

Lending Club Case Study

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Problem Statement

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

Approach

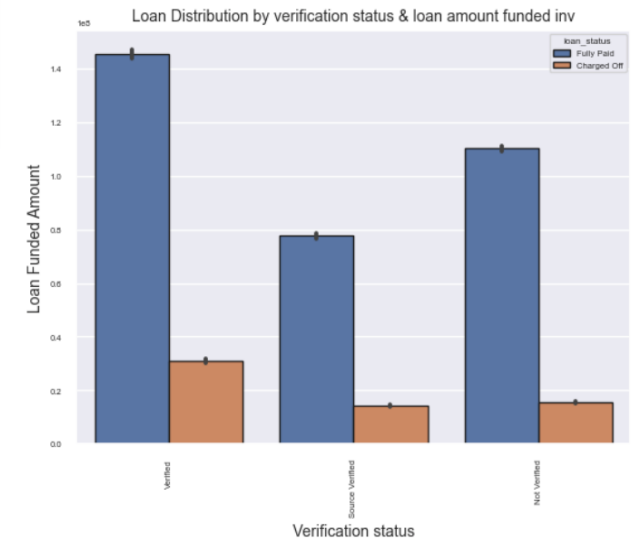
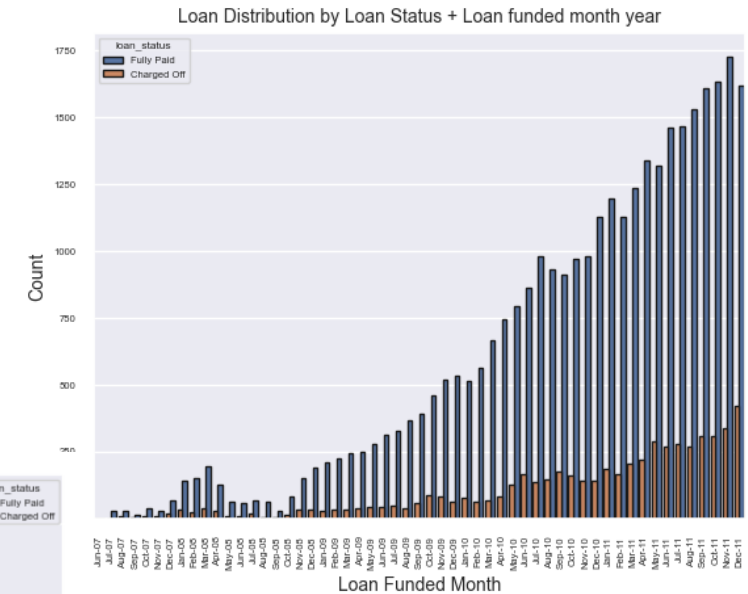
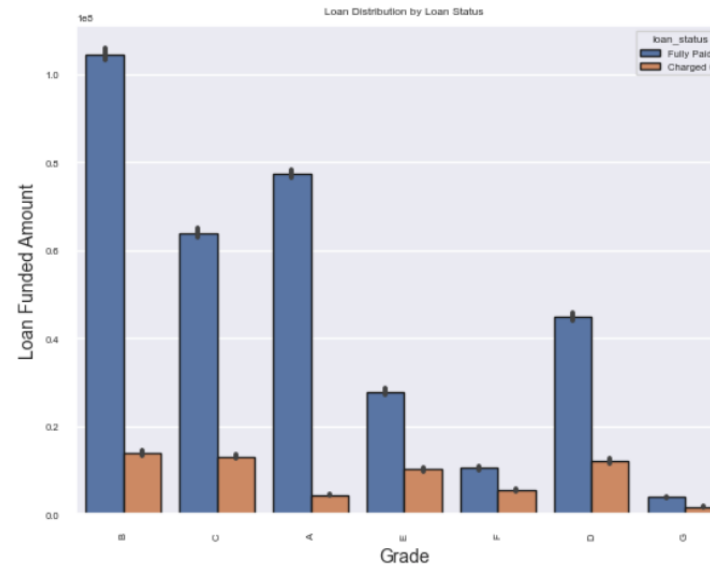
- Data Sourcing (loan.csv)
- Data cleaning
- Perform Univariate Analysis
- Perform Bivariate Analysis
- Perform Multivariate Analysis
- Consolidate Observations & Recommendations

Keep Doing... Positive signs!

Loan amount and number of loans are increasing month over month

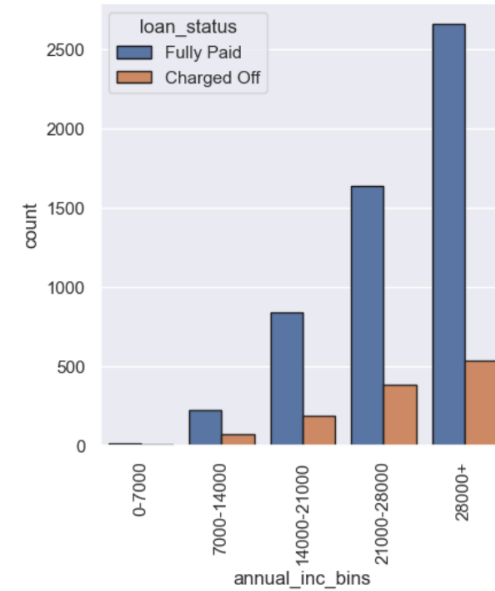
More loans have been given in the A, B & C grades which are relatively better grades with respect to risk & volatility

Income Source verified by LC has the highest number of loans



Keep Doing... Positive Signs!

More loans are given to the highest income group(more than 28000)

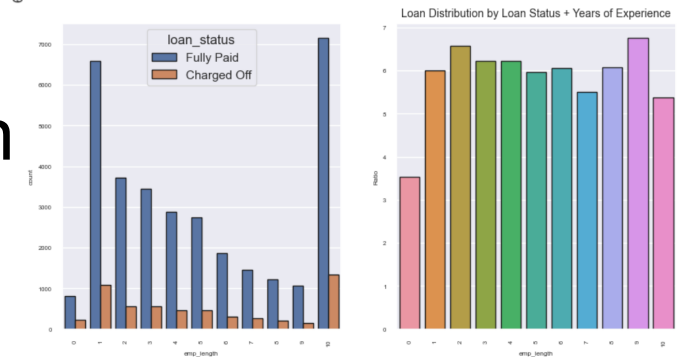
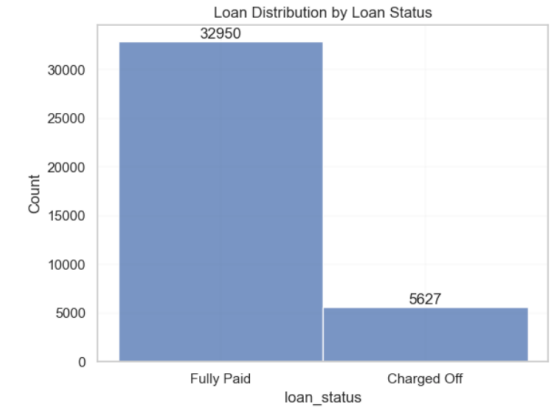
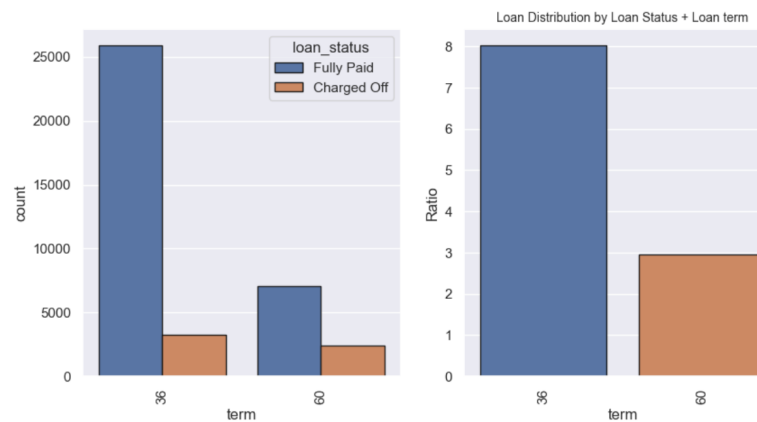


Concerns / Scope for Improvement

Around 15% loans disbursed are Charged Off.

High rate of default for 60 month term loans

Loans given to borrowers with less than 1yr experience shows highest percentage of ChargedOff

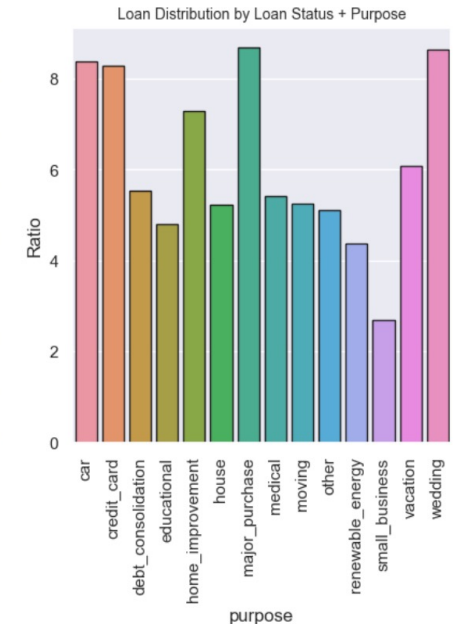
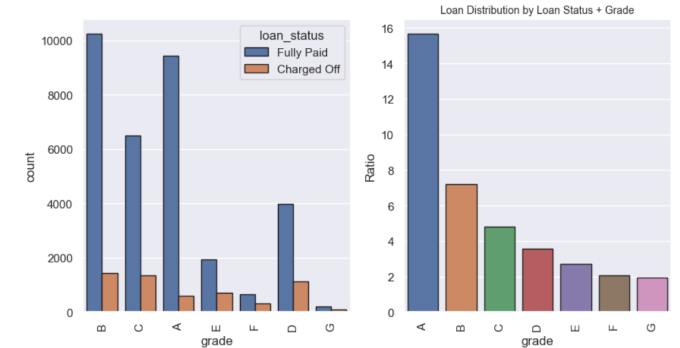
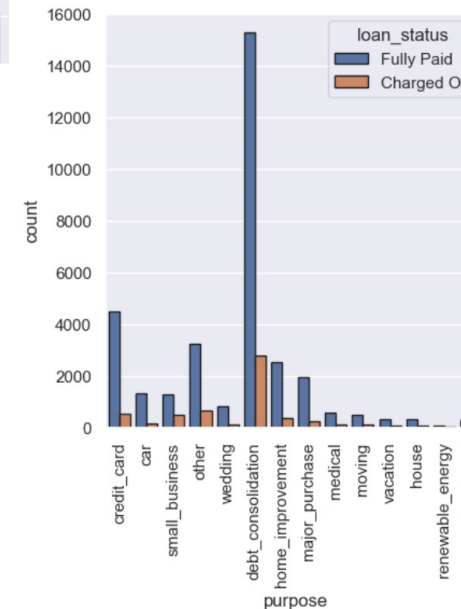
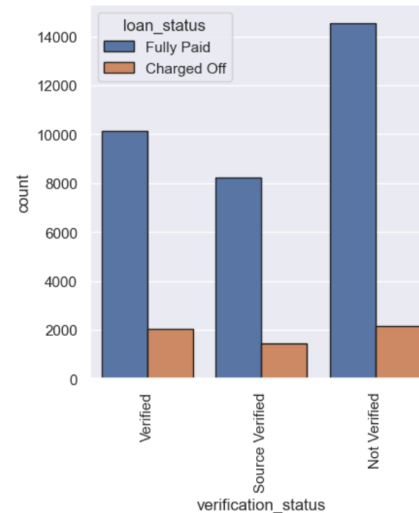


Concerns / Scope for Improvement

Loans given to E, F, & G grades shows highest rate of Charged Off

More number of loans are given to 'income source not verified' category

High rate of ChargedOff for loans given to 'small business' category (though the total loans given is less)

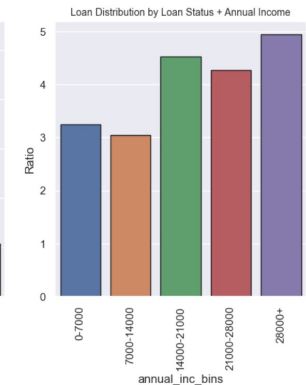
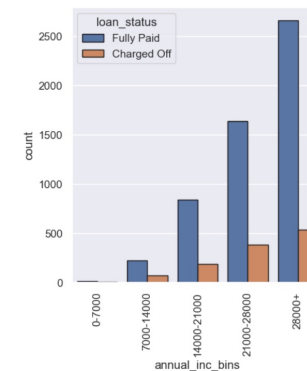
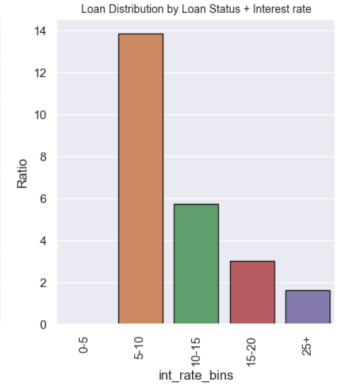
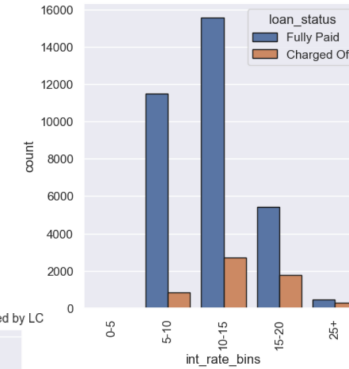
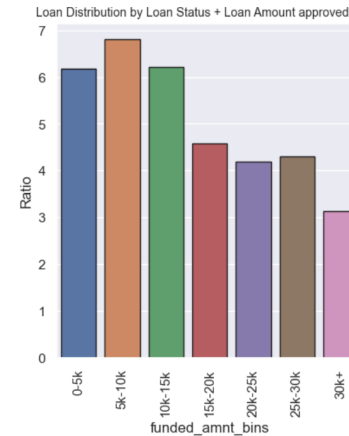
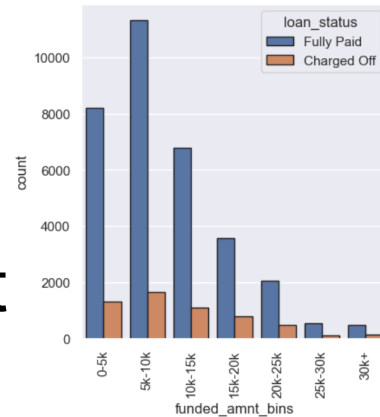


Concerns / Scope for Improvement

High interest rate has high chance of ChargedOff

Borrowers with amounts more than 30000 has the highest percentage of default

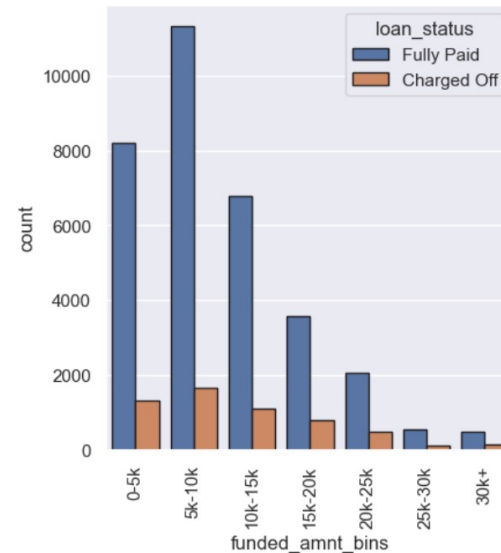
Borrowers with lower income has the highest ChargedOff ratio.



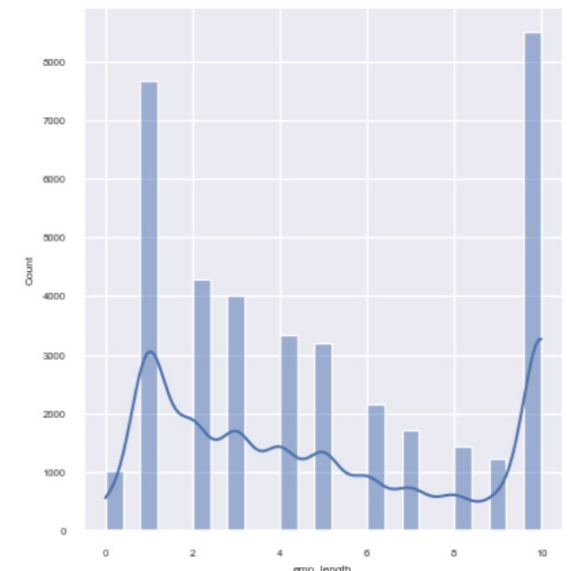
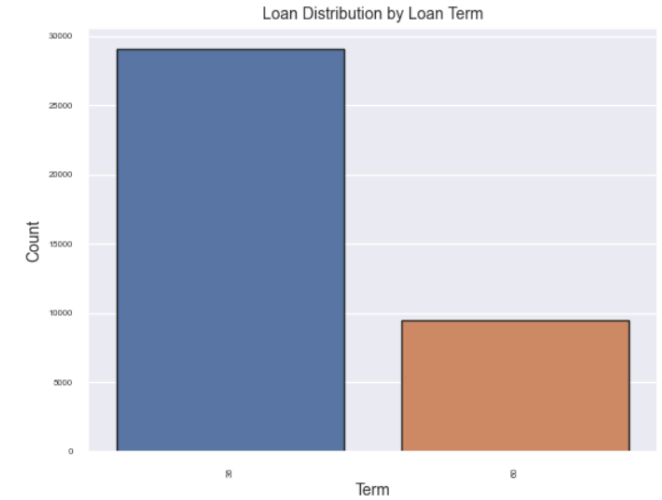
Observations

More loans are given for 36 month term(compared to 60 month term)

More demand for loan amounts in the 0 – \$15000 range

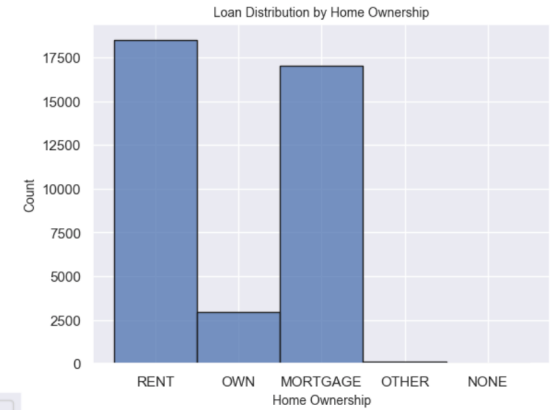


Borrowers with 1yr experience and 10+ years of experience has high demand for loans

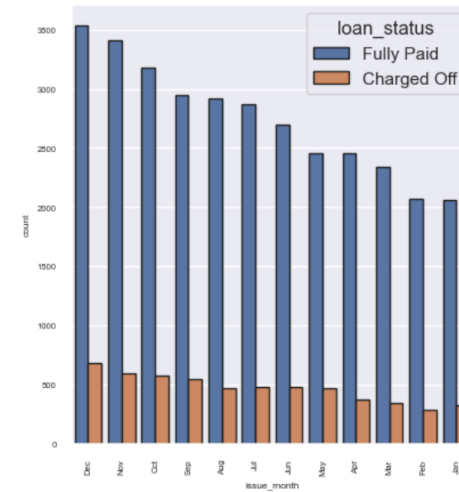


Observations

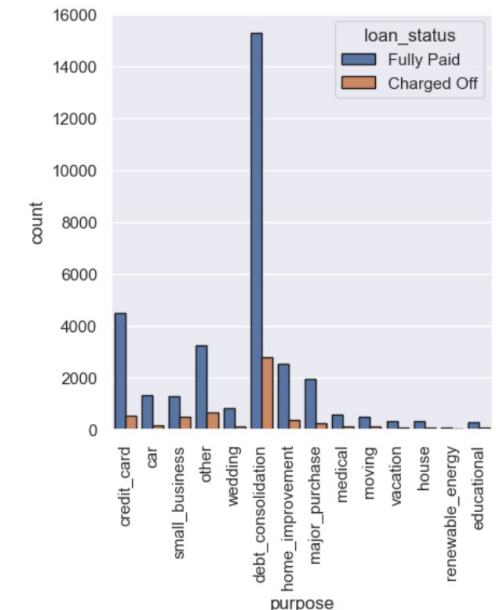
Borrowers staying for RENT or having mortgage are the highest takers of loan



More loans are given in the month of December. There is an increasing trend in loan from Jan to Dec

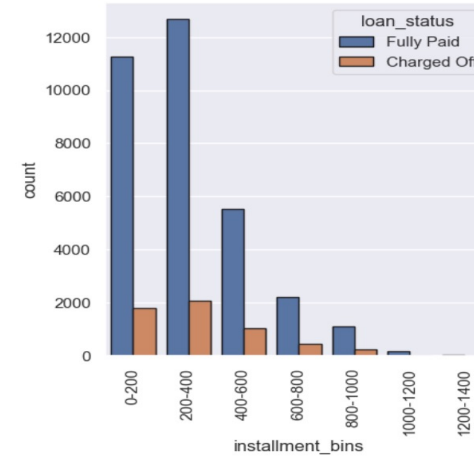


More loans given for 'debt consolidation' purpose, followed by credit card

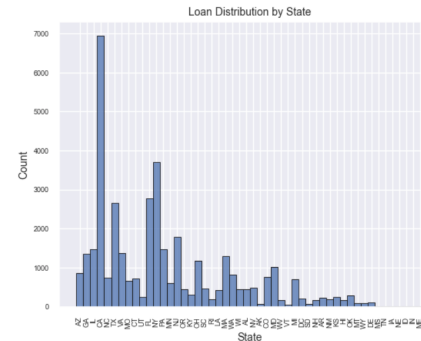


Observations

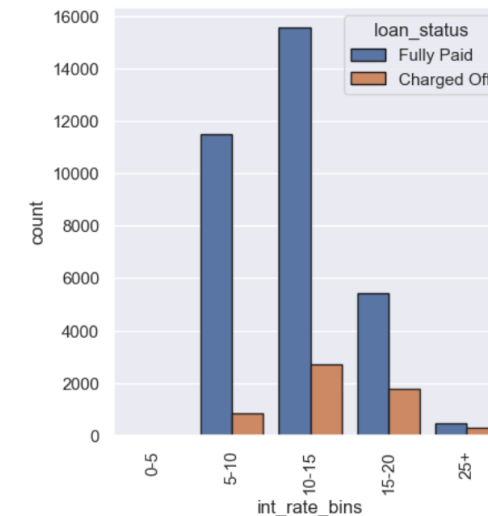
Number of instalments ranging from 0-400 has the highest demand



State of California having the highest number of loans

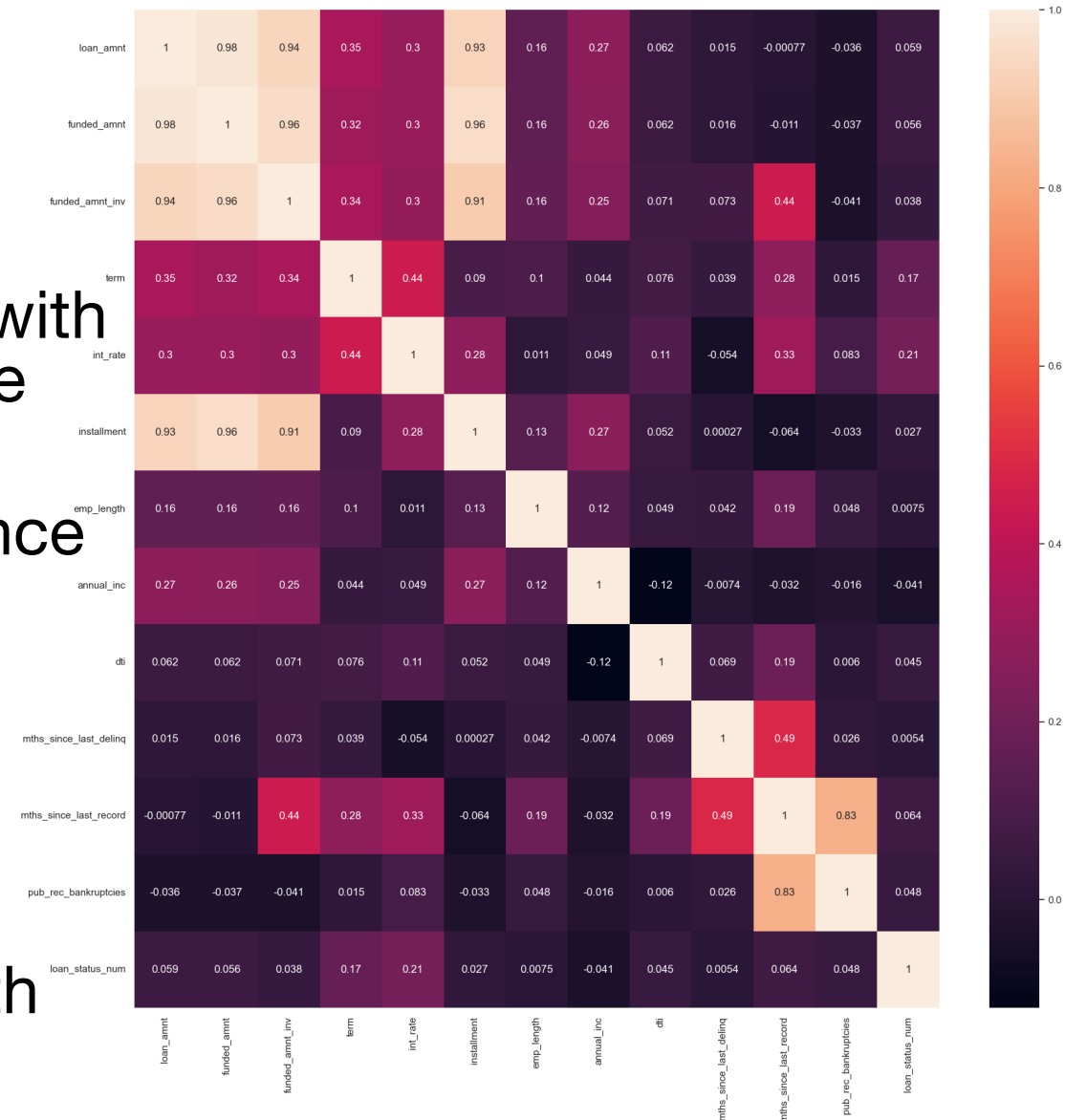


Interest in the 5-15% range has the number of highest takers



Observations

- loan amount, funded amount & funded amount invoiced has a strong correlation
- loan amount also has positive correlation with instalments, loan term, years of experience and annual income
- term has correlation with years of experience and loan status
- interest rate has correlation with term, instalments, dti and loan status
- instalment has correlation with years of experience, annual income
- Annual income has positive correlation with dti



Recommendations

At the time of approving/rejecting loan, consider below points

- High repayment term has highest risk
- Applicants with less than 1 year of experience are risky
- Consider Grade of applicants. A, B & C grades are comparatively safer
- Applications with purpose 'Small Business' are riskier than others
- Higher the rate of interest higher the chance of ChargedOff
- Loan amounts more than 30000 has high rate of ChargedOff
- Giving loan to lower income group(below 14000) is risky

Thank You
