Lending Club Case Study

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Abstract

- 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.

- The purpose of this presentation to showcase which kind of customers are defaulting loans and who are paying loans in time with the help of information about past loan applicants.

Methodology followed

Data Exploration → Data Cleaning → Data Analysis – Univariate Analysis & Segmented Univariate Analysis → Data Analysis – Bivariate Analysis → Conclusions

Data Exploration

1. Importing necessary modules
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 and FeatureSelection

- Checking and dropping columns where missing value is more than 50%

- Checking columns with one unique values

- Checking and changing the data type where needed.

- Filtering and removing columns with single unique value

Data Analysis
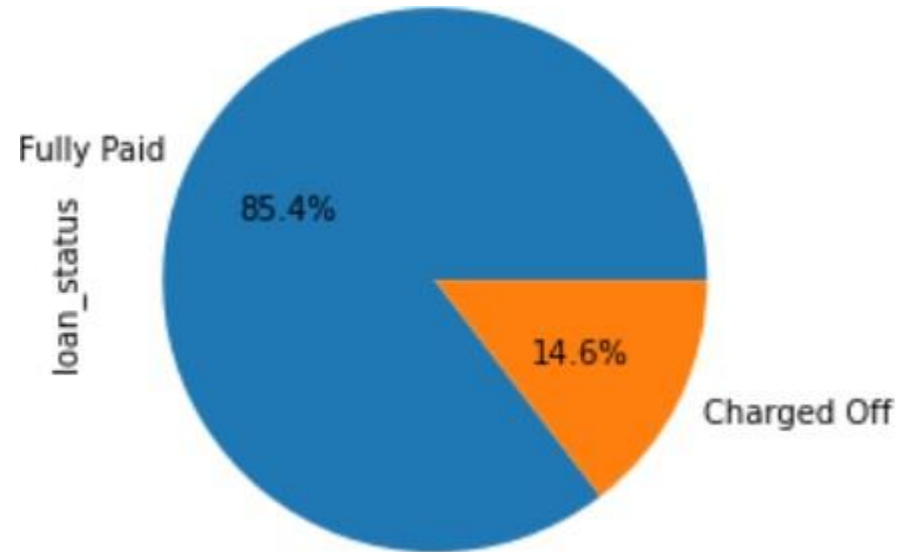
This graph above represents the majority of customers had paid loan and about 1/7 of total Customers are defaulters.

Data Analysis
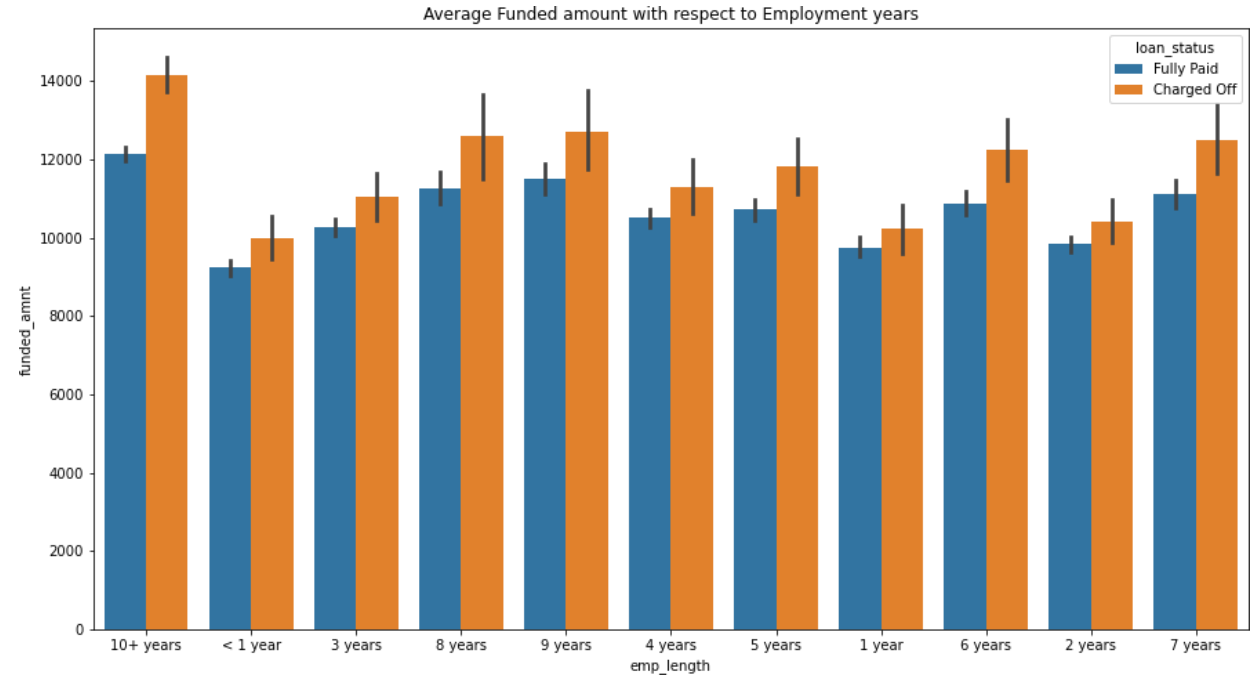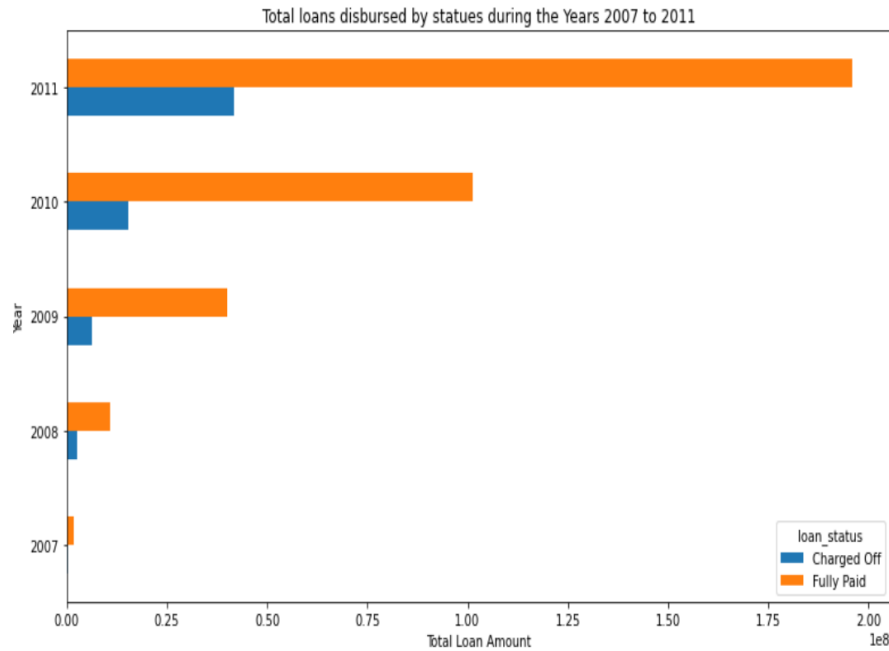
- Lending club has really expanded year by year, the number of loan issued are doubled every year, and so is the rate of defaulters.
- We could observe that average loan amount/funded amount for charged off applicants all the level of experience is more than that of average fully paid applicants.
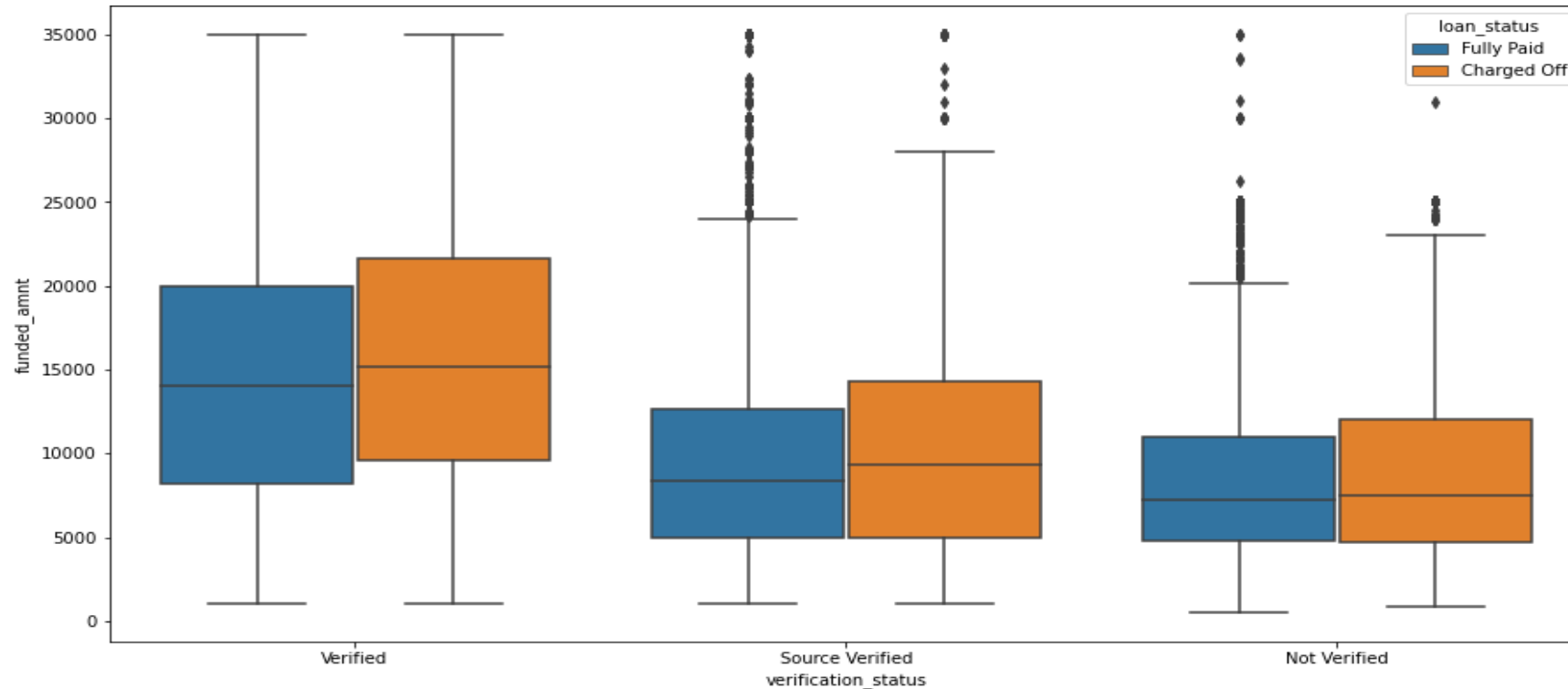
Data Analysis

Purpose Specified over the status of Loans
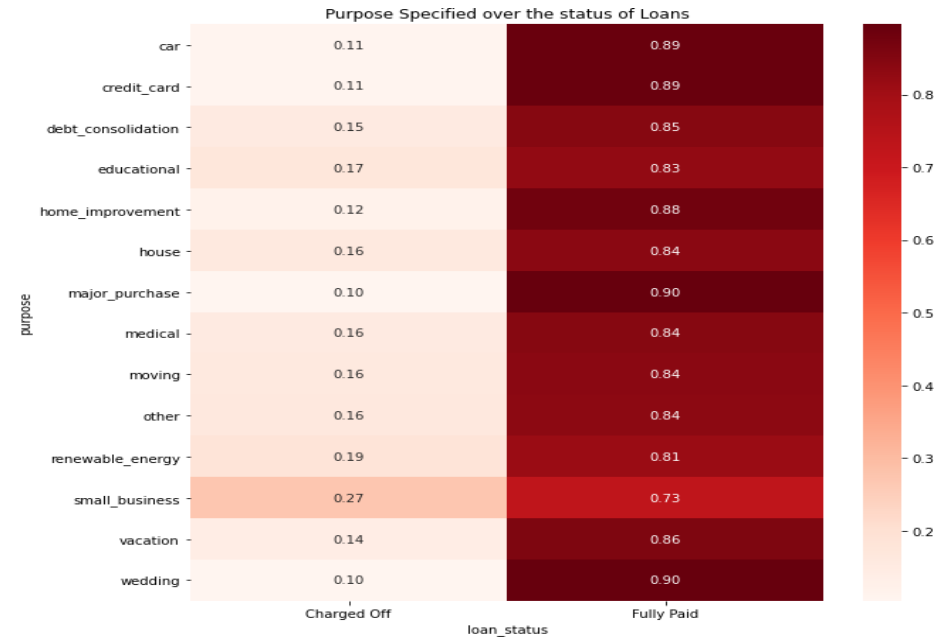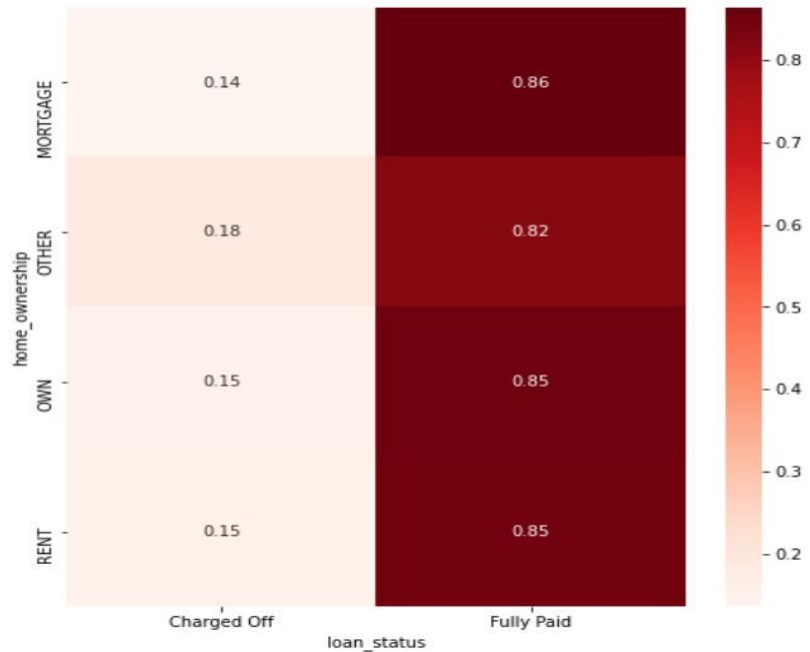
- Customers who does not filled the exact status of home ownership like Other option are more likely to charge-off.

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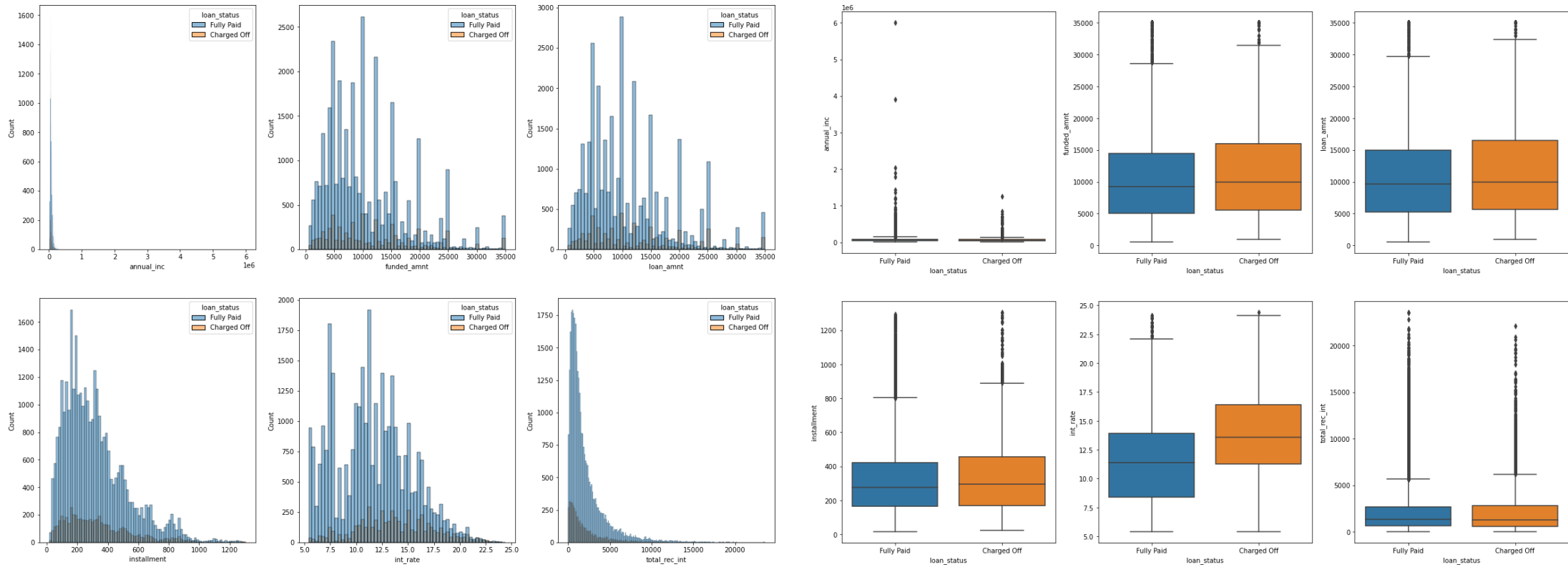
Data Analysis

- We could observe that the Not Verified & Source Verified customers IQR (Inter Quartile Range) is greater than that of Verified Customers.
- No outliers detected at Verified Customers.

Data Analysis

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

- Encourage Short Term Loans.
- Applicants with 'Others' as their home ownership are more risky, as they have bad payment records.
- Almost all experience levels curb the same full payment likelihood.
- 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.
- Lending to a 'non-verified' applicant can be encouraged, based on its high frequency and low charge-off ratio.
- 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.