



Lending Club Case Study

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Abstract



- Lending club 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.
- The objective of analysis is to use the information about past loan applicants and find whether they 'defaulted' or not.



Problem solving methodology



Data Data Analysis Analysis Analysis

Data Cleanin

g

Removing the null valued columns, unnecessary variables and checking the null value percentage and removing the respective rows.

Data Understandin

g

Working with the Data Dictionary and getting knowledge of all the columns and their domain specific uses

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Analysis

Analysing each column, plotting the distributions of each column.

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Univariate Analysis

Analysing the continuous data columns with respect to the categorical column

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Analysi Analysing the two Variable behaviour like term and loan status with respect to loan amount.

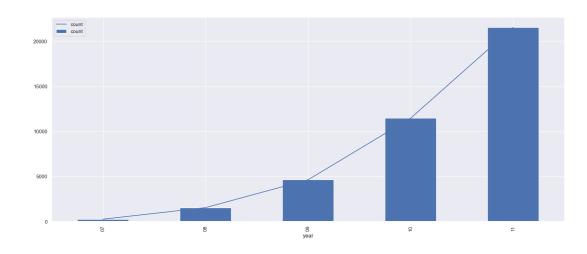
Recommendation s

Analysing all plots and recommendations for reducing the loss of business by detecting columns best which contribute to loan defaulters.

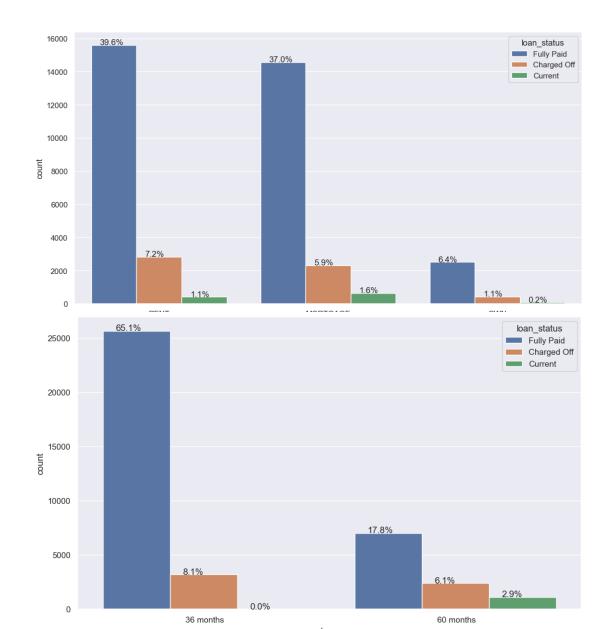


Analysis of Data





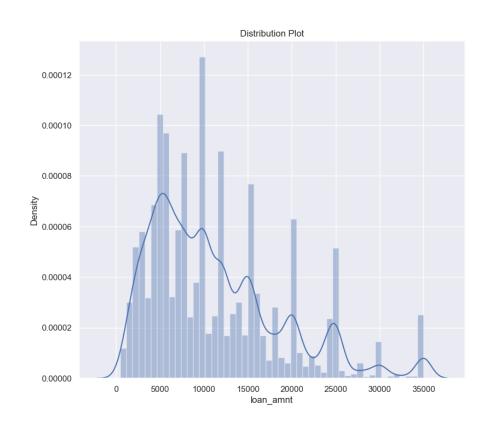
- Around 47.9% people have rented property and 44.5% have mortgaged property whereas only 7.7% people have their own house.
- Number of loan applications are increasing year on year
- Around 73% people opted for 36 months as loan term.

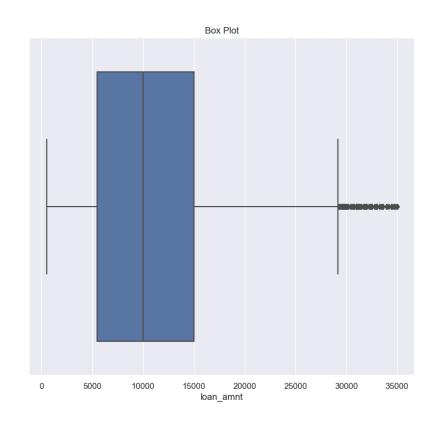






Univariate Analysis- Loan Amount



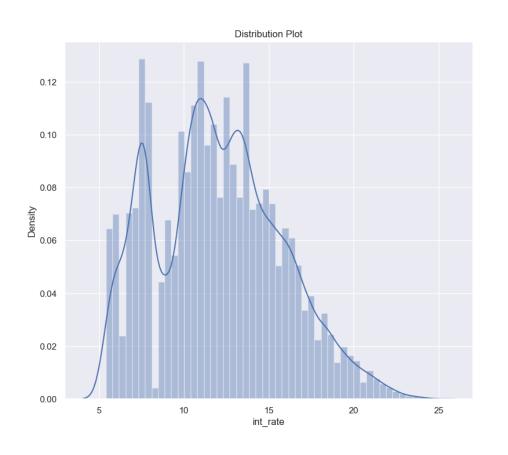


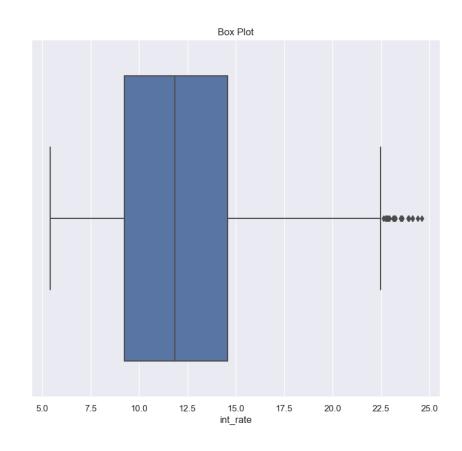
• Most of the loans sanctioned were between 5000 to 15000





Univariate Analysis - Interest Rates



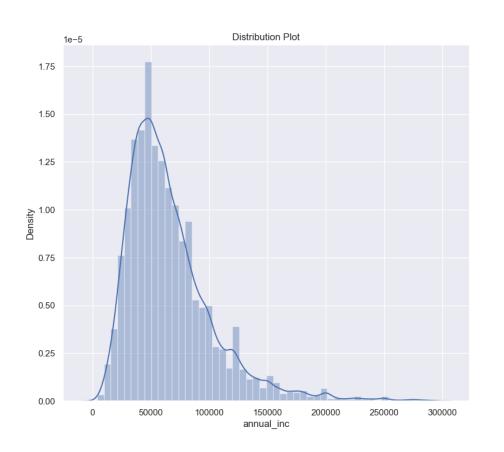


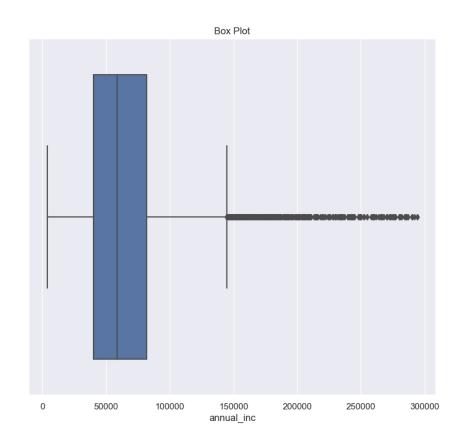
• The maximum defaulters are observed when the interest rates ranges between 8 to 15%



Univariate Analysis-Income





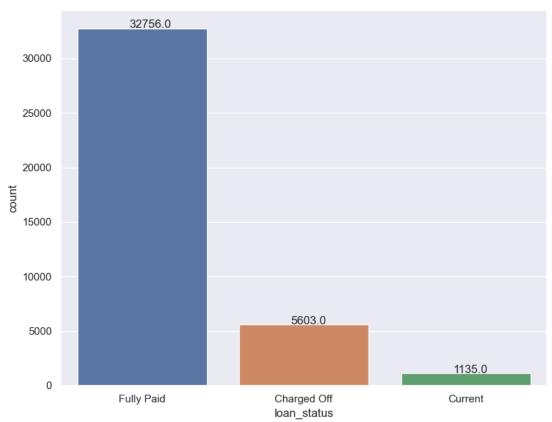


• The Average Income for people taking loans is between 40000 to 85000 annually.

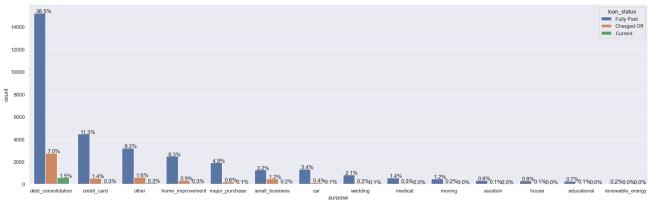


Categorical Analysis- Loan Status and Purpose for Loan UpGrad





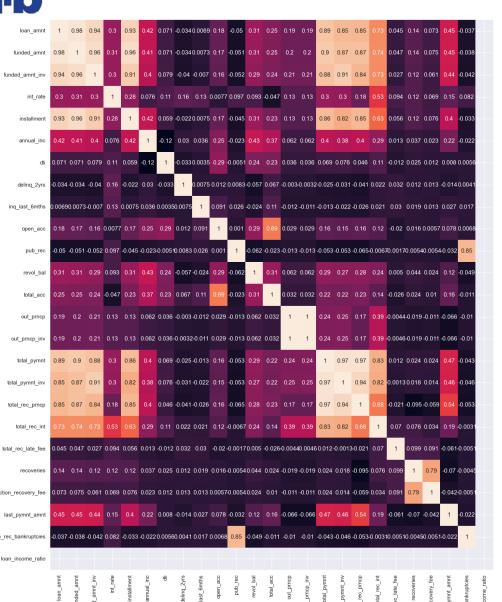
- About 2.87% applicants are charged off.
- About 47% people took loan to pay off other debts and loans.





Bivariate Analysis



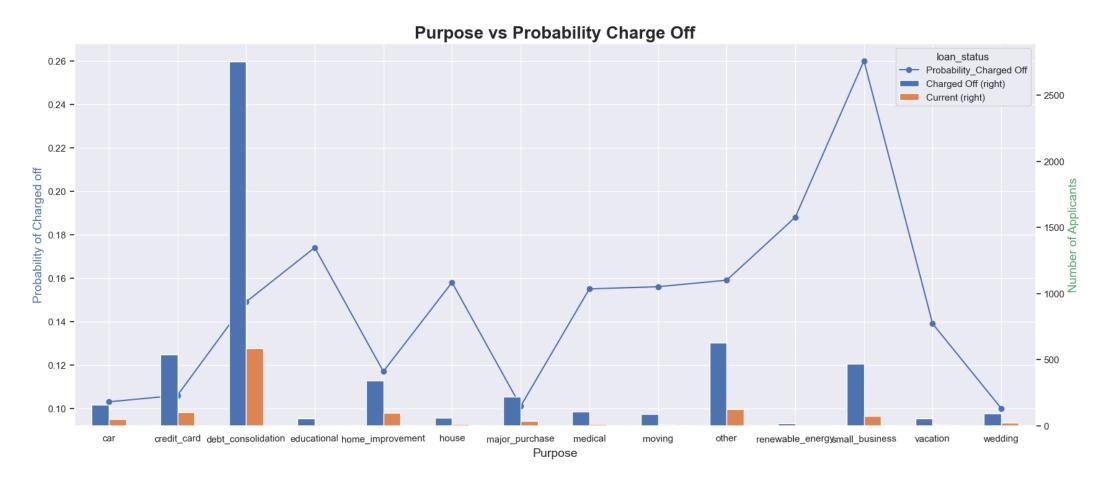


• It is clear from the Heatmap that 'loan_amnt','funded_amnt' & 'funded_amnt_inv' are closely interrelated.



Analysis



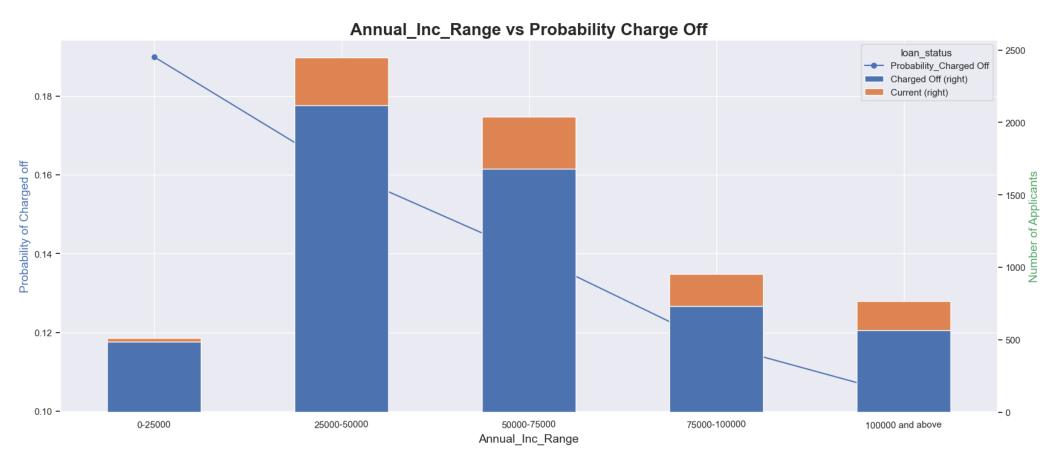


• Applicants who took loan for small business have the highest probability of charge off. A guarantee or asset should be taken while approving the loan for this purpose.



Analysis



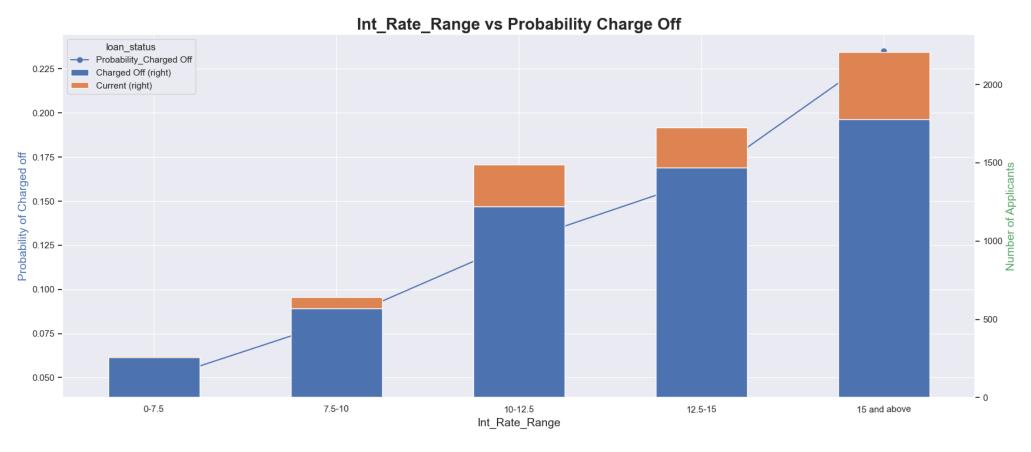


 Less annual income is indicating towards more defaulting in paying back ,percentage being 19%. Bank should consider this factor.







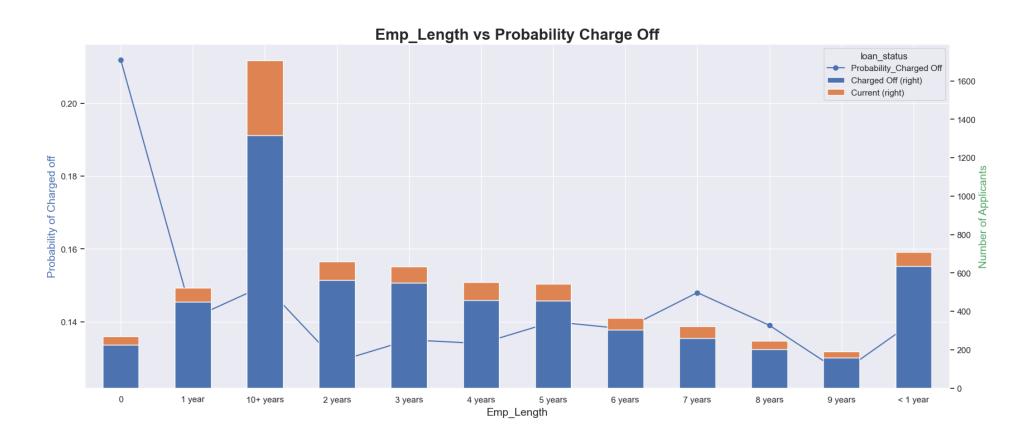


• As the interest rates are increasing so are the default rates, highest being at 15%



Analysis





Applicants who are self employed or employment<1 year are more probable to default.



Conclusions



- Lending club should reduce the high interest loans for 60 months tenure, they are prone to loan default.
- Small business loans are defaulted more. Lending club should stop/reduce issuing the loans to them.
- Borrowers with mortgage home ownership are taking higher loans and defaulting the approved loans.
- Lending club should stop giving loans to this category when loan amount requested is more than 12000.
- People with more number of public derogatory records are having more chance of filing a bankruptcy. Lending club should make sure there are no public derogatory records for borrower.
- Lending Club should check for the employment history of the person before issuing a loan as it increases the default rates, more prone to loan default.