Lending Club case study

Group members

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ABSTRACT:

- Lending club is an online loan market, lending various types of loans to urban customers.
- The main objective of this case study identify the risky loan applicants, then such loans can be reduced thereby cutting down the amount of credit loss

Problem solving methodology

Data cleaning:

- Cleaning the given data, like removing the null values, ignoring the single values and filling the missing values

Data understanding:

- Understanding the columns and its statements using the data dictionary

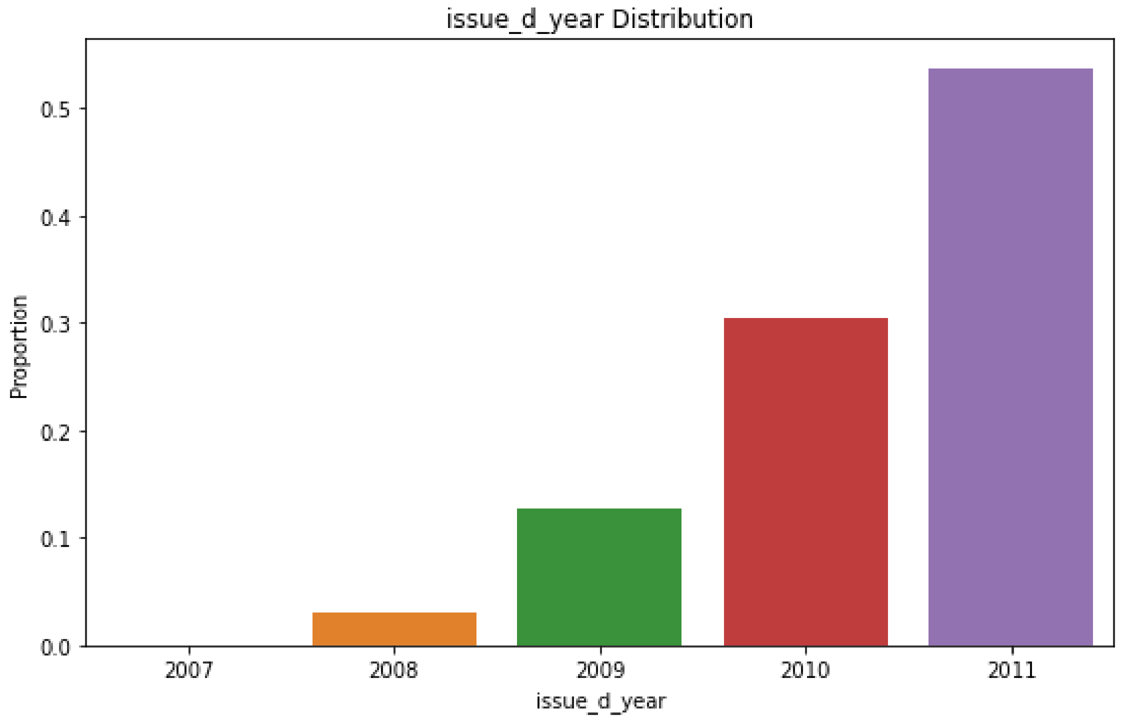
Data Analysis:

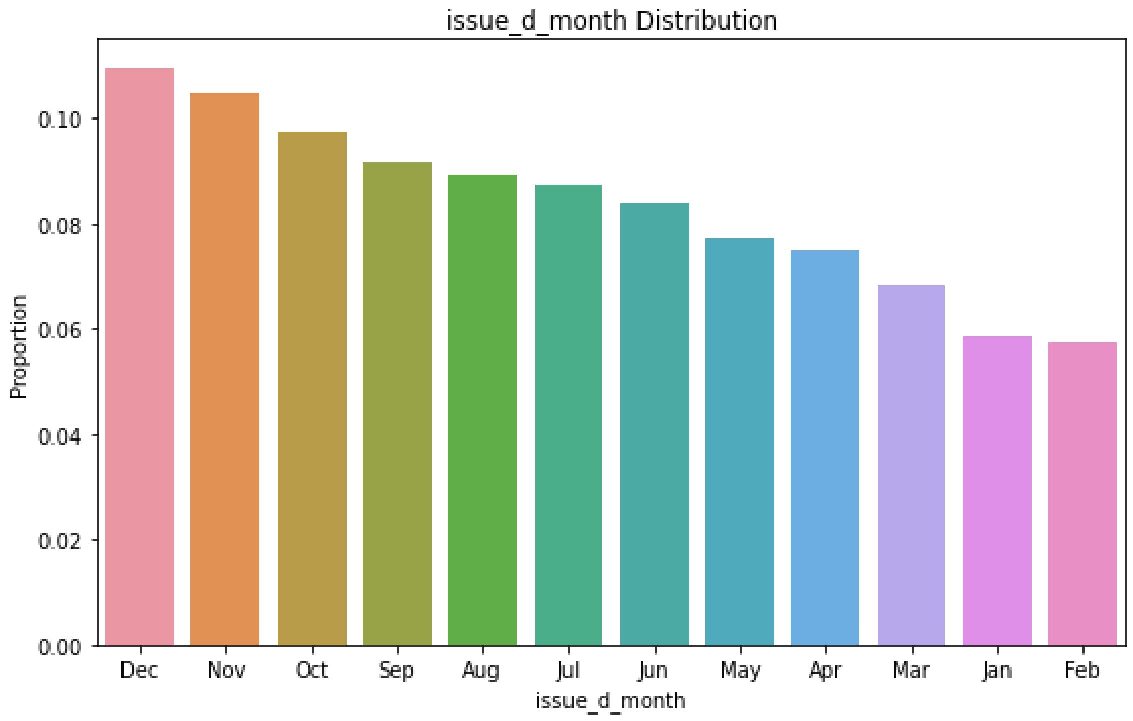
- Univariate Analysis
- Segmented univariate
- Bivariate analysis

Recommendation/ Conclusion:

- Analysing the plots and recommending the factors to reduce the credit loss and deriving significant columns.

Analysis:

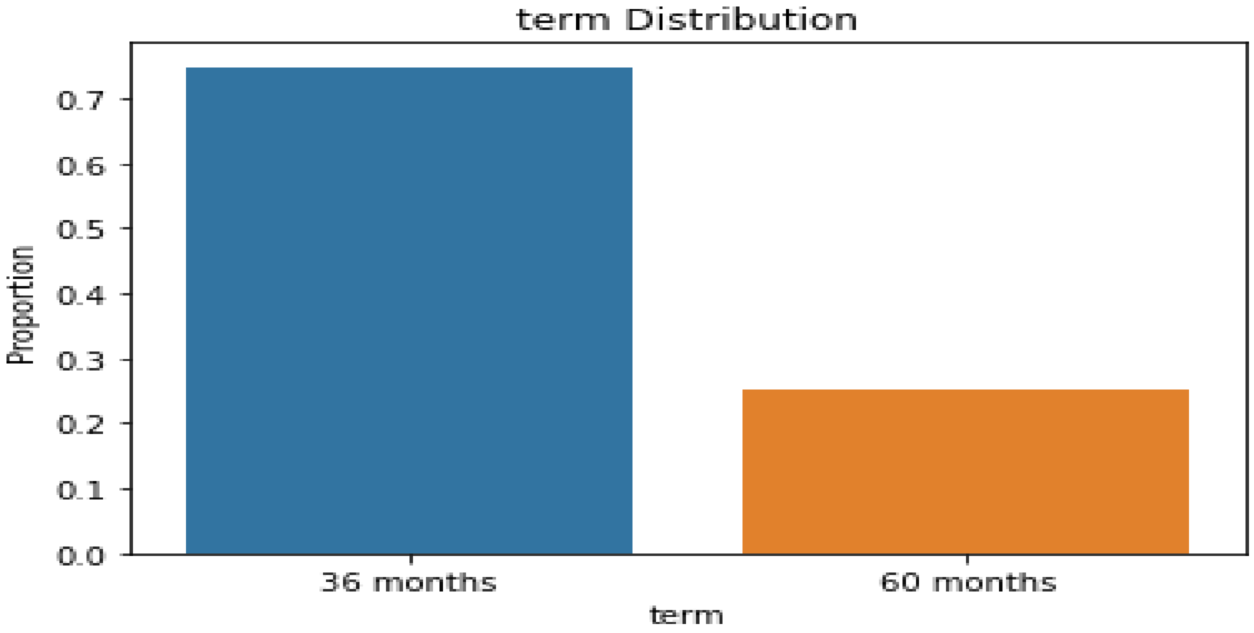




Observations:

Every year, the lending club (LC) doubles the number of loans it issues.
There have been increasing loan issues in the recent three months, including October, November, and December.

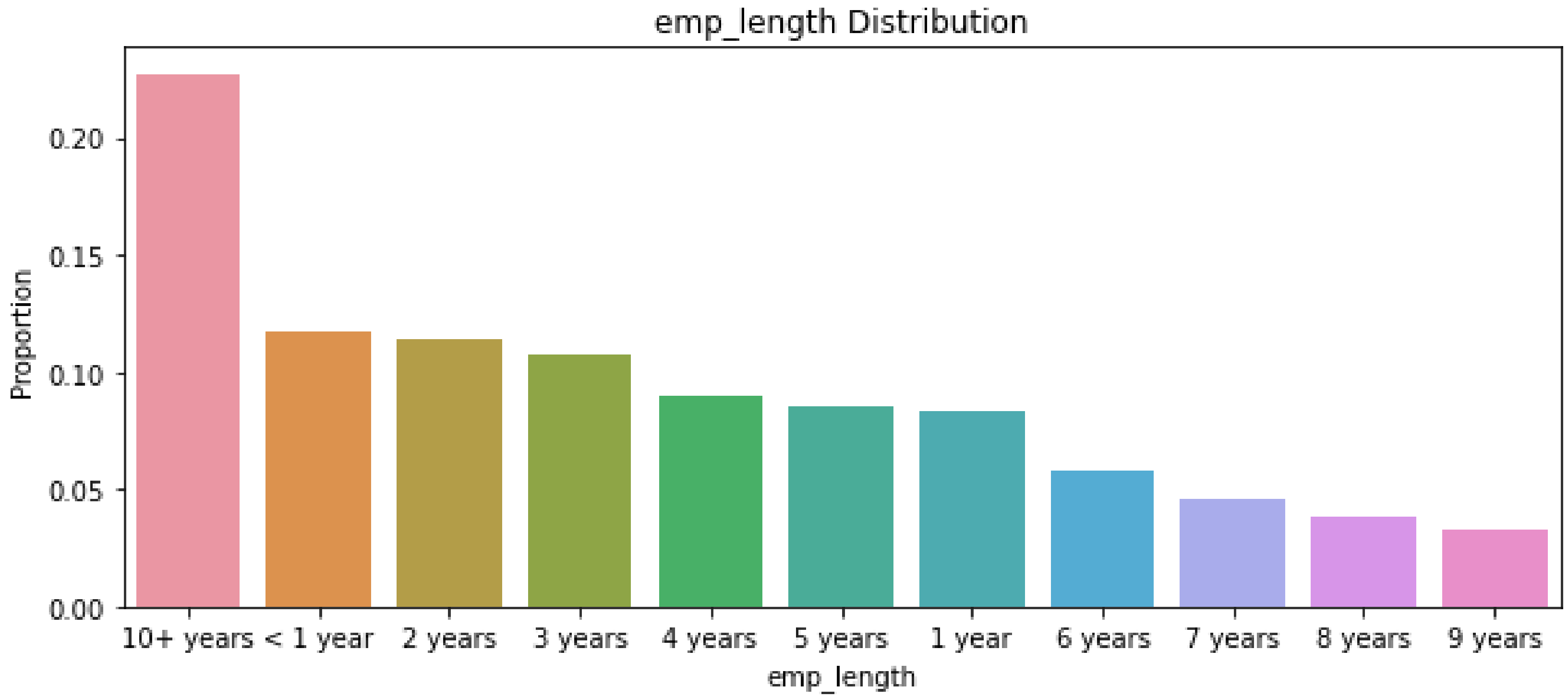
Analysis



Observations:

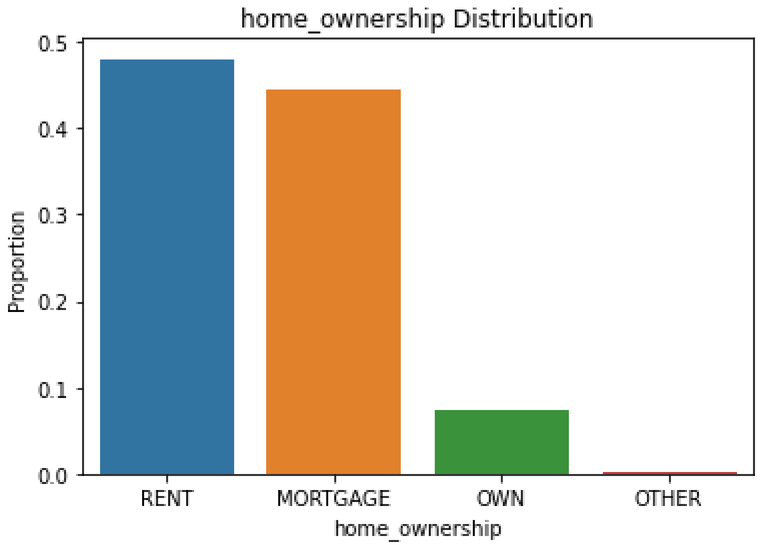
Barrows have more 36-month term compared to a 60-month tenure.

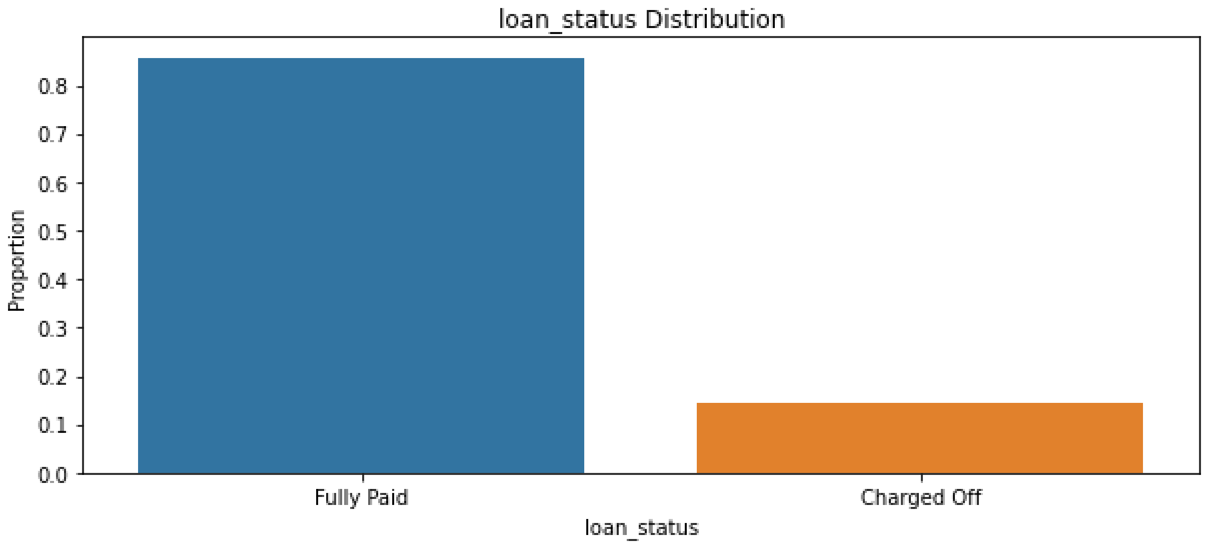
Analysis



Observation:
Borrowers are often employed for a period of 10 years or more

Analysis





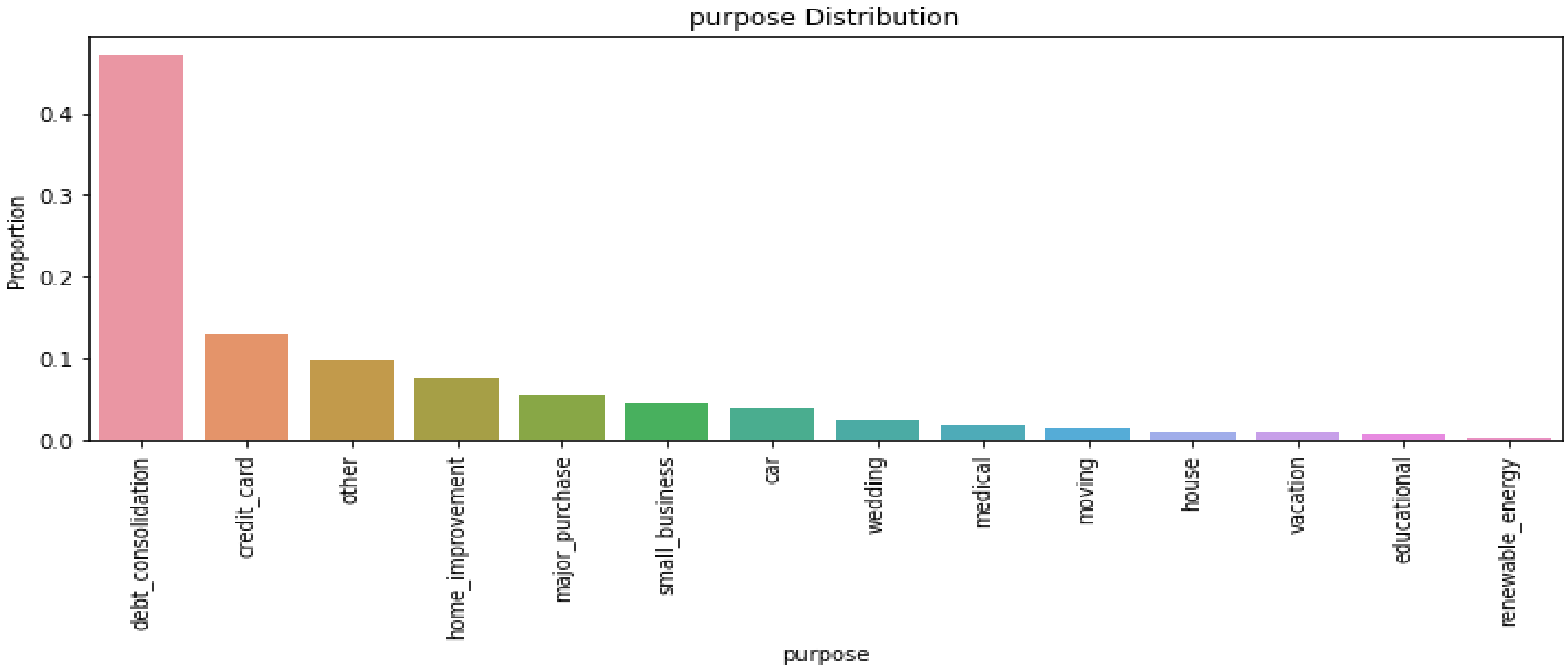
Observation:

The majority of loan debtors own rented or mortgaged homes.

Observation:

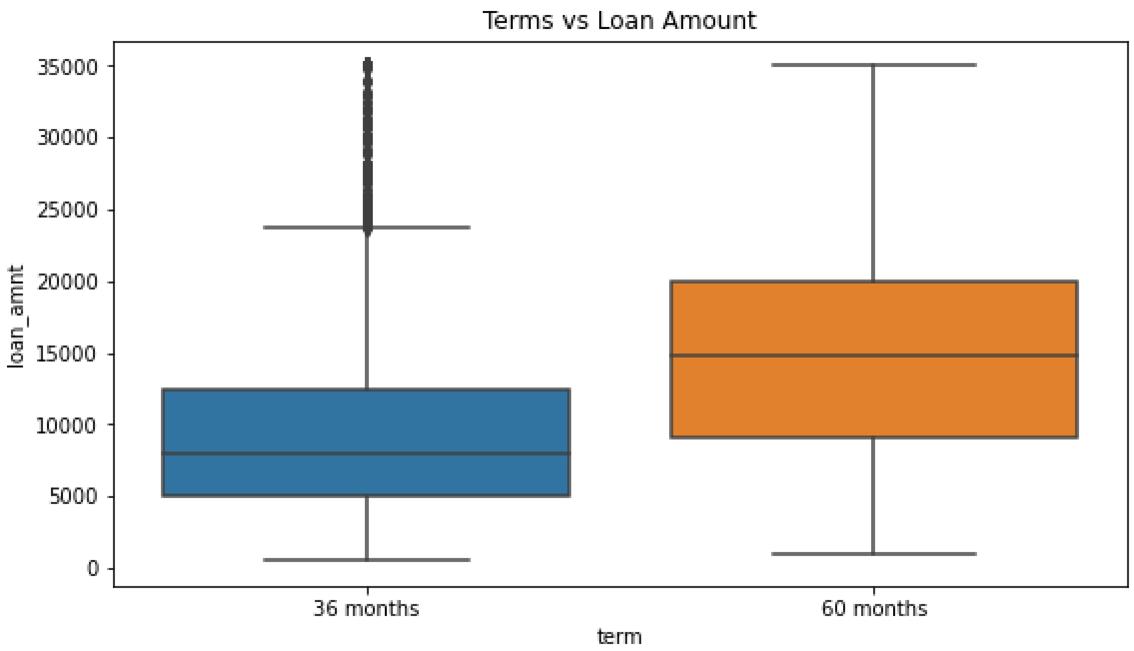
The loan has been paid in full by 85 percent of borrowers. There are 14 percent of those who have defaulted on their loans.

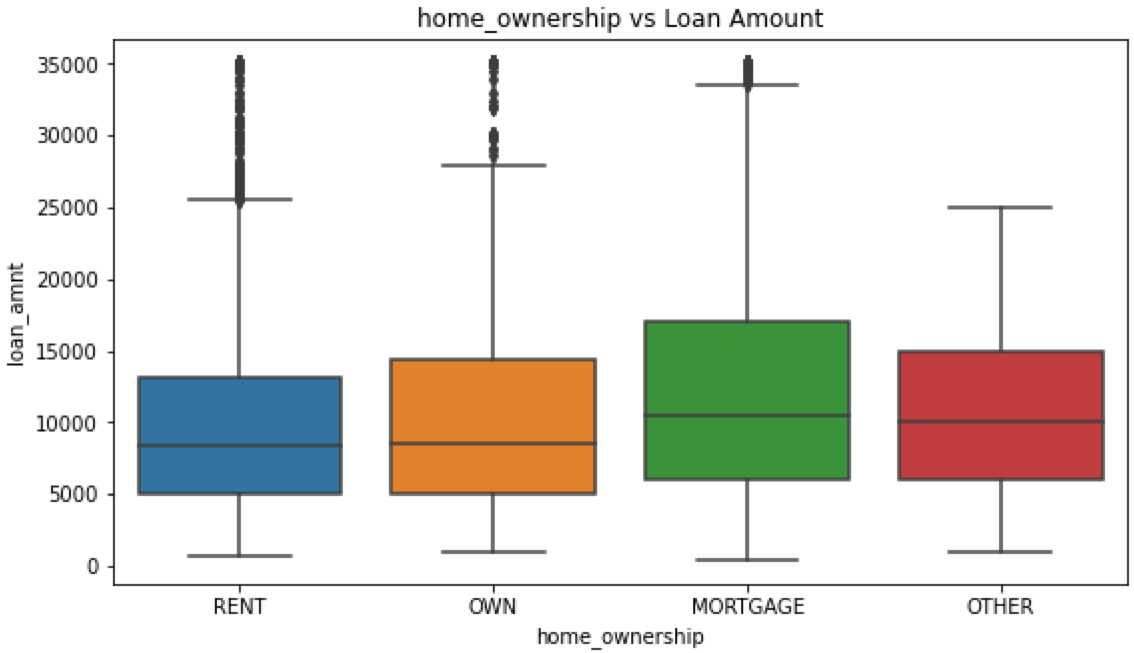
Analysis



Observation:
It appears that a greater number of people took out loans for debt consolidation, whereas only a few people took out loans for renewable energy.

Analysis





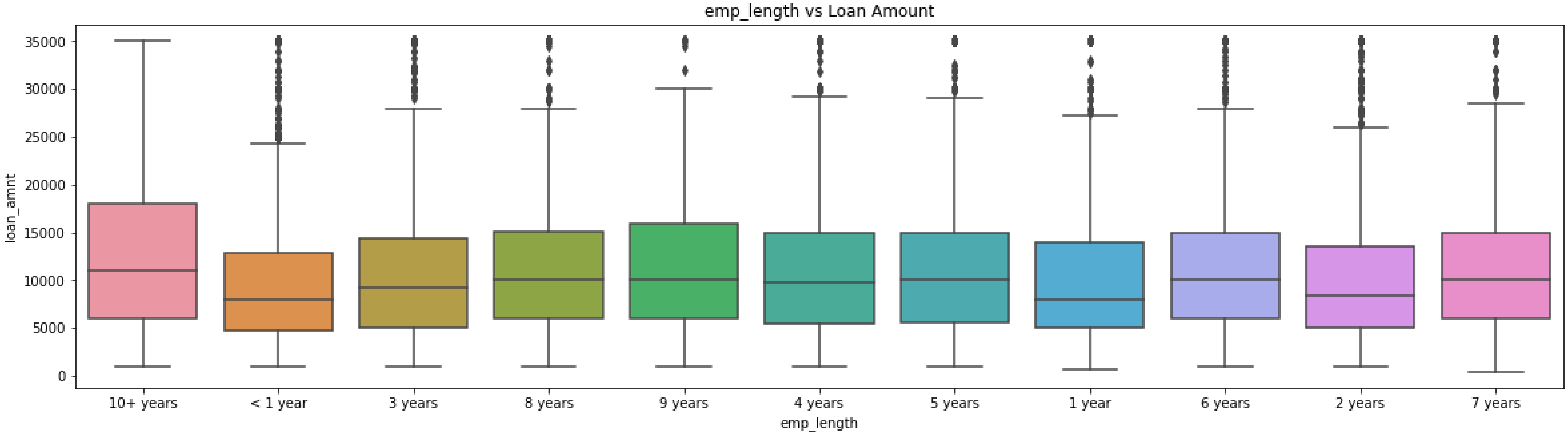
Observation:

Higher-value loans have a longer repayment period of 60 months.

Observation:

MORTAGE owned borrowers have a higher percentage of borrowers and a higher median loan amount.

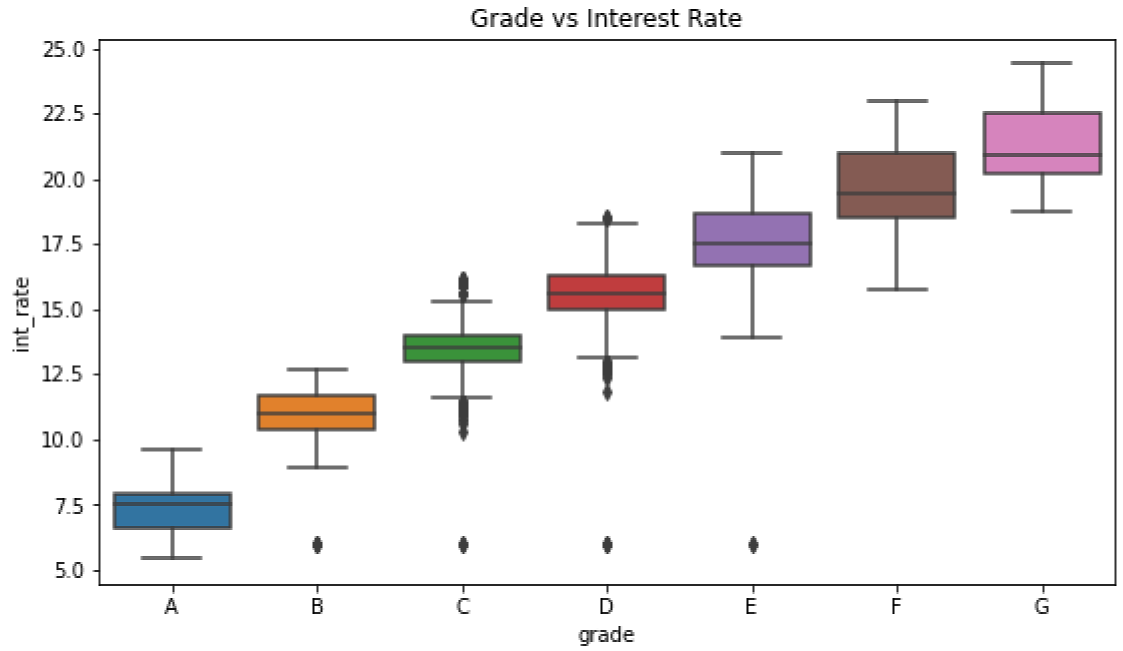
Analysis

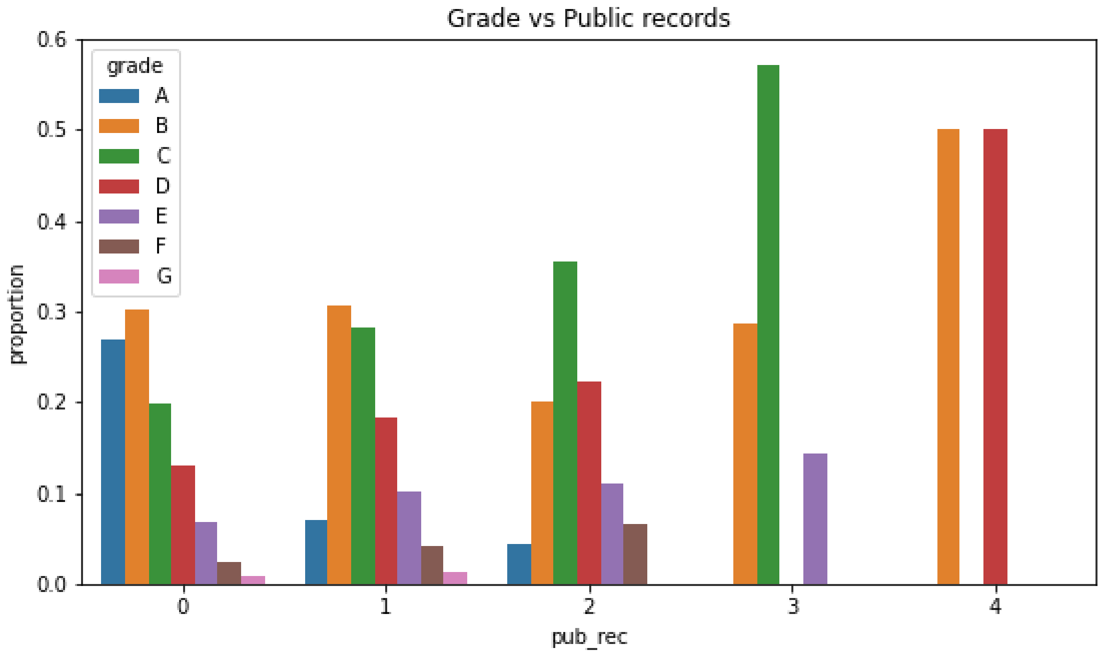


Observation:

The majority of borrowers have been in debt for ten years or more, with the shortest term being one year.

Analysis





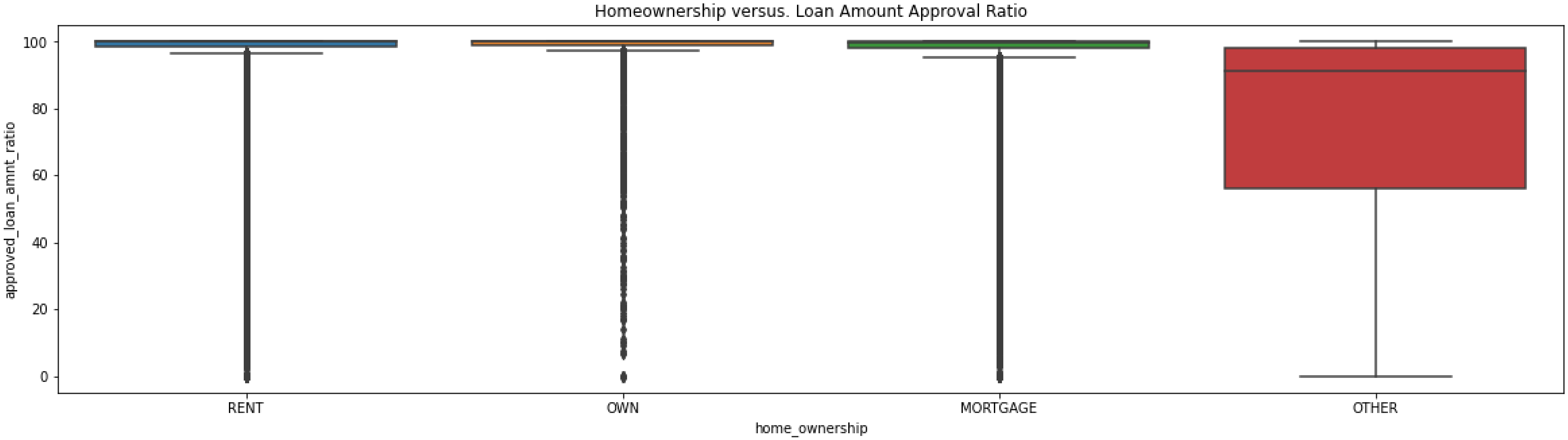
Observation:

when grades decline, interest rates are rising (A to G)

Observation:

We can see that the grades have a consistent trend. People in A grades have fewer unfavorable records than those in lower grades. People with exceptional C, D, and E grades have high pub_recs.

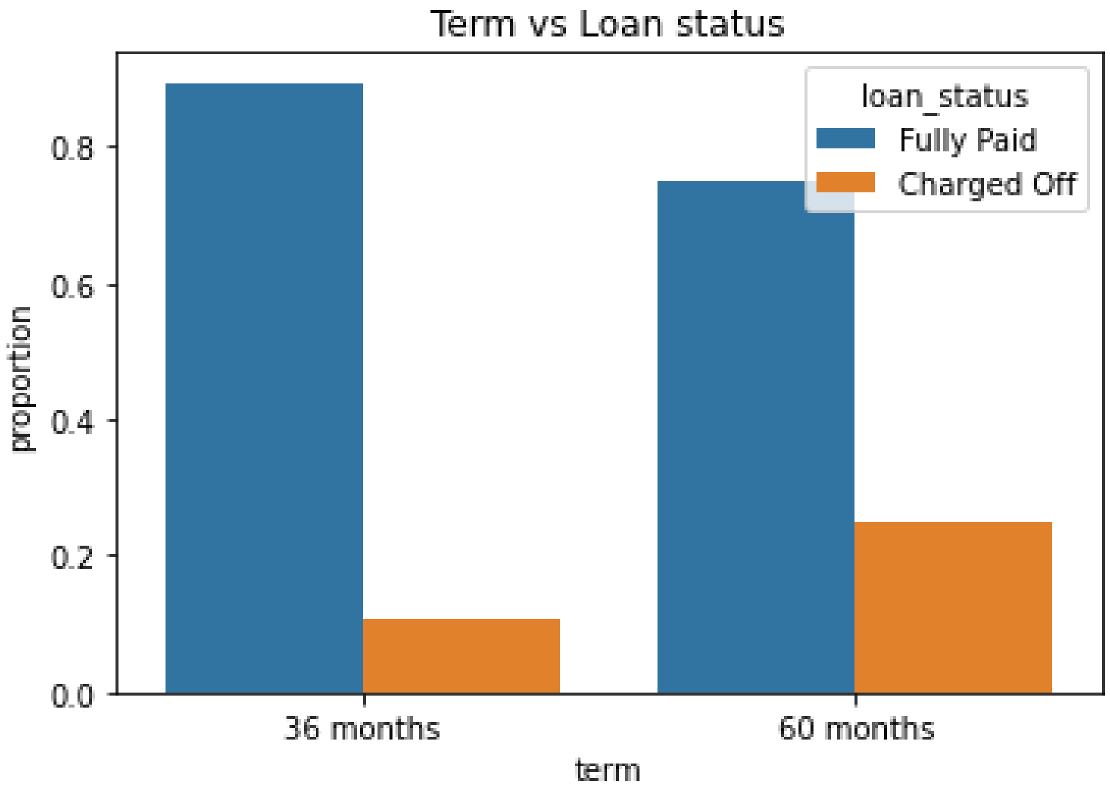
Analysis



Observation:

Borrowers who own other homes have a lower approved ratio, which means they received less money than they requested.

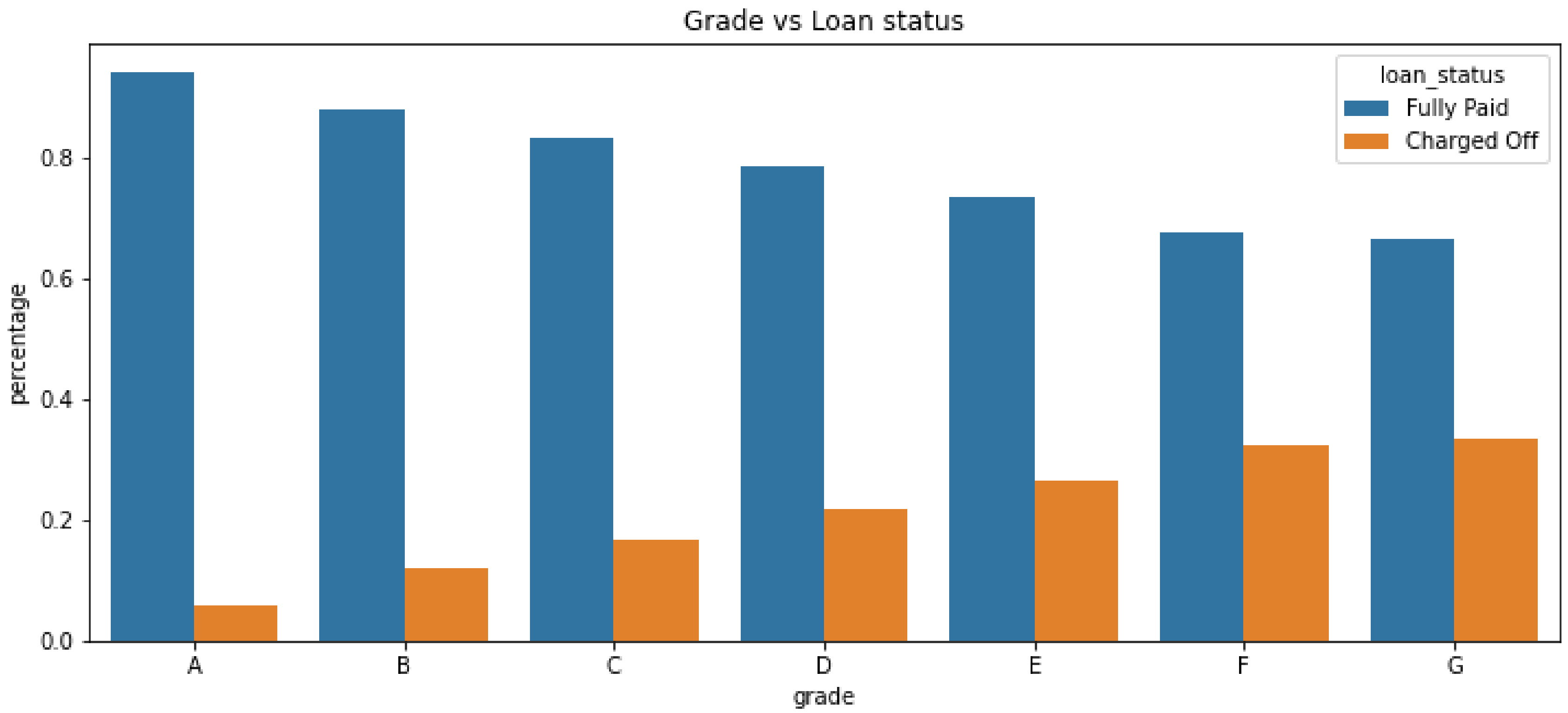
Analysis



Observation:

It appears that borrowers defaulted on their loans at a higher rate in the 60-month period than in the 36-month period. In addition, the Fully Paid rate is greater after 36 months.

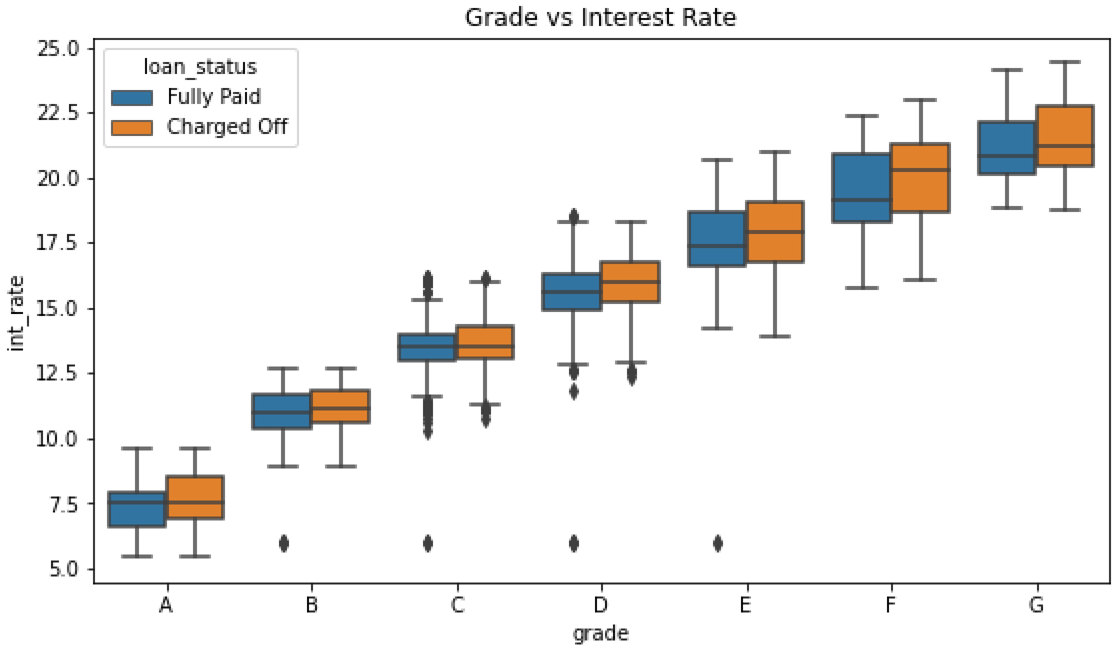
Analysis

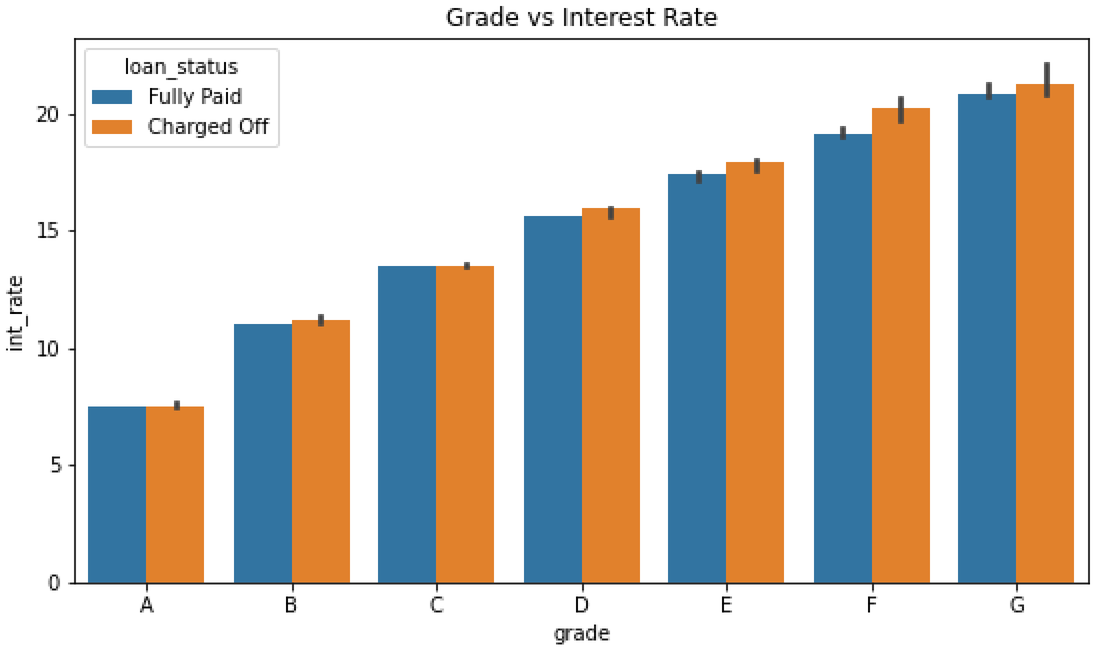


Observation:

The Charged off increases as grades decline, as shown on the graph above.

Analysis

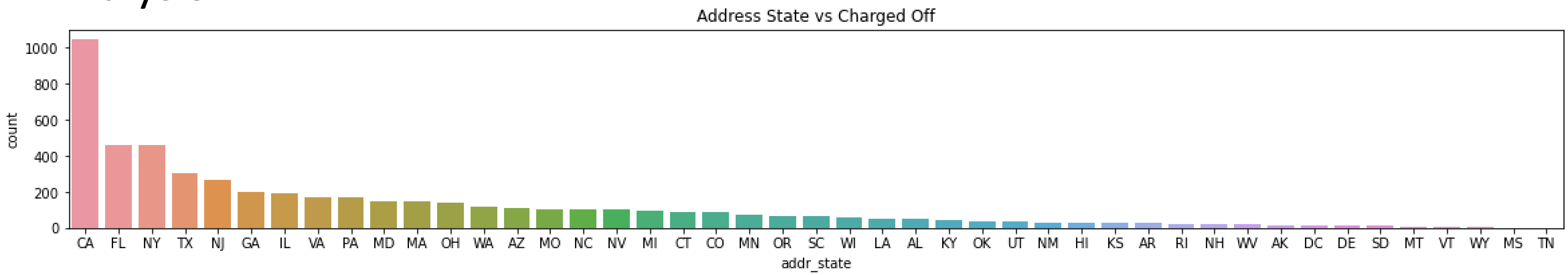


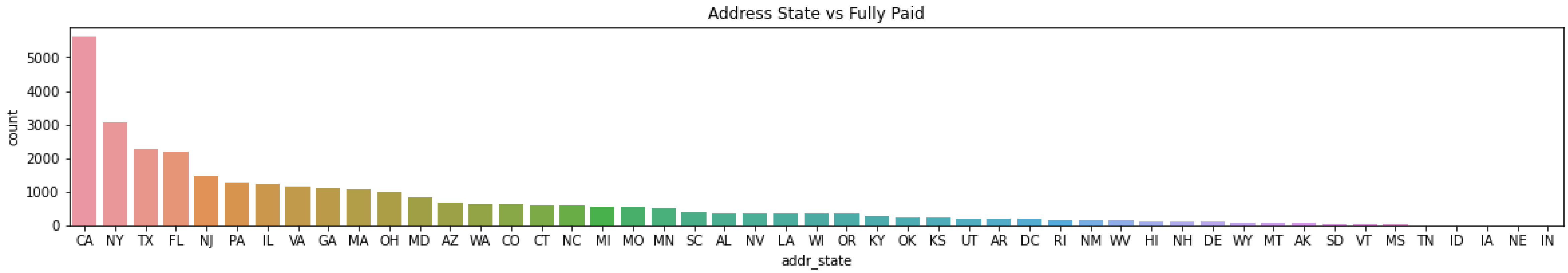


Observation:

The interest rate gradually rises as the grade falls. They are becoming increasingly prone to defaulting on their loans.

Analysis





Observation:

Borrowers defaulted in greater numbers in CA, FL, and NY.

Recommendation/Conclusion

Significant columns:

- Loan Status
- **Term**
- **Interest rate**
- Grade
- **Home ownership**
- Address state
- **Loan Amount**
- **Emp length**
- **Purpose**
- Loan issue date

Highlighted columns are the fields contributing more for loan default.

Recommendation/Conclusion

- Lending Club should minimize the high-interest loans with a 60-month repayment period because they are prone to default.
- Grades are a good metric for spotting defaulters; nevertheless, before issuing loans to low-grade borrowers, the lending club should gather extra information from the borrowers (G to A).
- To make money, lending club should limit the quantity of loans they provide to borrowers from CA, FL and NY.
- Small business loans are more likely to default. Lending Club should halt or reduce the amount of money it lends to them.
- Borrowers who own their homes and have a mortgage are accepting larger loans and defaulting on their approved loans. When the loan amount sought exceeds $12000, Lending Club should stop making loans to this group.
- People with a higher number of public negative records are more likely to file for bankruptcy. Lendong club should ensure that the borrower has no public derogatory records.