

LENDING CLUB CASE STUDY

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AGENDA

- Problem Statement
- Technologies Used
- Data Understanding
- Analysis
- Conclusions

PROBLEM STATEMENT

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

TECHNOLOGY USED

- PYTHON – Open-source language best suited for data analysis and machine learning, which provides many visualization libraries like matplotlib, seaborn, plotly, and data analysis library like pandas etc.
- JUPYTER NOTEBOOK – web based interactive computing platform for creating python notebooks

DATA ANALYSIS

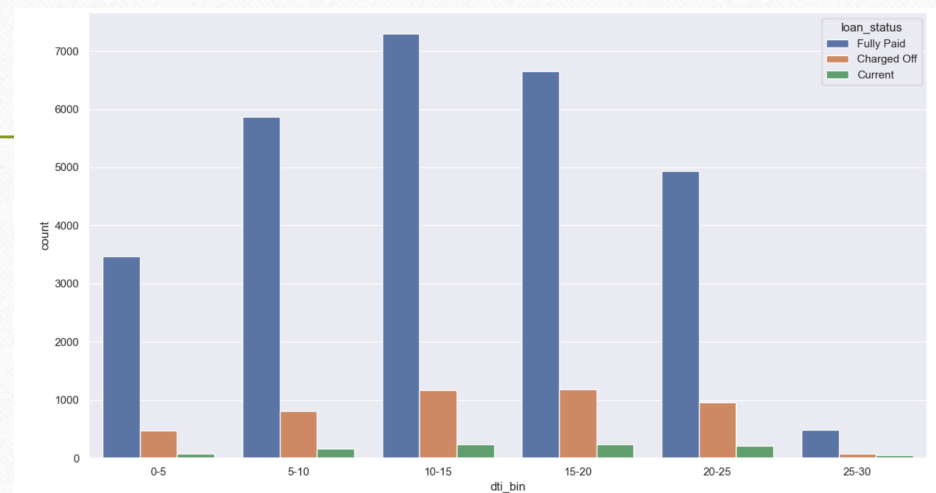
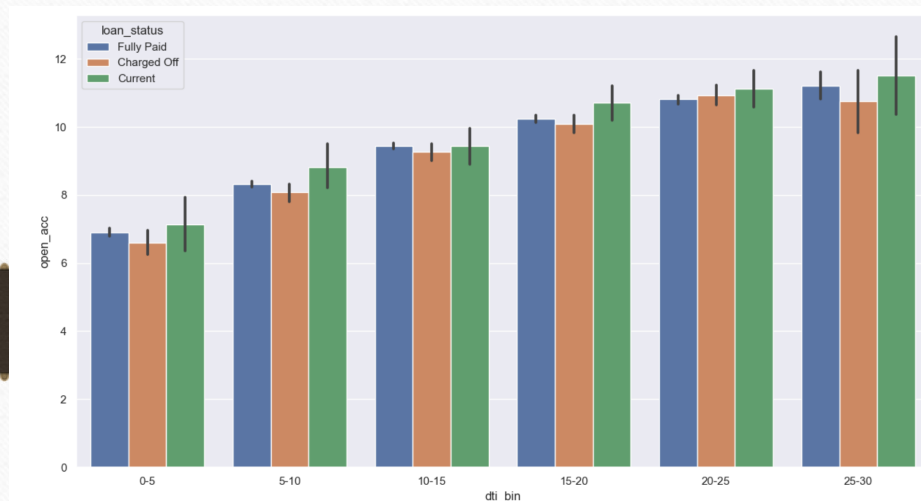
- Steps involved are
 - Loading the dataset and, checking for rows and columns
 - Missing value columns are identified and imputed values if needed, dropped columns if majority of the values are missing
 - Outliers are treated appropriately
 - Datatype Conversion for better understanding and analysis of data (Dates are in string – which is then converted to Date)
 - Analysis

ANALYSIS

- Employees with 10+ years of experience tends to take more loans than others, keeping that in mind, Employees having 10 years of experience and < 1 year experience tend to take the major proportion of defaulter list

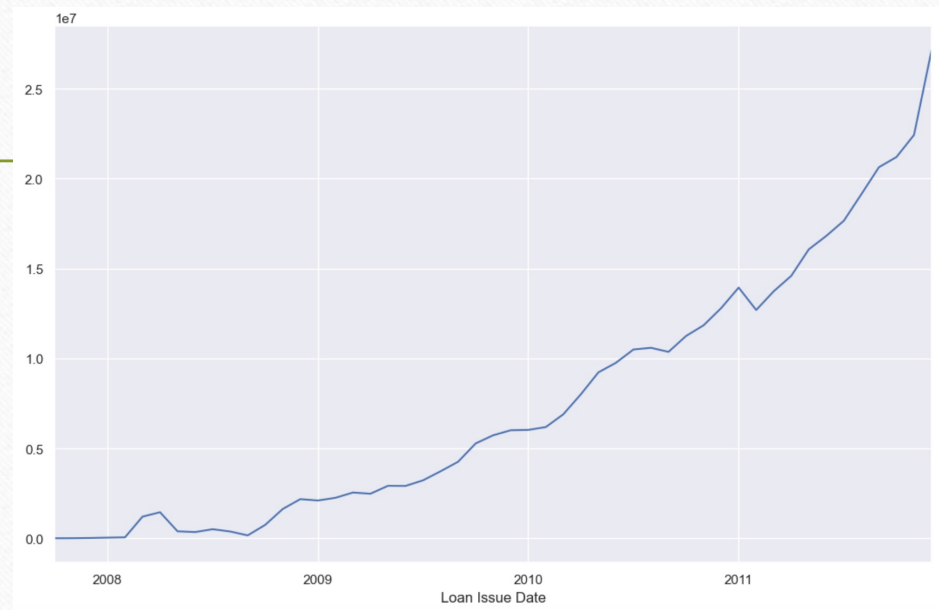
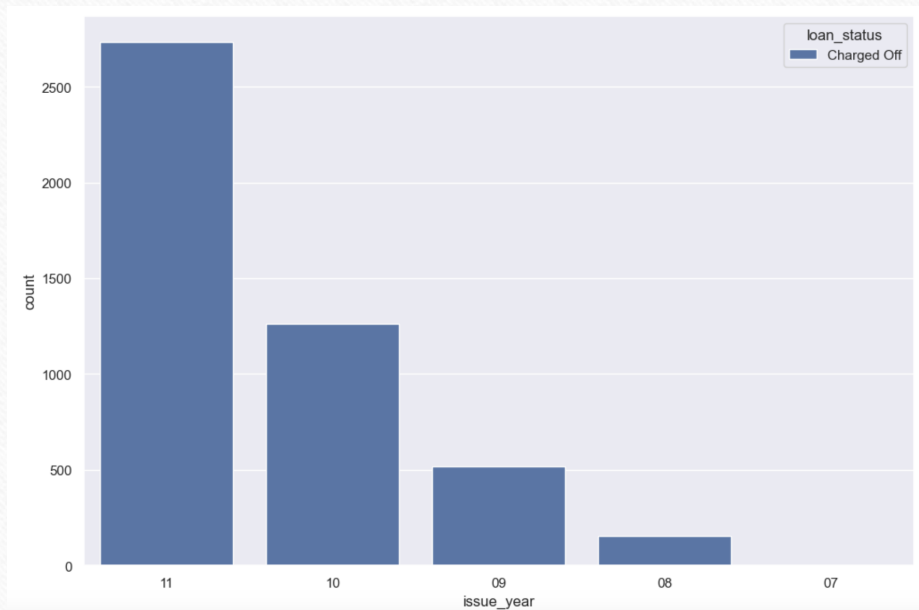


OBSERVATION - 2

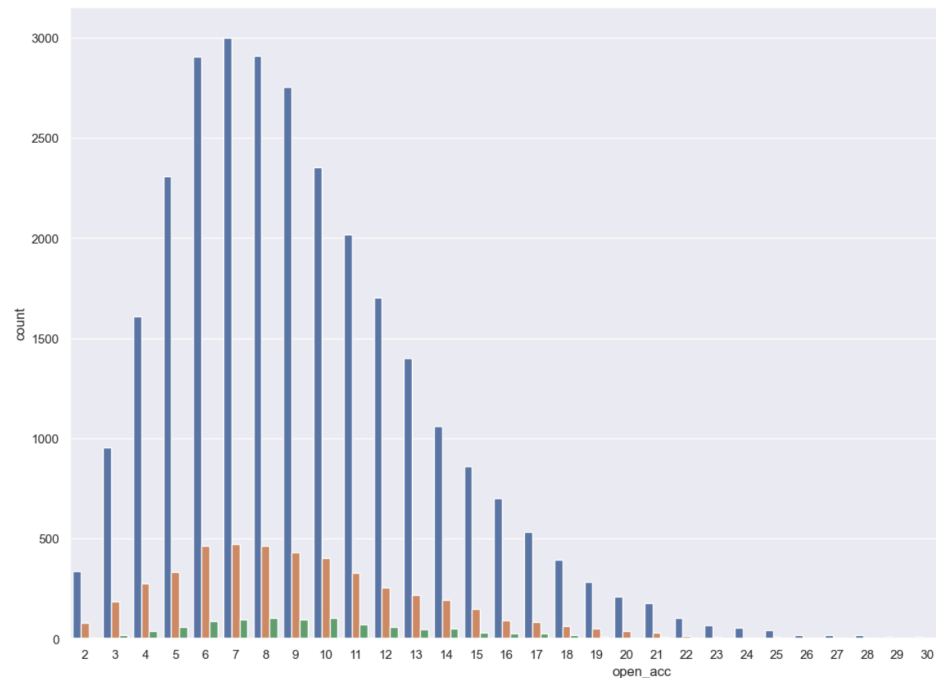


Most of the defaulters are with the DTI between 10% and 20%, number of charged off increases with dti range

OBSERVATION - 3



As analyzed, number of loan taken increased over years, as its increases, the number of defaults also increases

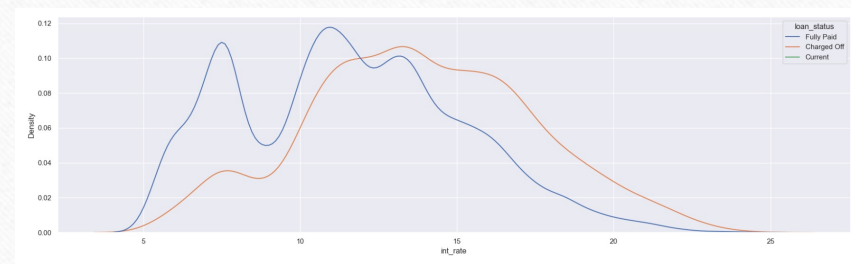


OBSERVATION - 4

- Employees with the open accounts between 6 and 9, tend to be defaulted most of the time

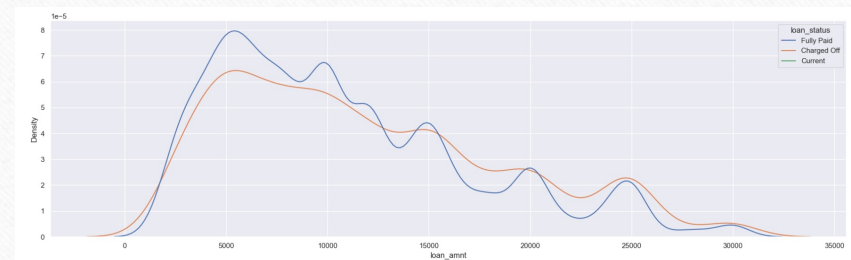
OBSERVATION – 5

- If the interest rate exceeds beyond the value, charged off person increases
- Increase in interest rate, increases the default list



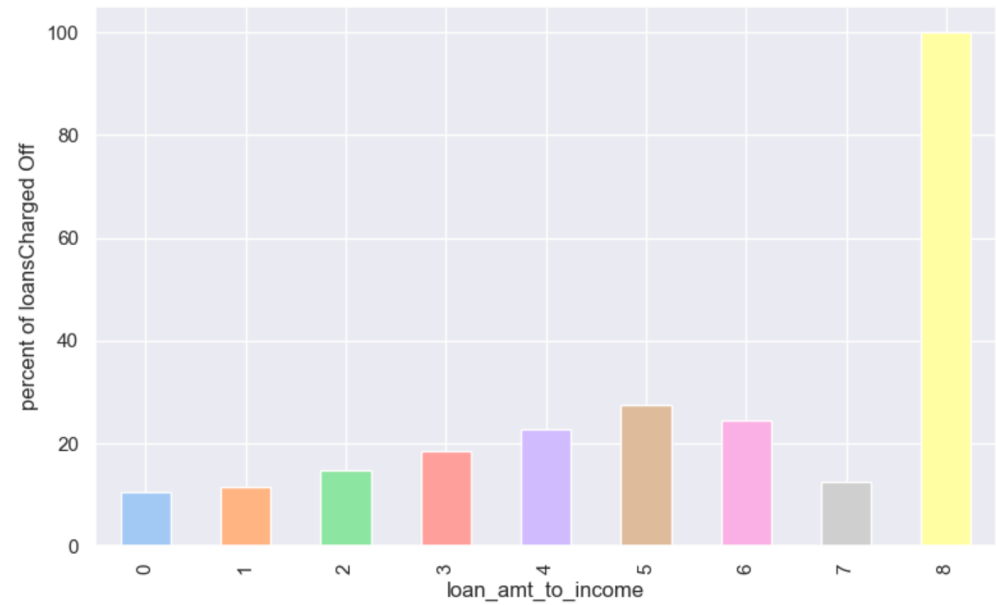
OBSERVATION - 6

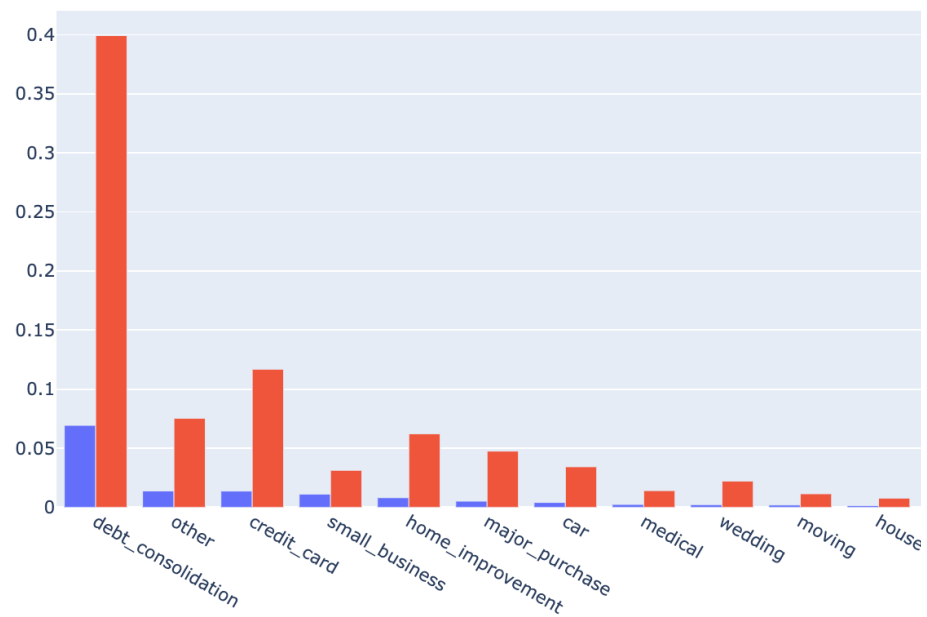
- The same trend has been seen with respect to loan amount, when the amount is less, both categories Fully paid and charged off follows the same trend, but when the amount increases, the count charged off slightly overtakes full paid ones



OBSERVATION - 7

- Borrowers contributing more proportion of income to loan, significantly affects employees to be charged off



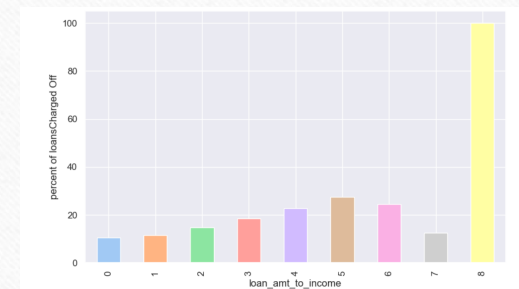
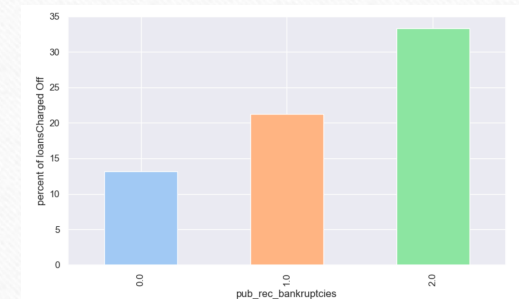


OBSERVATION - 8

- IT is obvious that, most numbers borrow for debt consolidation, and they are ones who tops the defaulters with more proportion

OBSERVATION - 9

- Employees with more derogatory are significantly affected, and are defaulted
- Employees with more bankruptcies are significantly affected, and are defaulted



CONCLUSION

- Employees with 10+ years of experience tends to take more loans than others, keeping that in mind, Employees having 10 years of experience and < 1 year experience tend to take the major proportion of defaulter list
- Employee who resides in rented house tend to charged off then in other home ownerships like own, mortgage and other categories
- Employees with the open accounts between 6 and 9, tend to be defaulted most of the time
- Charged off employees in all the grades (A, B, C, D, E, F, G) has a median salary less than the Fully paid employees, In continuation, Employees in B and C are charged off more than the other types
- Application type does not have any impact on the loan status, as all the employees who holds the account here are individual accounts
- If the interest rate exceeds beyond the value, charged off person increases
- The same trend has been seen with respect to loan amount, when the amount is less, both categories Fully paid and charged off follows the same trend, but when the amount increases, the count charged off slightly overtakes full paid ones
- Borrowers contributing more proportion of income to loan, significantly affects employees to be charged off
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