LENDING CLUB CASE STUDY

Introduction

- Lending Club company is the largest online loan marketplace.
- They finance personal loans, business loans and finances medical procedures.
- They have online interface to allow borrower easy accessibility
- They offer loan at lower interest rate than market rate

Objective

- There are multiple factors that are driving force to behind loans being defaulted
- As part of this case study we are to analyze patterns in data and give list of observations that will help Lending Club Company to decide whether to give loan to a borrower or not
- This will improve profits in business and also reduce bad debts for the company

Steps Followed

- Data Cleaning and Scrubbing
- Handle Missing Null Values
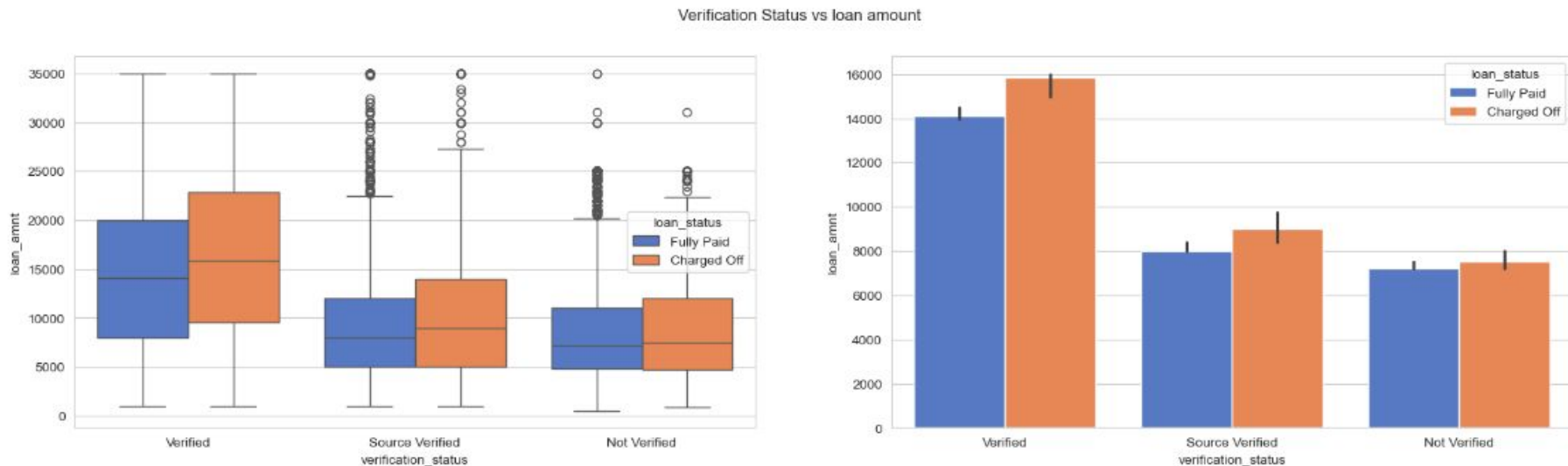- Derive Columns
- Outlier detection
- Analysis

Analysis

Issue month and Year distribution
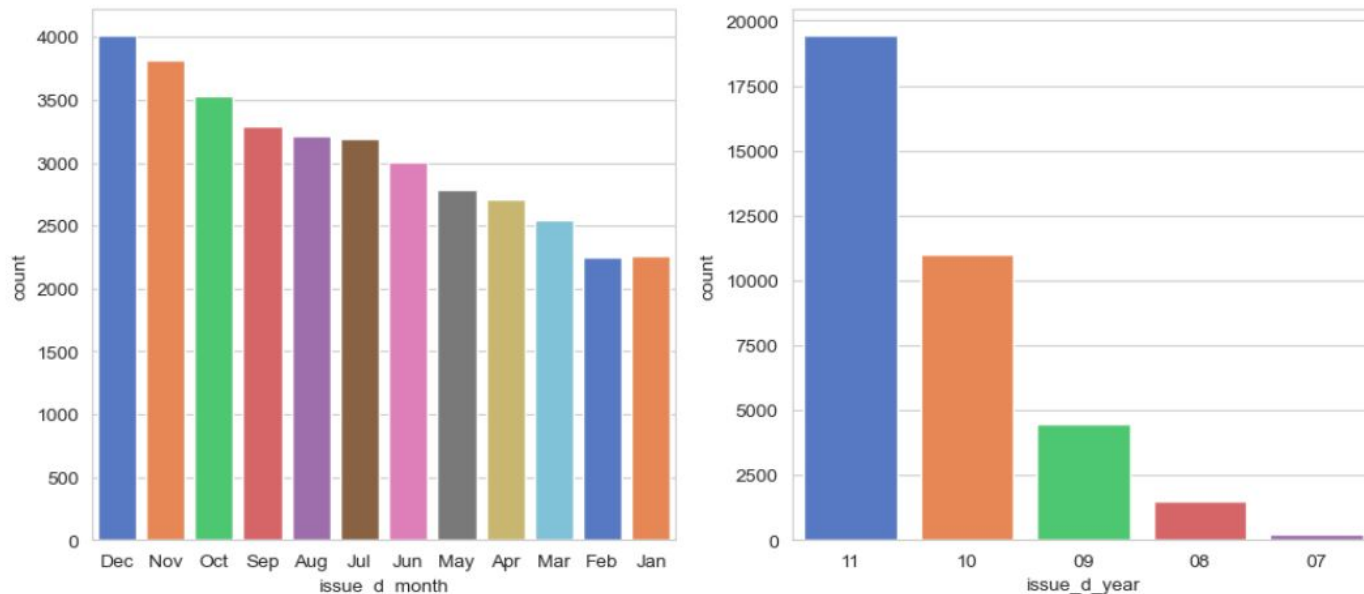
- From above graphs we can conclude that Lending Club Company business kept increasing year on year.
- Also we observe that number of loans kept increasing month on month, last quarter observing maximum loans granted.
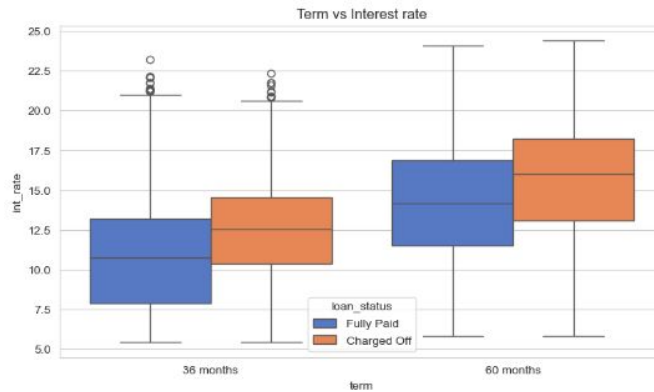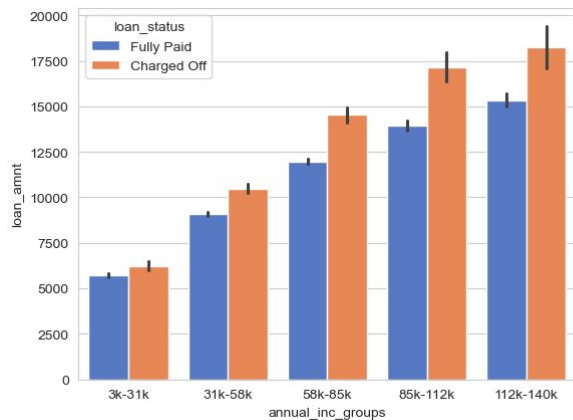
Analysis

Verification Status vs loan amount

From the plot we see that there are primary 3 ways of profile verification : Verified / Source Verified / Not Verified

We see irrespective of any type of profile verification there are high amount of defaults happening in all 3 types.
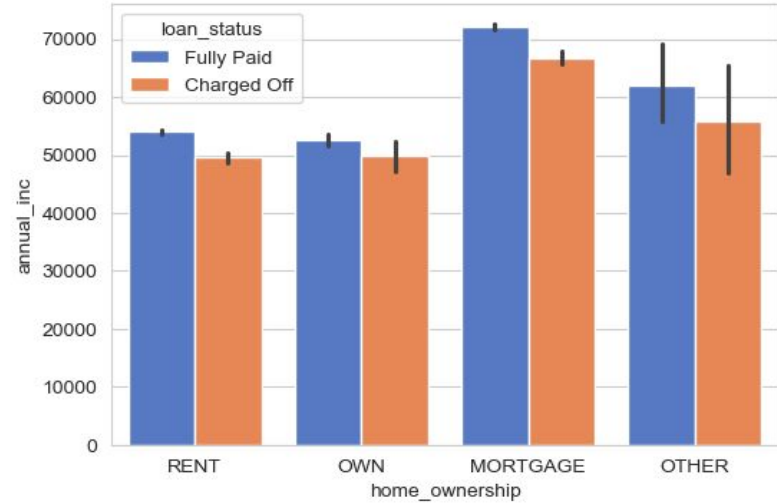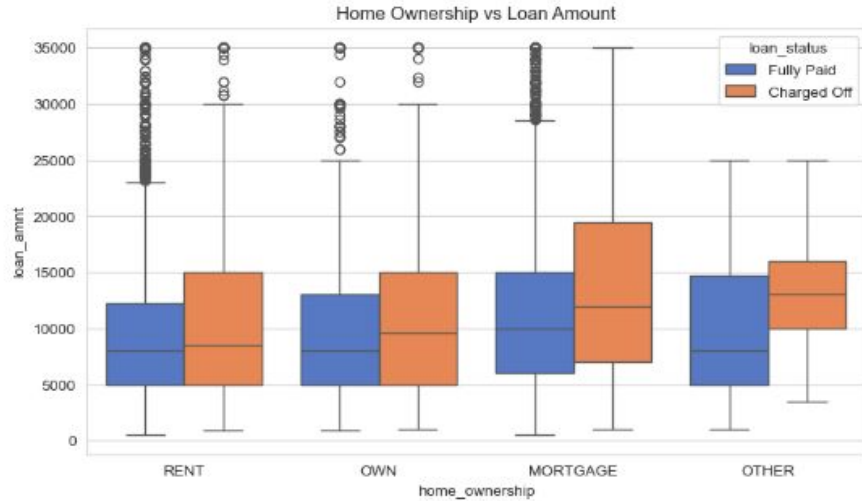
However, Verified profiles with loan amounts in range of 15k-22k are at high risk and have more default rate.

Analysis

- Loan amount for income >58k is high (>12k) and have high default rate

- Loans which are having high interest rate range of 15-18% for term of 60 months are more likely to default

Analysis

We observe from above plots that borrower with home ownership mortgage and in income range of 60k-70k have very high chances of defaulting. Hence such profiles should be avoided from granting loans
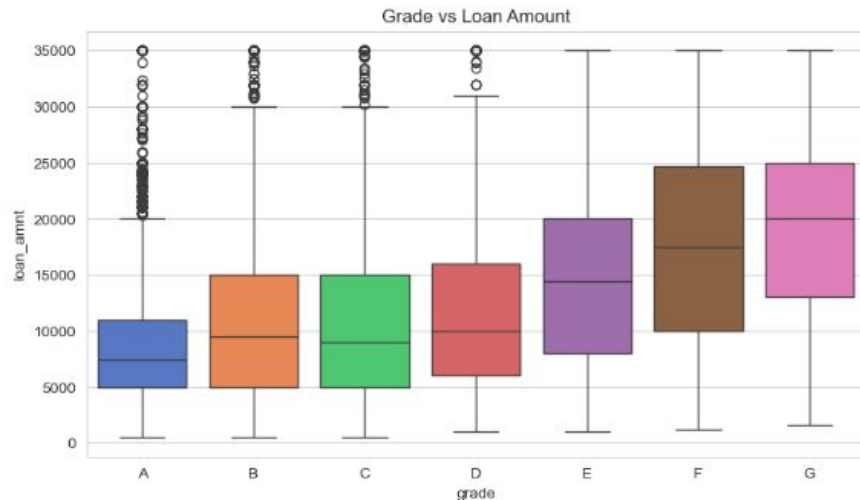
Analysis

Observing both plots we can conclude that below combination is most likely to default:

- Loans taken for small business / debt consolidation / credit card for amount > 12k
- Loans taken for home improvement / house / wedding for amount > 10k

Purpose CountPlot for Defaulted Loan

Grade vs Loan Amount
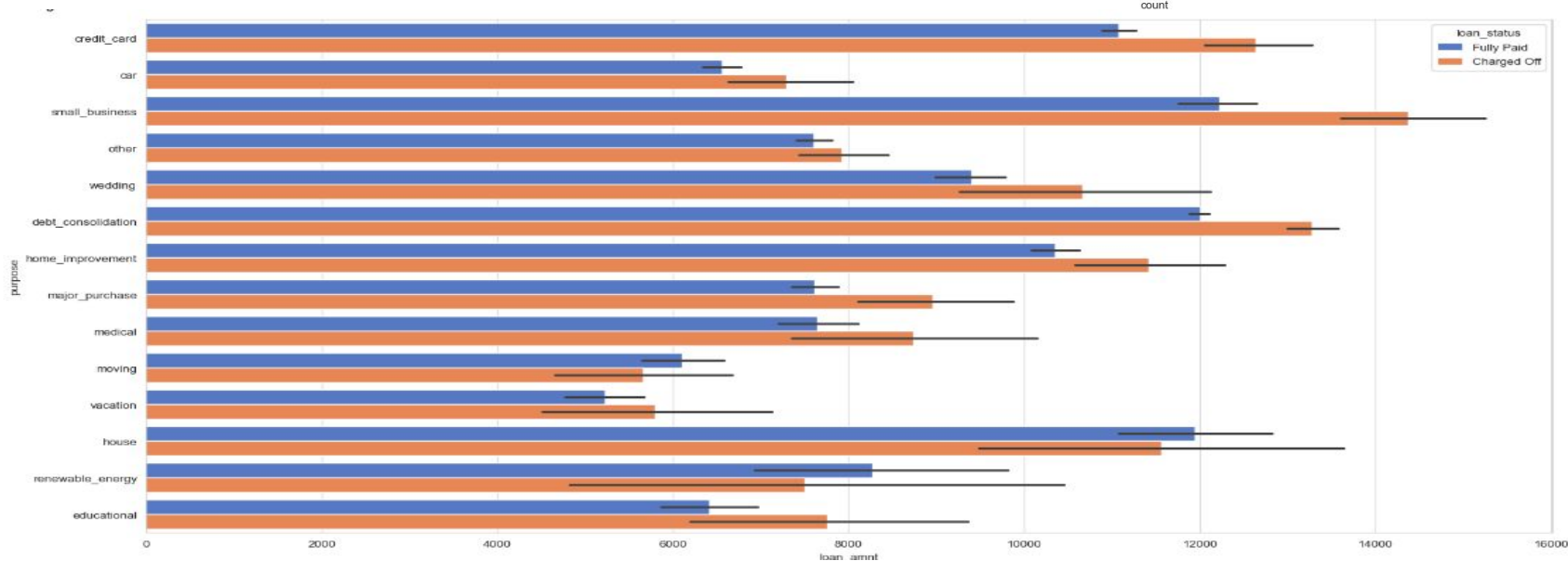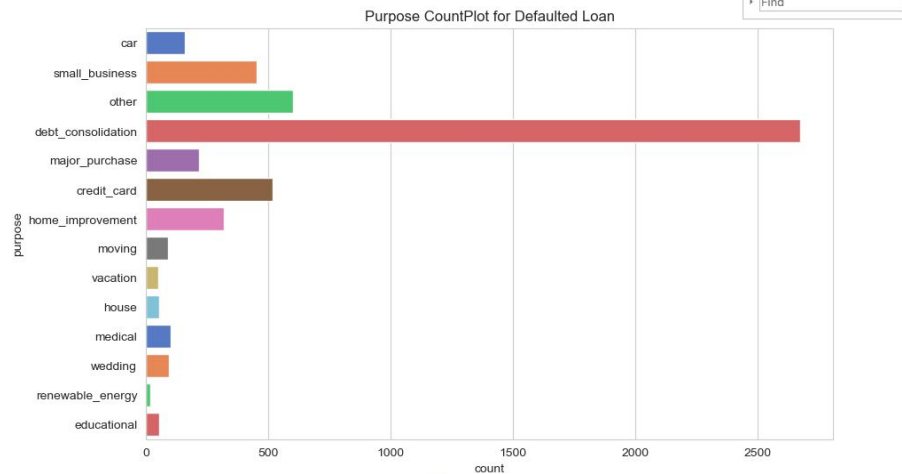
- We observe that as grades lower the probability of them defaulting keeps increasing.

- Loans for amount > 12k by grades E,F,G have high default rate

- Loans which has high interest rates(12.5%-17.5%) and term of 60 months for lower grades (E,F,G) are also more likely to default
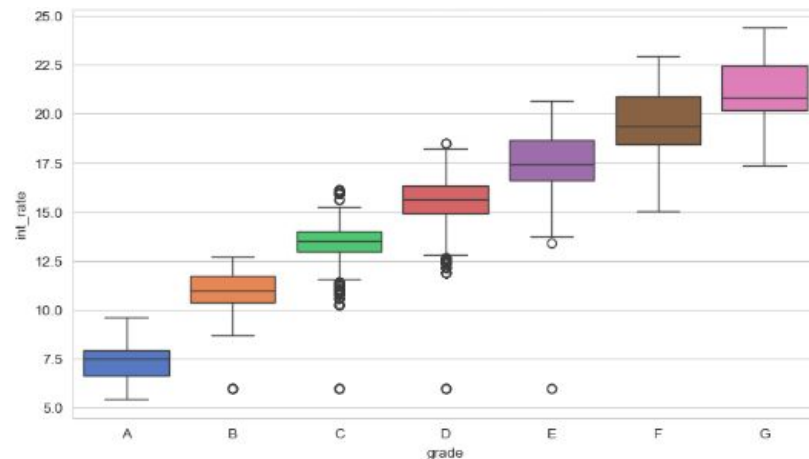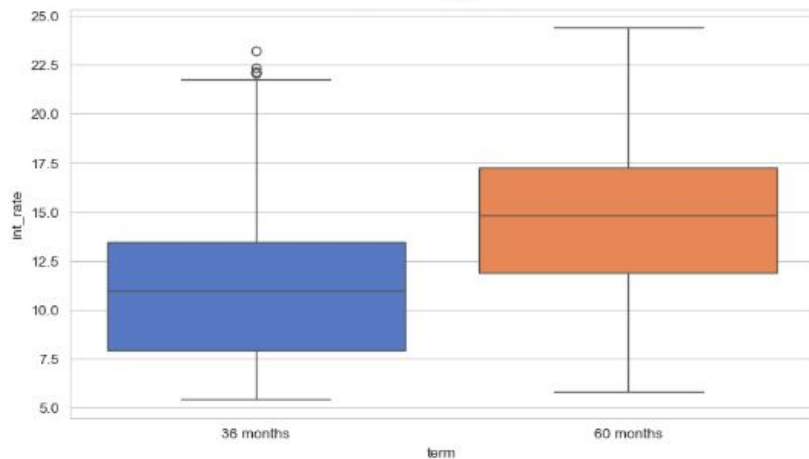
Conclusion

Below are few indicators of a Risky application / applications that can default:

- Applicants with lower grades requesting for high loan amount

- Applicants whose home ownership is MORTGAGE and having income range of 60-70k

- If applicants purpose of loan is for Small Business / Debt Consolidation (loan amount > 12k), Home / House Improvement (loan amount > 10k)

- Applicants Loan requirement >12k and has low grades E, F, G

- Applicants which are verified and are requesting loan amount >15k

- Loan amount(>12k) for applicant having annual income >58k

- Loans which require high interest rate range of 15-18% for term of 60 months

THANK YOU

Credits : Nikita Kothari