

# LENDING CLUB CASE STUDY

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# PROBLEM STATEMENT & OBJECTIVE

- LC grants loans to applicants for various , tenure, purpose, amount and interest rates.
- Some of the applicants are observed to be defaulting in paying off the loan which causes loss of business to LC.
- If one is able to identify these risky loan applicants, then such loans can be reduced thereby cutting down the amount of credit loss.
- Identification of such applicants using EDA is the aim of this case study.



# ANALYSIS APPROACH

- Data cleanup
  - Identifying missing/null values and removing columns containing 80% of null/missing values.
  - Identification and removal of irrelevant columns.
  - Standardization of dataset
    - Filling null and missing values.
    - Data formatting.
- Data Analysis
  - **Univariate Analysis** – Relevant columns independently were analyzed to detect any outliers.
  - **Bivariate Analysis** – Columns in relation to other columns were analyzed to find correlation with Loan status being “Charged Off”.
  - **Trivariate Analysis** – Here multiple (2) variables were analyzed to identify correlation with Loan status being “Charged Off”.



# OBSERVATION

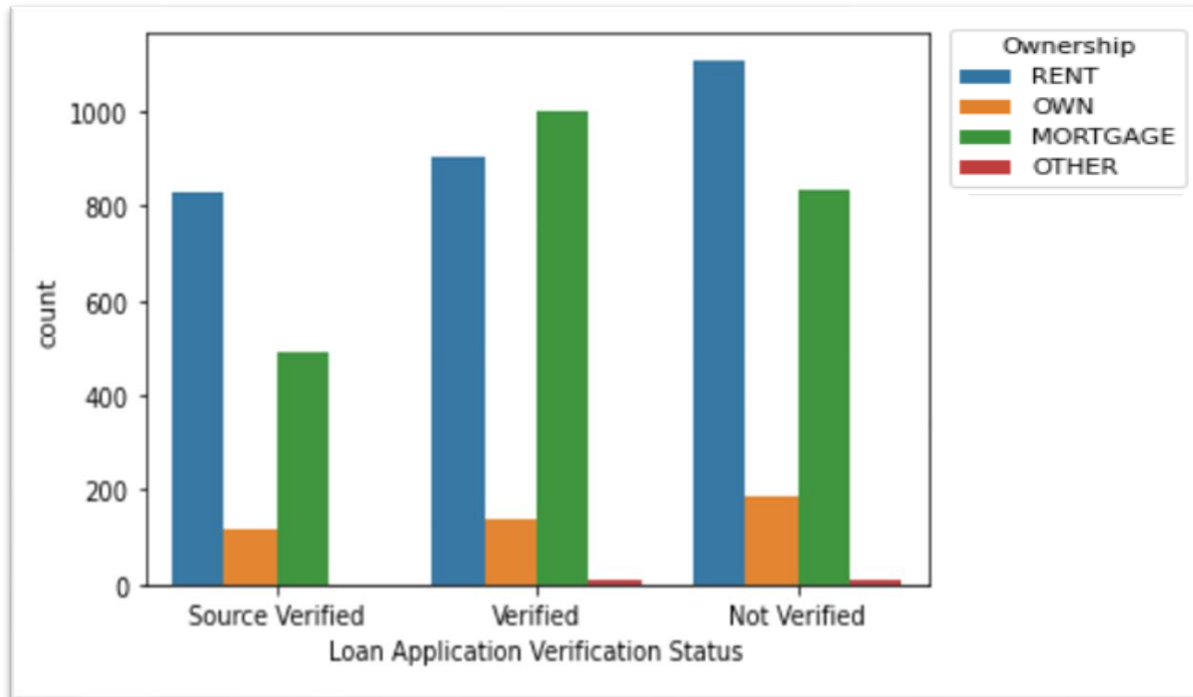
- **Observation of individual parameter on loan status.**
  - Interest rate between 14% and 17% tend to be defaulters.
  - Loan amounts between 5K and 10K show the trend for defaulters.
  - Loan tenures of 36 months tend to default more.
  - People on RENT are risky for defaulters
  - Verification status as "Not Verified" have some chance to default.
  - Grade B loans are probable to default
  - Sub grades A3,A5,D5,A2 tend to be defaulters.
  - DTI in range of 10 and 20 is little risky



# OBSERVATION

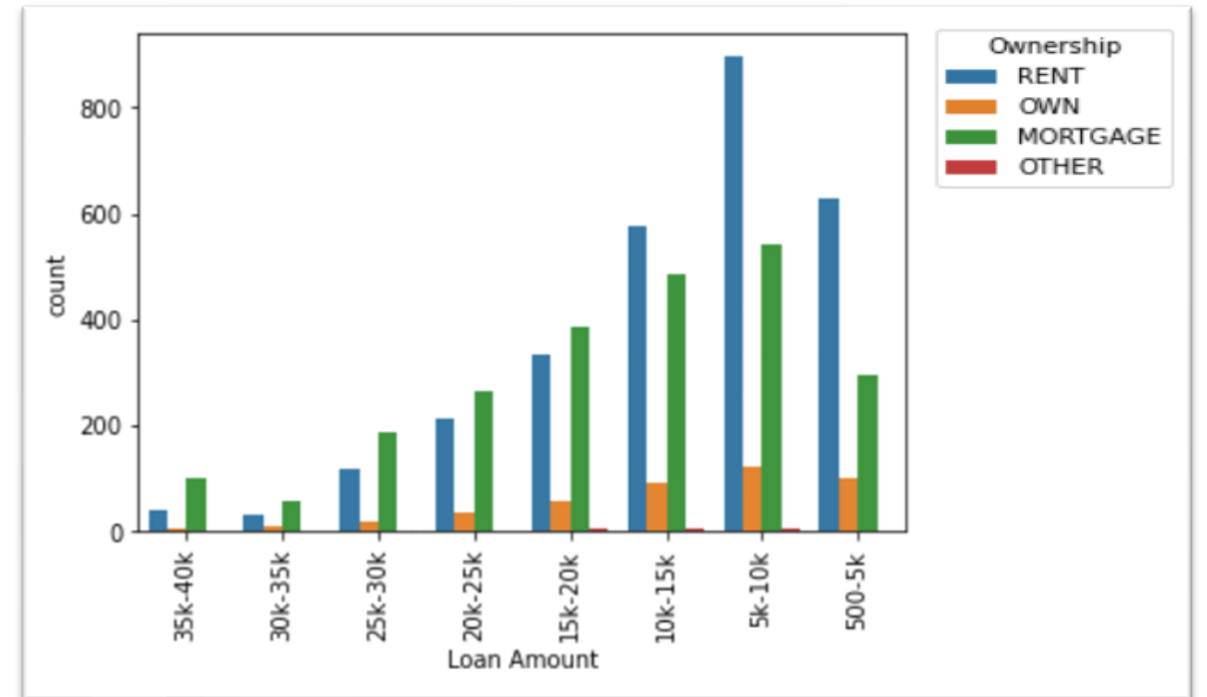
Below graphs show the relation of various parameters in relation to loan status being “Charged Off”

1. Combination of Verification Status, Home Ownership and Loan Status.



Analysis - Not Verified with house ownership as RENTED is not good.

2. Loan Amount and Home Ownership and Loan Status.

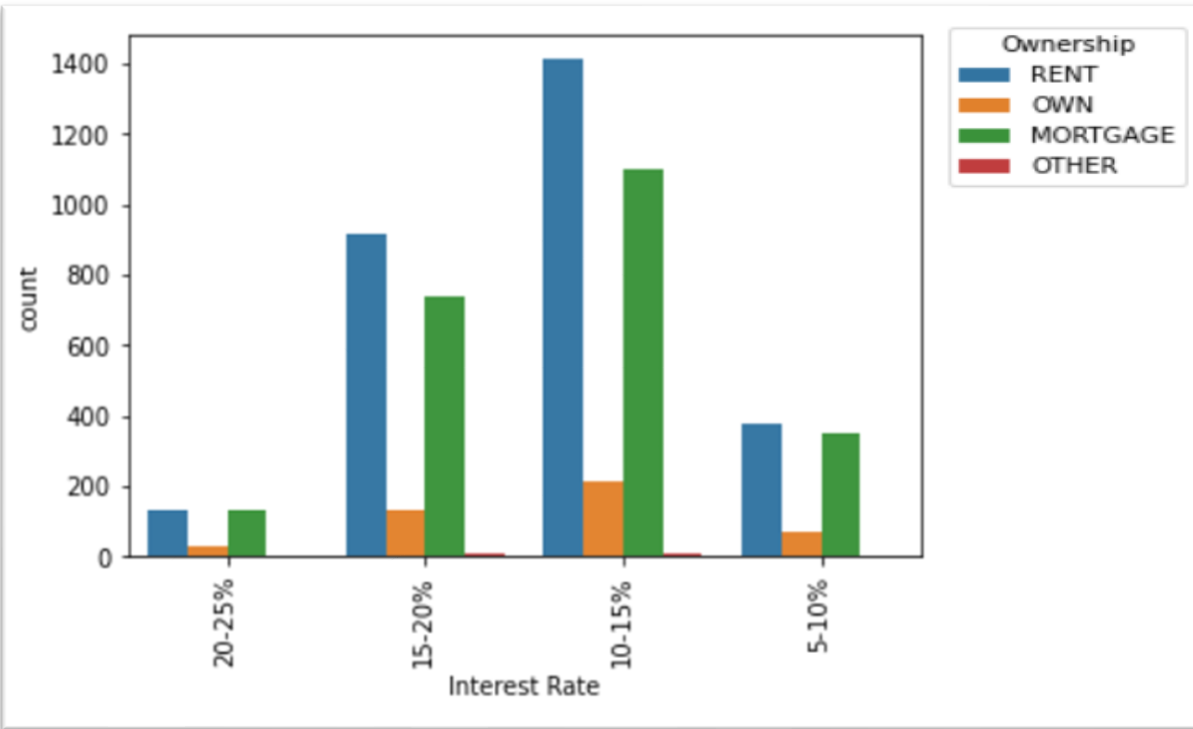


Analysis - Loan Amount between 5k-10k taken when house ownership is RENT is a risky loan.



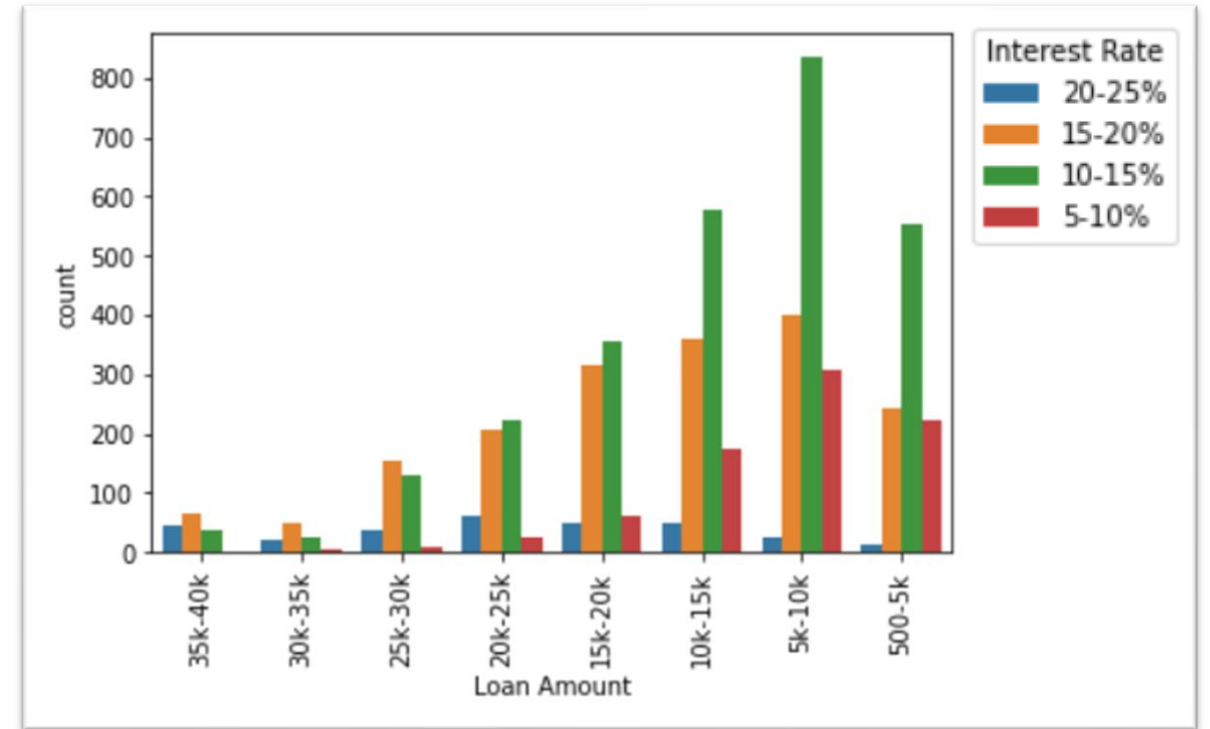
# OBSERVATION

3. Interest Rate and Home Ownership and Loan Status.



Analysis - Loans of 5-10k amount and interest rate between 10-15% can cause default loans.

4. Loan amount and Interest and Loan Status.

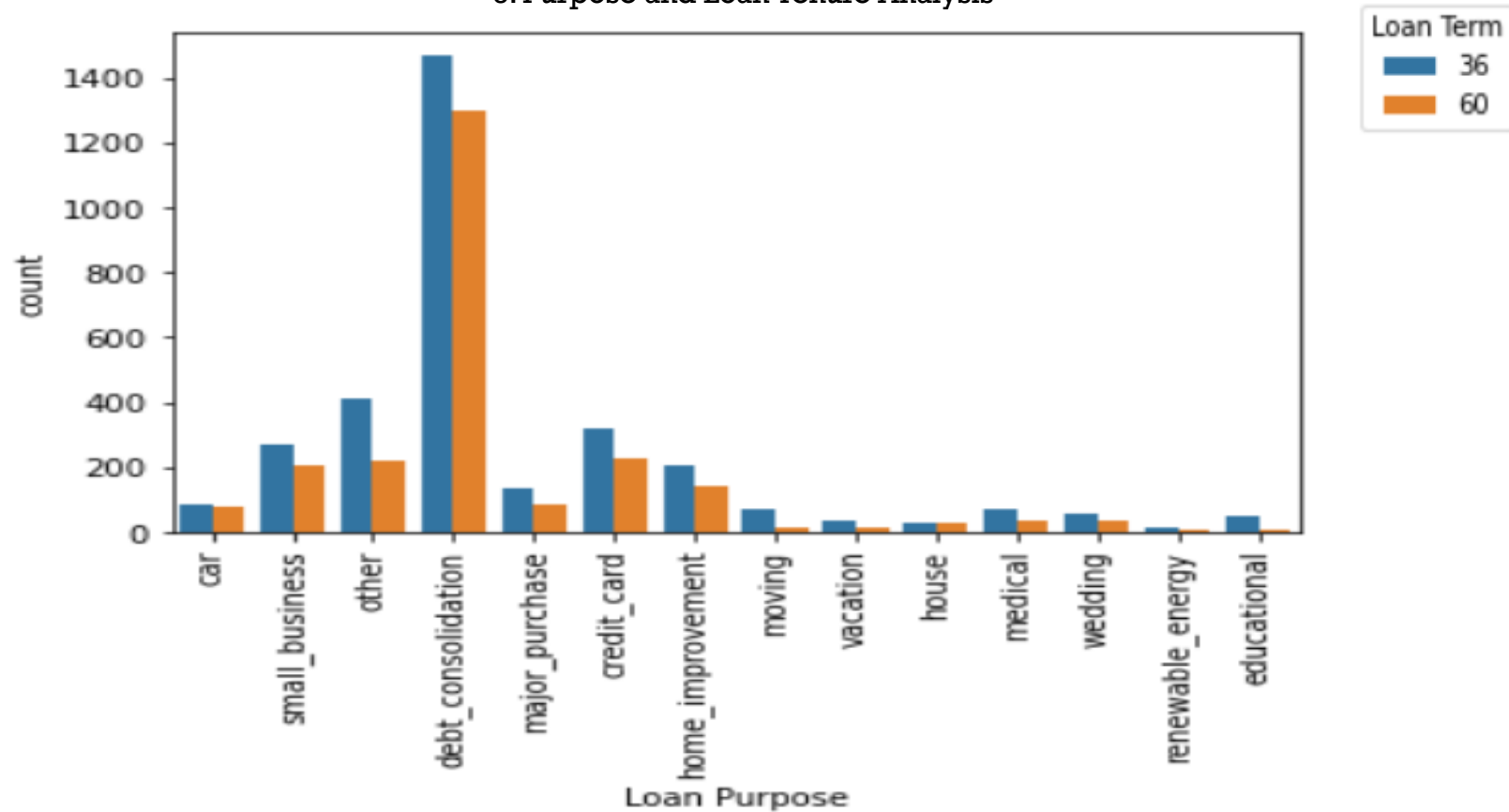


Analysis - Loans of 5-10k amount and interest rate between 10-15% can cause default loans.



# OBSERVATION

## 5. Purpose and Loan Tenure Analysis



Analysis - People taking 36 months loan for debt\_consolidation are defaulters.



# OBSERVATION

- **Observation of multiple(2) parameters in relation loan status.**
  - 'Not Verified' with house ownership as RENTED is not good.
  - Loan Amount between 5k-10k taken when house ownership is RENT is a risky loan.
  - House ownership as RENT taking loan with interest rate between 10-15% can cause default loans.
  - People taking 36 months loan for debt\_consolidation are defaulters.
  - Loans of 5-10k amount and interest rate between 10-15% can cause default loans.





# RECOMMENDATION

- House ownership being RENTED should be verified properly.
- House ownership being RENTED and loan amount 5-10k also should be consider carefully.
- Loan tenures of 36 months and the type of the loan taken for should be well scrutinized.
- Grade B loans need good verification.
- DTI in range 10-20 should be well scrutinized.
- LC should ensure all applicant status are "Verified".

