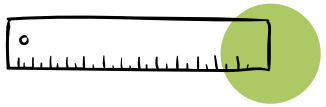
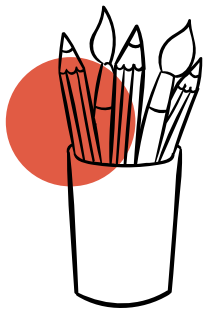
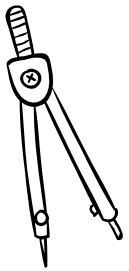


Lending Club

CASE STUDY

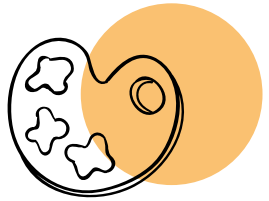




Worked on by-

Rashmeen Malhotra & Sheikh Moin

Steps to solve any given case study



01 DATA SOURCING/READING

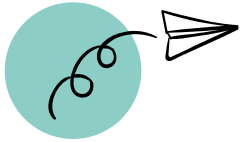
First step is to load the dataset and understand all columns using data dictionary

02 DATA CLEANING

Next we need to clean our data by removing all irrelevant rows an columns and finding missing values

03 DATA ANALYSIS

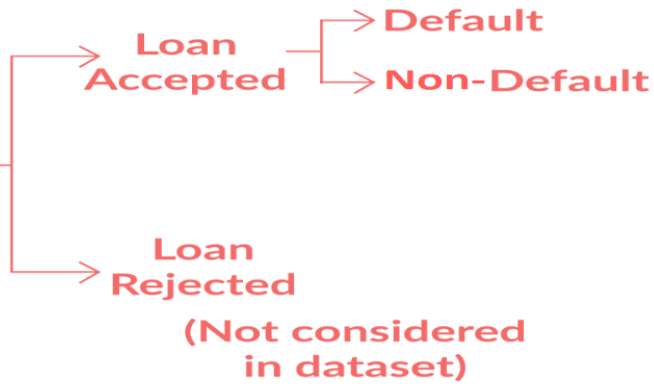
Then we perform our analysis by understanding the relation between columns and also how it can be used to get closer to solution



04 CONCLUSION

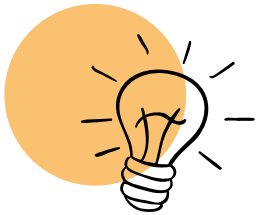
Finally we provide a conclusion on the driving factors (or driver variables) behind loan default

LOAN DATASET



Problem Statement

You work for 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.



Data Sourcing and Reading

- We start by importing the dataset file to our Jupyter notebook.

Given below are samples form data dictionary to understand what type of data is stored in dataset

1. id - A unique LC assigned ID for the loan listing.
2. installment - The monthly payment owed by the borrower if the loan originates.
3. url - URL for the LC page with listing data.
4. funded_amnt - The total amount committed to that loan at that point in time.
5. loan_status - Current status of the loan

Data Cleaning

- We have 39717 Rows and 111 Columns in the initial Data Set.
- After cleaning unnecessary columns such as 'na', duplicate, irrelevant etc., we are left with 39717 Rows and 22 Columns
- As you can see, we have not dropped any rows

Understanding Data

Before we come to any conclusions, let us understand the Data and some patterns using EDA and pictorial presentation

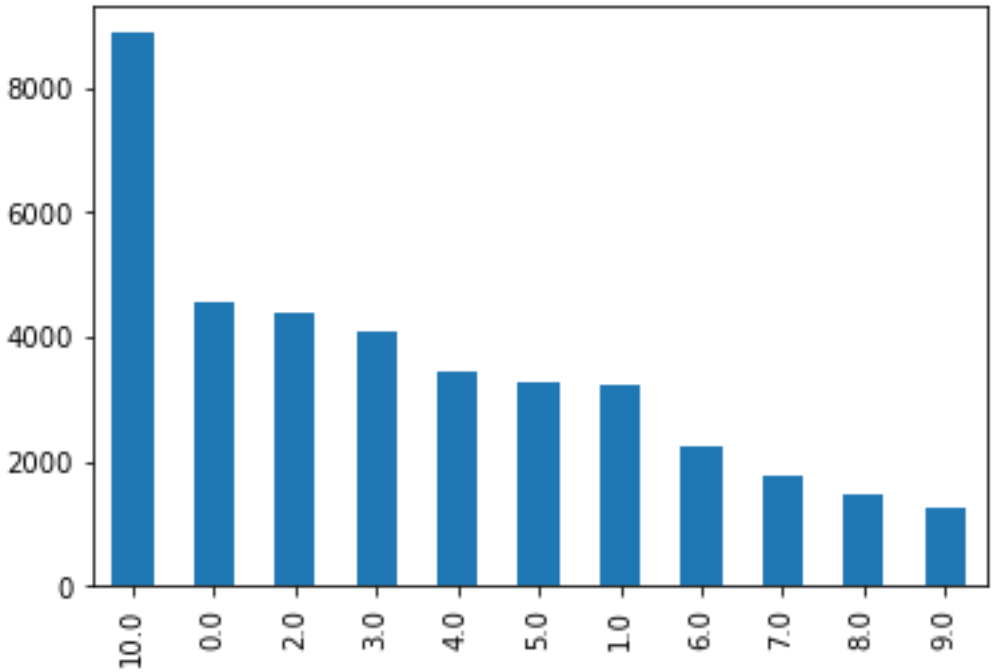
Understanding Data with Univariate

EMP_LENGTH

- As the employment length increases, the number of loan applications decreases
- A reason for this could be, financial stability

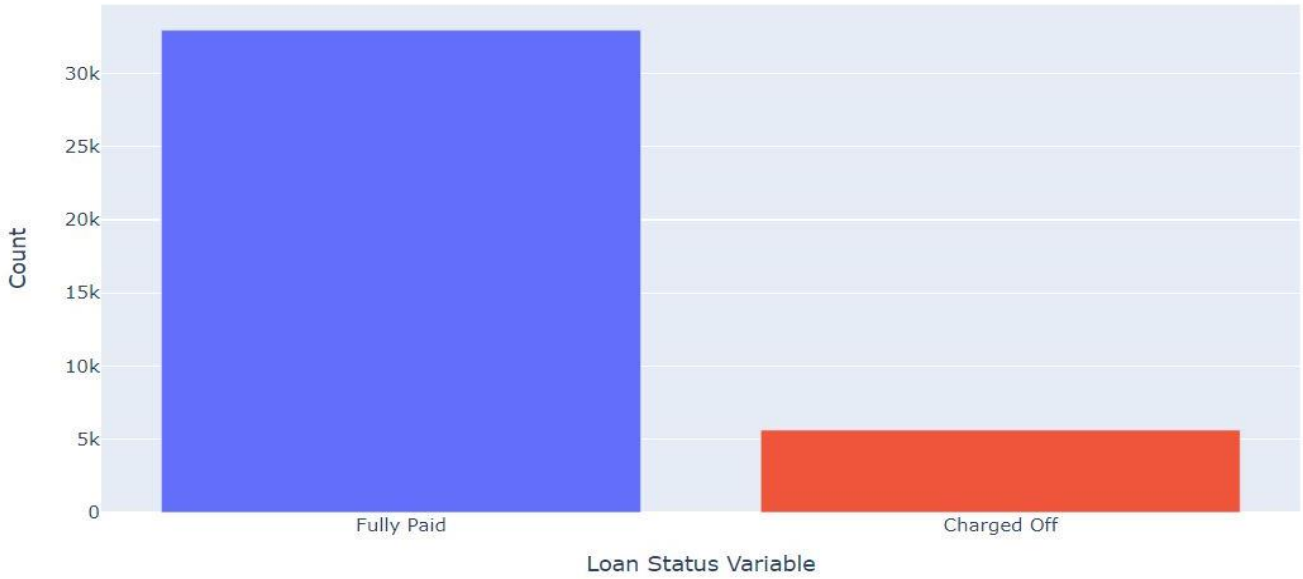
NOTE :

- Here 0 means, less than an year
- 10 means, ten or more years. (hence this is an exception in the trend seen)



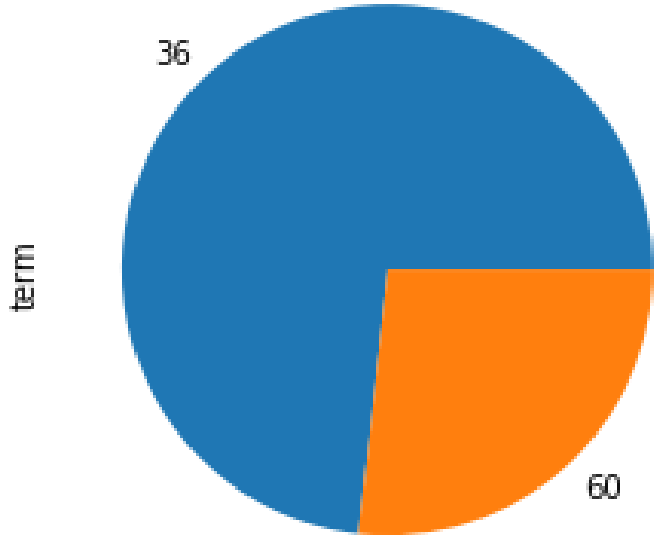
LOAN_STATUS

- We see that the count of people who is even though is very high in itself, it is less than the count of people who have fully repaid the amount



TERM

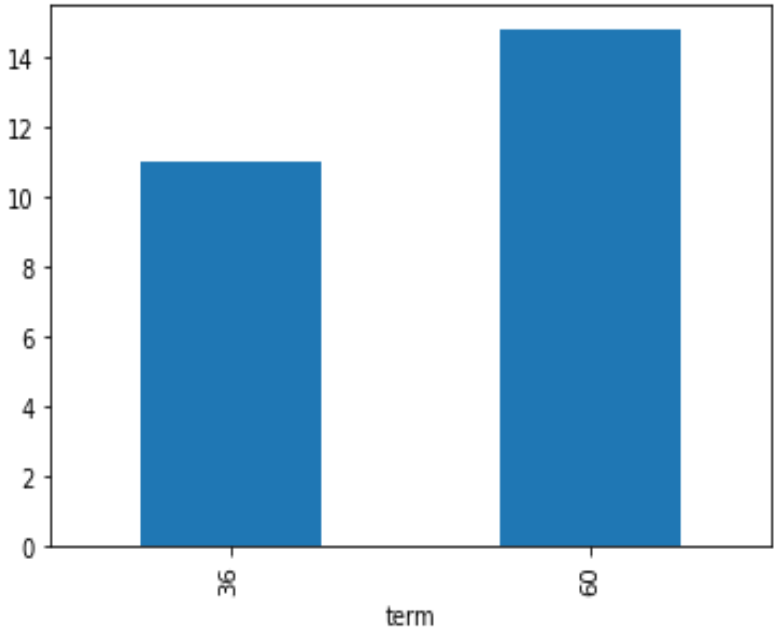
- Maximum percentage of customers choose 36 month tenure over 60 months
- In the next section, let us understand why



Understanding Data with Bivariate

TERM AND INT_RATE

- On an average the interest rate for 36 months is less than that for 60 months tenure
- This seems to be the driving factor for people going towards 36months



17.481450670657114

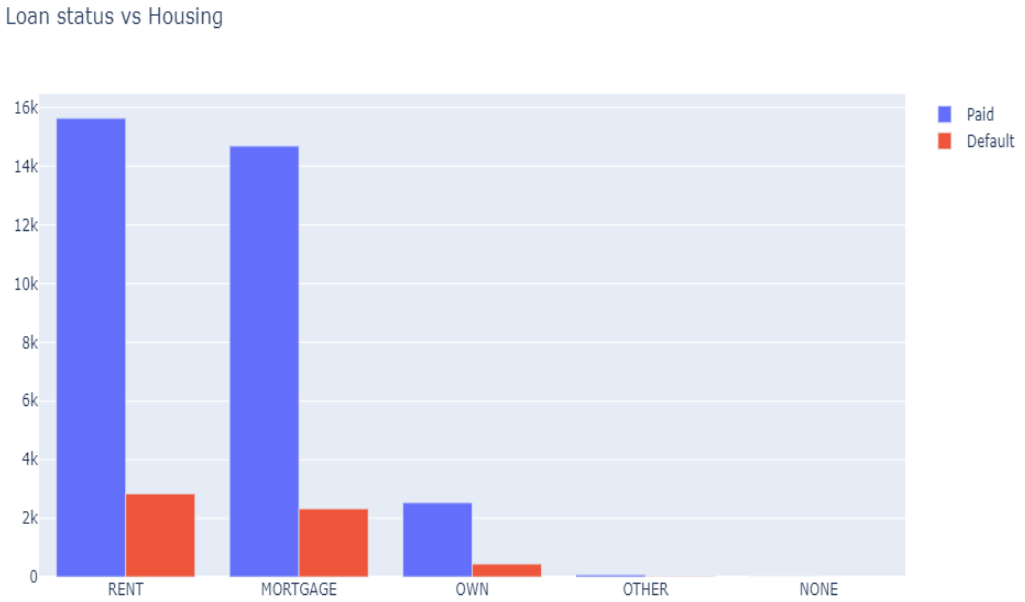
FUNDED_AMNT_INV AND ANNUAL_INC

- On an average the loan amount approved and sanctioned is around 17.48% of the annual salary

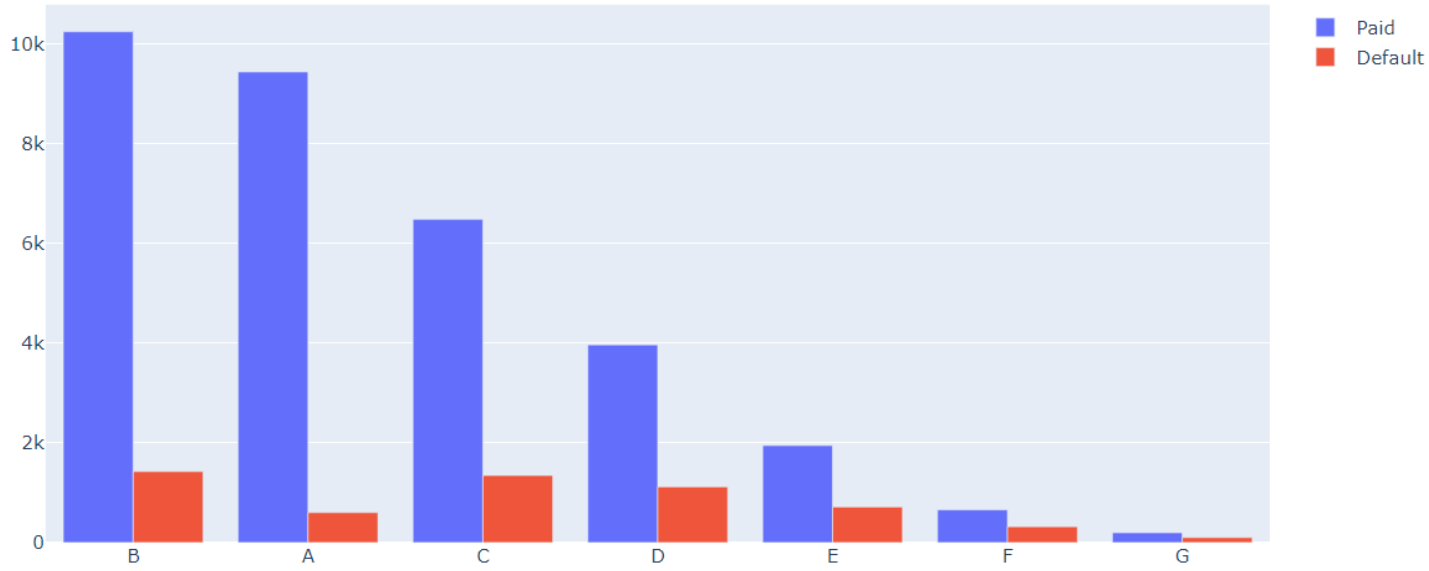
Bivariate Analysis to find driving factors behind loan default

LOAN STATUS VS HOUSING

- People with own house tend to apply less for loan and also do not default very often
- Whereas, people with rented or house under mortgage usually take more loan and the default rate is very high as well

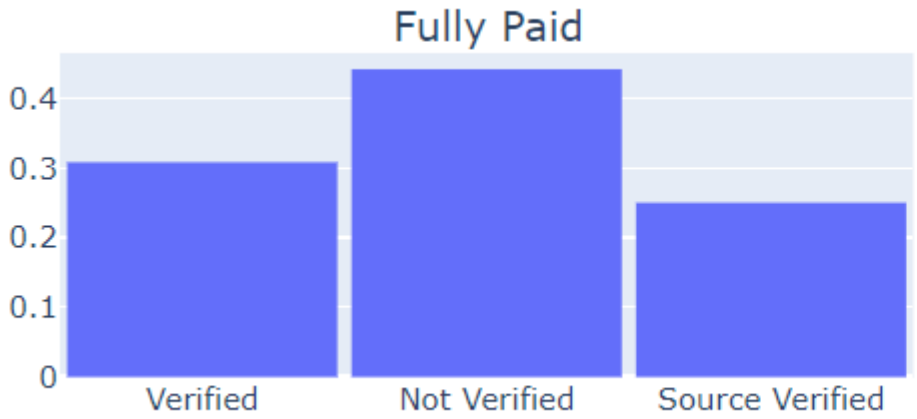


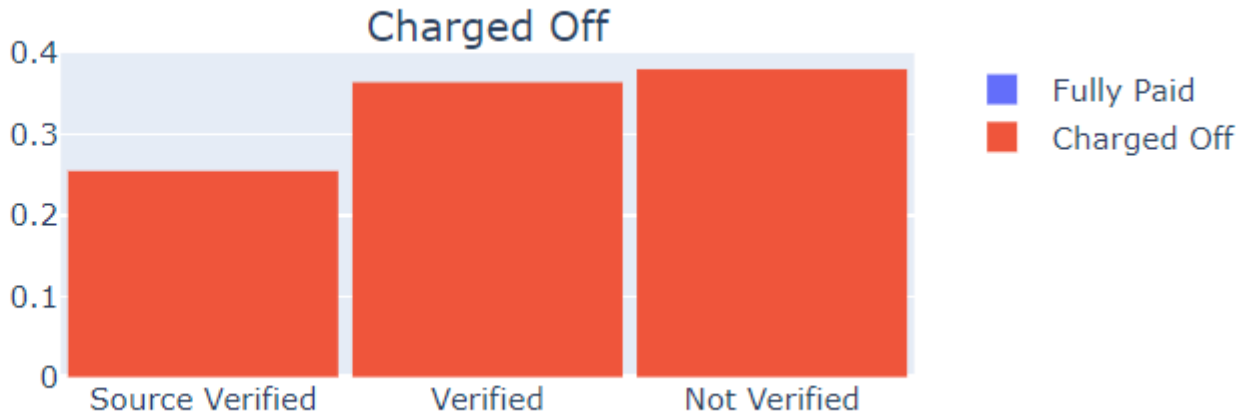
loan_status grade	Charged Off	Current	Fully Paid
A	602	40	9443
B	1425	345	10250
C	1347	264	6487
D	1118	222	3967
E	715	179	1948
F	319	73	657
G	101	17	198



GRADE VS LOAN_STATUS

- Here we can see as the Grade moves from A to G, the chances of a person defaulting a loan will increase
- We see that people with G, almost 1 of 2 people have defaulted





LOAN STATUS VS VERIFICATION

- Here we can see that verification has almost no effect on, if a person is going to default
- Almost same number of verified as well as unverified people have defaulted loan

Conclusion

- People with own house are more likely to pay back the loan
- People with good grade are more likely to pay back loan, whereas the ones with bad grade are likely to default loan (Where ‘A’ being best grade and ‘G’ being bad)
- We also see in the last representation that the ‘Verification’ has no effect on, if a person is going to default the loan

Find this Project on Github site

https://github.com/sheikhmoin1/Lending-Club

OR

https://github.com/rashmeenmalhotra/Lending_Club

SHEIKH MOIN

RASHMEEN MALHOTRA

Thank You!

Special Thanks to UpGrad Team!!