Lending Club Case Study

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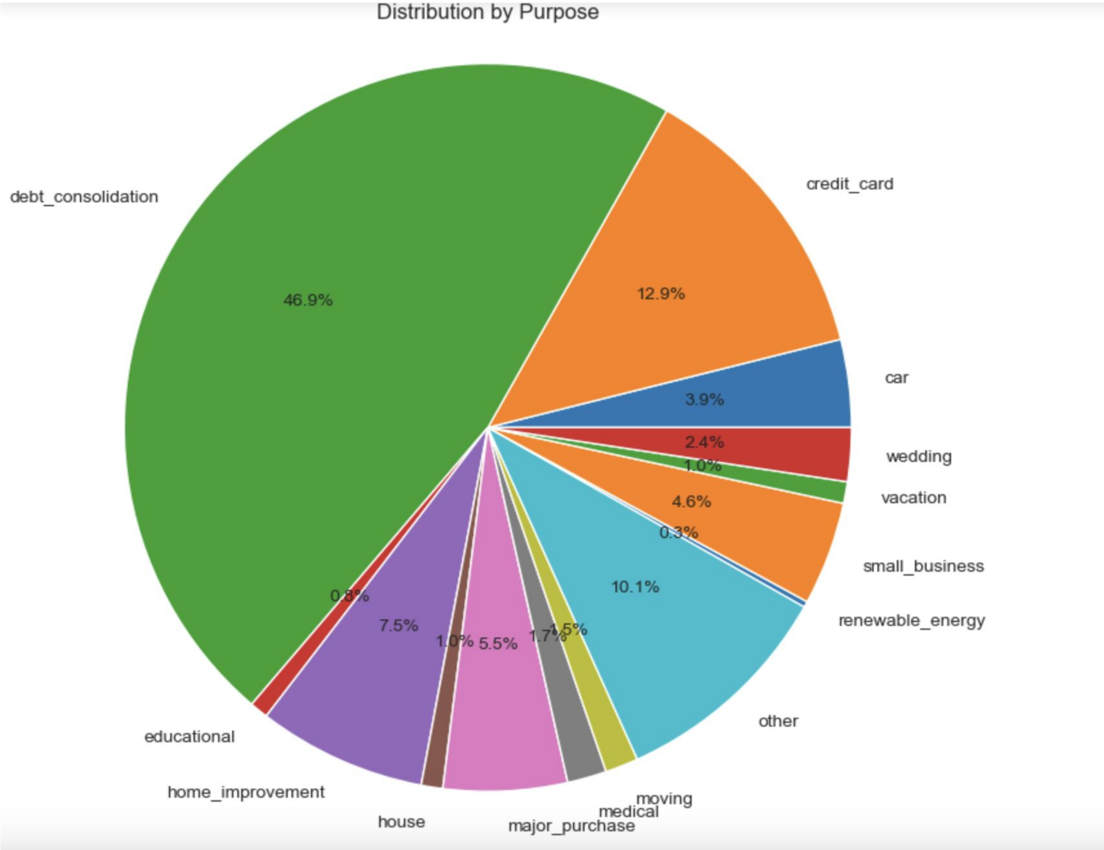
Problem Statement

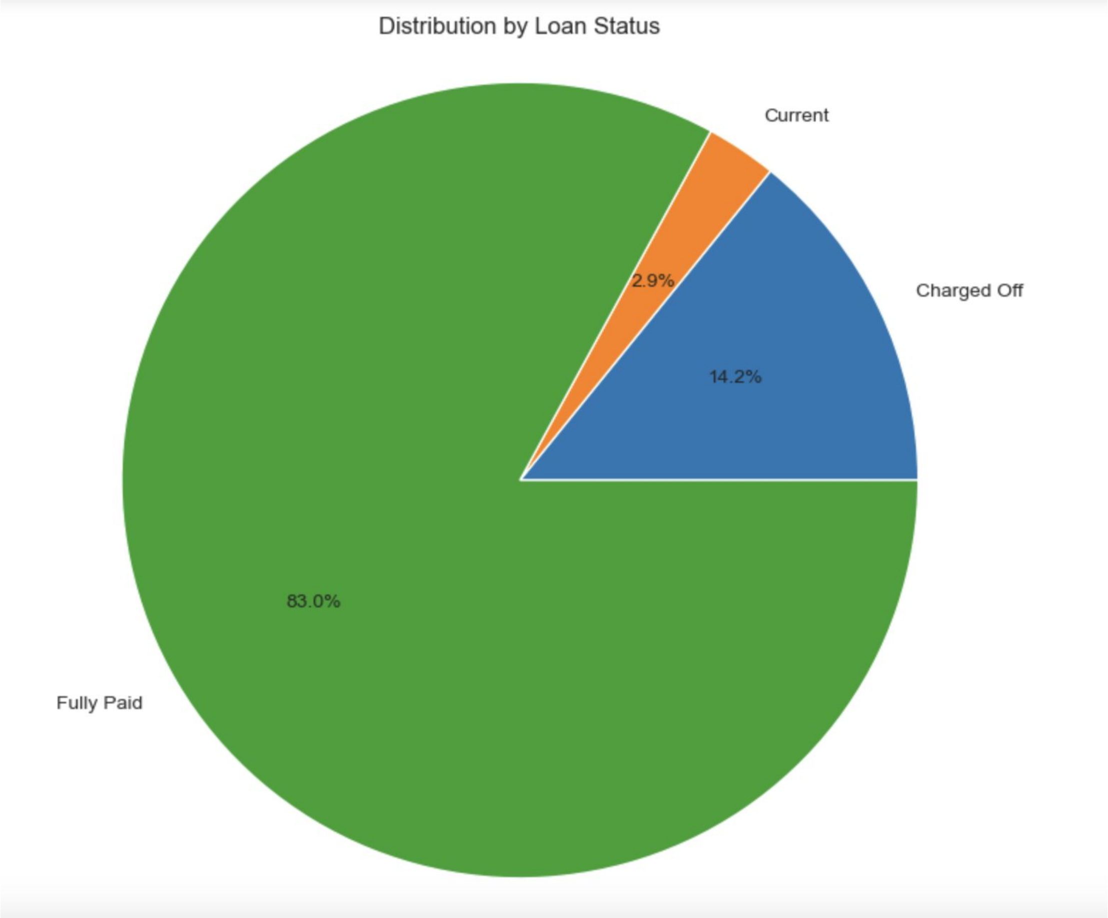
- Our company is the largest online loan marketplace, facilitating personal loans, business loans, and financing of medical procedures
- Borrowers can easily access lower interest rate loans through a fast online interface.
- We have access to historical data of borrowers, how much loan was requested, how much money was approved, and other details about the loan
- Using Past Borrowers Data find out whether we can predict who will default

Methods Used

Data Cleaning	Data Understanding	Univariate Analysis	Segmented Univariate Analysis	Multivariate Analysis	Observations
Fix Rows & Cols Fix Missing Values Standardise Values Fix Invalid Values Filter Data	Understand the data presented in the various columns by looking at the data dictionary	Analysing data per column. Trying to find if we can find patterns from the same	Categorize the data from a column and see if we can find patterns there	Analysing the relationship between various columns like interest against default	Present all the observations

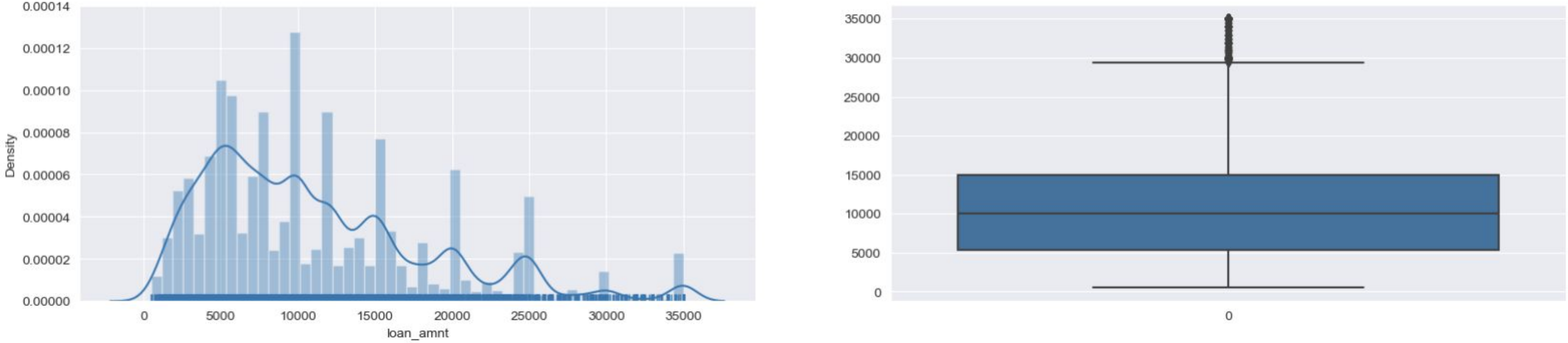


Most of the loans are taken for debt consolidation

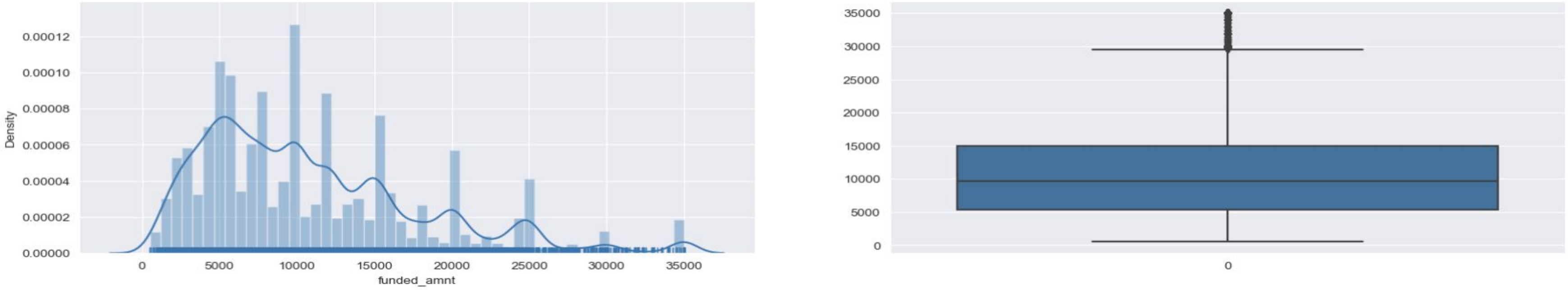


14 percent chance of loan being defaulted.

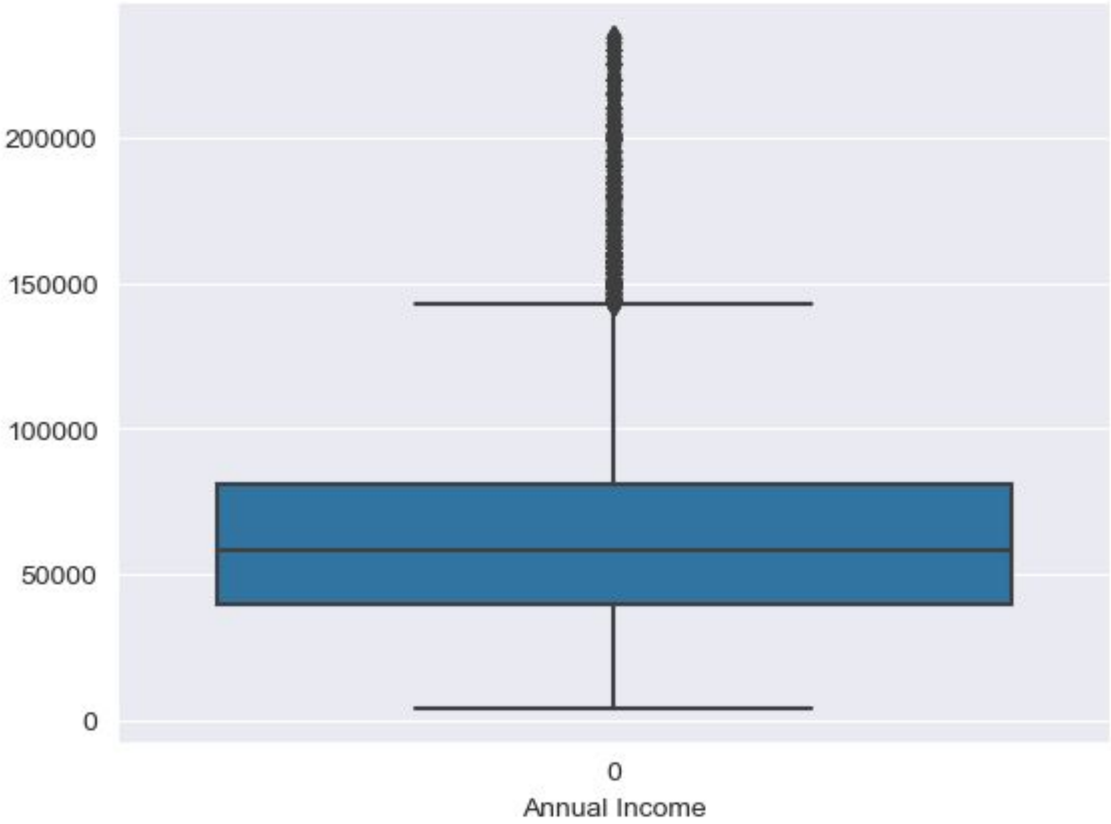
Loan Amount



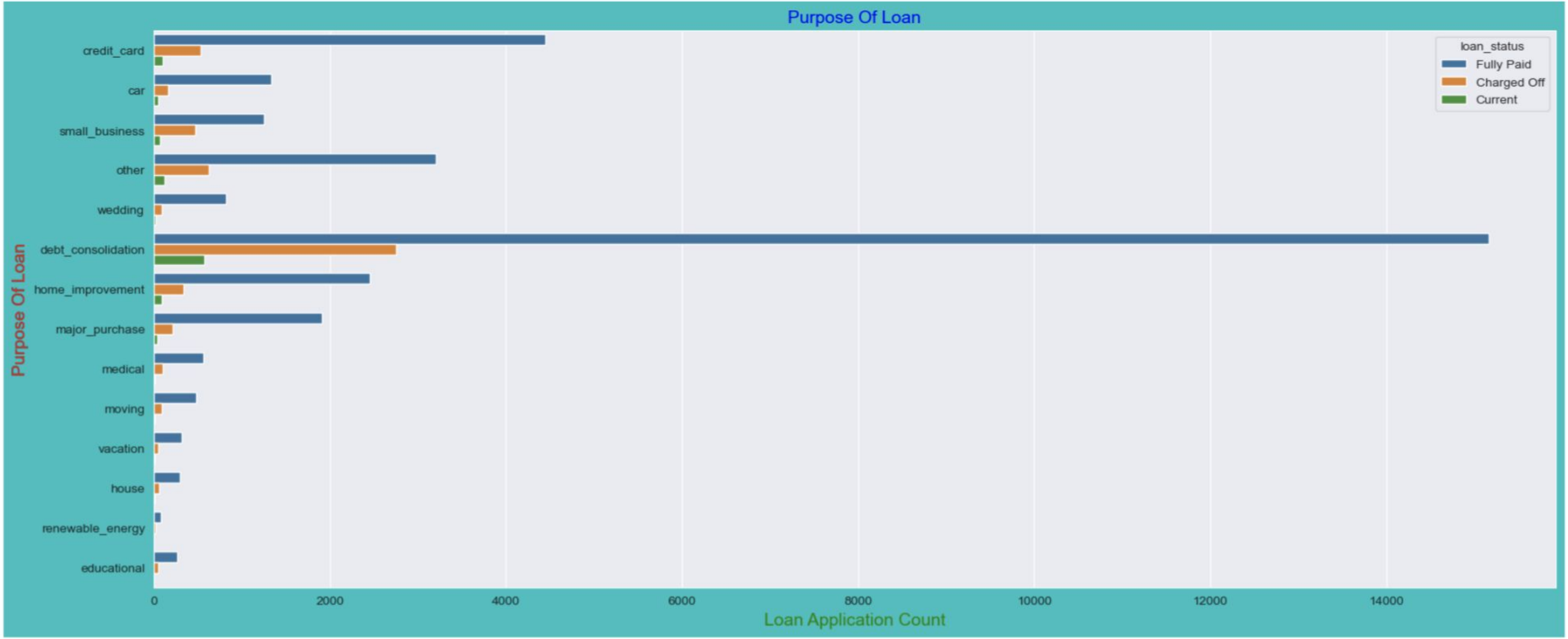
Approved Loan Amount



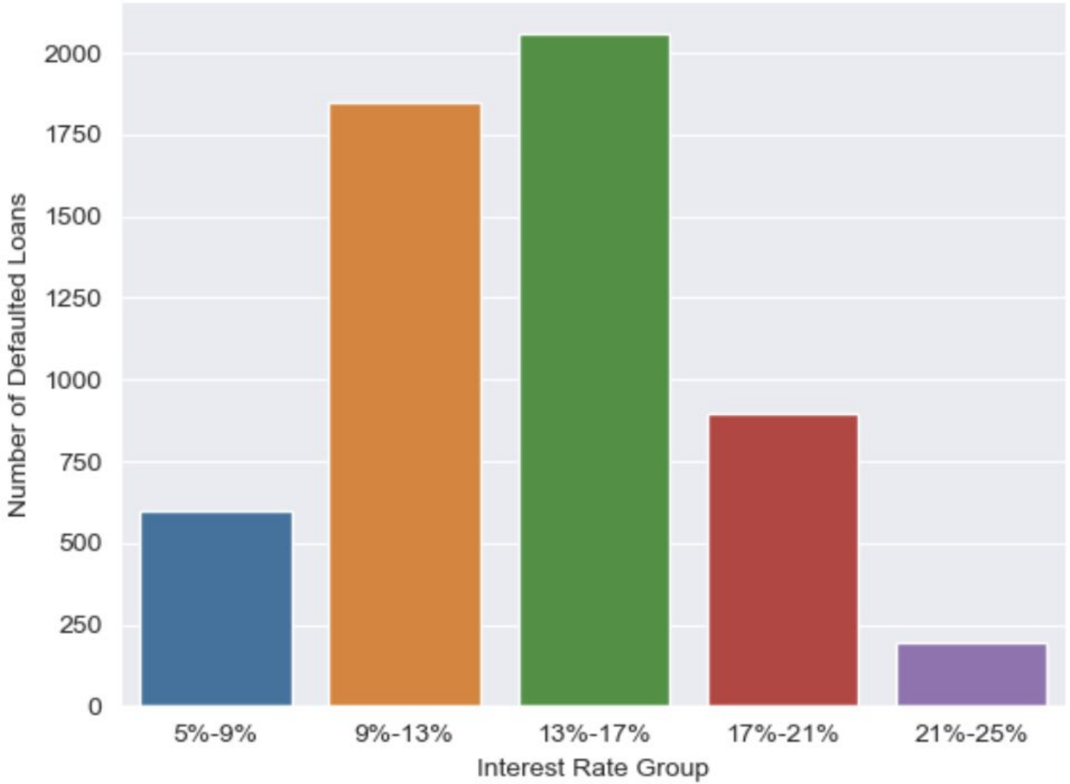
Requested And Approved Loan have same curve. Meaning all the requested amount were mostly approved



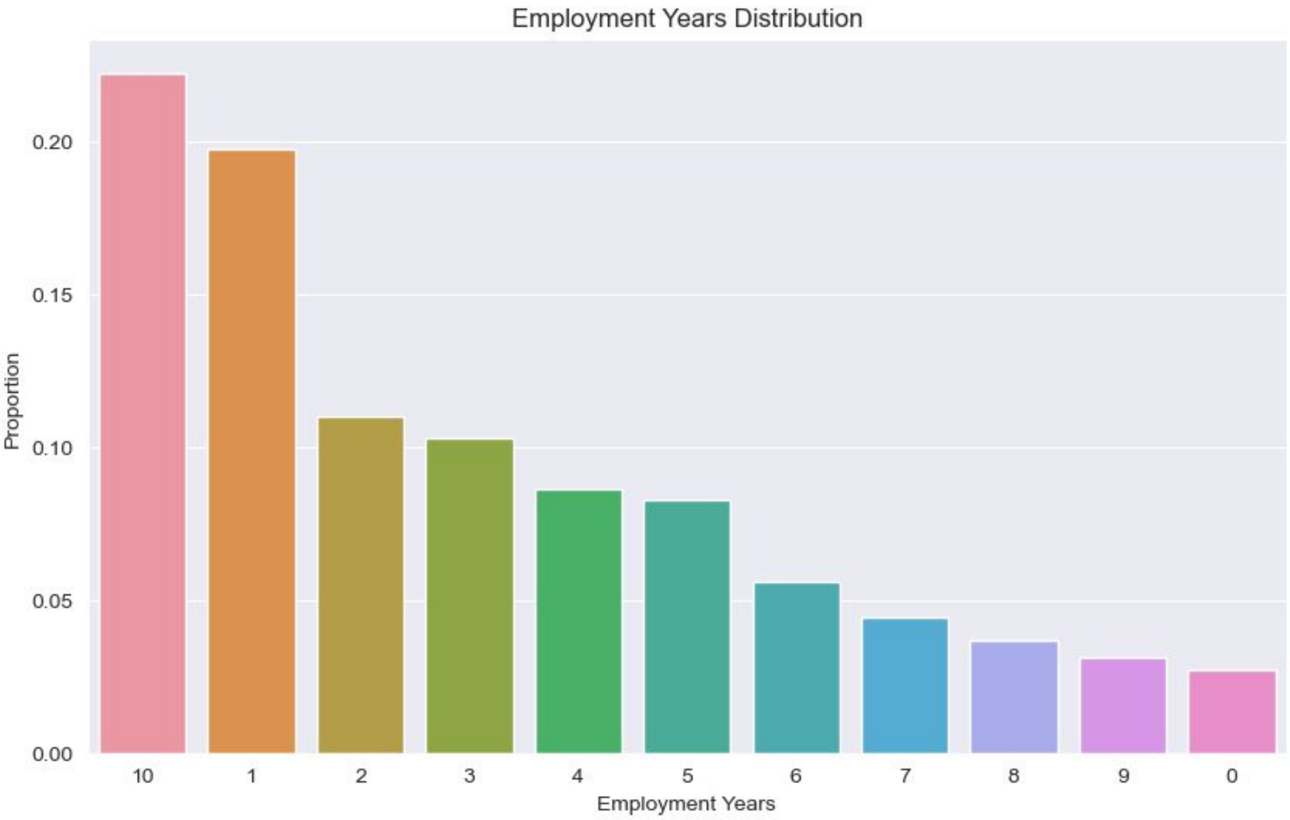
The median annual income is 58k and the median loan amount was around 10k



Purpose of Loan vs Chargeoff. There is not one purpose which stands out in case of defaulted loans.

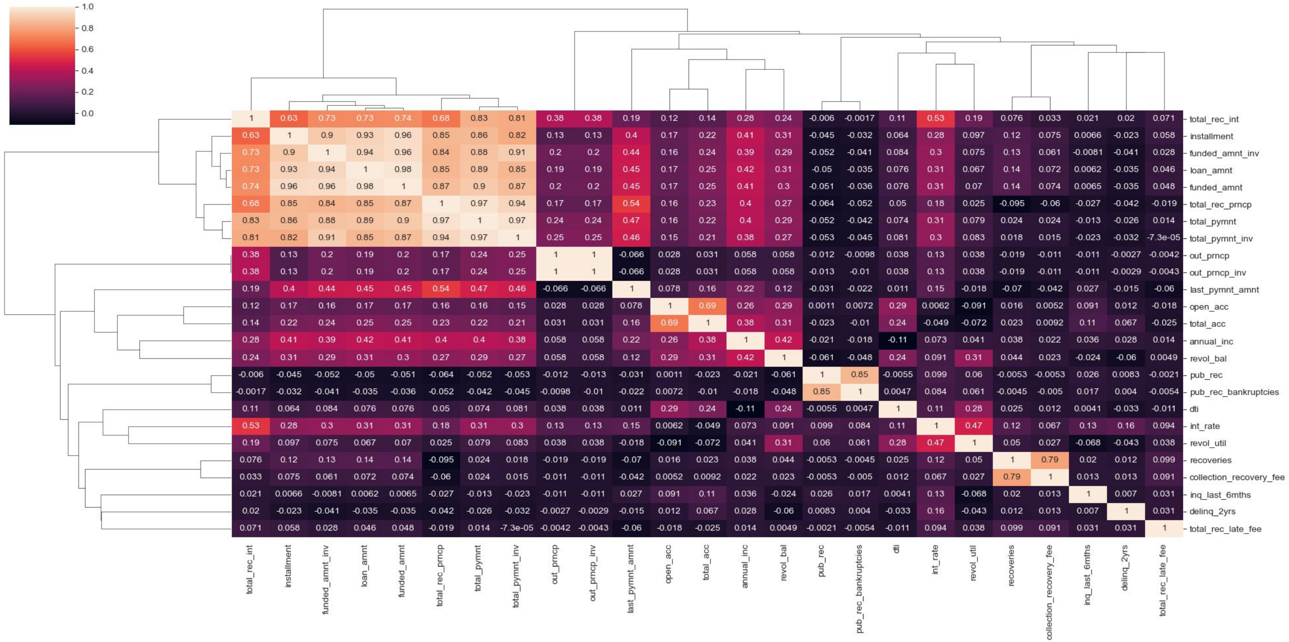


Loans in interest group of 13-17 percent have highest default

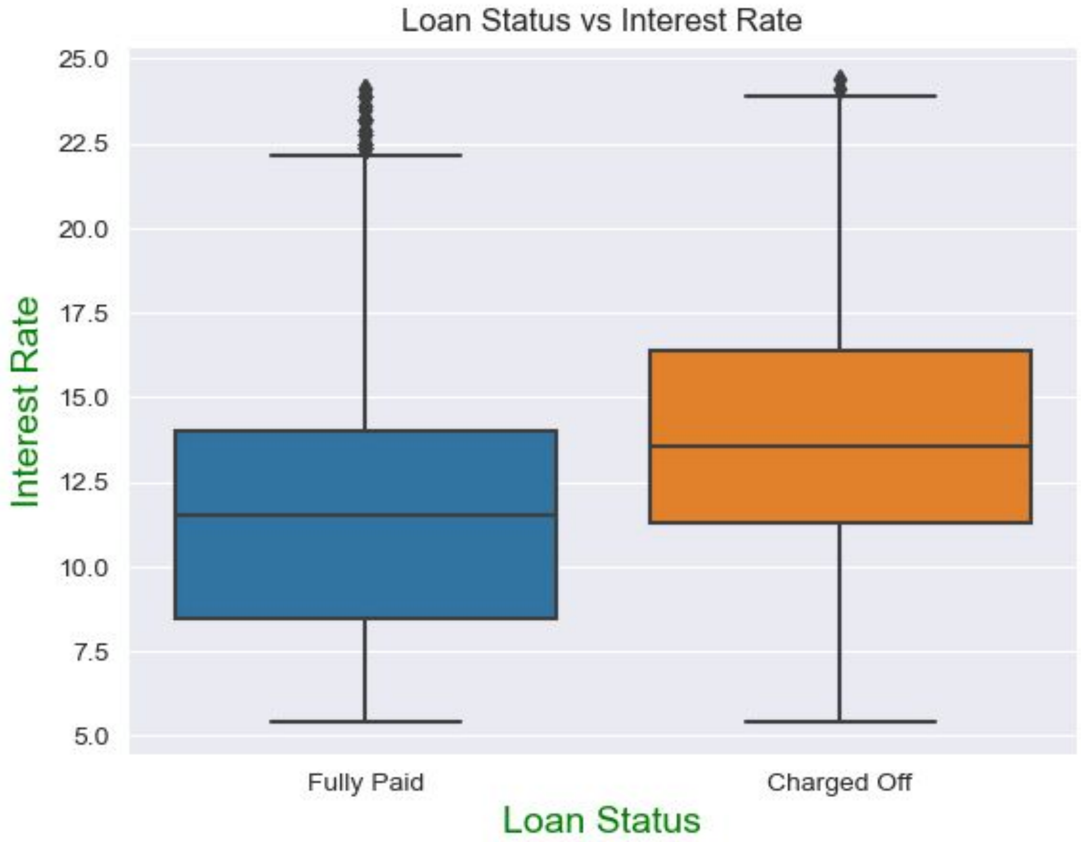


Higher your employment years higher the probability of getting loans. Probably because of stability

Most of the defaulted loans are in 4k-31k income category

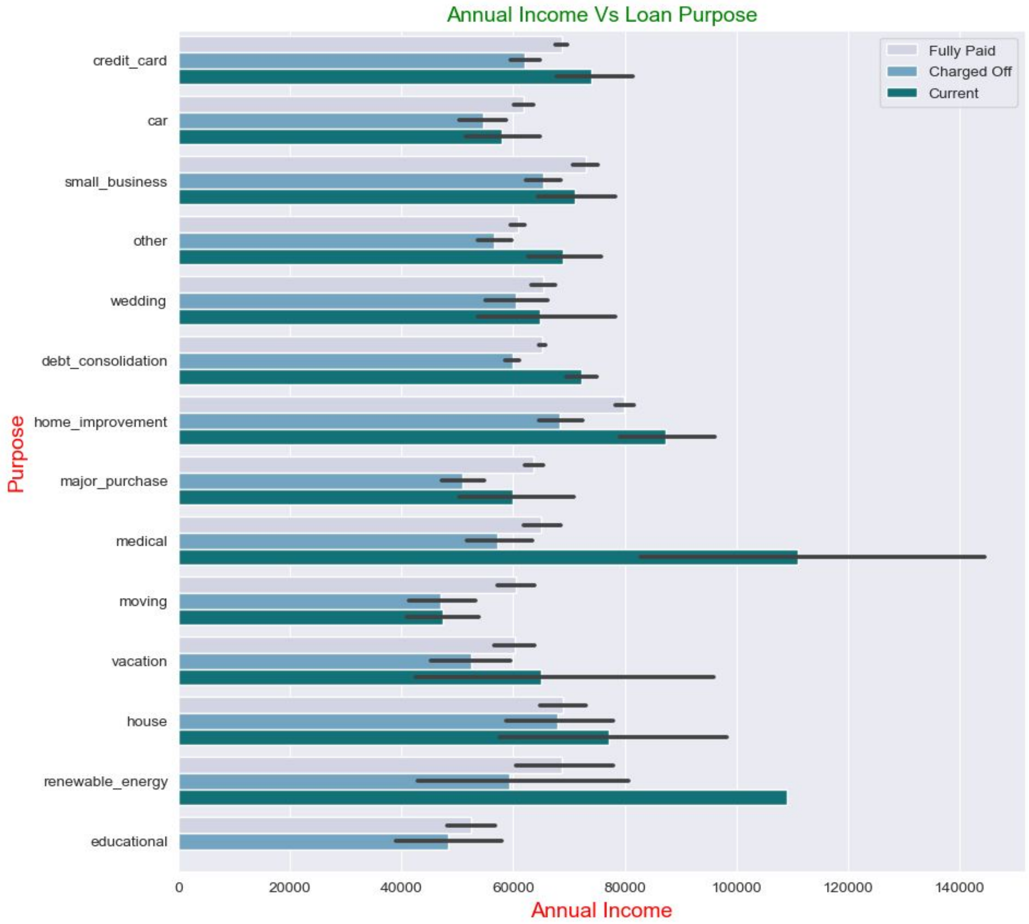


- Annual Income to DTI (Debt To Income Ratio) is negatively related (Which is because higher your income the ratio will be lesser)
- There is a very positive correlation between loan amount and funded amount (Which we had seen earlier as well)
- There is a positive installment amount and funded and loan amount (Which is very obvious because larger the loan bigger the installment)

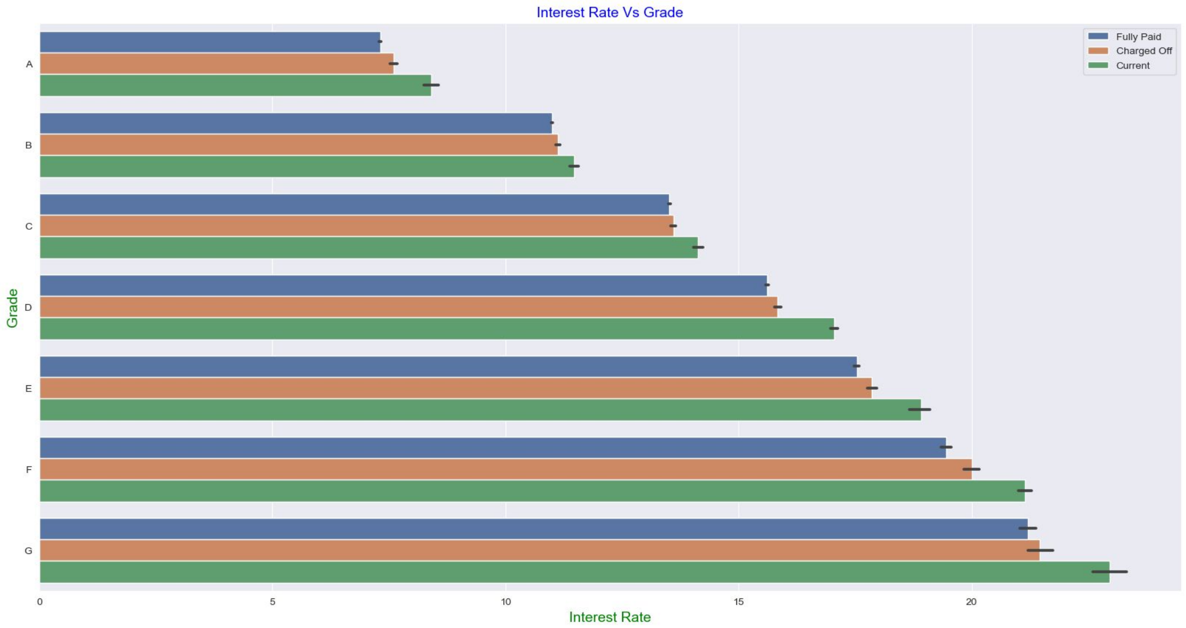


Charged off loans have higher median interest rates.

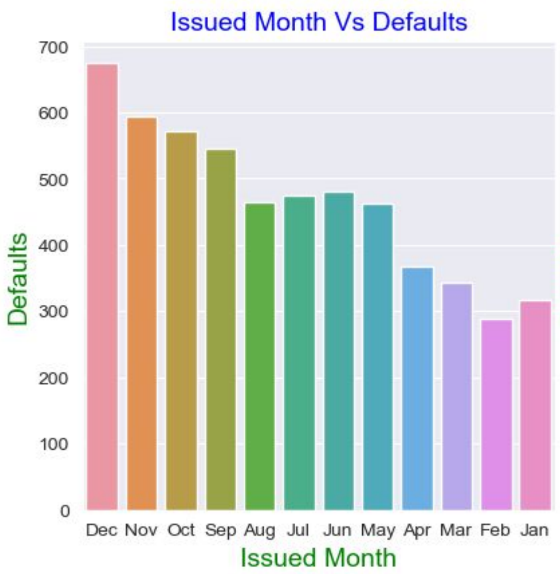
We can see that the proportion of charged off loan is higher in 60 months term

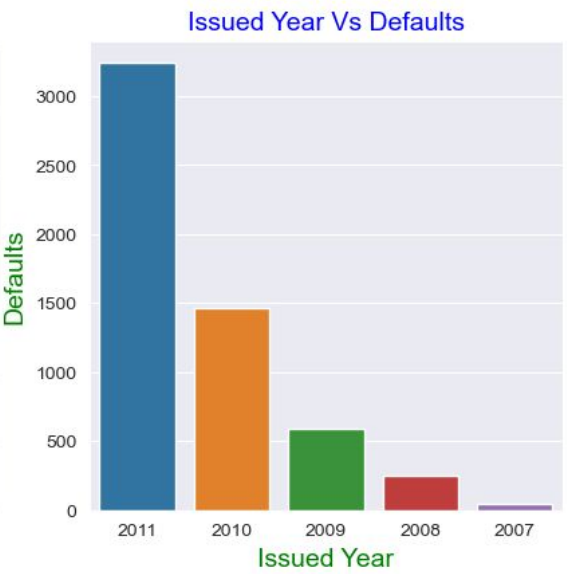


Most of the current loans with high income groups is for renewable energy, medical and home improvement



Loan defaults are high for grade G and interest rates above 20 percent





- Maximum defaults were for loans given in month of Dec
- Maximum defaults were in the loans given in year 2011

Analysis

- Proportion of defaulted loans is higher for 60 months term

- Loan defaults are high for grade G and interest rates above 20 percent

- Charged off loans have higher median interest rates.

- Most of the defaulted loans are in 4k-31k income category

- Most of the defaulted loans are for interest rates 13-17 percent

- Most of the current loans with high income groups is for renewable energy, medical and home improvement

- Maximum defaults were for loans given in month of Dec