



Lending Club Case Study

Group Members :

Pratik Shantaram Gaikwad

Prasad Pramod Pathak.

Abstract :

Lending Club 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.

The objective is to identify predictor of default so that at the time of loan application, company can use those variable for approval or rejection of loan.

Problem solving steps :

Data Cleaning

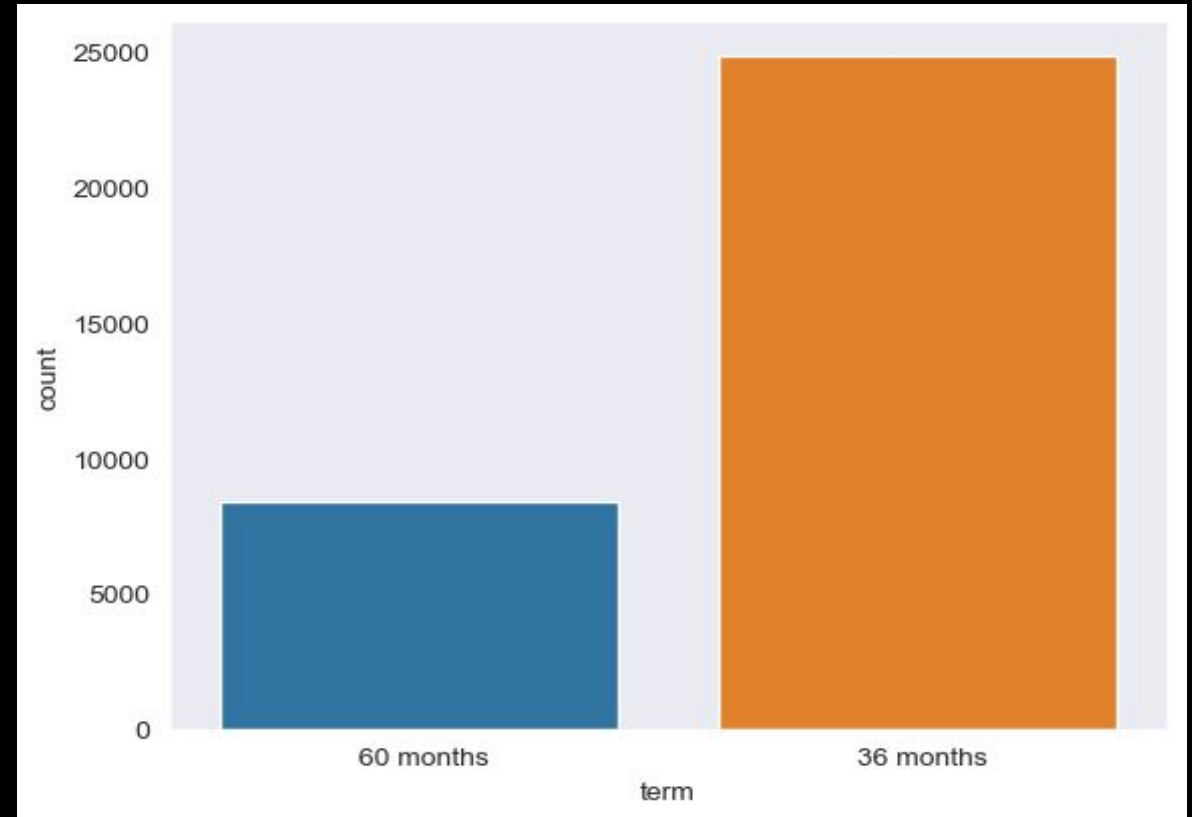
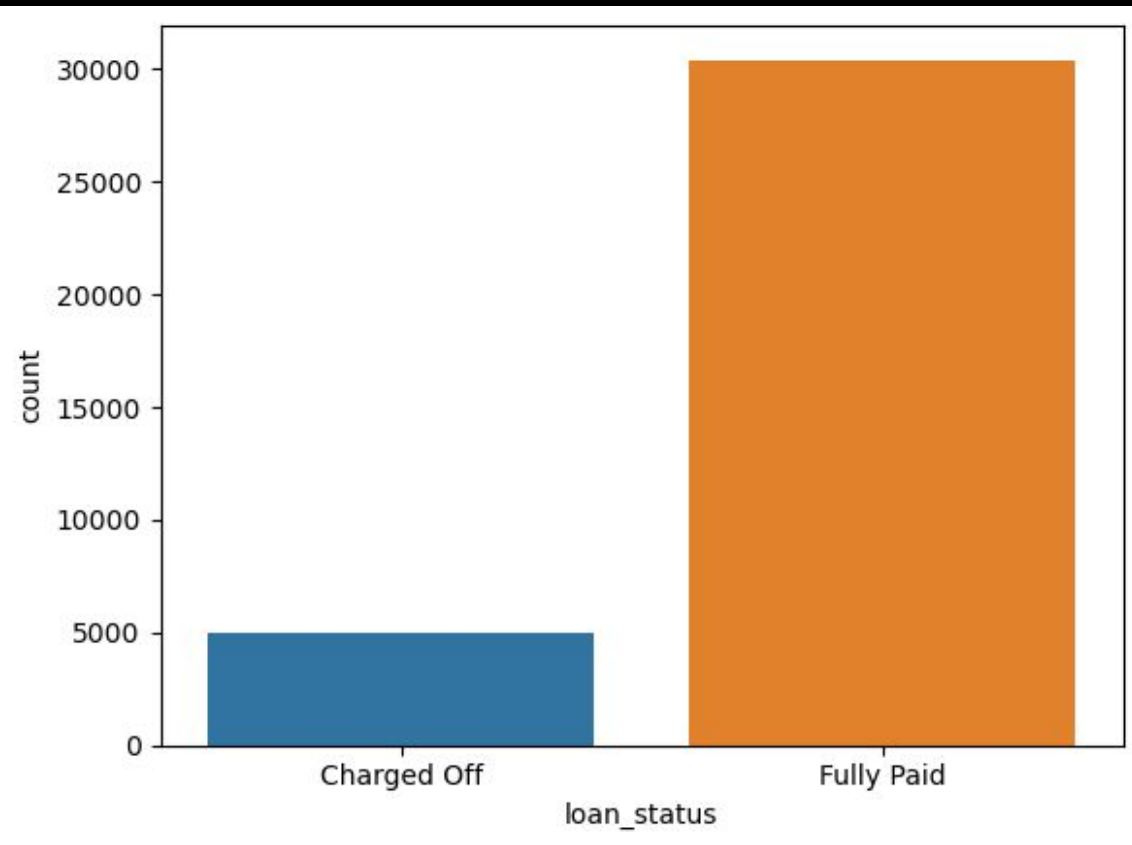
Data Understanding

Univariate analysis

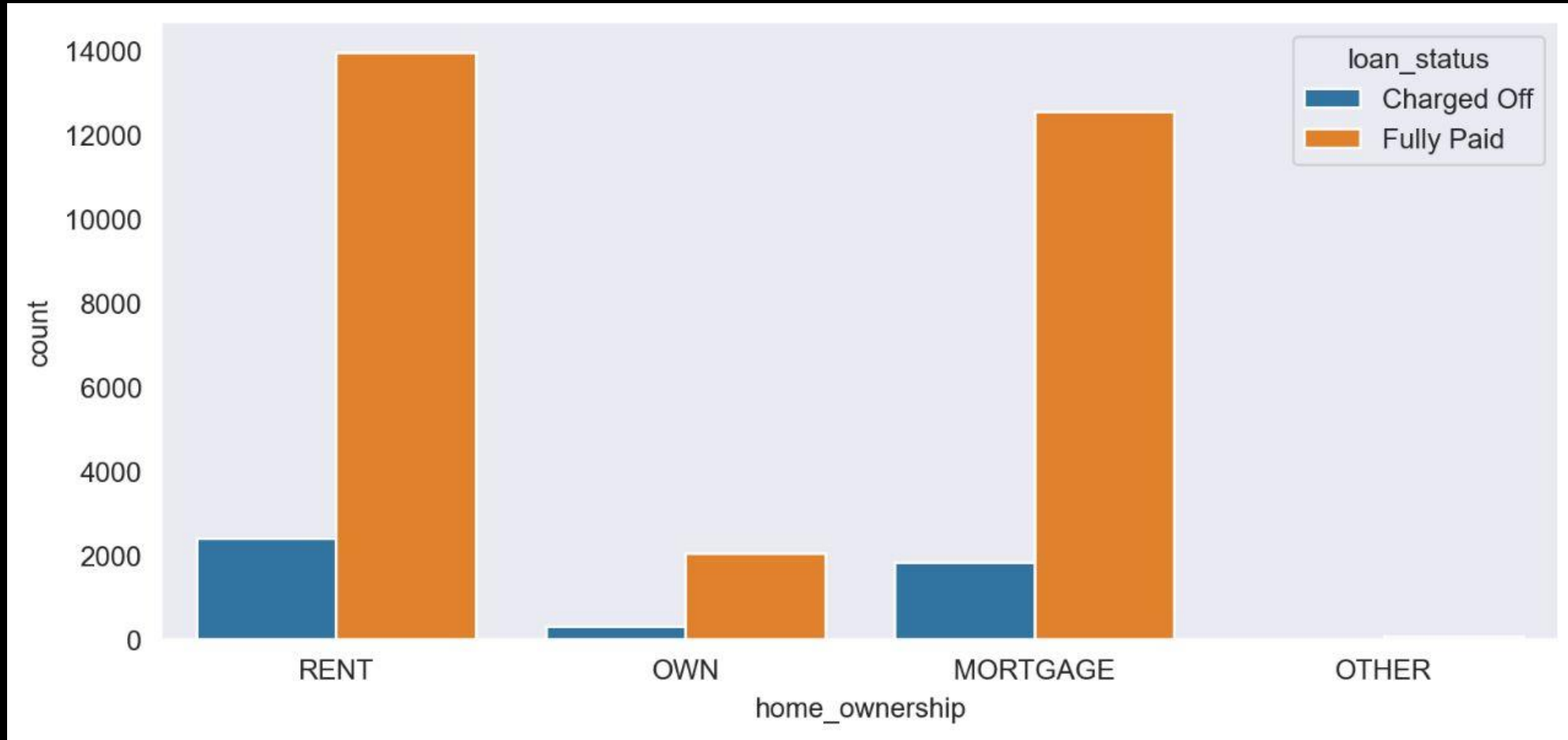
Bivariate analysis

Multi-variate analysis

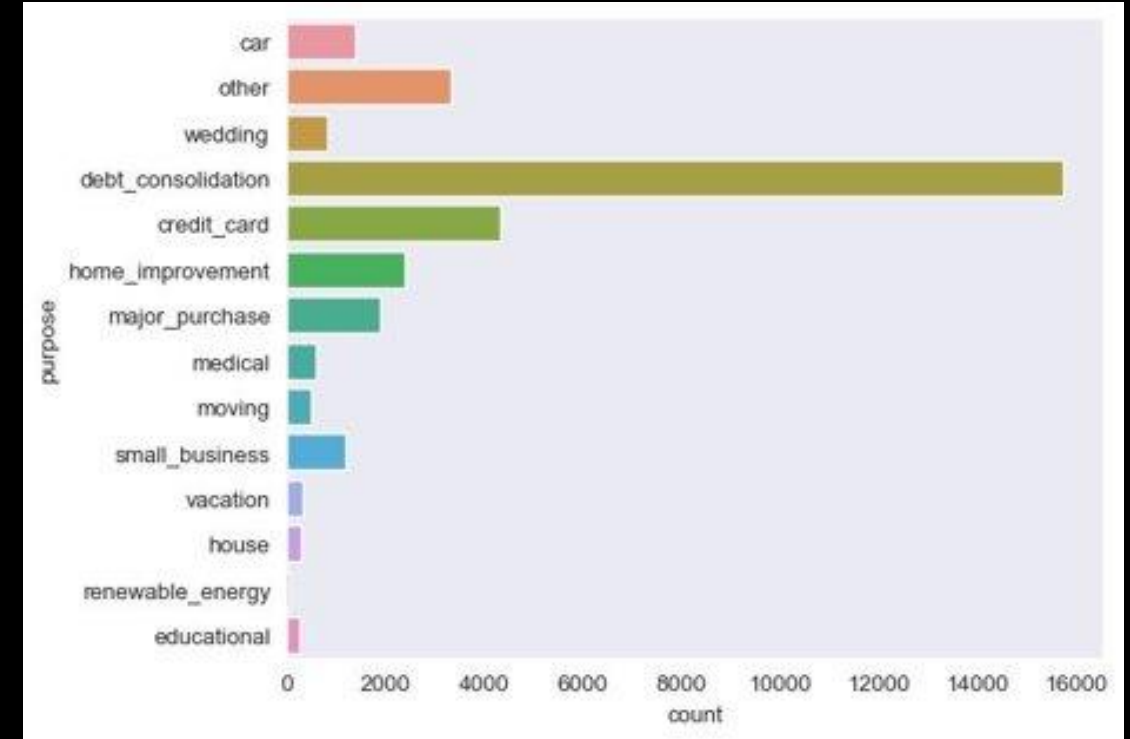
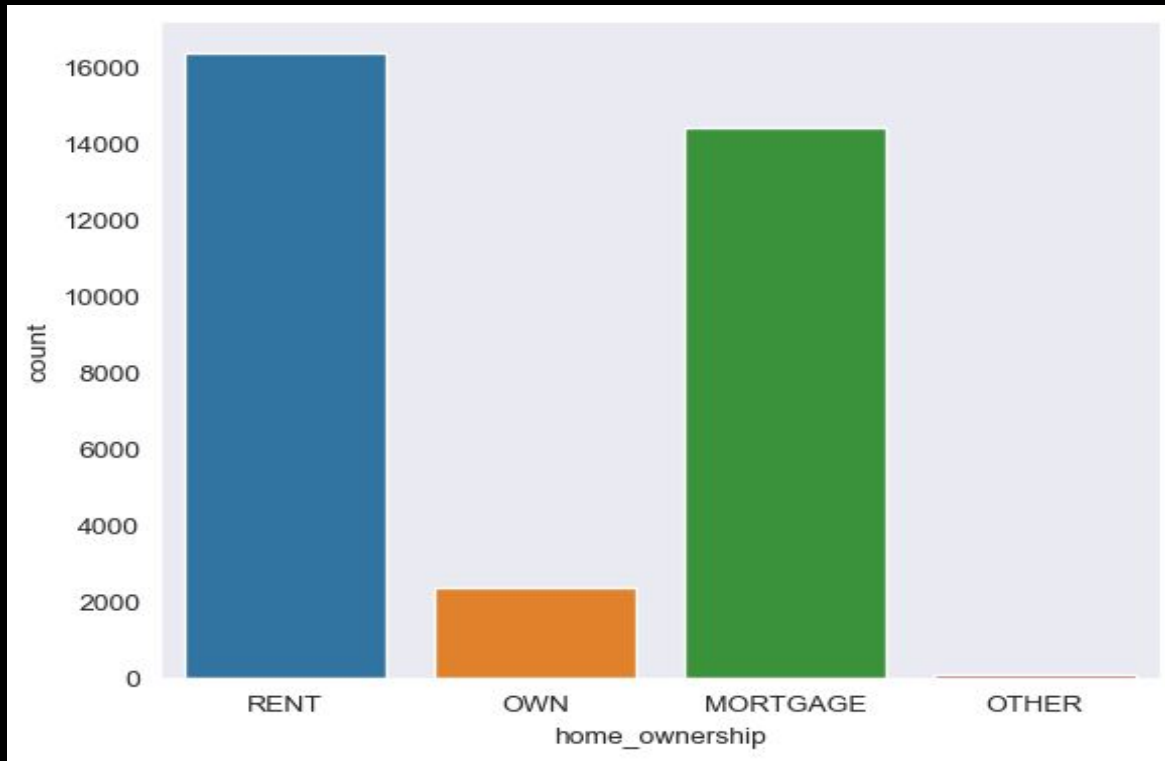
Recommendations



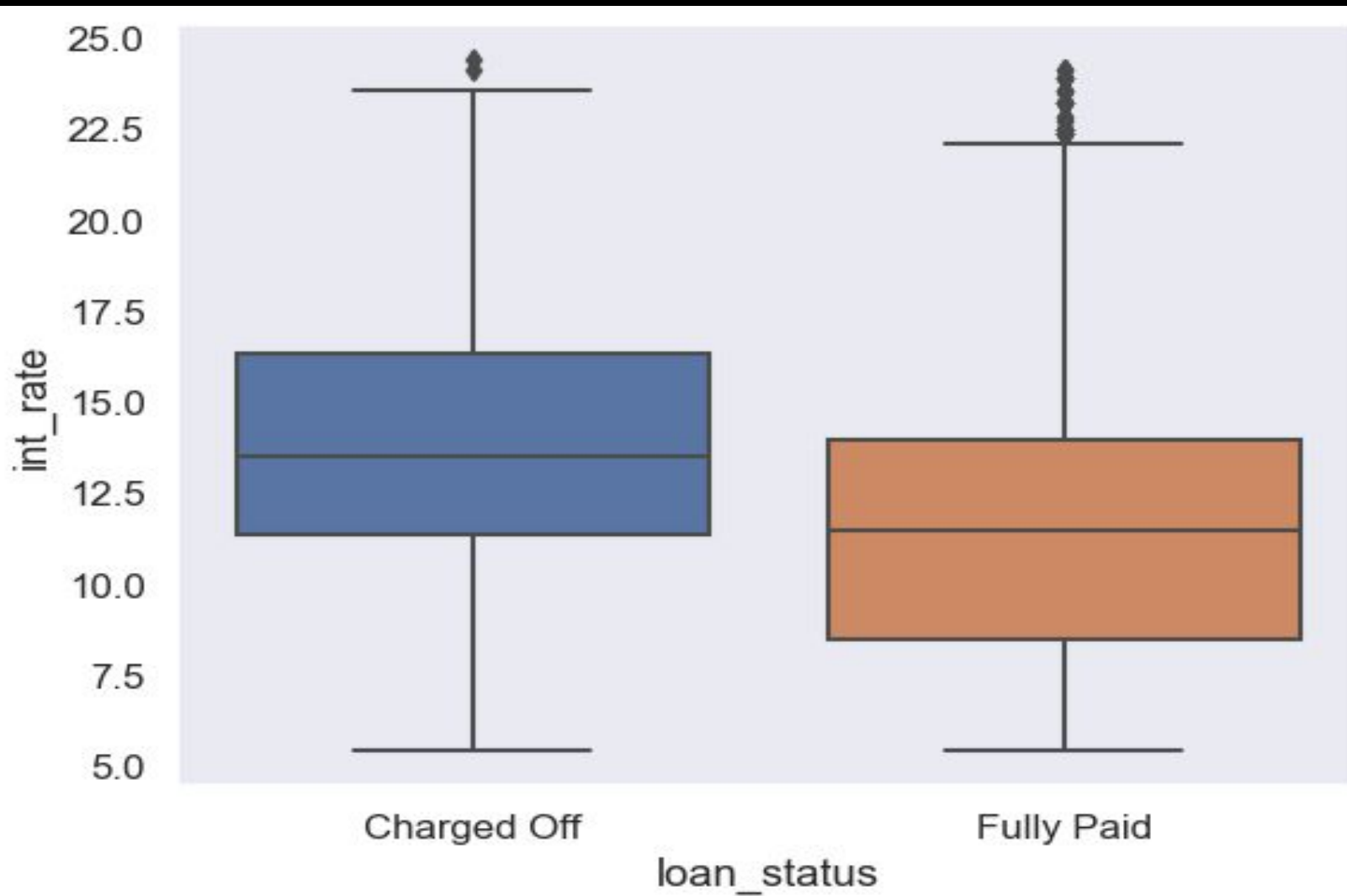
- There are only two loan terms 36 and 60 months. Around 75% borrowers took loans with 36 months term.
- The charged off borrowers are around 15% and fully paid is around 85% in the given data set.



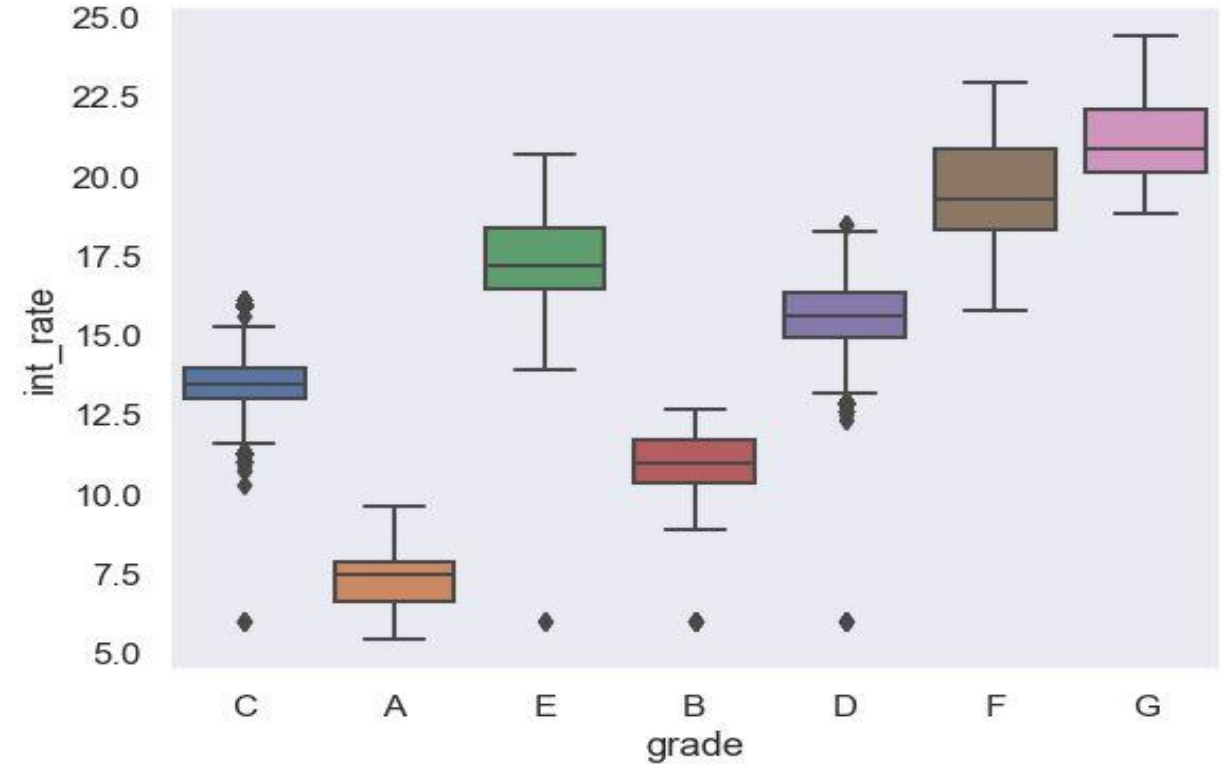
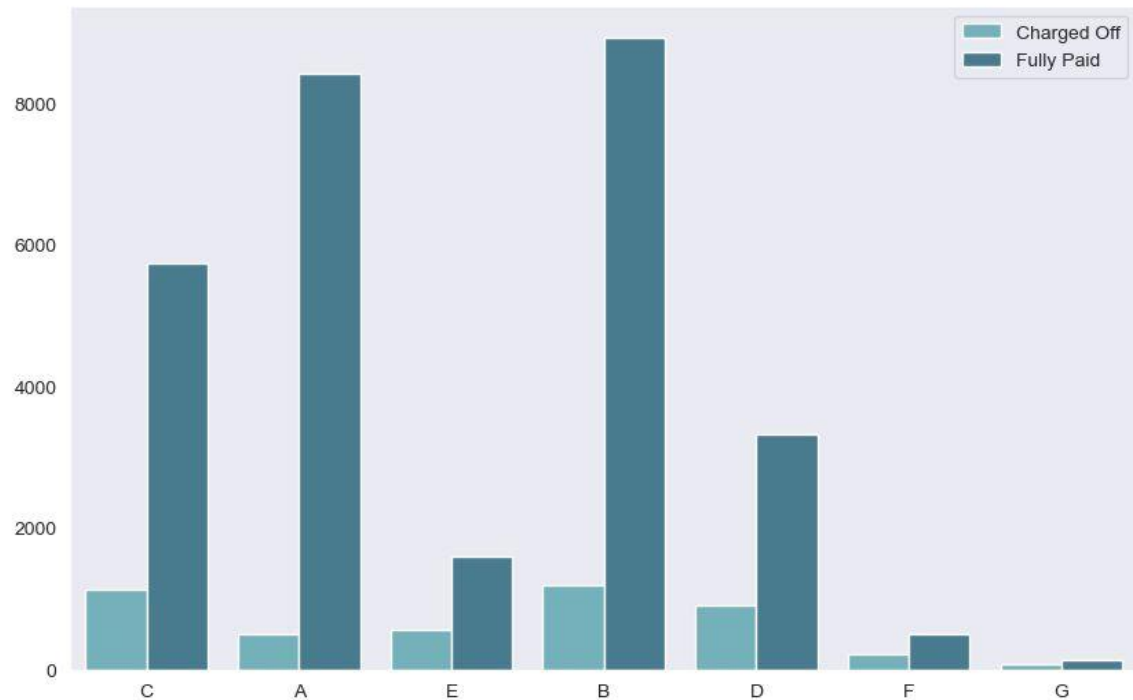
Borrowers with mortgage home ownership are taking higher loans and defaulting the approved loans.



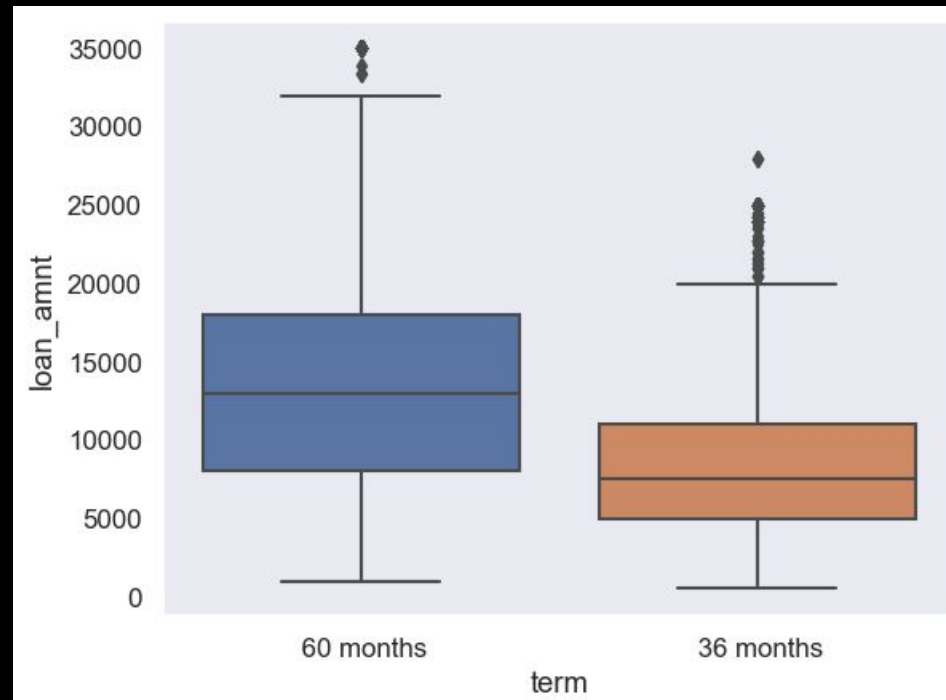
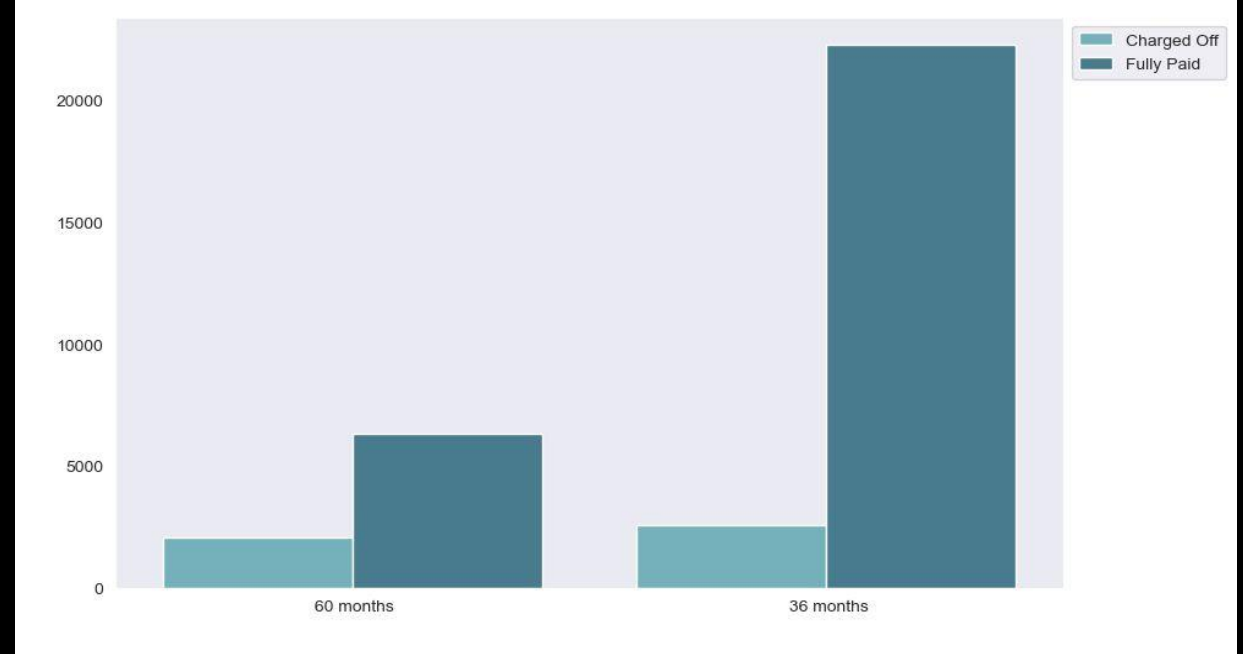
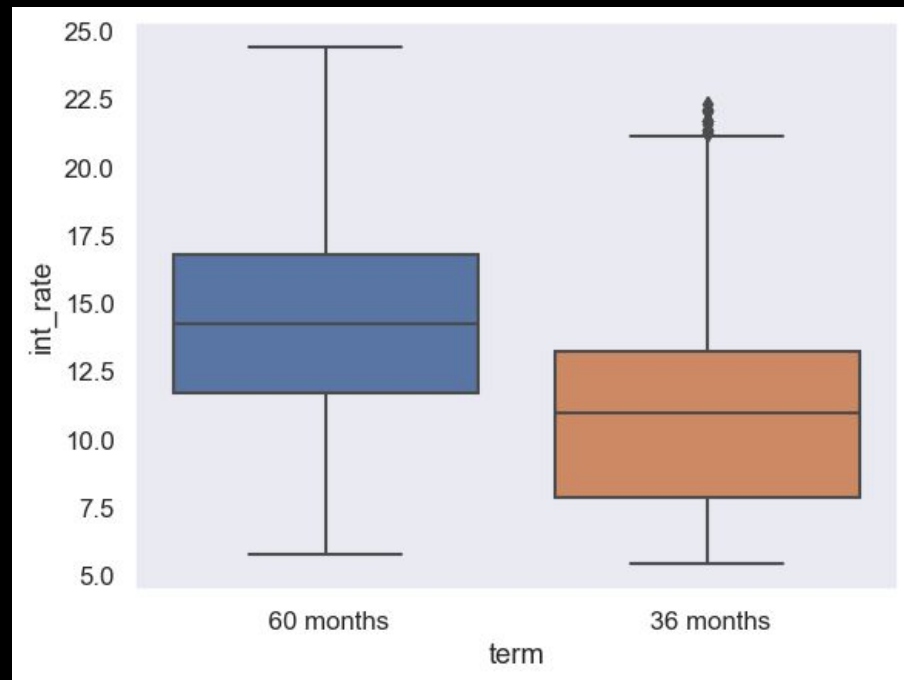
- Borrowers are usually the people who have Rented the apartment or under mortgage
- Mostly people under debt consolidation borrow loan followed by through credit cards, home improvement, major purchases, cars and others.



When the loan interest rate is high there is high chance of loan getting defaulted.

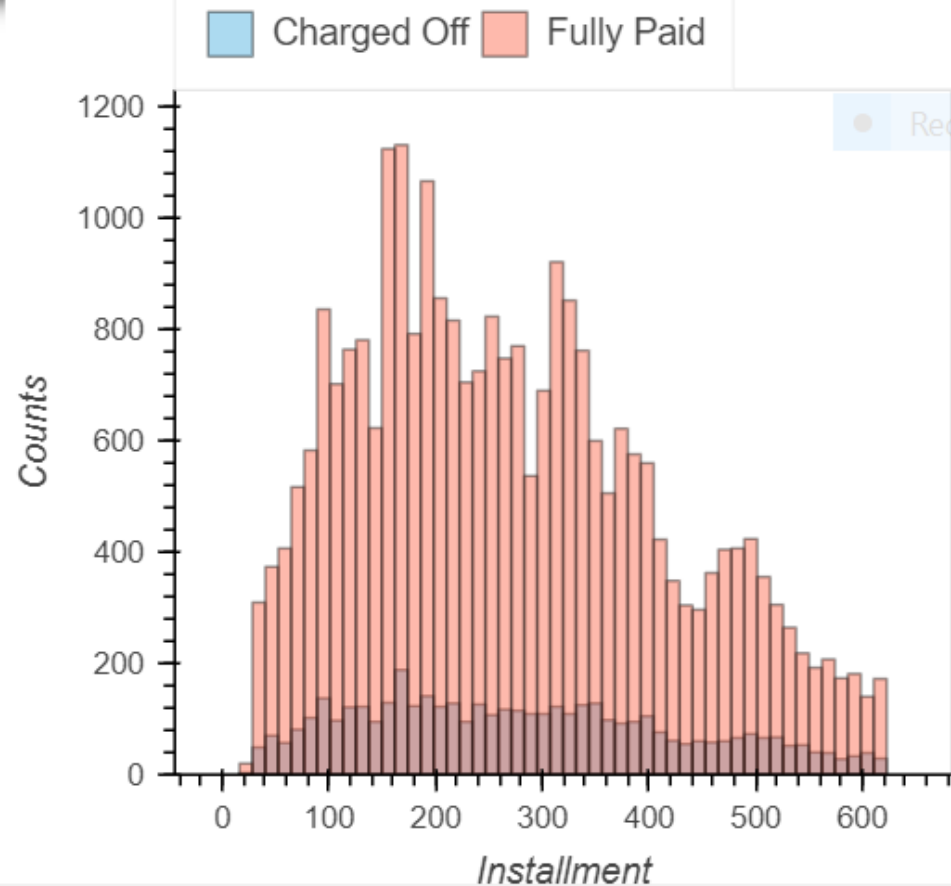


- Grades are very good category to tell the borrower probability of defaulting the loan.
- The Lower grades(E,F,G) have higher chances of defaulting the loan than Higher ones(A,B)
- Also the Lower grades are getting loans for higher interest rates which might be the cause for loan default

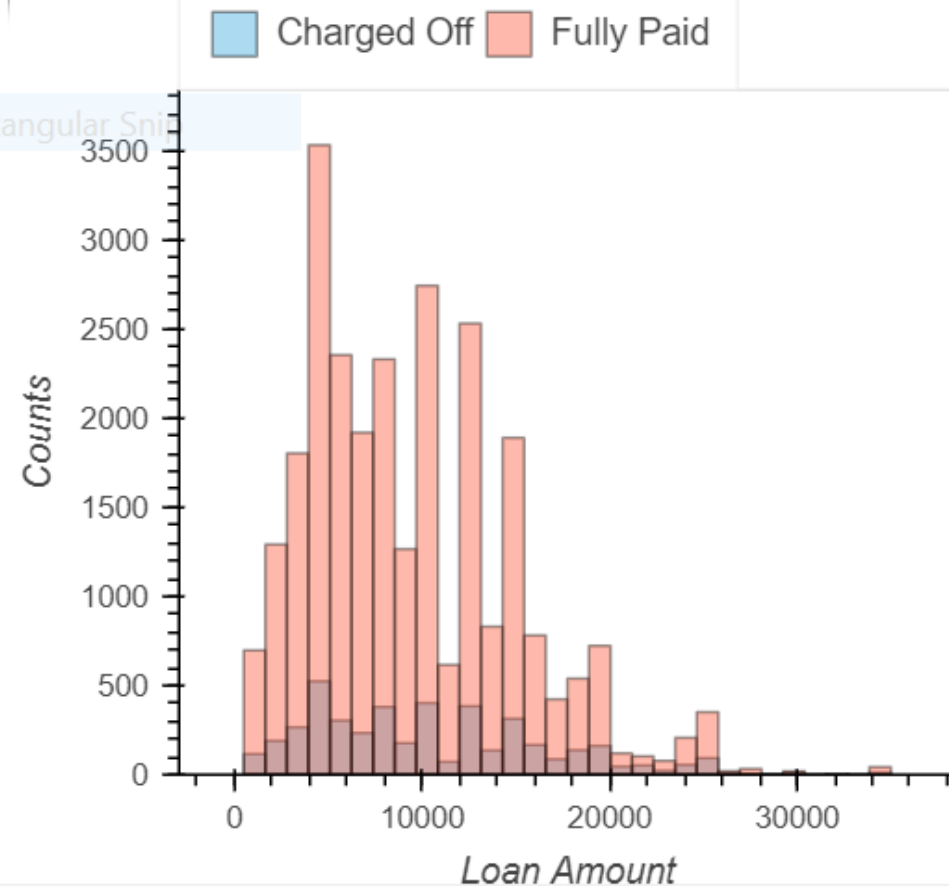


The default rate is high in 60 months tenure
As people took high loan amount with high interest rate.

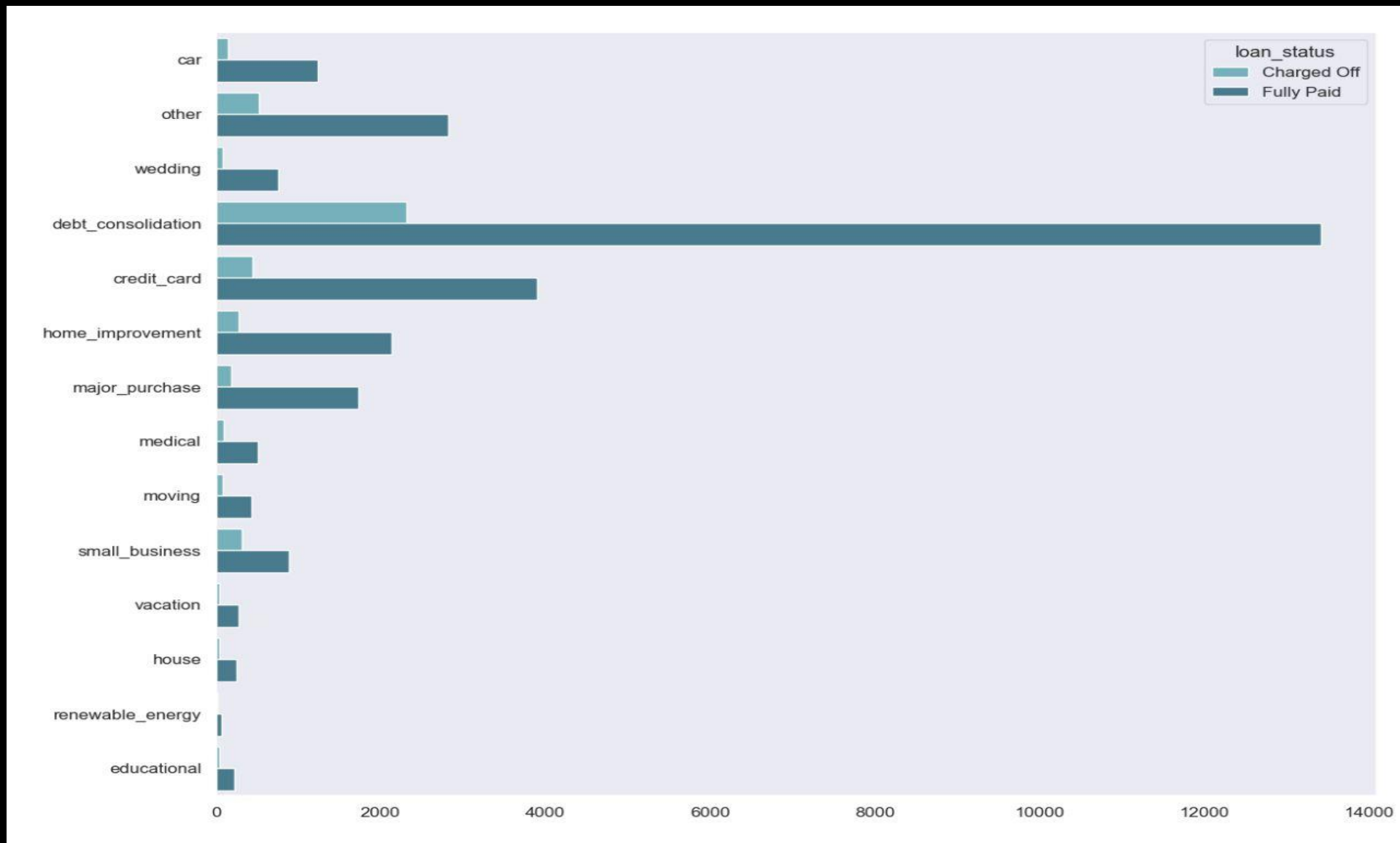
Installment by Loan status



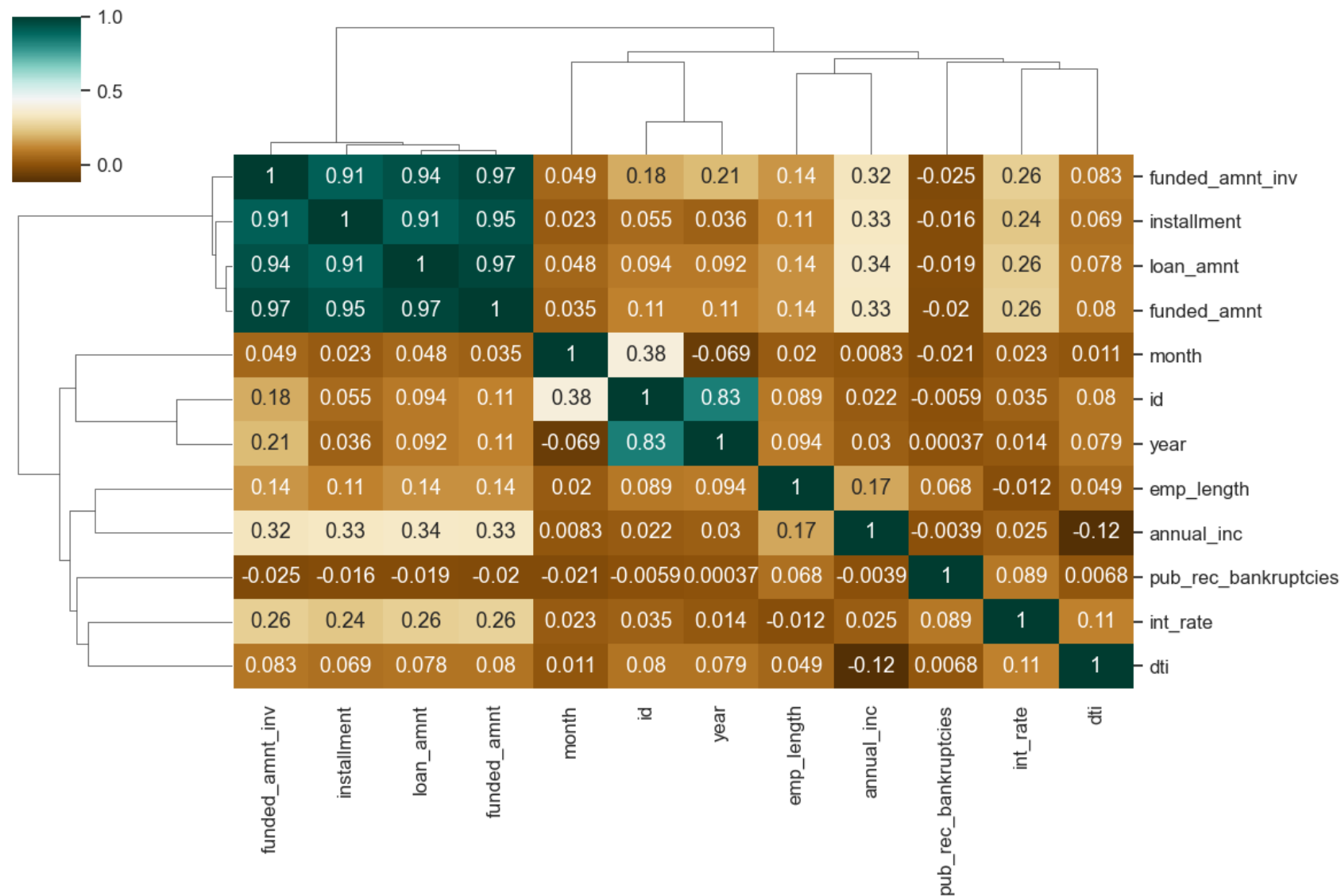
Loan Amount by Loan status



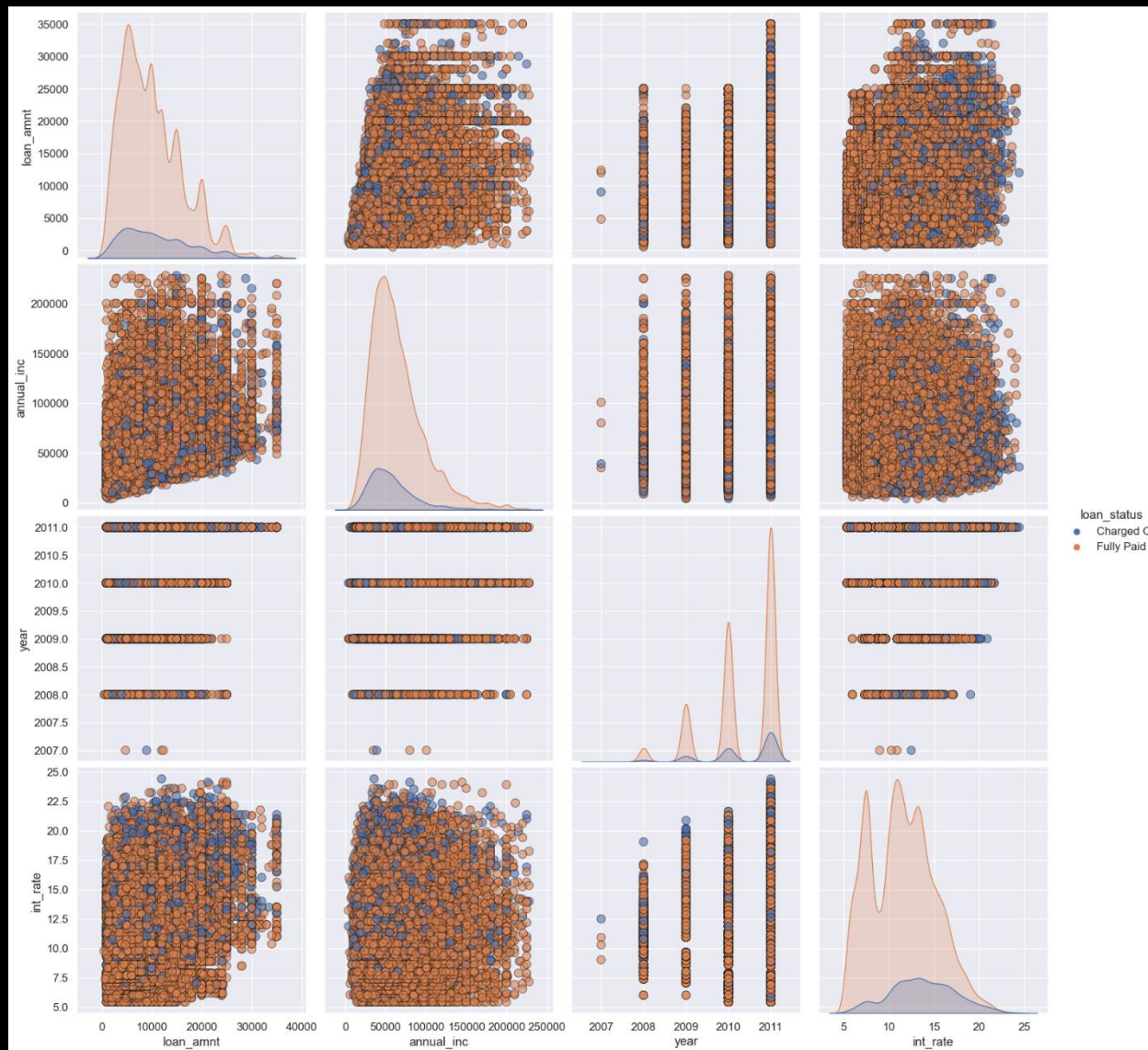
- Usually Borrower try to keep installment as low as possible.
- When Loan amount is less there are less chances of Default/Charged Off.



Borrower's who took loans for small business purpose have defaulted more



- Correlation matrix shows relation between variables
- It helps to detect multi collinearity
- Observation is that Loan amount, investor amount, funding amount are strongly correlated.
- Annual income with DTI(Debt-to-income ratio) is negatively correlated.



Pair plot shows relationship between various columns

Conclusions And Recommendations :

Lending club should give loan more to borrower with 60 months tenure as the number of default is less with higher months.

Borrowers with high grades can be considered more preferably for issuing loan.

Lending club can focus more on Large business as small business prone to default more.

Lending club should stop giving loans to borrower with mortgage home ownership and asking for more than 12000.