Lending Club Case Study

Contributor:

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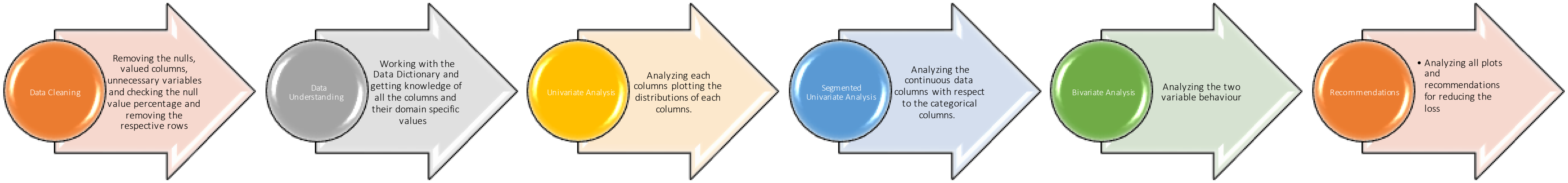
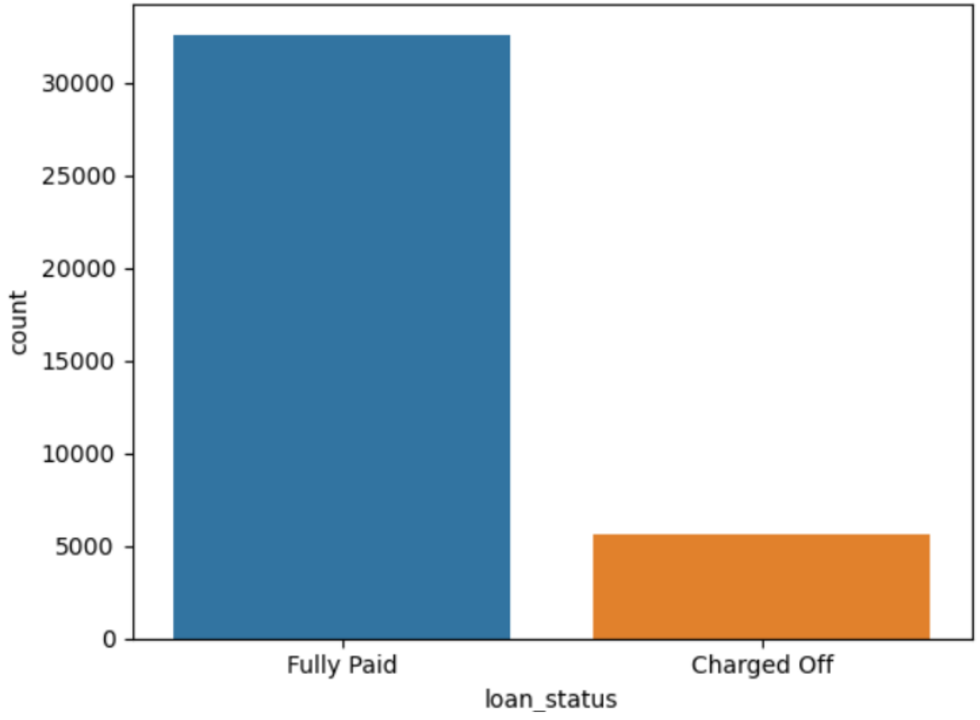
Abstract

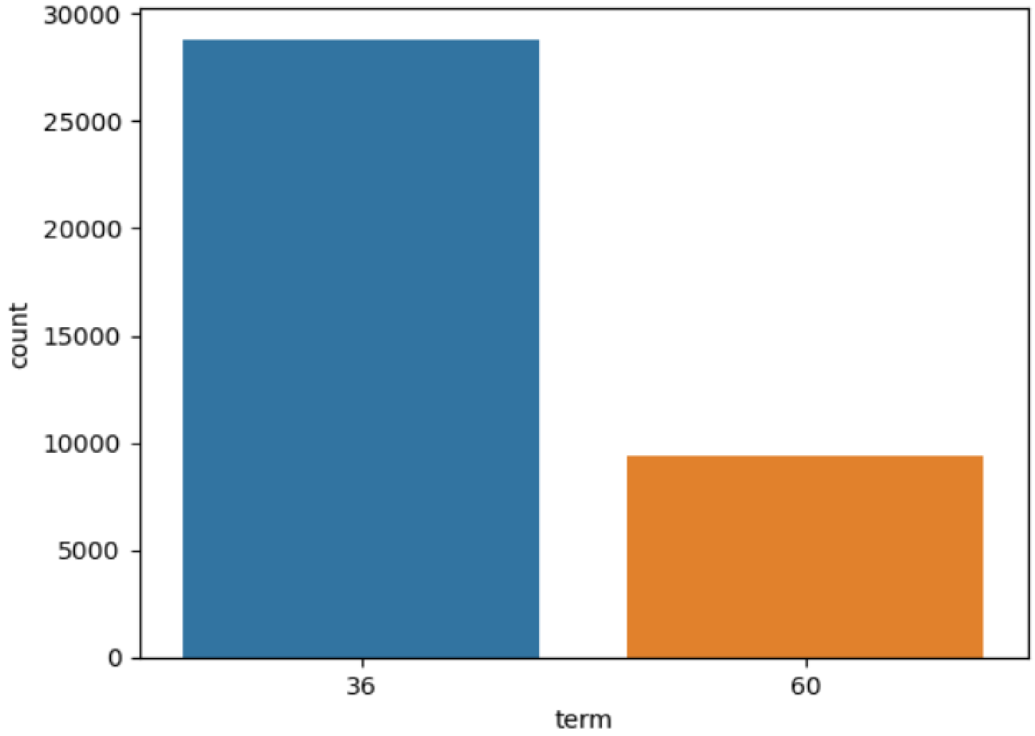
- This company is the largest online loan marketplace, facilitating personal loans, business loans, and financing of medical procedures. Borrowers can easily access lower interest rate loans through a fast online interface.
- If one can identify these risky loan applicants, then such loans can be reduced thereby cutting down the amount of credit loss. Identification of such applicant's using EDA is the aim of this case study.
- The Objective of the study is to understand the **driving factors (or driver variables)** behind loan default by using the information of the past loan applicants.

Problem Solving Methodology



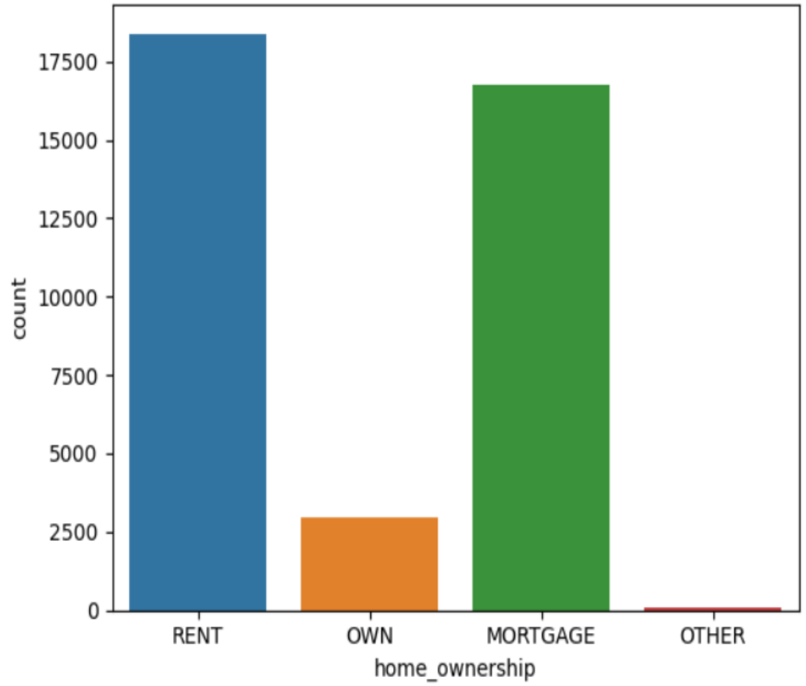
Univariate Analysis

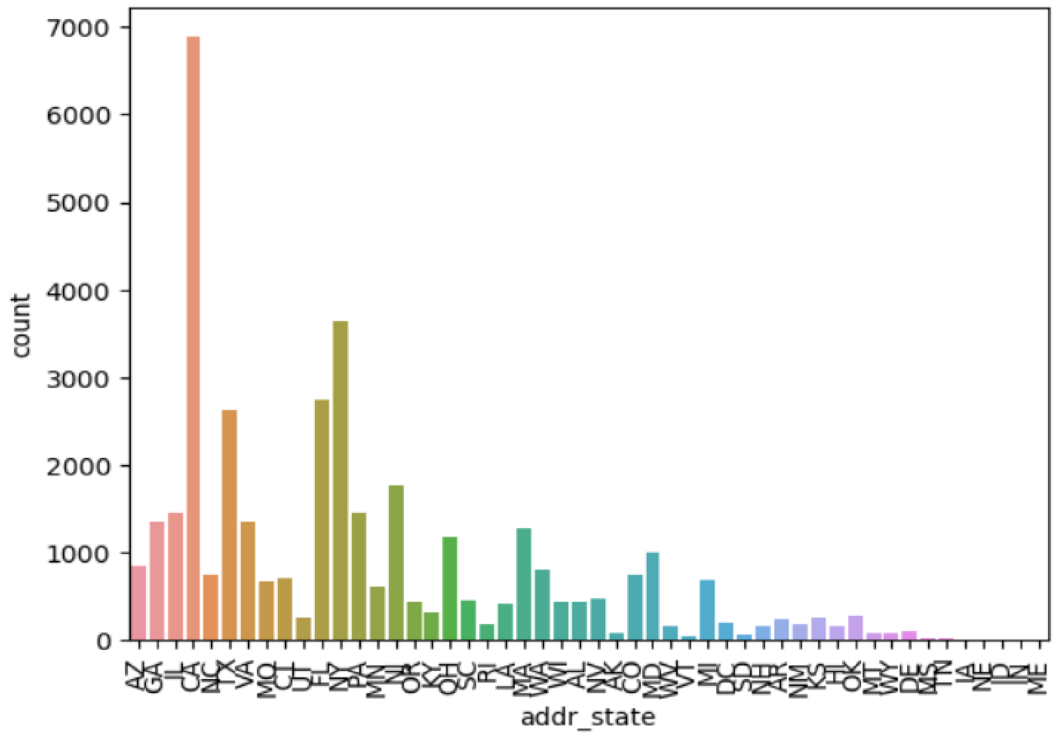




- Only 15% borrowers are charged-off, rest 85% are fully paid in the given data set.
- There are two loan periods. Around 75% of the borrower look loan with 36 months term.

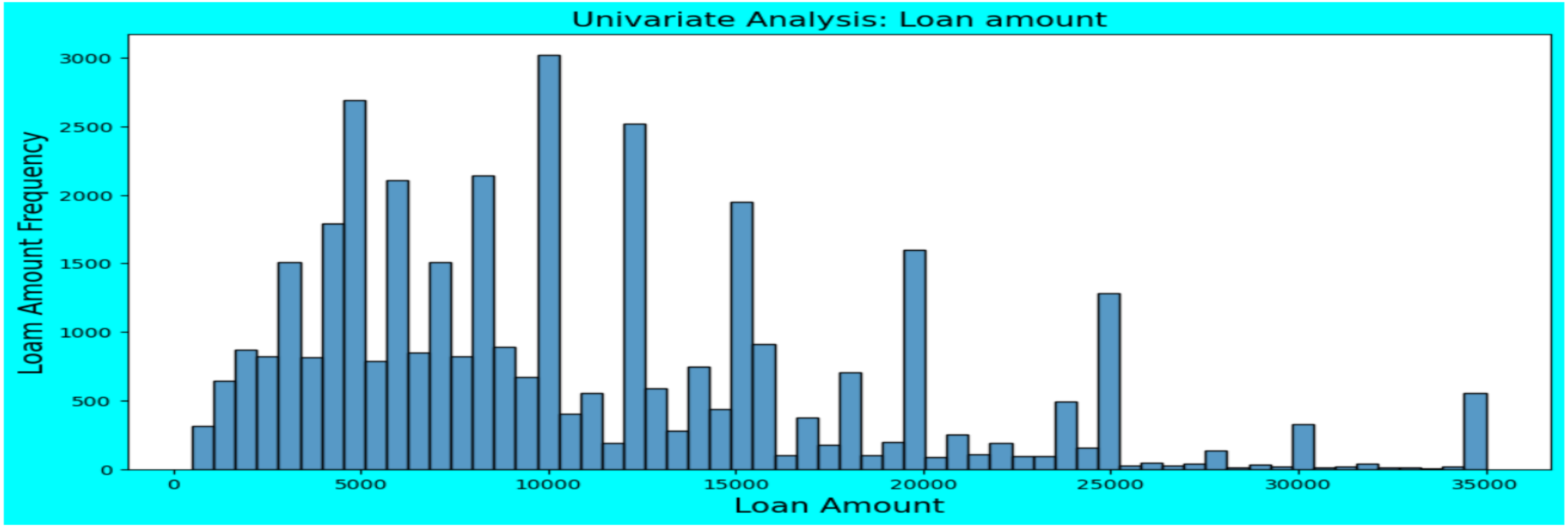
Univariate Analysis





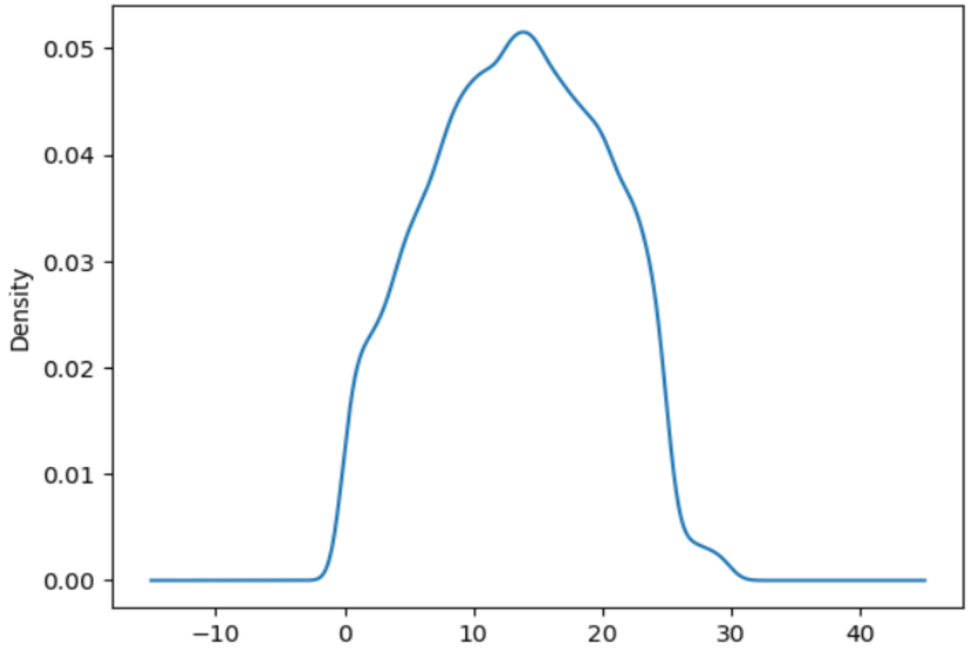
- Most of the borrowers are having rental property (about ~2500 own their property only)
- From the second plot we could identify that most of the defaulters are from the state like CA, TX and FL.

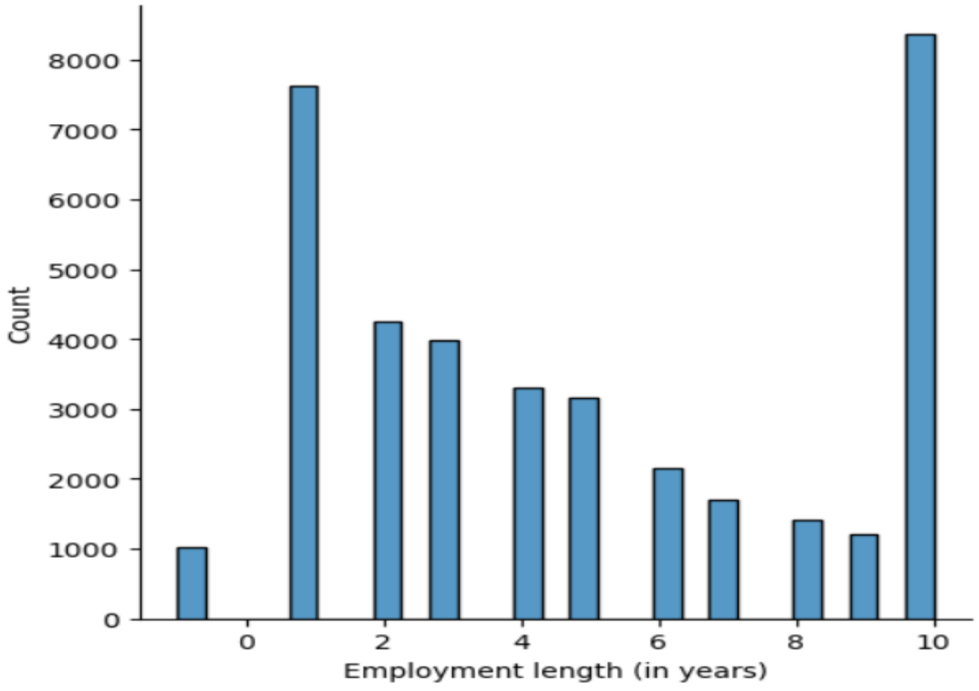
Univariate Analysis



- Majority of the loan amount are from ~5K to ~15K

Univariate Analysis





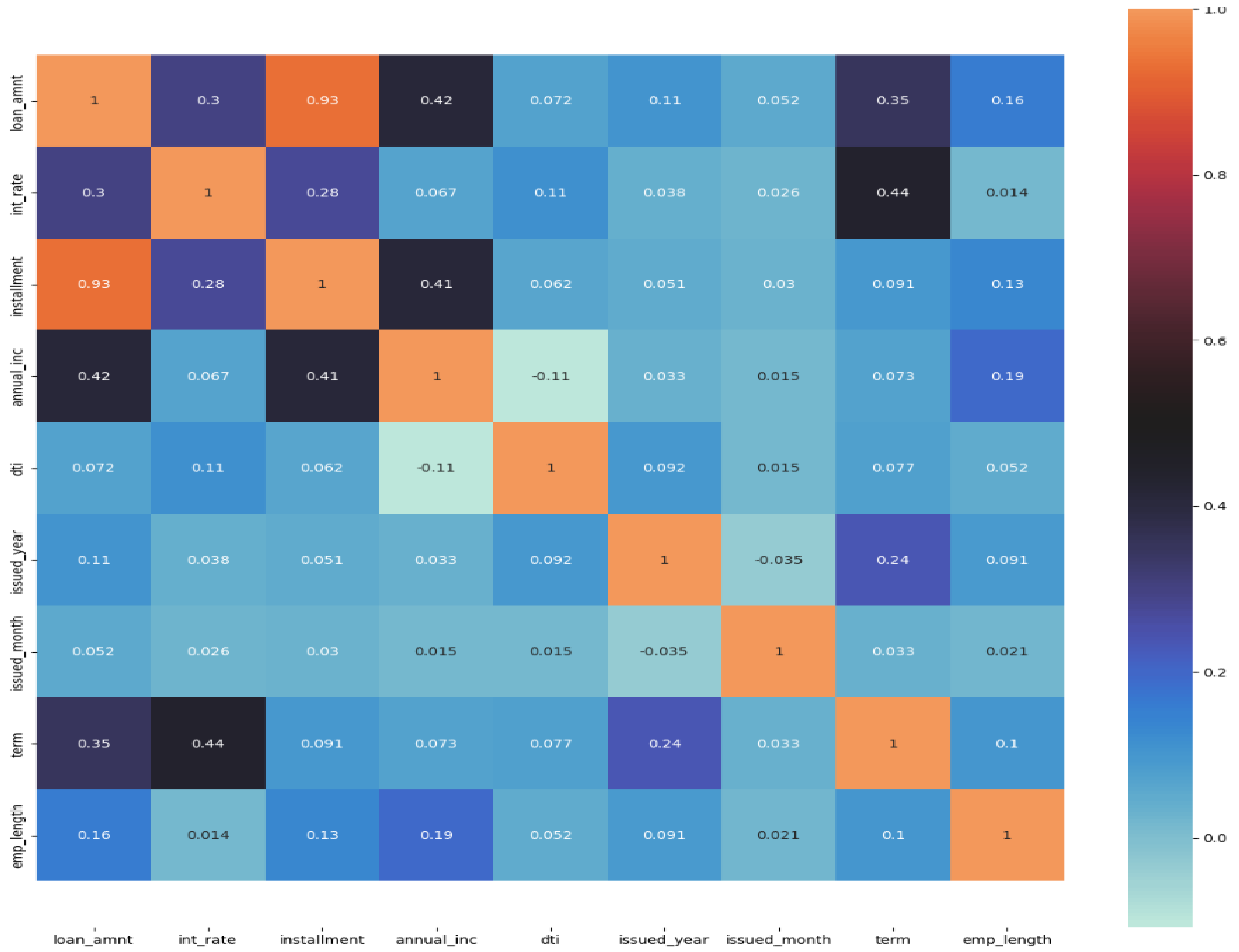
- Most loans are lent to borrowers with DTI ratio in between 10 and 20.
- Majority of the homeowners have either high work experience of 10 + years or 1 year.

Segmented Univariate Analysis

Observations:

- Loan amount for charged-off loans are higher than fully paid loans
- Interests rate are higher for charged off loans.
- DTI ration for charged-off loans are higher.
- Annual income for fully paid loan are higher.
- Interestingly, loan amount goes up with pooper grade.
- The loan amounts are higher for people with Mortage then people with own houses.
- The loan amounts are higher for verified individuals

Bivariate Analysis



- This heat plot has various observations.
- Term and Rate of interest are proportional, so default rate is high in 60 months tenure. As most of the people have taken high loan amount with high interest rate and hence faced difficulty to settle back
- For more installments loan amount is also higher.

Final Conclusion

- If the applicant home ownership is mortgage and loan amount is greater than 14K.
- if the applicant employment duration is 10+ years and loan amount is greater than 14k.
- Higher interest rate with around 14% rate, increases the default possibility.
- DTI ration of over 14, increases the default possibility.
- Lower annual income of about 60K, increases the default possibility.
- Grade G loan, with annual income of about 74K are more likely to default.
- Owners on Rent with about 50K annual income, and 14% interest are more likely to default.
- When the loan is verified, and loan amount is over 16K, and interest rate is around 15%.

Thank You