

Lending Club Case Study

Background

You work for a **consumer finance company** which specialises in lending various types of loans to urban customers. 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

Business Objective

The 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 utilise this knowledge for its portfolio and risk assessments.

Understanding Data

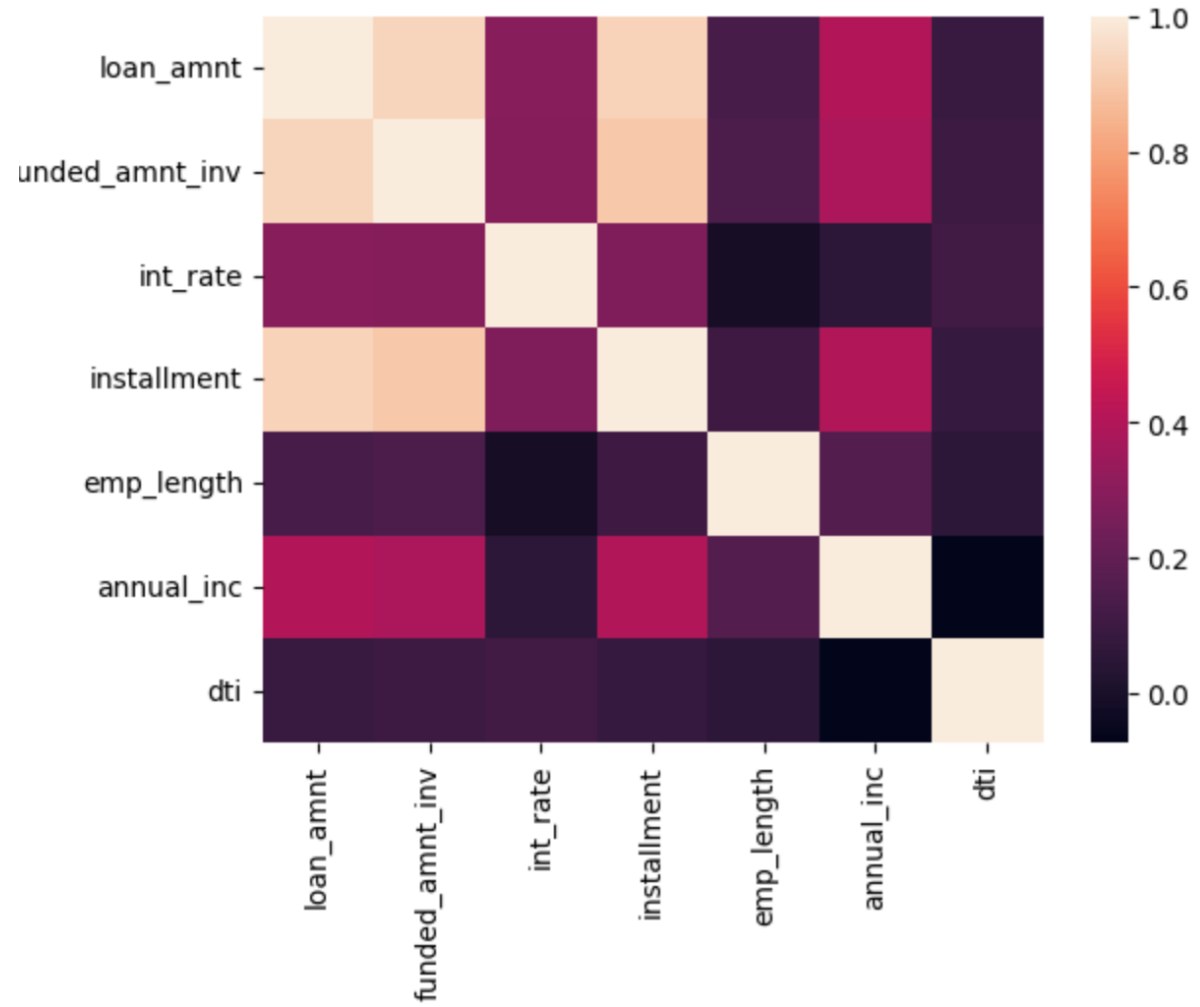
Loan Details

- loan_amnt – Loan Amount
- funded_amnt_inv - Funded Amount by investors
- int_rate – interest rates
- grade – loan grade
- sub_grade – loan sub grade

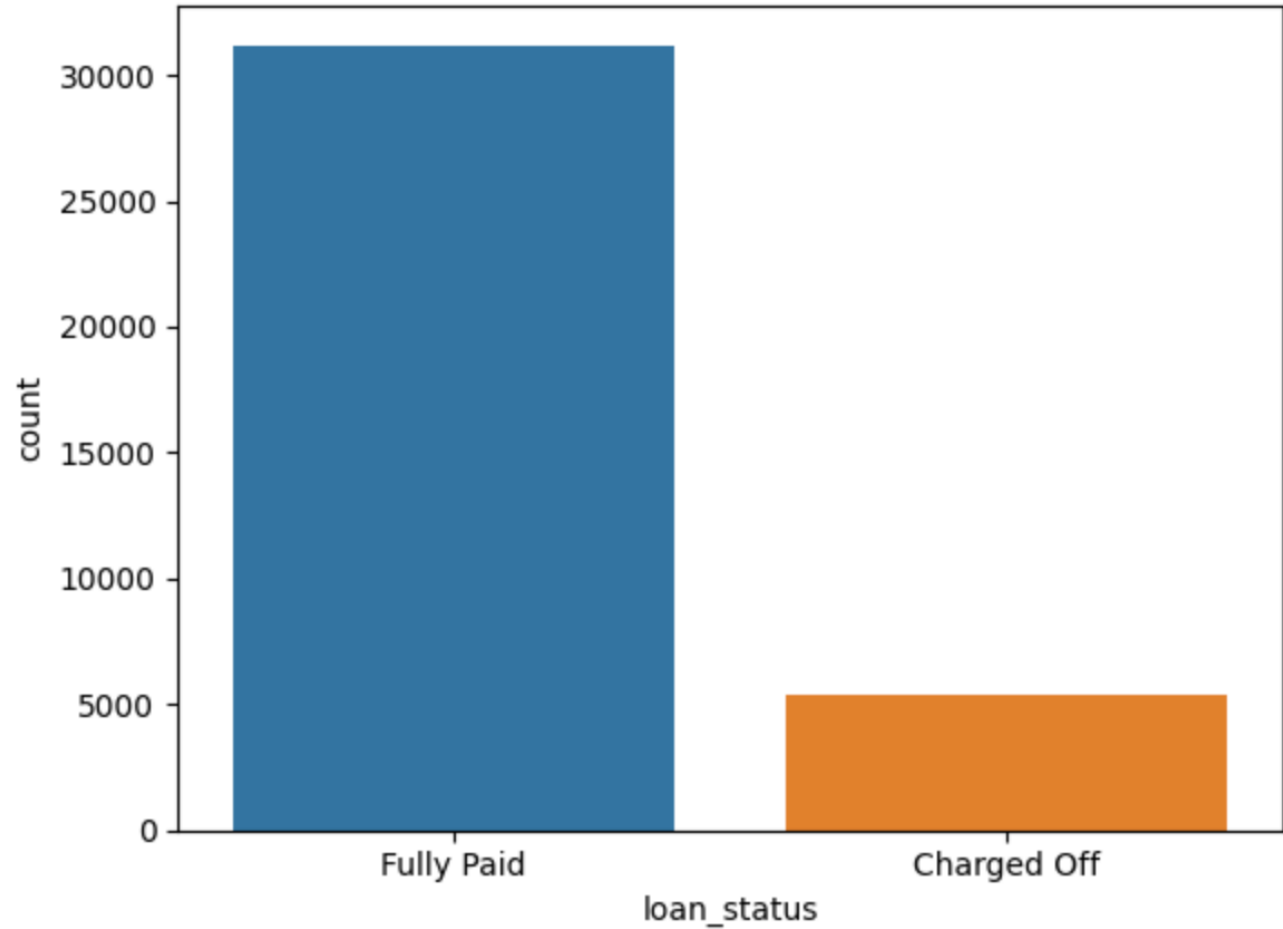
Loan decision metrics

- home_ownership – if owns a home
- verification_status – is verified
- loan_status – status of loan
- dti – Debt-To-Income Ratio

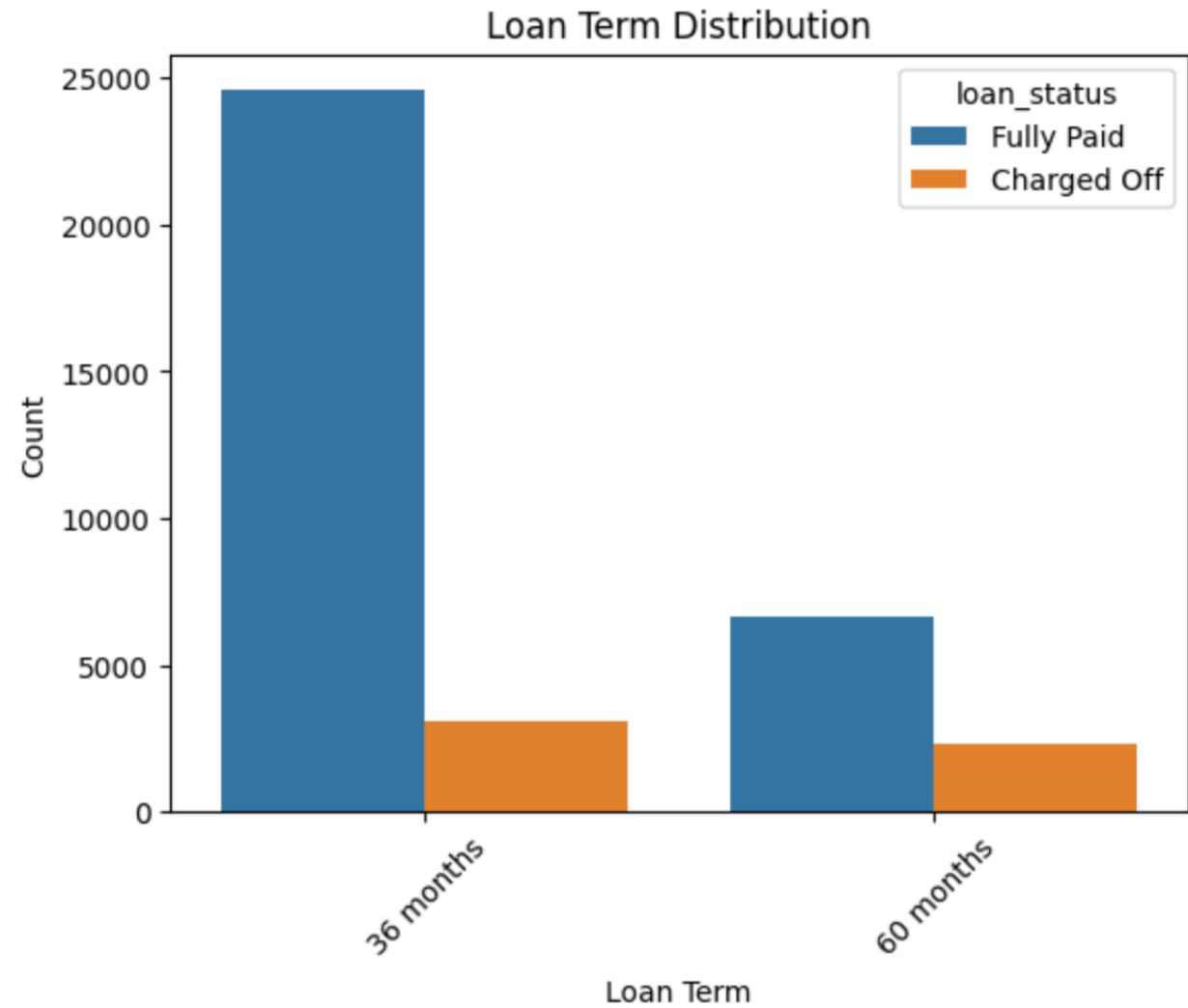
Correlation between the numeric columns



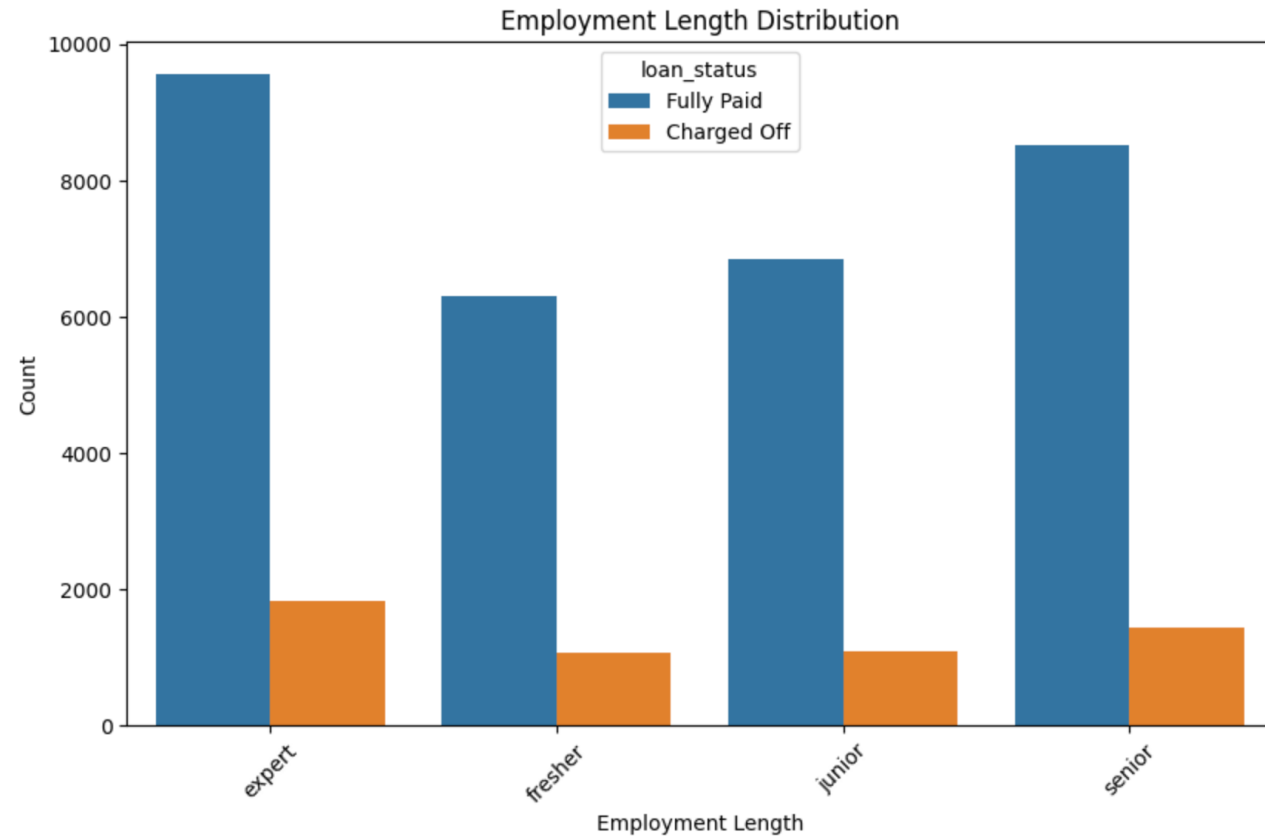
No. of fully
paid
customers vs
charged off



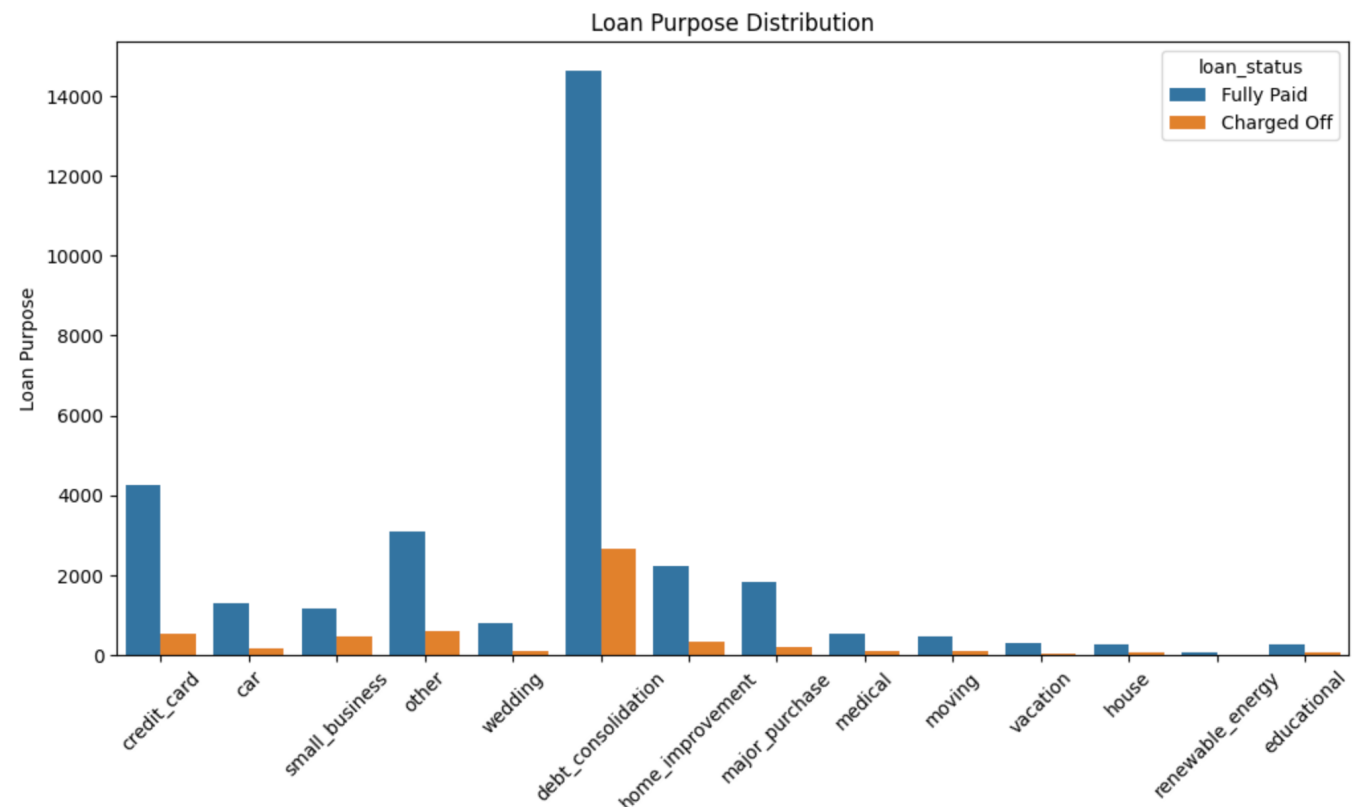
Classify loan
term affect
on loan
status



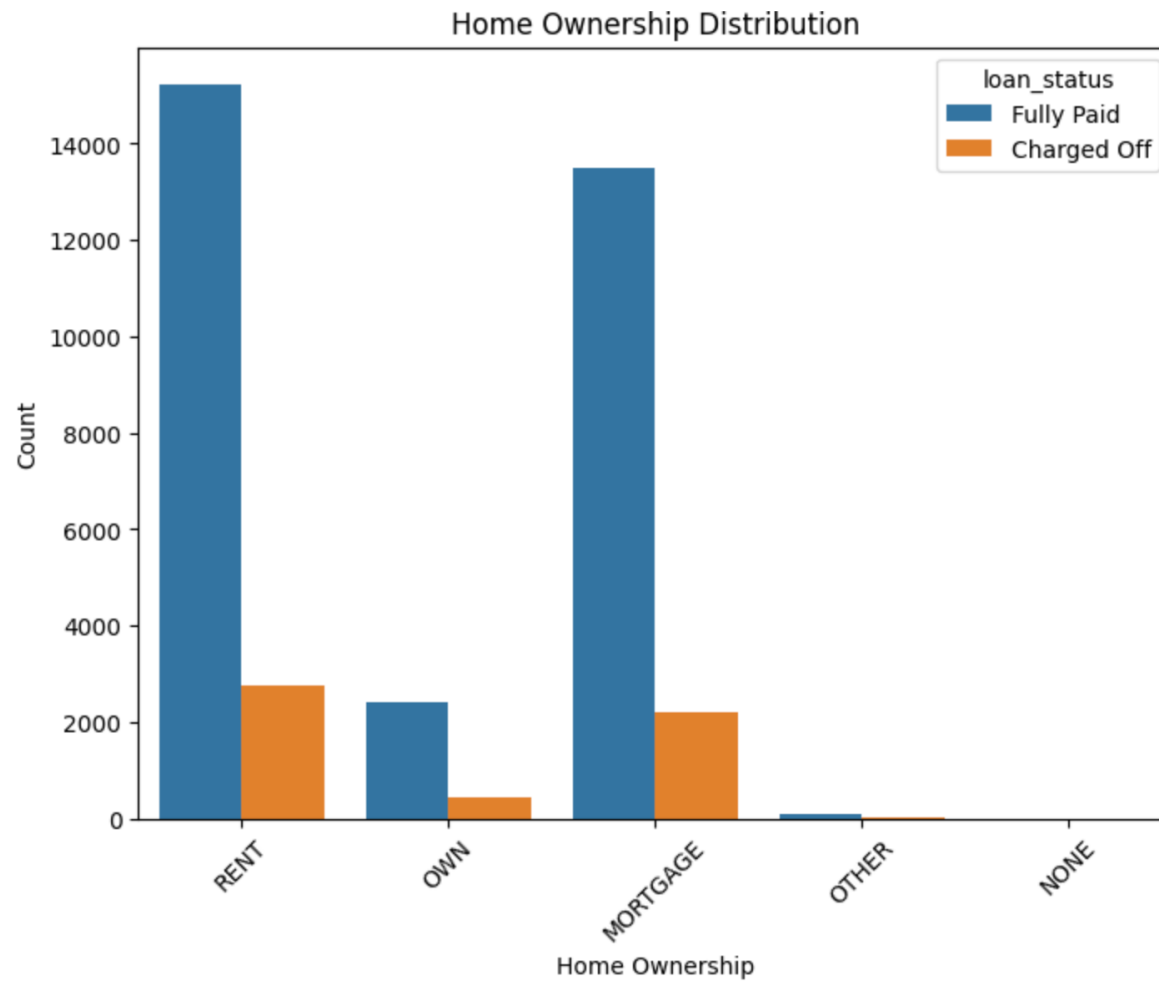
Employment
Experience
affect on
loan status



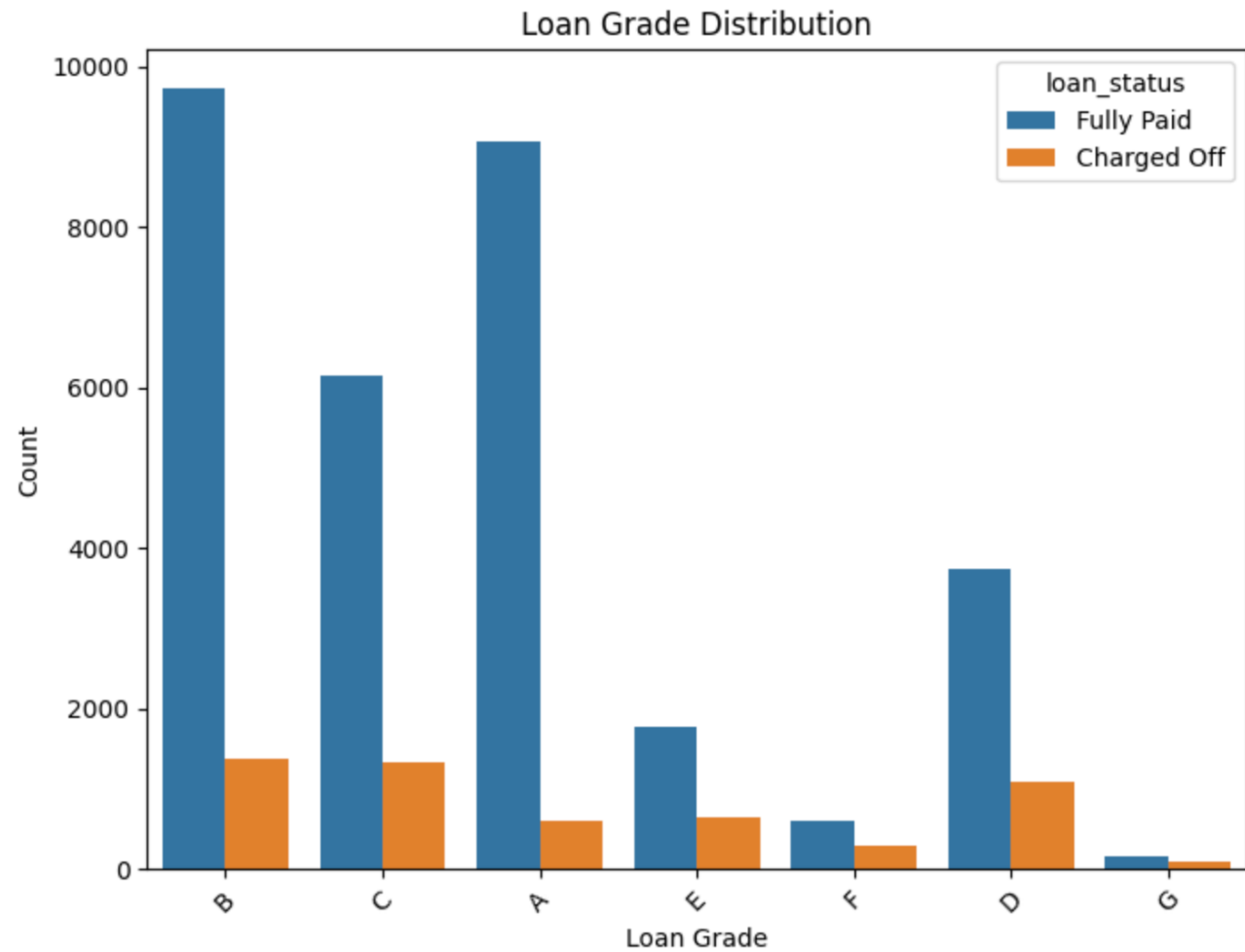
Loan type vs loan status



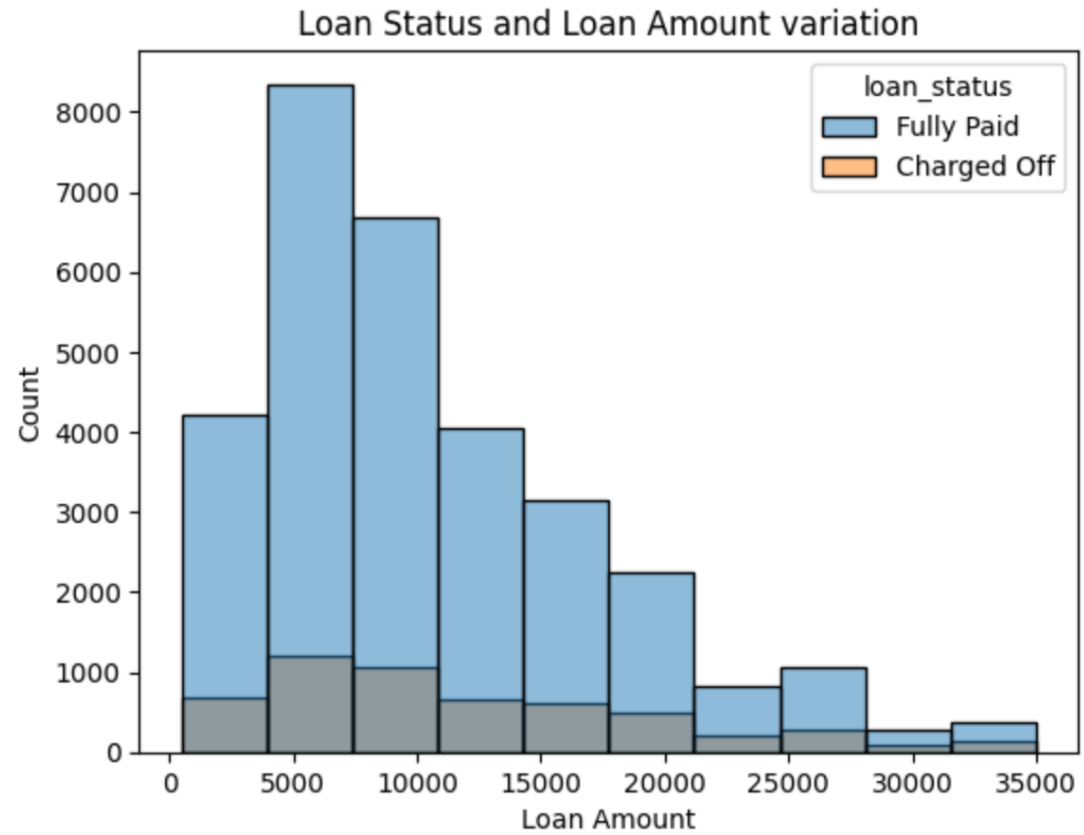
Home
ownership
effect on
loan status



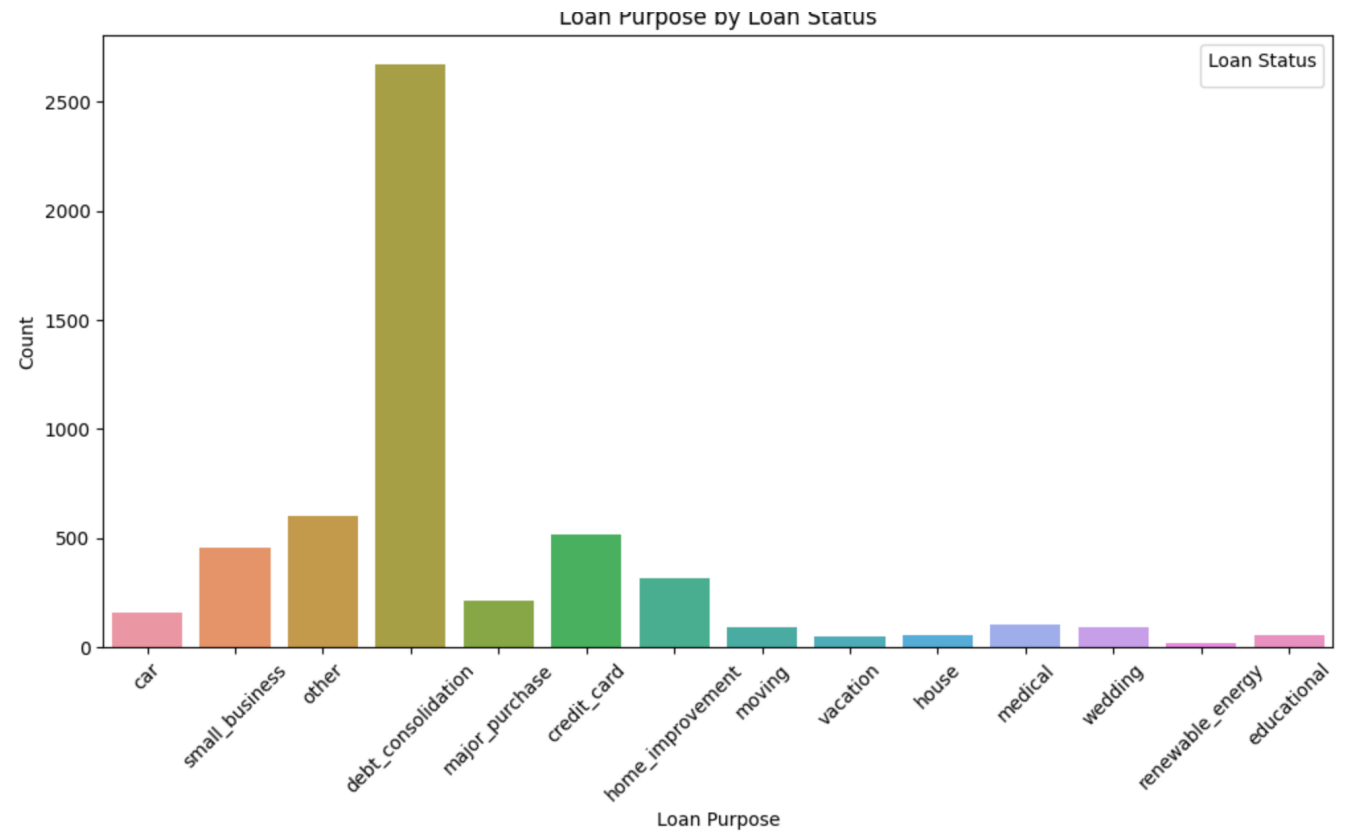
Loan grades vs loan status



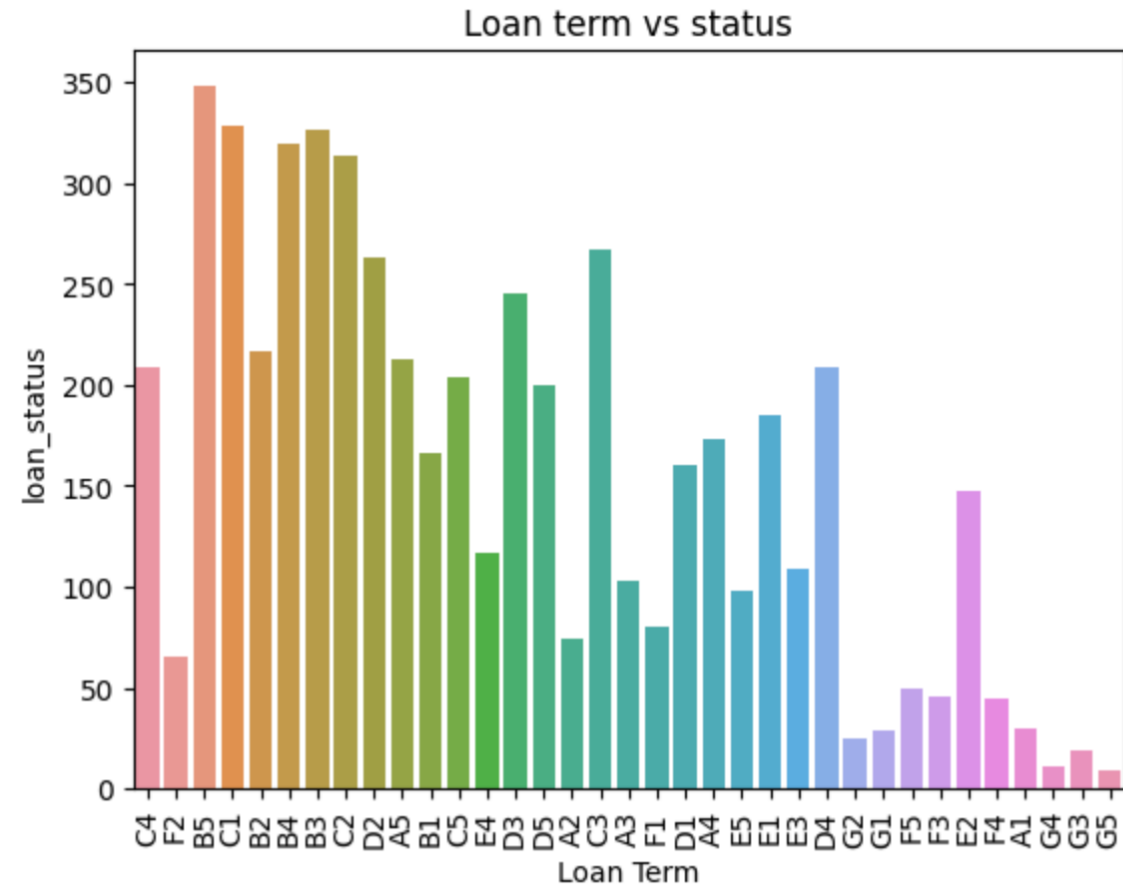
Loan status and loan amount variation



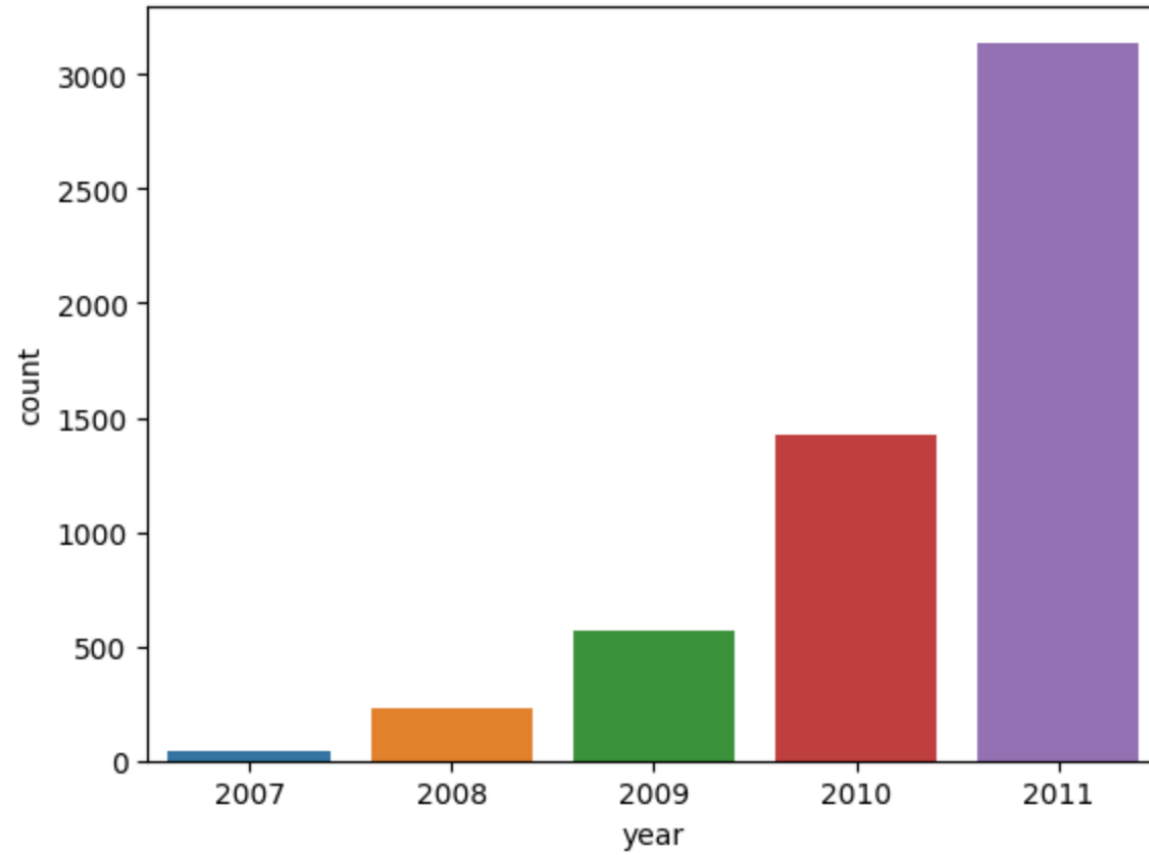
Loan type
tendency for
charged off
loan status



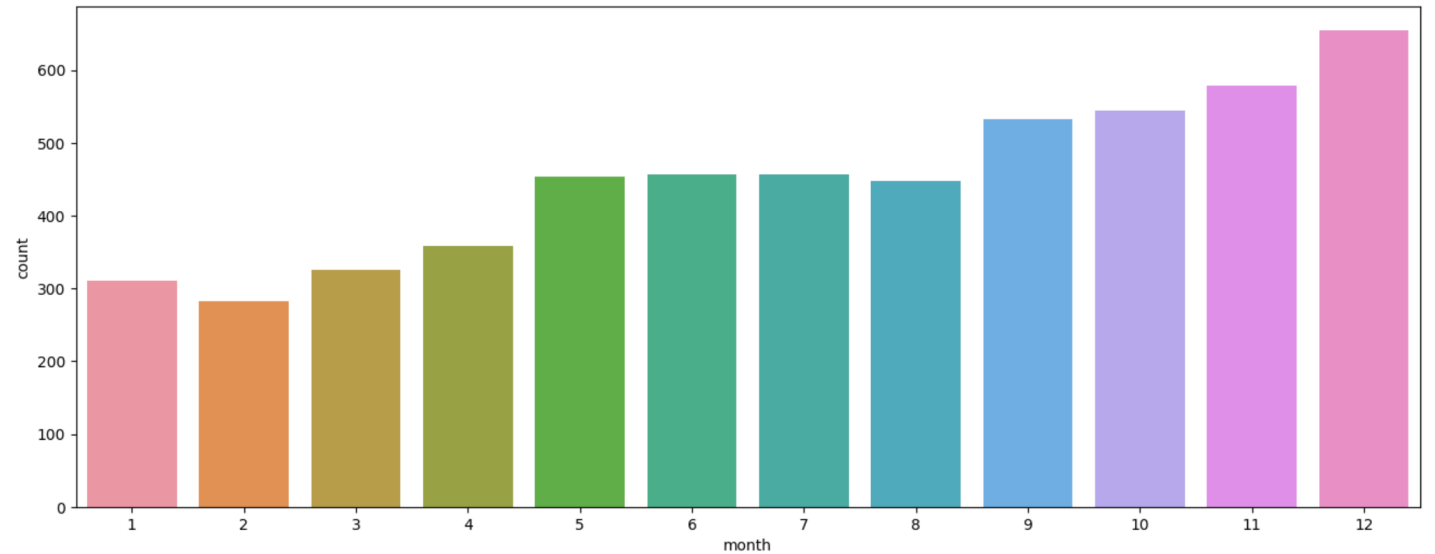
Loan sub grades vs loan status



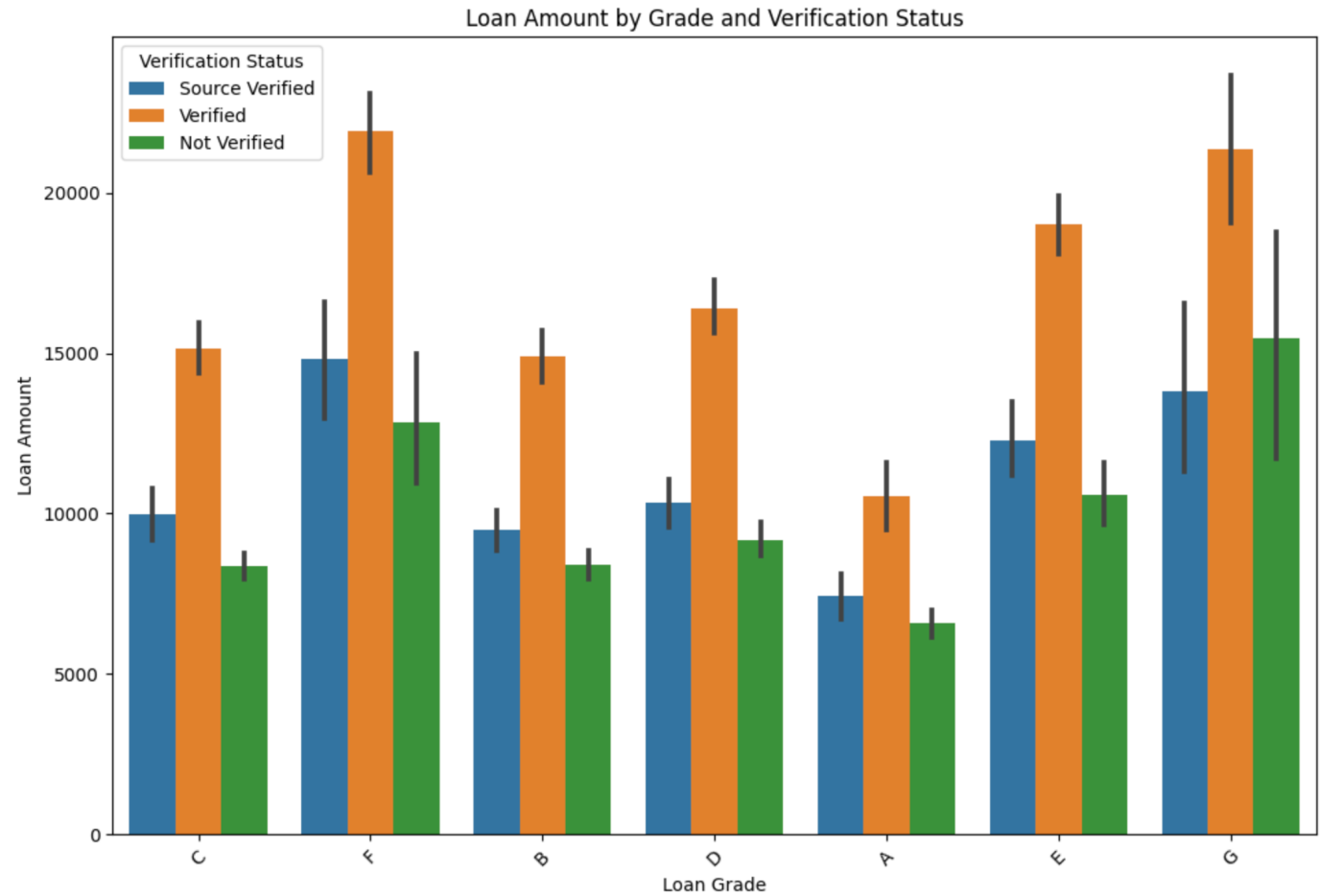
Charged off
loan over
years



Charged off
loan pattern
distribution
over months



Verification
affect on
loan status



Observations

- 14% applicants aren't paying instalments in due time.
- Applicants are more likely to pay instalments on time in short term loans.
- Applicants with more than 7 years of experience are more likely to take loans.
- Applicants are taking more loan for debt consolidation purposes.
- Applicants belongs to grade B are more likely to pay instalments on time however applicants belong to both grade b and c aren't paying instalments in due time.
- Applicants whose home ownership is 'MORTGAGE' and have loan of 14-16k.
- When the loan is verified, and loan amount is above 16k.
- For grade G and interest rate above 20%.
- Most the of Applicants have skipped due date for instalment in year 2011.
- Applicants are more likely to skip due date for instalment towards last months of the year.

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