Lending Club Case Study

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Problem Statement

The aim is to identify patterns which indicate if a person is likely to default, which may be used for taking actions such as denying the loan, reducing the amount of loan, lending (to risky applicants) at a higher interest rate, etc.

Dataset Provided

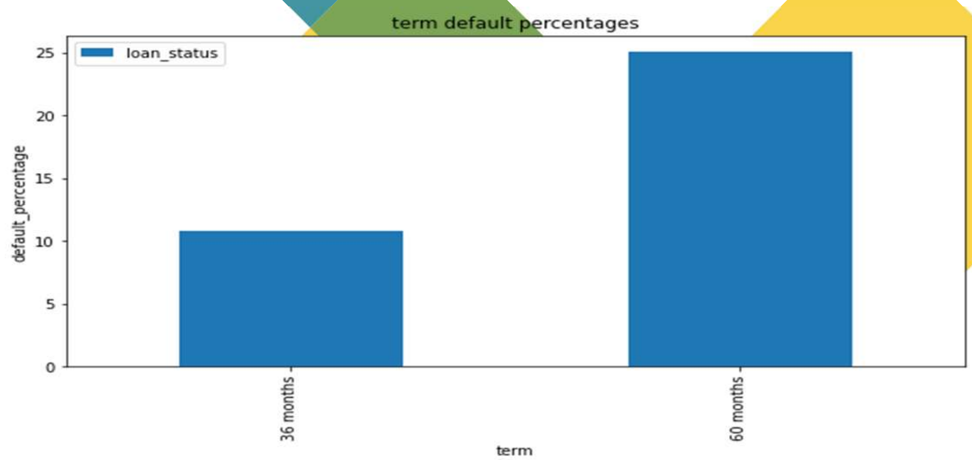
Loan dataset : The dataset contains information about past loan applicants and whether they ‘defaulted’ or not along with other user based attributes.

Data Facts

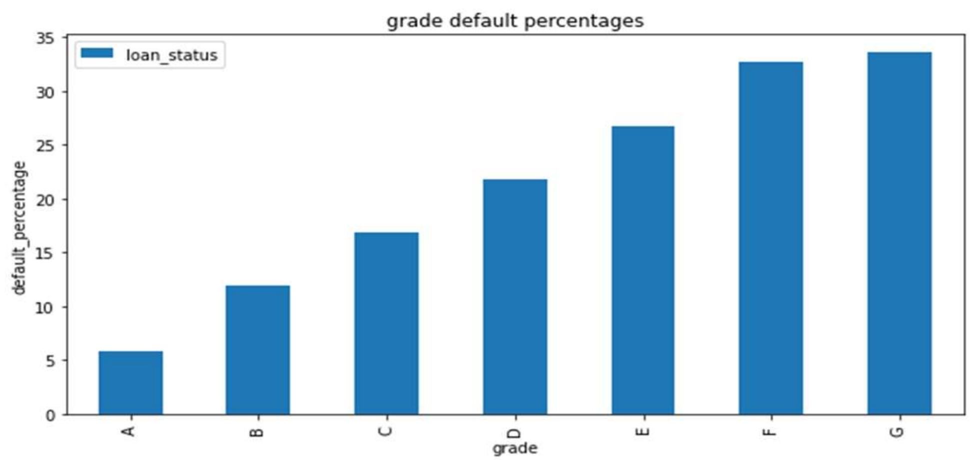
- Looking at the frequency distribution, we can tell that majority of the people are looking for short term loans(36 months).
- Most of the individuals applying for loans have a stable employement tenure(10+ years).
- Majority of the users applying for a loan do not own a house.
- Debt consolidation and credit card payment are the two major reasons to apply for a loan.
- There's a high percentage of people applying for loan from the state of California.
- The number of loan applicants increase gradually towards the festive period(CHRISTMAS) and then decreases after the festive period is over.

Analysis and Recommendations

- Users with short terms loans tend to default far less and are hence better suited to be approved for a loan.

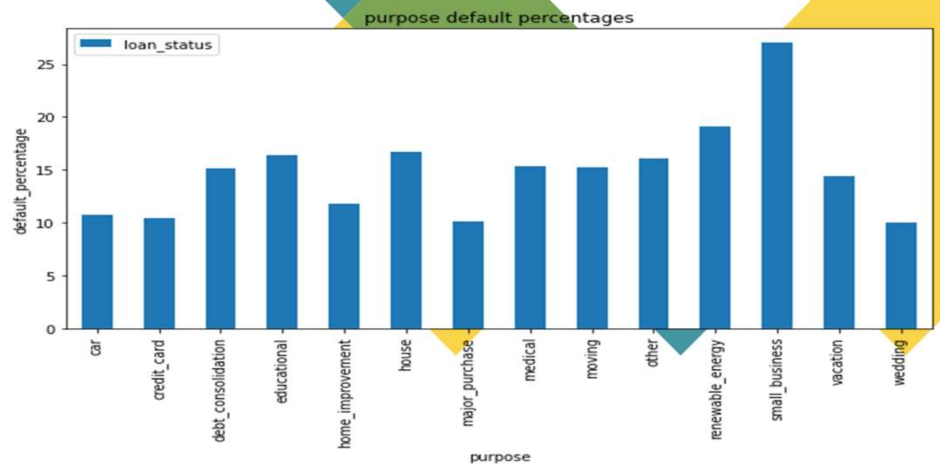


- The lower the grade(with A being higher and G being lower) the more the default percentage so it would be ideal to give loans to higher graded individuals(A,B,C).

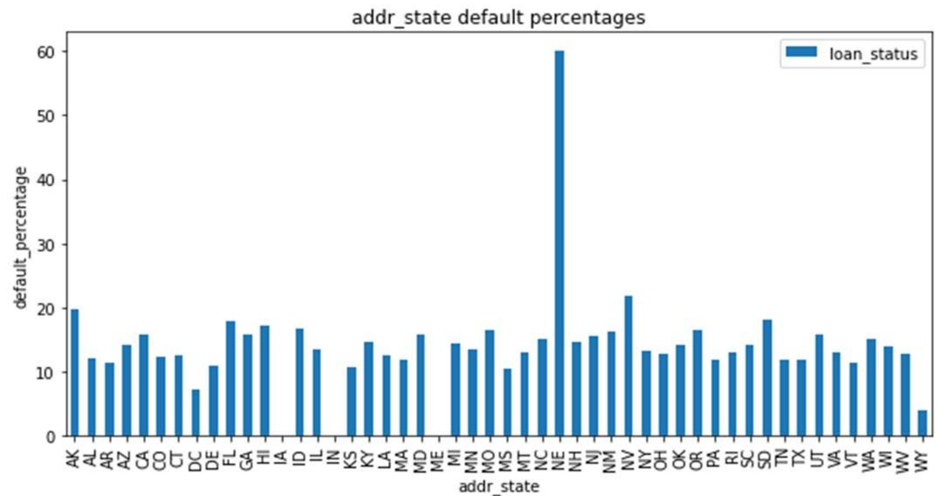


Analysis and Recommendations

- Users taking loan for small business tend to have an extremely high default percentage(~27%) should be avoided for approval, while users taking loan for car, credit card, wedding and major purchases tend to perform better and hence should be ideal candidates.

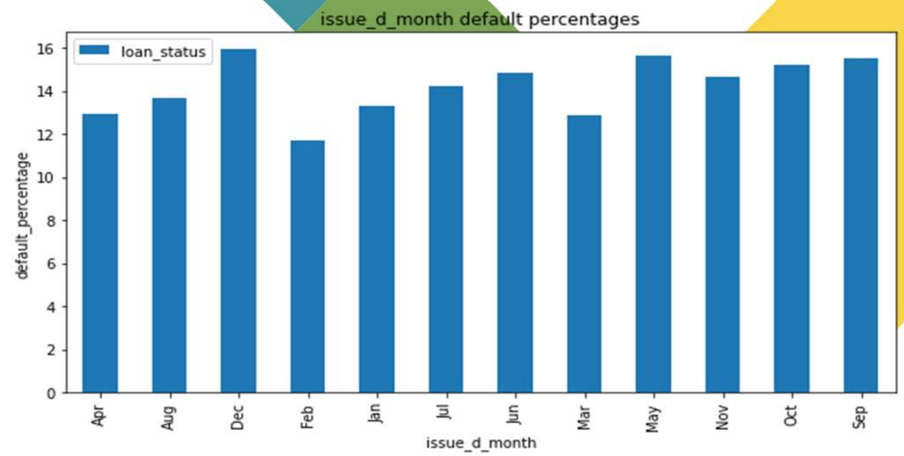


- Loans taken from eastern region of USA(MA, PA, VA, ETC...) tend to perform better when compared to the rest of the regions and are ideal loan takers.

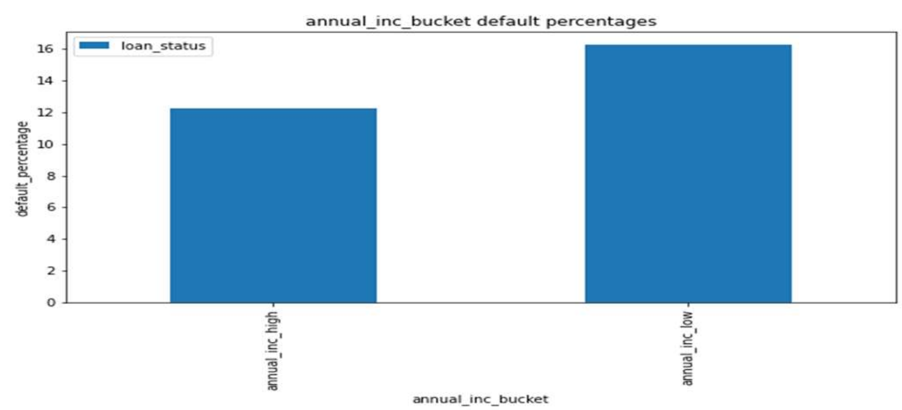


Analysis and Recommendations

- Default rates tend to get higher moving towards the festive month of Christmas(May to December) and are less for the initial part of the year(January to April), so most of the loans should ideally be provided in the initial few months of the year.

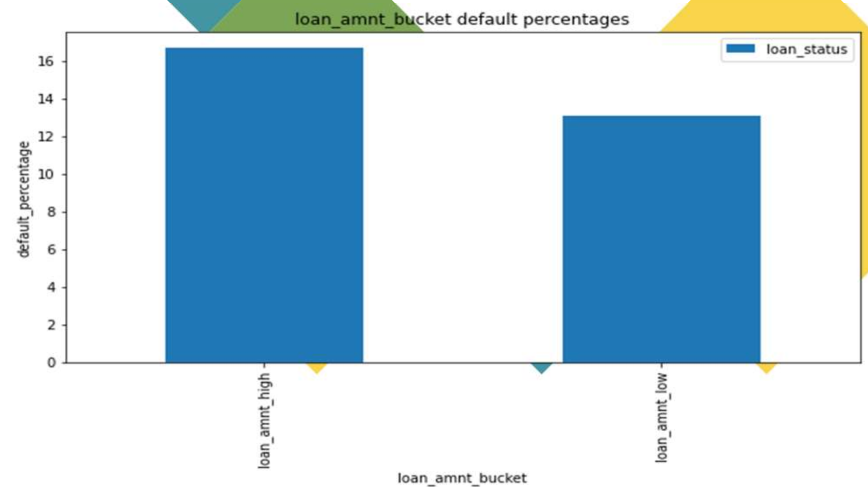


- Users with higher annual incomes tend to take loans of larger amount and also default less often and hence are ideal candidates for giving a loan.

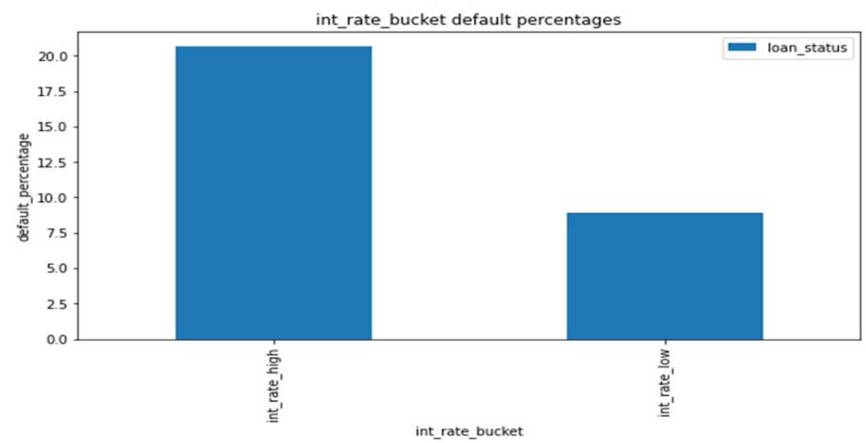


Analysis and Recommendations

- Users with lower loan amount tend to default less than users with higher loan amount. Giving loans of higher amounts is riskier.

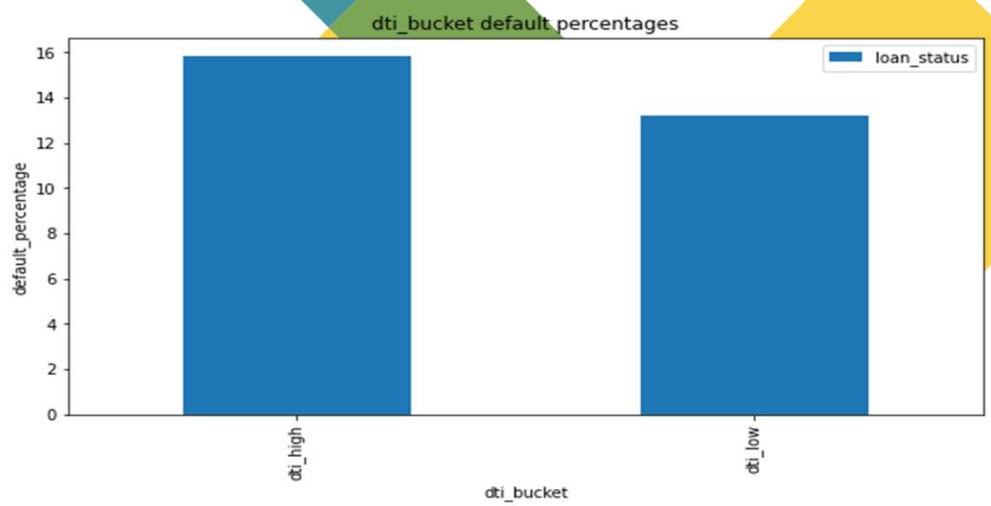


- Users with lower interest rates tend to perform significantly better and default way less than users with higher interest rates.



Analysis and Recommendations

- Users with higher debt to income ratio tend to default more than users with less debit to income ratio.



Thank you