

LENDING CLUB CASE STUDY

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OBJECTIVES



PROBLEM
STATEMENT



DECISION
MAKING RISKS



PLAN OF ACTION



DATA
HANDLING



DATA ANALYSIS



CONCLUSIONS.

PROBLEM STATEMENT



A CONSUMER FINANCE COMPANY WHICH SPECIALIZES IN LENDING VARIOUS TYPES OF LOANS TO URBAN CUSTOMERS. WHEN THE COMPANY RECEIVES A LOAN APPLICATION THE COMPANY HAS TO MAKE A DECISION FOR LOAN APPROVAL BASED ON THE APPLICANT'S PROFILE.



THE DATA GIVEN IS GIVEN FOR PAST LOANS APPLICANTS WHOSE LOAN WAS APPROVED AND WHETHER THEY "DEFAULTED" OR NOT. THE AIM IS TO IDENTIFY PATTERNS WHICH INDICATE IF A PERSON IS LIKELY TO DEFAULT, WHICH MAY BE USED FOR TAKING ACTIONS SUCH AS DENYING THE LOAN, REDUCING THE AMOUNT OF LOAN, LENDING (TO RISKY APPLICANTS) AT A HIGHER INTEREST RATE, ETC.

DECISION MAKING RISKS

TWO TYPES OF RISKS ARE
ASSOCIATED WITH BANK
DECISIONS.

- If the applicant is **likely to repay the loan**, then not approving the loan results in a **loss of business** to the company

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

PLAN OF ACTION

Data understanding

- Data sourcing
- Exploring the data in file

Data cleaning

- Data quality issues
- Dropping unnecessary columns

Data manipulation

- Formatting datatype
- Calculating derived columns
- Outliers detection and removals

Data Analysis

- Univariate Bivariate analysis
- Segmented analysis

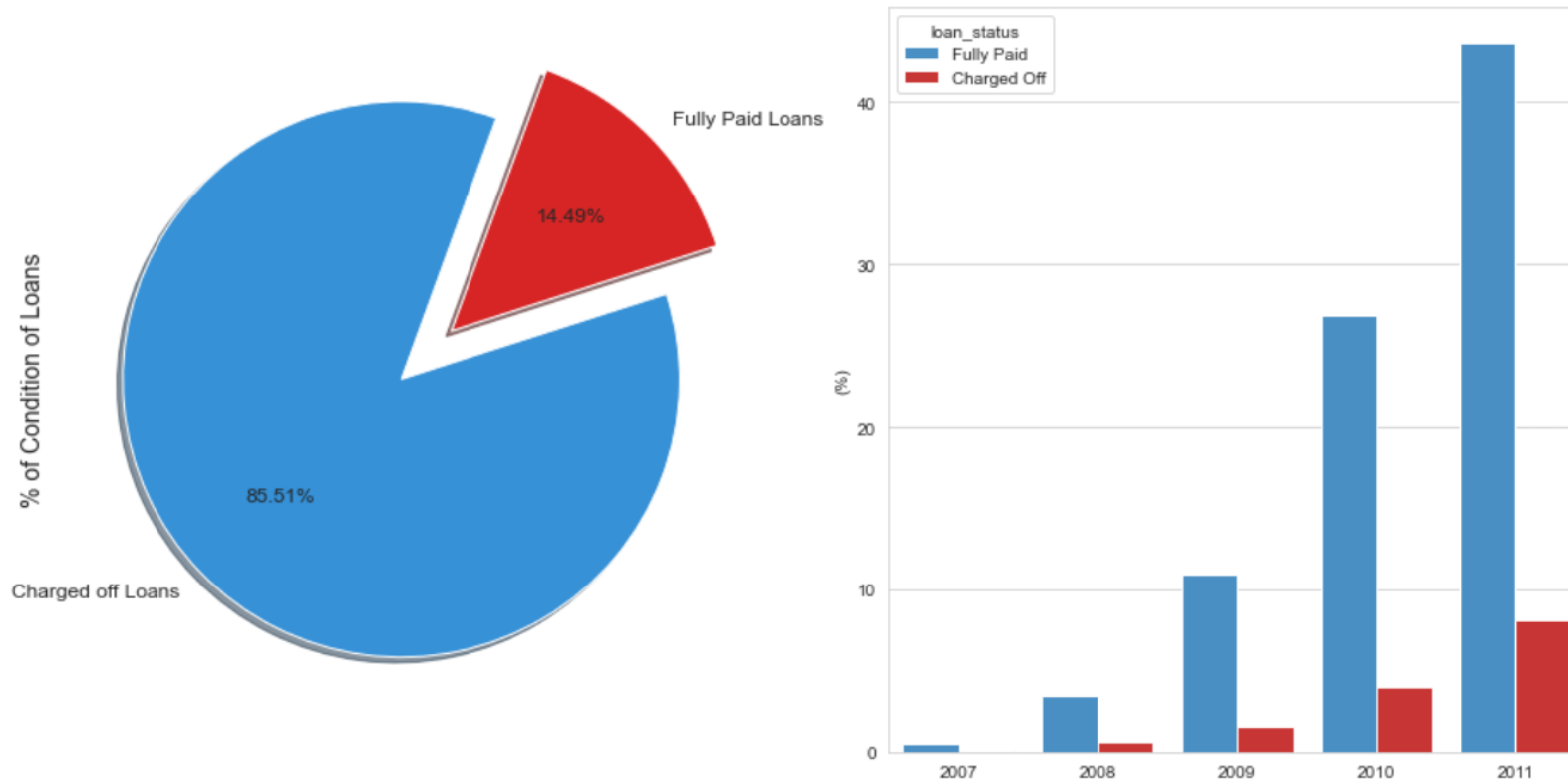
DATA HANDLING

[UNDERSTANDING + CLEANING]

Post understanding the dataset, its required to perform the below actions

- ☐ Identifying and Handling duplicates
- ☐ Missing Value Analysis
- ☐ Standardizing the Columns
- ☐ Reconciliation of Columns

Analysis of Loan Charged Off



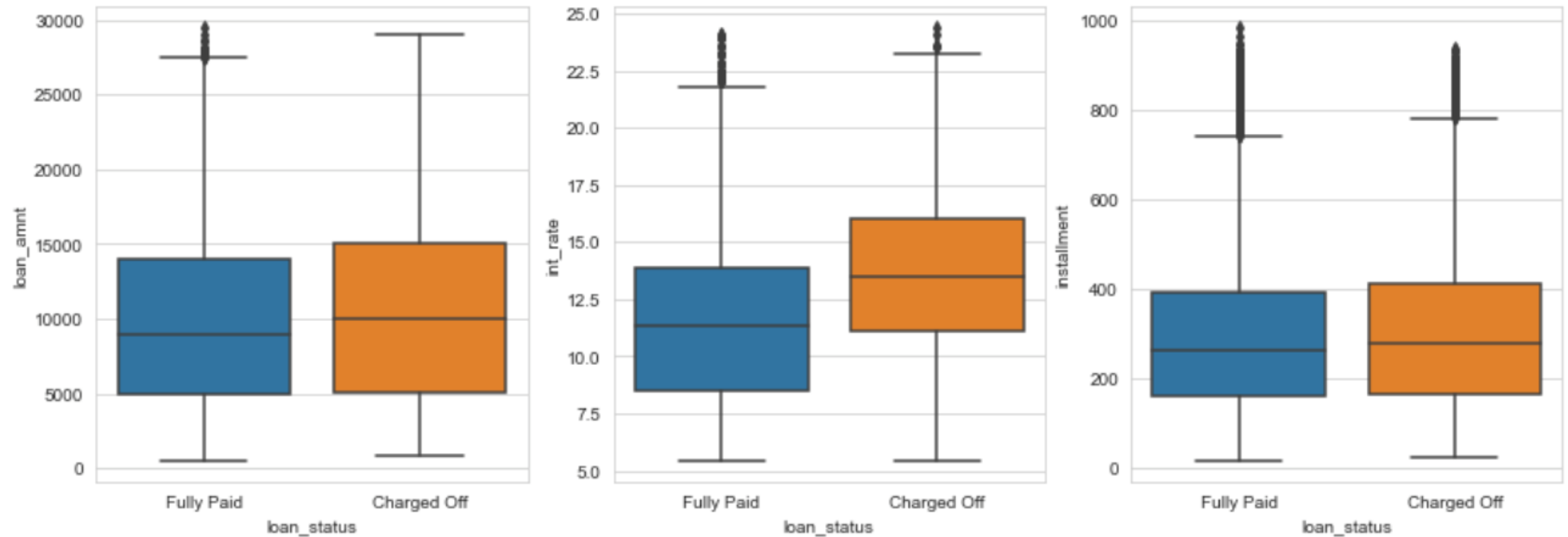
Conclusions

Outcomes of Univariate Analysis

- ❑ Most of the loans has been offered at interest from 12% to 15%
- ❑ 14.17% of total Loans are Charged Off
- ❑ When the Loan Amount Increases then the Total Payment is decreased
- ❑ There are quite considerable number of Loans which are Not Verified which requires Further
- ❑ dti ratio is acceptable , where the Debt to Income is not making big impact
- ❑ Employess with more exprience is taking more loans
- ❑ home_ownership with RENT and MORTGAGE were taking more loans
- ❑ More loans were being taken for Debit Consolidation
- ❑ All the loans taken with either tenure of 36 or 60 months
- ❑ Tops Grades were taking more loans (A, B C)

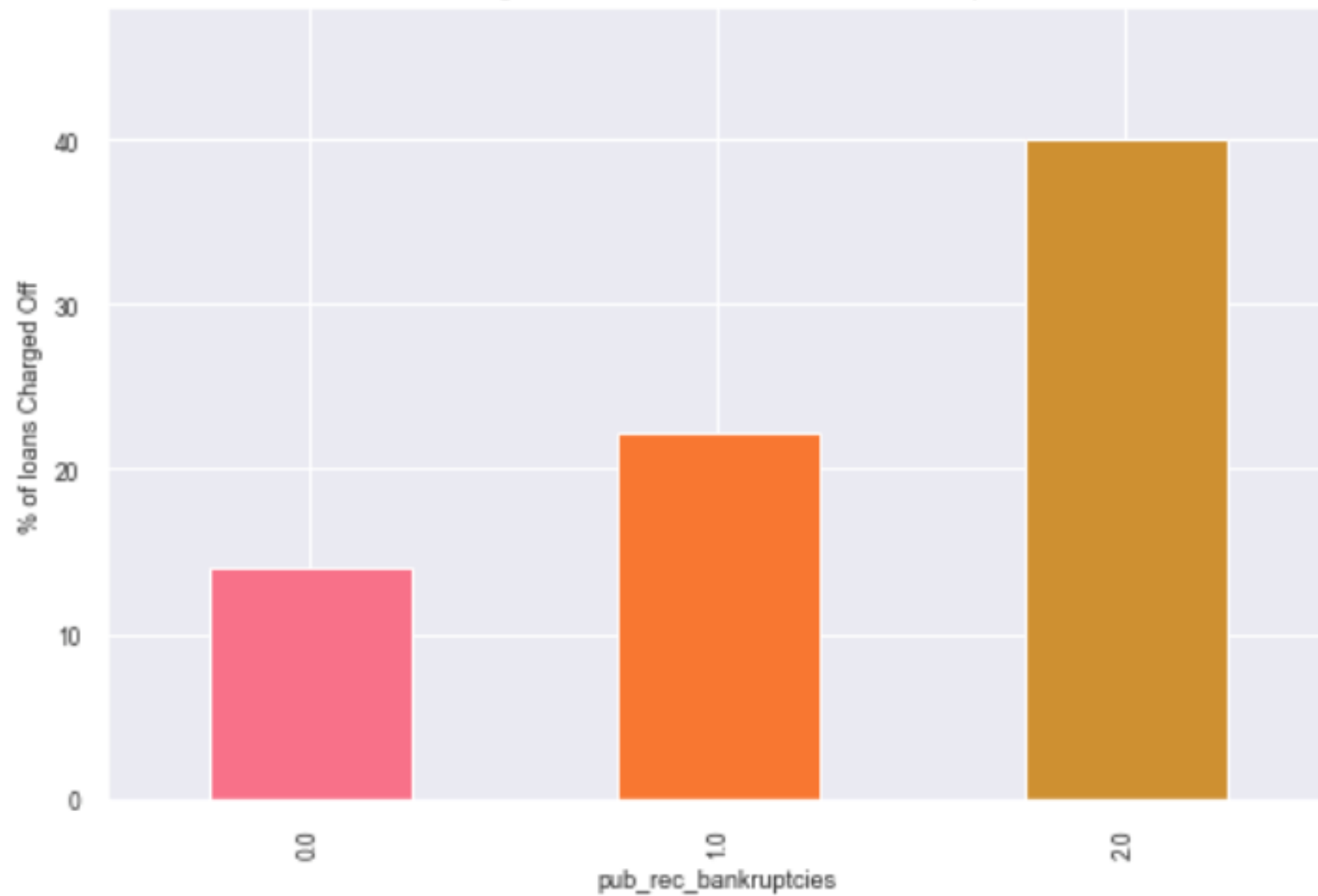
analysis

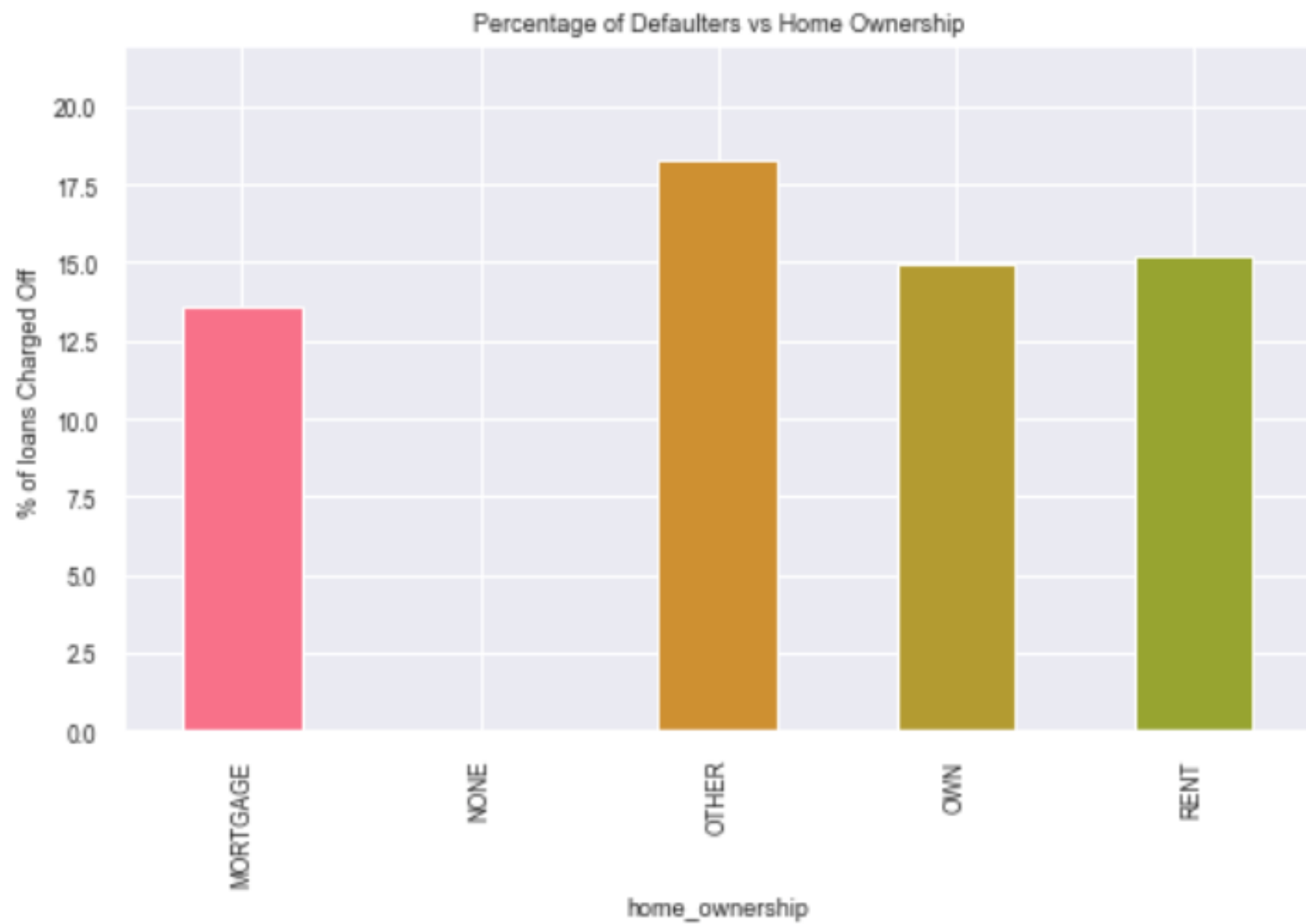
Loan Status against Loan Amount / Interest rate/ Installment



Each variable variable analysis has been updated in the Jupyter Notebook

Percentage of Defaulters vs Public Record of Bankruptcies





Conclusions

Outcomes of Segmented Univariate Analysis

- ❑ There is an increase in Number of loans each year from Q1 to Q4

Outcomes of Bi Variate Analysis

- ❑ When Loan Amount/interest rate/debt to income ration/employment Lenth increases then there is risk of getting defaulters
- ❑ Members with low Debt to Income Ratio and high annual income have less tendency to get charged off
- ❑ Members with house ownership status as "Others" tend to default the rate by 18%.
- ❑ Whereas Members in category of Mortgage and own house has less tendendency to be defaulters compared to other categories.