

Loan case study

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DATA EXPLORATION

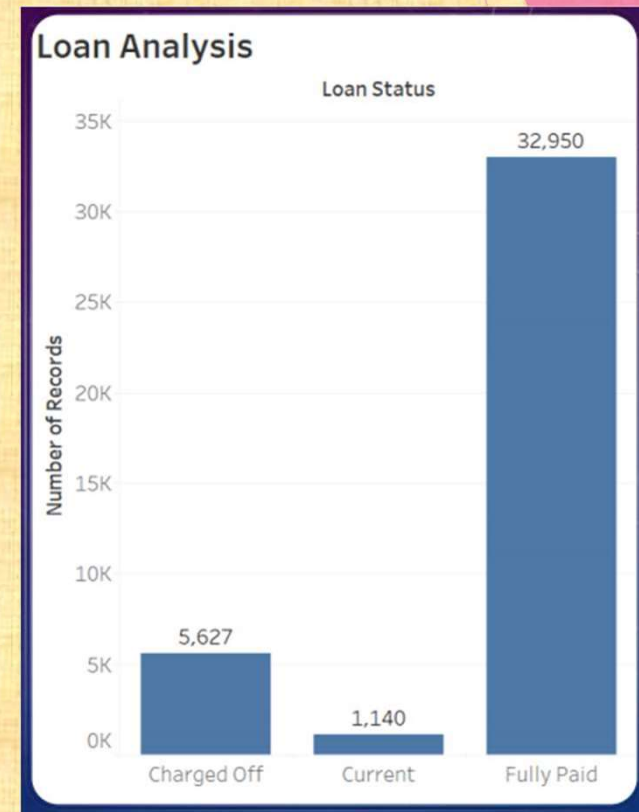
- There are 111 variables in the loan dataset. Problem Statement: To find a solution to minimize the risk of losing money while lending to customers. So we need to particularly concentrate on the charged off case.

DATA CLEANING AND MANIPULATION

- Dealing with Missing values :
- In this dataset 54 variables contain all the observations as NA so they are removed. • 14 columns have more than 70% of 0 so they are removed. • Some columns are replaced with 0 in the place of NA. • 4 columns from remaining has same data in column hence they were removed. Others: • Rounded of some numeric variables. • Removed “months” from terms and “%” from some variables for visualization purpose

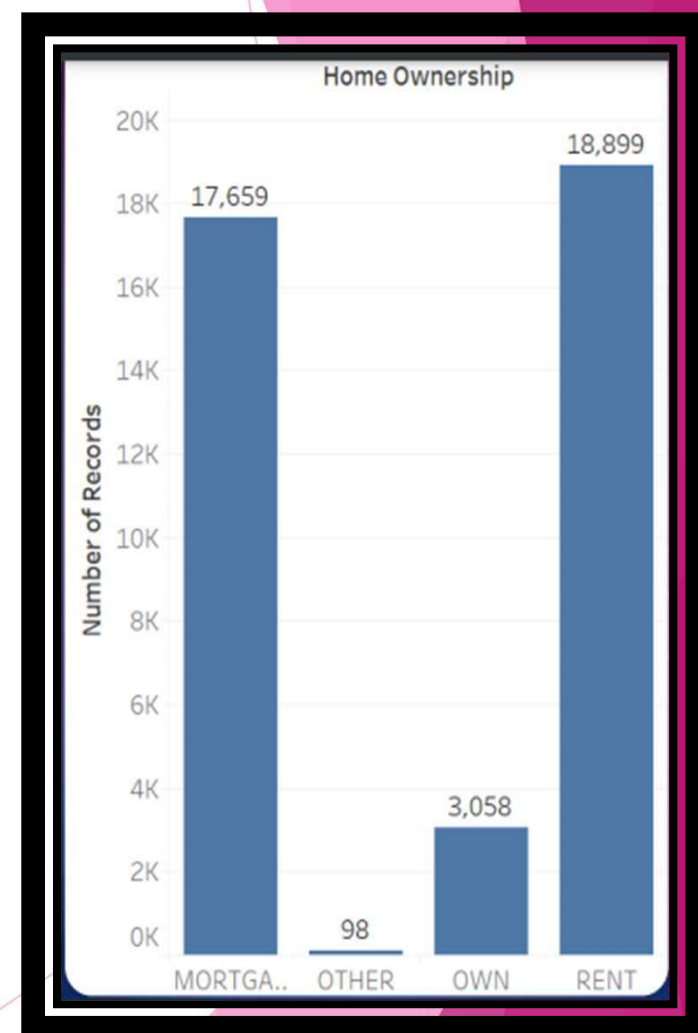
ANALYSIS OF LOAN STATUS

- So out of 39717 loans granted 5627 were charged off.
- For 1140 members status is current.



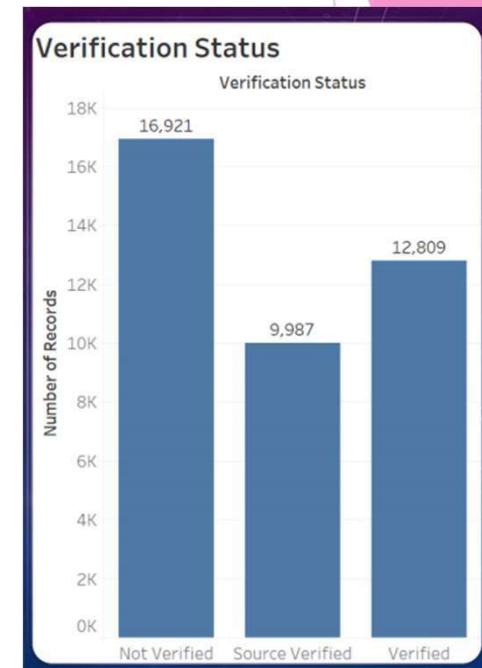
CHARGED OFF - HOME OWNERSHIP

- From the graph it is clear that in charged off case most of the members have rented and mortgage homes.
- 2839 people are living in rented home. •2327 people are already on a housing loan.



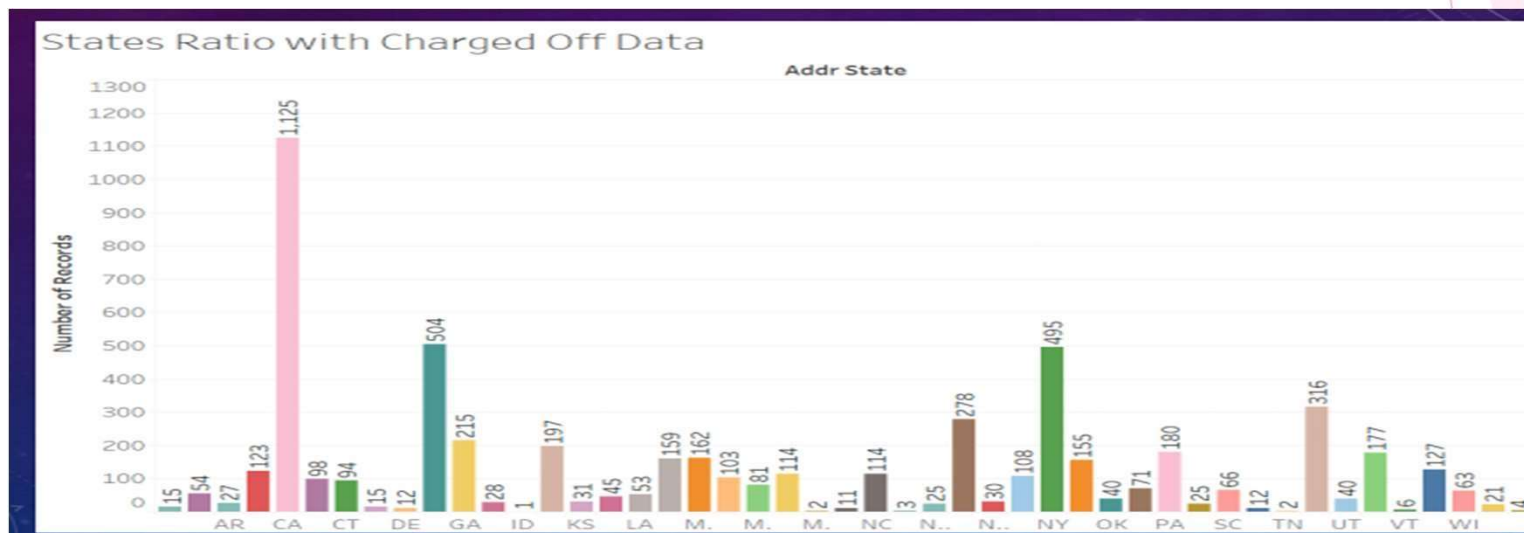
CHARGED OFF VERIFICATION STATUS

- This analysis shows the bank's carelessness.
- Without verifying the income of the person they granted loans for 2142 members.

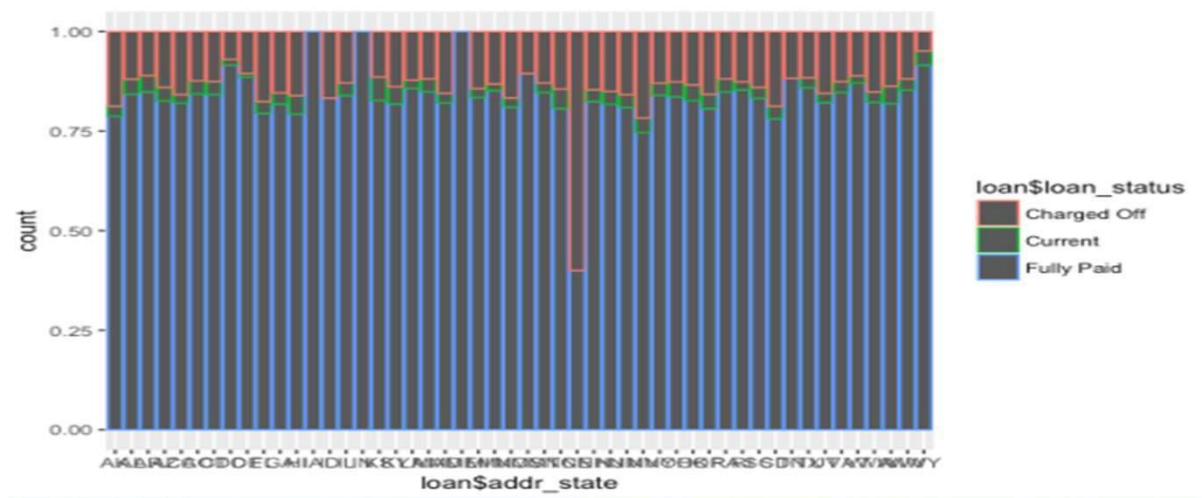


CHARGED OFF - STATE

- California State has most number of cases which are charged off

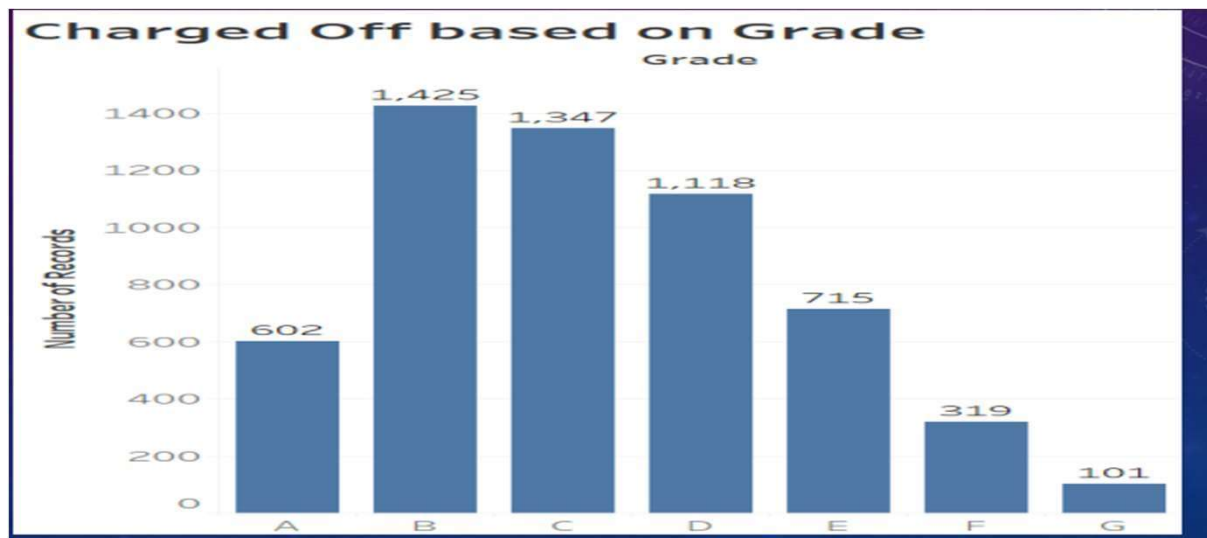


LOAN STATUS WITH STATE, NE NEBRESKA IS
STATE WITH HIGHEST DEFAULT PERCENTAGE
BUT ITS AN OUTLIER



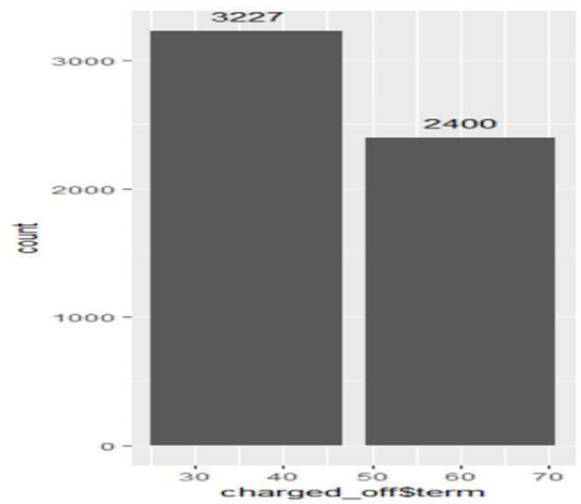
CHARGED OFF - GRADE

- Most of the charged off occurred in B, C and D grades of loans



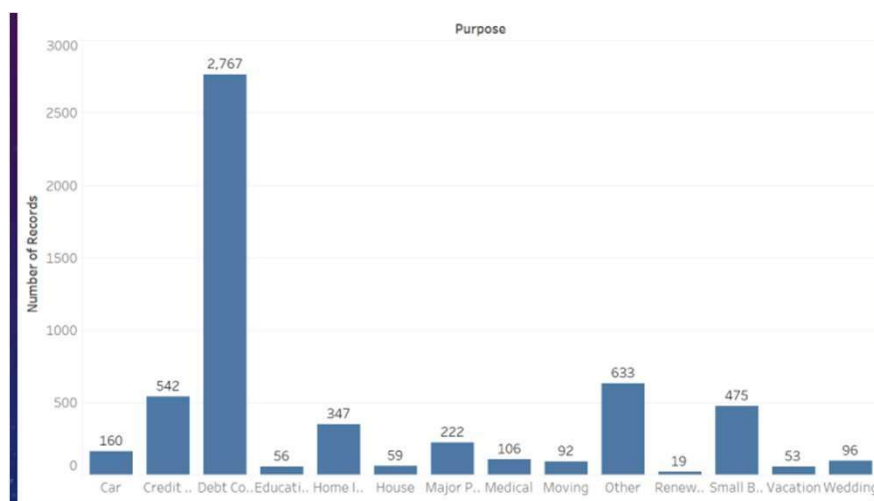
CHARGED OFF - TERM

- The number of defaults are more for the people who have the term of 36 months

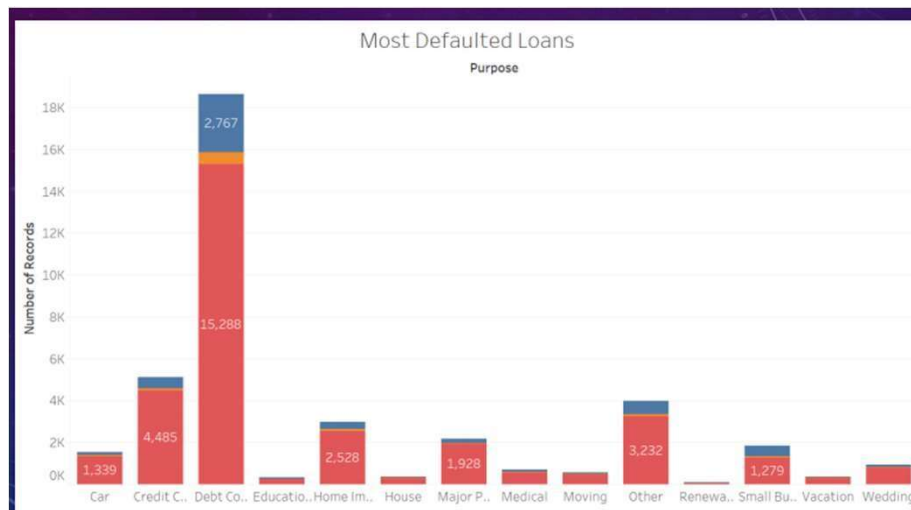


CHARGED OFF - PURPOSE

- 2767 Loan defaulted in Debt Consolidation purpose, followed by when purpose is not specified and is others

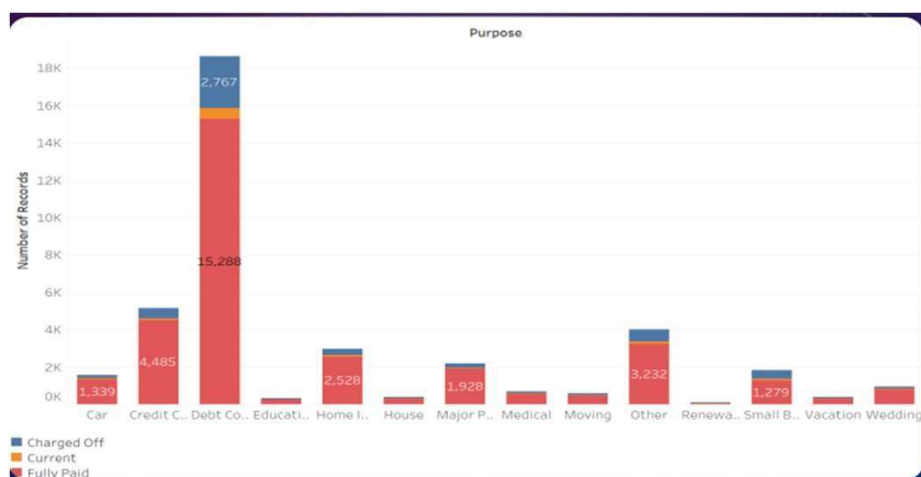


THE LOANS TAKEN FOR DEBT CONSOLIDATION ARE MORE DEFAULTED



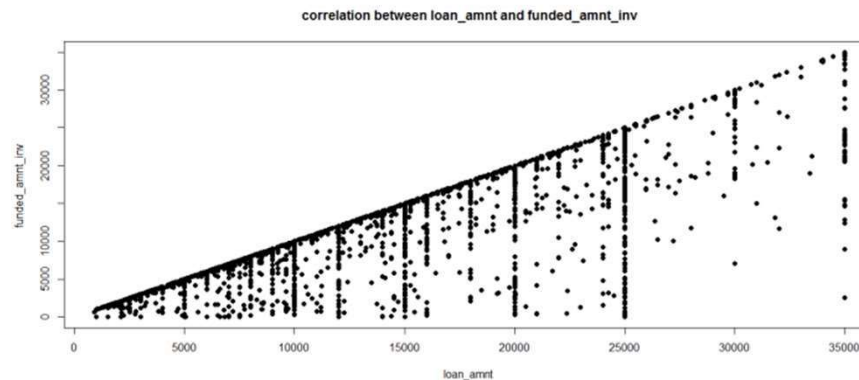
REASONS FOR LOAN AND STATUS

- •For overall Population of loan we see that higher % of people with purpose as small business as charged off. Overall Debt Consolidation then small Business



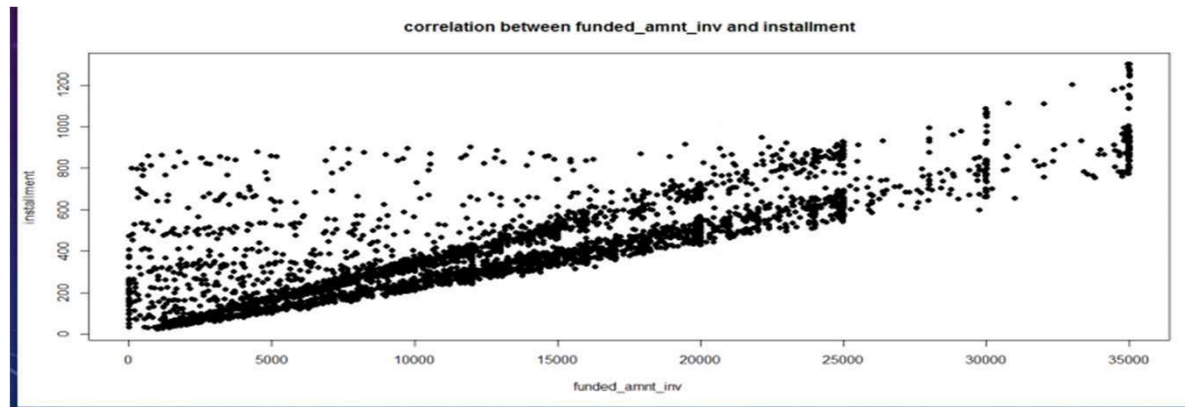
CORRELATION BETWEEN LOAN AMOUNT AND FUNDED AMOUNT INVESTED IN DEFAULTED CASE

- The correlation is 0.95 and clearly states that with increase in loan amount there is increase in funded amount invested

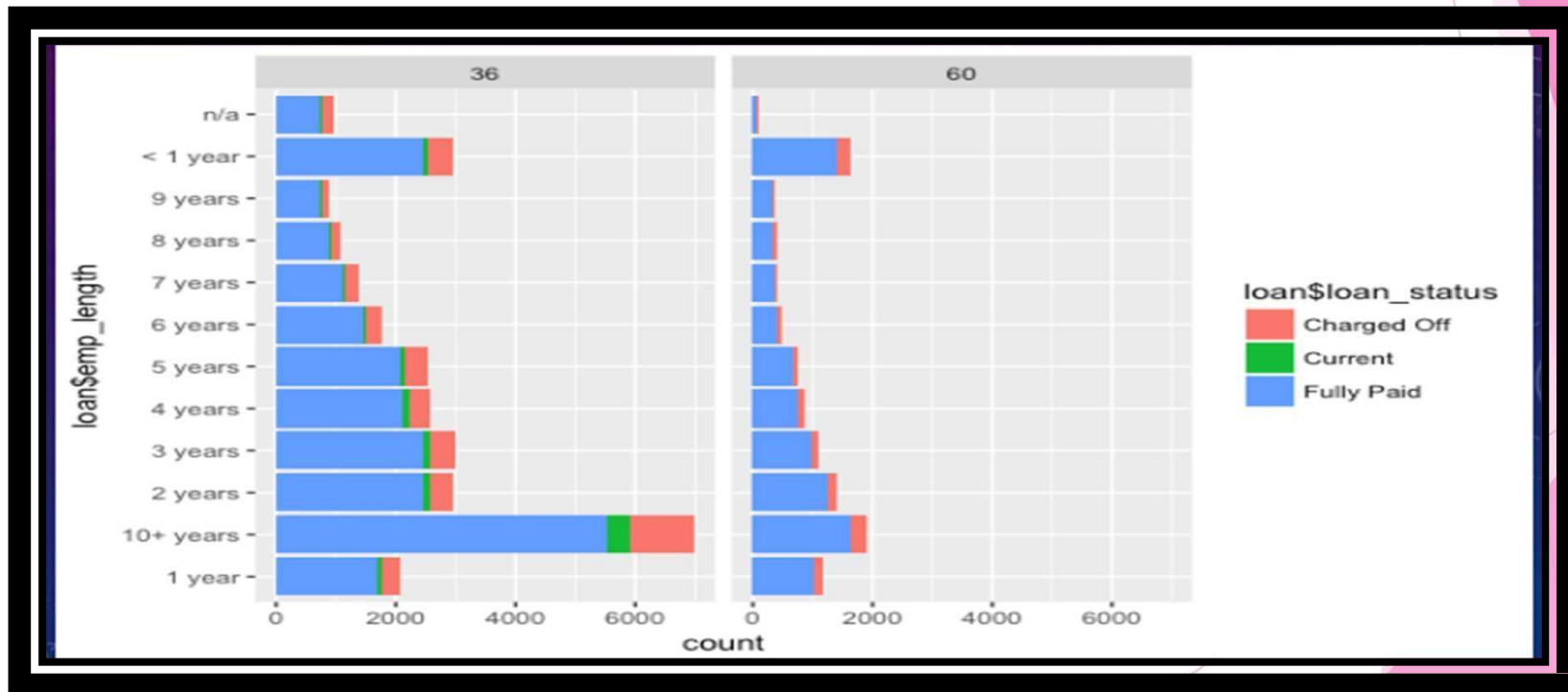


CORRELATION BETWEEN FUNDED AMOUNT INVESTED AND INSTALLMENT IN DEFAULTED CASE

- The correlation is 0.9 and clearly states that with increase in funded amount invested the installment increases.

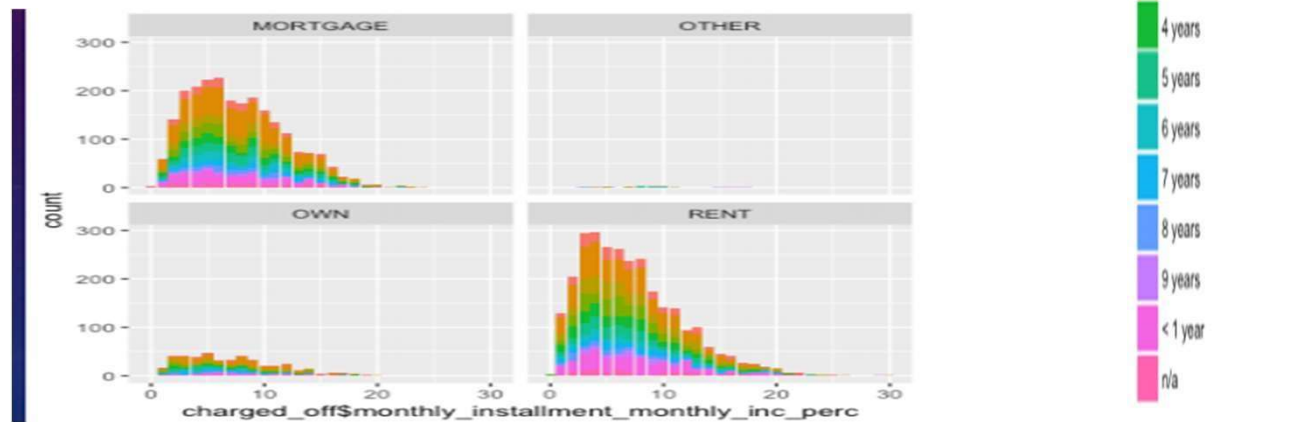


LOAN STATUS WITH TERM TO EMPLOYEE LENGTH, HIGHER % WITH 10+ YEAR EMPLOYEE LENGTH



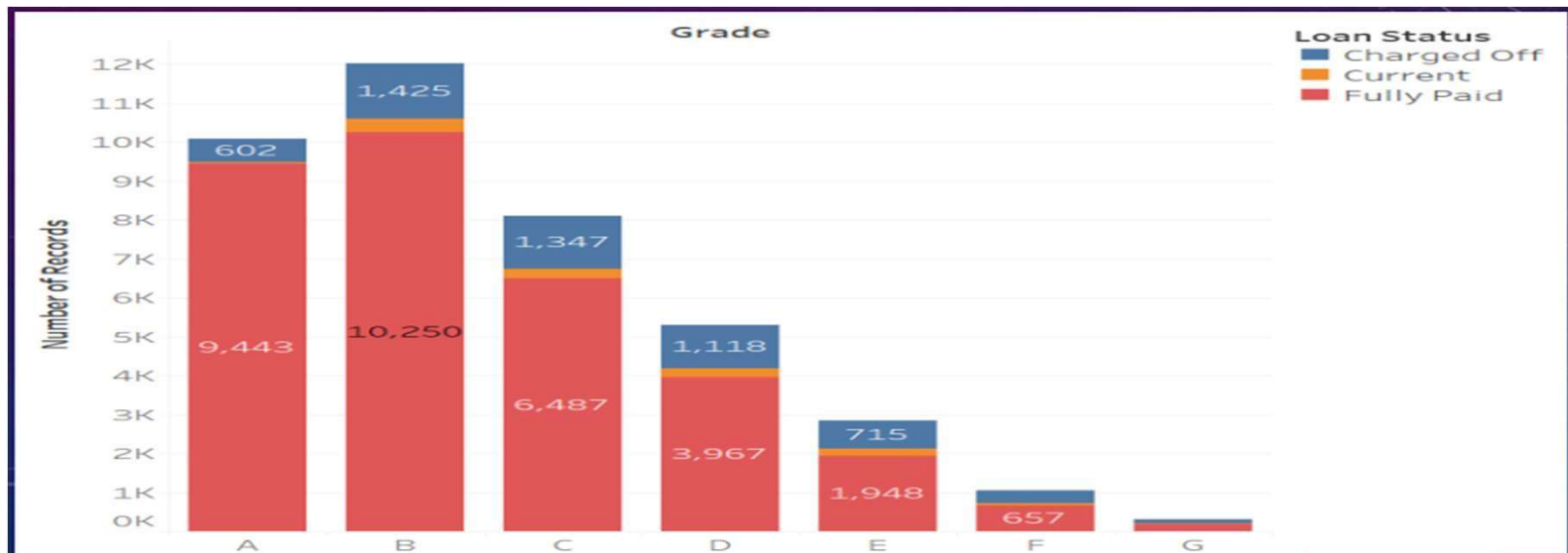
MONTHLY INSTALLMENT PERCENTAGE OF SALARY TO EMPLOYEE LENGTH AND OWNERSHIP

- Monthly installment is around 5-10% of monthly income on Mortgage/Rent are high defaulters



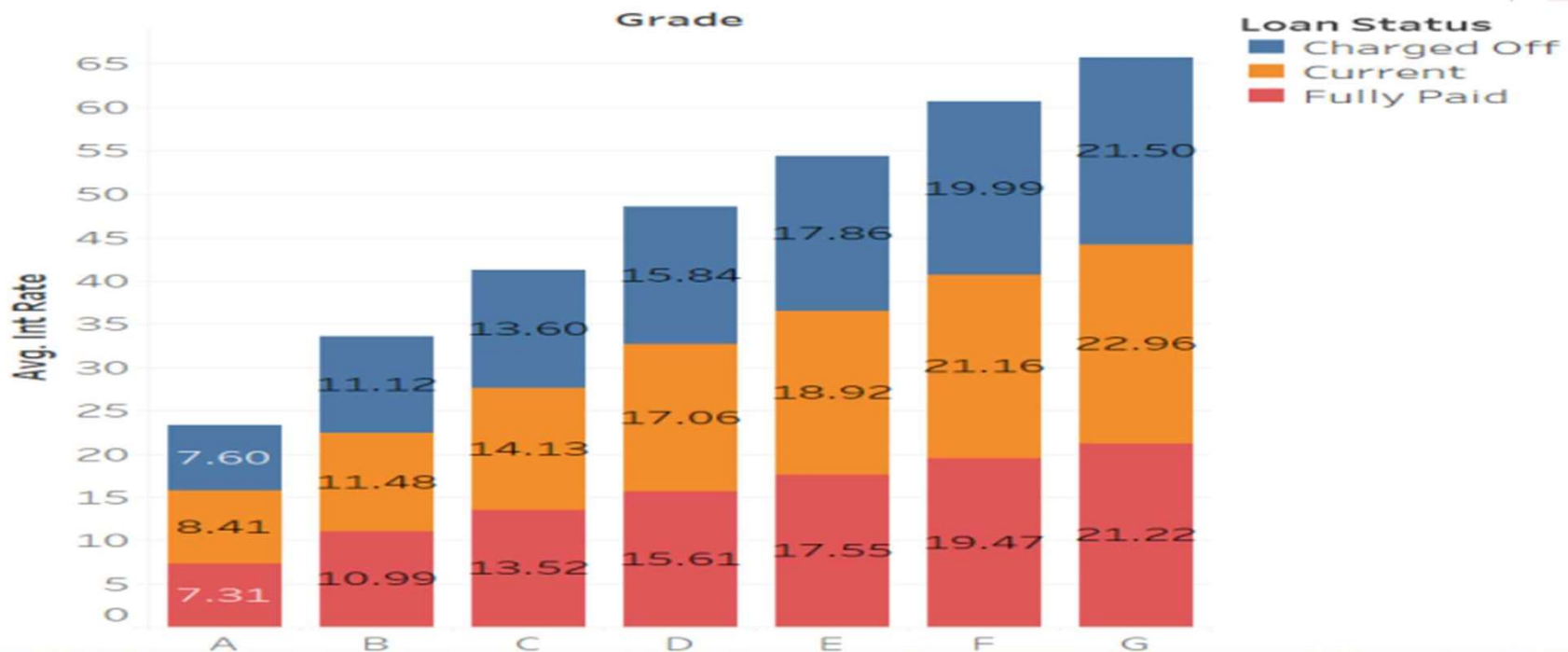
NUMBER OF PEOPLE WITH LOANS AT VARIOUS GRADES

- It clearly indicates that People with Grade B have applied for maximum loans and also with highest rate who have cleared loan



AVERAGE INTEREST RATES AT VARIOUS GRADES

- This analysis can help in understanding the average interest rates at various grades. Also to identify the interest rate patterns



CREDIT CARD REVOLVING BALANCE

- The revolving balance analysis among various states across all grades helps in identifying in loan processing for the organization.

