

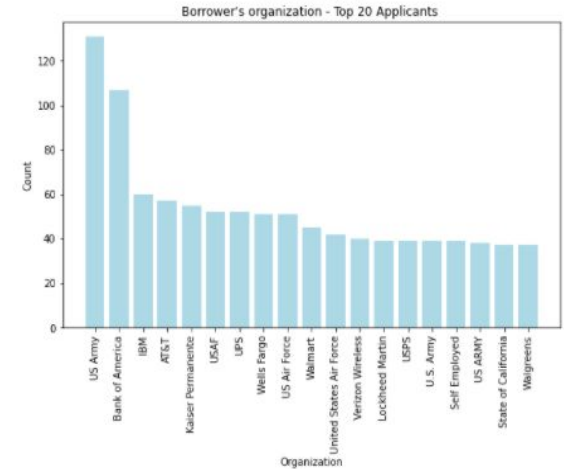
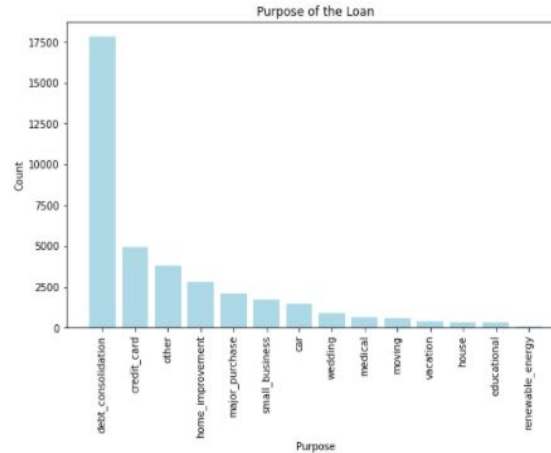
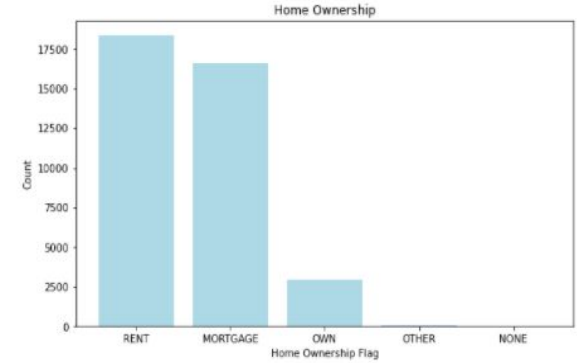
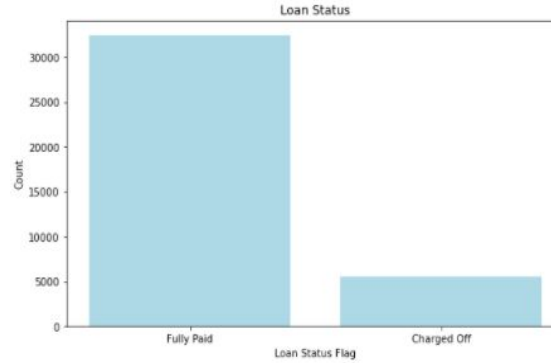
Lending Case Study - IIITB

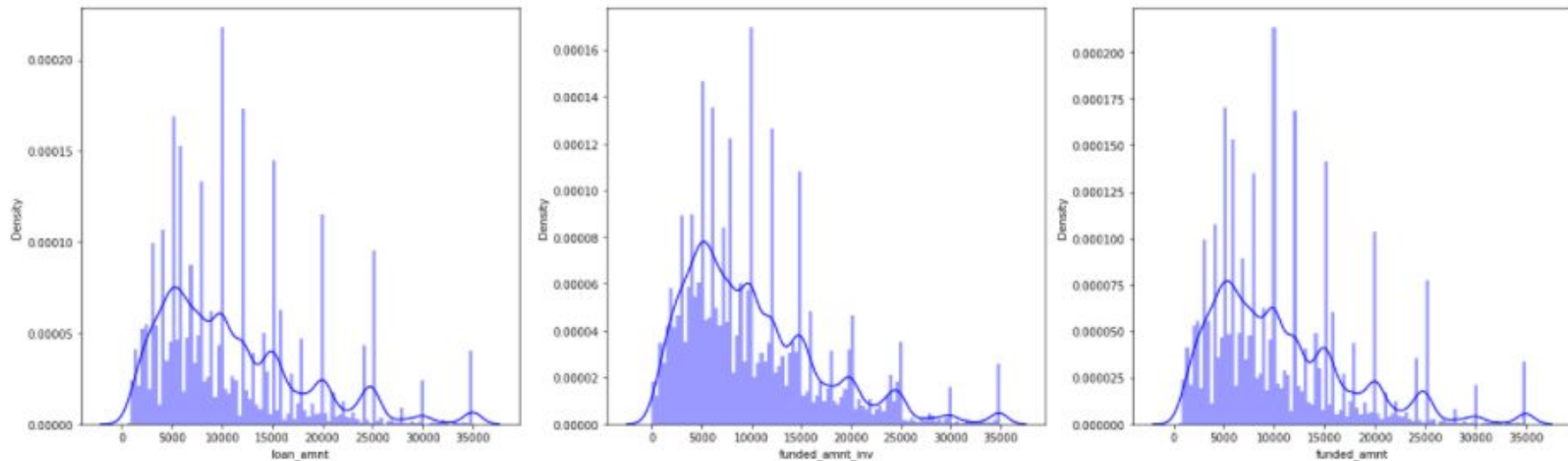
Project Facilitator : Rohit Kotikanyadanam Anand
Application ID : APFE21706779

Data Analysis

Plot 1 - Observation

1. Charged Off - 14.2% of the total data set
2. Top two categories of people who apply loan either are in rented house or have mortgaged their home
3. Top three categories of the purpose of applying loan - Debt Consolidation , Credit Card and Others
4. Top three work organization declared by borrowers are - US Army, Bank of America, IBM



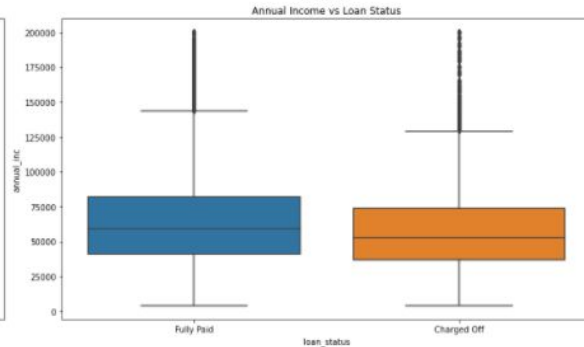
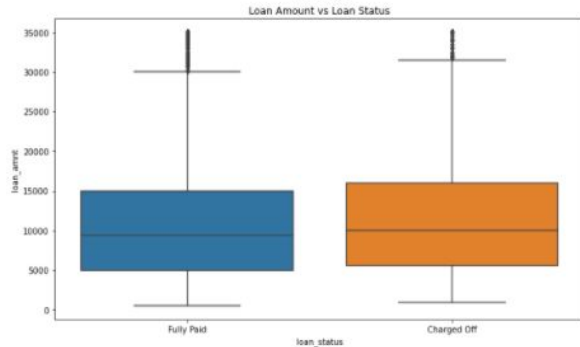
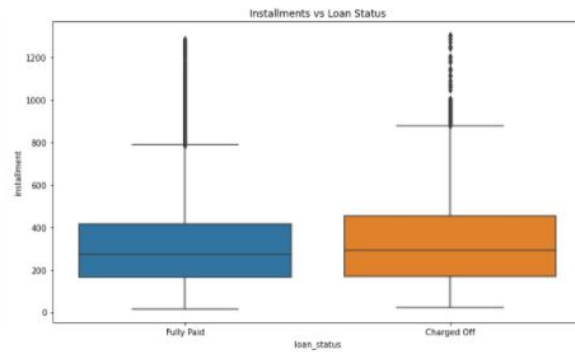
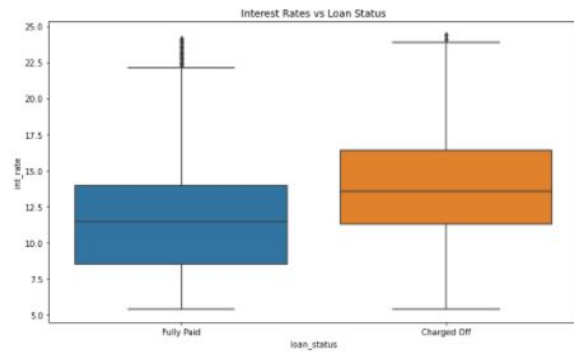


Plot 2 - Observation

1. We see high degree of correlation between Loan Amount, Funded Amount and Funded Amount invested
2. We use Loan Amount as a base for the exercise

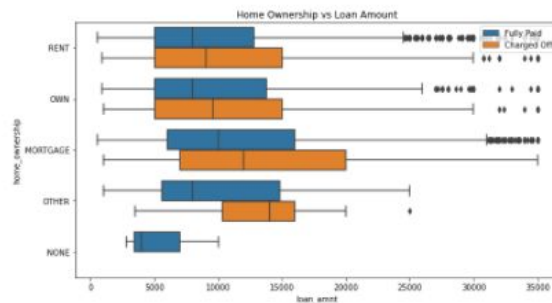
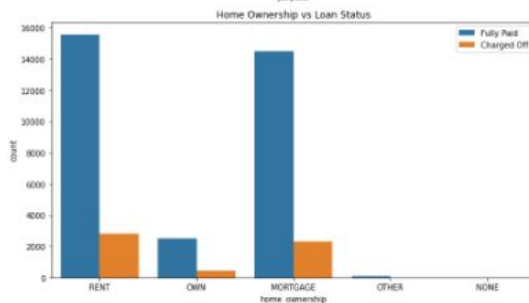
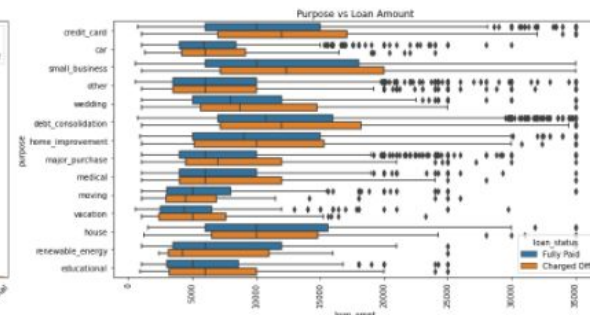
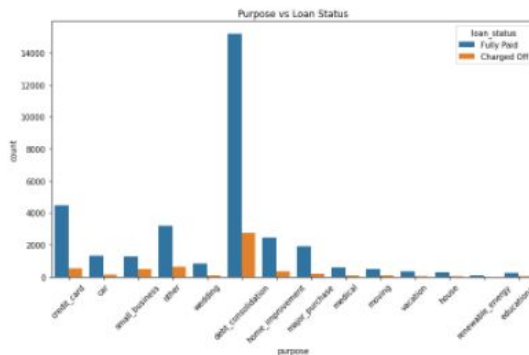
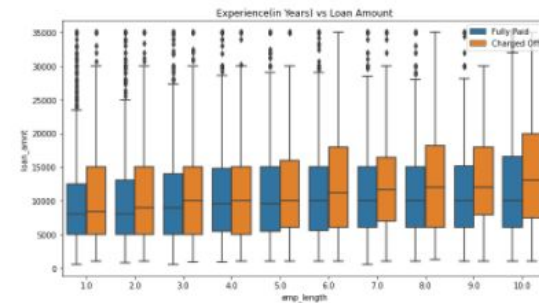
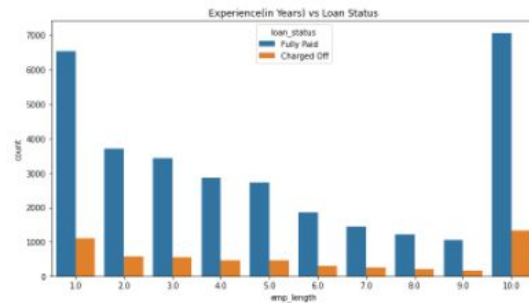
Plot 3 - Observation

1. We can observe that, the interest rates for the charged off population is comparatively more than the once paid fully
2. We can see that the charged off category has a slightly higher median in comparison to Fully Paid and we can also observe that the IQR for the Charged Off is greater.
3. While the median of installments chosen by the Fully Paid and Charged Off are close, we do see a significant number of people who are charged off to be on likely to request for longer duration to pay off.
4. There is a clear indication that the people who have been charged off have lesser income in comparison to the Full Paid



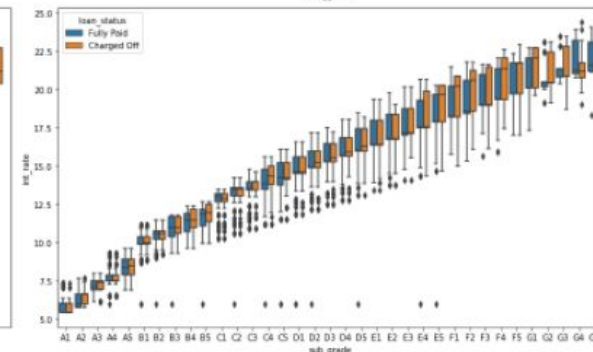
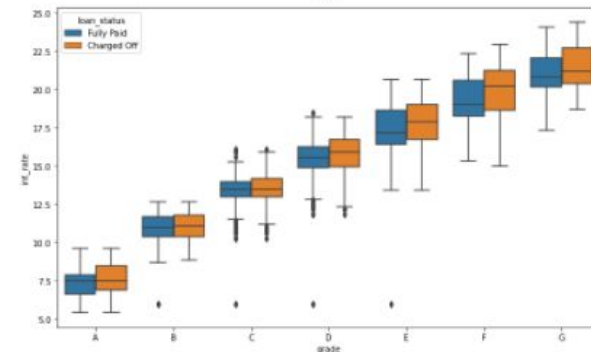
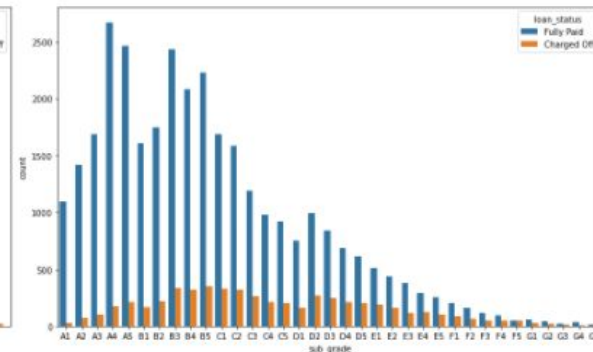
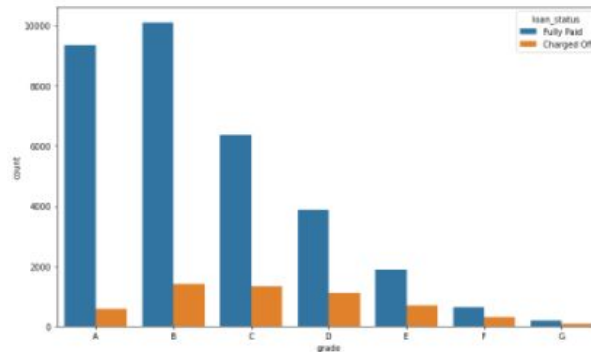
Plot 4 - Observation

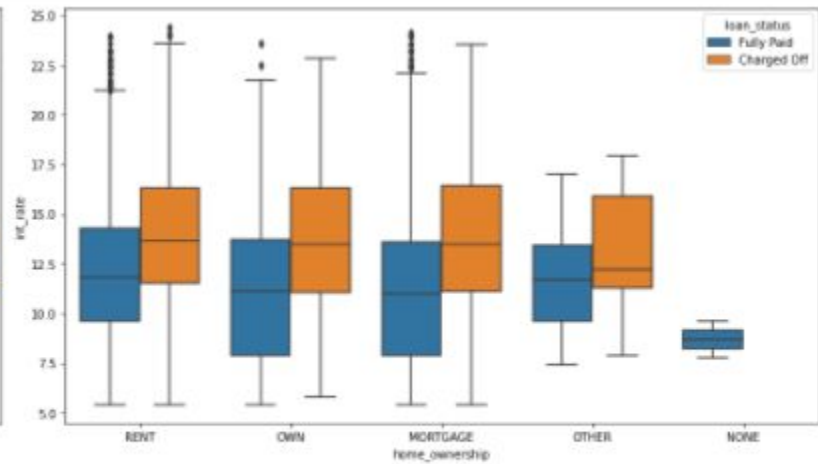
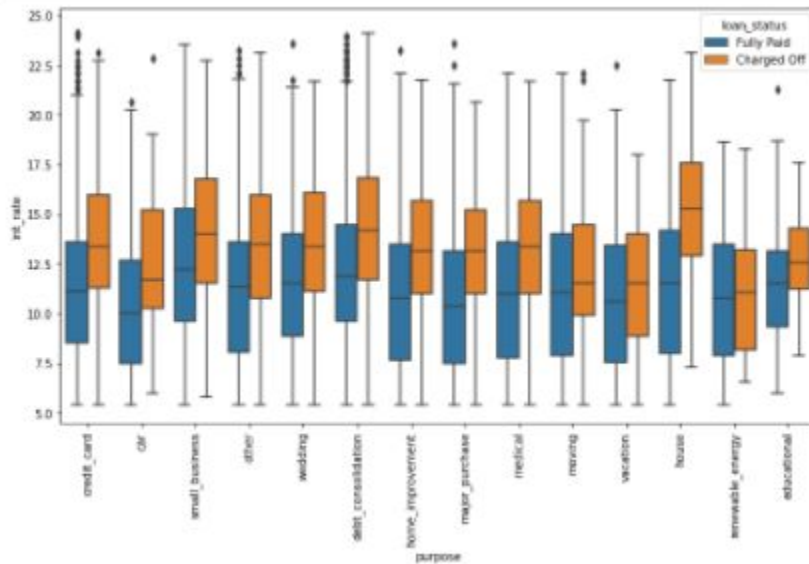
1. Number of people who have applied for loan are at the two extremes of the spectrum - Less than 1 Year or 10 Years and more.
2. We can see a trend for people with experience above 6 years wherein the people who have been marked as charged Off have taken loan amount - greater by terms of Median, IQR and Max value in comparison to the Fully Paid category.
3. In comparison to the top 3 categories of loan purpose, we see an evident trend in Credit Card, Small Business, Debt Consolidation which are greater by terms of Median, IQR and Max value in comparison to the Fully Paid category.
4. In comparison to the top 3 categories of Home Ownership, we can see a trend between Rent, Own and Mortgage which show significantly higher Median, IQR and Max value in comparison to the Fully Paid category. In "Others" category - there is a strong indicator of loan amount of Charged Off people whose 25th Quartile, Median and 75th Quartile are all significantly greater than Fully Paid.



Plot 5 - Observation

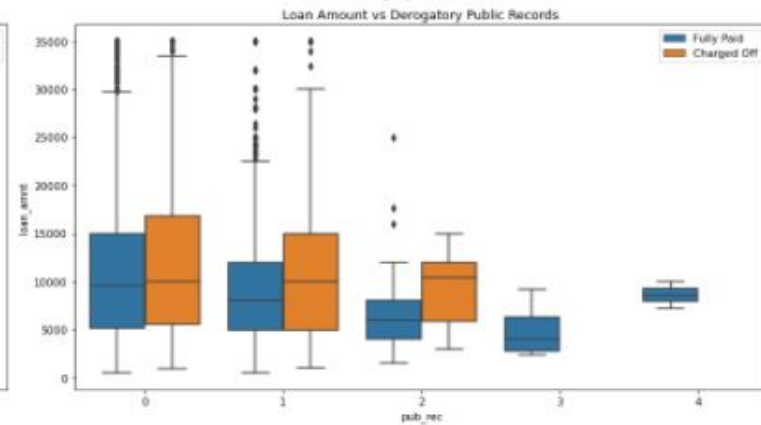
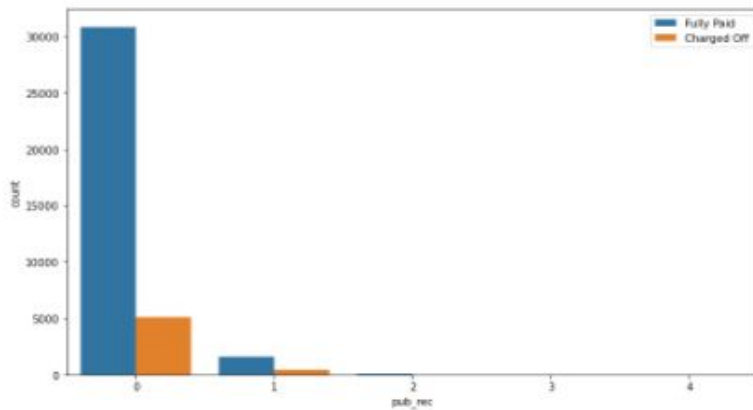
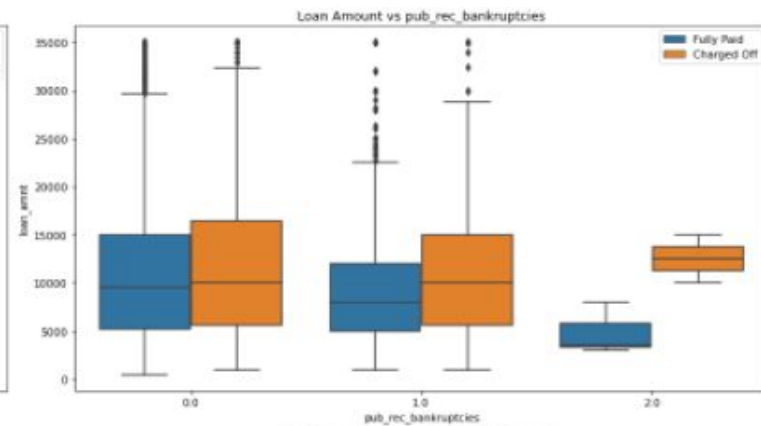
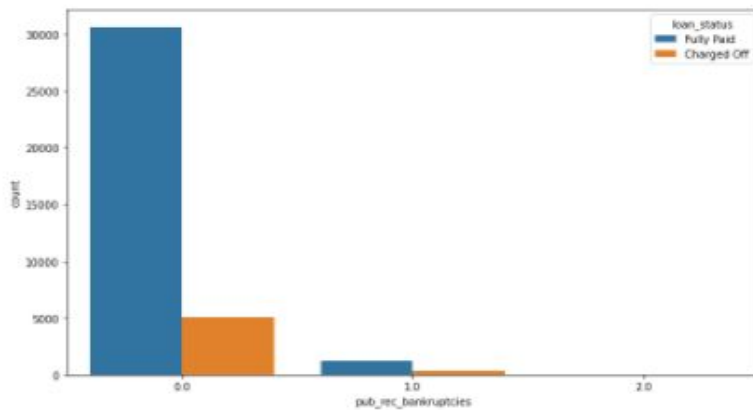
1. We see clear increase in the proportion of Charged Off category in comparison to Fully Paid under Grades C to G - Subgroups C3 to G5
2. There is high degree of correlation between rate of interest and Grades/Sub Grades. As the grades moves away alphabetically from A onwards the interest rate increased substantially.



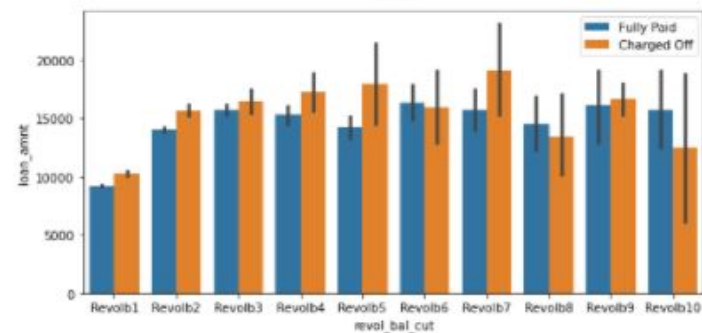
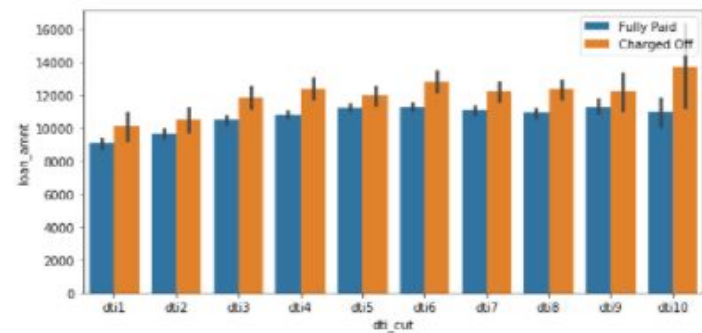
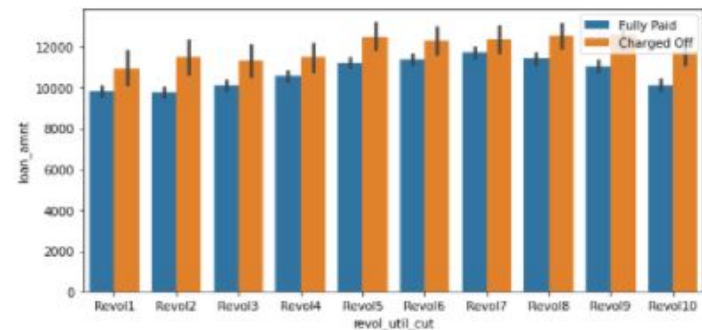
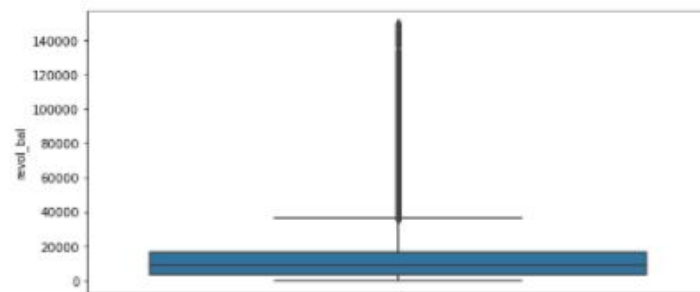
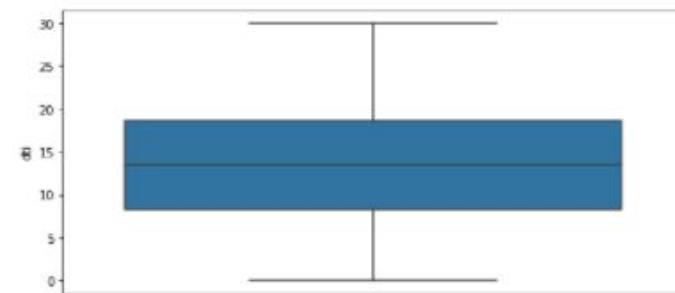
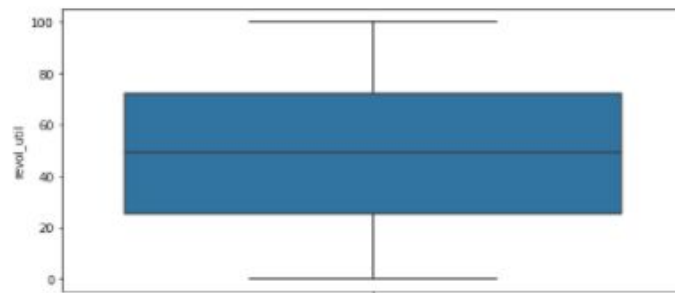


Plot 6 - Observation

1. Median interest rates for the purpose outlined are significantly greater and in some cases closer to 75th percentile which indicated that the charged off category under purpose were paying far greater interest rate in comparison to Fully Paid.
2. Across the Home Ownership category, we see that the people who have been charged Off have paid significantly higher interest rates and closer to 75th percentile in comparison to Fully Paid.



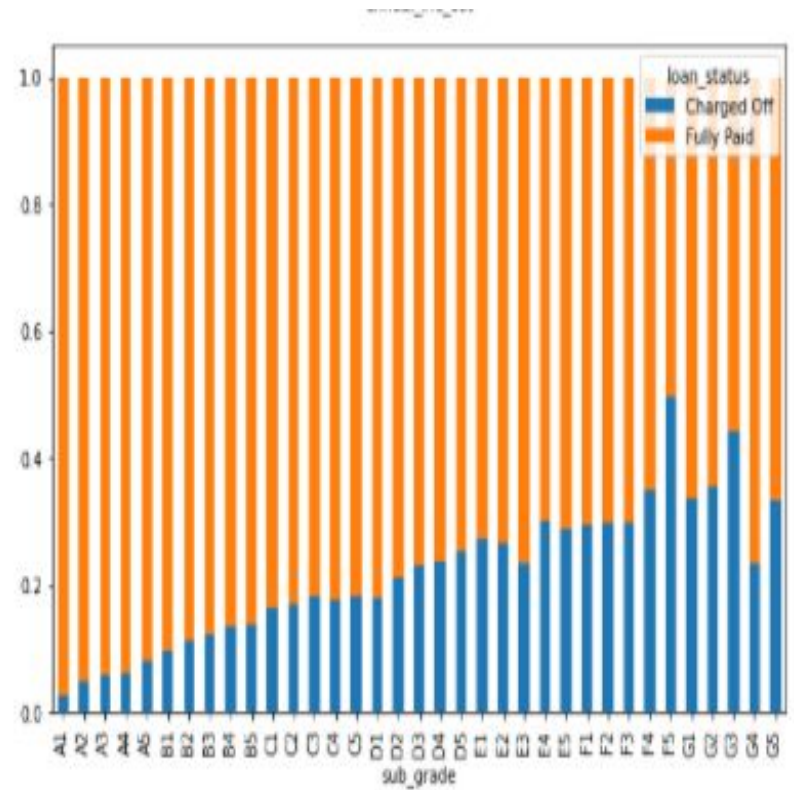
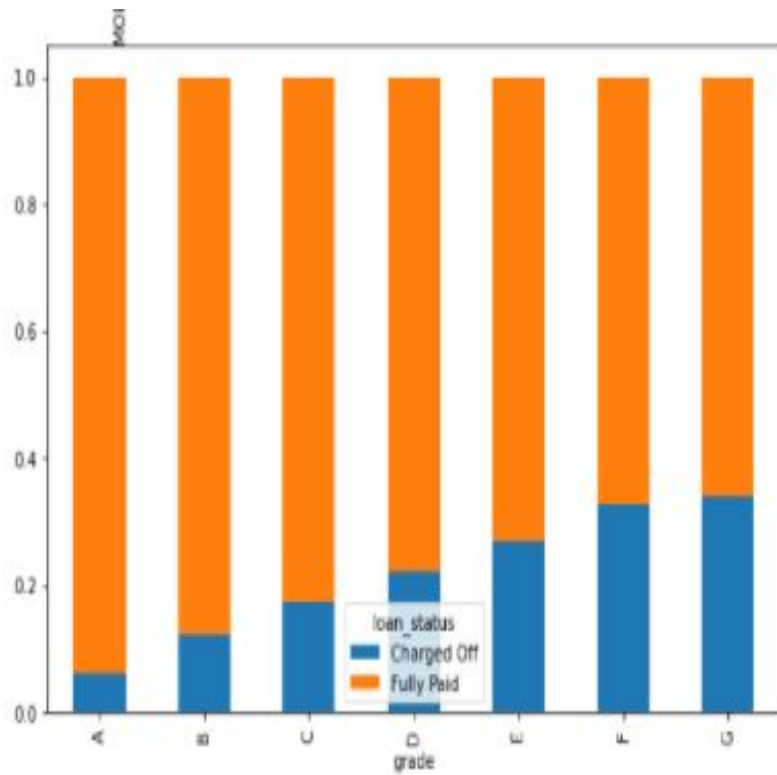
Plot 7



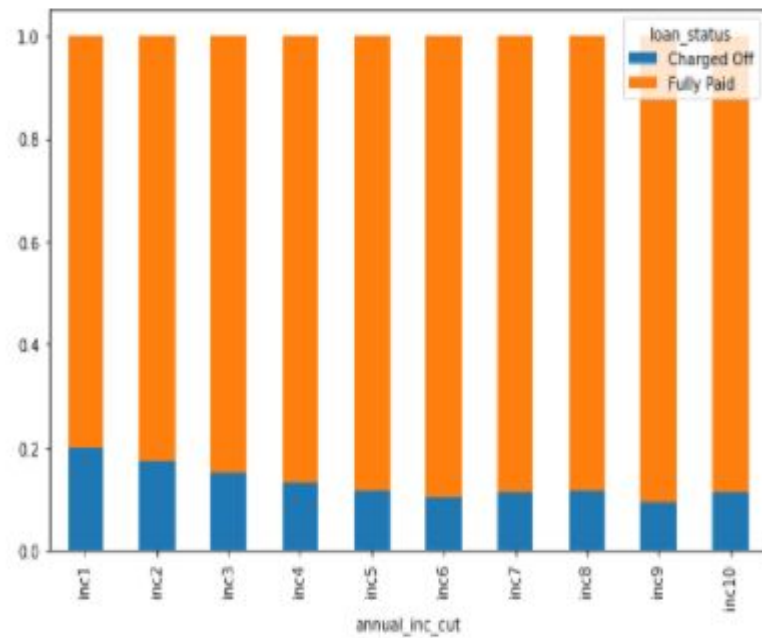
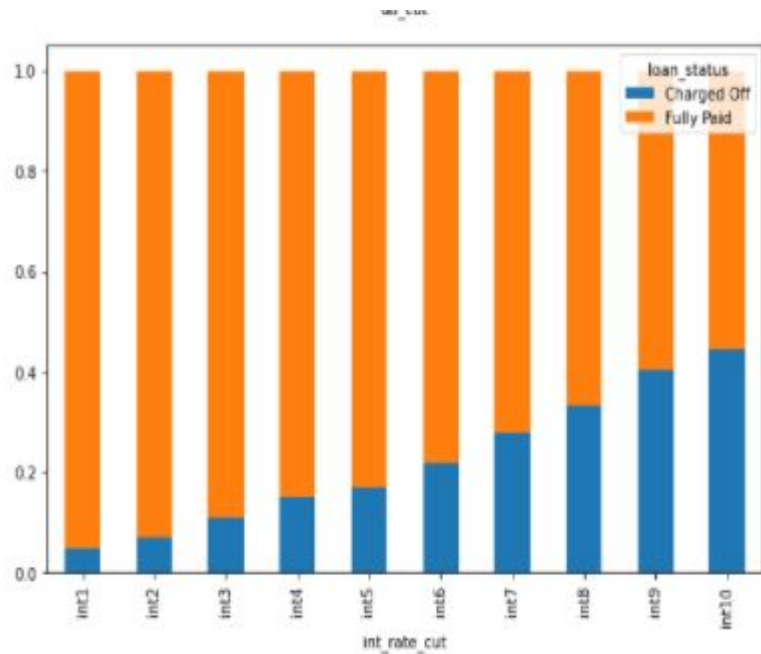
Plot 8



Plot 9



Plot 10 - 1



Plot 10 - 2

Key Takeaways

1. Installments and Loan amount to be looked alongside the Income, might give us a fair statistical point in whether to approve or reject.
2. Any loan where borrower experience greater than 6 years, can be viewed in combination with Home Ownership and Purpose in-order to determine whether it would be appropriate to approve.
3. Higher interest rates are common feature and especially in few segments, the median of charged off to be closer to the 75th percentile of the Fully Paid is an alarm to be observed for.
4. Home Ownership - Proportion of Charged Off is greater than “Other” and followed by - Mortgage, Own and Rent.
5. Annual Income - Proportion of Charged Off is highest in the first 3 buckets (upper limit of 200000 has been broken down into 10 bins of equal proportion)
6. Grades & Sub-Grades - Proportion of Charged Off is increasingly greater as we moved from C to G.
7. Purpose - Small business, Renewable, Educations show greater proportion of Charged Off
8. Term - Term of 60 months have greater proportion of Charged Off
9. Int Rate - We see an incremental raise in interest rates and as they are higher, we see a clear correlation wherein the proportion of Charged Off significantly increases