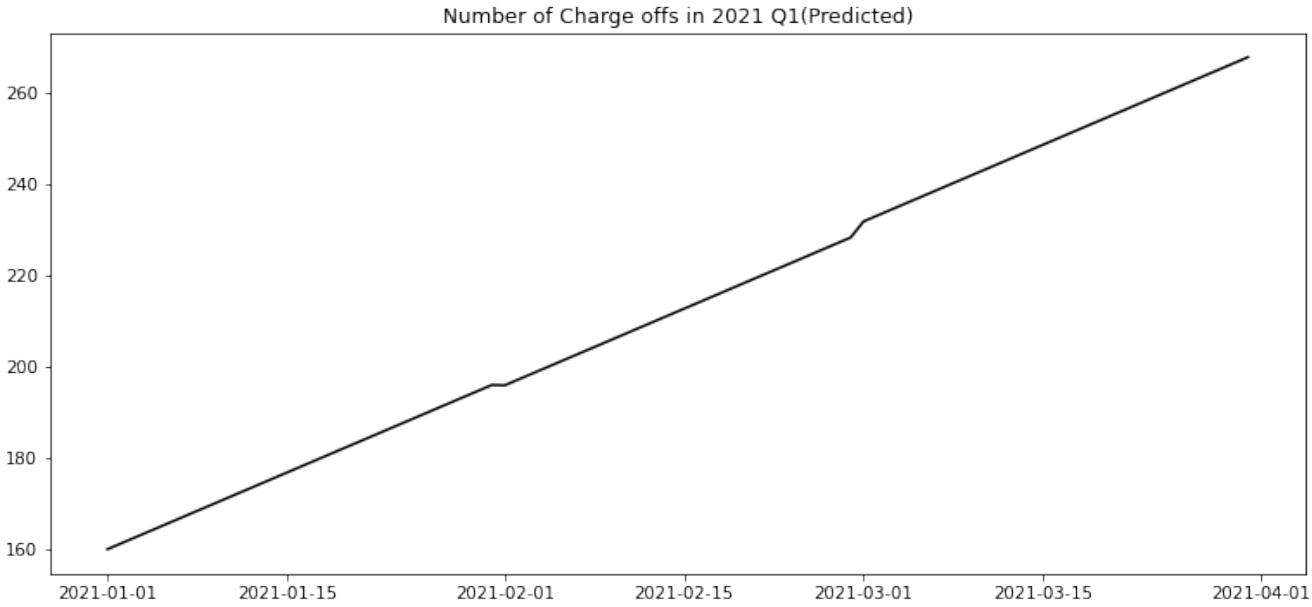
Section 3-Operations:-

1. **Please estimate the number of Charge-offs (120+ days late) that might have occurred by month in 2020 and your Charge Off Projections for 2021 Q1.**

The Total Charge off of 2020 is Shown Below in this Line Chart:



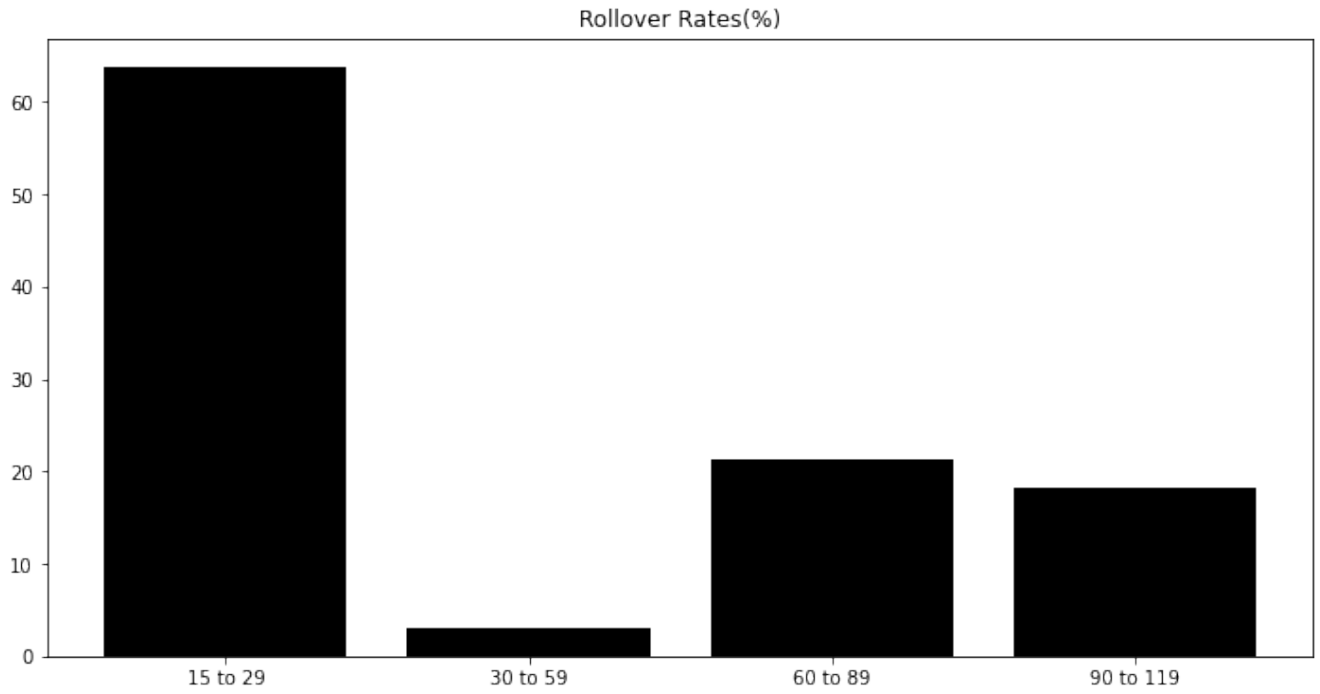
The Overall Trend of this chart is a Growing trend. The Predicted Projection in the First quarter of 2021 is:



2. **Please estimate the roll rates by each bucket; i.e. % of 30-59 roll over to 60-89, from 60-89 to 90-119.**

I have estimated Rollover Rates Shown below in Table:

Days Range	Roll Rates
0 to 14	--
15 to 29	63.71%
30 to 59	3.13%
60 to 89	21.20%
90 to 119	18.20%



Most Highest Rollover rate is From 0 to 30 days after 30 Days, the Probability of rollover rates has decreased

3. **Pl provide your best forecast from the available data for all the delinquencies (by bucket) for Q1 of 2021.**

	January	February	March
1 to 14	18676.860960	23073.008572	32566.935948
15 to 29	6294.581717	7715.444373	11535.728416
30 to 59	6752.444235	8154.290364	11602.224097
60 to 89	7124.008315	7845.788295	10309.785193
90 to 119	6127.797478	6595.876439	8601.320941
Total	44975.692704	53384.408044	74615.994596

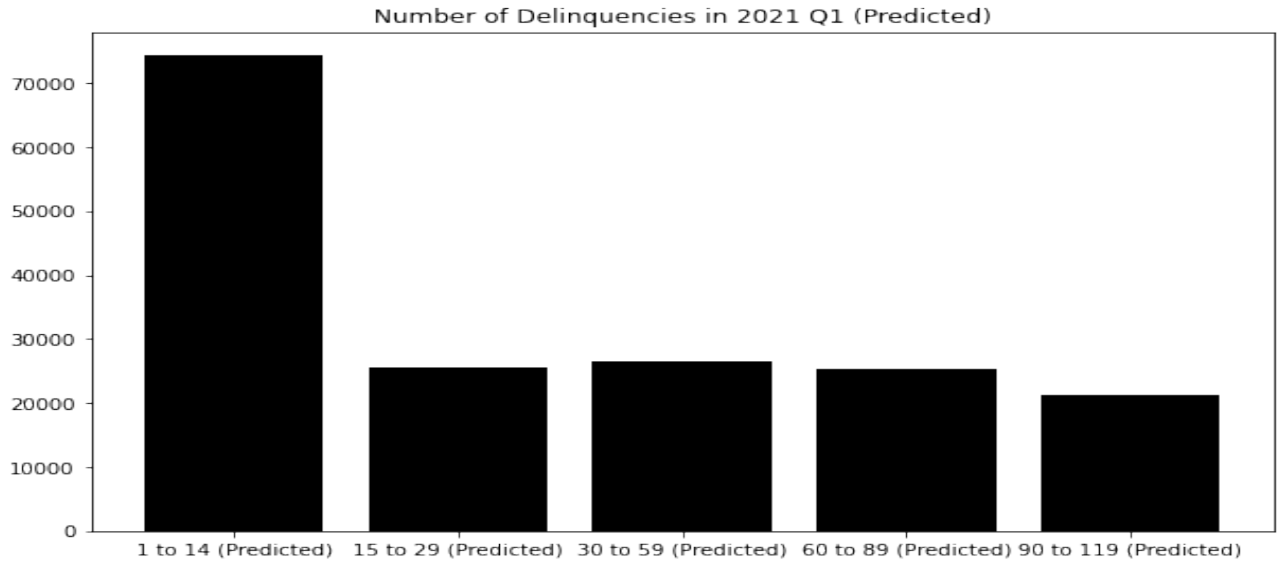
4. **Now provide your best estimate of the number of agents needed in the Collections Department to meet the demand for Q1, 2021.**

After a Deep Analysis of Given Assumptions and Work Hours of an Agent, I came up with a range of Agents required to meet the demand of the Collections Department, Which is about 100 to 110 agents.

5. **If the department is staffed at only 66% of your required capacity you have projected, please provide a calling strategy that will make best use of the limited resources. Provide appropriate reasoning to justify your recommendation.**

In the Previous question, I have estimated about 100 to 110 agents so the 66% Percentage of this number is about 66 to 73 Agents, the previous way of Collection is as follows:
In starting days, the agent calls once in two days, In middle days agent calls 1 call per day, and In Last day agent wants to meet a customer.

In my Suggestion from 0 to 15 days, if we use Automated System to Call the customer and use recorded voices, and in 15 to 30 days, Agents will call daily basis, and after 30 days agent need to meet with customers, As we can see in the chart shown below that, the customer in 0 to 14 bucket have Most Delinquencies, but in 15 to 29 bucket, it came down, after that, all bucket have kind of constant delinquencies, so in 0 to 15, if we use Automated calling System, so it will help us to grab customer, and in 15 to 30 days, Agent Call Customer Manually, and then after 30 days have a meeting with a customer, it is the better strategy to grab customer, and get rid of charge off.



6. **Assuming an average account has $15,000 in balance when they charge-off and an average agent's annual income is $70,000 – lay out the economics for the level of performance required by collections to justify the costs.**

As mentioned in the question, that Average Accounts while charge-off is $15,000, while Average annual income is $70,000, If we fall in basic economics, the performance required for a single Agent is to he should get at least (Minimum) 5 customers to stop charge-off, so he can save $75,000, and it can justify the cost of the average salary of an agent

7. **What other strategies would you recommend to drive improvement in collections effectiveness. Also, what other data elements about the customer do you think can help you better optimize your collection strategy.**

I have some recommendations are as follows:

- we should develop an automated calling system call on an Hourly or Half-day basis, so we can remind our customers more consistently
- In the Data, people with less than an Annual Income of $70,000 are more likely to be charge-off, so while dealing with those customers, we should have some limit, so they do not charge off.
- If we created some obligatory factors, for charge-off customers It will also help us to retain customers