Lending Club Case Study

By Tejas Hankare & Madhur Gupta

Problem Statement :

- Like most other lending companies, lending loans to 'risky' applicants is the largest source of financial loss (called credit loss). The credit loss is the amount of money lost by the lender when the borrower refuses to pay or runs away with the money owed.
- Expected Solution:
- 1. Identify these risky loan applicants
- 2. Understand the 'Driver Factors' behind 'Loan Default'

Abstract

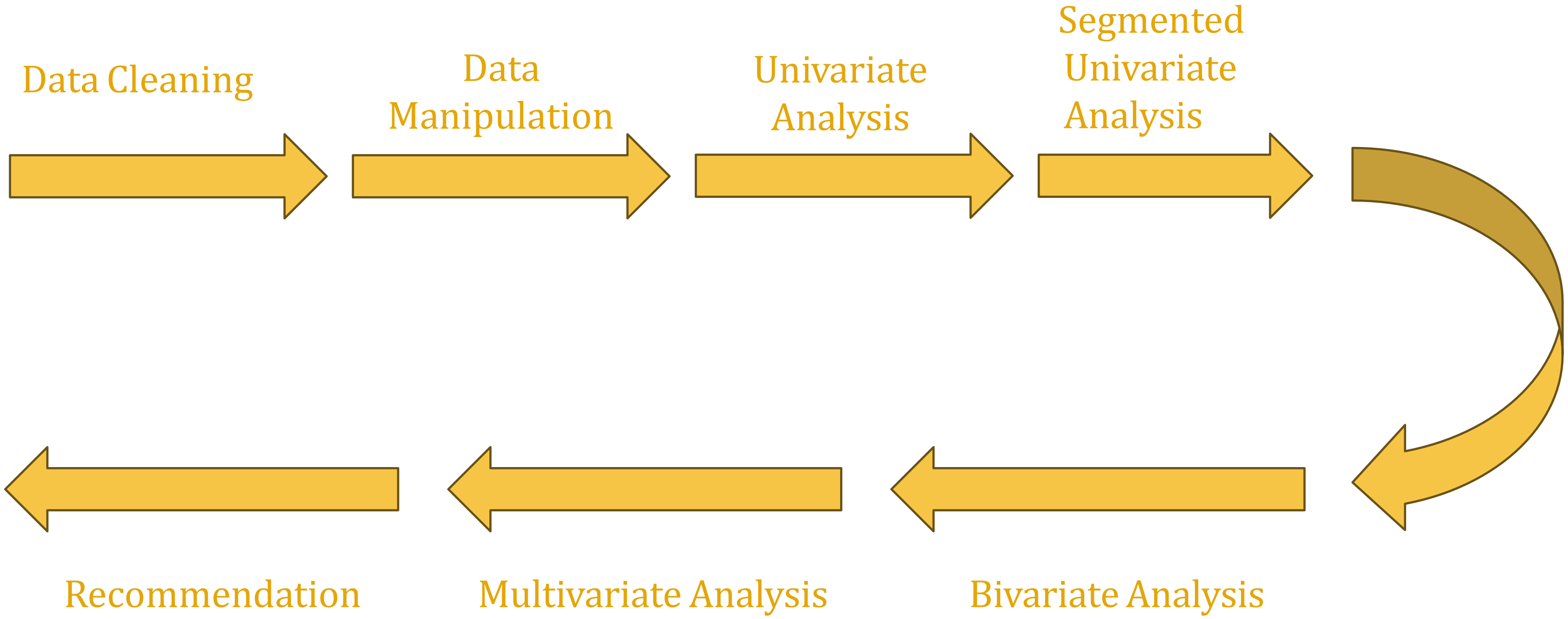
Lending Club is a marketplace for personal loans that matches borrowers who are seeking a loan with investors looking to lend money and make a return.

When the company receives a loan application, the company has to make a decision for loan approval based on the applicant's profile. Two types of risks are associated with the bank's decision:

- If the applicant is likely to repay the loan, then not approving the loan results in a loss of business to the company.
- If the applicant is not likely to repay the loan, i.e. he/she is likely to default, then approving the loan may lead to a financial loss for the company.

So, company wants to understand the driving factors (or driver variables) behind loan default, i.e. the variables which are strong indicators of default. The company can utilize this knowledge for its portfolio and risk assessment.

Problem Solving Methodology



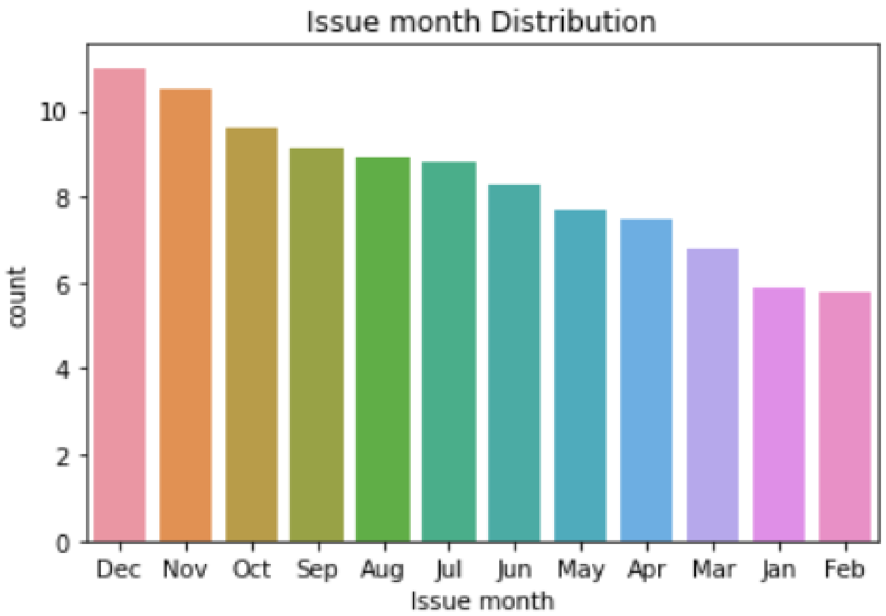
Data Cleaning

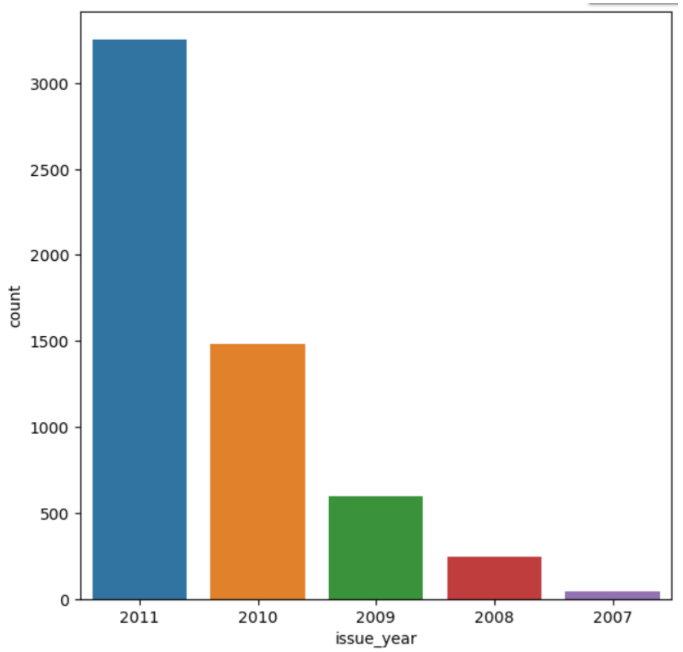
- Removed all the columns with Null values.
- Removed all the rows with majority Null values.
- Removed Columns which are not defined in the Column Definition dataset

Loan Amount Distribution

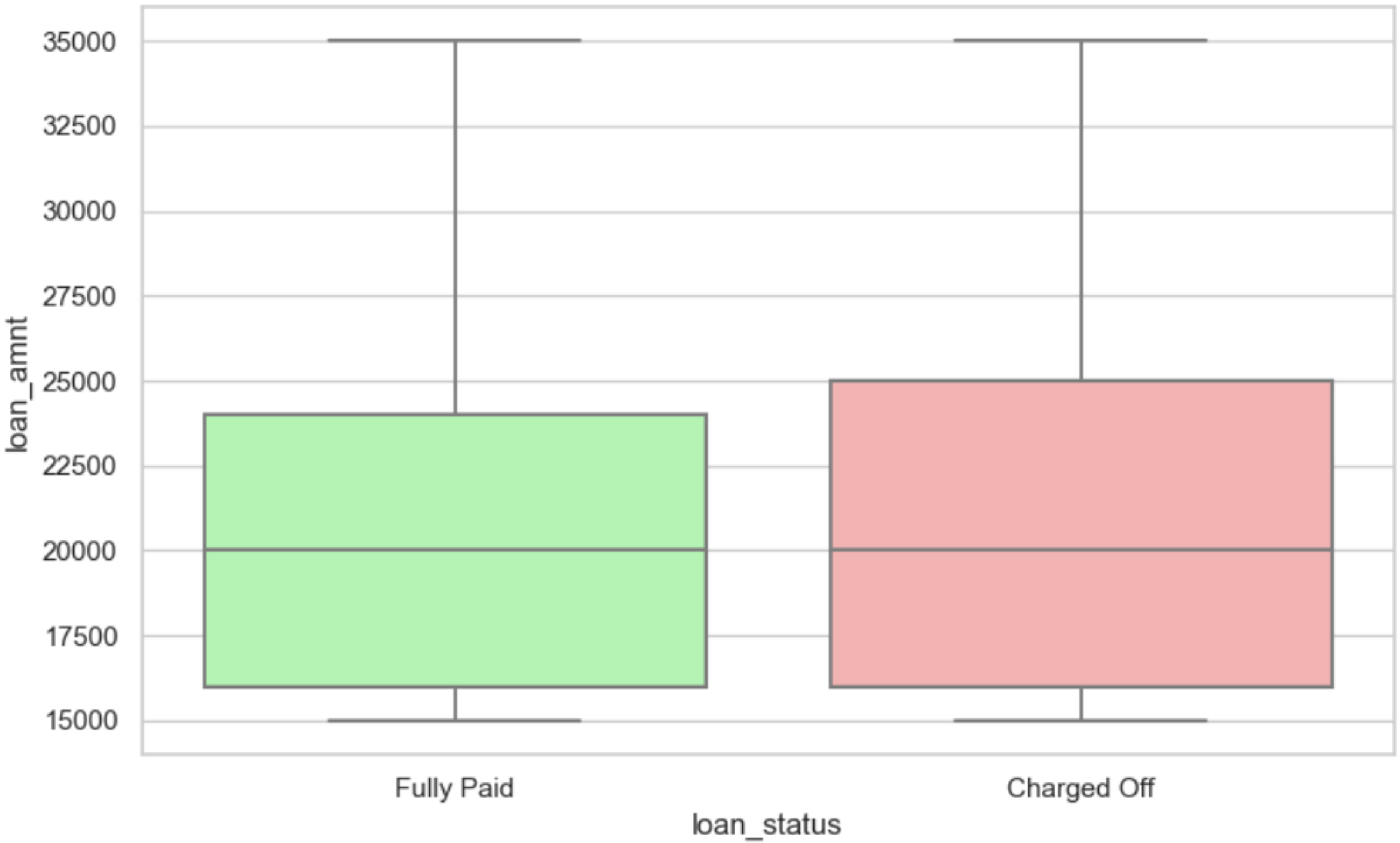
- Data manipulation refers to the process of changing or transforming data to make it more suitable for analysis or visualization.
- Standardizing data formats, such as converting date columns to a consistent format.
- Handling missing values by either imputing them or removing rows with missing data.

Analysis

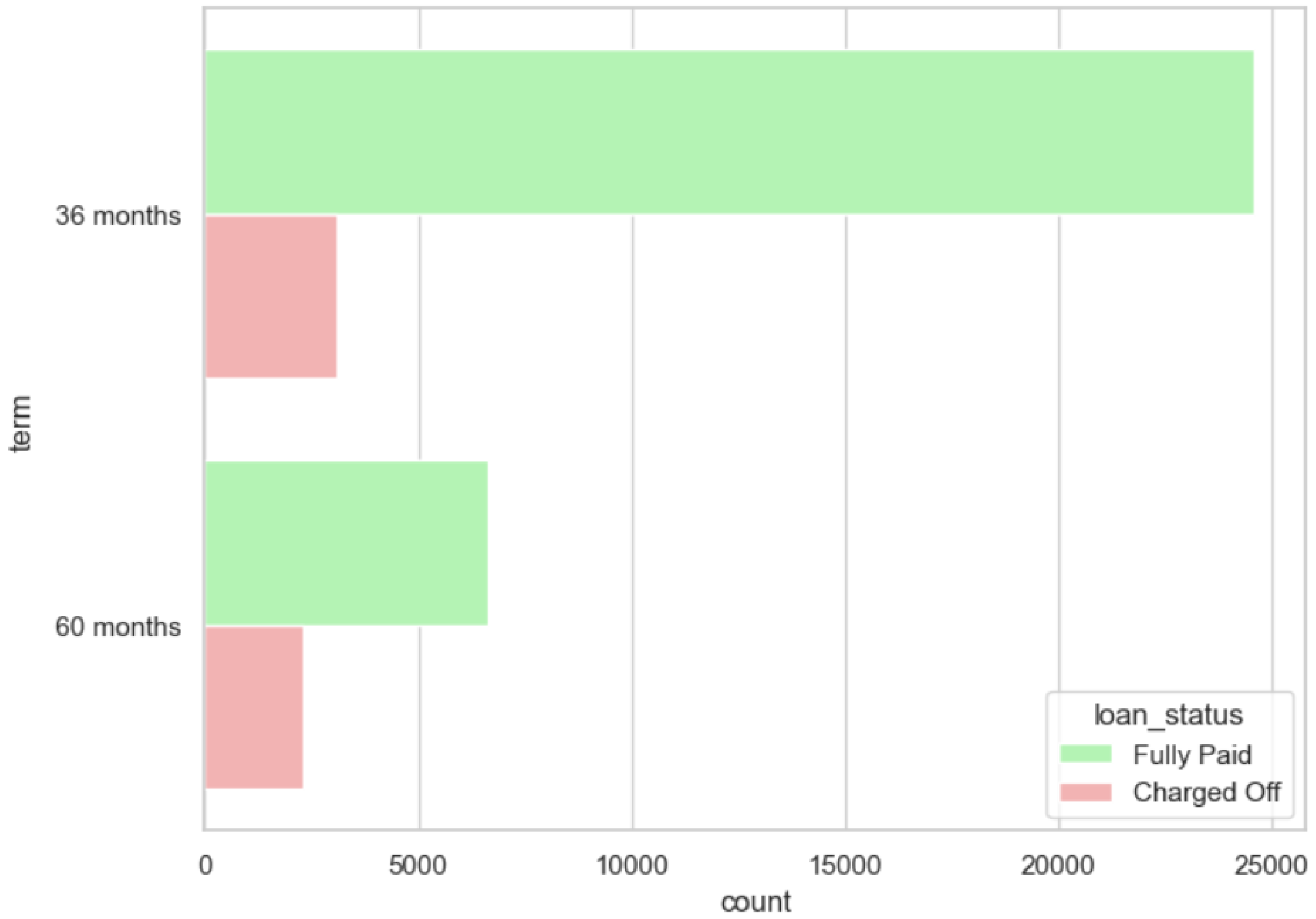




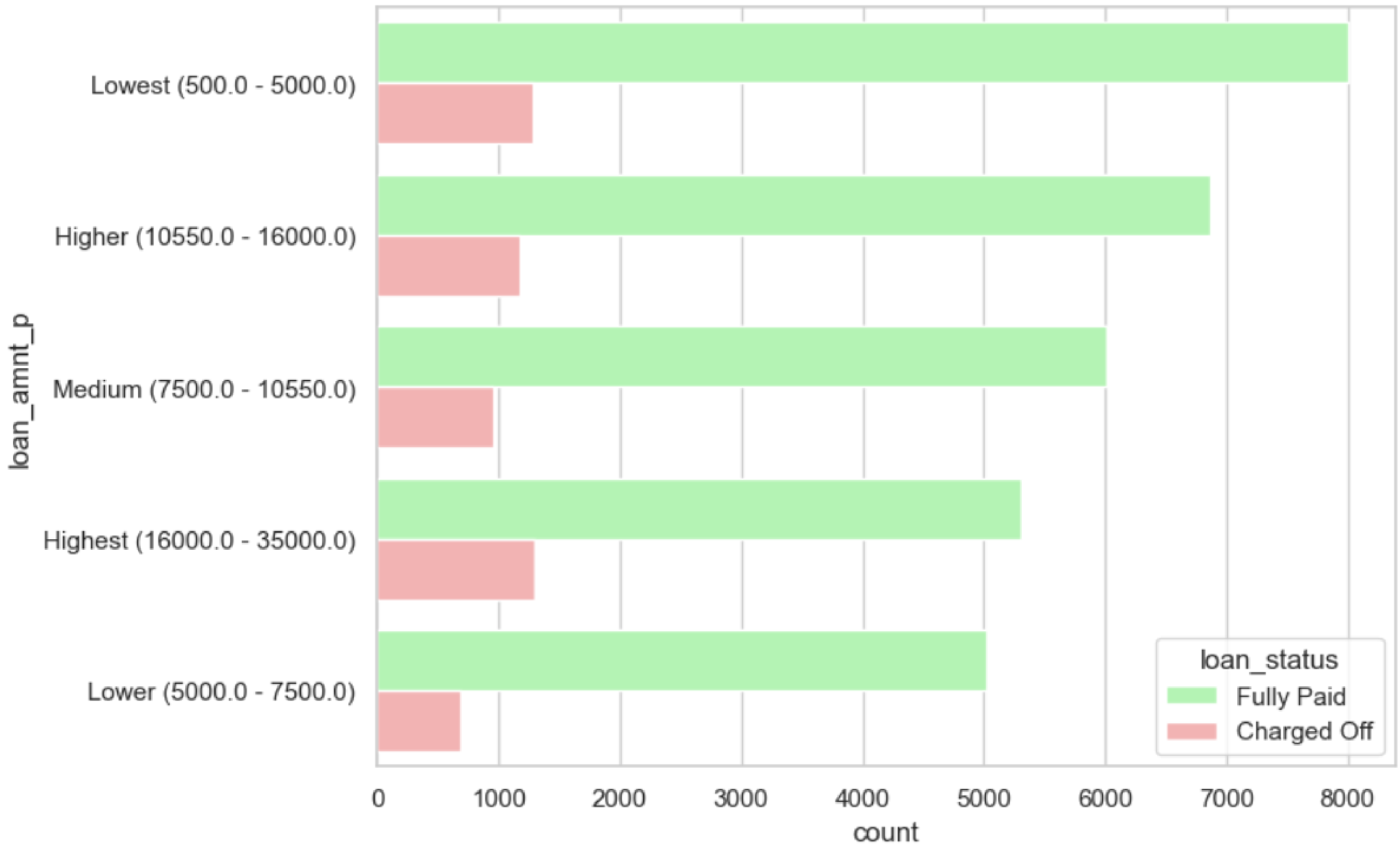
- Lending club has really expanded year by year, every year the number of loans has doubled.
- Issue of loan is also increasing every month from January to December and in the final quarter of year there are more loans issued due to vacation.



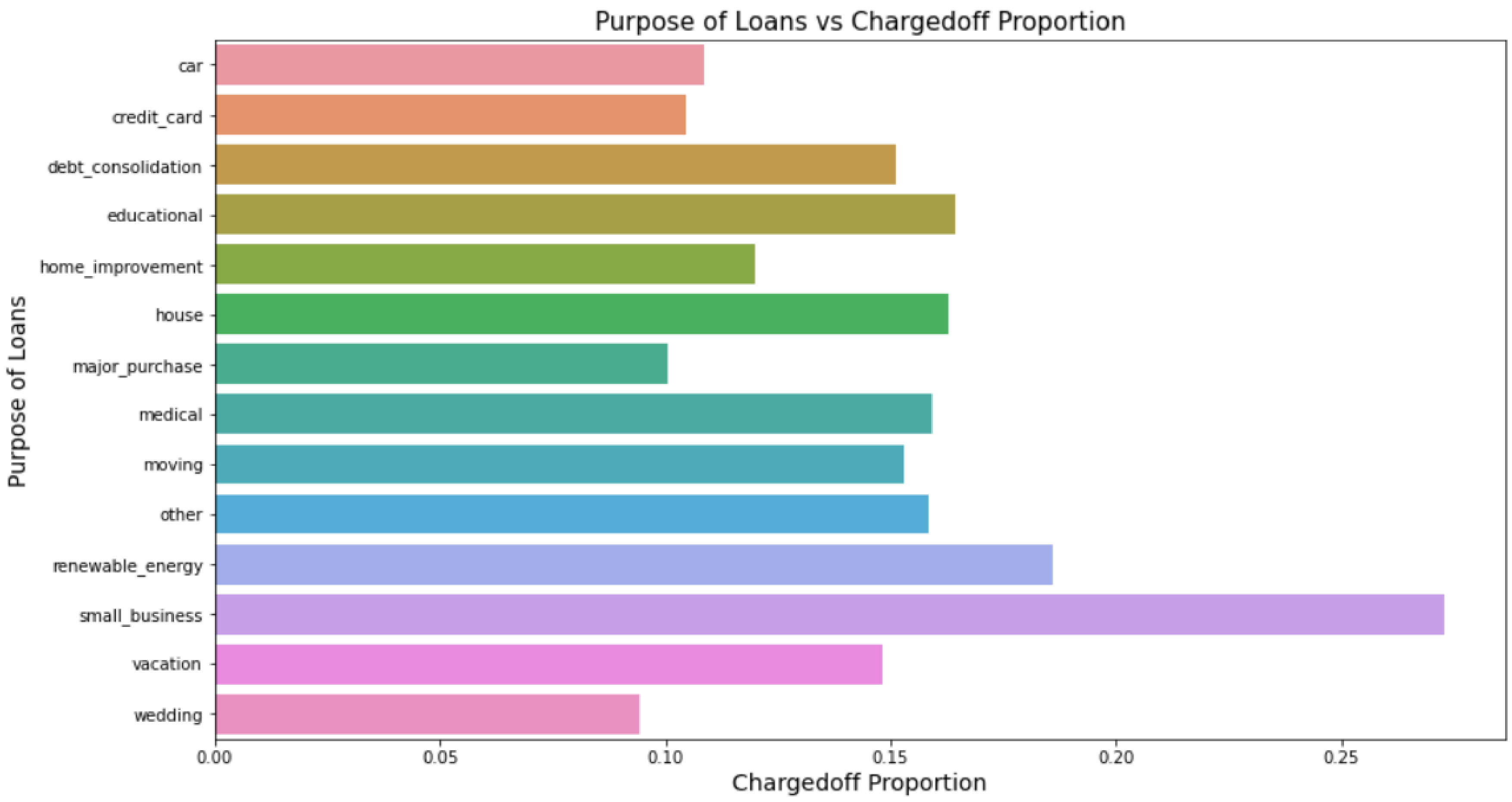
From above box plot we can conclude that "higher the amount" will tend to "Write off"



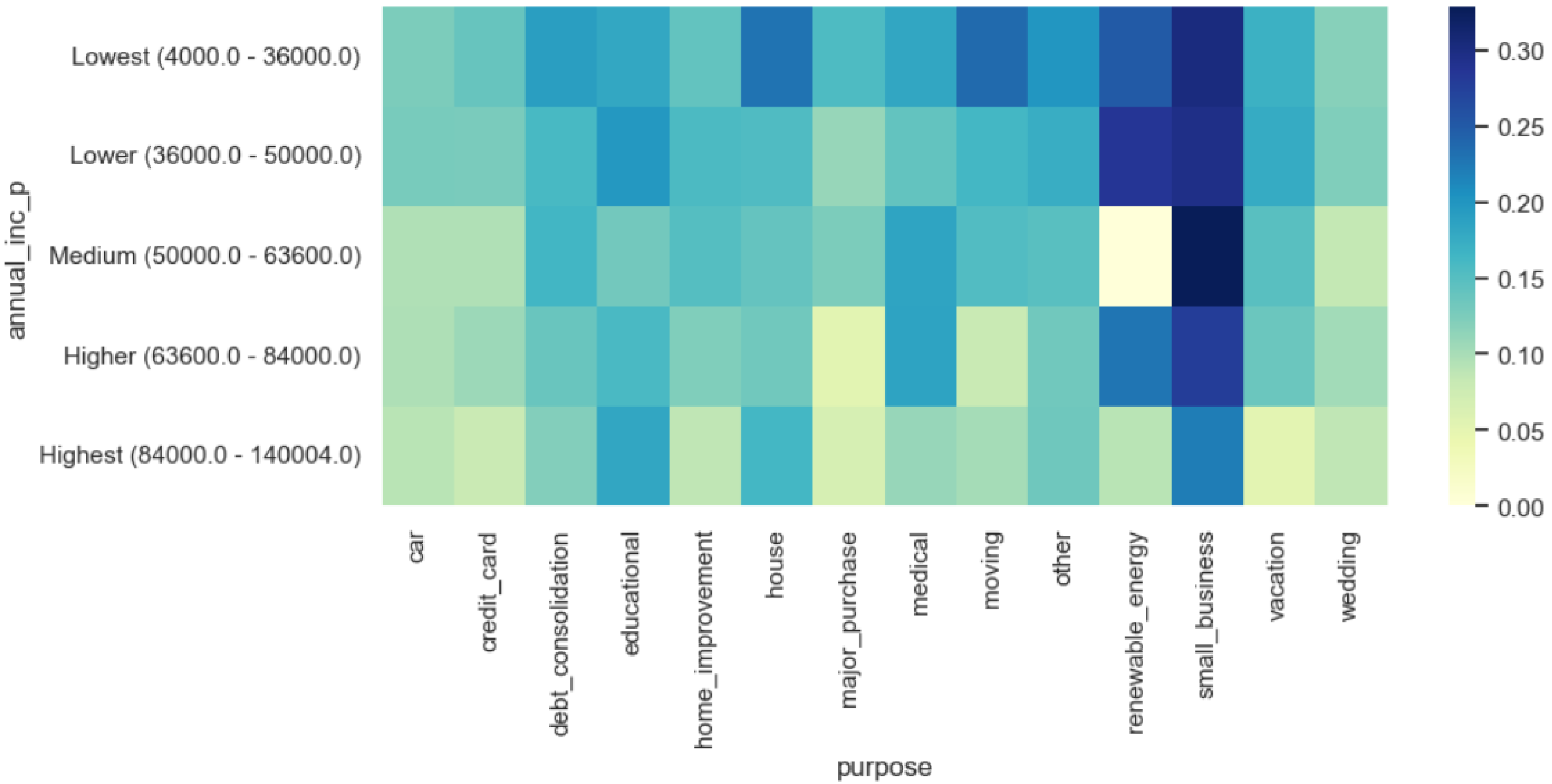
There are 2 loan term and most of the borrower took 36 months tenure. But the ratio of charged off is high in 60 months tenure.



As pe the analysis we can see that, higher the loan amount, greater the chance of the loan getting default.



The borrower who took loan for the purpose of small business are mostly getting charged off.



Medium debt-to-income group in the lowest income range is the most risky when it comes to loan repayment.

Thank You!

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