

LENDING CLUB CASE STUDY

TEAM MEMBERS:

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OBJECTIVE

- Lending club is a online platform, facilitating loans such as medical, buying house , business and other financing needs.
- Customers can access loan quickly with help of online platform at low interest rate.

AIM

To identify the patterns which indicates if a person is likely to default or not, In other words to understand the driving factors behind loan default, i.e. the variables which are strong indicators of default. The company can utilise this knowledge for its portfolio and risk assessment.

Method followed to complete the Analysis

DATA EXPLORATION



DATA CLEANING



DATA ANALYSIS :
UNIVARIATE & SEGMENTED UNIVARIATE



DATA ANALYSIS :
BIVARIATE ANALYSIS



CONCLUSION

DATA EXPLORATION

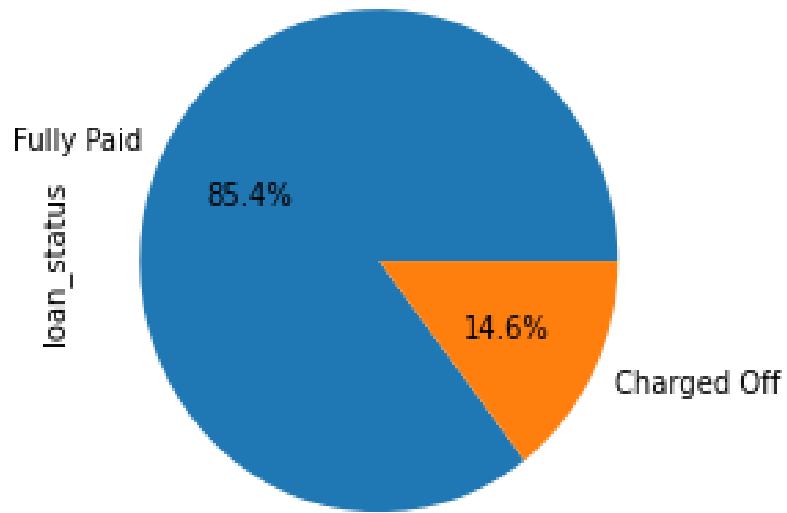
1. Importing necessary python libraries.
2. Loading data set files to data frame.
3. Finding out the shape of data frame
4. Understanding the Data set and Data type of variables
5. Understanding the data dictionary

DATA CLEANING

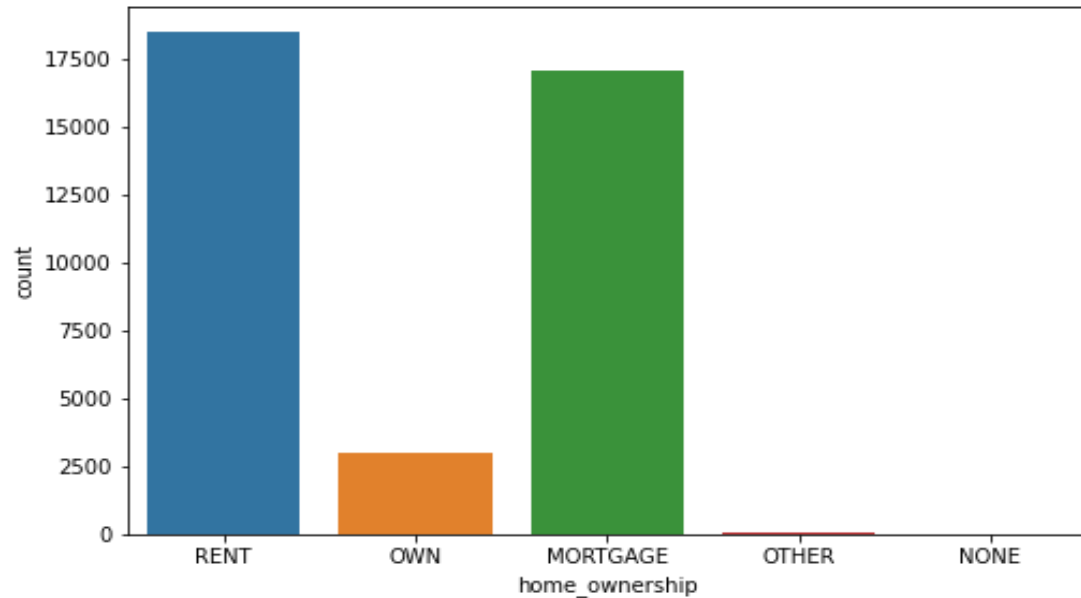
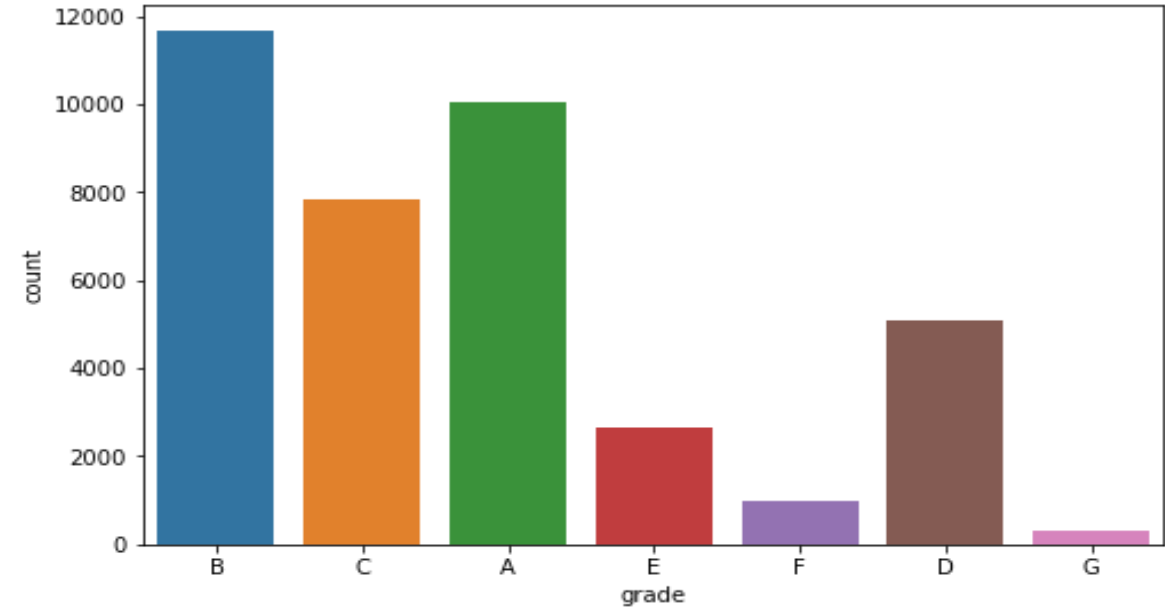
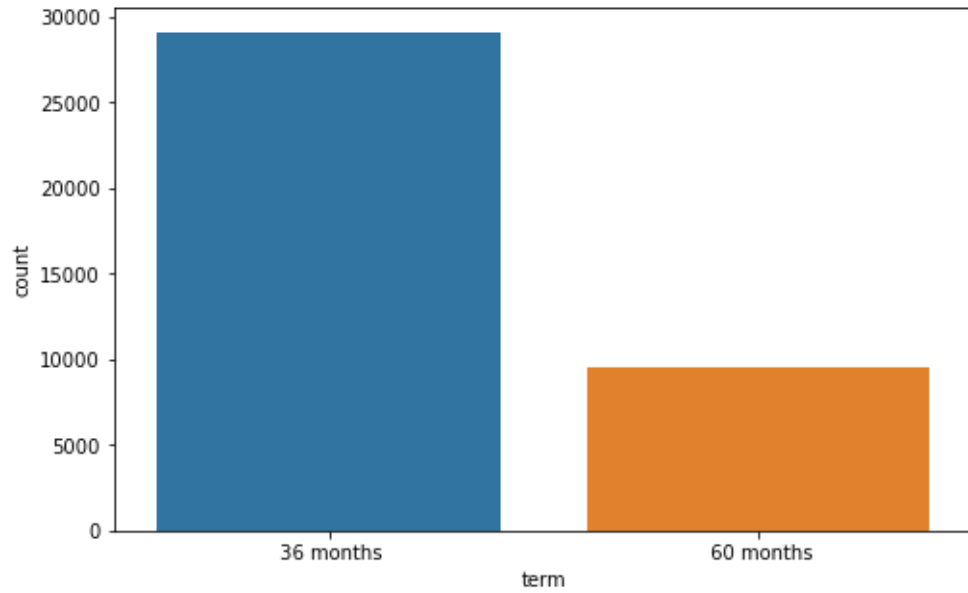
1. Checking and dropping columns where missing value is more than 50%
2. Checking columns with one unique values
3. Checking and changing the data type where needed.
4. Filtering and removing columns with single unique value

DATA ANALYSIS

1. UNIVARIATE ANALYSIS

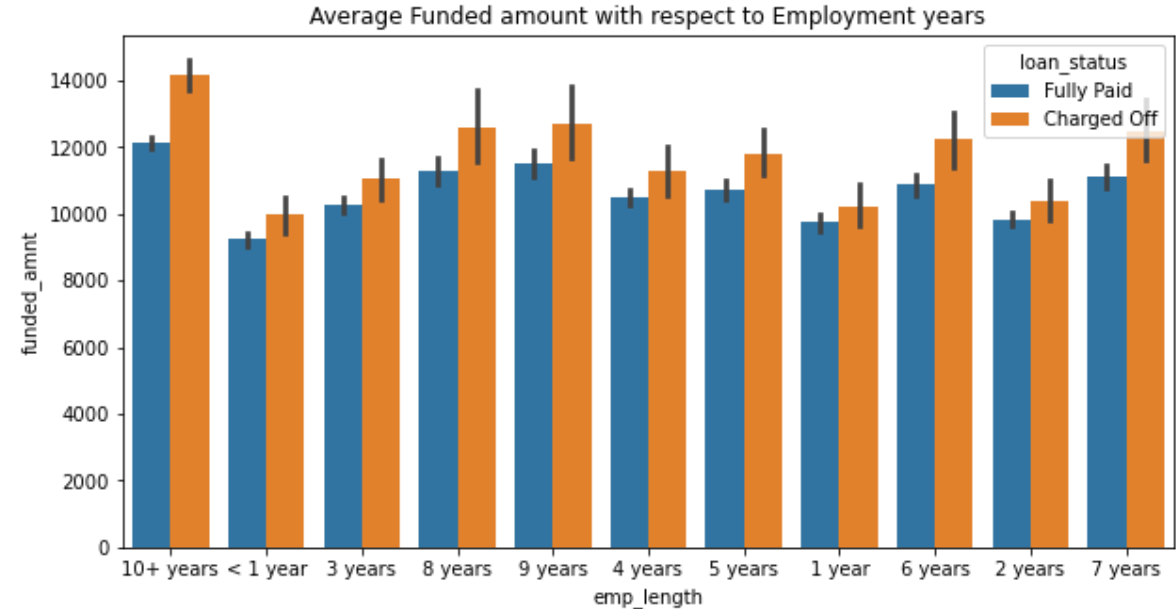
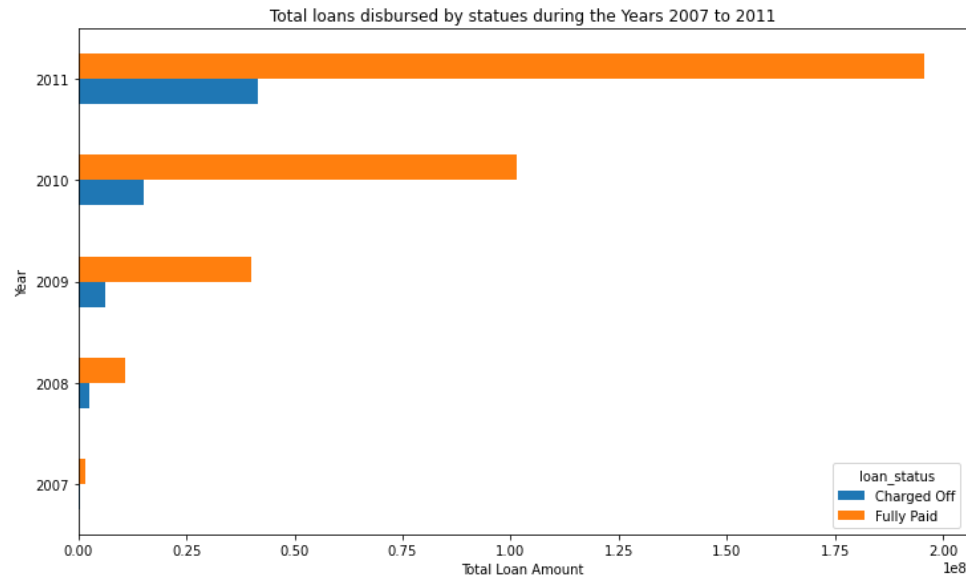


We can see that most of the loan disbursed is fully paid covering around 85% and around 14% of them being defaulters

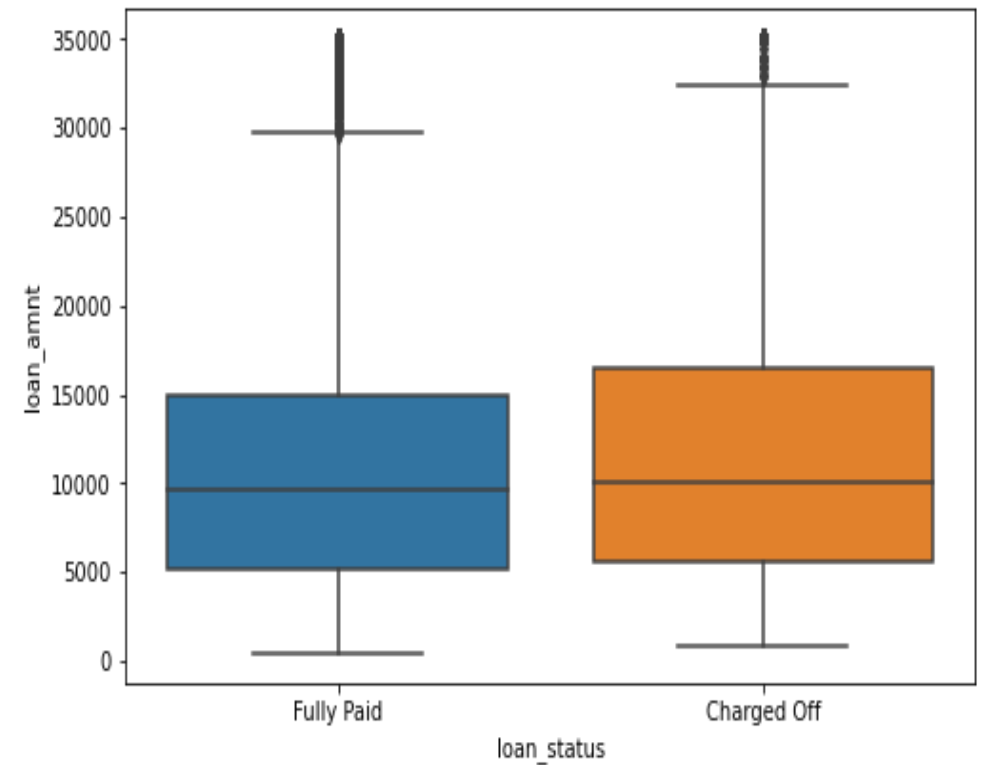
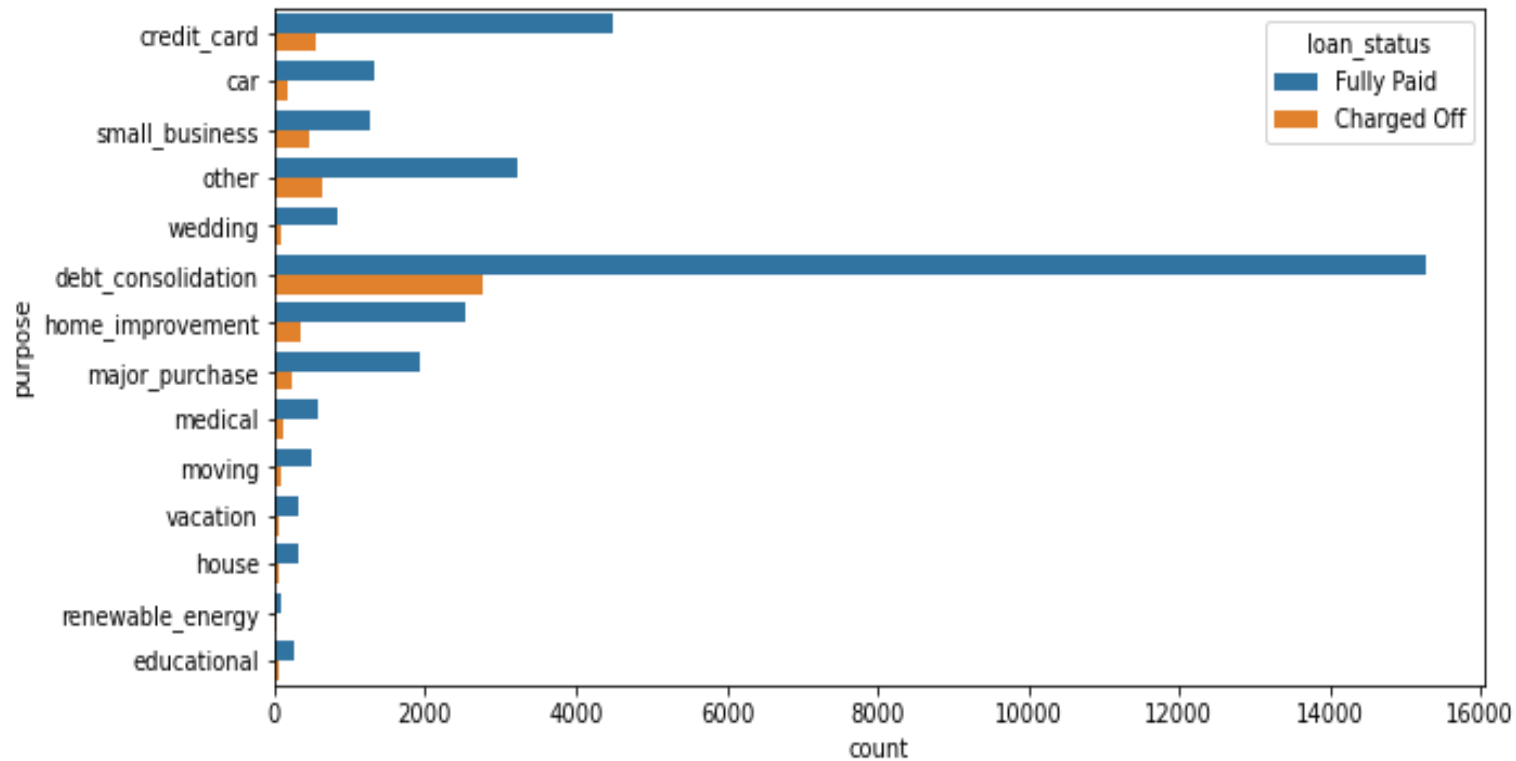


1. Most of the loans are taken for the 36 months compared to 60 months
2. Most of the loans belong to Grade A and Grade B therefore stating most of the loans are high graded loans
3. Applicants whose Home Ownership is filled with 'OTHER' option are more likely to charge-off

2. SEGMENTED UNIVARIATE ANALYSIS

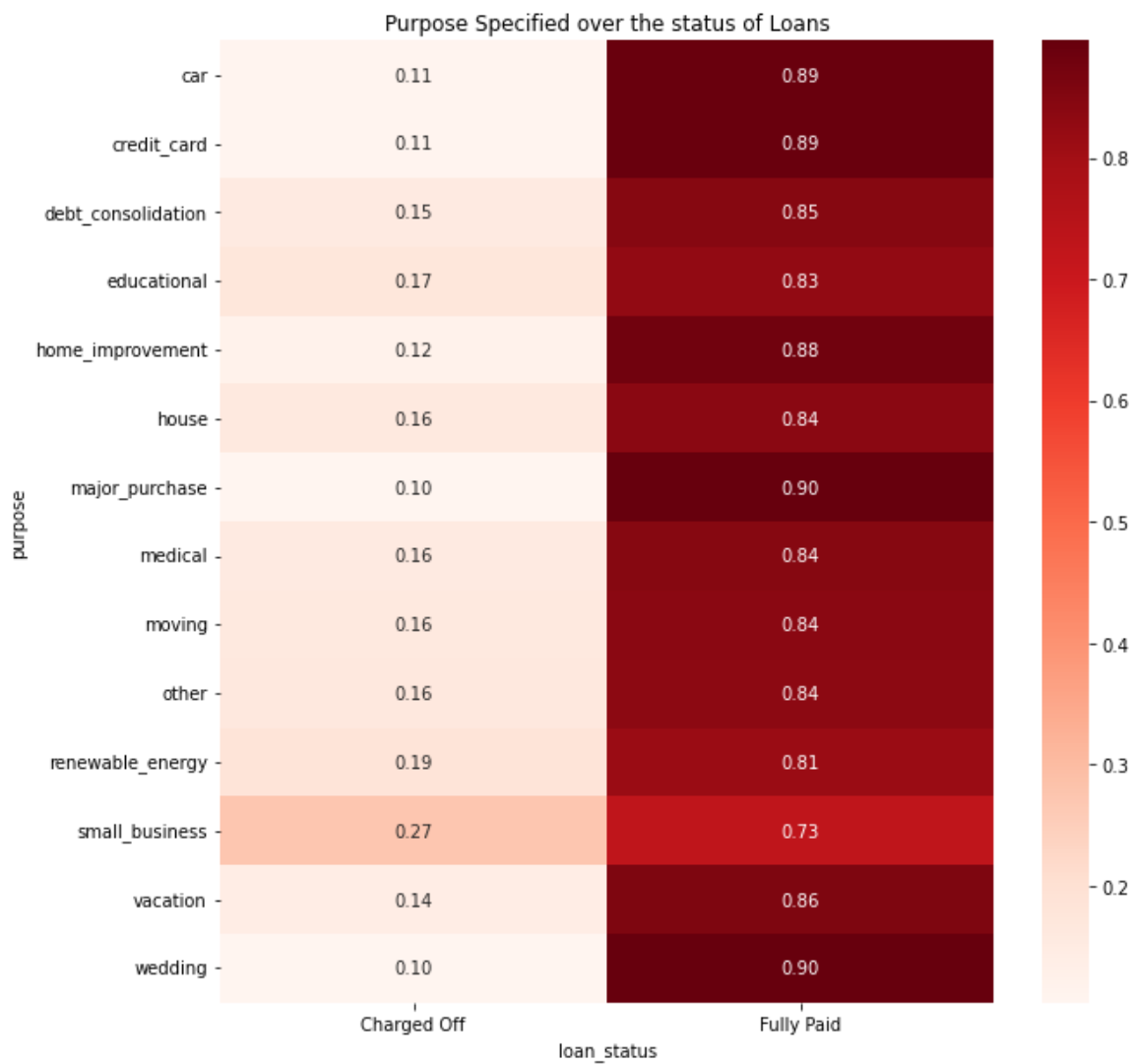


1. Here we can observe that most of the loans are fully paid in the year 2011 hence the number of loans approved increases with the time at exponential rate.
2. Applicant's who have more than 10-year experience has more number of loan applications.

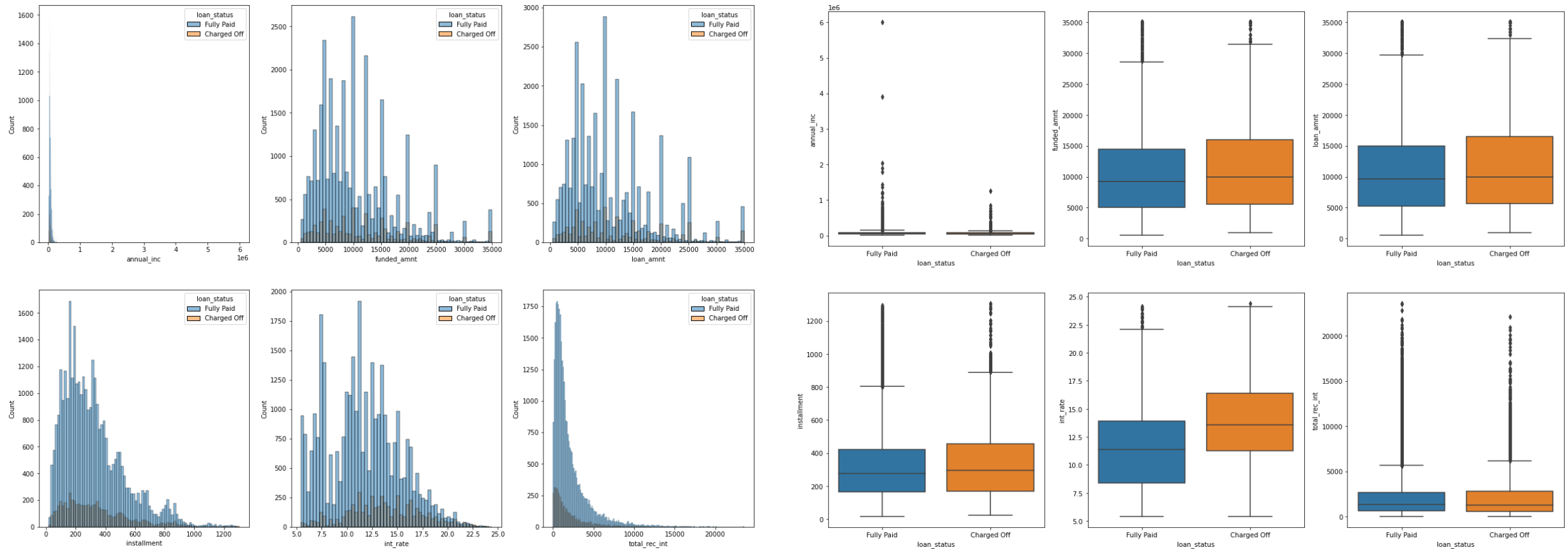


1. Majority of loan has been given for the debt consolidation purpose and has been fully paid.
2. Mean and 25% percentile are same for both but 75% percentile is more in charged off loan hence large amount of loan has higher chances of default.

3. BIVARIATE ANALYSIS



We observe that applicants whose purpose of applying loan is Small Business, are more likely to charged off, while the one's applying for purpose of wedding, car, credit card or other major purchases are more likely to repay the entire loan within the given period.



There are few important variables such as Interest Rate, which is allotted at the time of loan sanction. We observe a significant difference in their median values, which depicts that if interest rate is higher, the borrower is more likely to default.

CONCLUSIONS

Based on the above analysis the following measures can be taken to minimize the risks involved in lending loans & to maximize their profitability

- 1) Encourage Short Term Loans.
- 2) Applicants with 'Others' as their home ownership are more risky, as they have bad payment records.
- 3) Almost all experience levels curb the same full payment likelihood.
- 4) Loans assigned for the purpose of Small Business bring are to be avoided as much as possible, rather approve prompt on Major Purchases, Wedding, Car, Credit Card, etc.
- 5) Lending to a 'non-verified' applicant can be encouraged, based on its high frequency and low charge-off ratio.
- 6) Lastly, it is recommended to levy an optimal interest rate of around 12.5%. Higher interest increases the probability of defaulting, & lower rates reduce the risk, but also profitability is affected.