

# Lending Club Case Study

Submitted By:

Group Facilitator – Sareddy Jaswanth Reddy

Group Member – Sareddy Jaswanth Reddy

# Objective of the Case Study

- Understanding of risk analytics in Banking and Financial services.
- Understand how data is used to minimize the risk of losing money while lending loans to customers.
- Identification of Loan applicants that tend to ‘default’ for paying loans.

# CASE STUDY DETAILS

- Lending Club is a Consumer Finance Company which facilitates loans to Customers like Personal Loans, Business Loans , Financial Loans and so on.
- For the EDA analysis Lending Club case study is taken where in order to solve, following need to be considered.

## Business Understanding

- Risks
- Decision

# **Business Understanding- Risks**

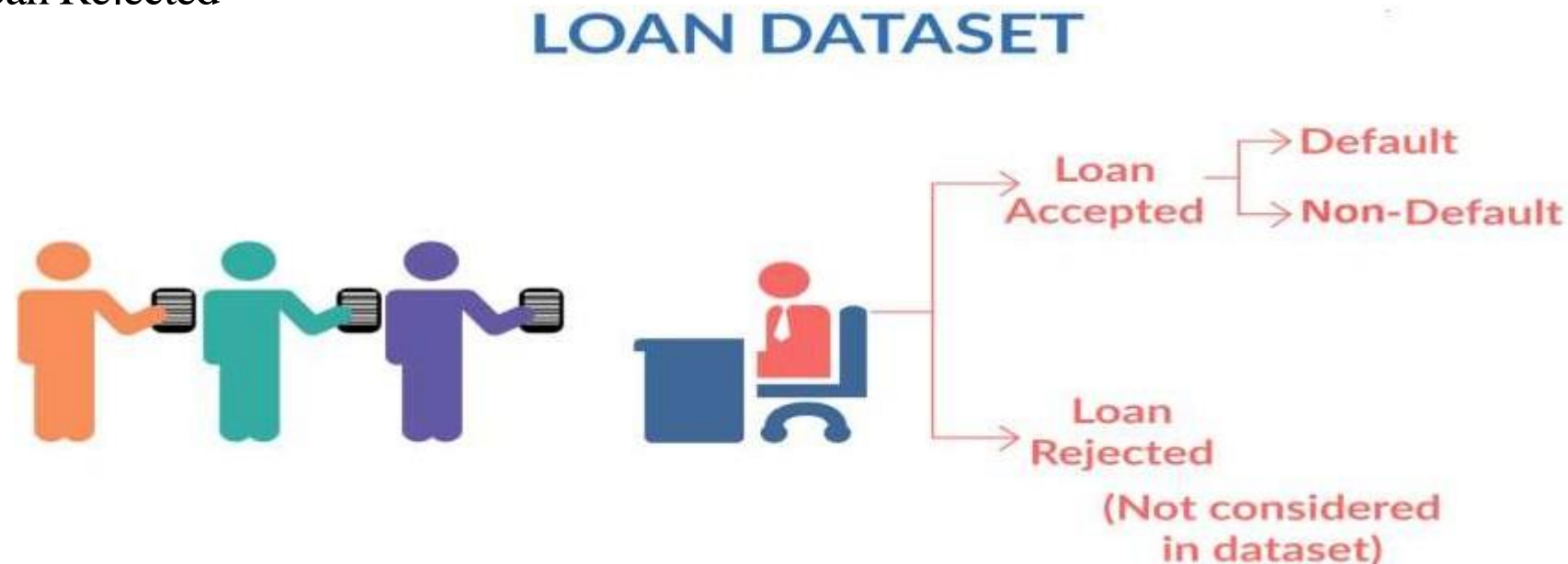
**Two types of risks are associated with the bank's decision:**

1. If the applicant is likely to repay the loan, then not approving the loan results in a loss of business to the company.
2. If the applicant is not likely to repay the loan, i.e. he/she is likely to default, then approving the loan may lead to a financial loss for the company

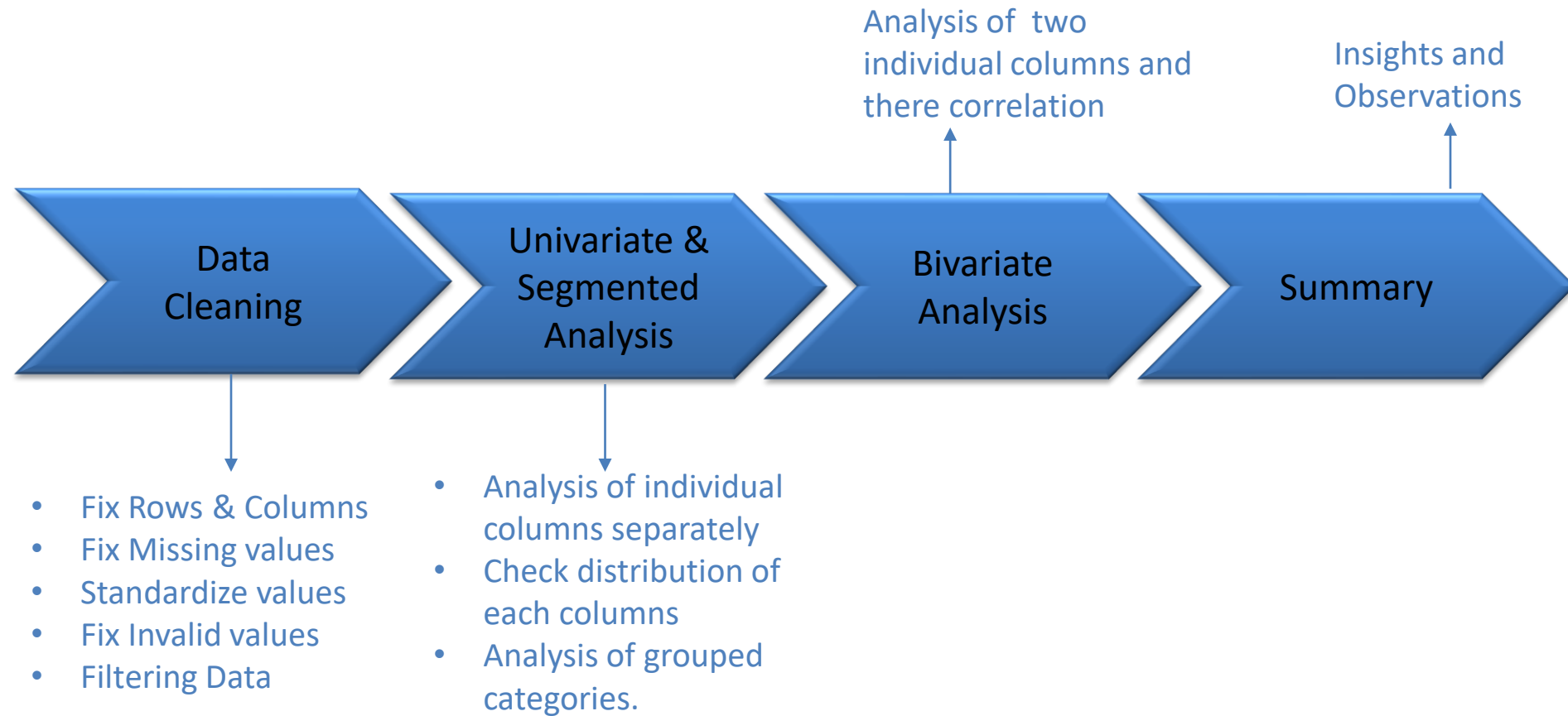
# Business Understanding- Decision

When the company receives a loan application, the company has to make a decision for loan approval based on the applicant's profile.

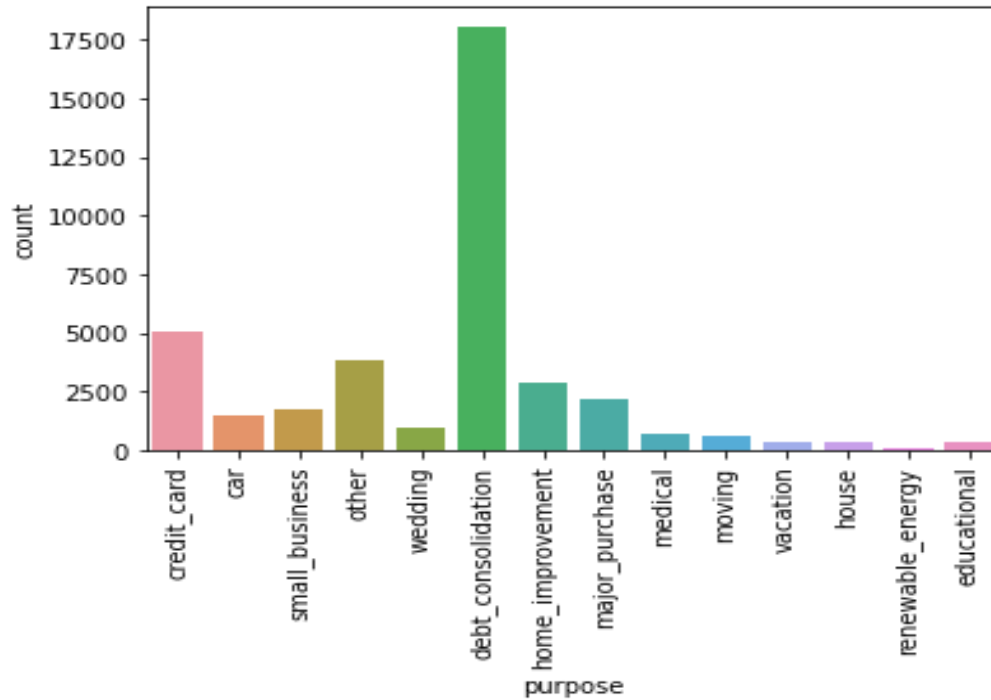
- Loan Accepted
- Loan Rejected



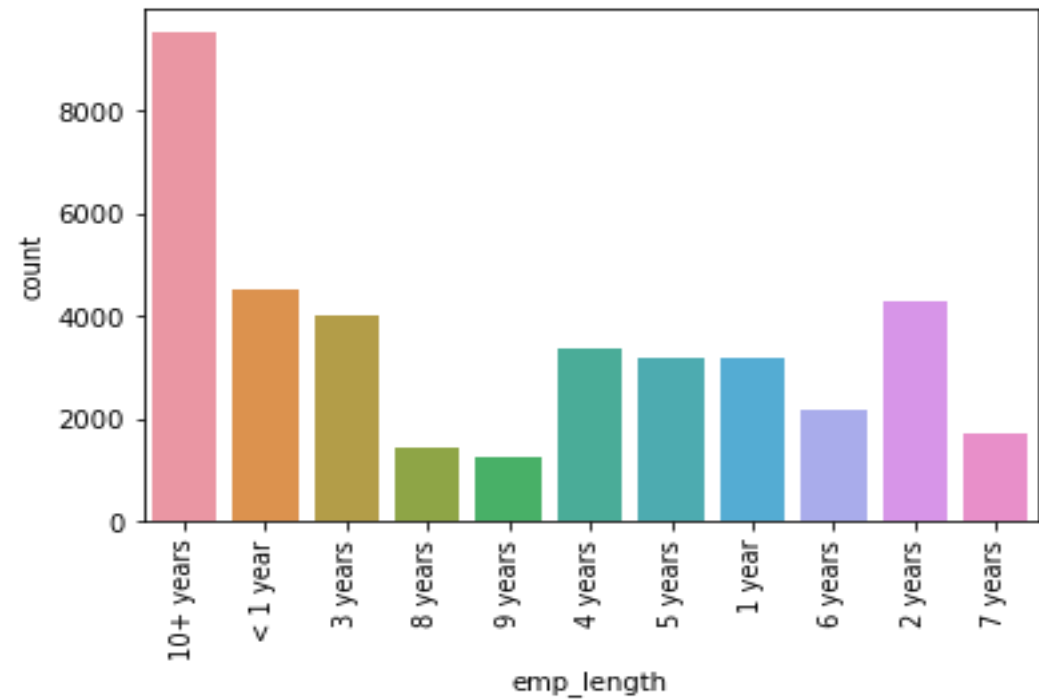
# Dataset Analysis Approach



## Analysis

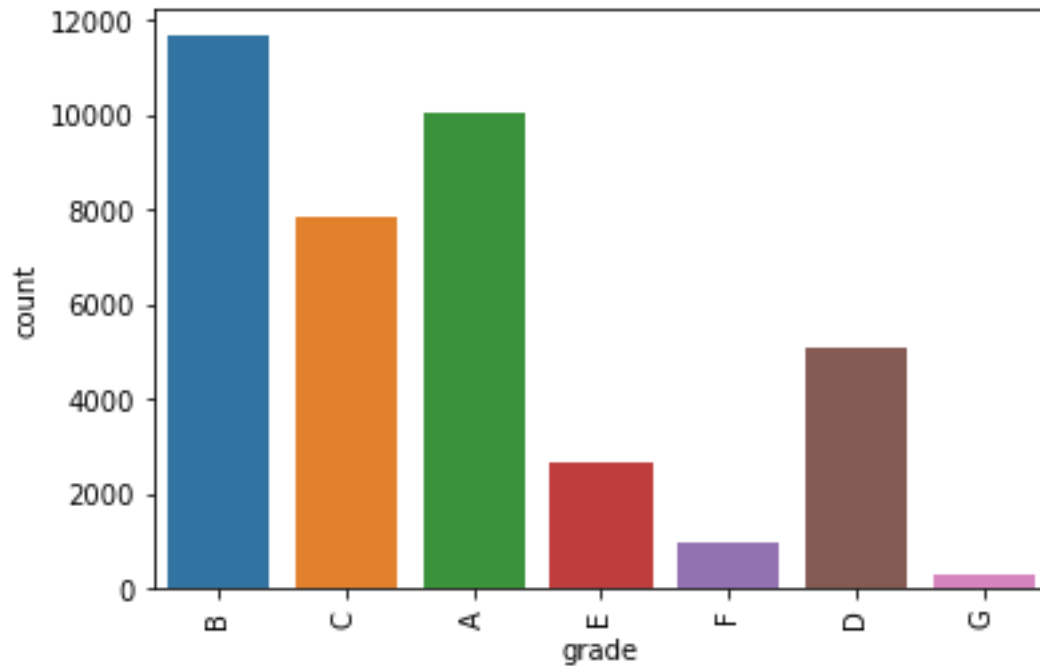


- Most of the Loans are taken for Debt Consolidation purpose.
- Less Loans are taken for Renewable Energy.

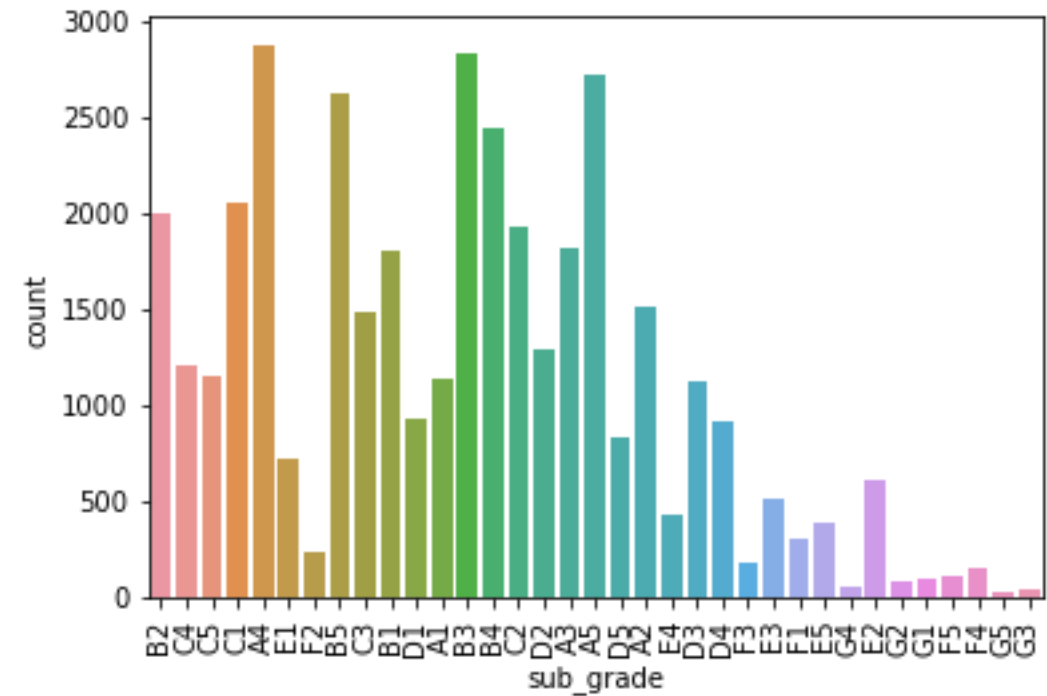


- Most of the Loans are held by 10+ years of job experience applicants.
- Less Loans are held by 9 years of job experience applicants.

## Analysis



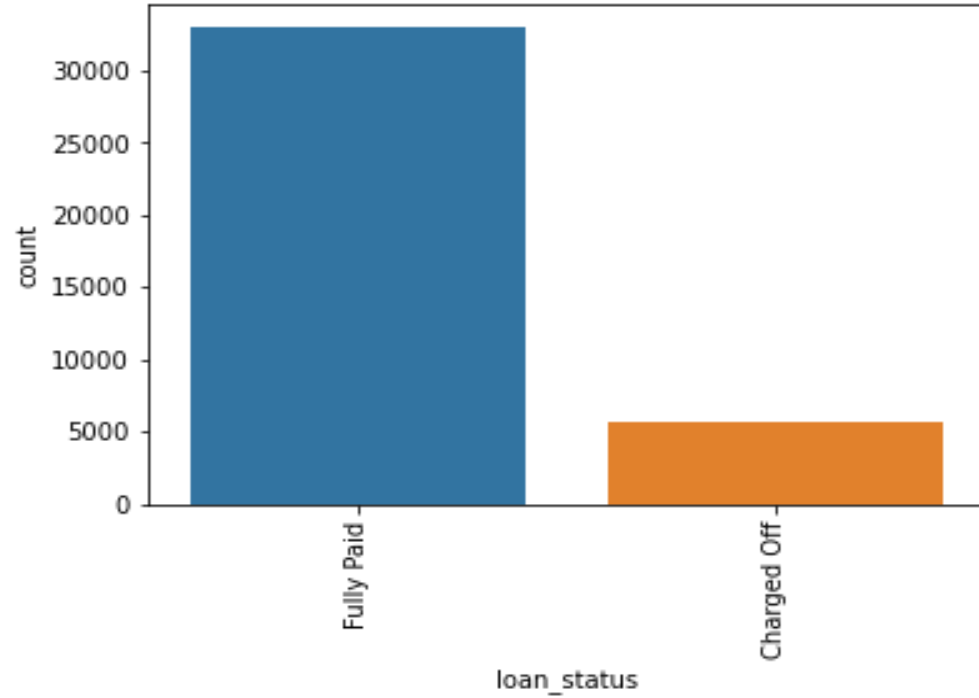
- Most of the Loans are held by B grade applicants.
- Less Loans are held by G grade applicants.



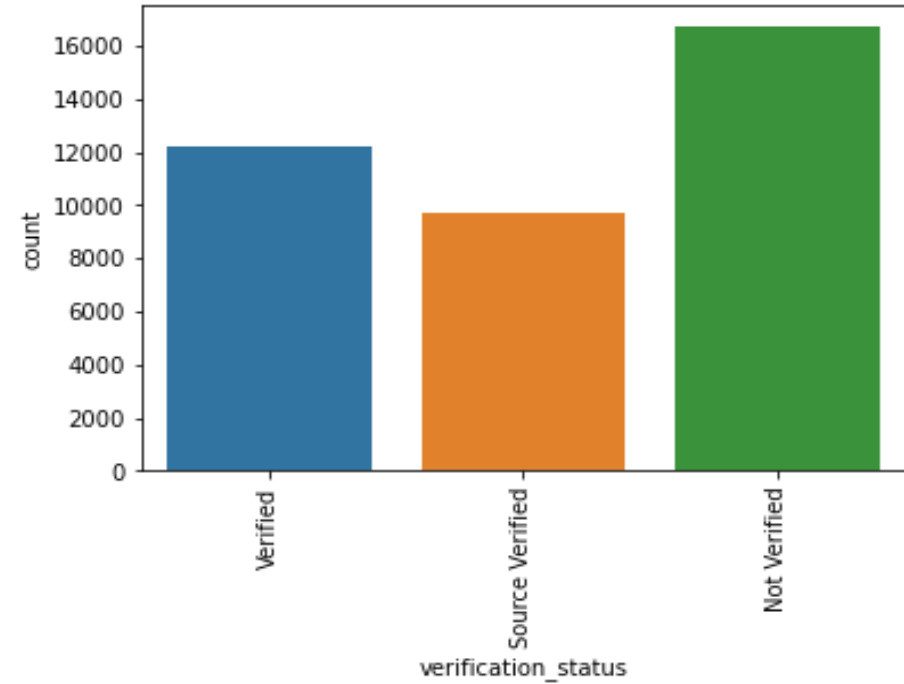
- Most of the Loans are held by A4 sub grade applicants.
- Less Loans are held by G5 sub grade applicants.



## Analysis

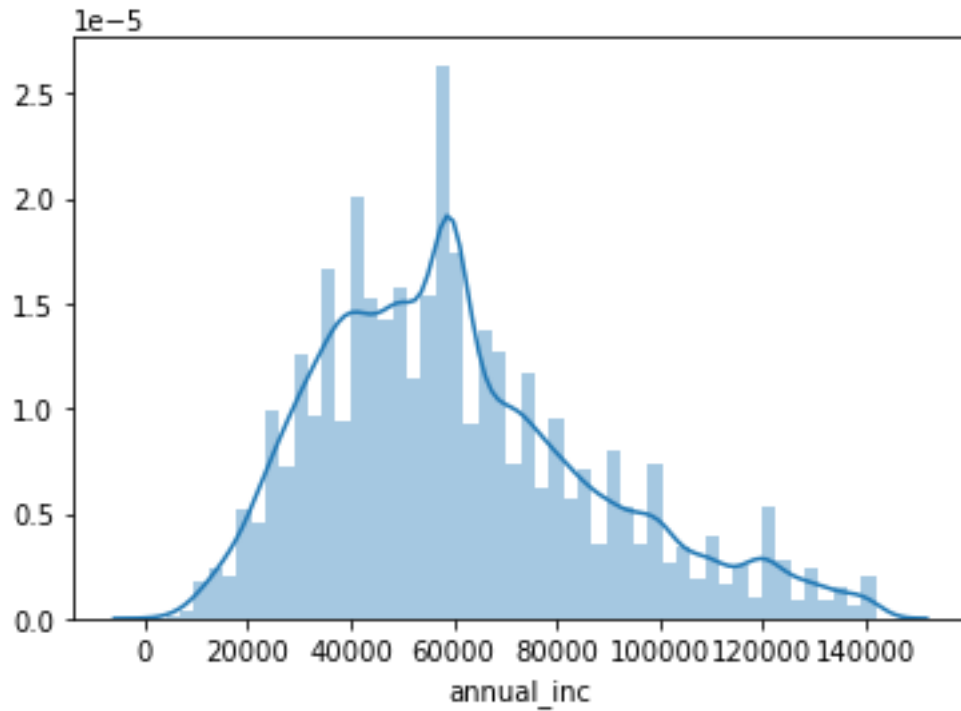


- Most of the Loans are paid by borrowers.
- Few borrowers have skipped paying loans.

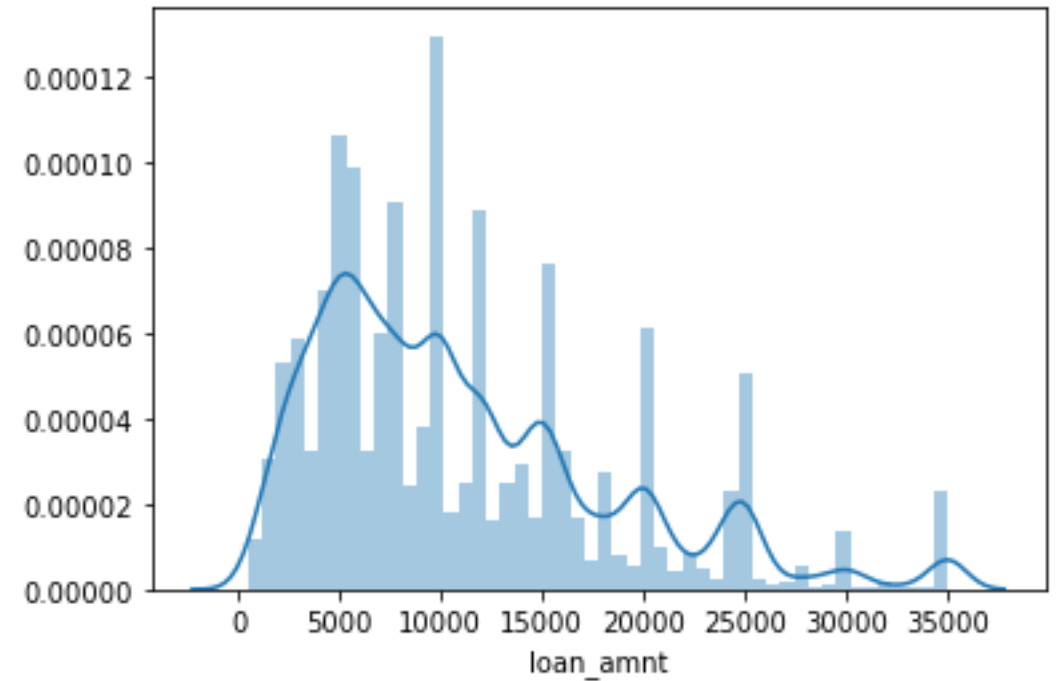


- Most of the Borrowers Income was not verified by LC.

## Analysis

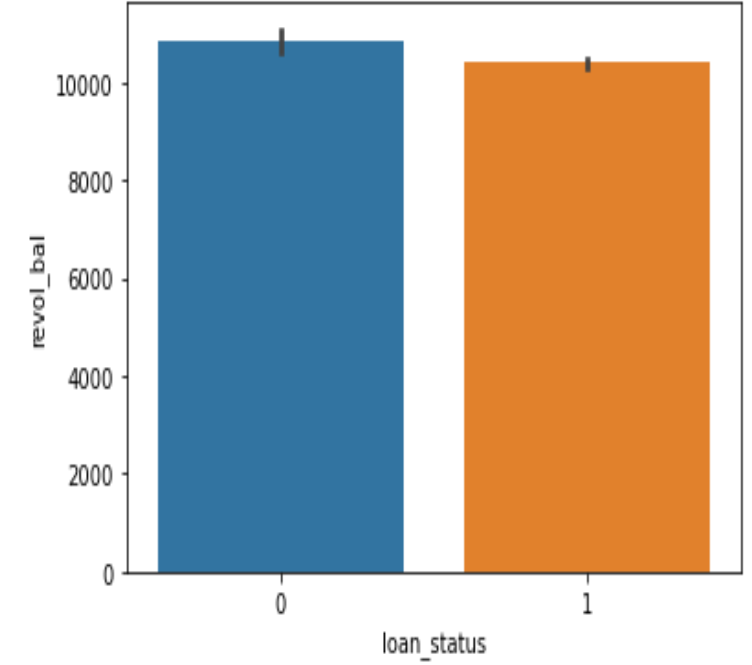
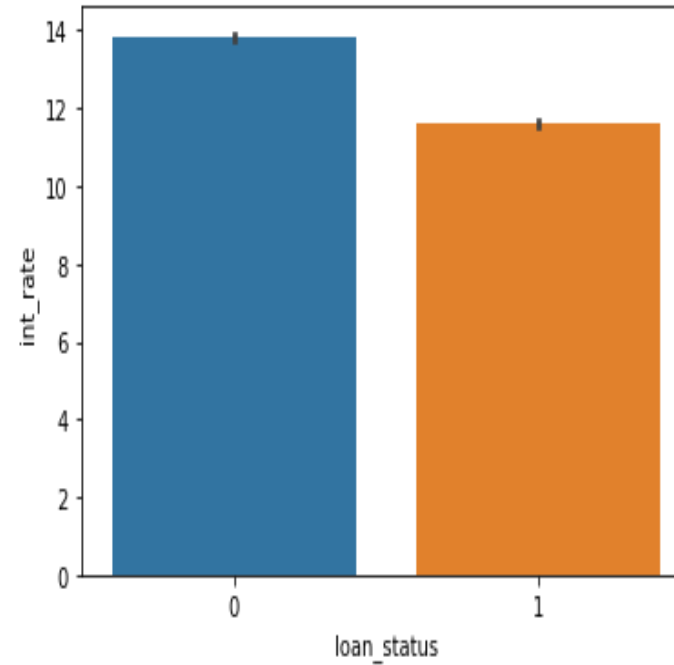
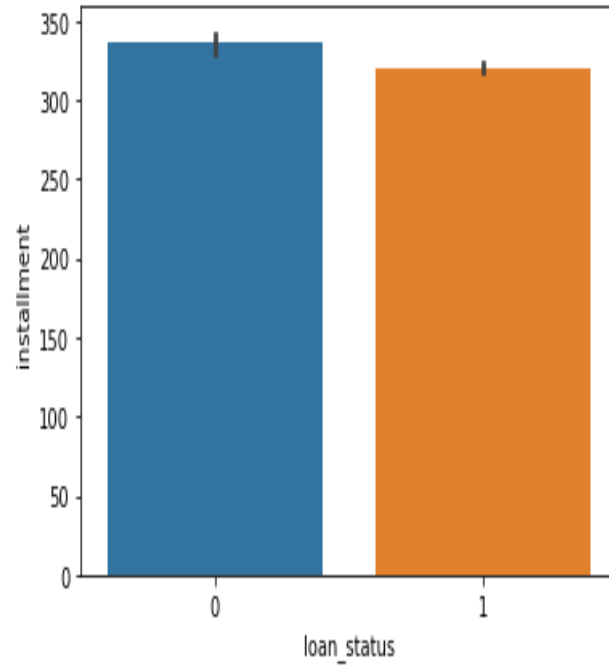


- Most of the Borrowers annual income lies around 60,000.



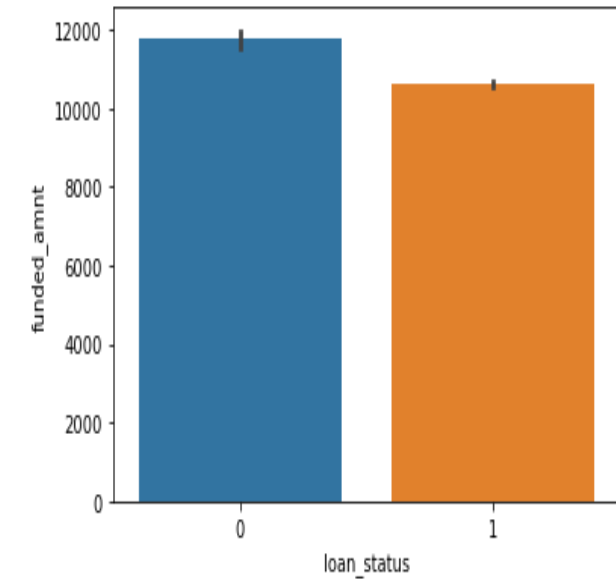
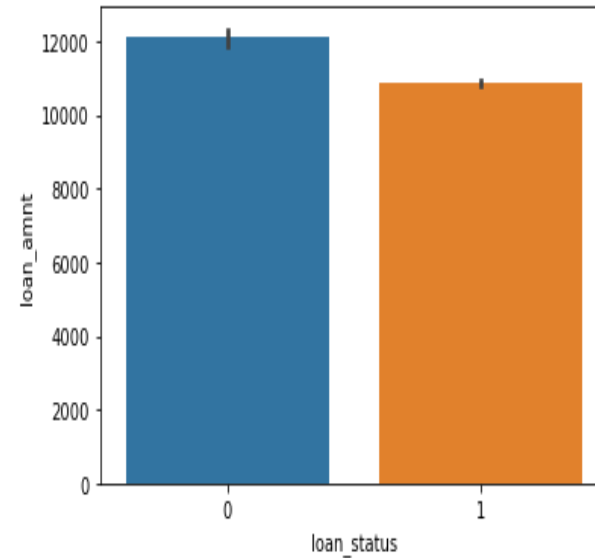
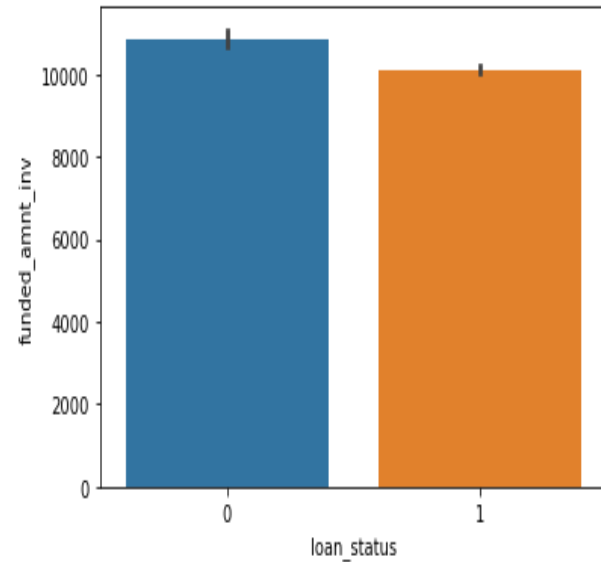
- Most of the Borrowers loan amount lies between 4000 to 6000 range.

# Analysis



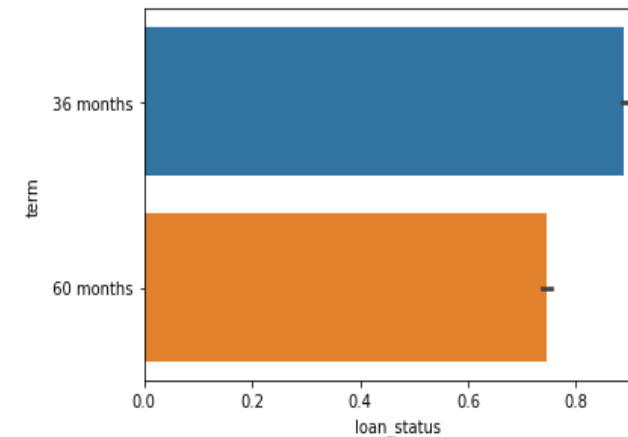
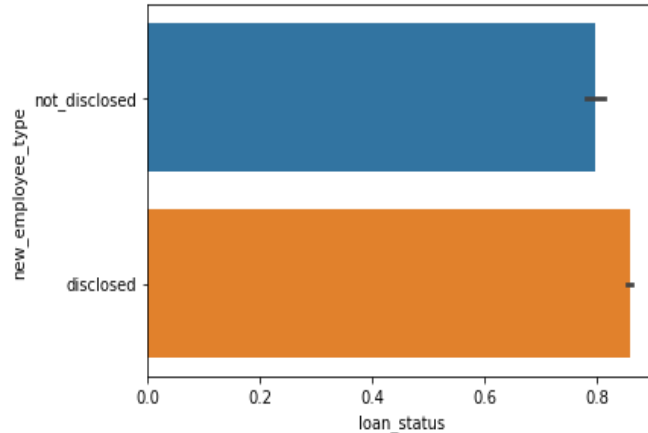
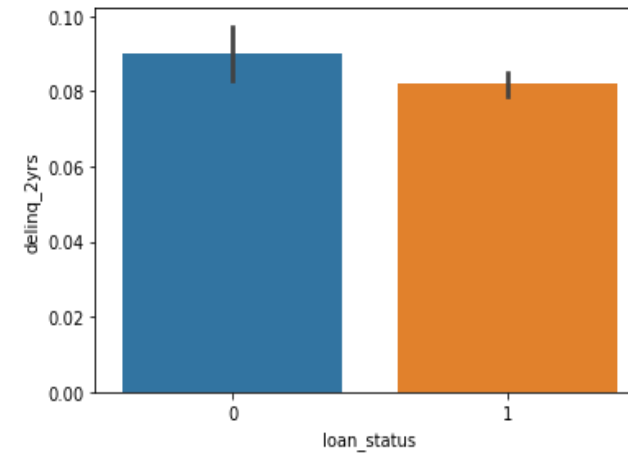
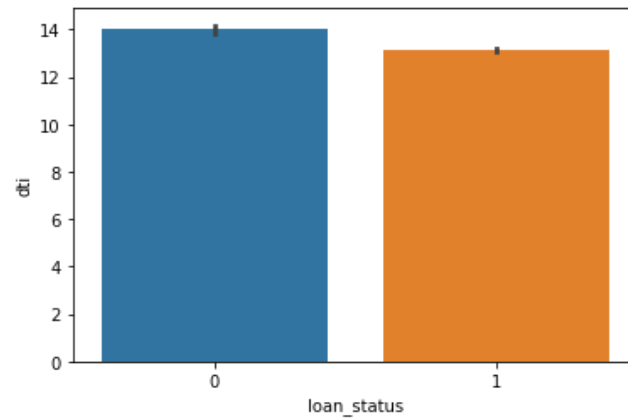
- More number of installments leads to high chance of loan default
- More number of interest rate leads to high chance of loan default
- More number of revolving balance leads to high chance of loan default

# Analysis



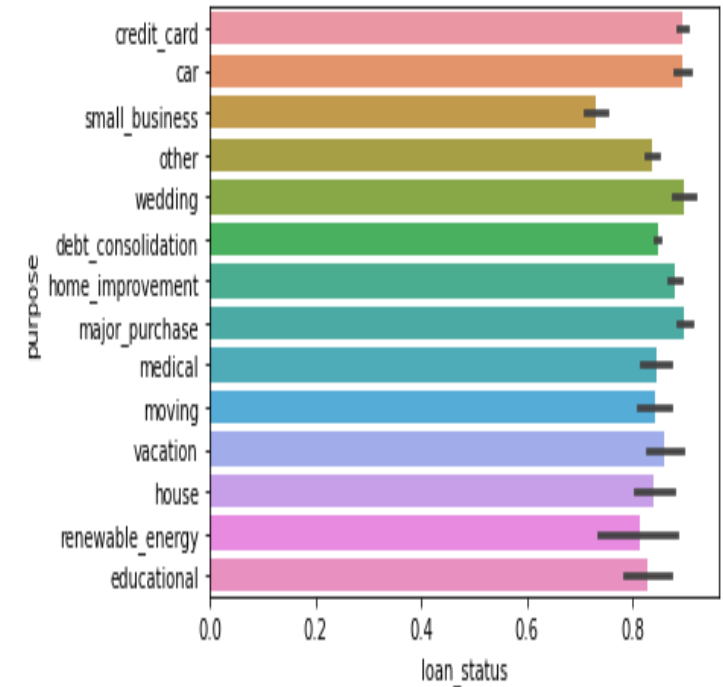
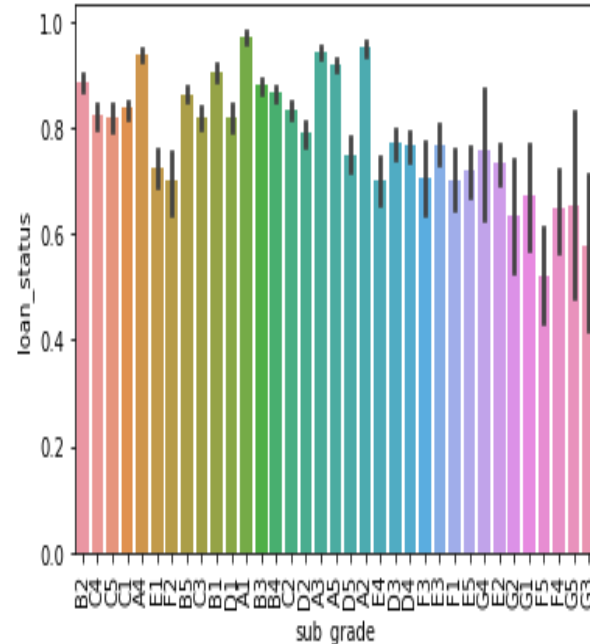
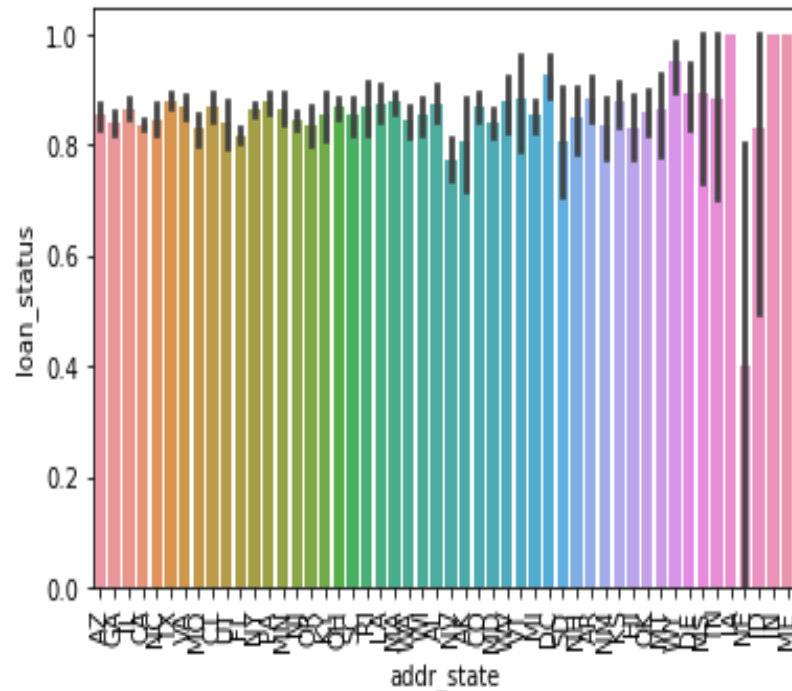
Funded amount, Funded amount invested, Loan amount are correlated to each other and they are negatively correlated to loan status . Due to which as more the amount then more chance of loan defaults.

# Analysis



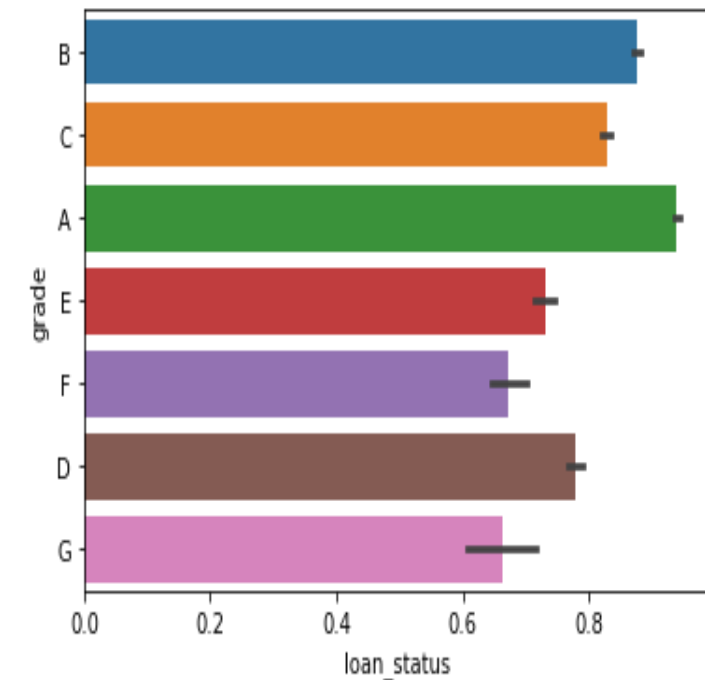
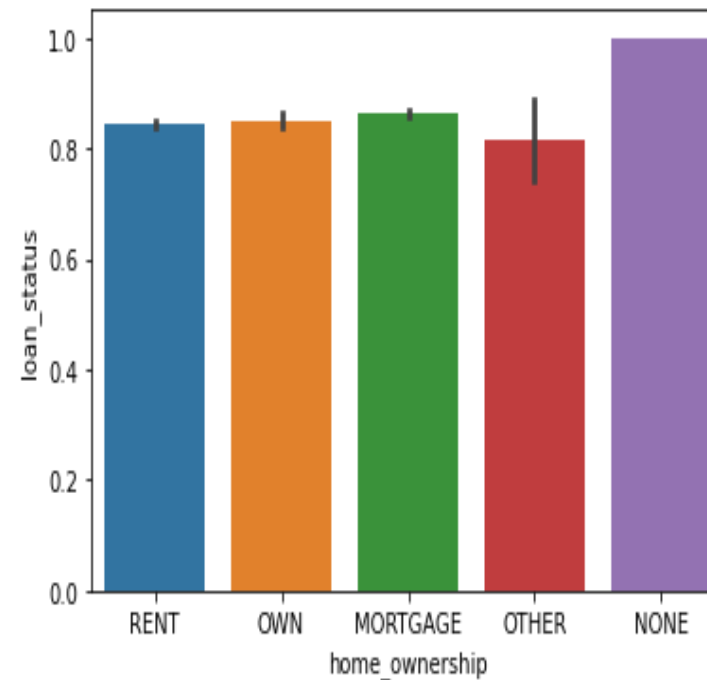
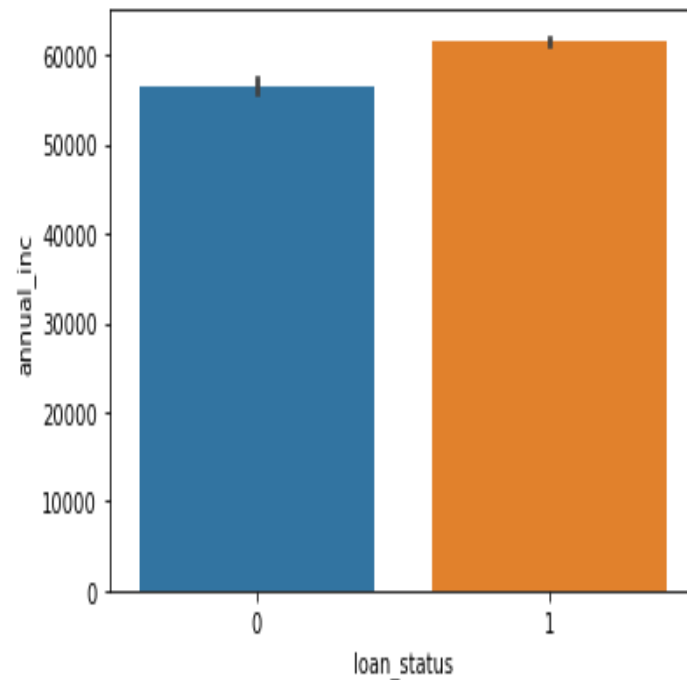
- Higher Dti & Dti\_2yrs based borrowers are more loan defaulters
- Borrowers who didn't disclose their employee role are more loan defaulters
- Borrowers who choose more term to pay ,they are high loan defaulters

# Analysis

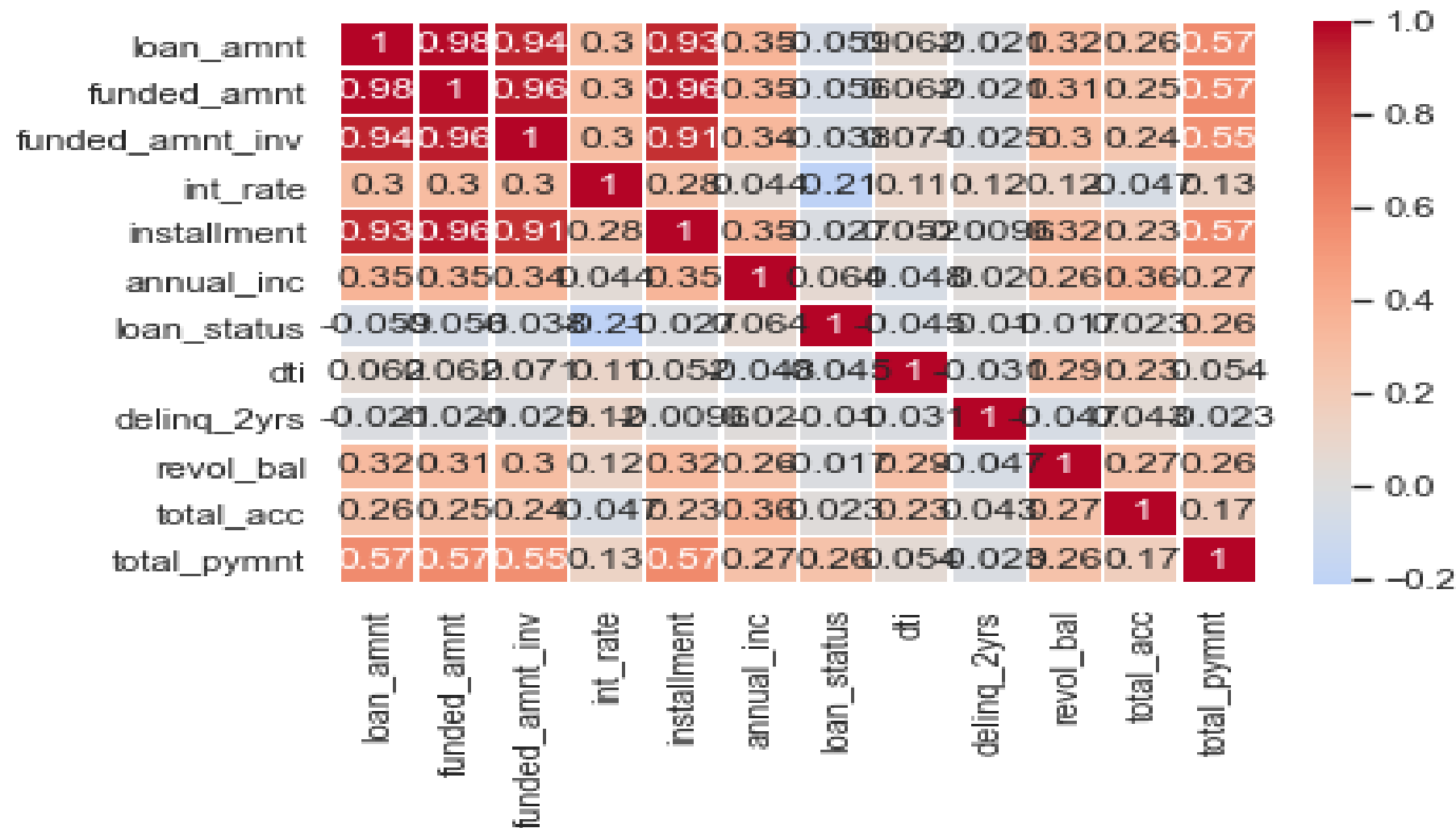


- High chance of loan defaults for giving loans to NE addressed state.
- High chance of loan defaults for giving loans to F5 sub graded borrowers.
- High chance of loan defaults for giving loans to Small business.

# Analysis



- High chance of loan defaults for giving loans to low annual income.
- High chance of loan defaults for giving loans to not known home ownership borrowers.
- High chance of loan defaults for giving loans to G & F grades category.



- Among all parameters annual income highly correlates in positive direction and interest rate in negative direction with loan status.
- Loan amount, funded amount, funded amount, installment are highly correlated to each other.
- Loan amount, funded amount, funded amount, installment, interest rate are negatively correlated to loan status.
- As a overall most of the columns are negatively correlated to loan status.



# Conclusions

Lending Loans to below categories would lead to loan defaults:

- Not disclosing employee type
- Low annual income
- Home Ownership status is None
- NE stated addressed state
- Small Business Purpose
- High number of installments
- G,F grades especially F5 sub grade category
- High number of tenure months(60) to repay loan leads to loan defaults