

LENDING CLUB CASE STUDY

PRABU DURAISAMY



Case Study

- **Business Objective**

- Lending club is the largest online loan marketplace where Borrowers can easily access loans.
- The company wants to understand the driving factors behind loan default, i.e. the variables which are strong indicators of default. The company can utilize this knowledge for its portfolio and risk assessment.

- **Problem Statement**

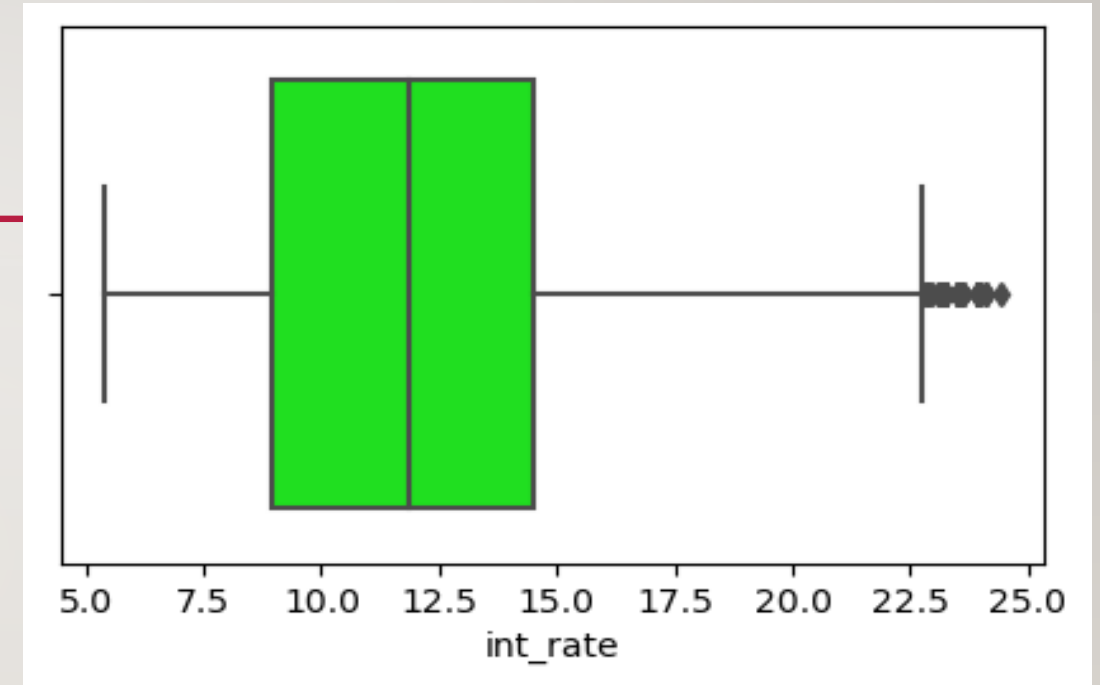
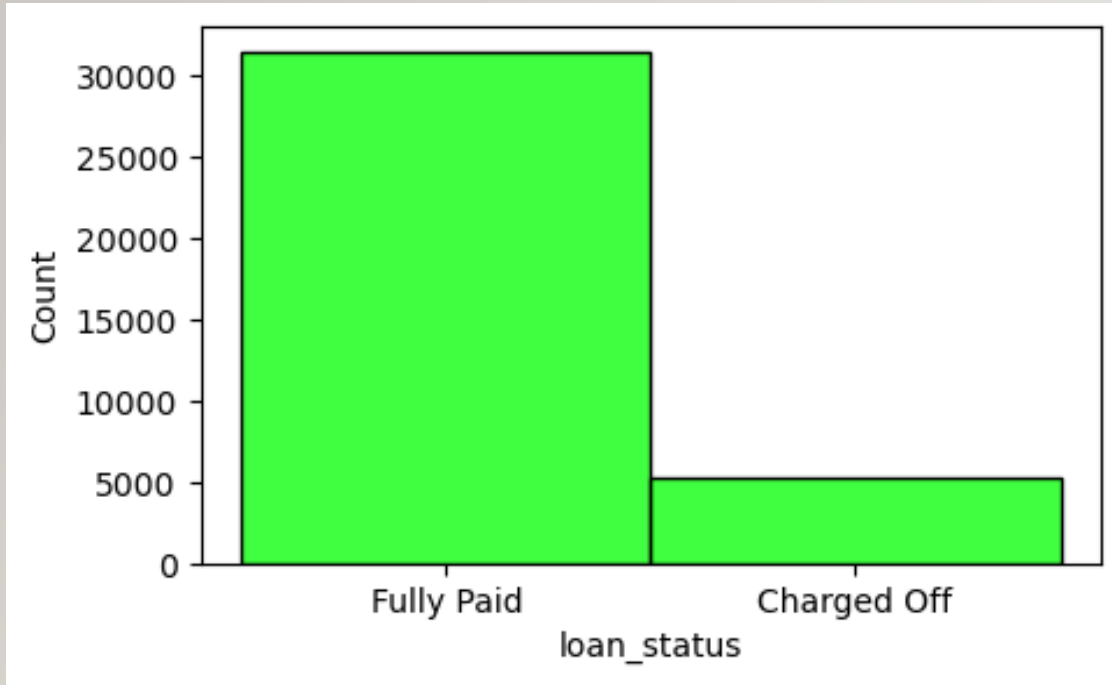
- Borrowers who default cause the largest amount of loss to the lenders. In this case, the customers labelled as 'charged-off' are the 'defaulters'.
- So, identify these risky loan applicants, then such loans can be reduced thereby cutting down the amount of credit loss.

Data Analysis Approach

- Data Cleaning
 - Drop column with null values
 - Drop unnecessary columns which not needed for our analysis
 - Done data Manipulation
- Data preparation
 - Convert to proper data types
- Univariate Analysis
 - Check distribution of numerical variables
- Bivariate Analysis
 - Analyse variable against another variable
 - Find correlation analysis
- Multivariate Analysis
 - Analyse with three variables

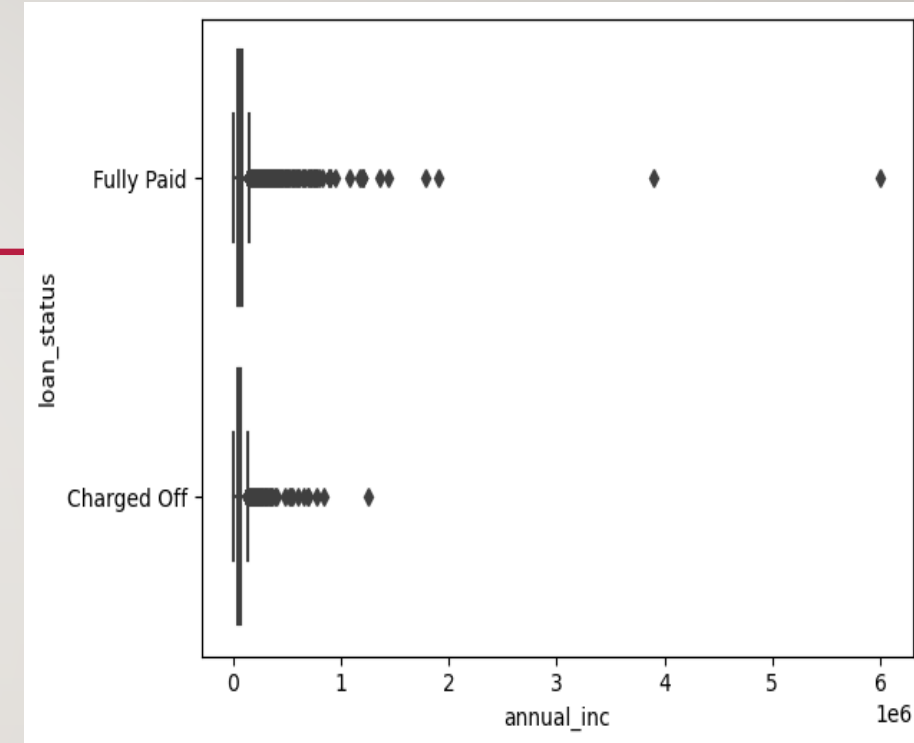
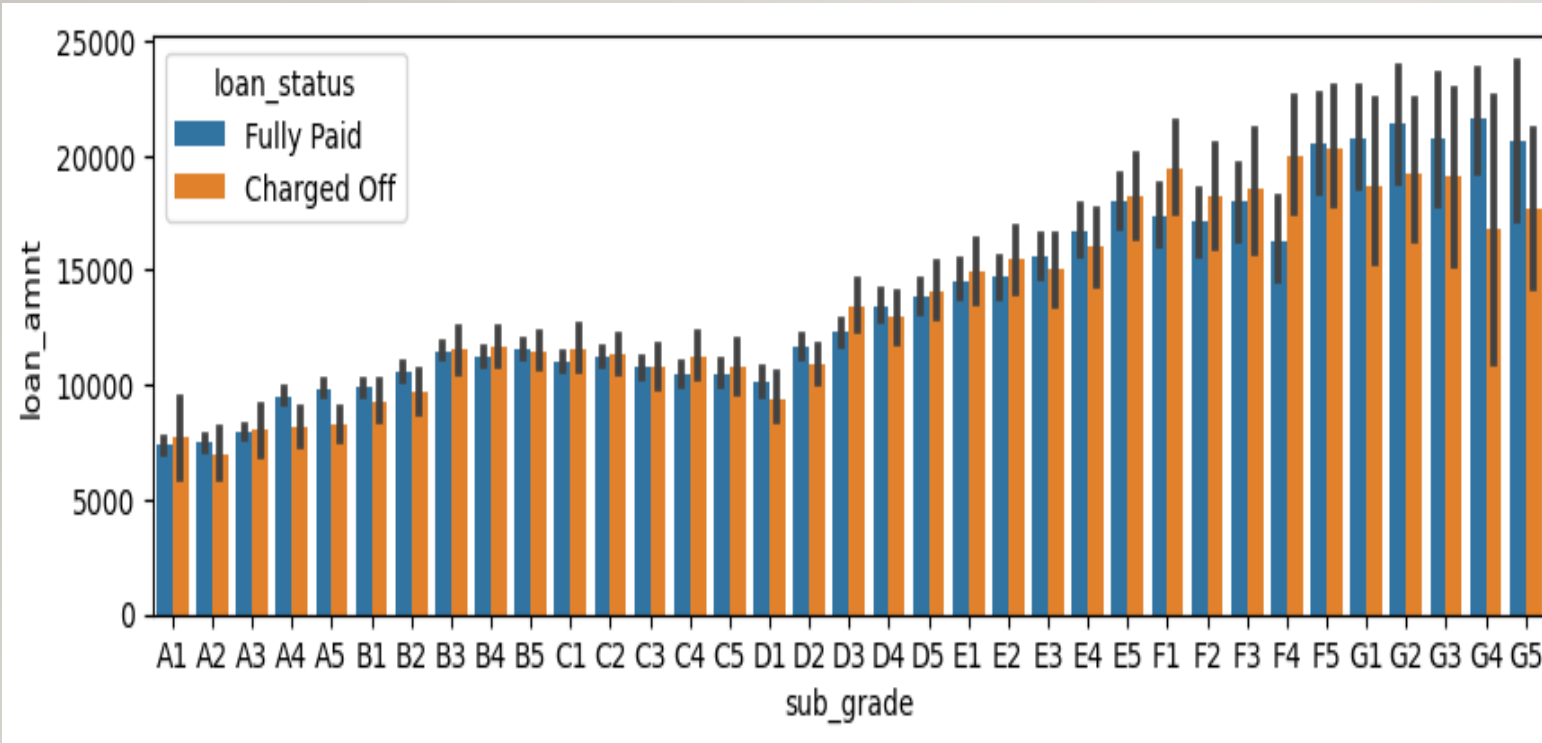


UNIVARIATE ANALYSIS



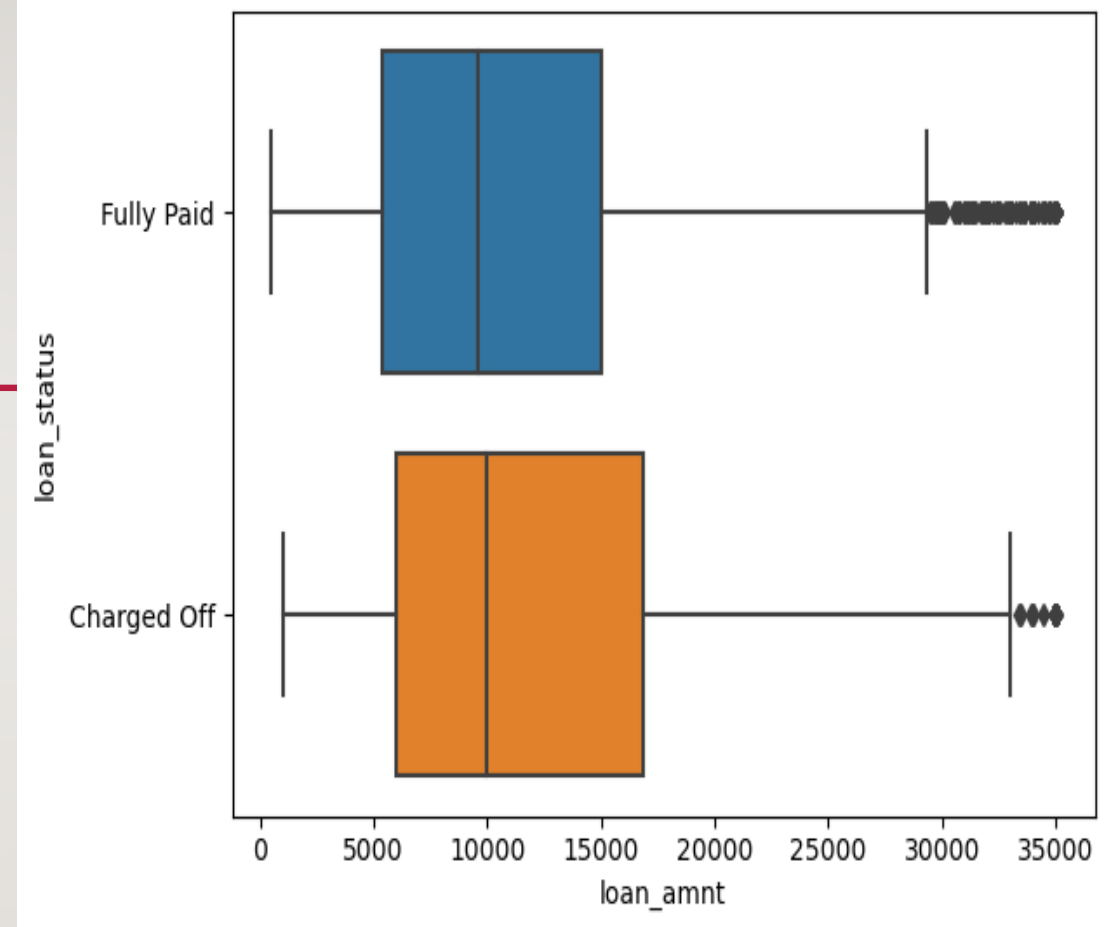
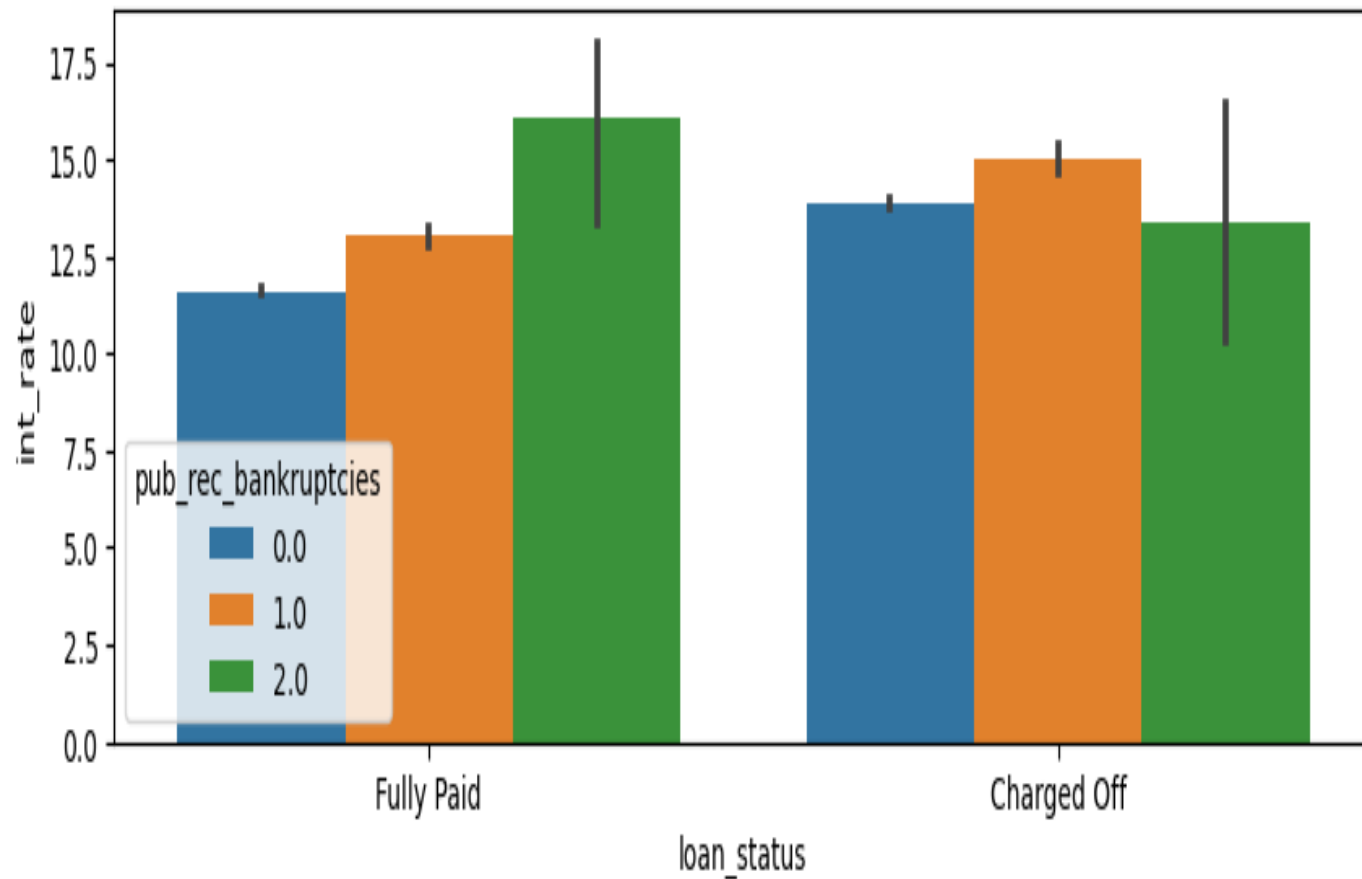
- Around 5K customers are Charged Off from the total customers
- Noticed extreme values present in the Int_rate column(Outliers are present). We need to remove this to get good results in model building. Else it will impact the quality of the model results.

BIVARIATE ANALYSIS



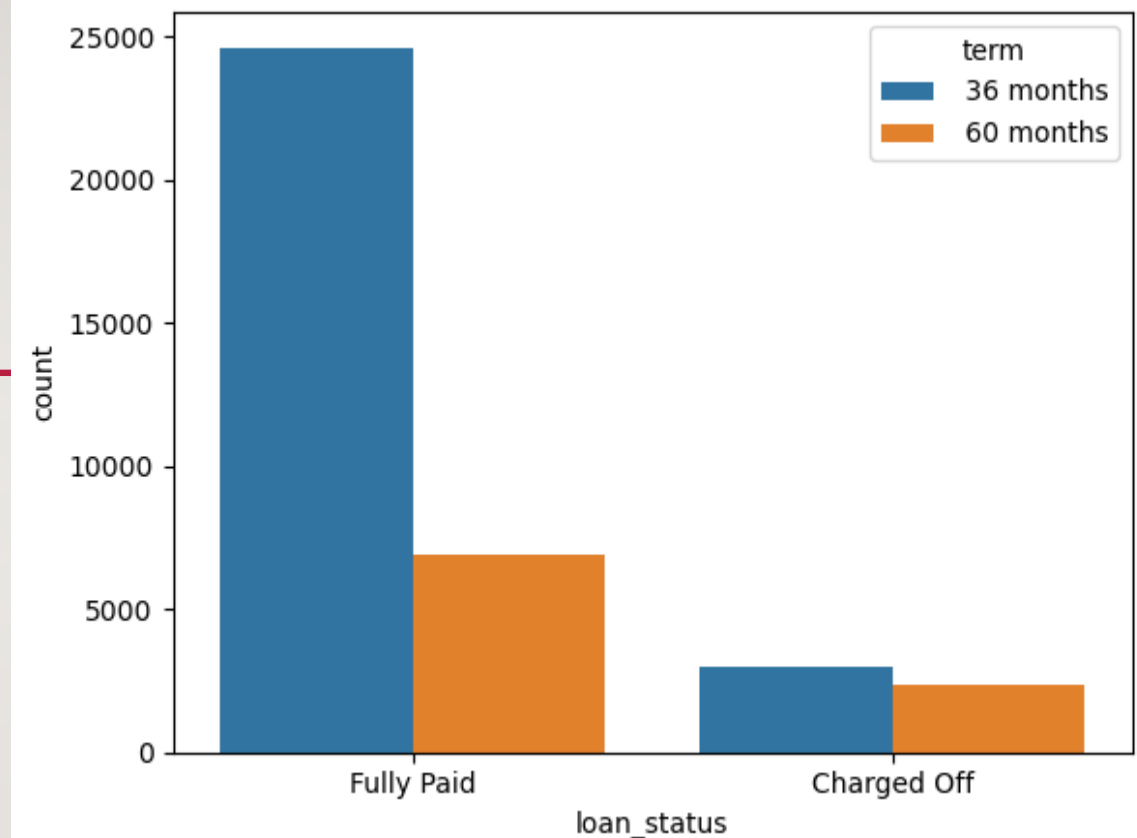
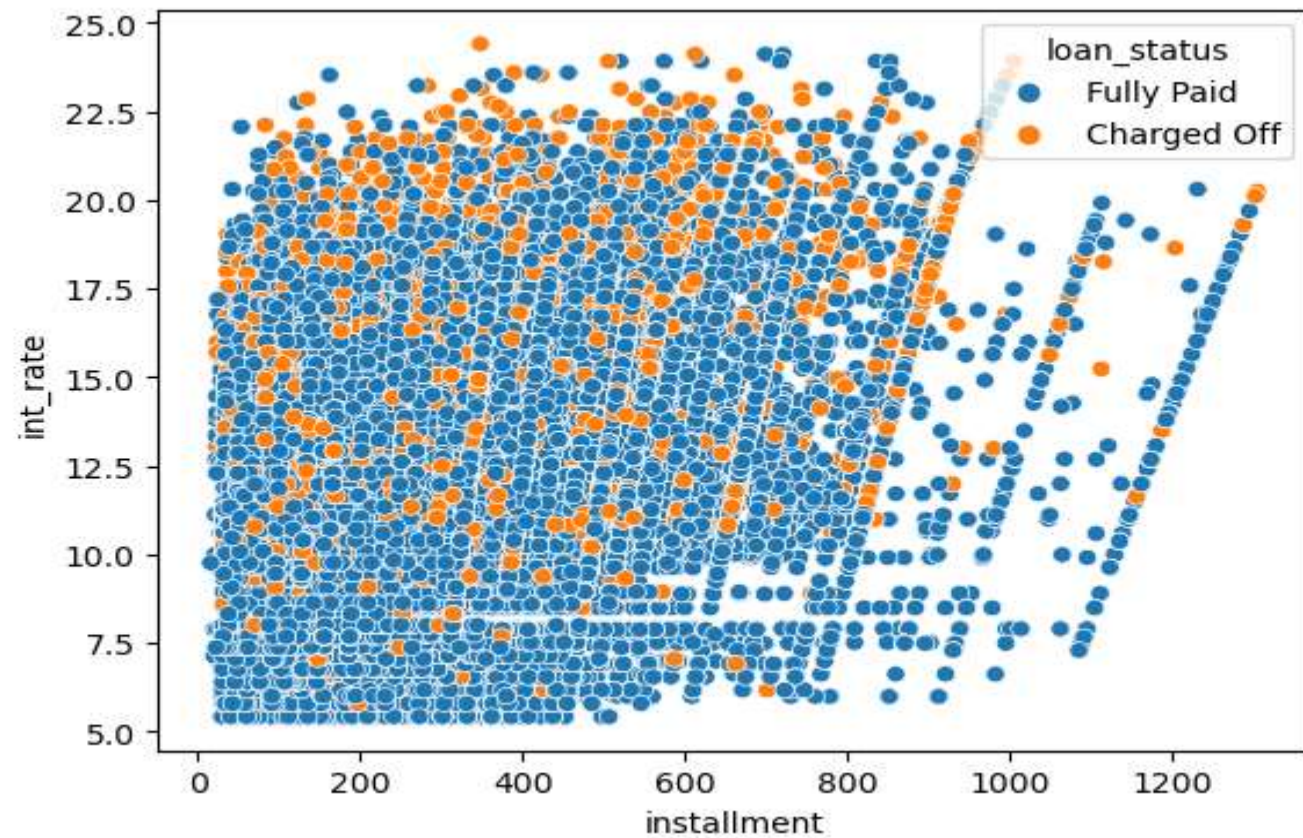
- There is no strong indicator for annual_inc for the Charged Off Reasons

1. If the Loan amount is increased, chances of charged off is higher.
2. For G sub_grades, Chargedoff is less than fully paid.
3. For F sub_grades, Chargedoff is high than fully paid.
4. For Other sub_grades, ChargeOff and fully paid are almost same.



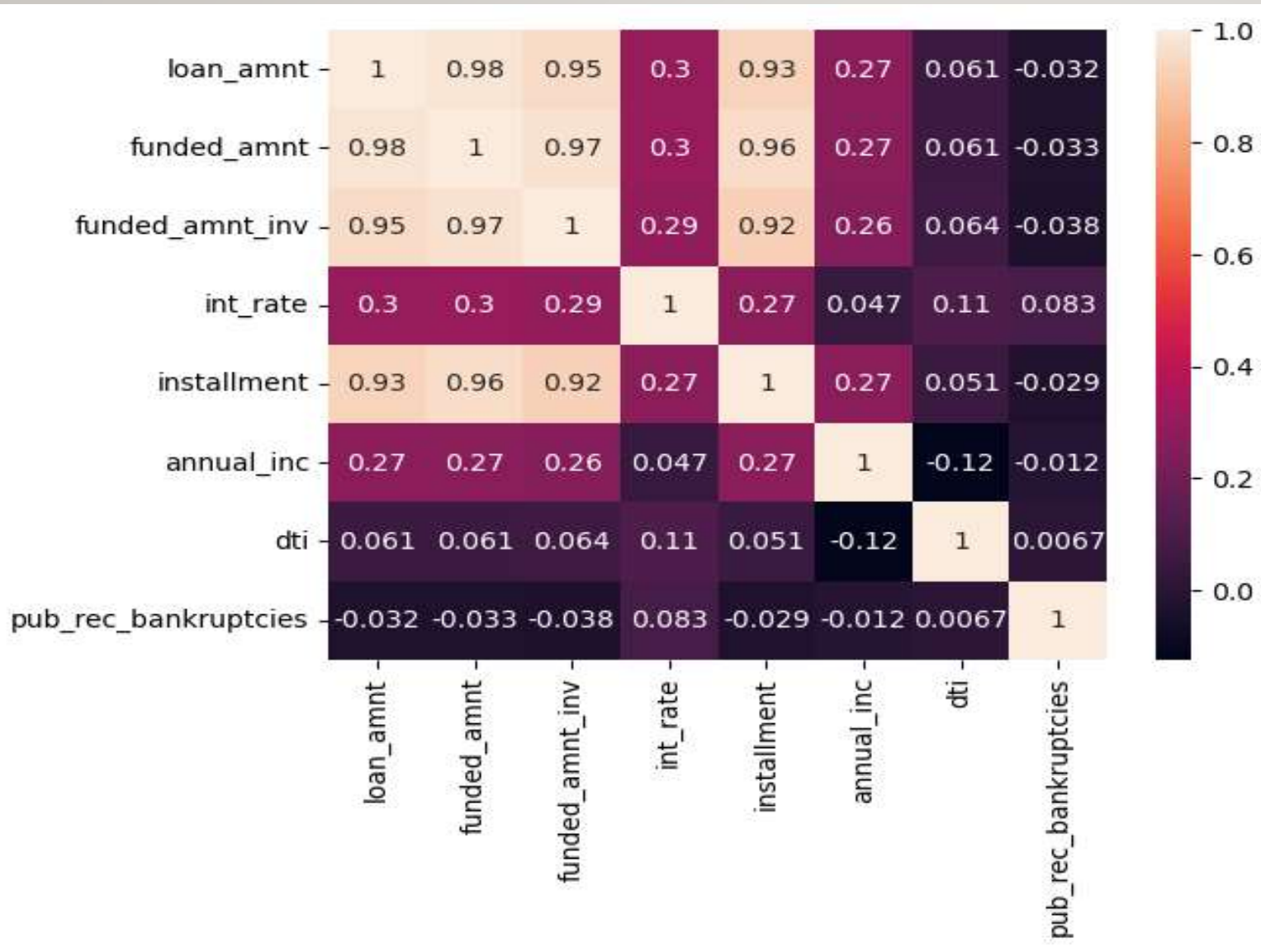
1. Persons those who already have 2 bankruptcies paid the loan properly and less chances of Charged Off
2. Persons those who doesn't have bankruptcies or with 1 bankruptcies are more chances of Charged Off

- When the loan amount is higher, the charged off is higher



1. If Interest rate increases, chances of charged off loan is very high
2. If Installment is higher, chances of fully paid is high and also charged off loan is low.
3. If Interest rate is low, chances of fully paid is very high

- The higher term tenure is high indicator for Charged off



HEAT MAP

1. loan_amnt and installment have higher positive correlation.
2. Int_rate and annual_inc have lesser positive correlation with loan_amnt

CONCLUSION/RECOMMENDATION

1. The higher term tenure is high indicator for Charged off.
2. Small Business, Education, Credit Card, Debt Consolidation, Wedding purposes have chances of very high default.
3. Those who are staying in Rent or Mortgage are the high indicators for Charged Off.
4. When the loan amount is higher, the charged off is higher.
5. Persons those who doesn't have bankruptcies or with 1 bankruptcies are more chances of Charged Off
6. If the Interest rate is higher, the chances of charged Off is very high.
7. For F sub_grade, Chargedoff is high than fully paid.