

# Loan Defaulers Analysis for Consumer finance company

By Narendra

# Business Problem & Objective the case Study

## **Business Context :**

This company is the largest online loan marketplace, facilitating personal loans, business loans, and financing of medical procedures. Borrowers can easily access lower interest rate loans through a fast online interface.

Consumer loans carry some 'risk' and specifically un-secured loans carry largest source of financial loss. Borrowers who **default** causes the largest amount of loss to the lenders.

## **Objective:**

If we can identify the risky loan applicants characters, then such loans can be reduced thereby cutting down the amount of credit loss. Identification of such applicants/ characters/features using EDA is the aim of this case study.

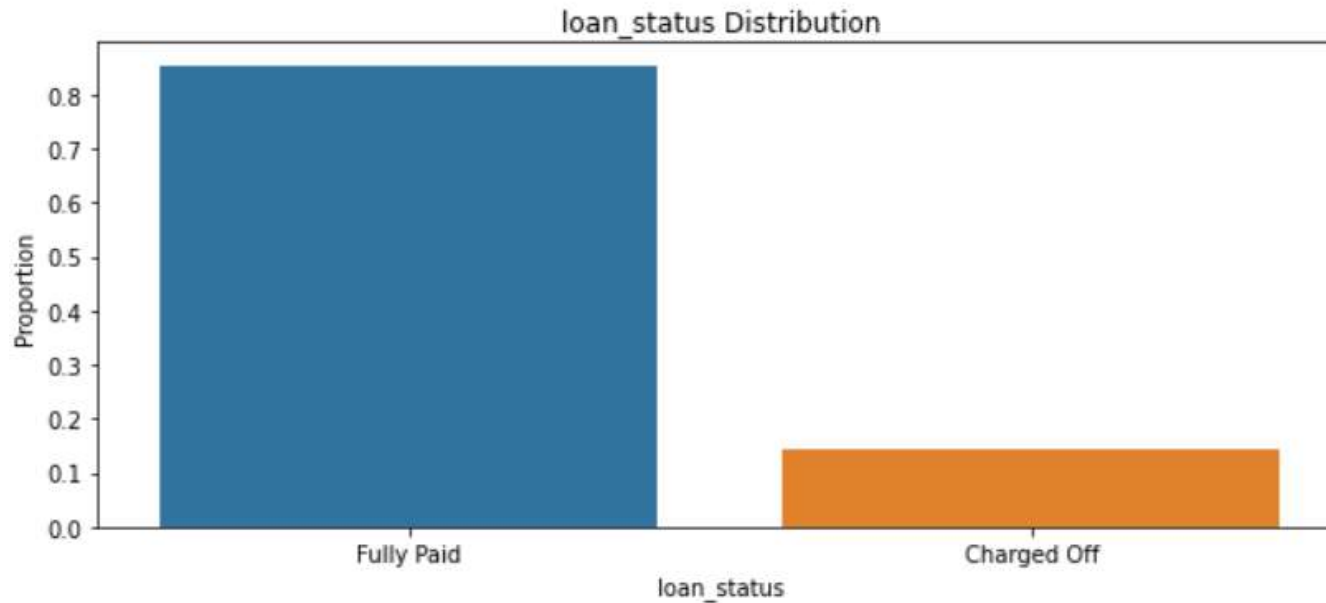
Company wants to understand the **driving factors (or driver variables)** behind loan default, i.e. the variables which are strong indicators of default. The company can utilize this knowledge for its portfolio and risk assessment.

# Approach

For identifying the risky loan applicants characters, will do following analysis

- Data Understanding
- Univariate Analysis
  - ✓ Analysis of each feature/column to understand the distribution of the data
- Bi-variate Analysis
  - ✓ Analyzing data two variables using
    - ✓ Cross Tabulation
    - ✓ Correlations
  - ✓ to find patterns and insights from data.
- Presentation of Insights and Recommendation from above Analysis using Visualization

# Data Understanding – Loan Status Distribution



Data shows historically 15% of portfolio have charged-off accounts.

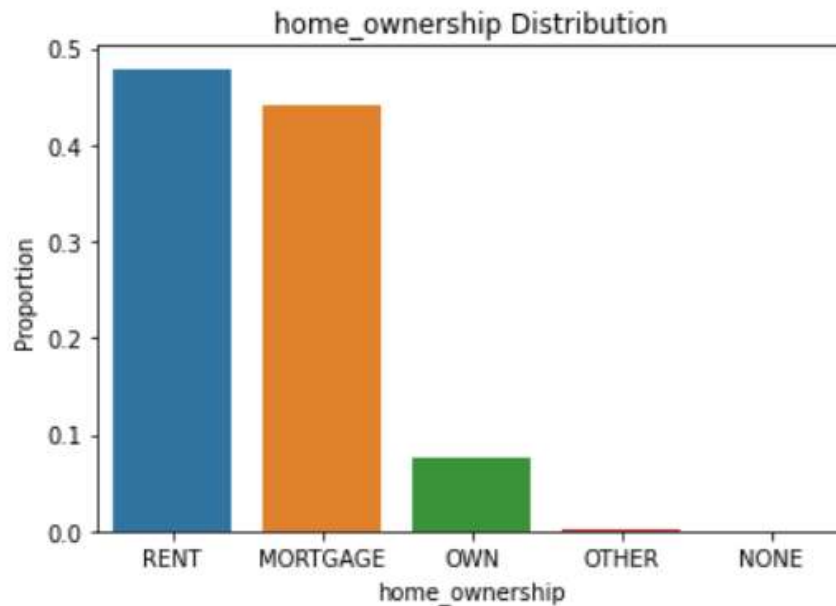
# Data Statistics Distribution

	id	member_id	loan_amnt	funded_amnt	funded_amnt_inv	installment	annual_inc	dti	delinq_2yrs	inq_last_6mths	mths_since_last_delinq
count	3.971700e+04	3.971700e+04	39717.000000	39717.000000	39717.000000	39717.000000	3.971700e+04	39717.000000	39717.000000	39717.000000	14035.000000
mean	6.831319e+05	8.504636e+05	11219.443815	10947.713196	10397.448868	324.561922	6.896893e+04	13.315130	0.146512	0.869200	35.900962
std	2.106941e+05	2.656783e+05	7456.670694	7187.238670	7128.450439	208.874874	6.379377e+04	6.678594	0.491812	1.070219	22.020060
min	5.473400e+04	7.069900e+04	500.000000	500.000000	0.000000	15.690000	4.000000e+03	0.000000	0.000000	0.000000	0.000000
25%	5.162210e+05	6.667800e+05	5500.000000	5400.000000	5000.000000	167.020000	4.040400e+04	8.170000	0.000000	0.000000	18.000000
50%	6.656650e+05	8.508120e+05	10000.000000	9600.000000	8975.000000	280.220000	5.900000e+04	13.400000	0.000000	1.000000	34.000000
75%	8.377550e+05	1.047339e+06	15000.000000	15000.000000	14400.000000	430.780000	8.230000e+04	18.600000	0.000000	1.000000	52.000000
max	1.077501e+06	1.314167e+06	35000.000000	35000.000000	35000.000000	1305.190000	6.000000e+06	29.990000	11.000000	8.000000	120.000000

Average Number of Installments are 325

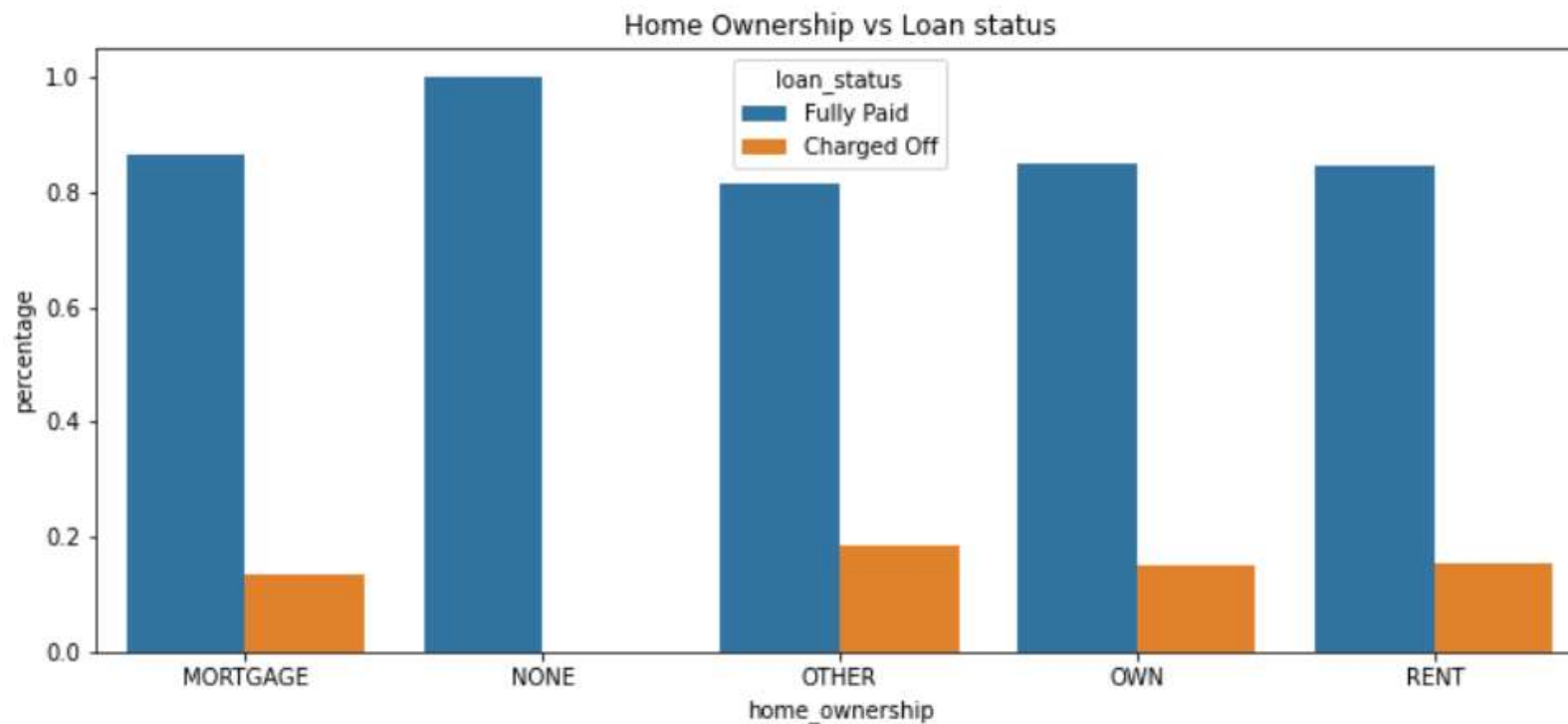
Average Funded Amount is around 10,947.

# Data Understanding – Home Ownership Distribution



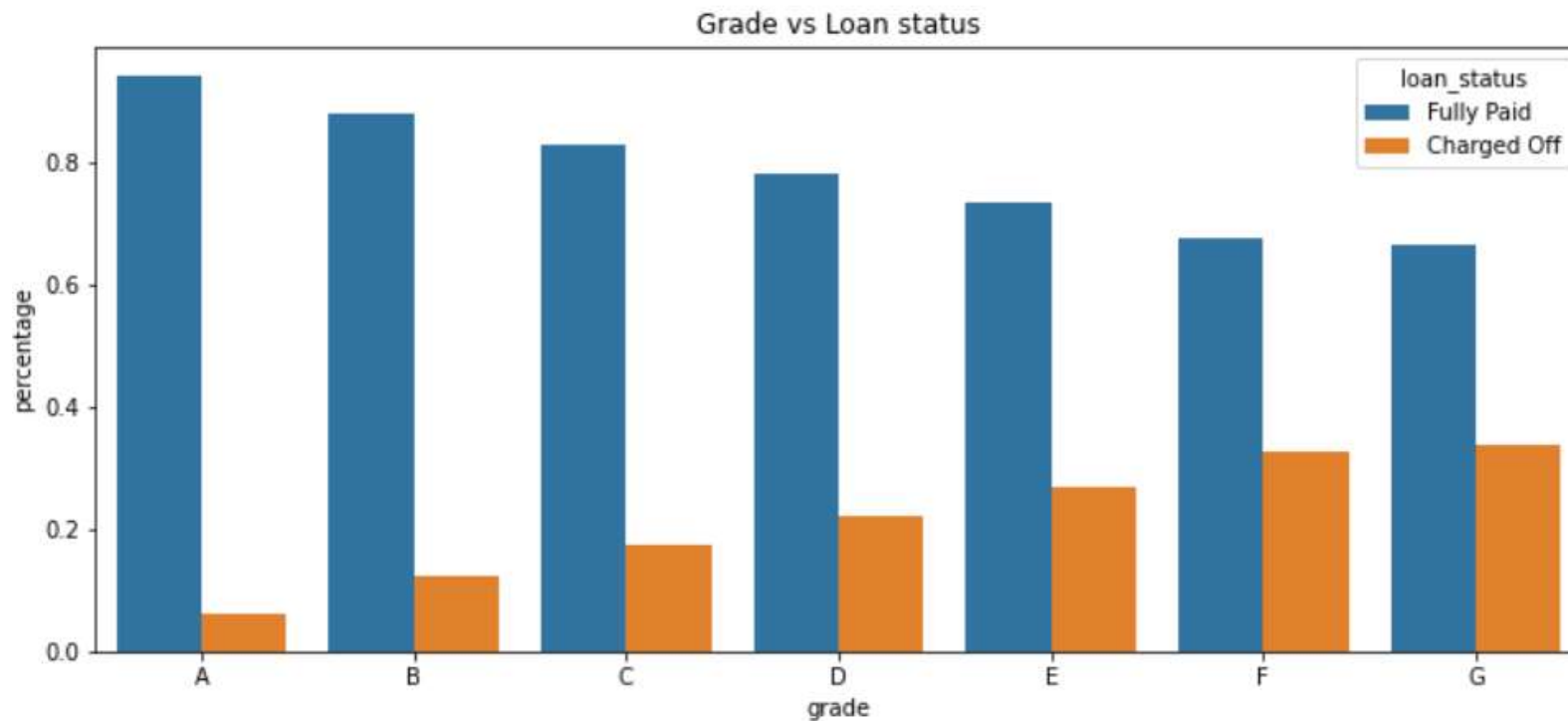
Majority of loans are taken by Home ownership as RENT or Loan on Mortgage

## Bivariate Analysis – Home Ownership Distribution with Loan Status



No Clear cut data insight by looking home ownership analysis with loan status that is charged-off or defaulter and have no pattern with home ownership feature.

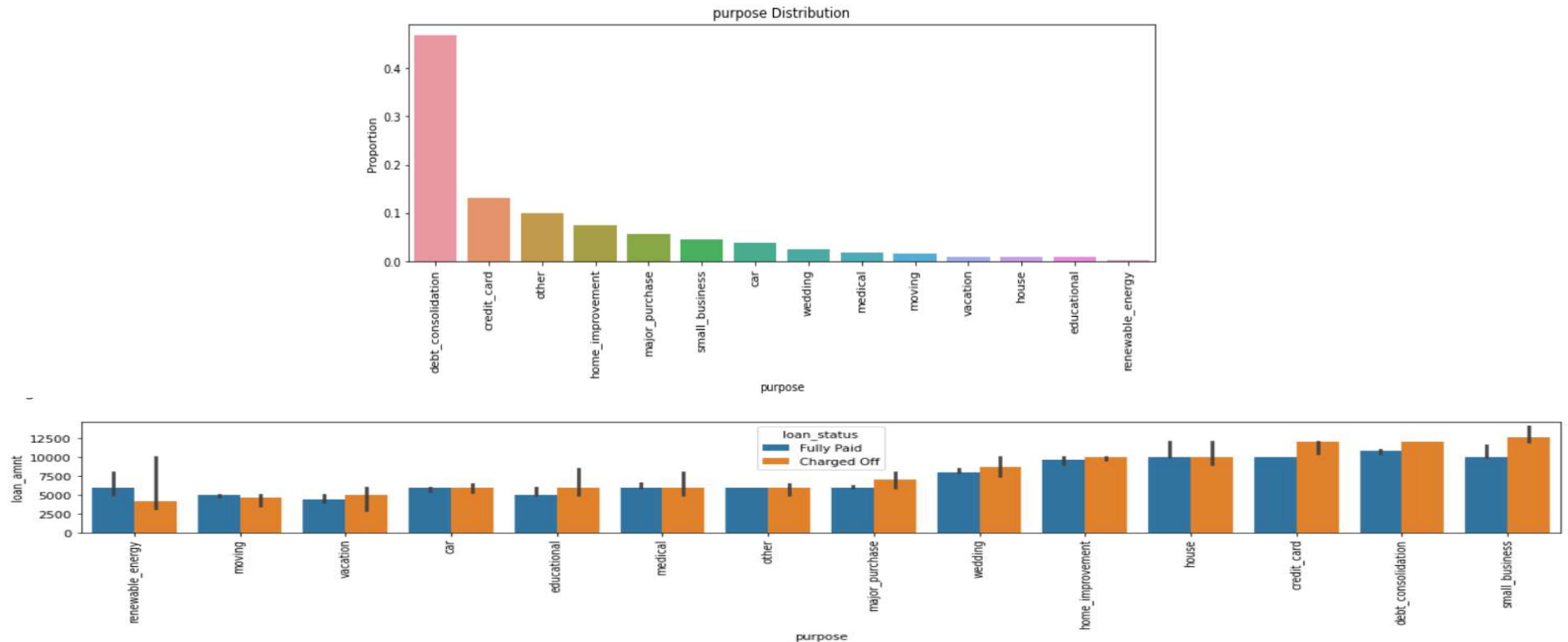
# Bivariate Analysis – Grade with Loan Status



Data Clears show high grade leads high risk of getting defualted.



# Bivariate Analysis – Purpose with Loan Status



Clearly Small Business & Credit card loans have more defaults compared to other type of loans.

# Insights and Recommendations

- *Low Grade borrowers are high risky compared to high grade -> Consumer finance company needs do more due diligence before providing loan approval for low grade borrowers.*
- *Some states more risky compared to other state like FL and NY. -> Consumer finance company needs do more due diligence before providing loan approval for these state loans.*
- *Small Business and Credit Card loans are more risky compared to other loan types -> Consumer finance company needs do more due diligence before providing loan approval for these type of loans.*

Thank you

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