Lending club case study

The driving factors to identify risky loan applications

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The problem

Company

The lending club is the largest online loan marketplace, facilitating personal loans, business loans, and financing of medical procedures.

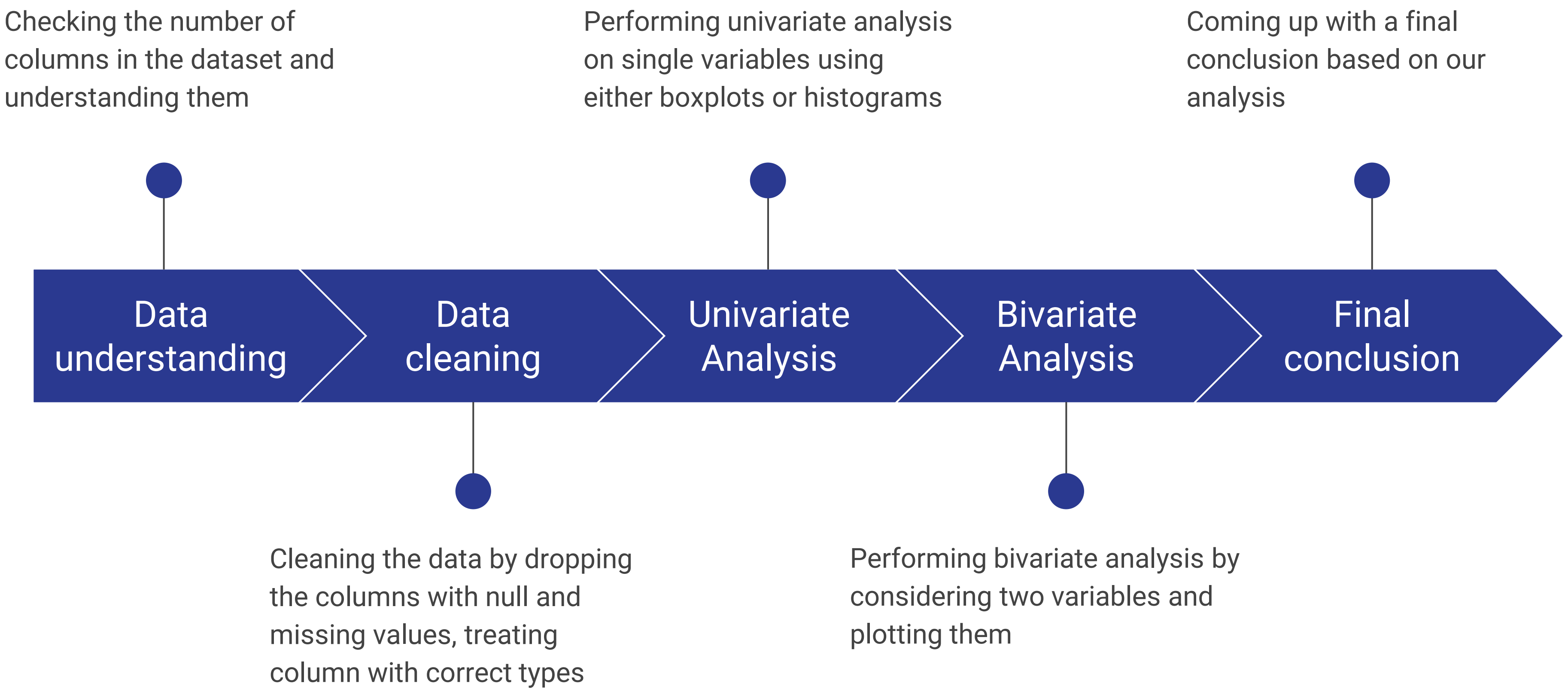
Problem

Borrowers who default cause the largest amount of loss to the lendors.
Such risky applications must be identified in advance.

Objective

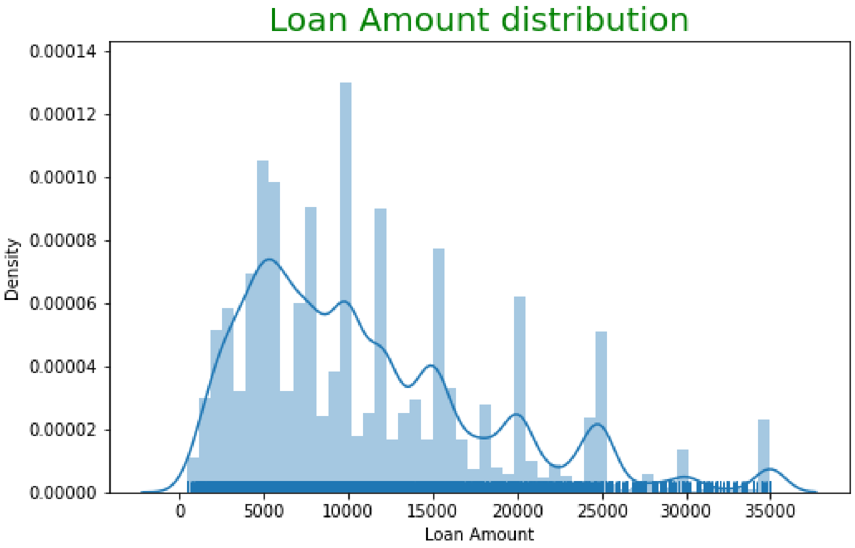
The objective of this case study is to use EDA on the provided dataset and come up with the driving factors that can identify risky loan applications

Understanding the analysis

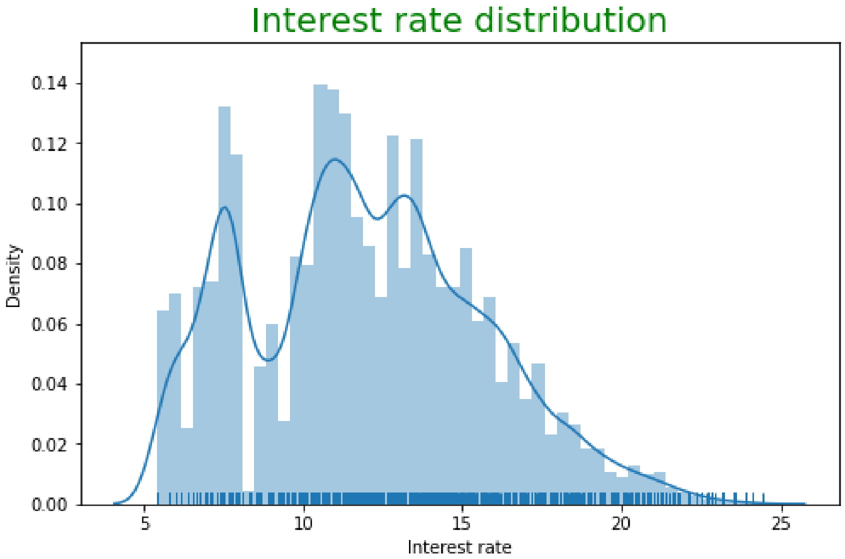


Analysis

Analysis

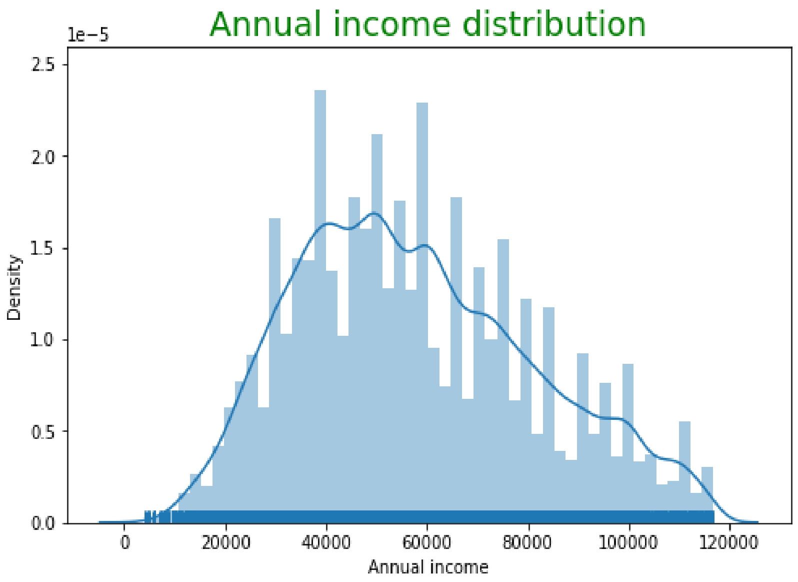


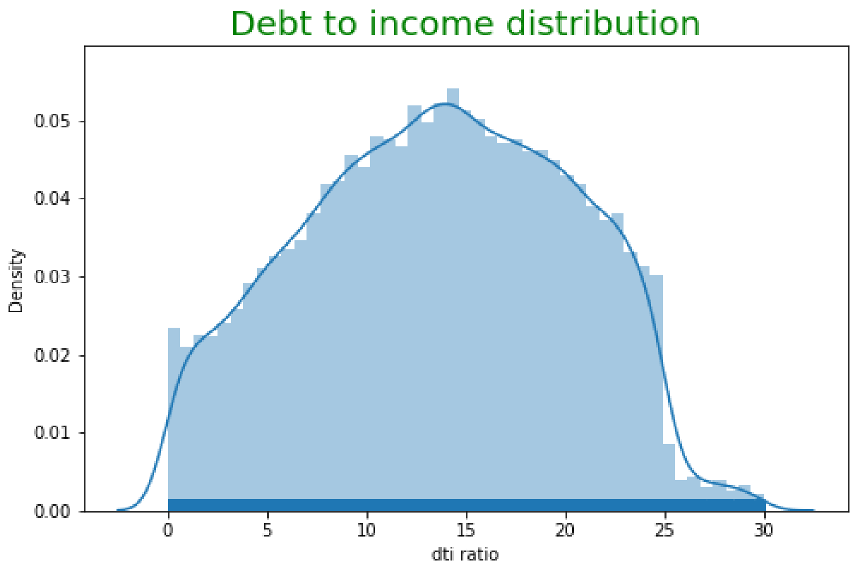
Loan amount vary from 500 to 35000 and most borrowers are looking for loan below 15000



Interest rate for most applicants lie below 15% and ranges from 5 to 25 percent

Analysis

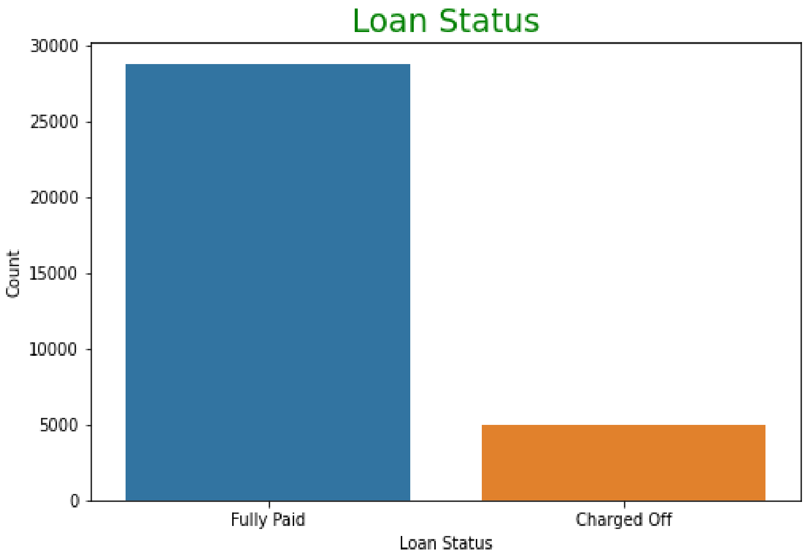


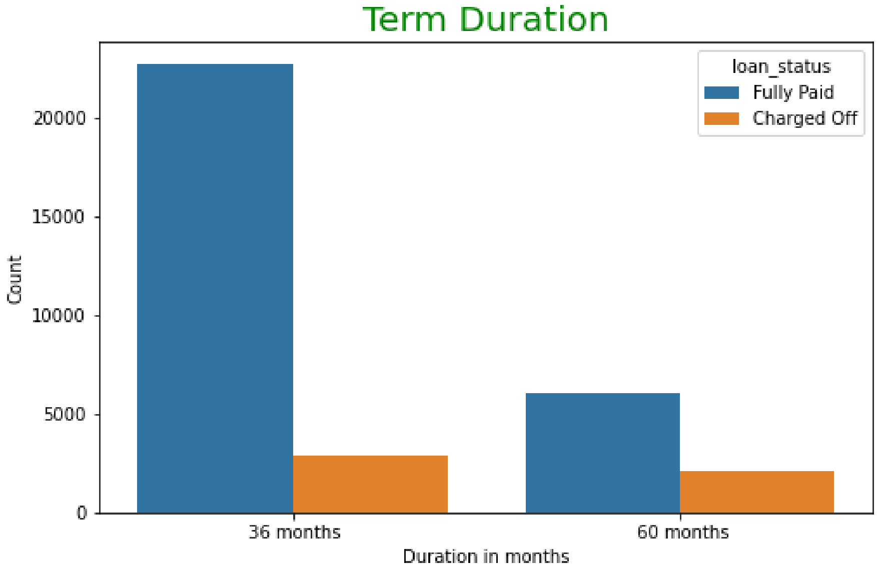


Annual income for most of the applicants ranges from 40000 to 75000, while the min and max income are 4000 and 116664 respectively

Dti for most of the applicants range from 8.48 to 18.83

Analysis

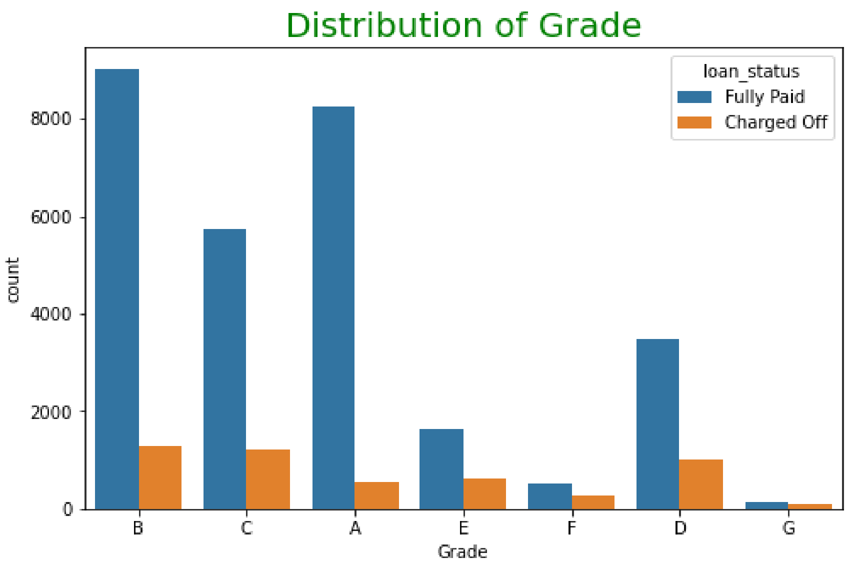


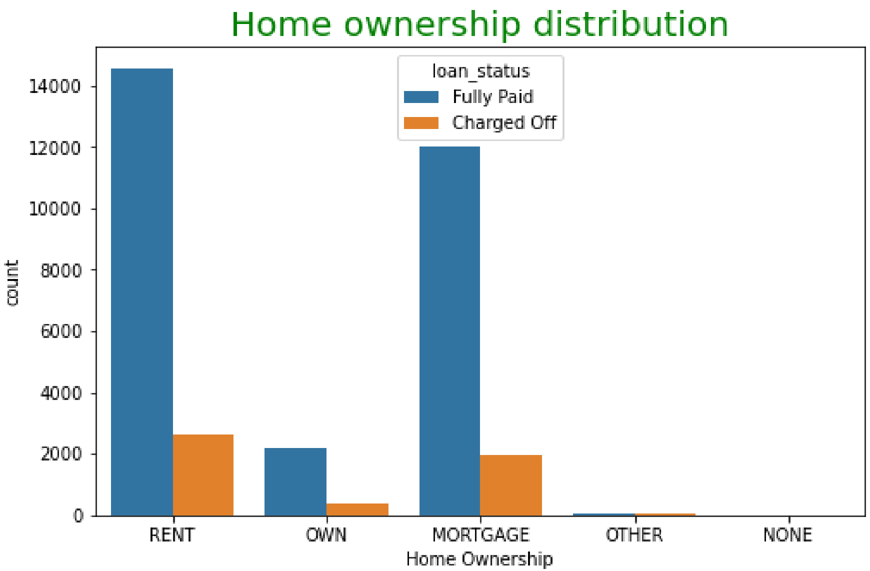


Only a small quantity of loans is charged off

Most of the loan applications are for 36 months tenure.

Analysis

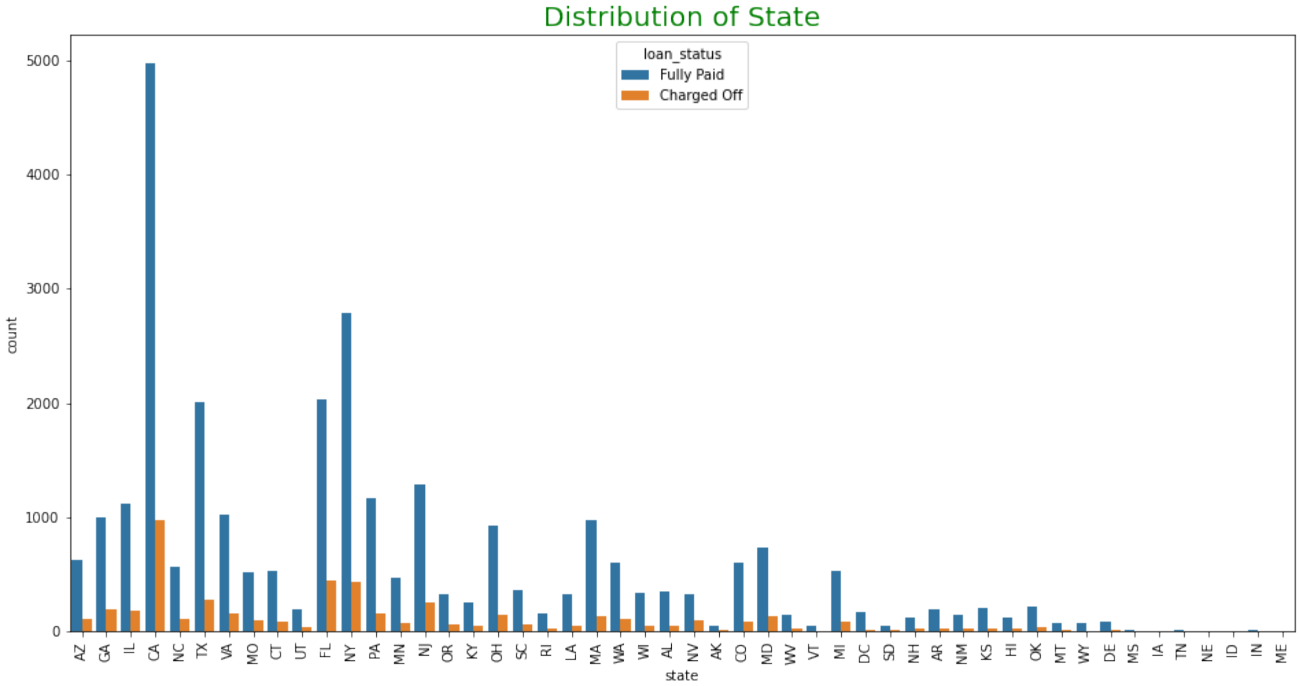




Most loans are of type Grade A, B and the grades E, F, G are considered low as they have higher chance of getting charged off

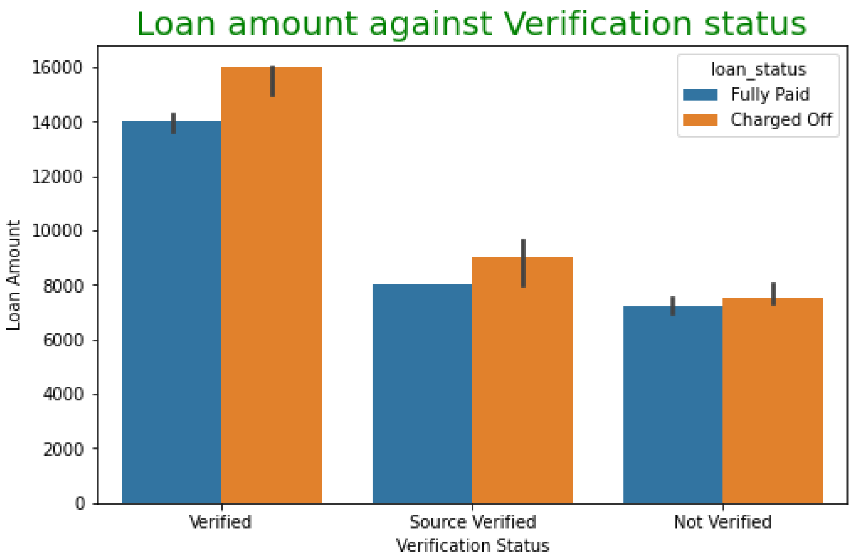
Most of the loan applications live in a rented space or have mortgages.

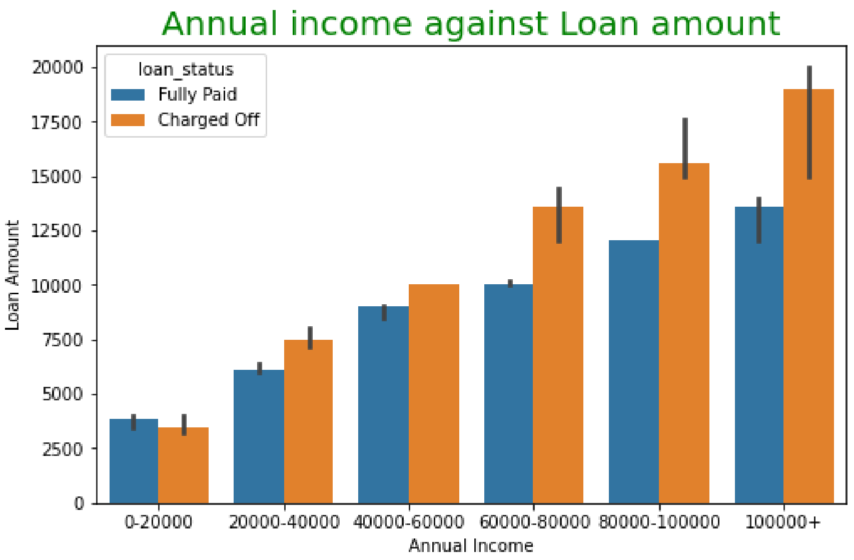
Analysis



Most borrowers belong to states CA, NY, TX, NJ and FL
And applicants from CA and NY have higher chances of getting a loan charged off

Analysis



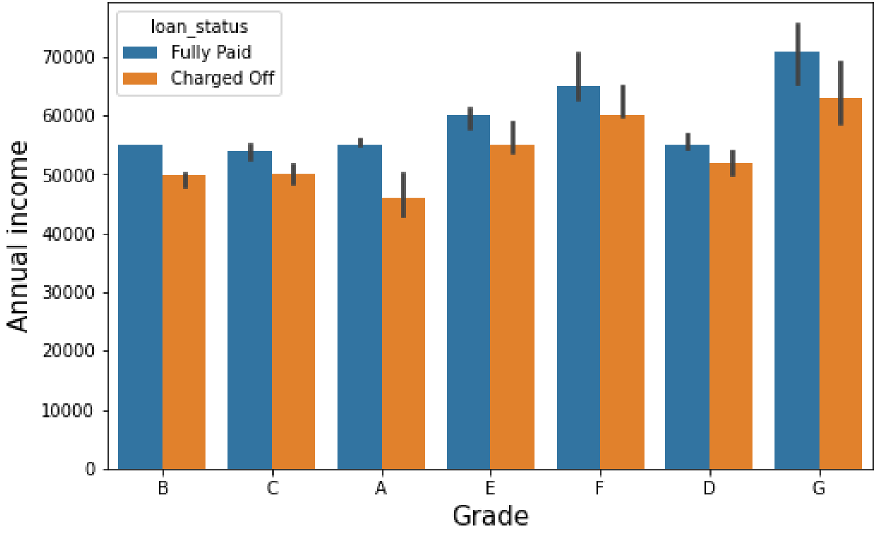


Verified applicants tends to go for higher loan amount, thereby increasing the charge off chances

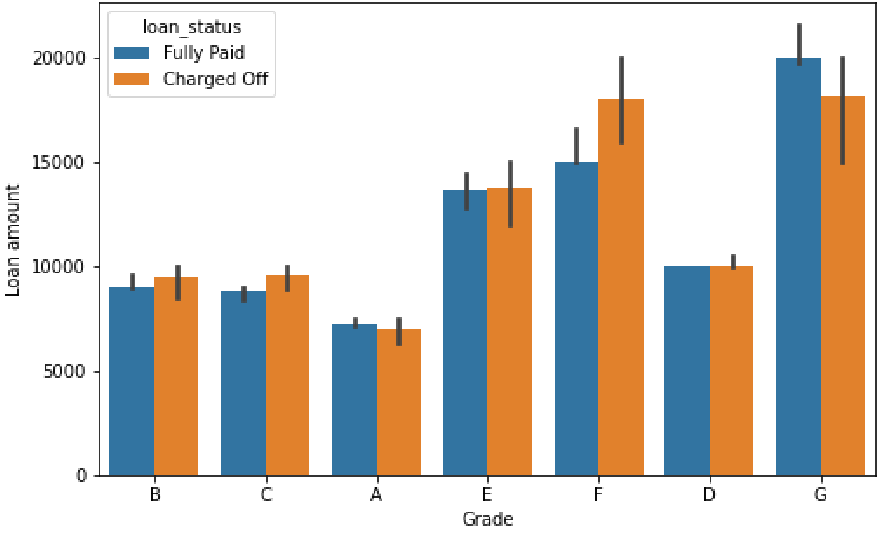
Interestingly, the chances of getting a loan charged off is also higher with a higher income

Analysis

Annual income against Grade



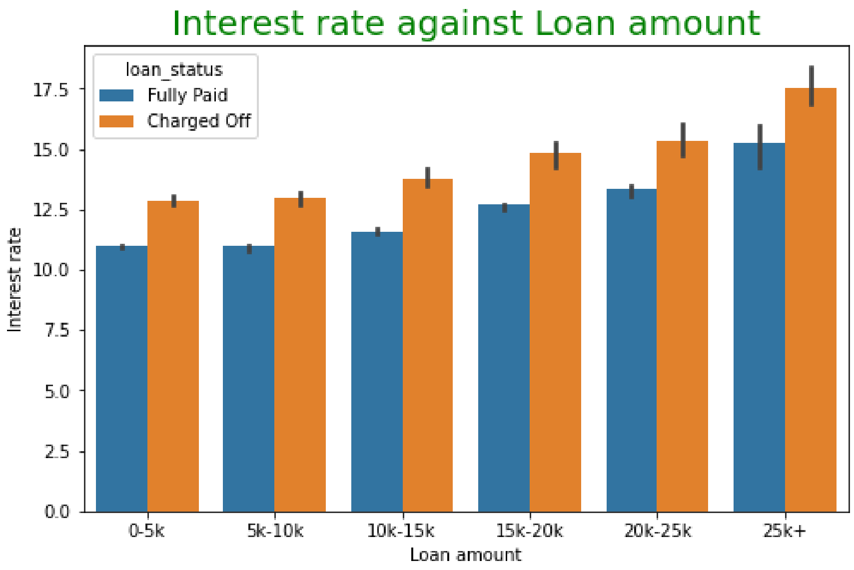
Grade against Loan amount



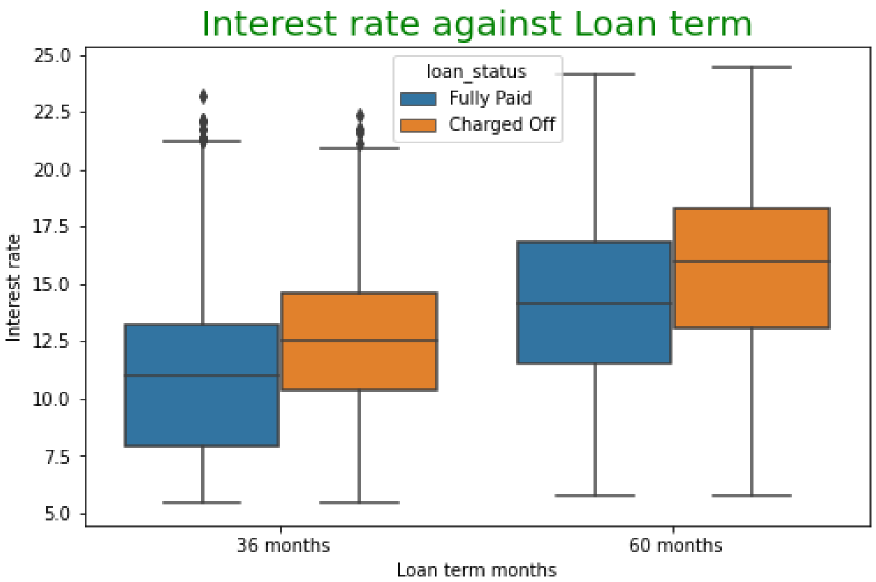
Within a same grade, for a lesser income, chances of getting a loan charged off is higher

As the loan amount increase, chances of classifying it into a lower grade increase

Analysis

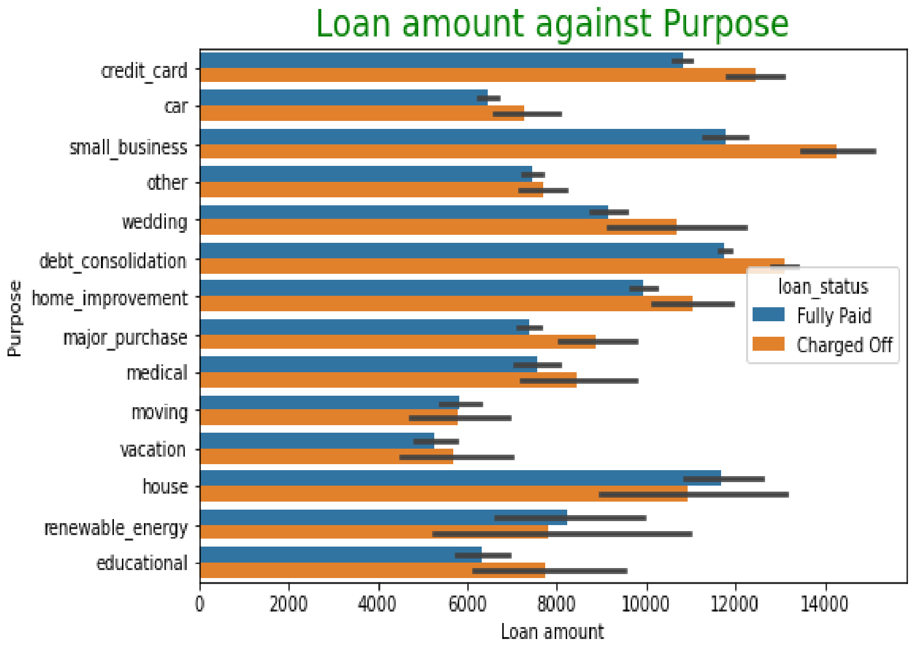


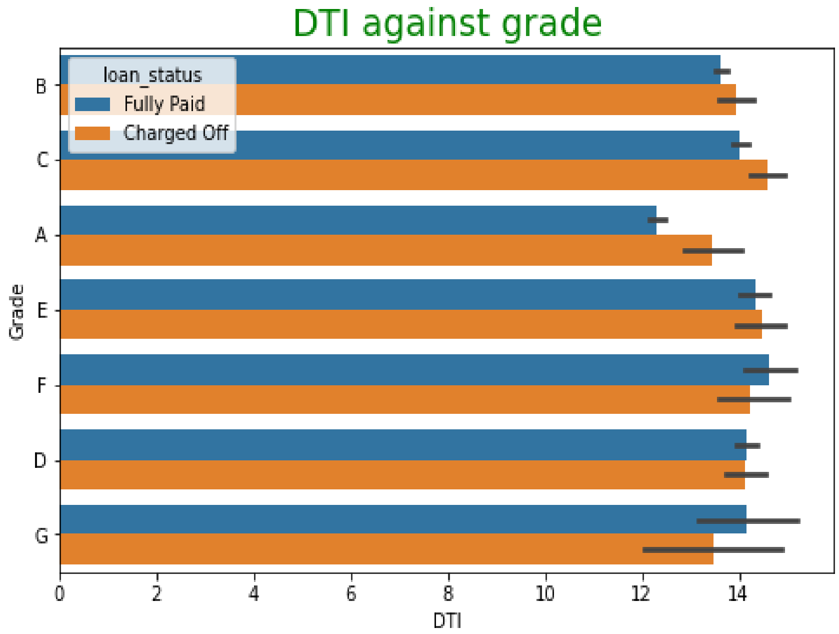
Interest rate tends to increase with the increasing loan amount



Higher interest rate with a higher loan tenure has a higher chance of getting charged off

Analysis





Loans for the purpose of small business, credit card and debt consolidation have higher chances of getting charged off

A lower grade has a lower dti

Conclusion

The chances of getting a loan 'Charged Off' or 'defaulted' increases with

- having a higher loan amount
- having a higher interest rate
- having loan grades in E,F or G
- borrower belonging to states like CA, NY and TX
- having a higher installment tenure
- having a purpose of ‘small business’ or ‘credit card’ payment