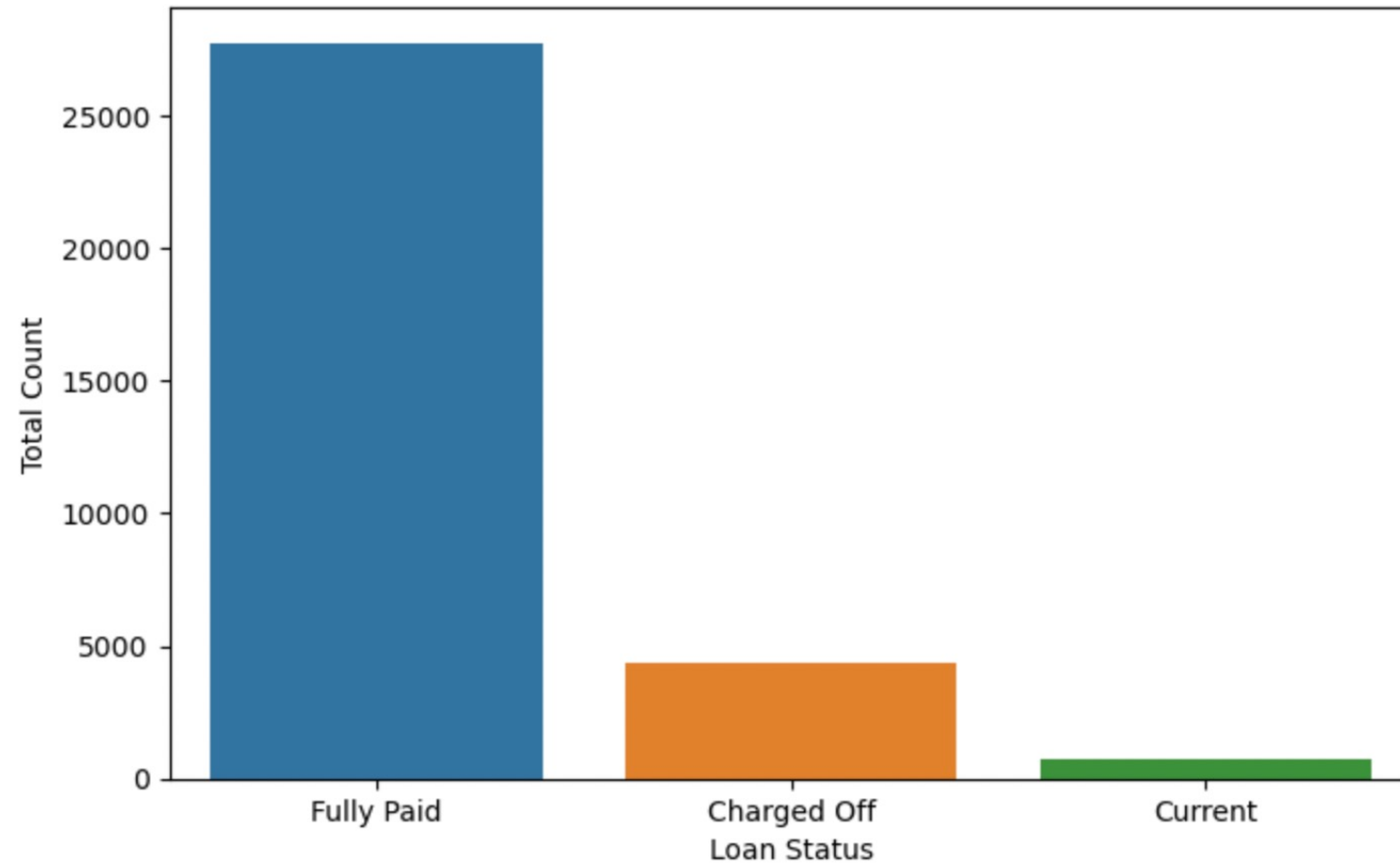# Lending Club Case Study

upGrad and IIITB Machine Learning & AI
Program – Jan 2024

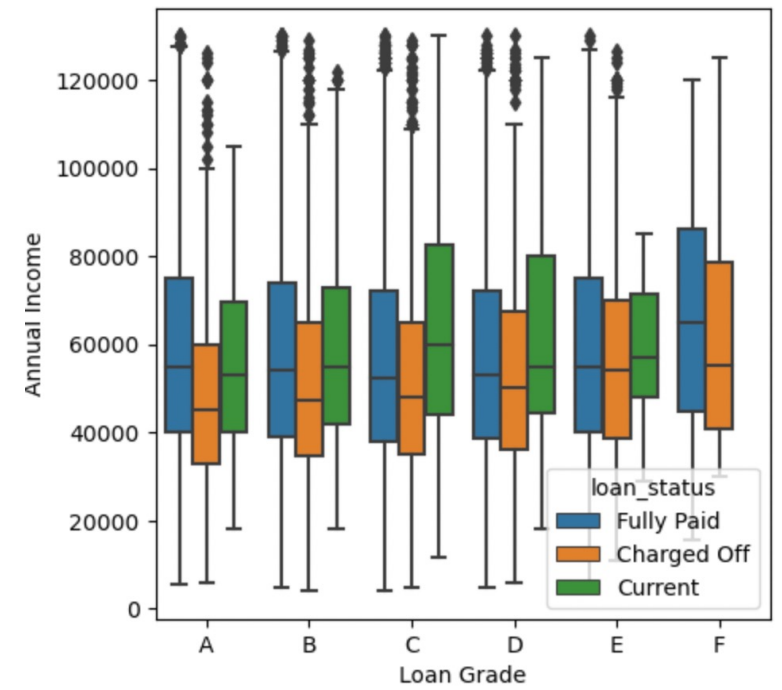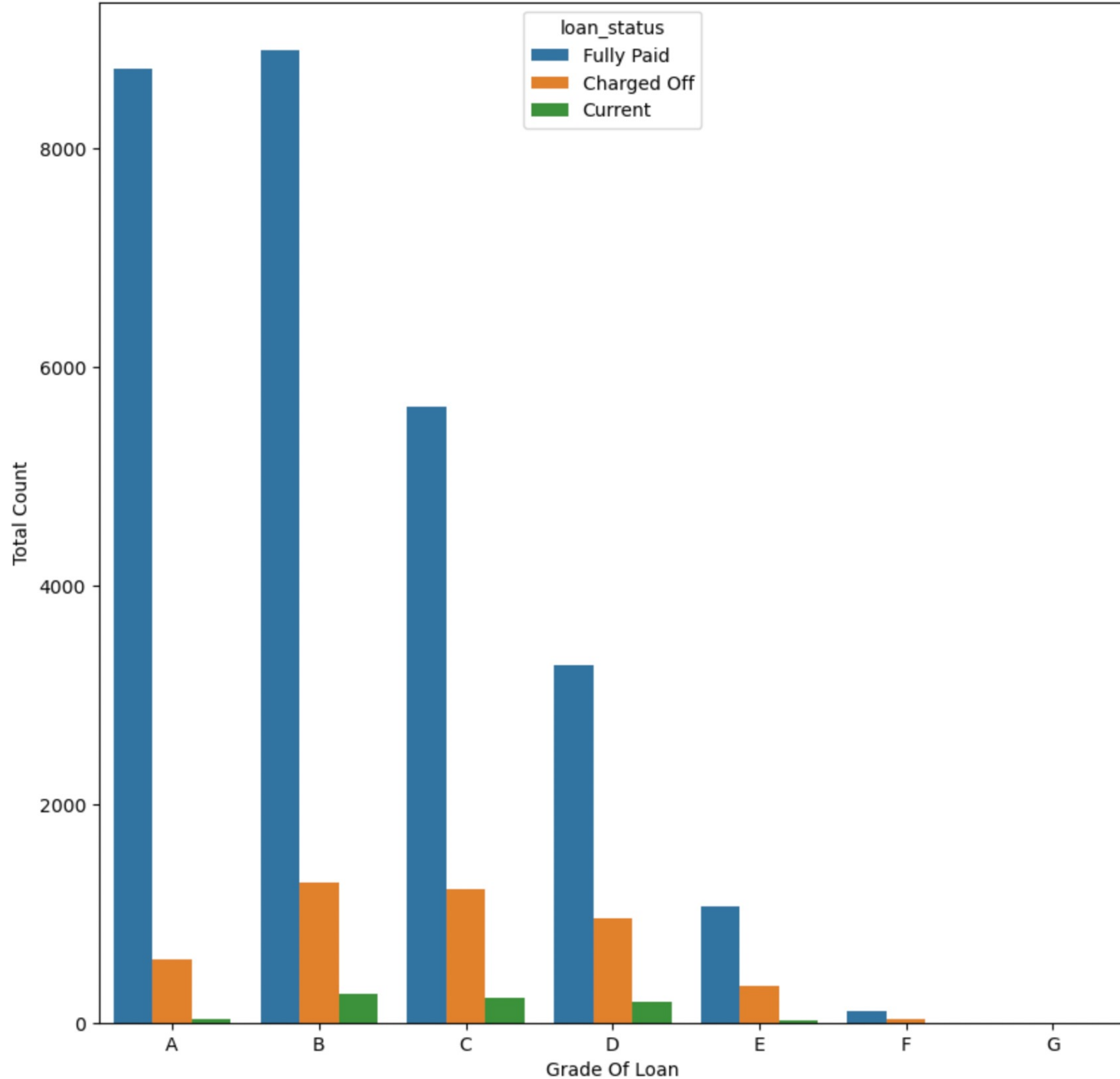**Group Members:**

Kritika Sharma

Abhijit Baliar Singh

Case study of a dataset that revolves around loan applicants and details of whether they paid the loan on time or not.

Overall, 84% applicants fully paid the loan while roughly 12% defaulted.
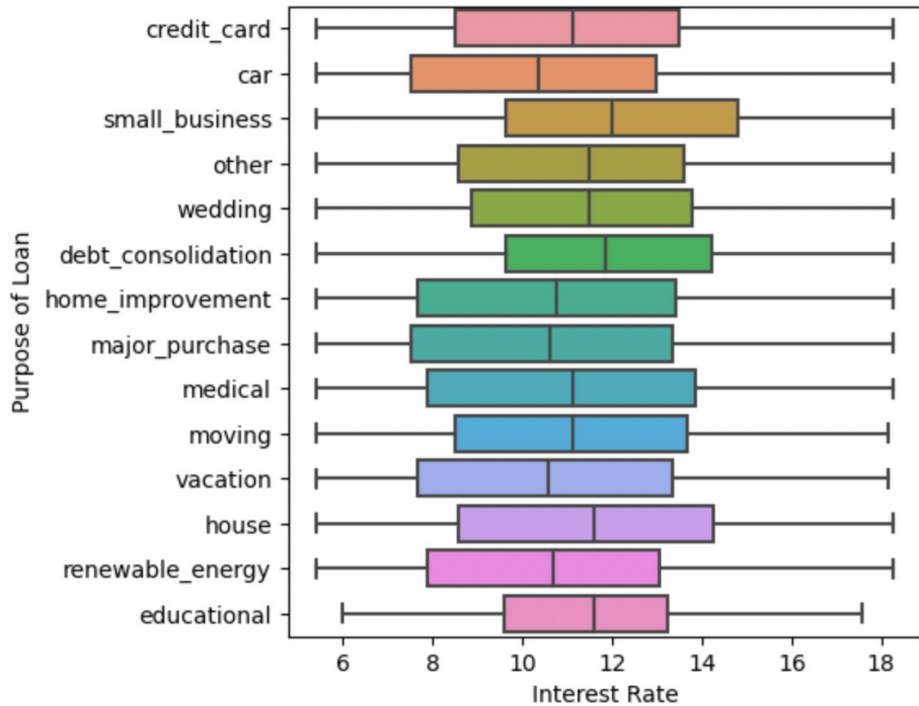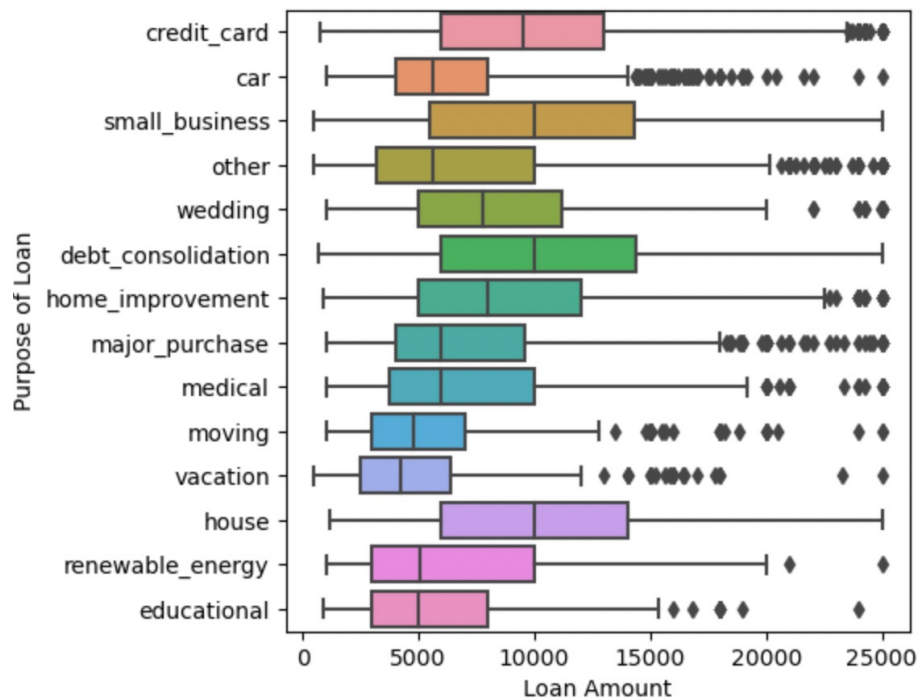
Maximum defaulters were in loan grade B and C.

When loan grade and annual income were compared, the defaulter grades seemed to have lowest incomes out of all the grades.

Maximum defaulters took loan for the purpose of debt consolidation, small business and credit cards.
However, debt consolidation was a heavy majority at 47.7%
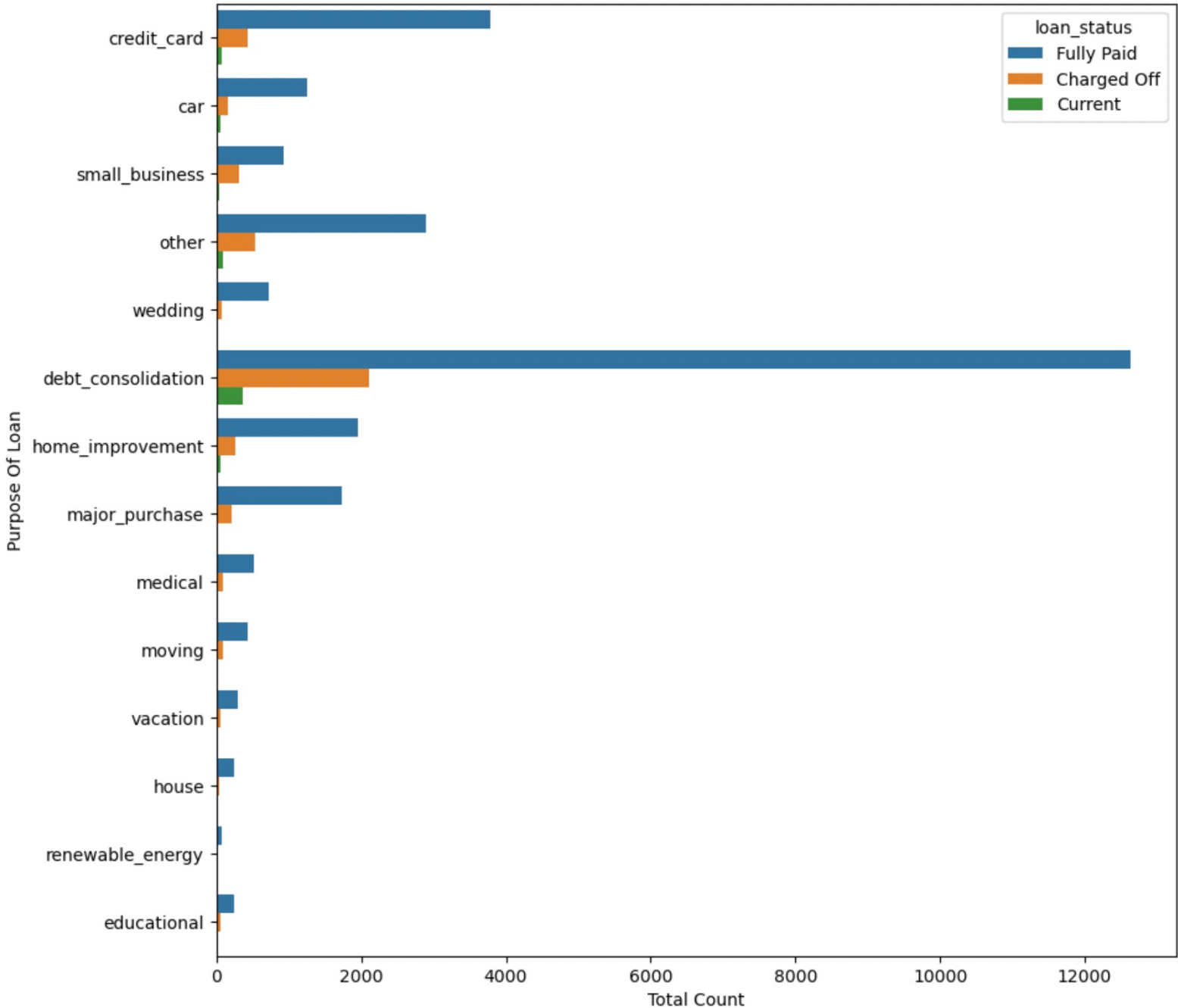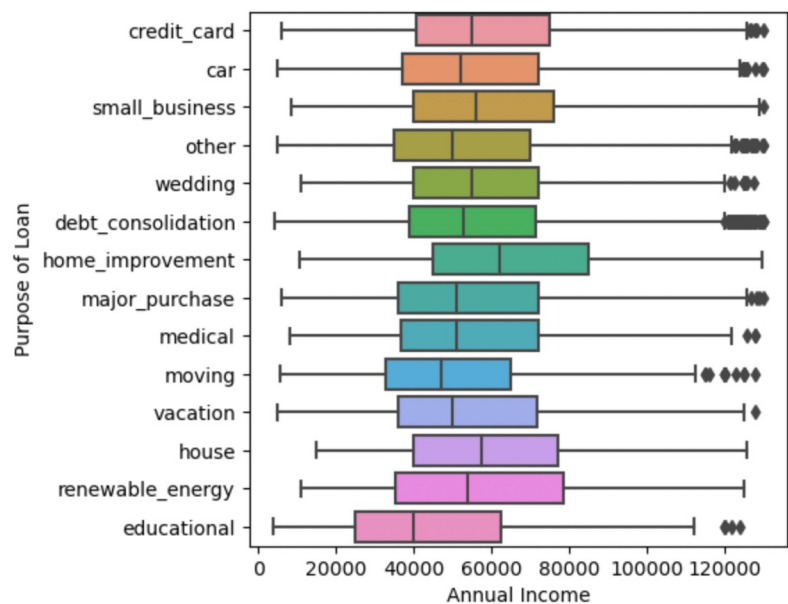
Debt consolidation had higher interest rates, higher loan amounts and lesser income groups which might explain why debt consolidation had the highest number of defaulters.
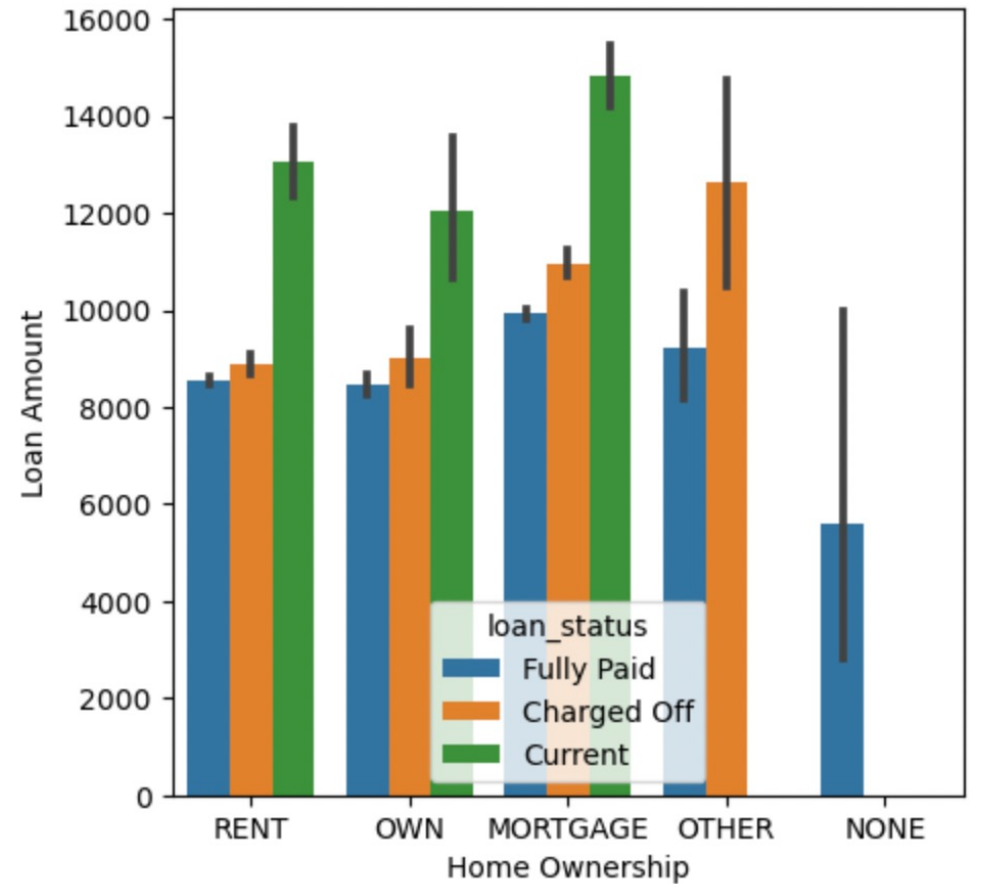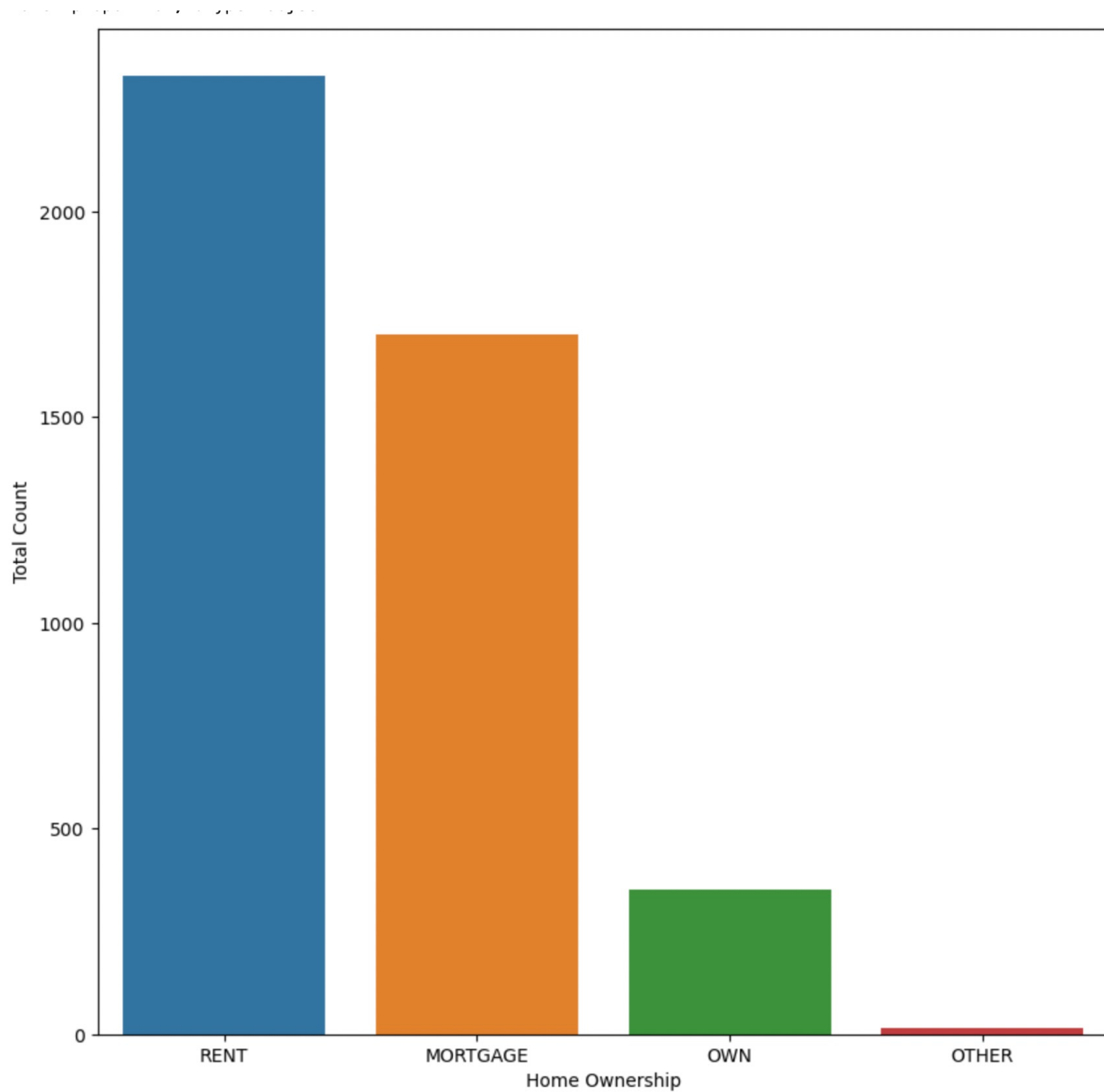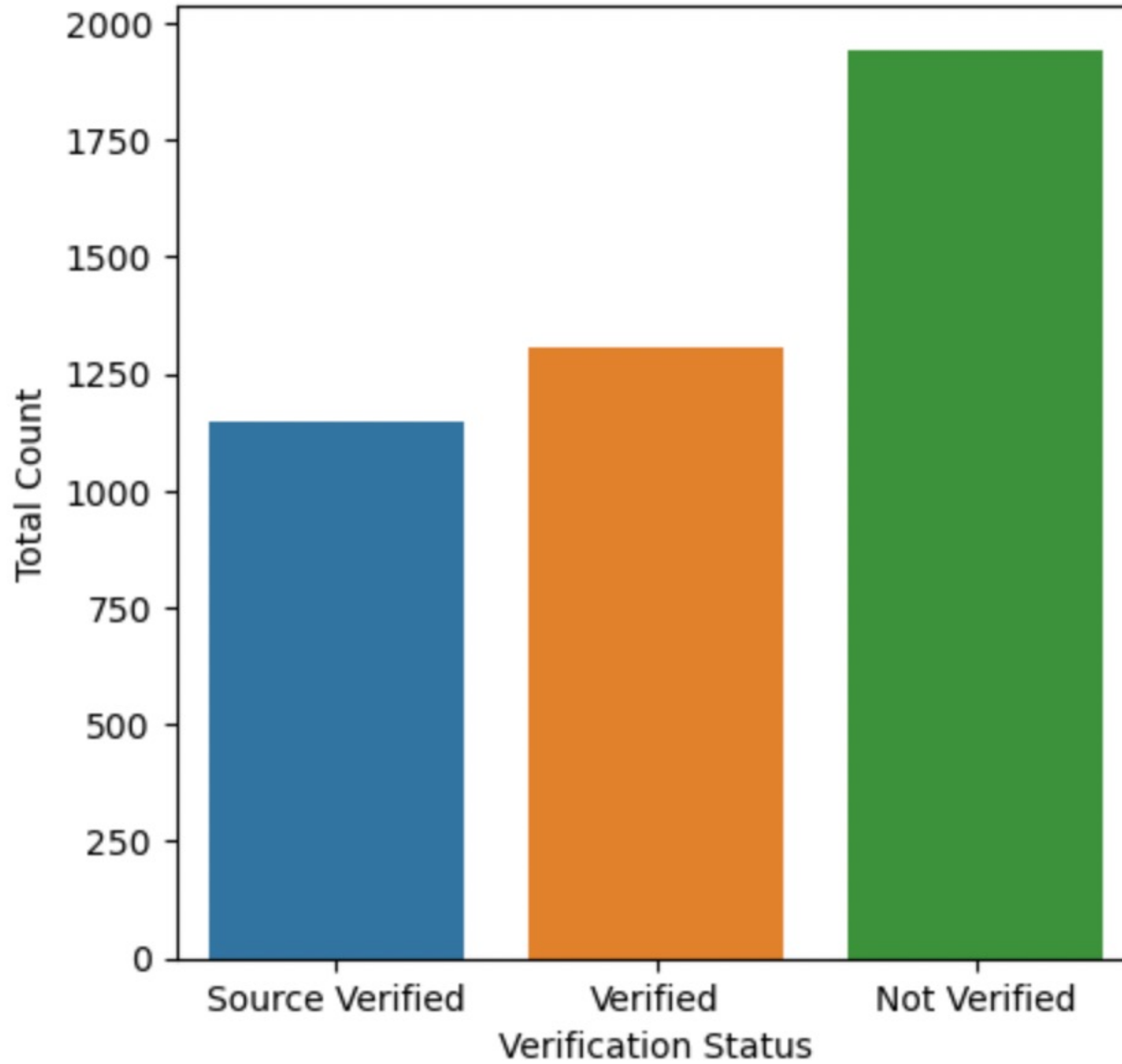
Applicants who were on rent or mortgage defaulted more than applicants who owned houses.

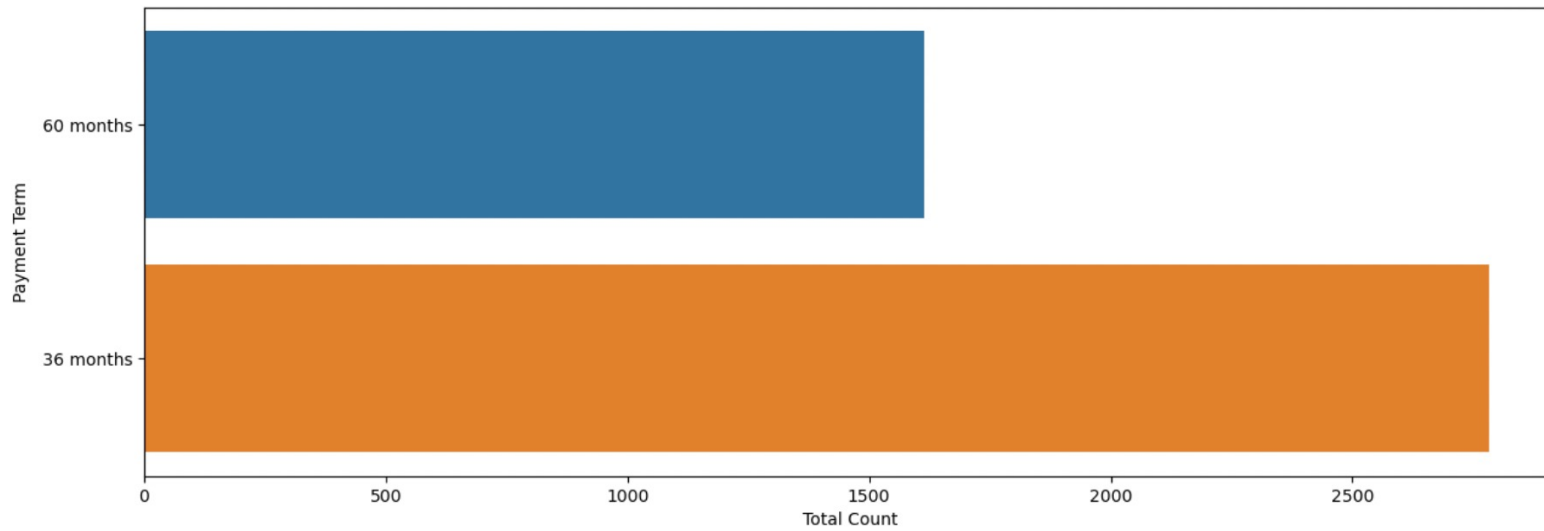The requested loan amount was highest for mortgage home ownership .
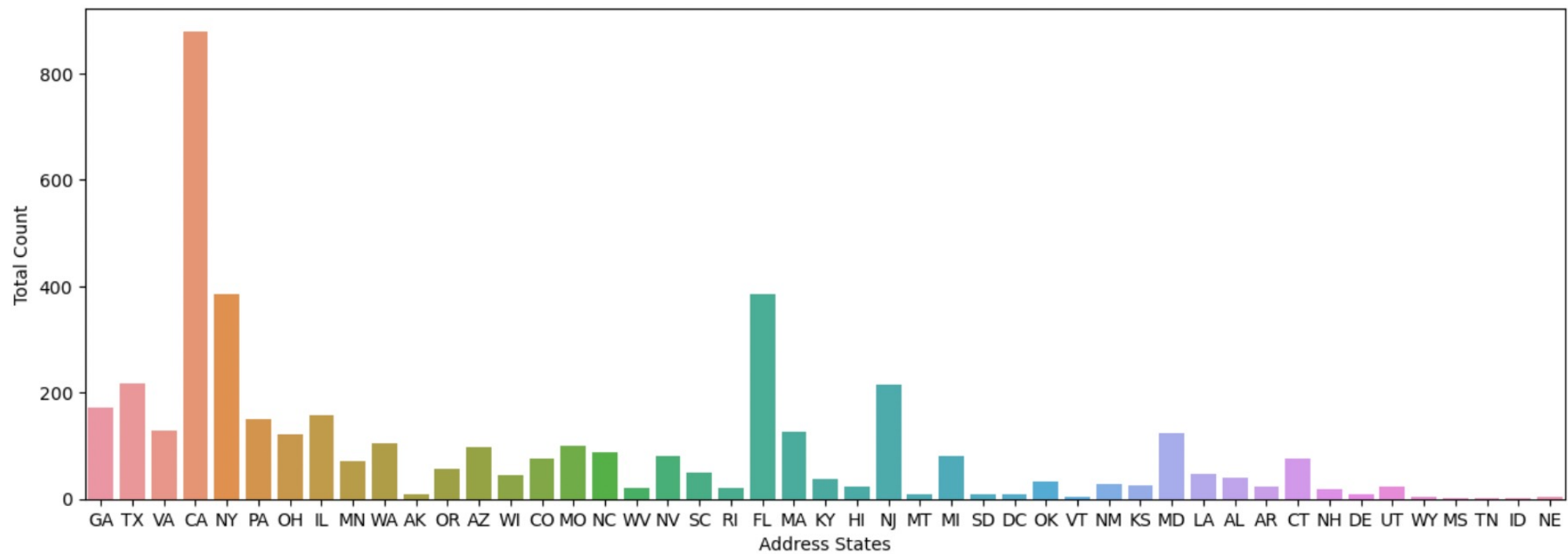
Out of all the states, California, New York and Florida had the highest rate of defaulters.

Majority of defaulter applicants were not verified by the bank.
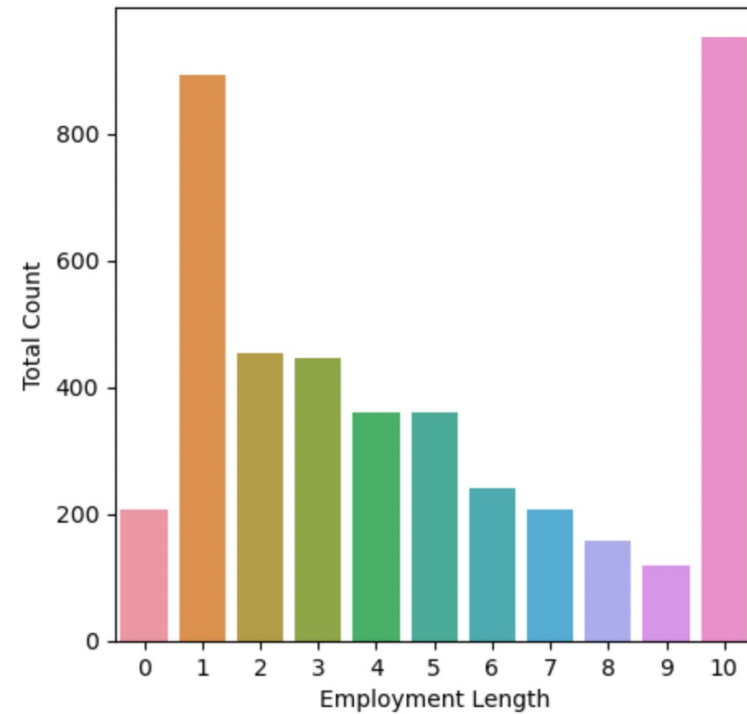
The number was roughly around 44.1%.

Not verifying applicants properly was the leader of business loss.
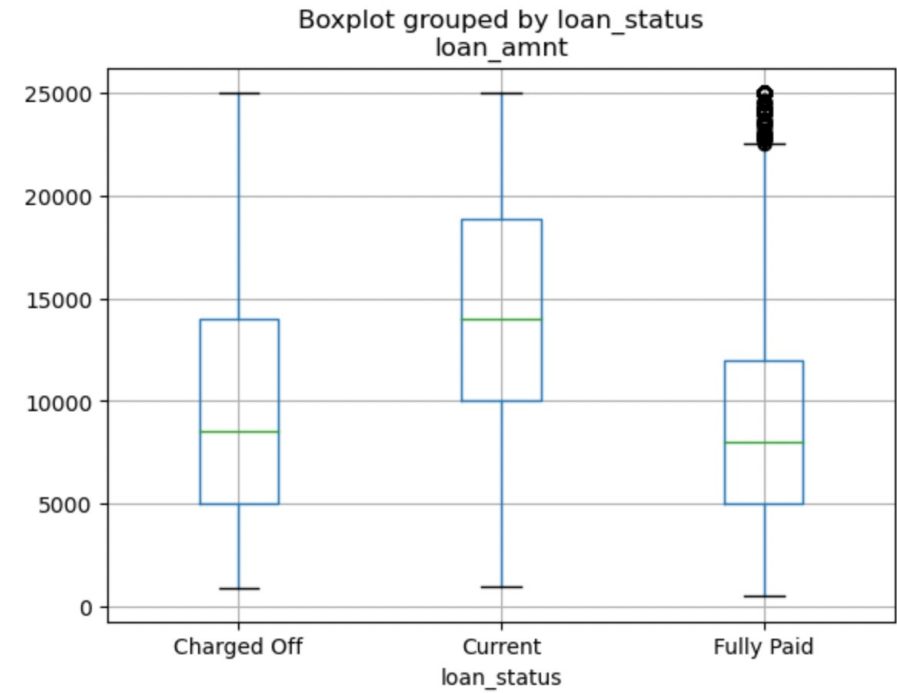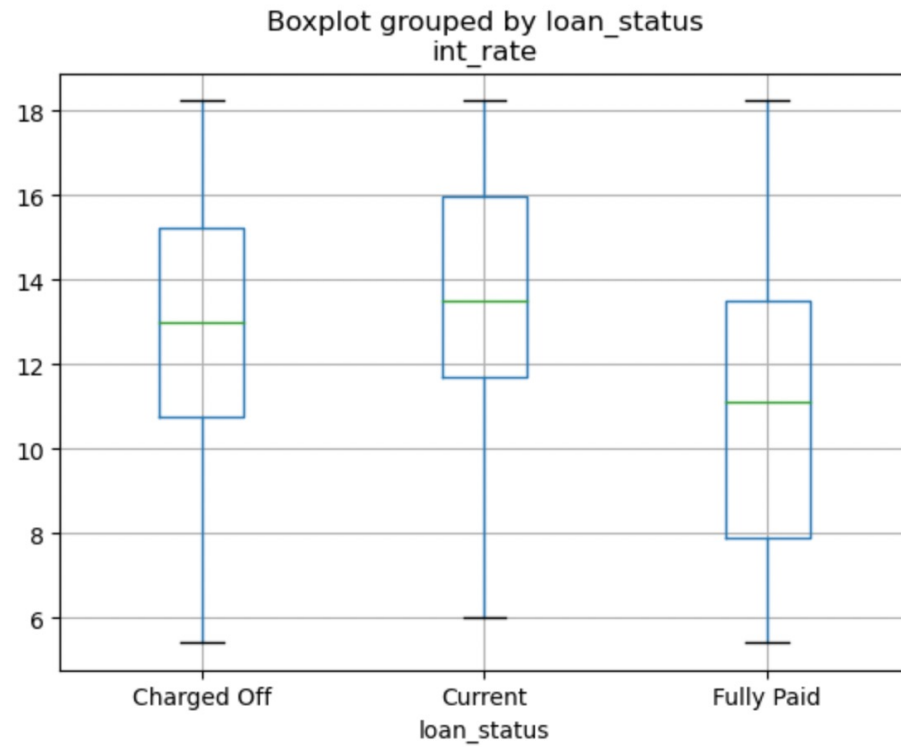
Longer payment term seemed to have lesser defaulters.

So, investing in longer term plans seems a better choice.

The default applicants were either very less experienced (0-1 year) or extremely experienced (+10 years).
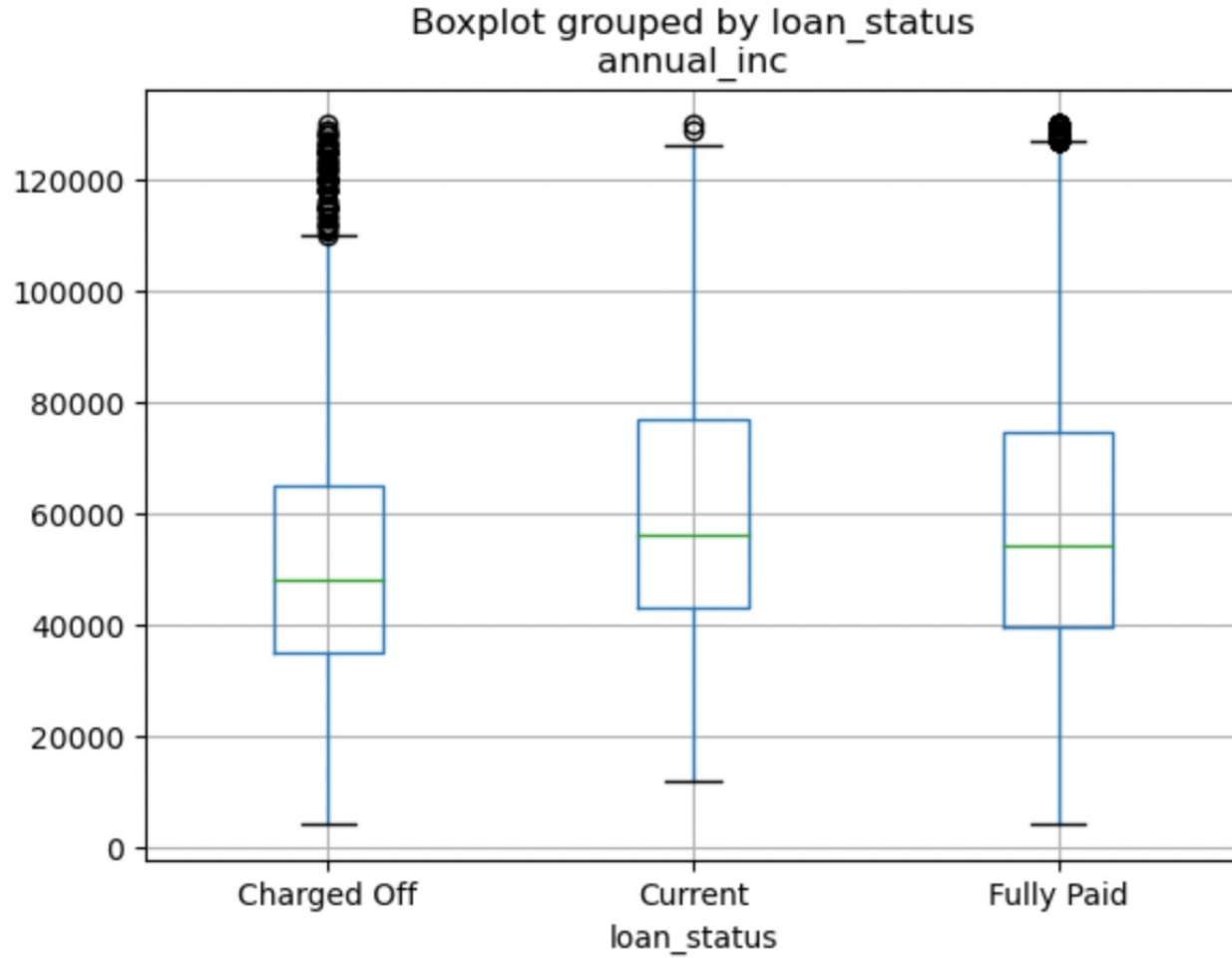
Defaulter applicants had significantly higher interest rates even when the loan amount was similar to or slightly higher than the fully paid applicants.
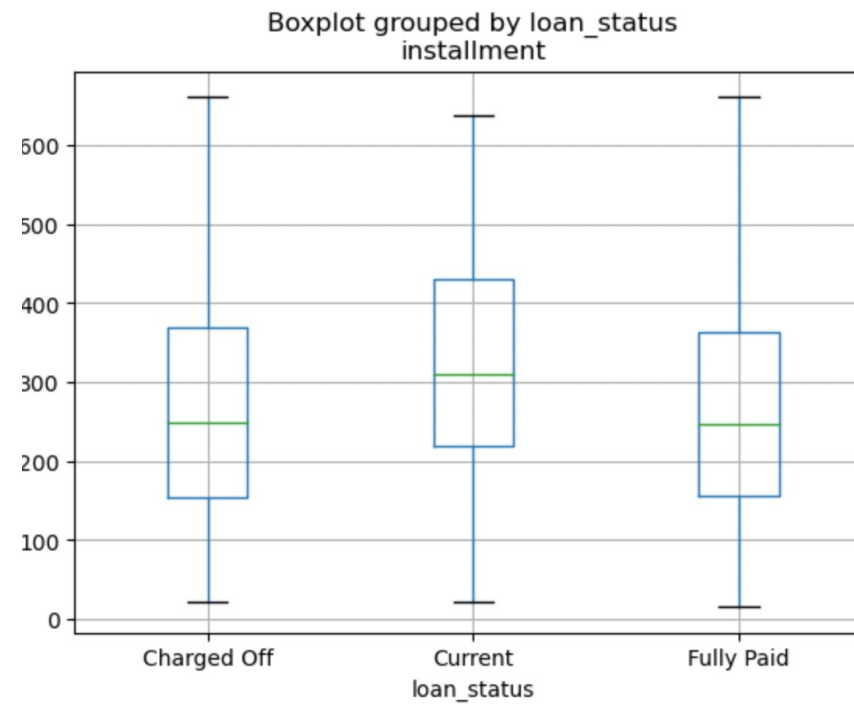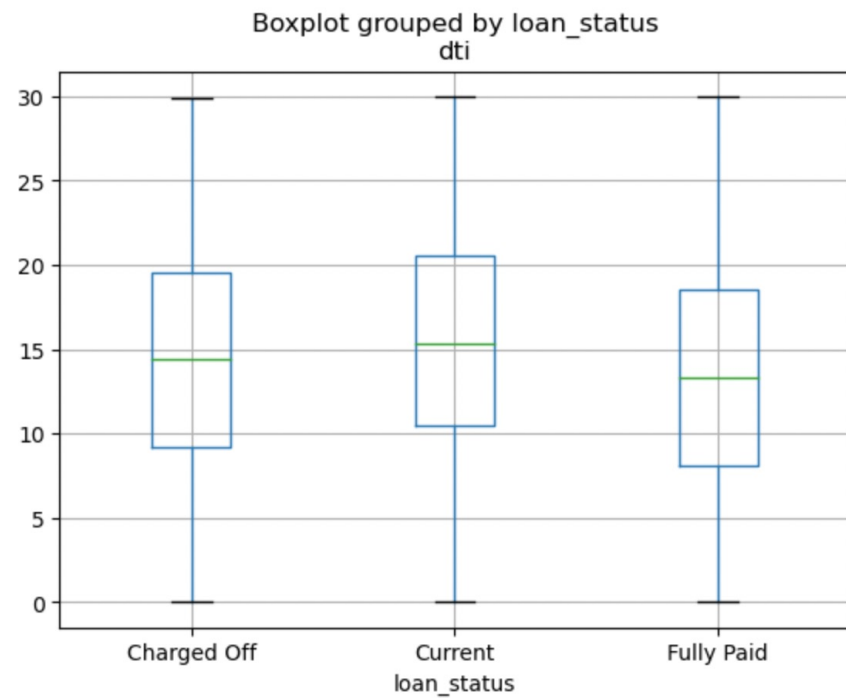
The Debt-to-Income ratio and Installments for defaulter applicants were only marginally higher than the fully paid applicants.

Boxplot grouped by loan_status
annual_inc

The annual income of defaulter applicants was lower as compared to other groups.
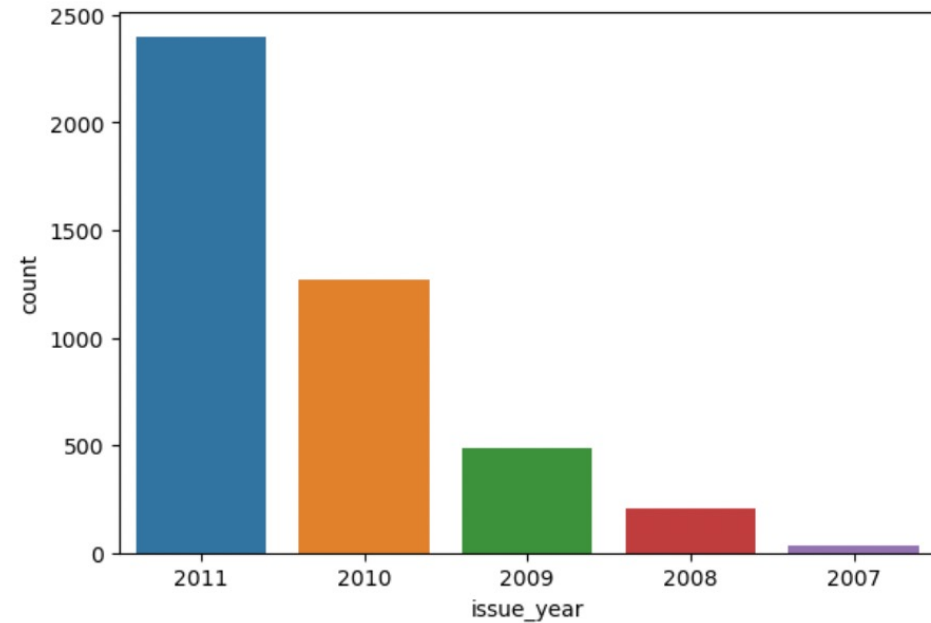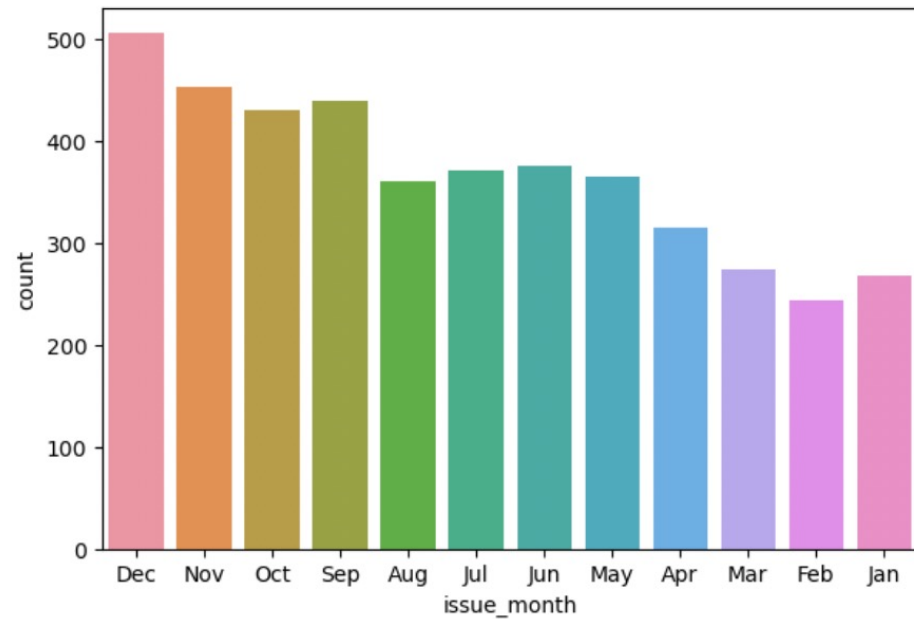
Over the years, the number of defaulters has rapidly increased.
Also, there is gradual increase in defaulters from starting of the year to end of the year
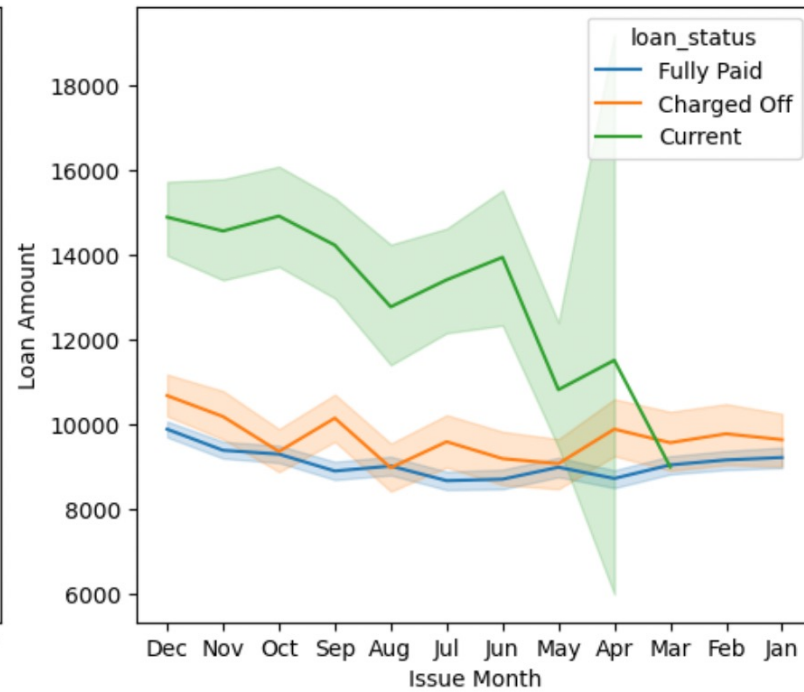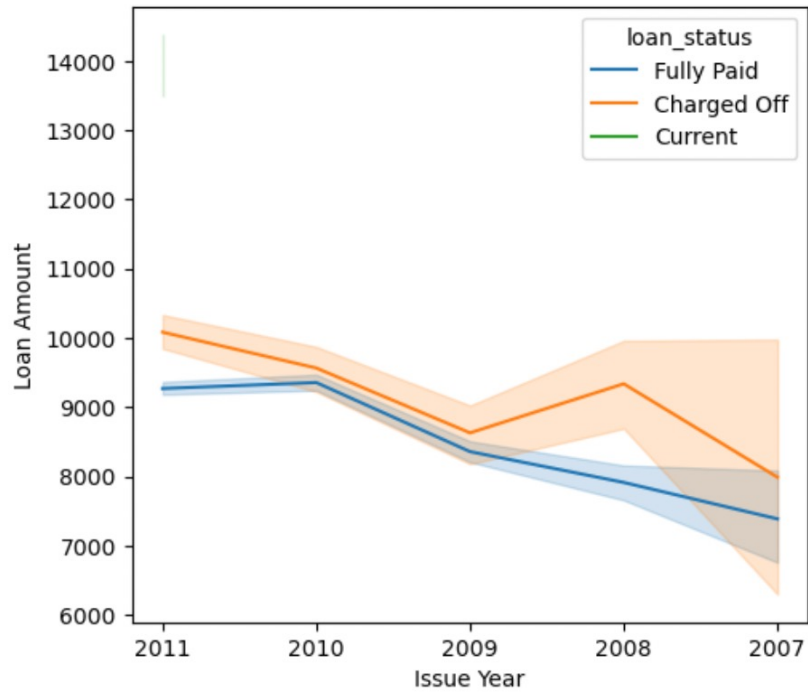
Along with the defaulters, the loan amount and the interest rate also increases in similar manner.
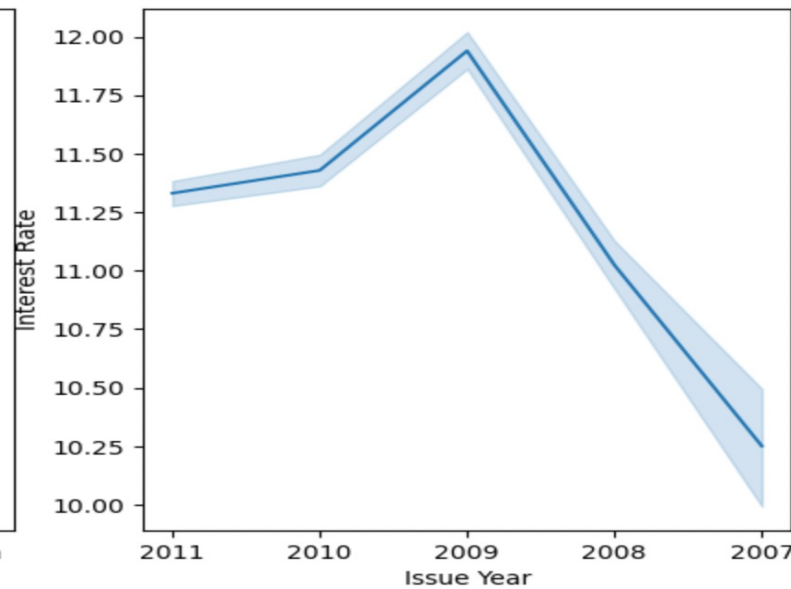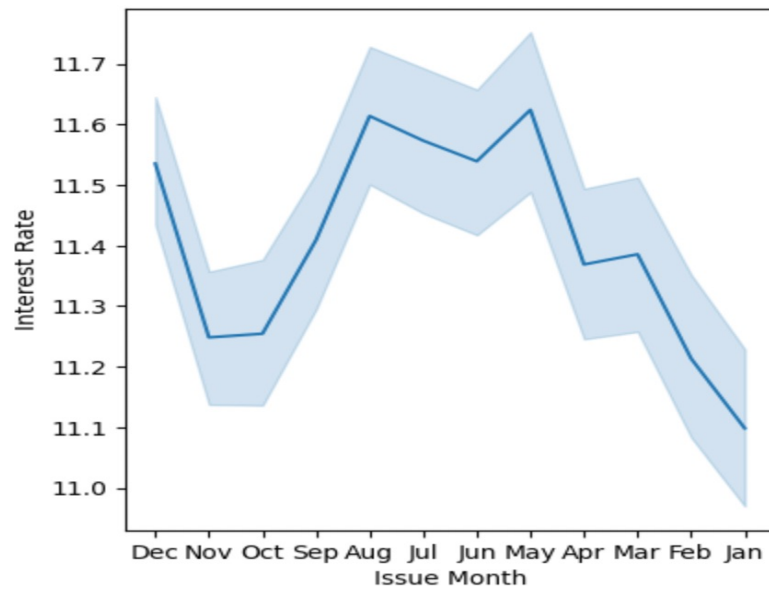
This implies that consumer requirements as well as the interest rate are increasing with time.