



LENDING CLUB CASE STUDY

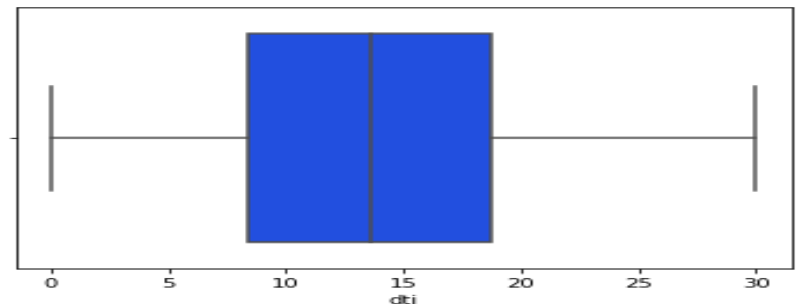
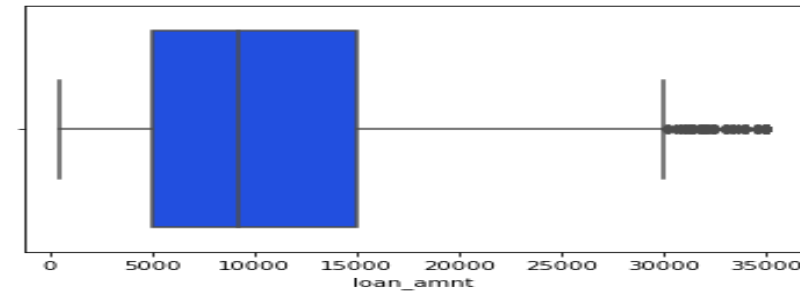
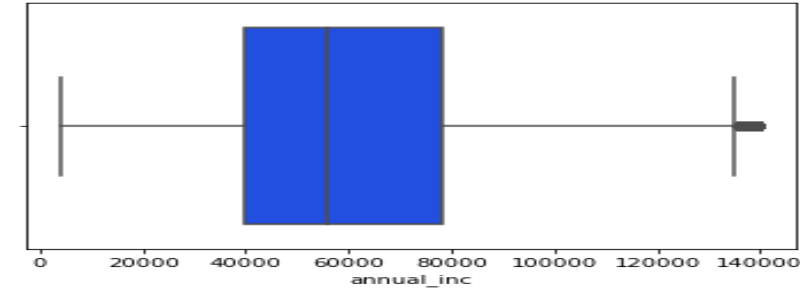


ABSTRACT

- The case study is to observe and learn with the given dataset for a lending club. The lending club team wants to know whether the people will pay the money back on time, so that they can do risk analysis.
- The programming language used is python along with NumPy, Pandas and matplotlib libraries.
- Through the given data we will analyse the risk factors of lending money to specific people based on their age, occupation, income and previous experience as a loan repayment.

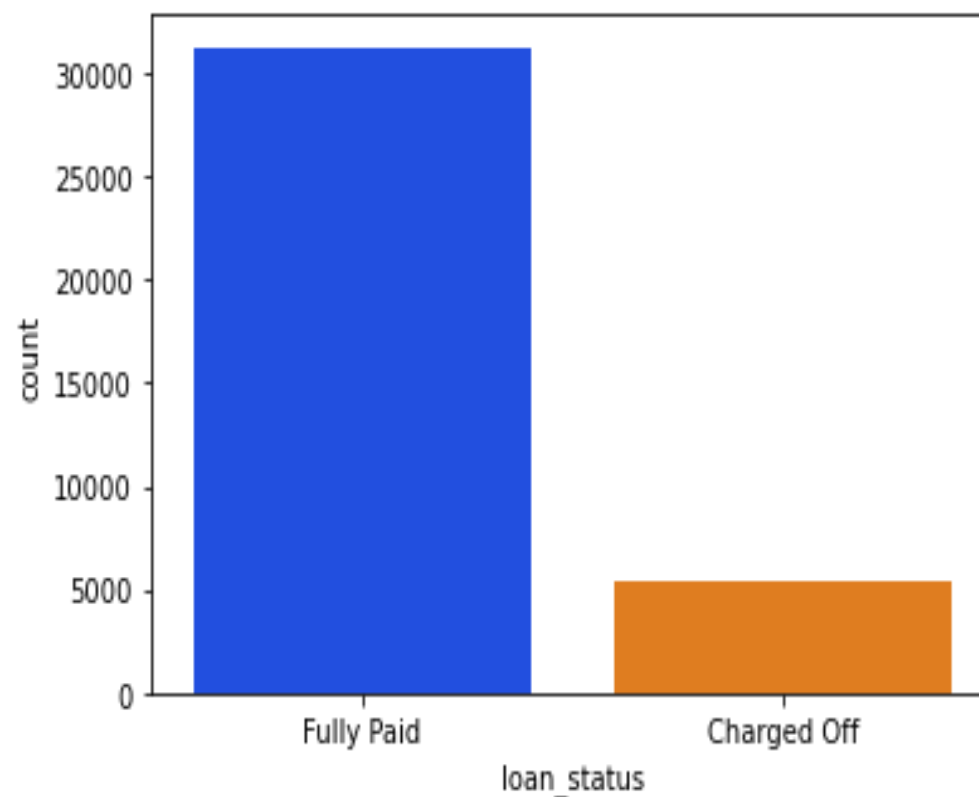
ANNUAL INCOME

- Annual income of customers who applied for loan varies from 40k – 80 k .
- The applied loan amount is between 5k – 15 k
- The provided loan amount will be 5k – 15k
- So accordingly the amount can be decided and loan can be provided.



Defaulter and paid

- As per the data, 30k people paid the money back in time .
- The 5k people didn't pay the loan back.
- The paid list is blue .
- The unpaid list is orange.



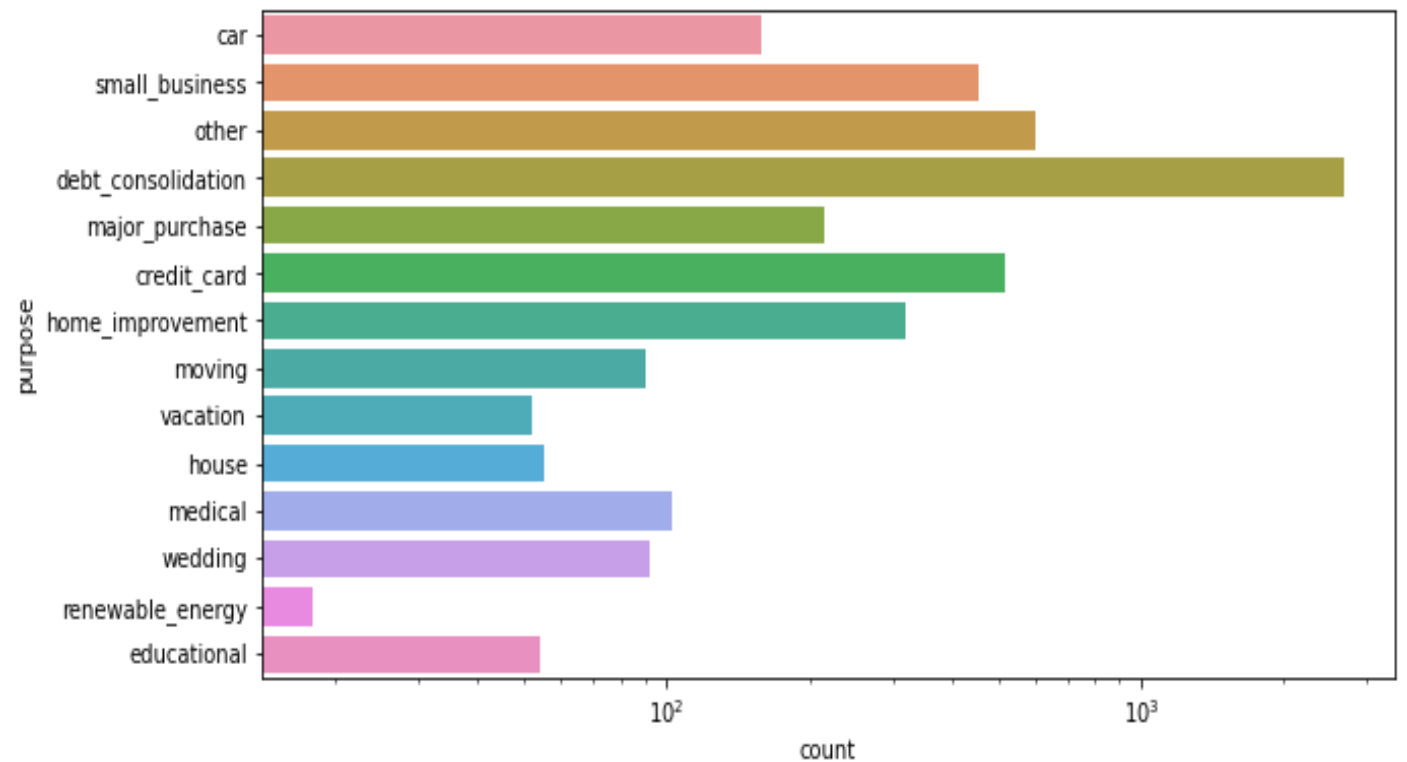
CUSTOMERS WITH OWN HOUSE

- Customer home ownership details to verify the financial statement of the customers , So that it will help to understand whether customer will default the loan or not.
- The provided data is analyzed and chart has been created to understand the dataset.

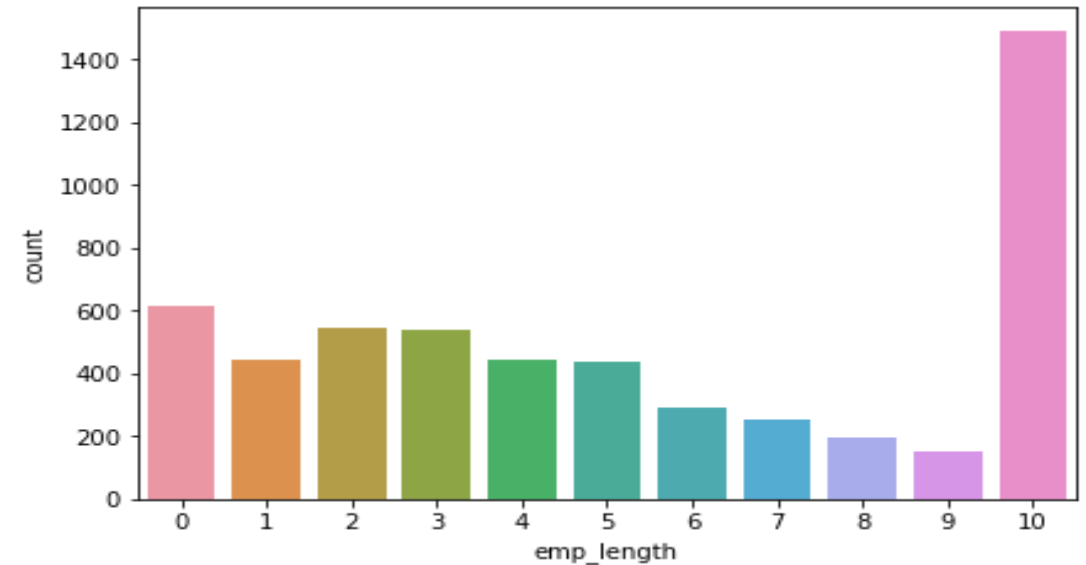
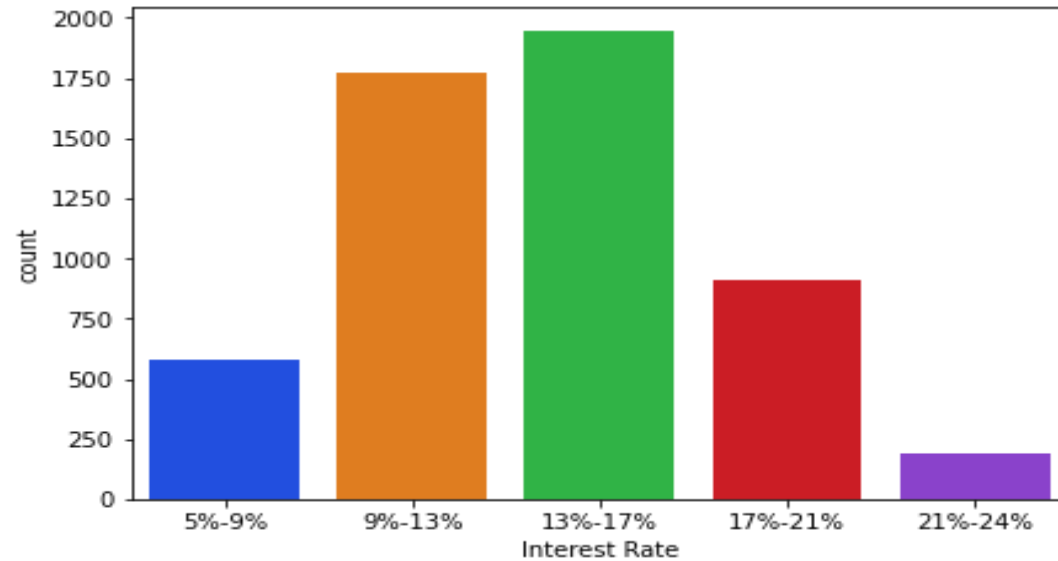


PURPOSE OF LOAN

- The reason for applying loan should be taken into note so that the value of loan amount can be defined.
- Loan application should be a valid reason, with customer capability to repay the fund.



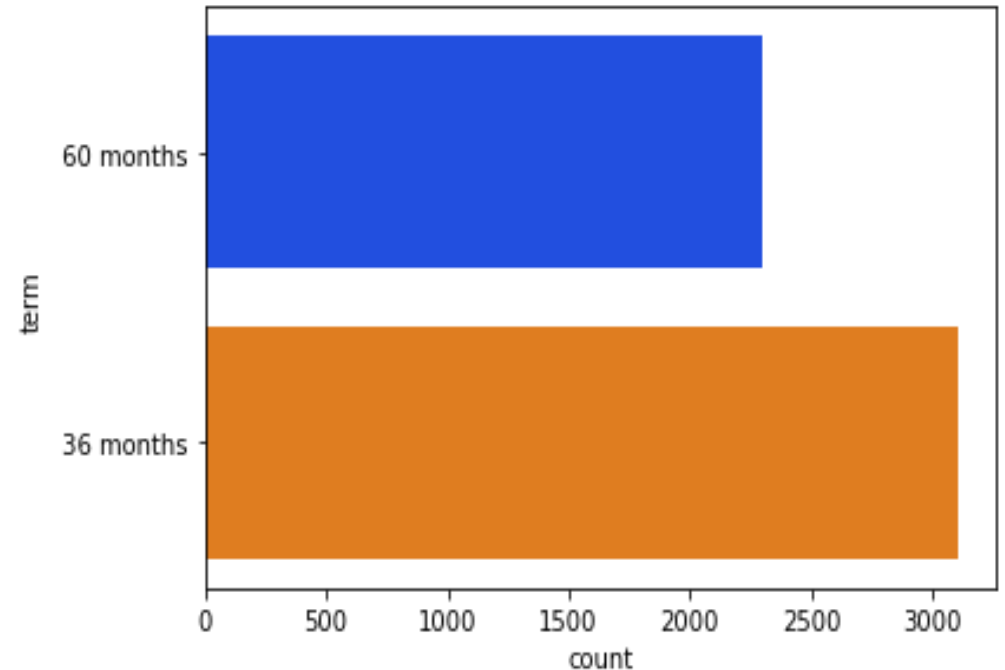
INTEREST RATE



- The interest rate will vary according to loan duration and amount funded.

LOAN DURATION

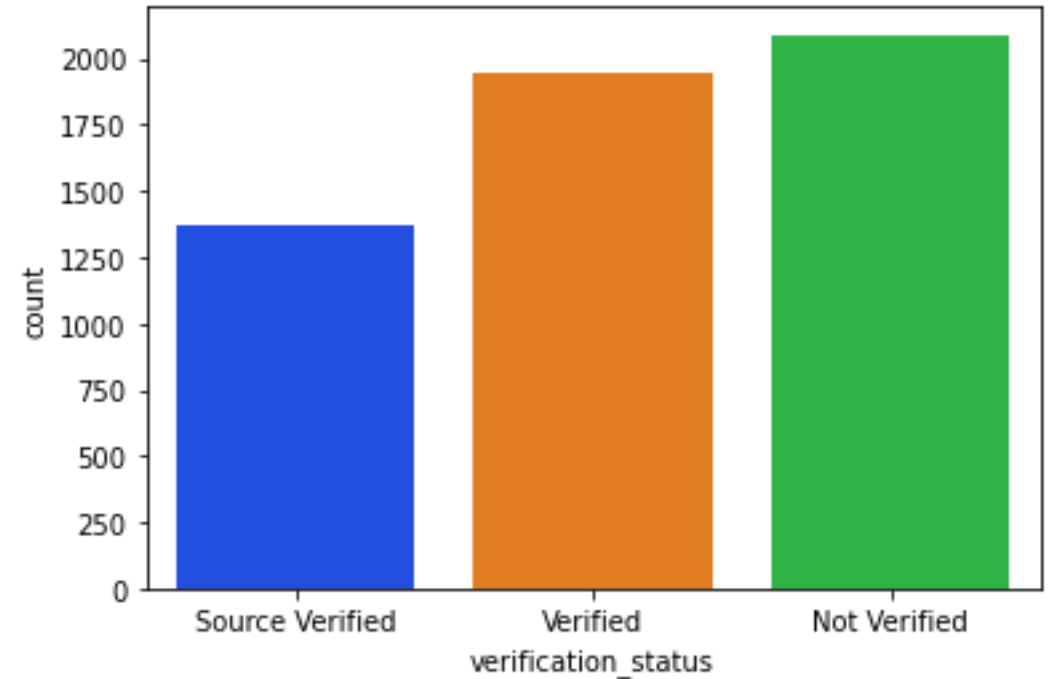
- Loan duration of customer play a important role.
- Loan duration for large amount of money will help the customer to be comfortable within the range.
- EMI should not be a burden is what customer expects .



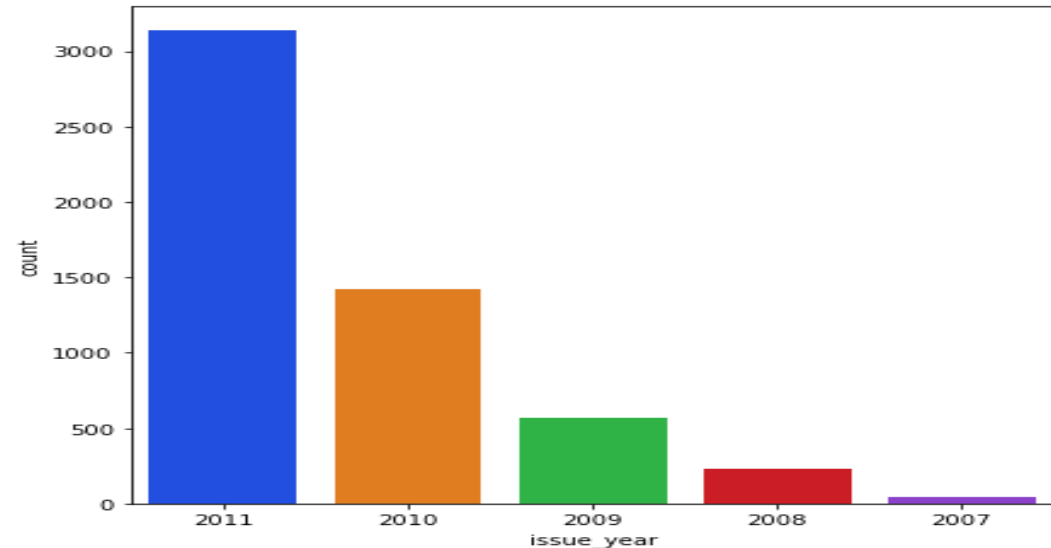
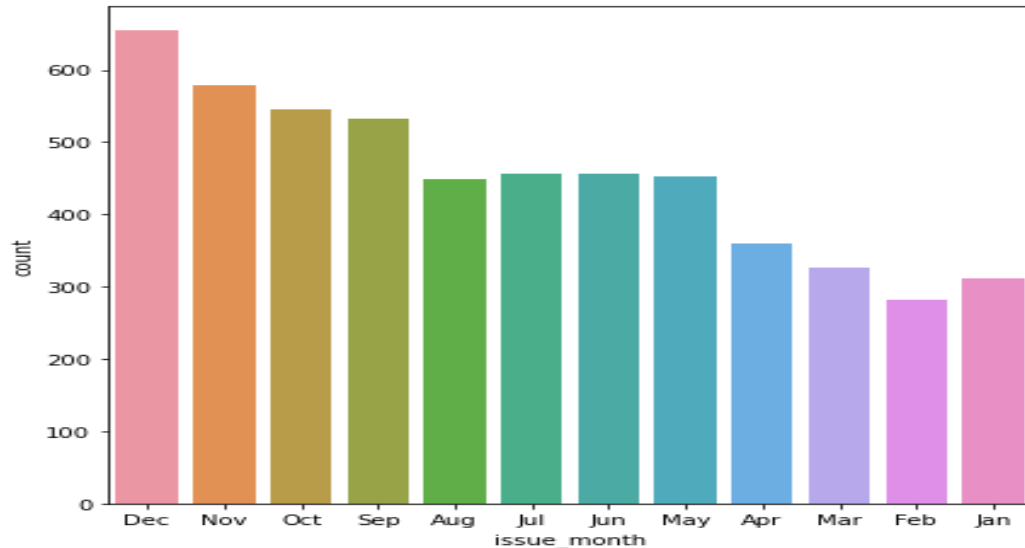
DATA VERIFICATION



- Customer data verification plays a much more important role.
- As wrong data may end up in defaulting customers.
- The chart provides verified and non-verified data plot.



LOAN ISSUED MONTH AND YEAR

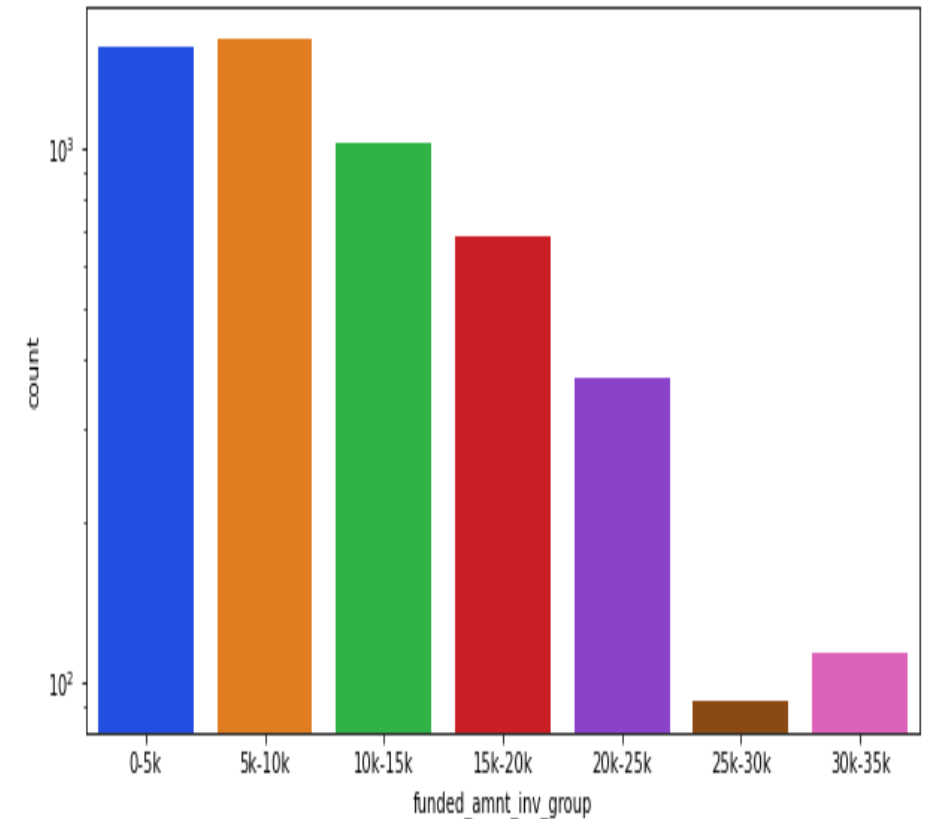


- The first plot describes about number of loan issued in each month.
- The second plot describes about number of loan issued in each year.

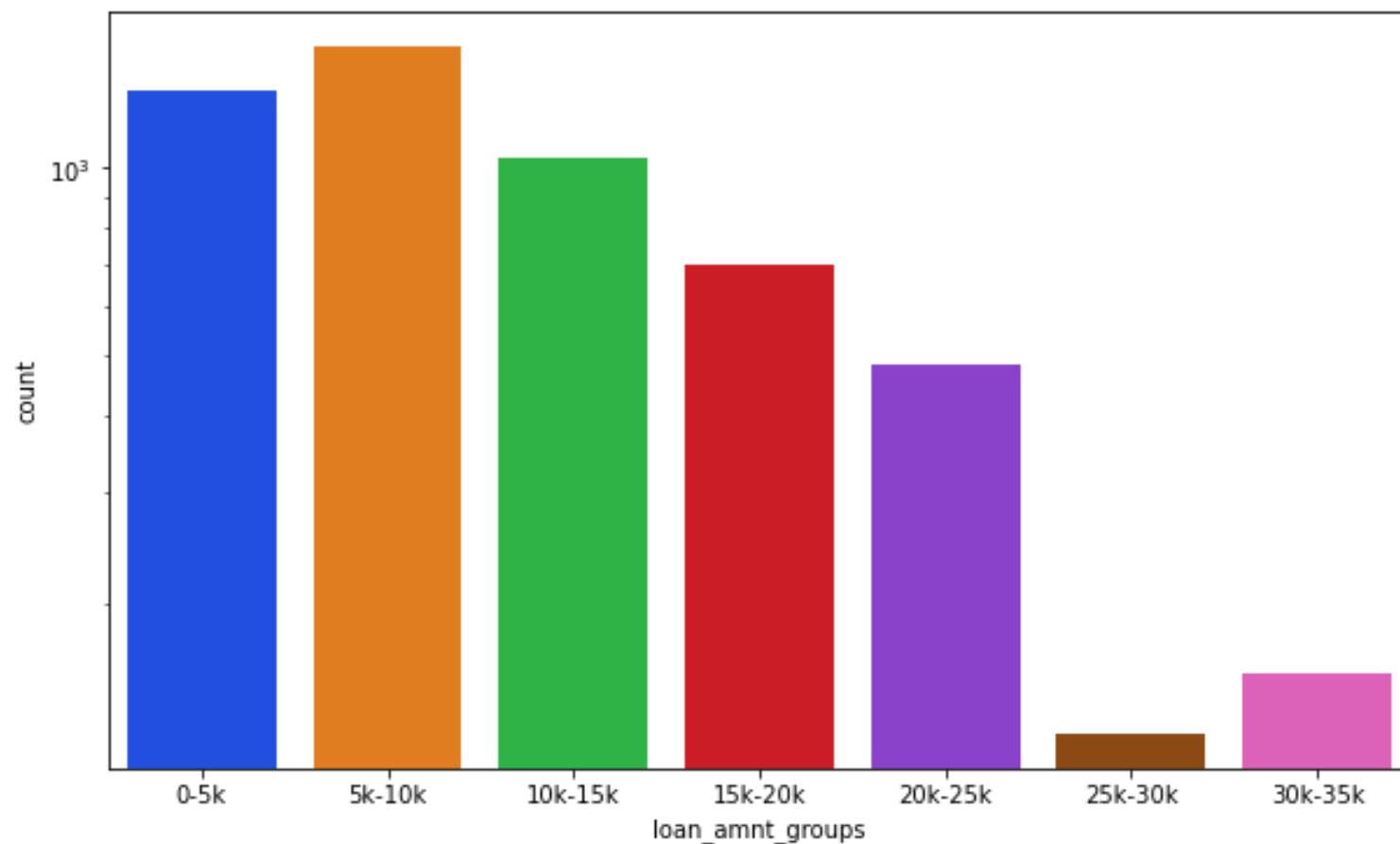
INVESTMENT BY LENDING CLUB



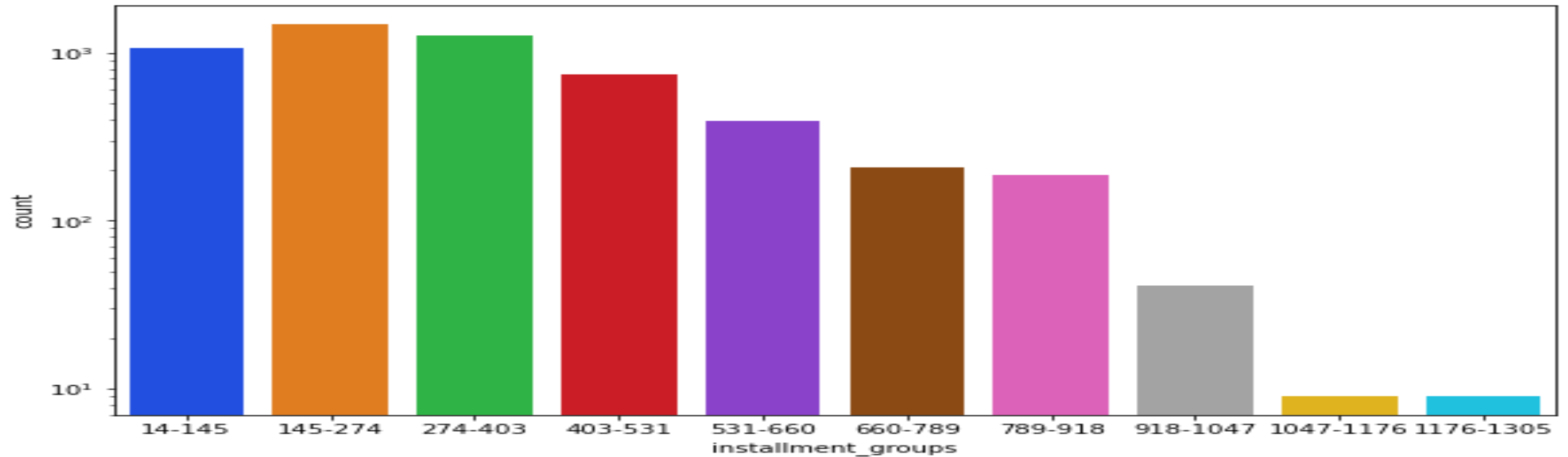
- Range of amount invested by the lending club for a range of customers
- The plot colour explains clearly about range of customers coming under each category.



LOAN AMOUNT UNDER CATEGORY



INSTALLMENT GROUPS

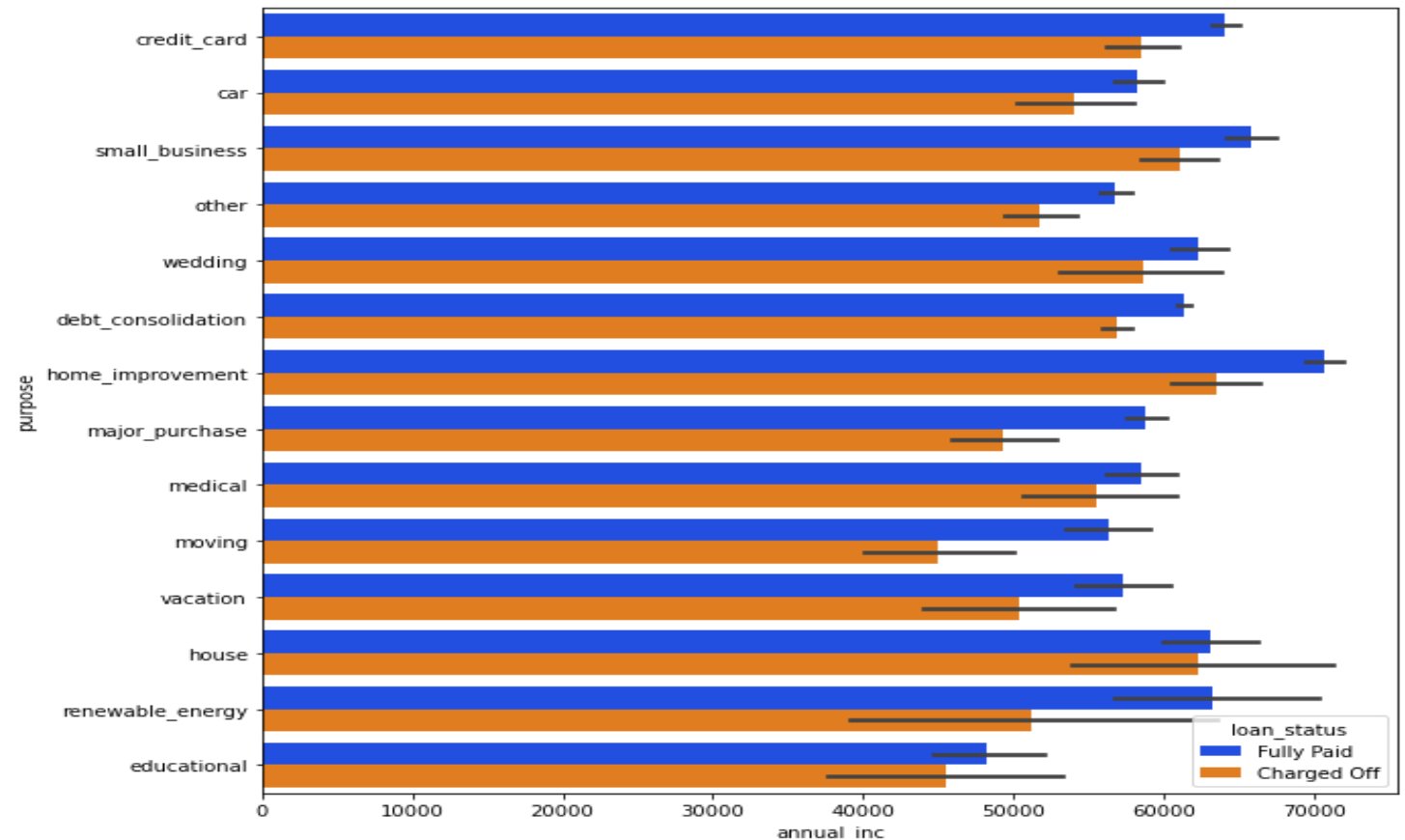


- Category of customers coming under different monthly payment .

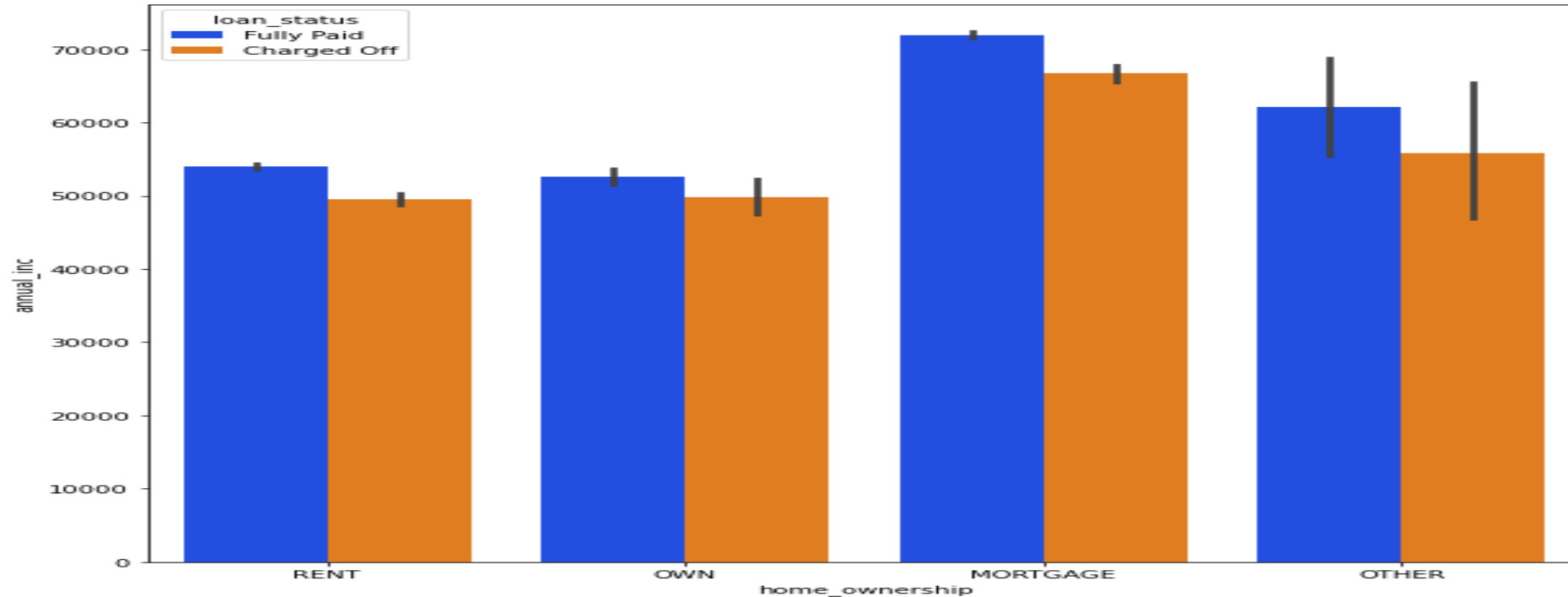
CUSTOMER INCOME VS LOAN PURPOSE



- Comparison of customer income to the purpose of loan will more likely help to find whether the customer will pay or default the loan.



HOME OWNERSHIP & ANNUAL INCOME

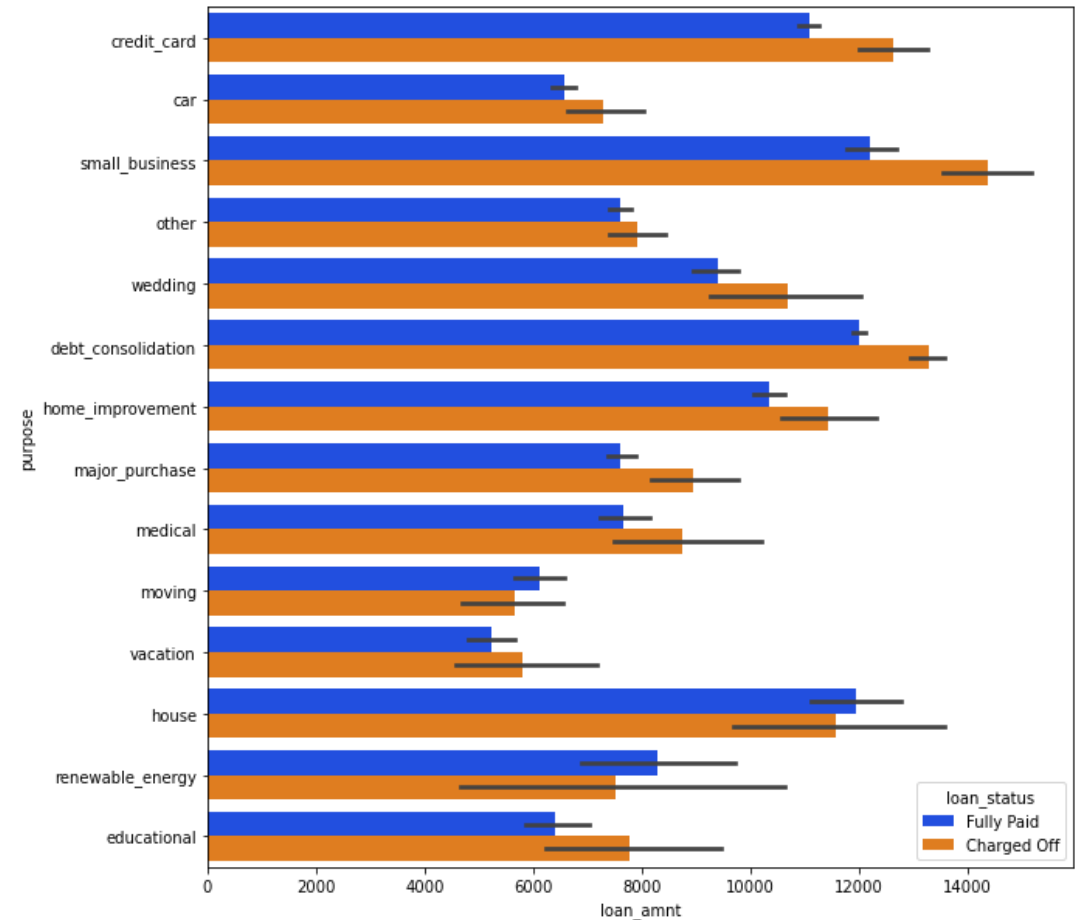


- Comparison of Annual income of customer with the mode of residence . This is to identify how much customer will be able to pay or identify chances of loan defaulting.

PAID & CHARGED OFF – LOAN PURPOSE

Fully paid and charged off data from purpose of loan category has been charted down.

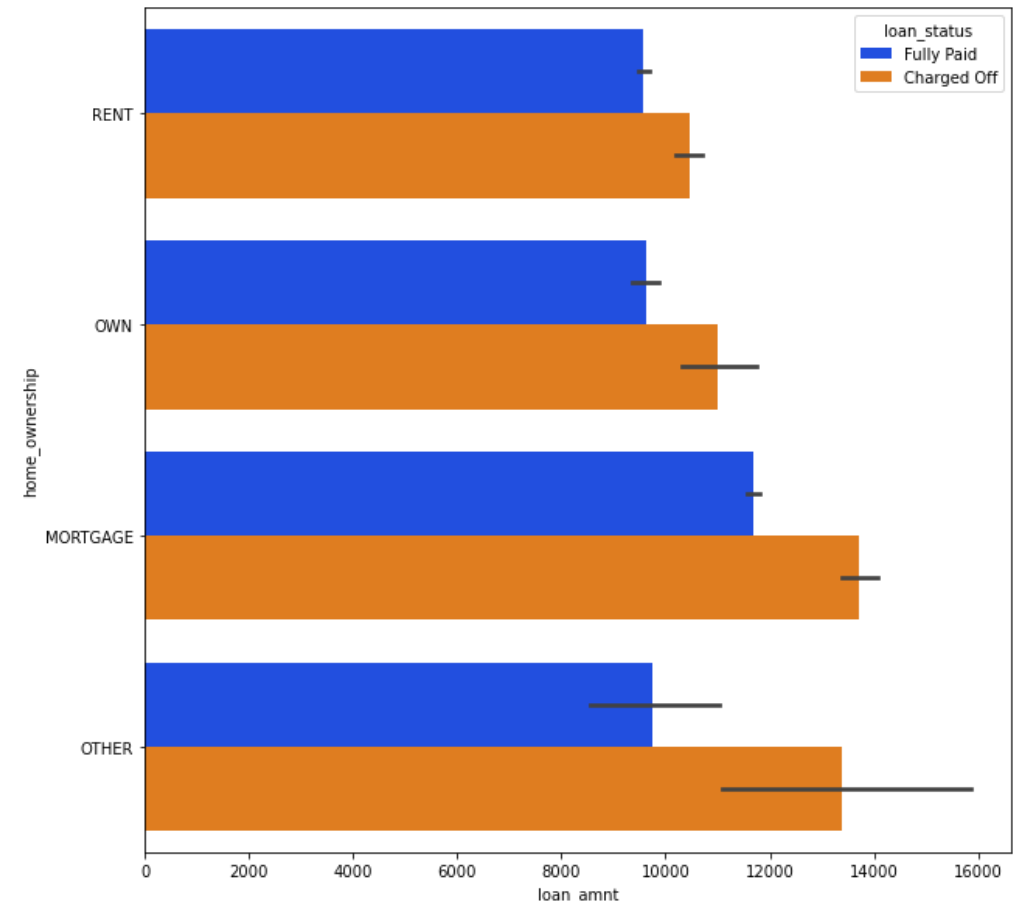
This will help to predict ideal customer profile from defaulting the loan



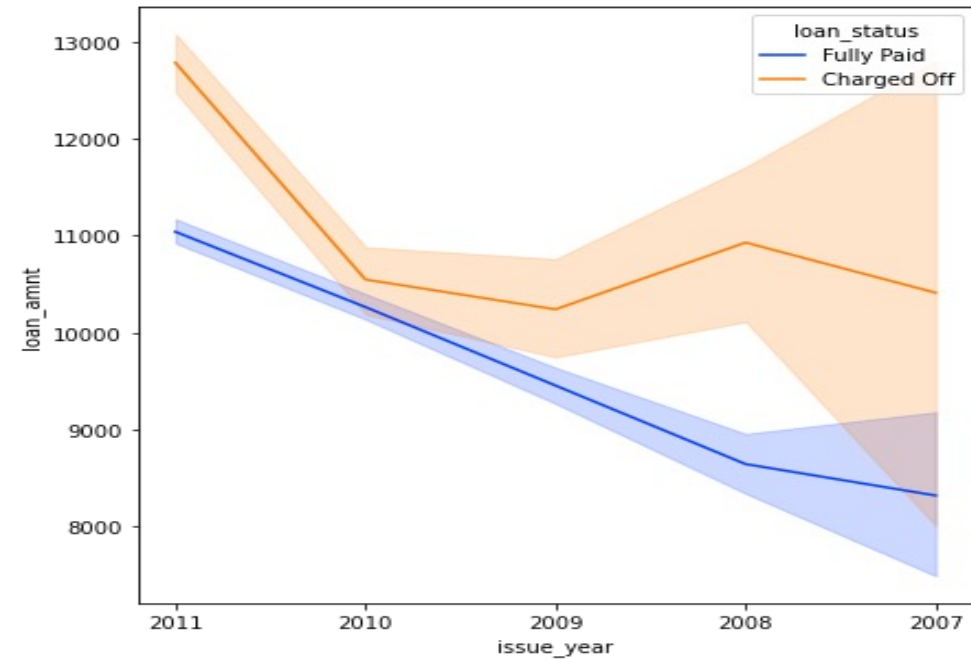
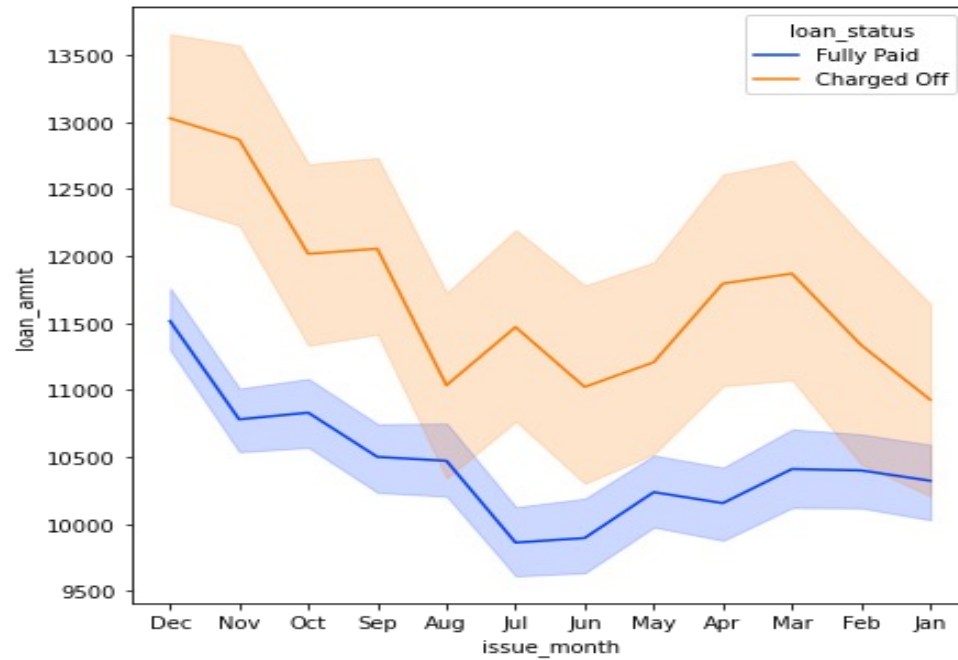
PAID & CHARGED OFF – HOUSE OWNERSHIP



- House ownership data with loan amount.
- Fully paid and charged off data is plotted.
- This will help prevention of such case in future



ISSUED MONTH AND YEAR



- Loan Issued month and year data along with loan amount released on customers

FINAL OBSERVATION



- **The above analysis with respect to the charged off loans. There is a more probability of defaulting when**
- Applicants taking loan for 'home improvement' have income of 60k -70k
- Applicants whose home ownership is 'MORTGAGE' have income of 60-70k
- Applicants who receive interest at the rate of 21-24% have an income of 70k-80k
- Applicants who have taken a loan in the range 30k - 35k are charged interest rate of 15 -17.5 %
- Applicants who have taken a loan for small business the loan amount is greater than 14k
- Applicants whose home ownership is 'MORTGAGE' have loan of 14-16k
- When grade is F and loan amount is between 15k-20k
- When employment length is 10yrs then loan amount is 12k-14k
- When the loan is verified then loan amount is above 16k
- For grade G the interest rate above 20%



THANK YOU