

Lending Club - Case Study

Introduction & Objective

- * Lending Club is a 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.
- * Borrower applies for the loan(`loan_amnt`) by providing their income(`annual_inc`), credit quality score, professional experience(`emp_length`), and for what purpose they are applying the loan(`purpose` and `title`) and which place they are staying(`addr_state`) and are they staying in their own house / rent / mortgage (`home_ownership`)
- * Lending club shares the request with the investors.
- * If once they validated the details, they will share how much amount got approved by investors(`funded_amnt_inv`) and their rate of interest(`int_rate`) and (`grade`) and (`sub_grade`) will get decided
- * Borrower will choose the term period (term - 36 months / 60 months) to repay the amount along with the interest

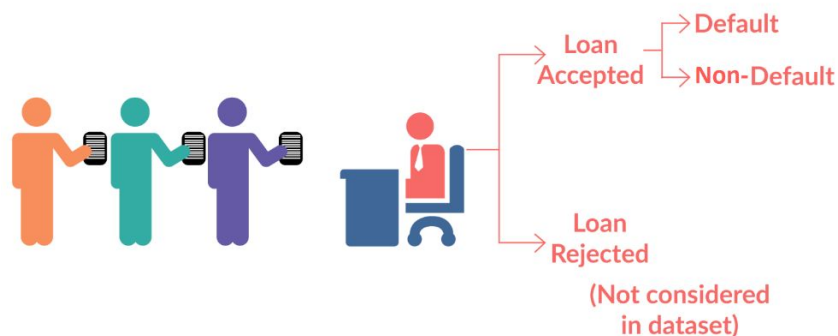
Procedure followed for the Analysis

There are four major parts that are needed to be done for this case study:

1. Data understanding
2. Data cleaning (cleaning missing values, removing redundant columns etc.)
3. Data Analysis
4. Recommendations

Data Overview

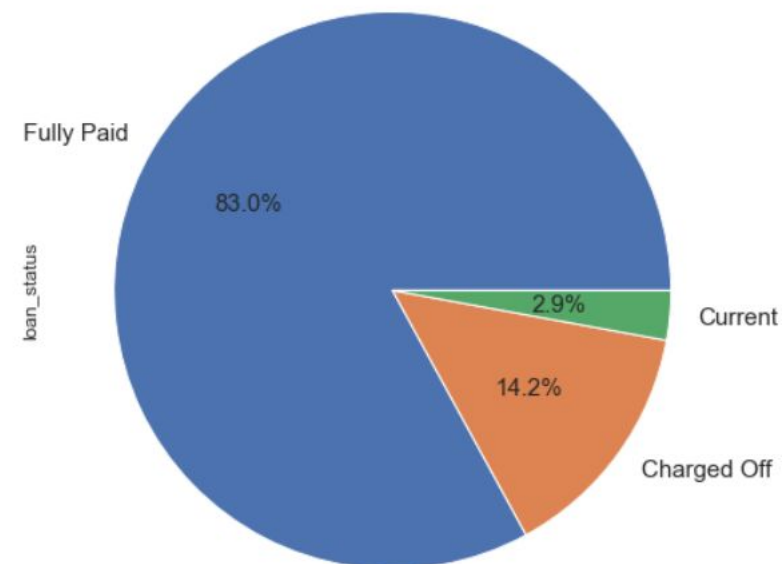
LOAN DATASET



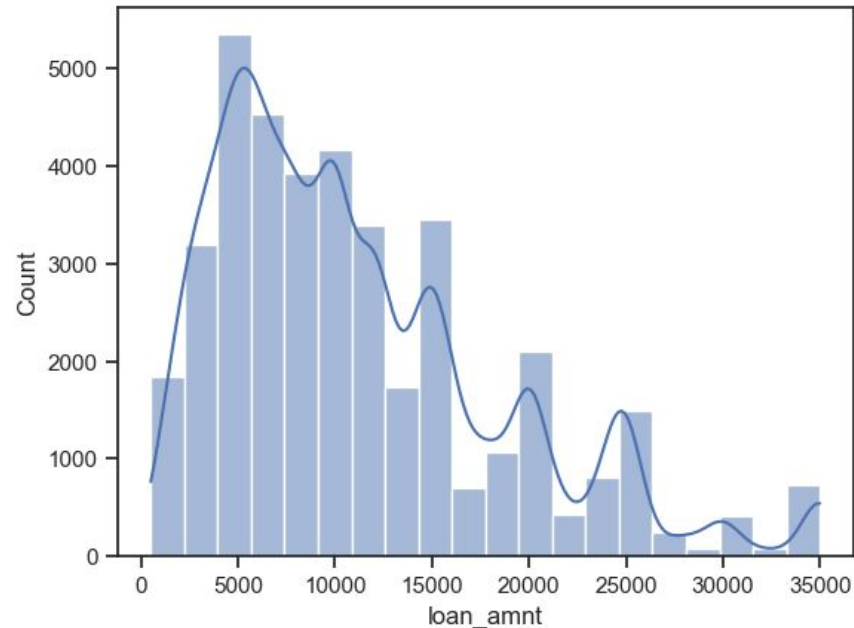
Fully paid: Applicant has fully paid the loan (the principal and the interest rate)

Current: Applicant is in the process of paying the instalments, i.e. the tenure of the loan is not yet completed. These candidates are not labelled as 'defaulted'.

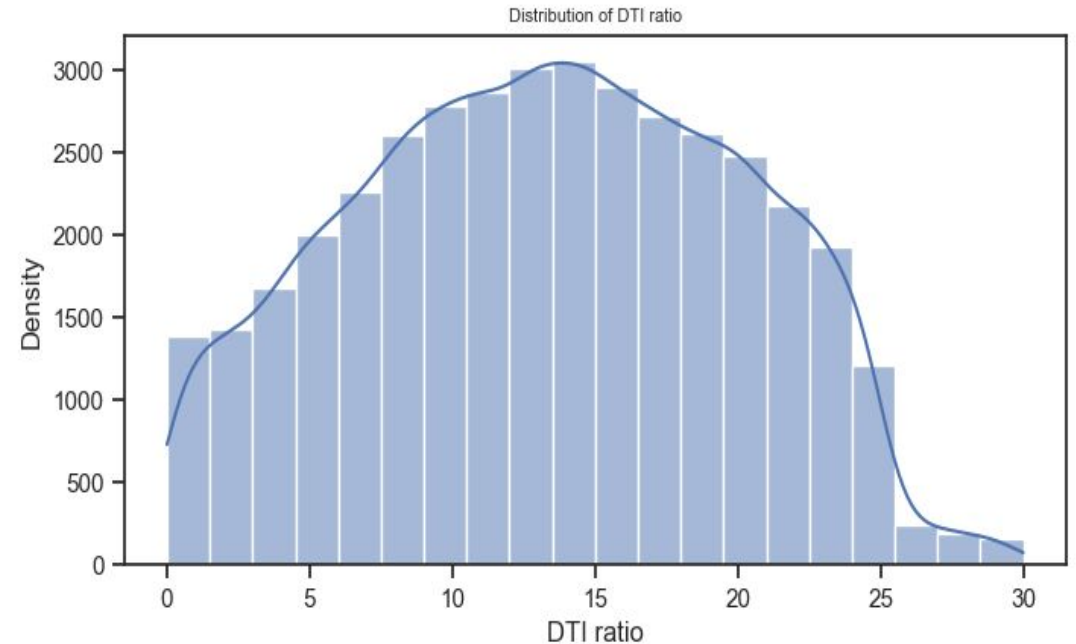
Charged-off: Applicant has not paid the instalments in due time for a long period of time, i.e. he/she has defaulted on the loan



Observations

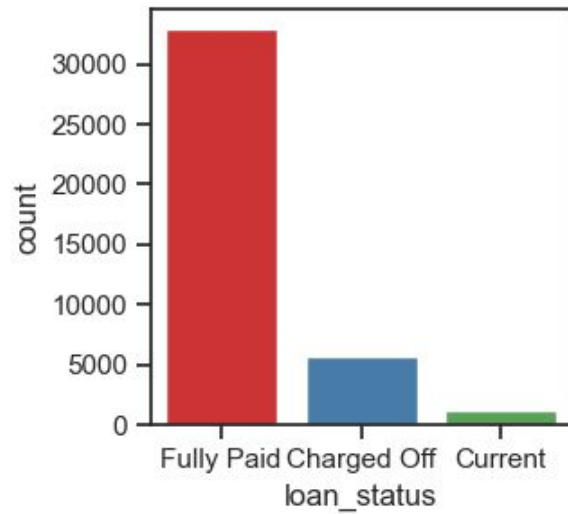


Most of the loan amount ranges between 0 to 15K Dollars

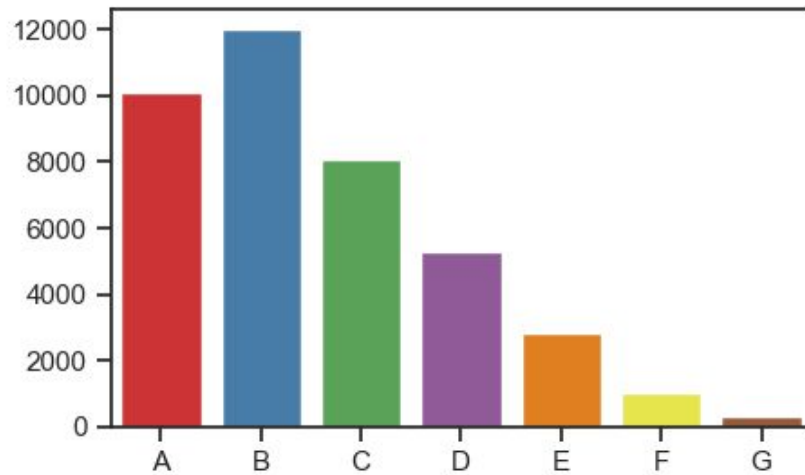


Most of the borrowers have very large debt compared to the income in the 10-15 DTI ratio

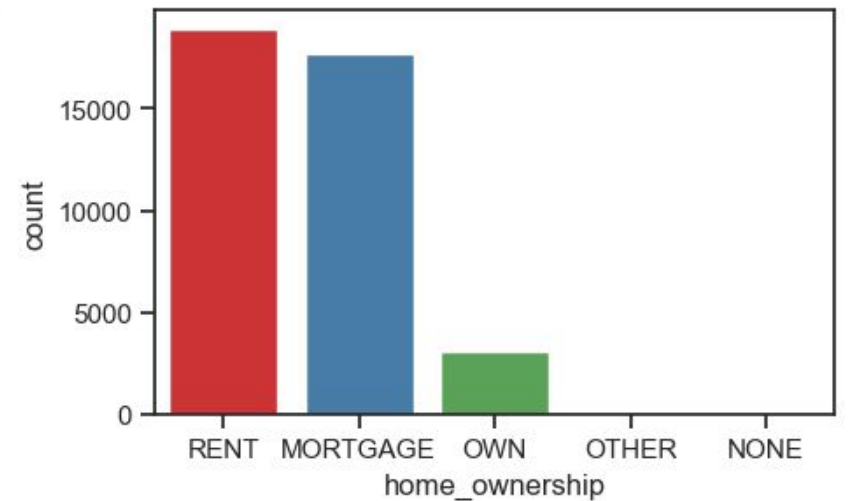
Observations(Uni variate Analysis)



Loan status Stats

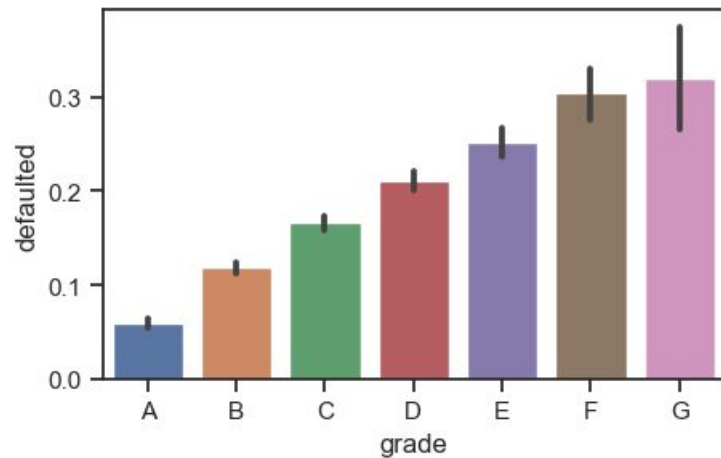


Based on Grade

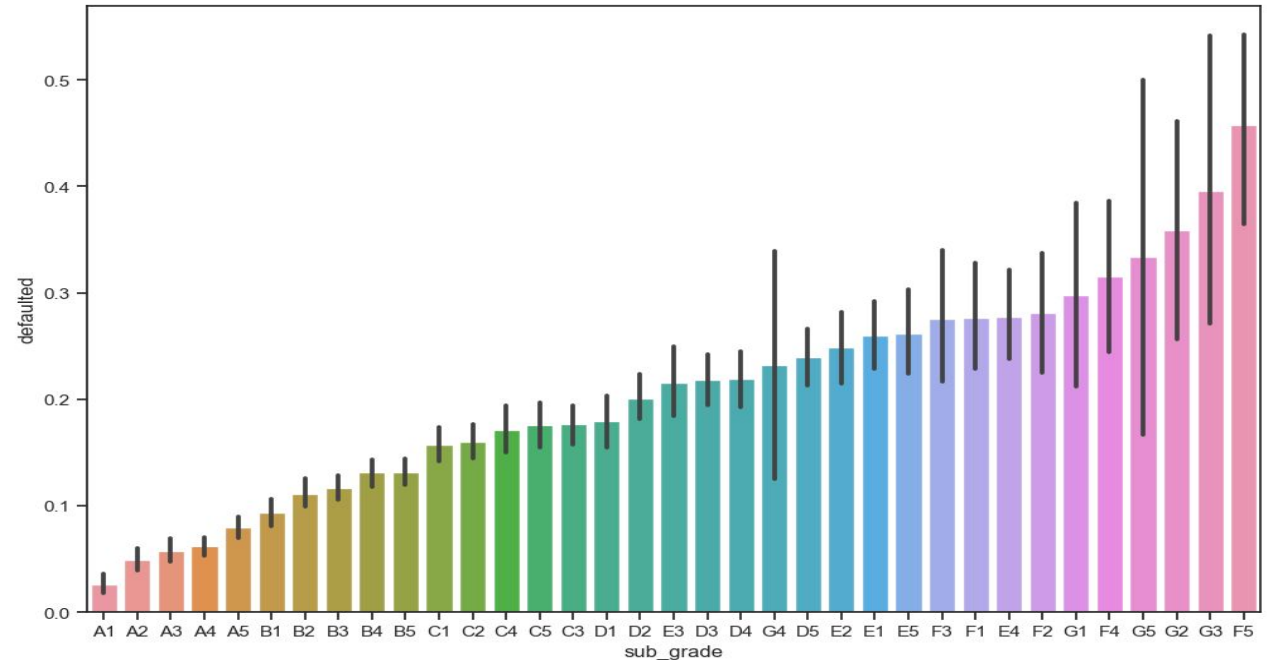


Based on Home Ownership

Observations(Bi Variate Analysis)

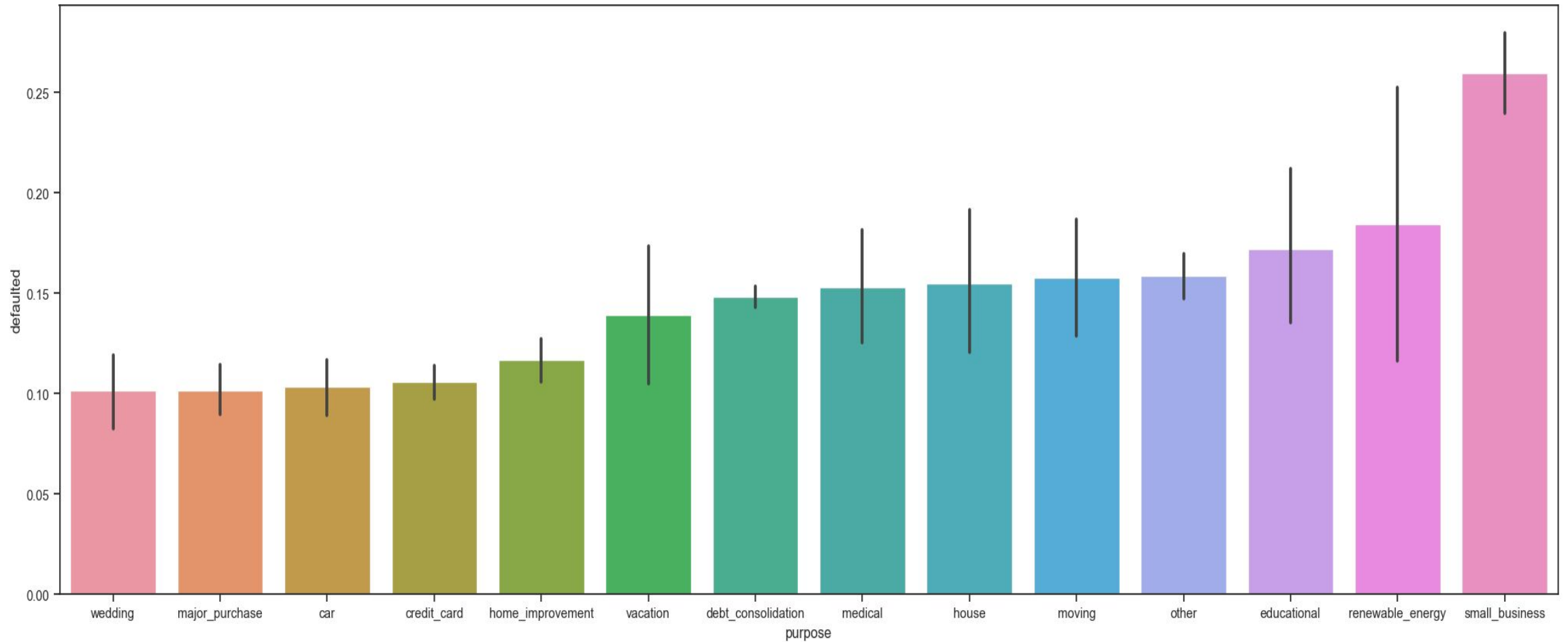


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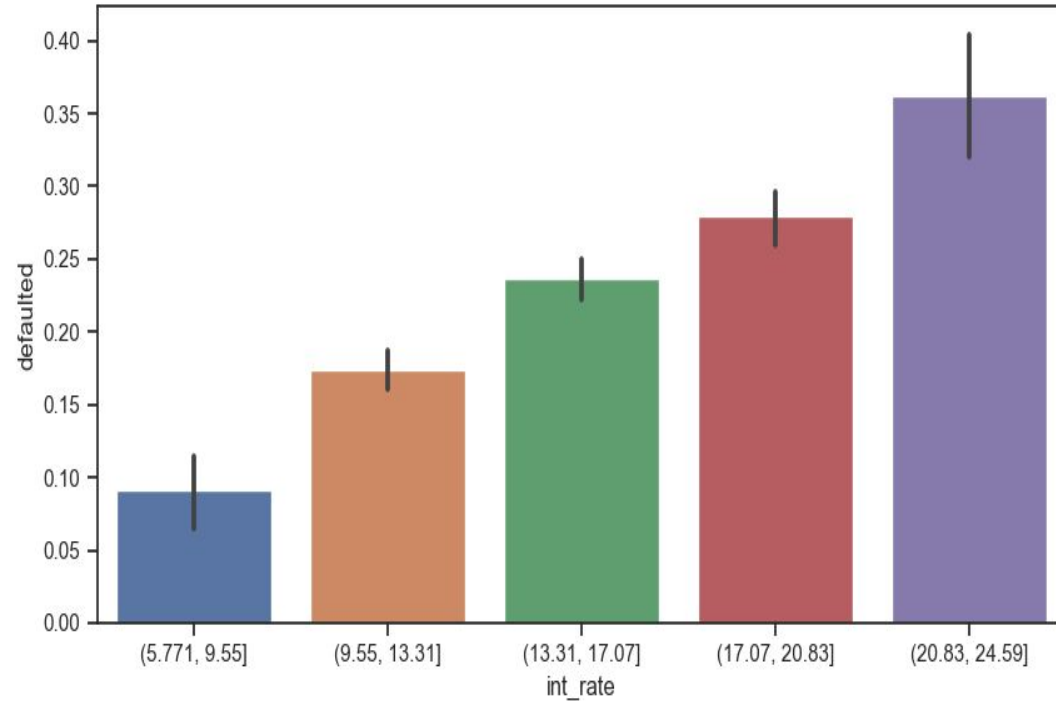
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Observations

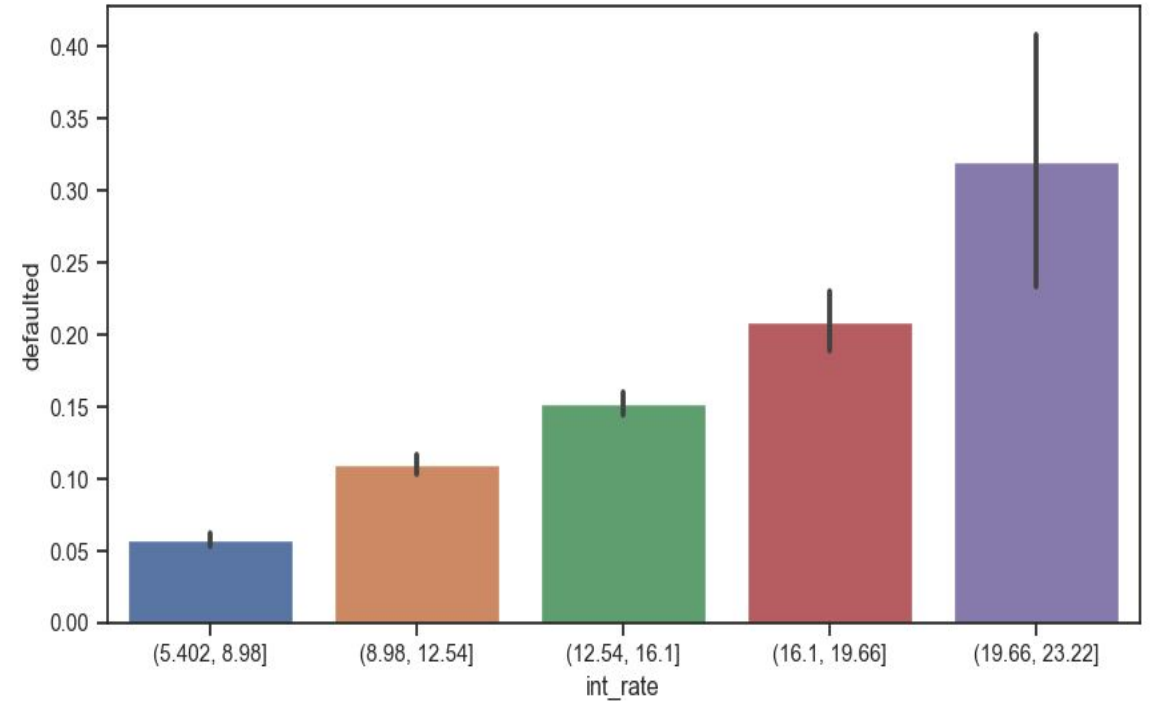


Trend of the defaulters there are more people from educational, renewable energy & small business people present.

Observations



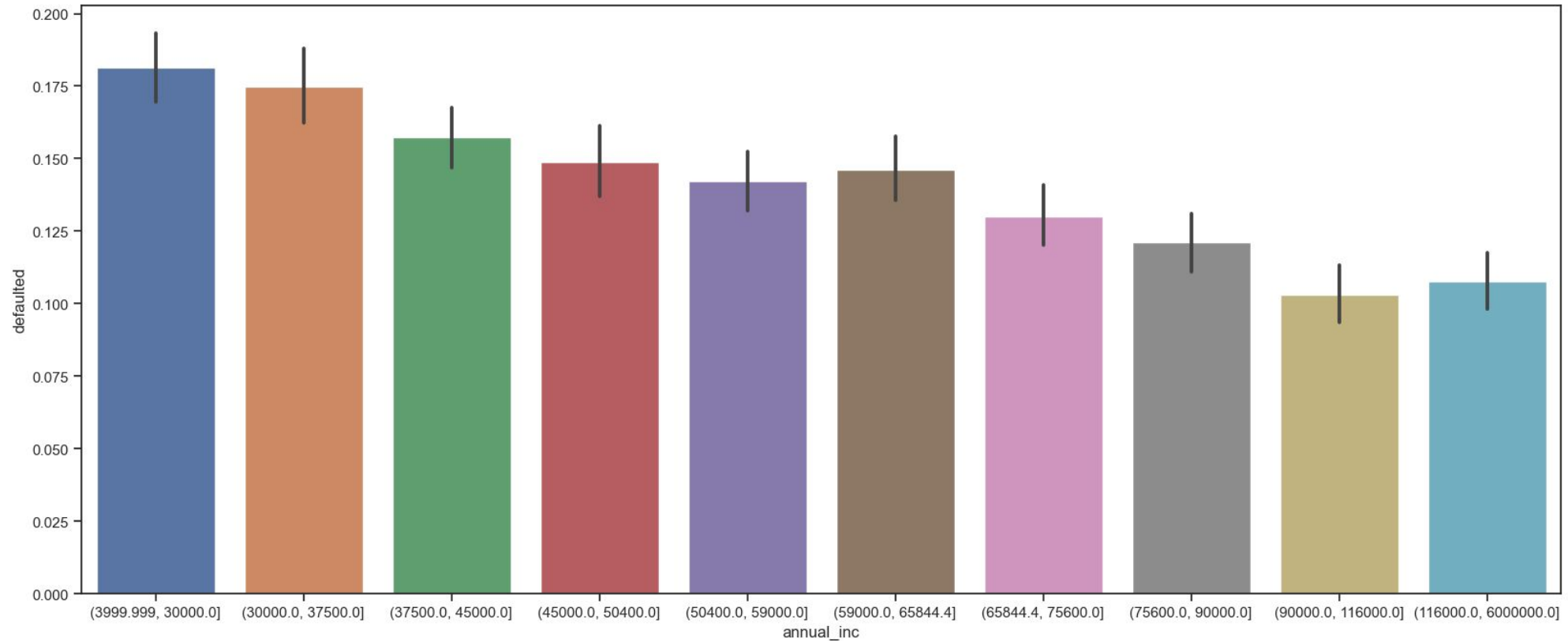
60 months term



36 months term

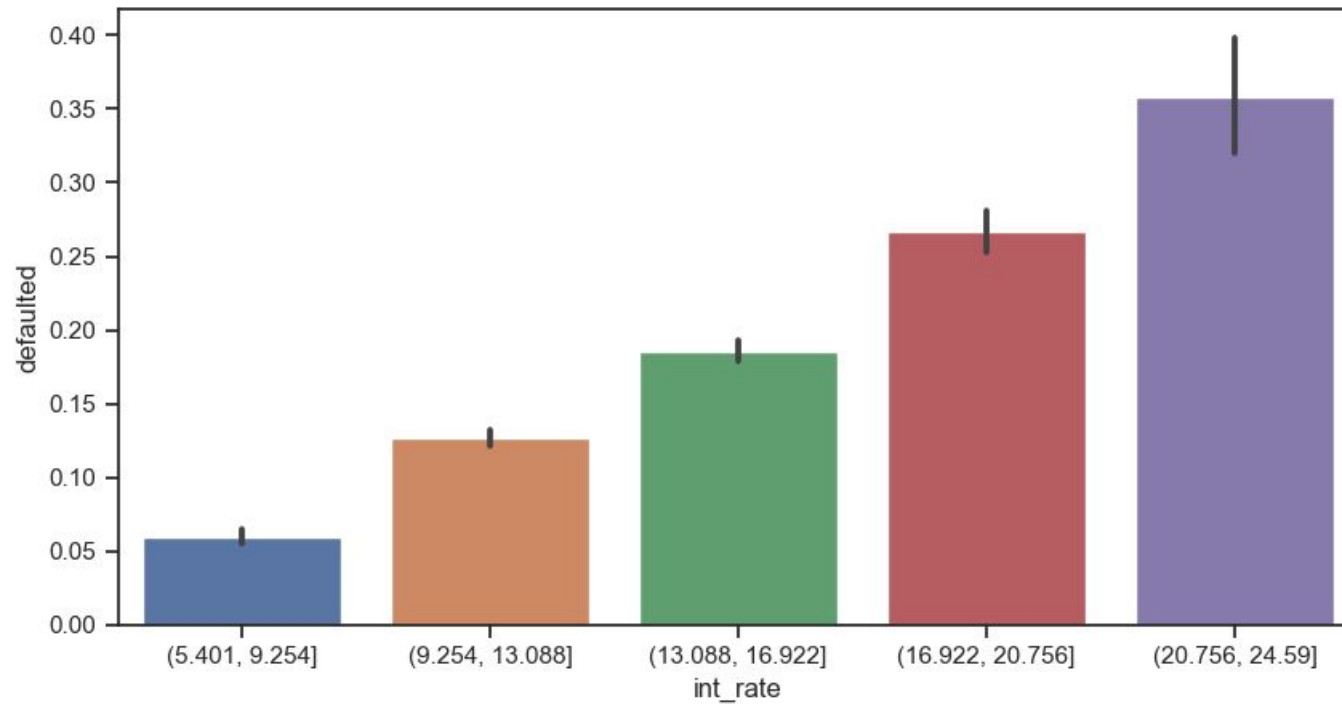
There is a clear difference between tenure of 36months vs 60 months, for 36 months tenure there are less defaulters

Observations



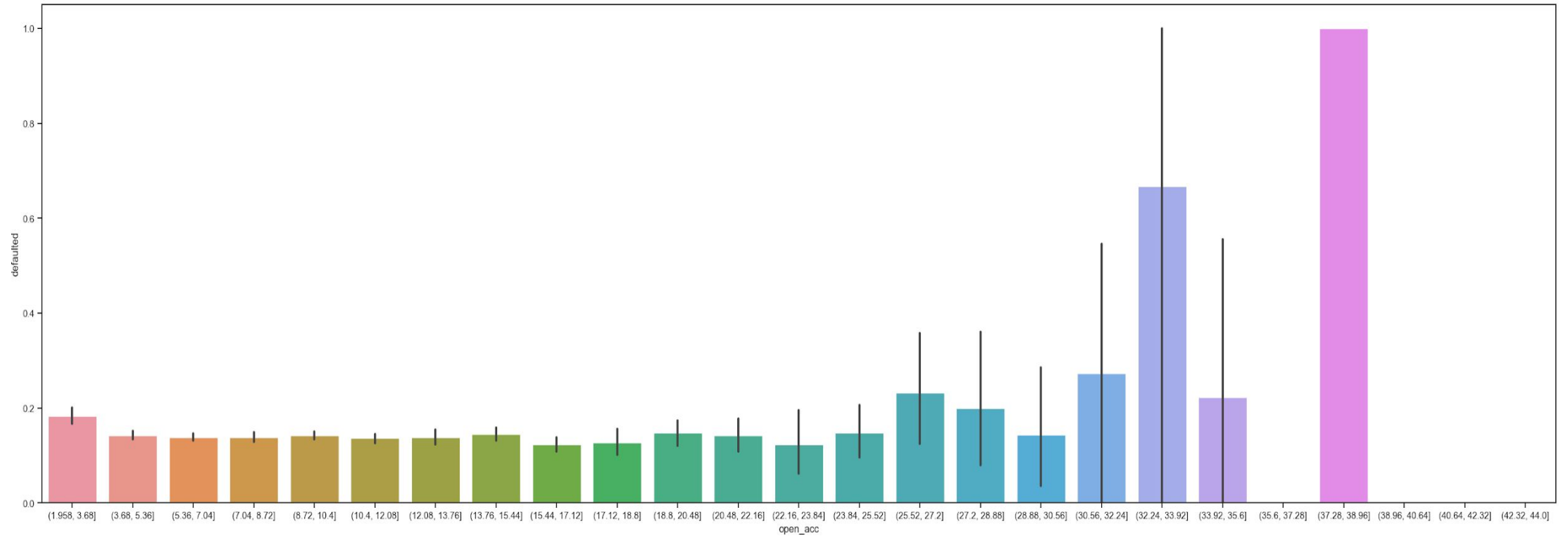
We can observe, decline in the defaulters as the annual income of the employee increases

Observations



As the interest rate increases no.of defaulters are increasing

Observations



There is no impact on the number of accounts on the defaulted status

Recommendations

- ❖ Grade, SubGrade - As grade changes there are defaulters changing, G being the highest
- ❖ Purpose of the loan - Small business has more defaulters
- ❖ Interest rate - As interest rate increases defaulters are more
- ❖ Term - There are more defaulters with 60 months term than 36 months
- ❖ Annual income - If the annual income is more then high possibility that he pays the loan

Stop High Risk Loans

- grade F
- int_rate > 20%

Reduce Medium Risk Loans

- grade > 'C'
- int_rate > 12.5%
- annual_inc < 15000
- term = 60 months

Increase Low Risk Loans

- grade 'A'
- int_rate 7.5-10%
- term = 36 months
- lesser loan amount
- lower dti