Lending Club Case Study

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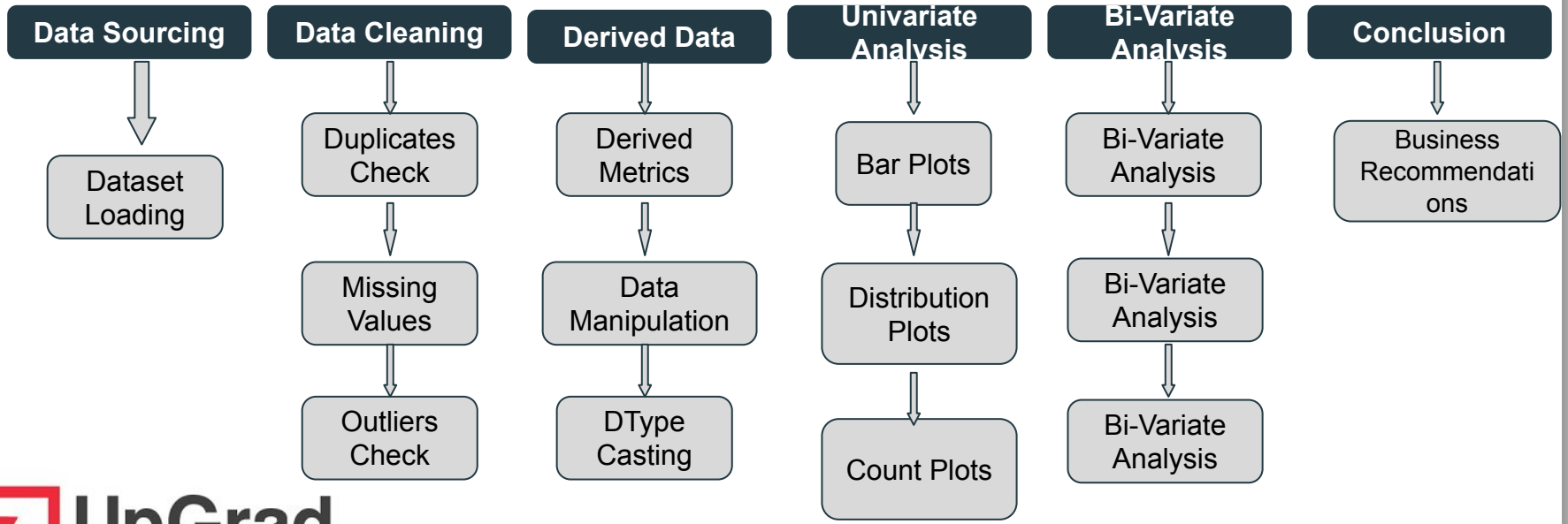
Agenda

- Problem Statement
- Techniques Used
- Univariate - Data Analysis
- Bi-Variate Data Analysis
- Recommendations

Problem Statement

- To identify risky loan applicants, then such loans can be reduced thereby cutting down the amount of credit loss.
- Identification of such applicants using EDA is the aim of this case study

Techniques Used



Univariate Analysis

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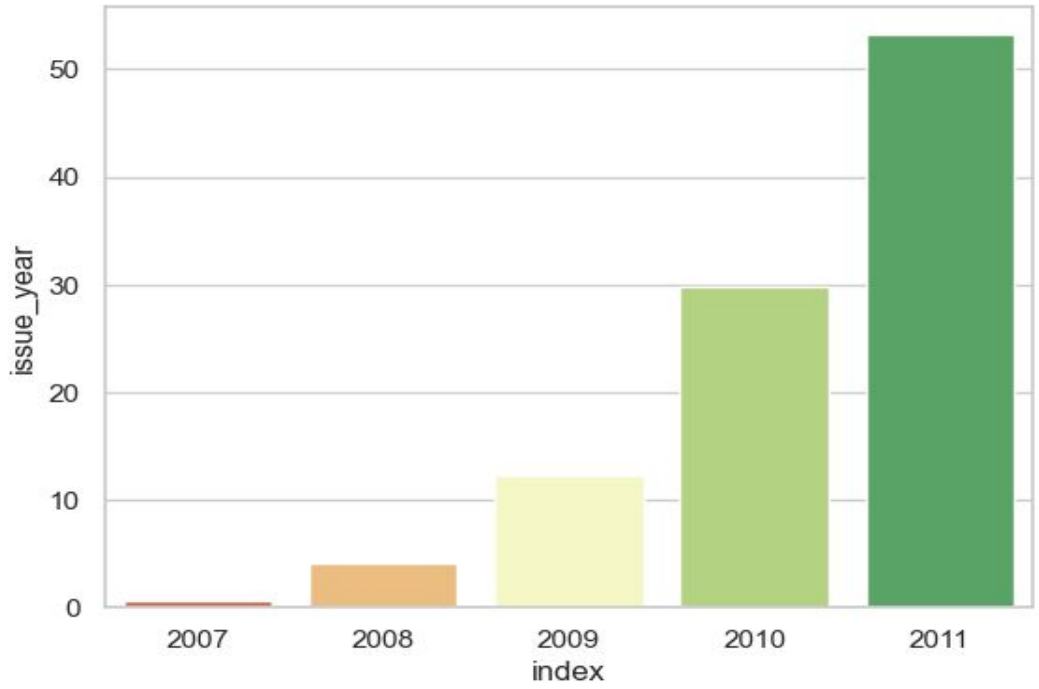
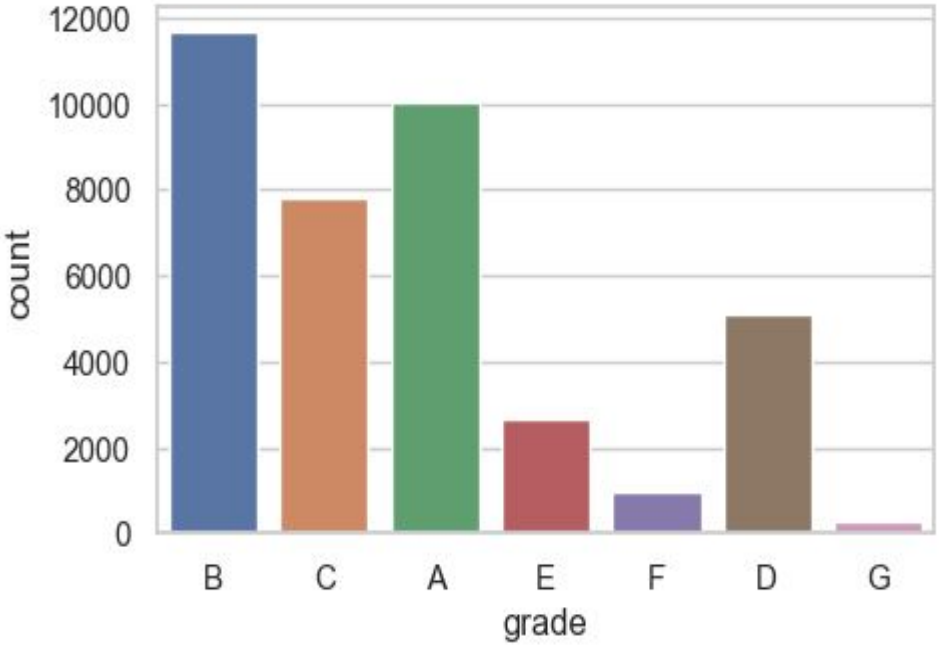
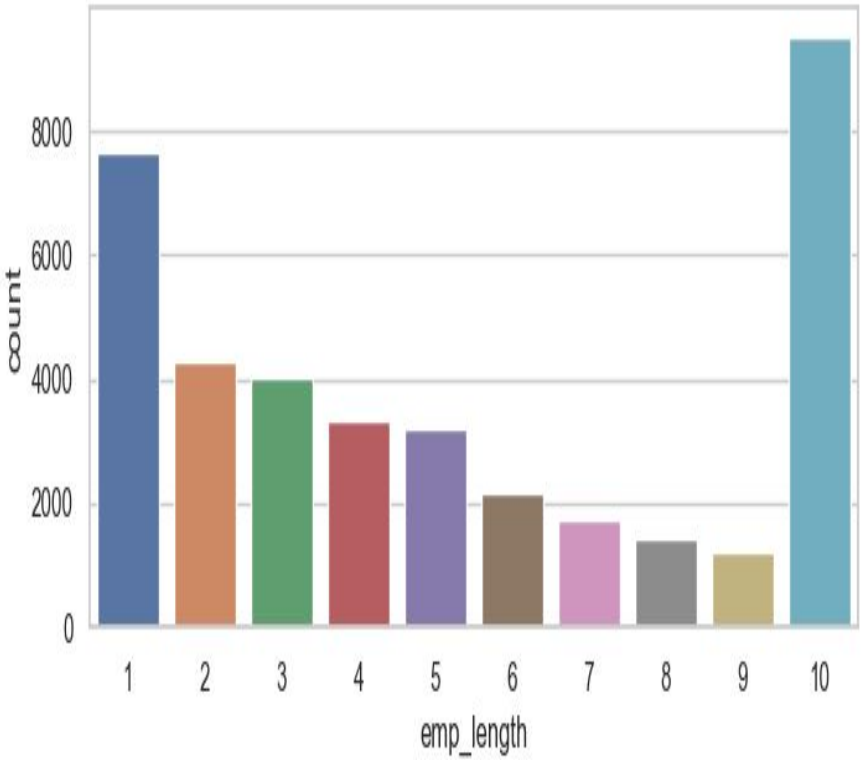


Year over year, number of loan borrowers are increased

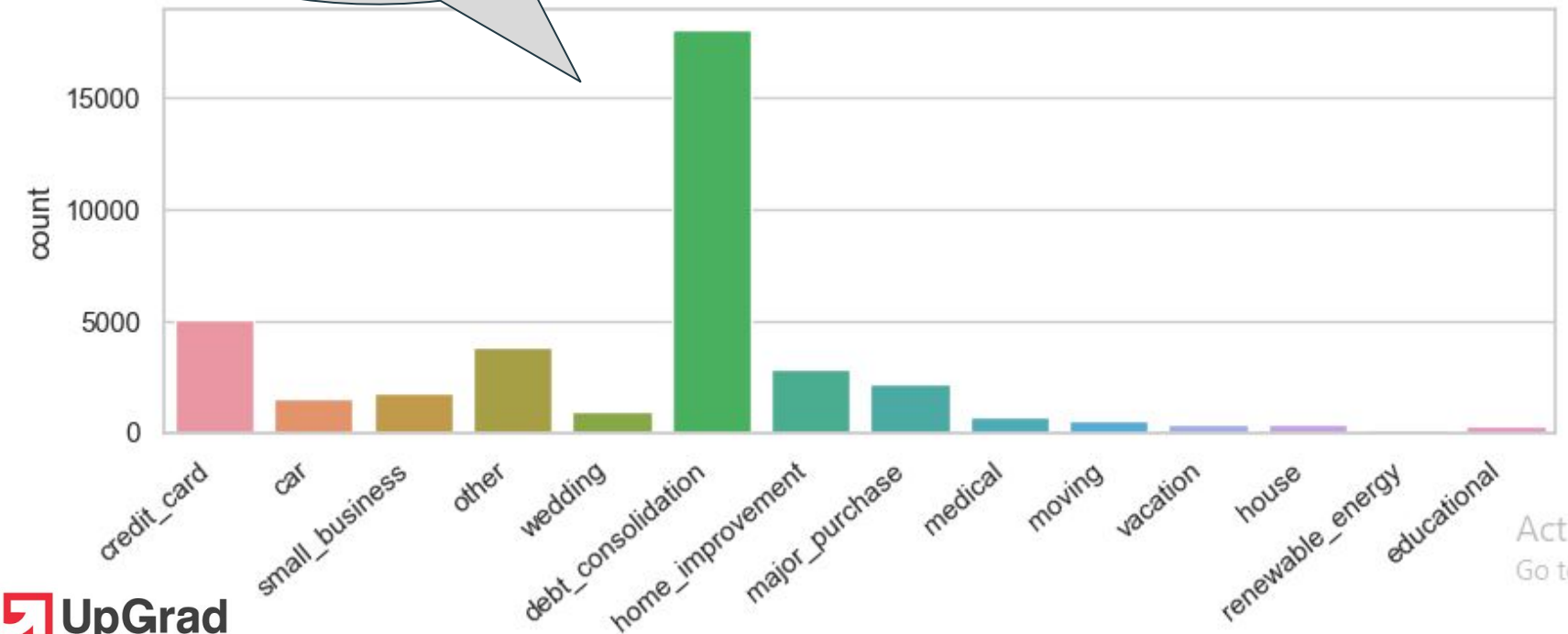


People belonging to Grade B,A tend to take more loans



People who are 1 year experienced and 10 Year experienced are tend to take more loans

Most loans are borrowed for debt consolidation and credit clearance



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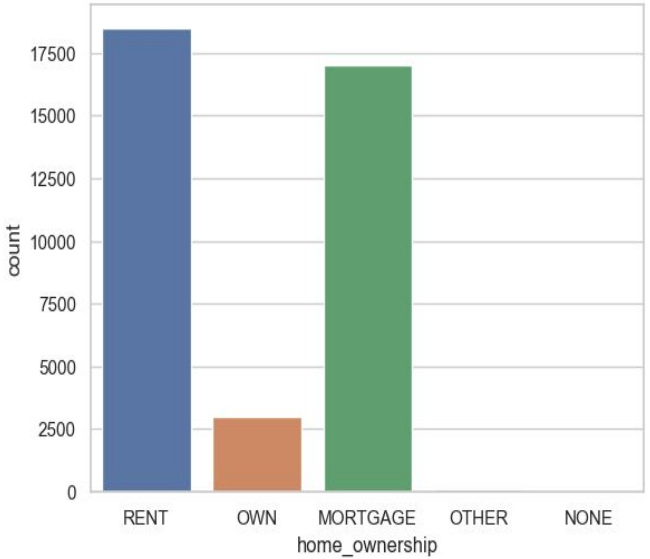

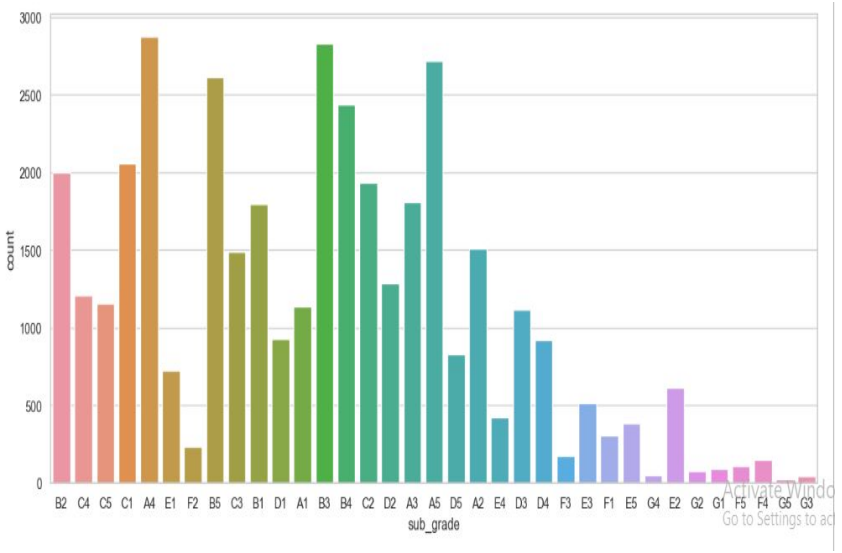

Observations:

1. People with mortgage ownership tend to borrow more loans
2. People belonging to subgrade A4, B3, A5, B5 tend to borrow more loans

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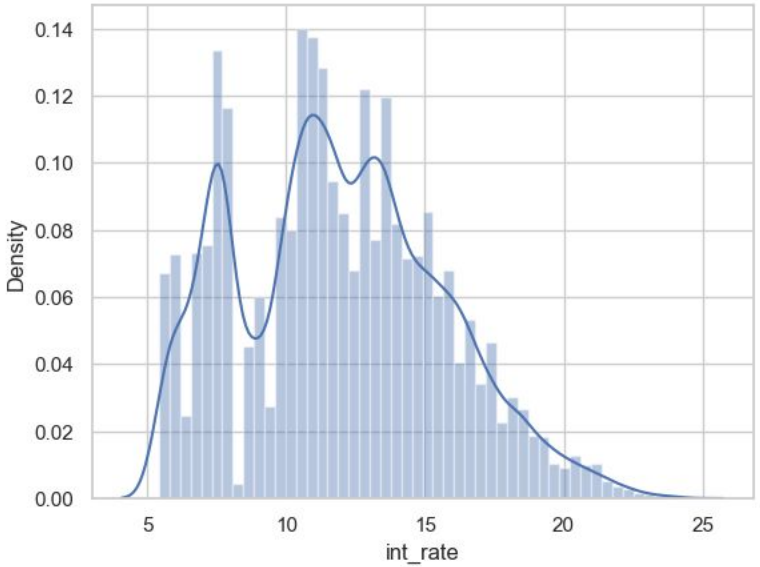

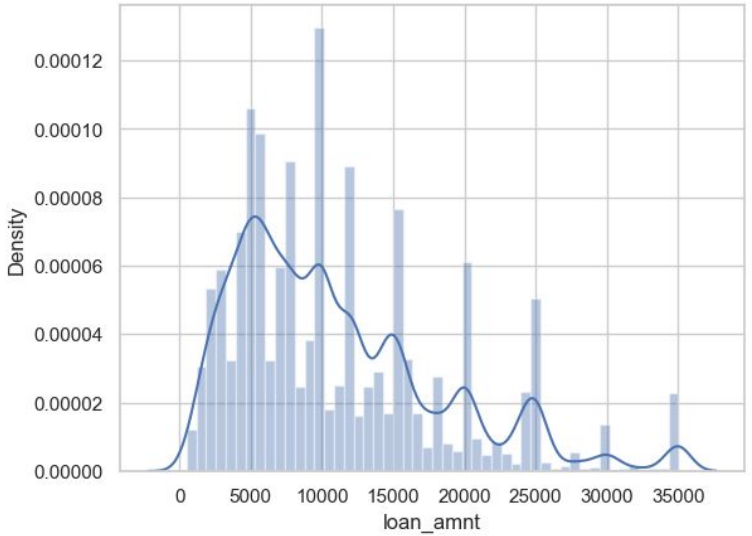

Observations:

1. Average interest rate provided by the banks are 10-15% for most of the loans
2. Average amount provided is around 5-12k of amount

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Summary of Univariate Analysis:

- Above analysis shows ~14 % of the total loan issued have been 'Charged Off' (Defaulted) and ~85% are fully paid.
- Maximum loans are borrowed for debt_consolidation
- Most of the Loans issued are in 2011 and followed by 2010
- Average interest rate: 12.0 %
- Most loan borrowers are of 10k, followed by 5k, 6k and so on
- Purpose of the loan requested are for debt consideration and credir_card settlement
- Customers belonging to grade-B and Grade-A are the highest loan takers
- Having own house are the least borrowers of loan
- Every year number of loans processed are increasing

BiVariate Analysis

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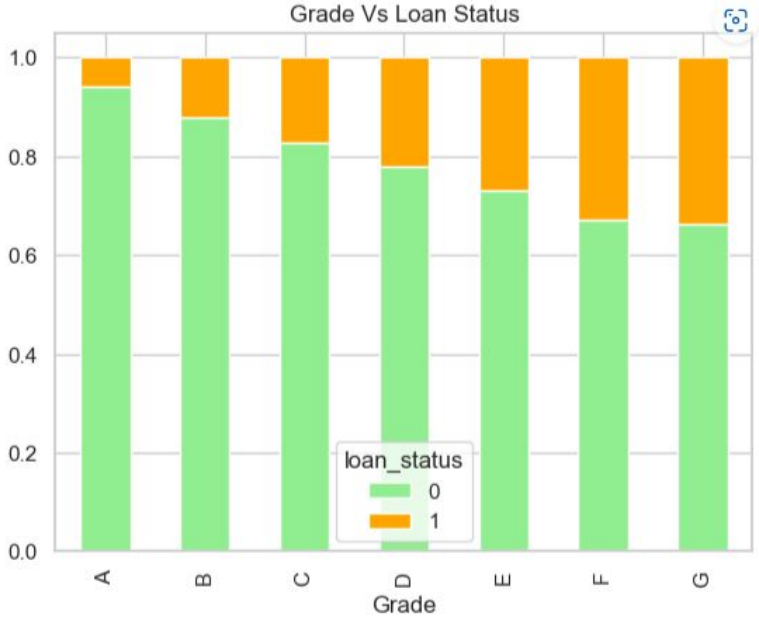

Observations:

1. Above analysis shows the risk of getting defaulters is those who opt for long term(i.e. 60Months)
2. From the above analysis, F & G graded people are high risk of defaulters

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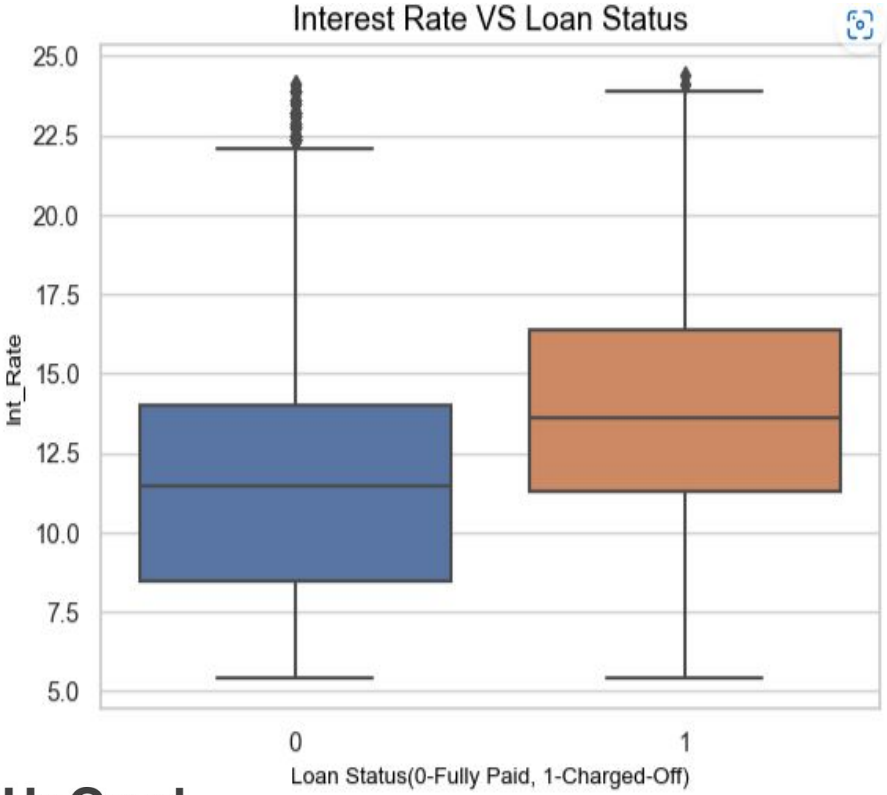
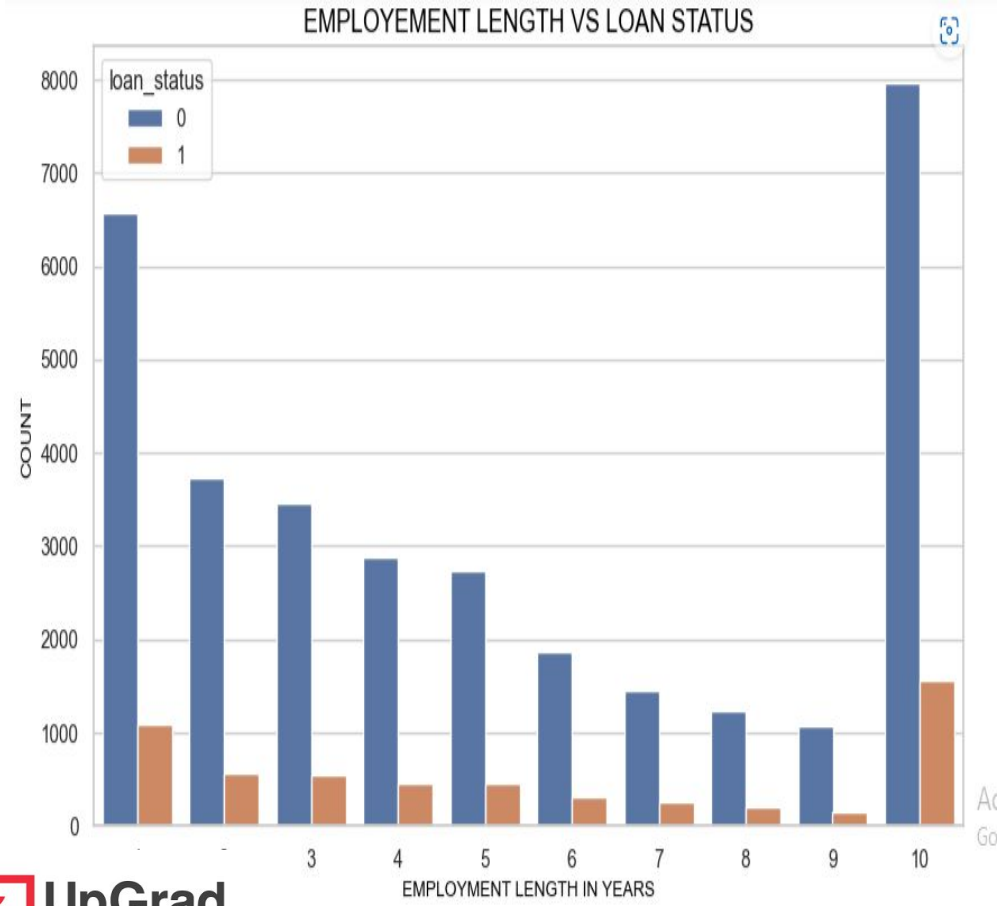


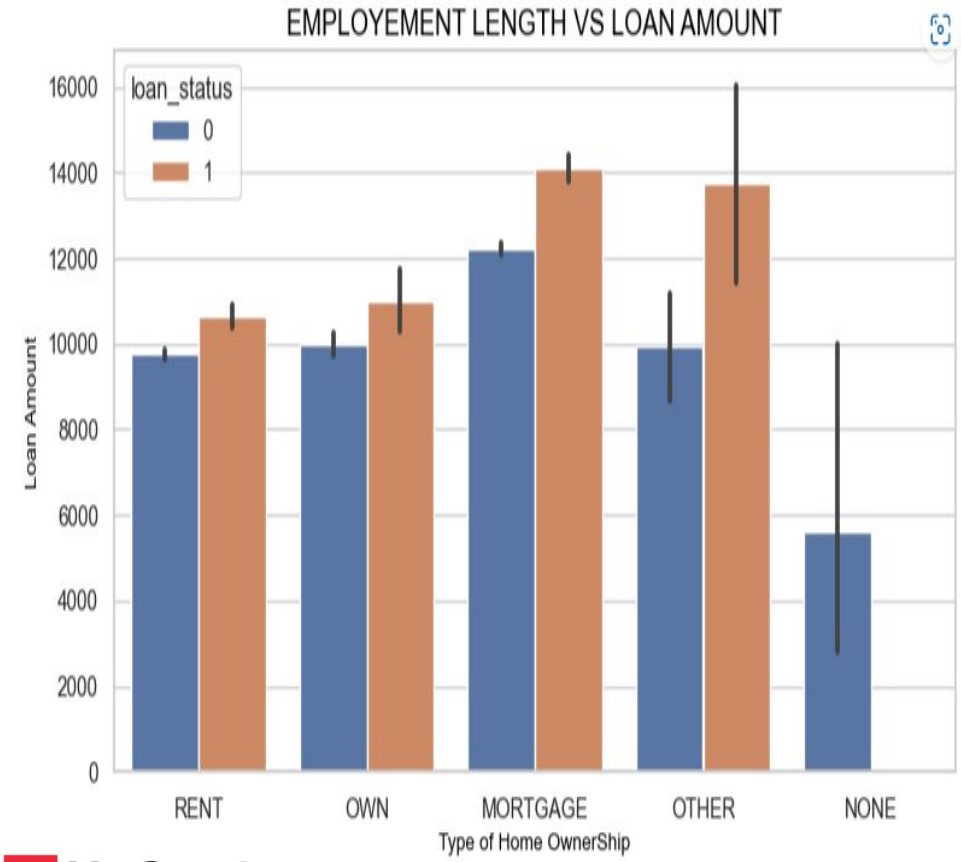
Observations:

- Box plot shows that the upper and the lower quartile of loan status to range between 7 and 17.
- There is a relation between the two variables in most charged off loan has an interest rate of 13%.
- This indicates that the higher the rate the more the charged off loans.



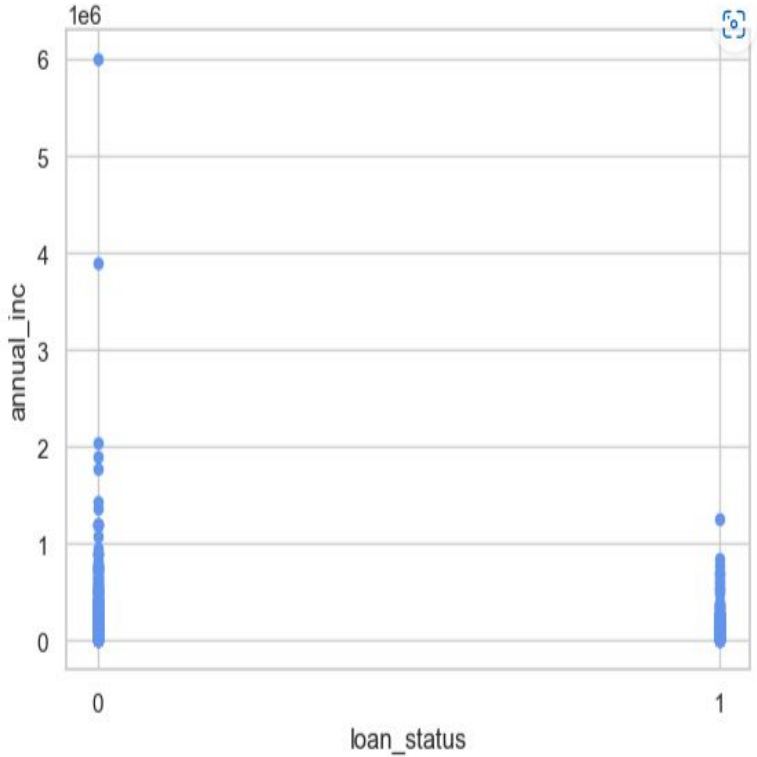
Observations:

- We can see that people with 10+ years of employment have more chances of getting defaulters followed by 1-Year



Observations:

- Barplot with Home_Ownership Vs Loan Amount and Loan Staus as hue
- We can see that people with Mortgage home and loan amount greater than 12k have high chances of getting into defaulters



Observations:

- Scatter Plot analysis between Loan status and the annual income says that, the higher the annual income the higher the loan being fully paid.
- If the annual income is low, there is chances of the loan getting defaulted.

Summary of BiVariate Analysis:

- Risk of getting defaulters is those who opt for long term(i.e. 60Months)
- F & G graded people are high risk of defaulters
- People with 10+ years of employment have more chances of getting defaulters followed by 1-Year
- People with Mortgage home and loan amount greater than 12k have high chances of getting into defaulters
- Scatter Plot analysis between Loan status and the annual income explains that, the higher the annual income the higher the loan being fully paid.
- If the annual income is low, there is chances of the loan getting defaulted.

Multi Variate Analysis

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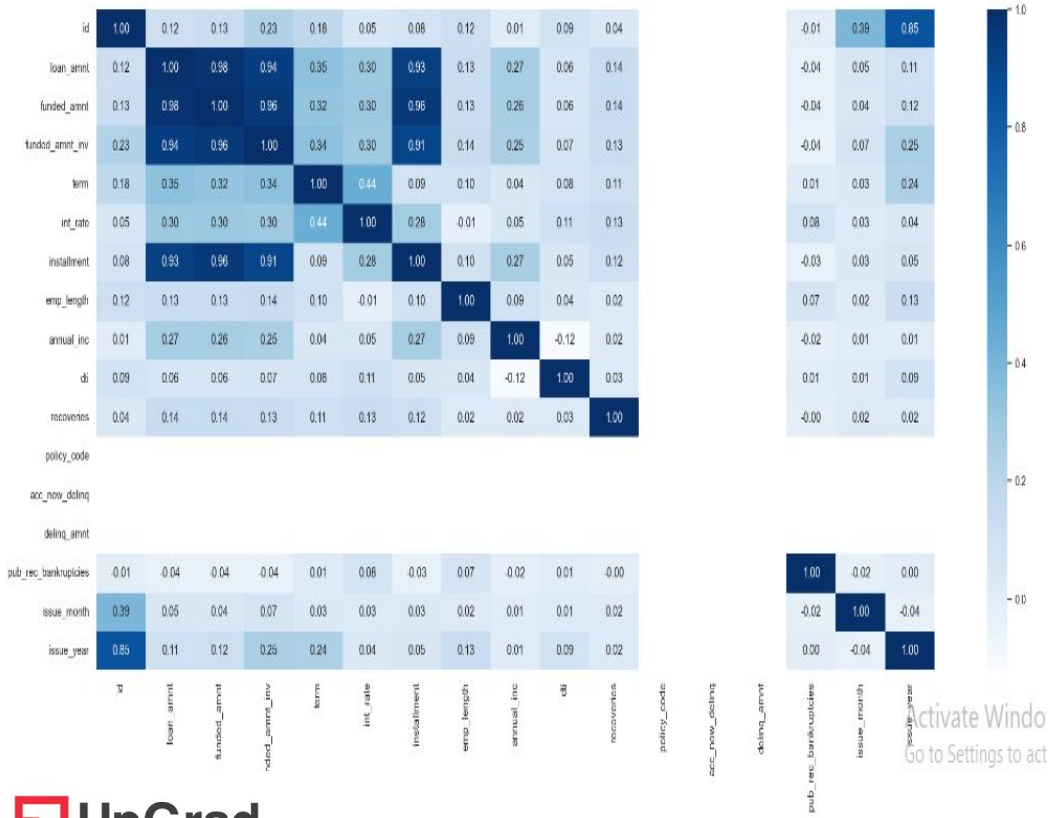

Observations:

- Installment has positive impact on loan amount, funded amt and funded_amnt_inv

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Conclusion & Recommendations

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Conclusions

- Maximum loans are borrowed for debt_consolidation
- Average interest rate for the loans are of 12.0 %
- People with 10+ years of employment have more chances of getting defaulters followed by 1-Year
- People with Mortgage home and loan amount greater than 12k have high chances of getting into defaulters
- People with higher annual income the higher the loan being fully paid.
- If the annual income is low, there is chances of the loan getting defaulted
- Most loan borrowers are of 10k, followed by 5k, 6k and so on
- Customers belonging to grade-B and Grade-A are the highest loan takers

Recommendations

- Ratio of employment_length with 7,8,9 Years of employment this risk of getting defaulters are very less, reducing interest will encourage them
- Focussing on higher annual income people will lower the risk of defaulters
- Avoiding Customer with home_ownership Mortage will reduce the risk of defaulters
- Limit the Loan Amount to 10K for the Rented, Own House, Mortgage type of ownership this will also have risky applicants

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