Lending Club Case Study

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PROBLEM

RISK ANALYSIS

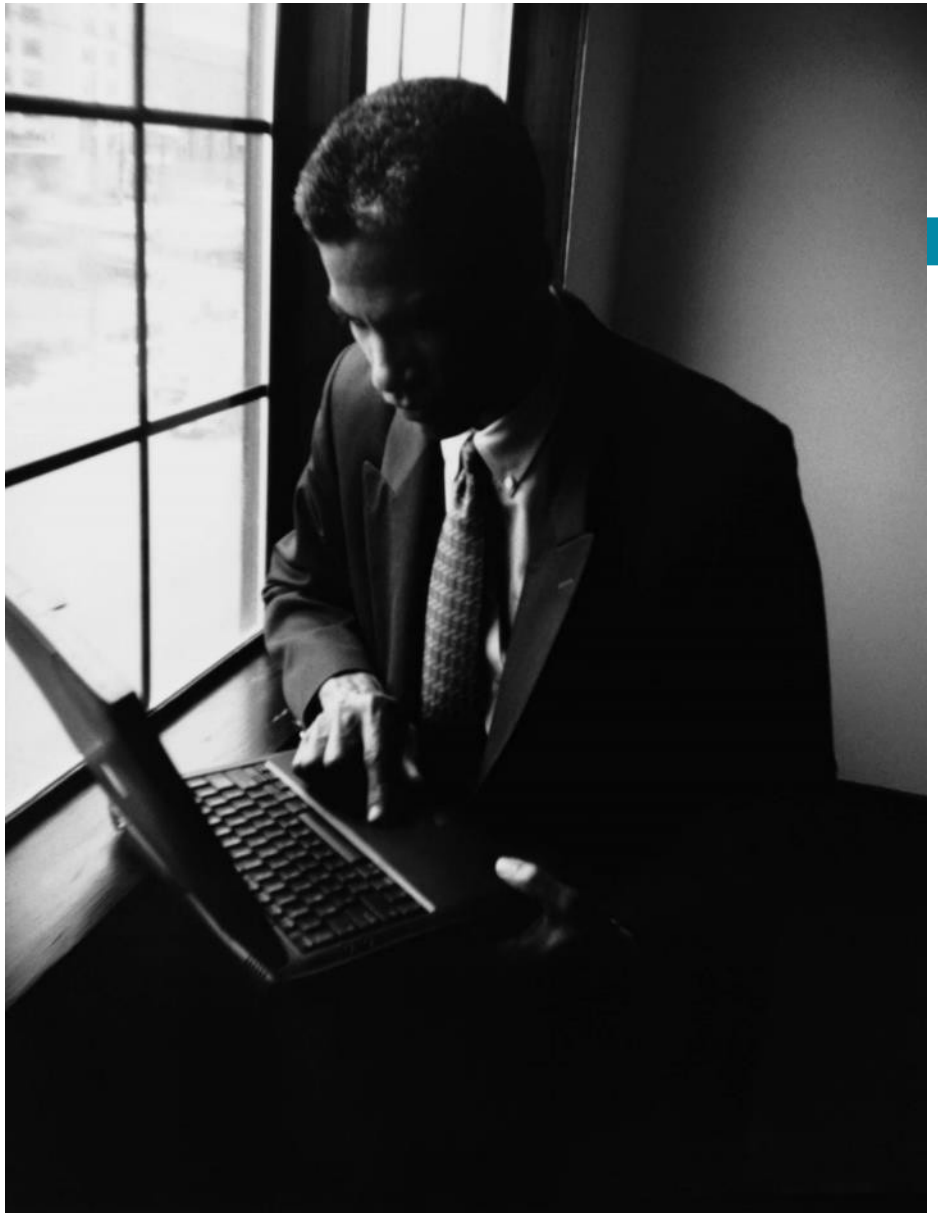
Consumer finance company when receives a loan application, the company has to make a decision for loan approval based on the applicant’s profile.

1.BUSINESS LOSS

If applicant is likely to repay load then not approving the loan results in a loss of business to the company.

2.FINANCIAL LOSS

If applicant is not likely to repay the loan, i.e. he/she is likely to default , then approving the loan may lead to financial loss for the company.



SOLUTION APPROACH

1.DATA UNDERSTANDING

We have approx. 40,000 data of historical applications, which we will use to understand data, analyze trends in data.

2.DATA ANALYSIS

With the help of python – pandas, numpy libraries

3.DATA VISUALIZATION

With the help of python - seaborn, matplotlib libraries.

4.SUGGESTIONS TO CONSUMER COMPANY

Provide points to company based on which company can make decision whether loan should be approved or denied.

DATA UNDERSTANDING

TOTAL DATA

DATASET size
39717 rows &
111 columns

CURRENT APPLICANTS DATA

1140 Rows

FULLY PAID APPLICANTS DATA

32950 Rows

DEFAULTERS DATA

5627 Rows

DATA CLEANING & IMPUTATION

REMOVE NULL COLUMNS

There are some columns in dataset which have absolutely null values so will removed those. Out of 111 -> 57 columns now available for analysis. Where nan present, replaced with 0.

SEGMENTATION – CATEGORICAL DATA & NUMERICAL DATA

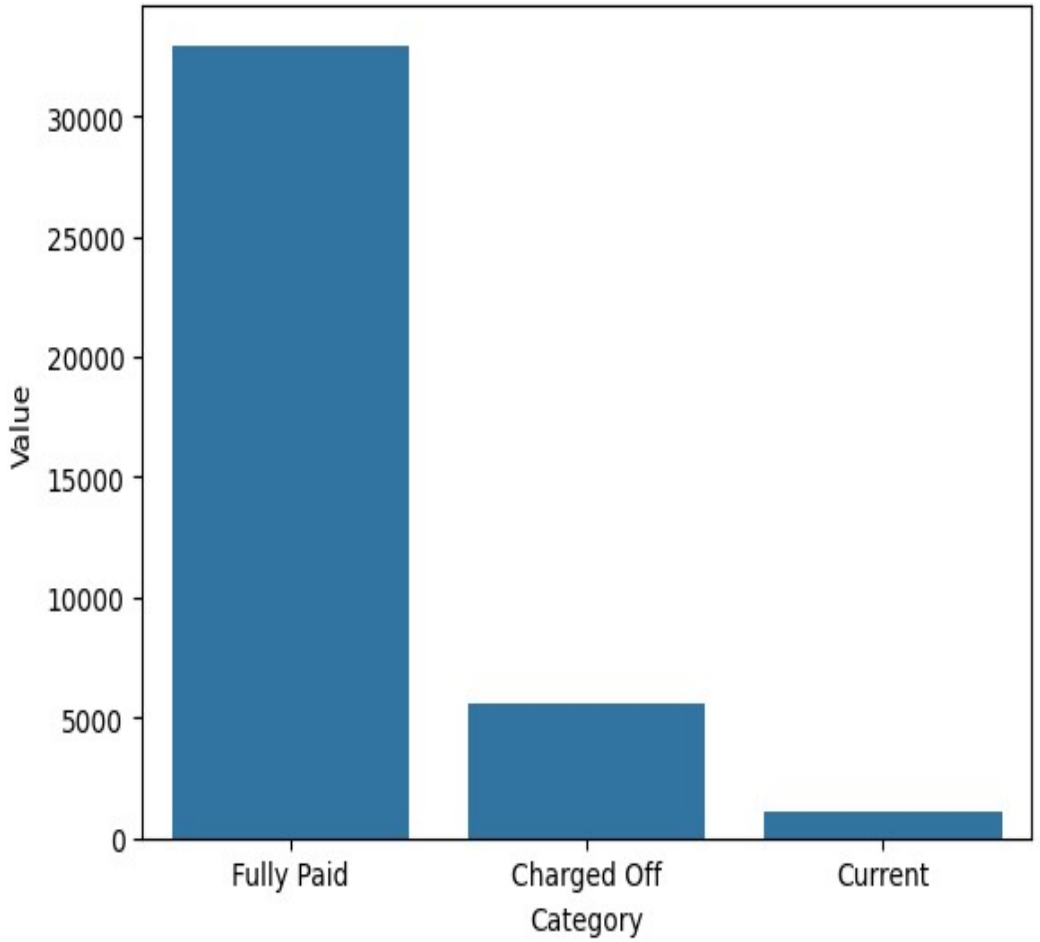
Based on number of unique values present in each column , segmentation is performed which will be useful for univariate analysis.

REMOVE UNNECESSARY COLUMNS/ROWS

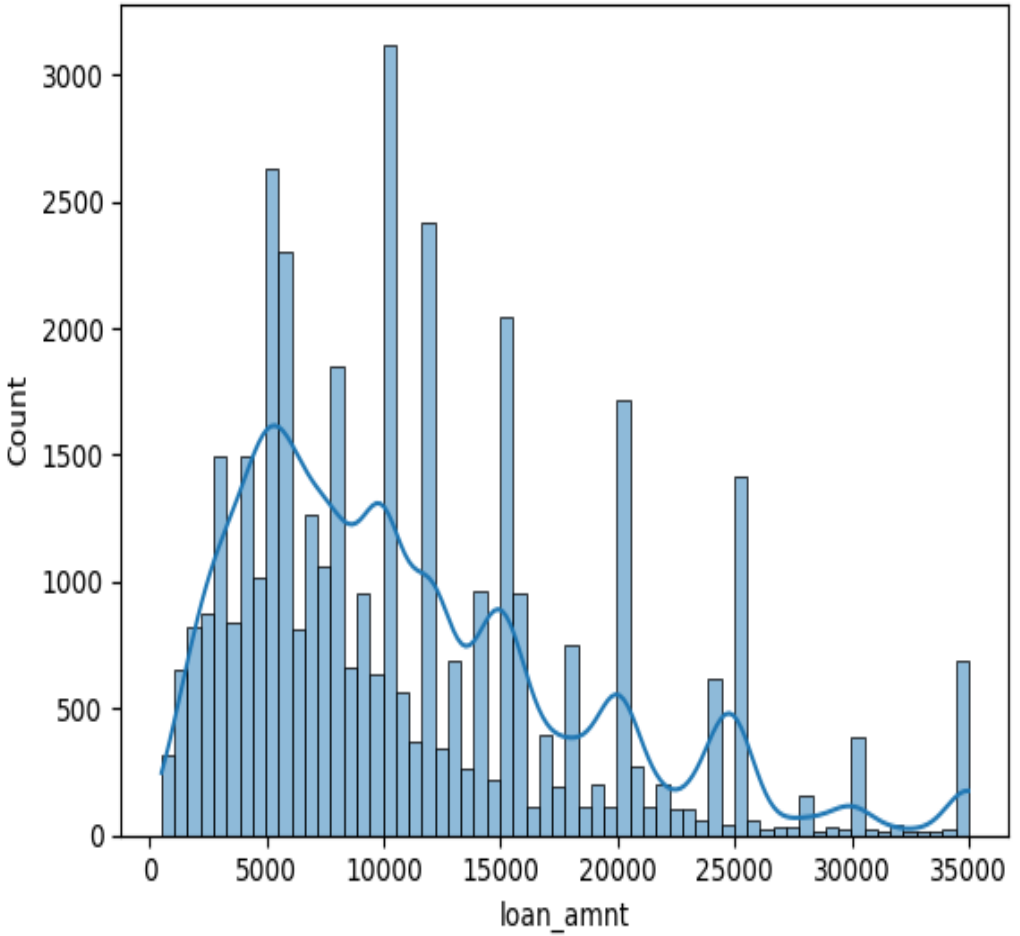
In dataset there are columns such as id,member id which wont be useful for analysis so dropped those columns from data.

DATA VISUALIZATION

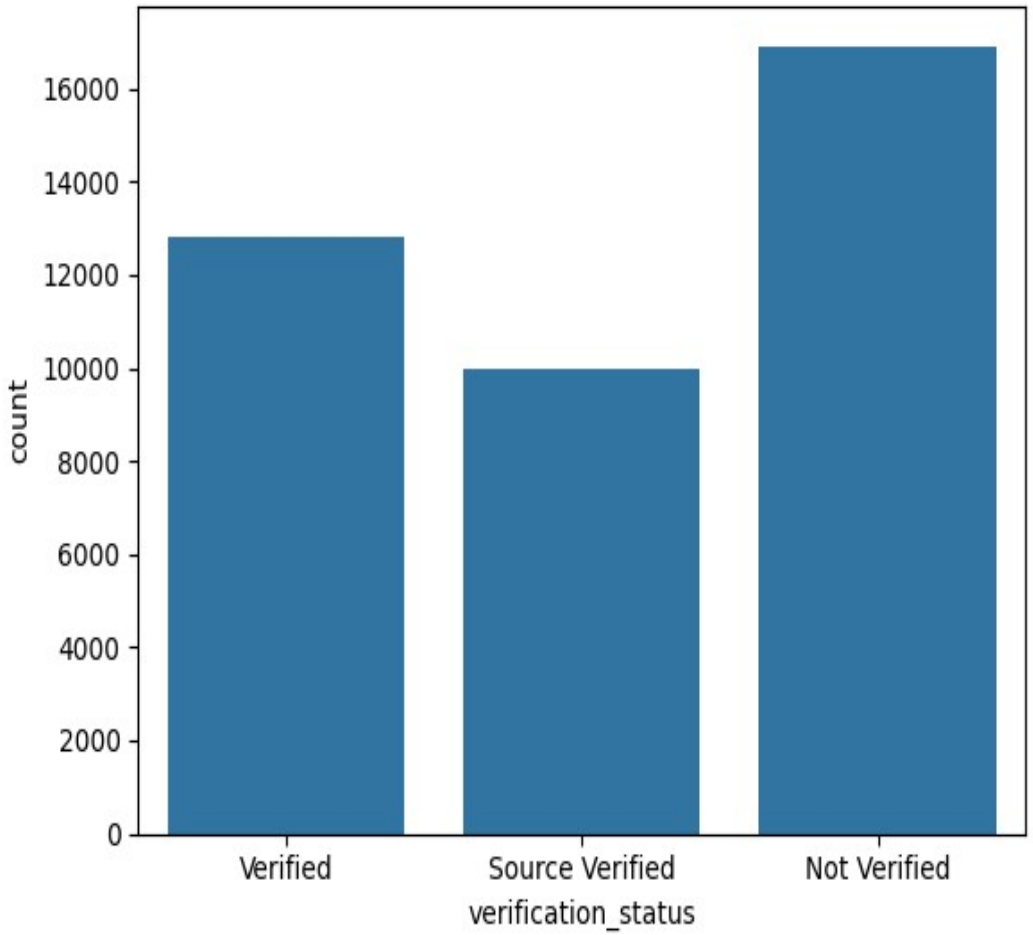
Loan status count



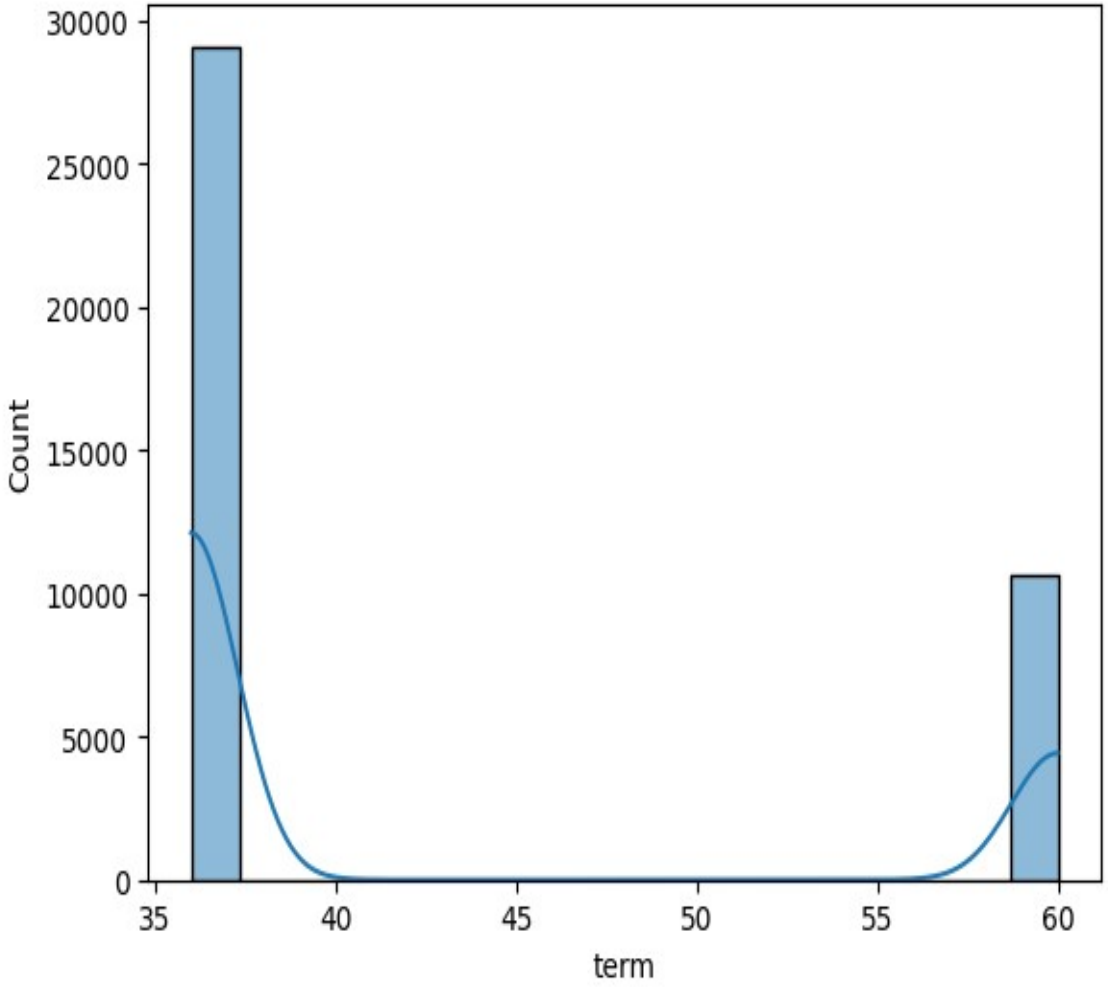
Loan amount varies from 5k to 35k



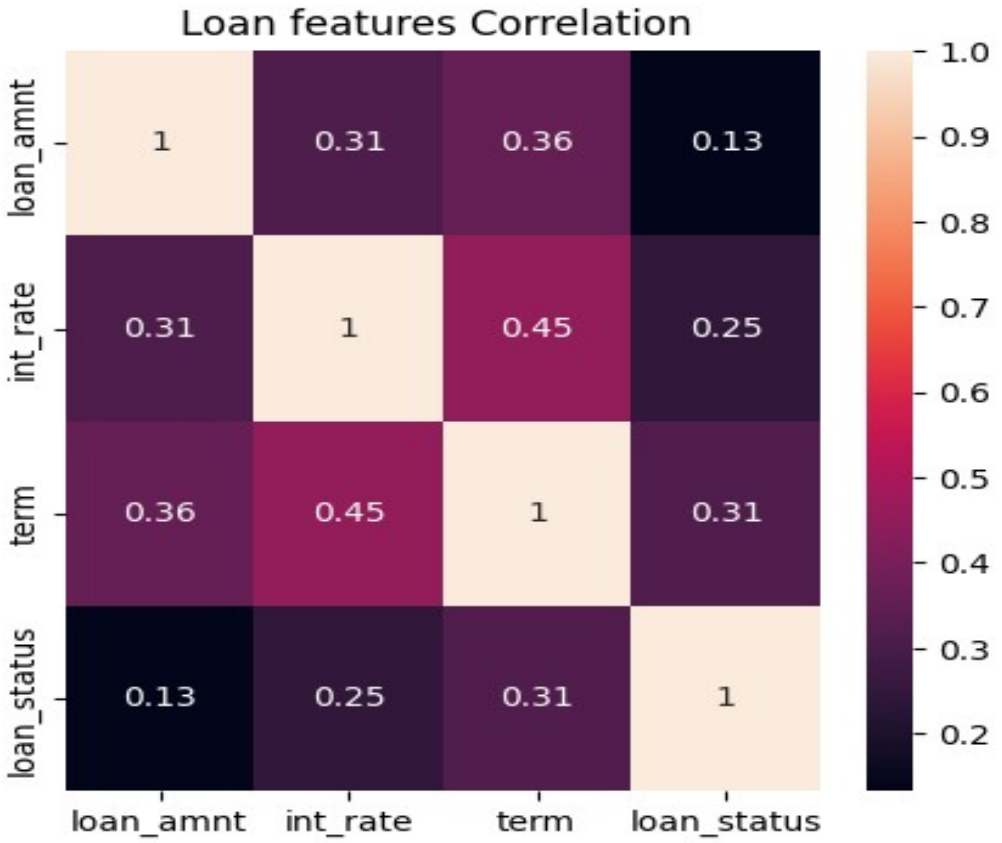
Verification status of applicants



Loan term falls in 2 categories – 36 months & 60 months



CORRELATION BETWEEN LOAN DATA



DATASET AFTER EDA

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df.head()
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	loan_amnt	funded_amnt	funded_amnt_inv	term	int_rate	installment	grade	sub_grade
0	5000	5000	4975.0	36	10.65	162.87	B	B2
1	2500	2500	2500.0	60	15.27	59.83	C	C4
2	2400	2400	2400.0	36	15.96	84.33	C	C5
3	10000	10000	10000.0	36	13.49	339.31	C	C1
4	3000	3000	3000.0	60	12.69	67.79	B	B5

5 rows × 44 columns

Summary

Factors need to consider before loan approval

1. Loan purpose should be checked.
2. Check loan term of applicant. Long term loan are not suggested.
3. Verification should be done time to time.
4. Applicant’s employment length should be checked. Employment length between 3 to 9 yrs is suggested.

NOTE :
After analysing data, these points have came in picture. Apart from this, applicants proper background verification and time to time inquiry is suggested.

SUMMAR

THANK YOU

ABOUT