

LENDING CLUB CASE STUDY

SUBMISSION

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Lending Club Case Study Analysis

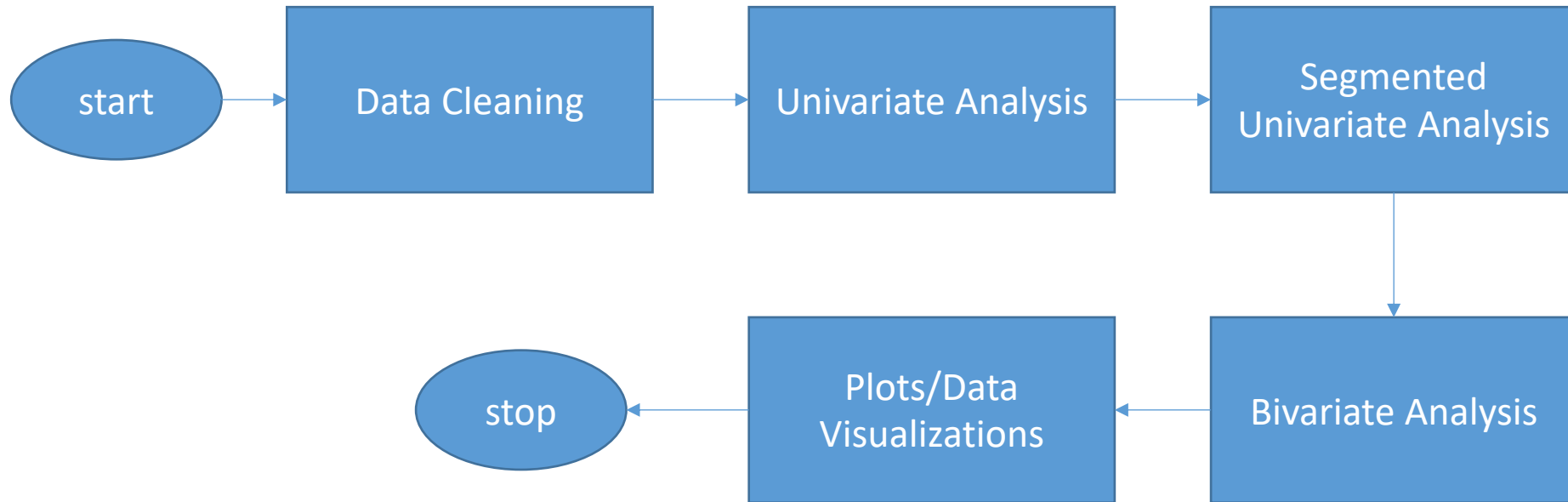
Lending Club, a consumer finance company which specialises in lending various types of loans to urban customers. When the company receives a loan application, the company has to make a decision for loan approval based on the applicant's profile. Two types of risks are associated with the bank's decision:

- If the applicant is likely to repay the loan, then not approving the loan results in a loss of business to the company
- If the applicant is not likely to repay the loan, i.e. he/she is likely to default, then approving the loan may lead to a financial loss for the company

We need to identify the risky loan applicants so that such loans can be reduced thereby cutting down the amount of credit loss. Identification of such applicants using EDA is the aim of this case study.

Problem solving methodology

Flow Chart:



Analysis

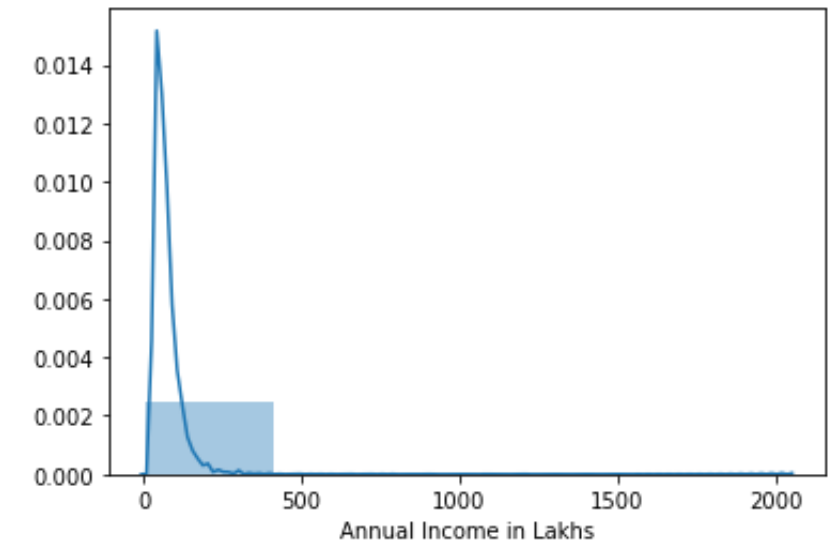
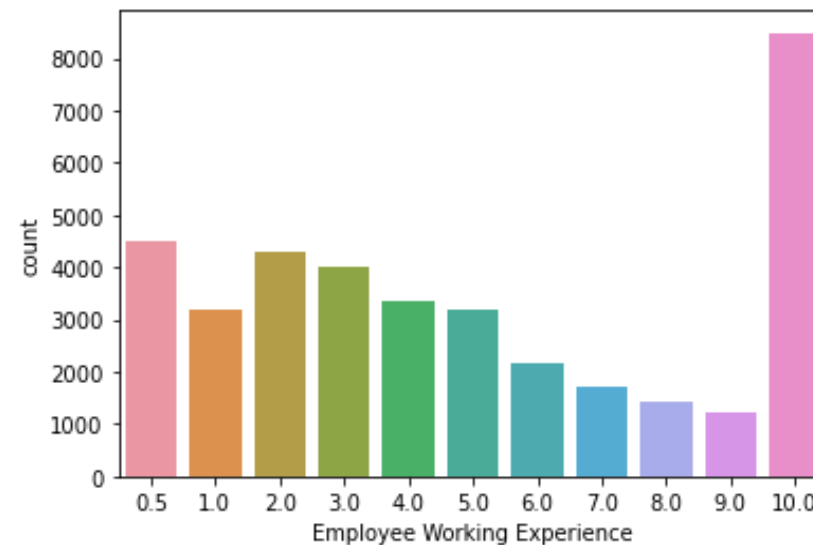
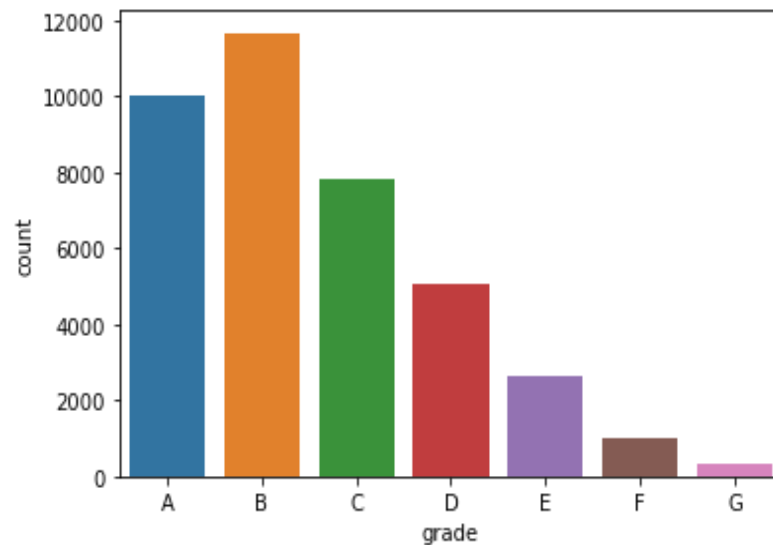
Data Cleaning

- Handling missing values
- Removing columns with unique values
- Creating derived columns from existing columns
- Converting columns data type to desired data type
- Removing data with loan status as Current as it is not helpful for our analysis

Analysis

Univariate Analysis

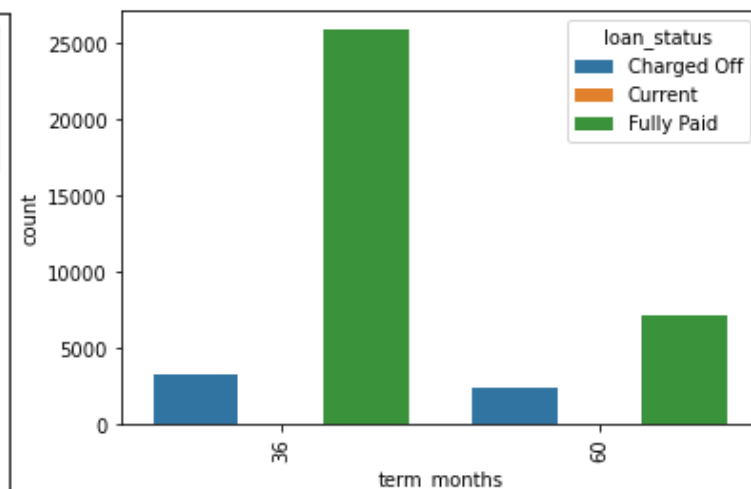
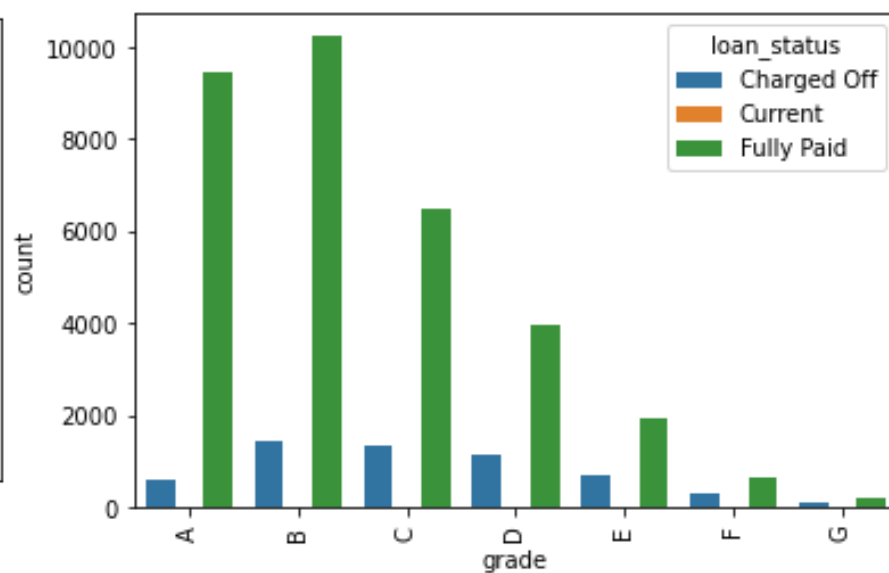
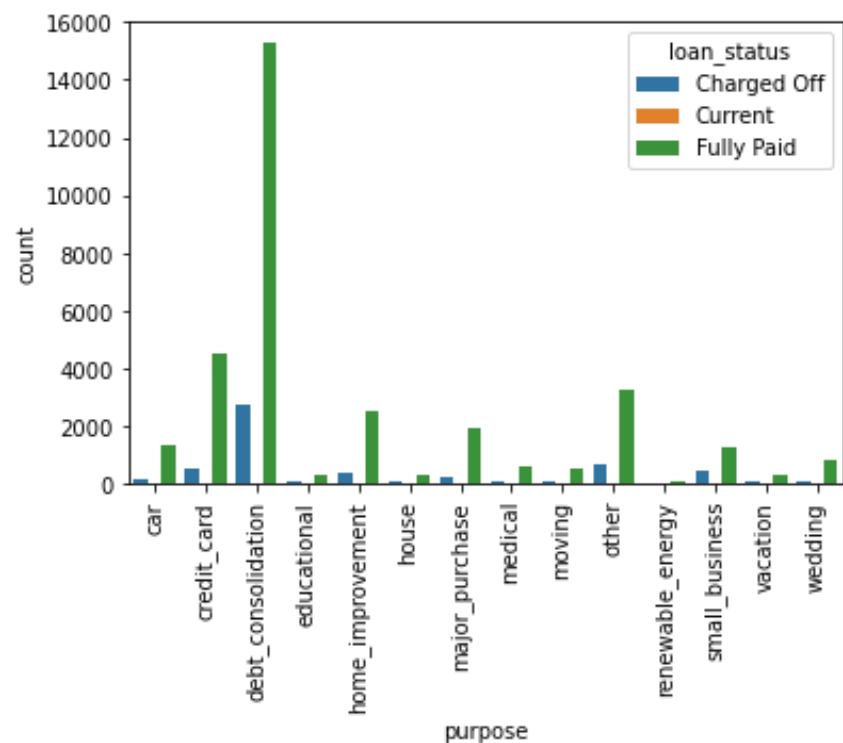
- We have checked the counts of various impacting variables in the data.
- Most of the loans have grade of A and B. Therefore we can say most of the loans are high graded loans
- Majority of employees applying for the loan have more than 10 years of experience
- Majority of loan applicants have income less than 5 lakhs



Analysis

Segmented Univariate Analysis

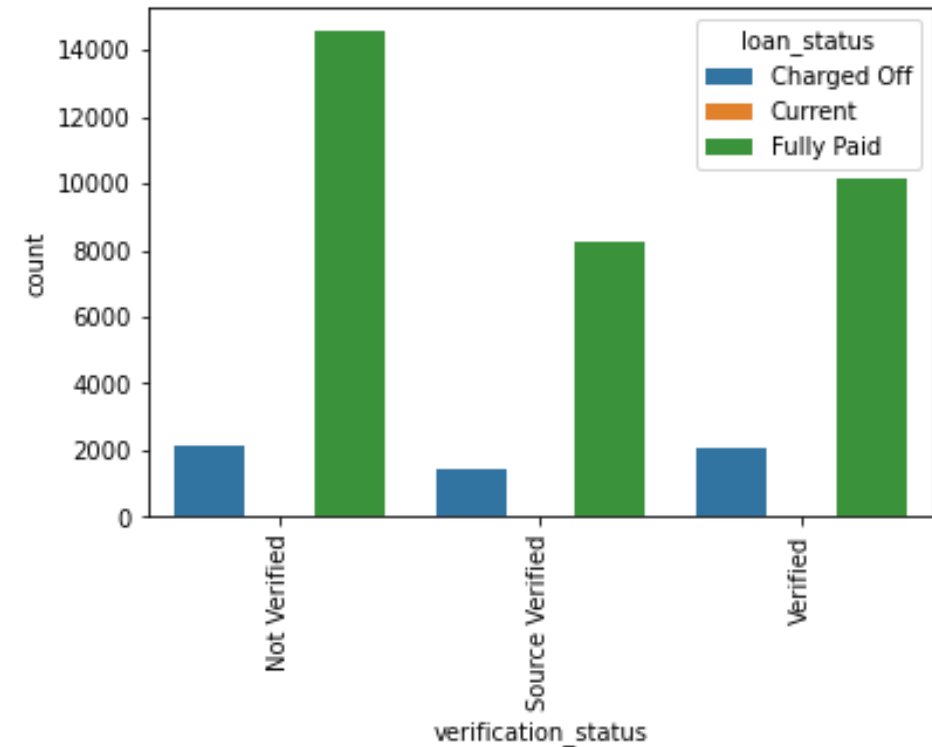
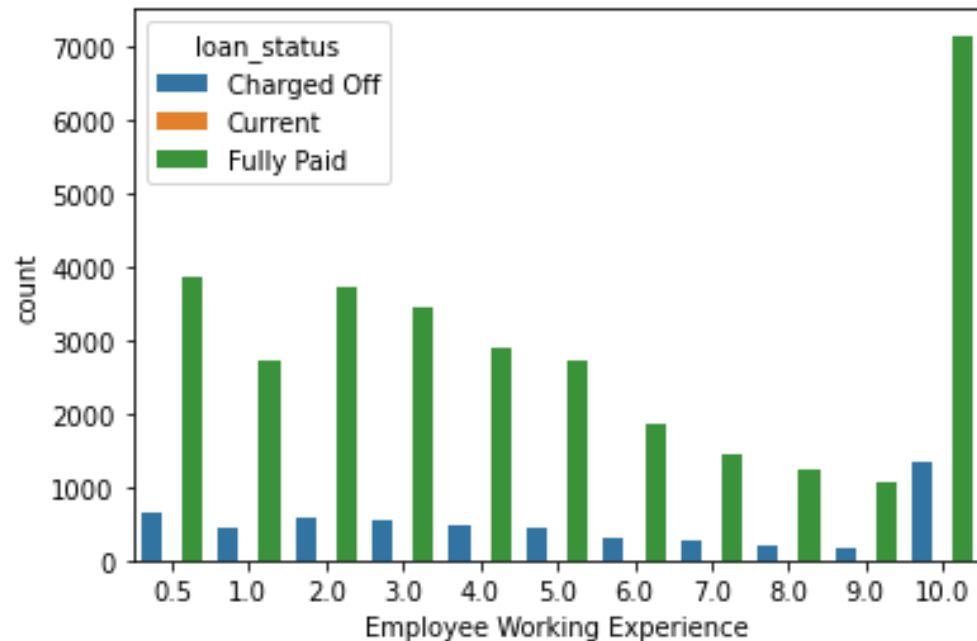
- Majority of loan has been given for the debt consolidation purpose.
- A and B grade loans have relatively high counts of Fully Paid status
- Loans with 36 months term have higher fully paid counts than 60 months



Analysis

Segmented Univariate Analysis

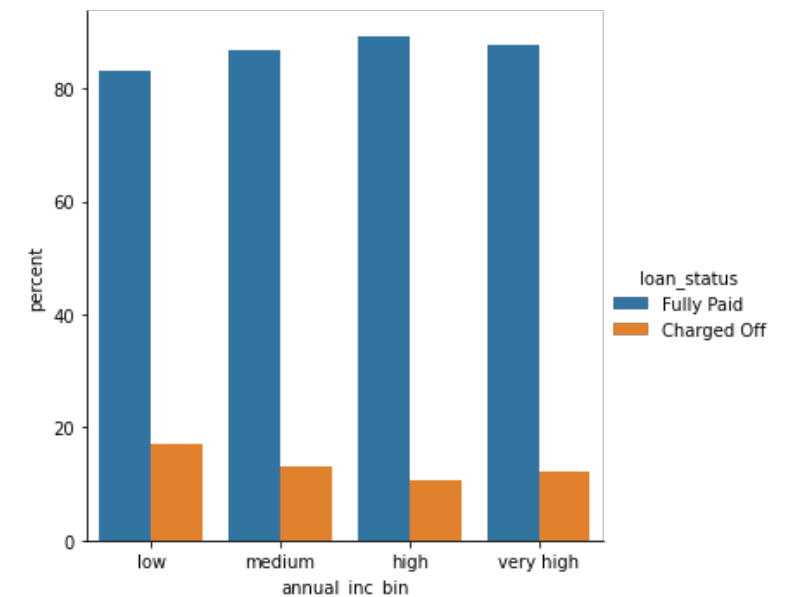
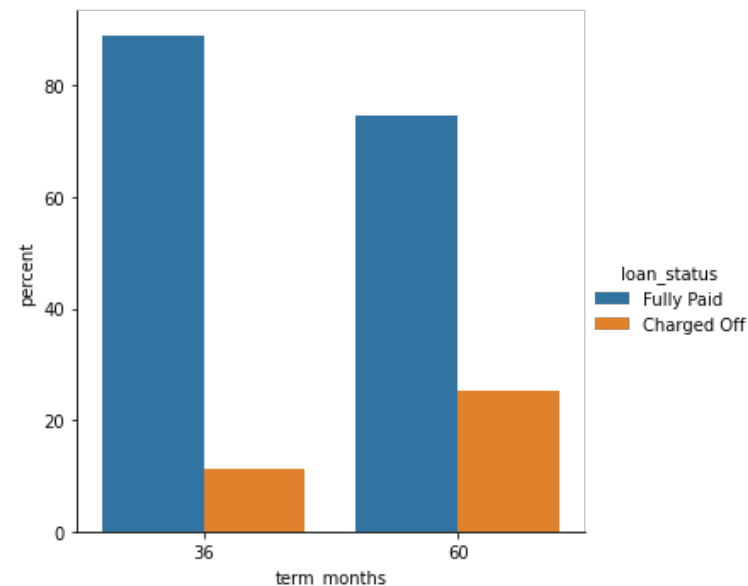
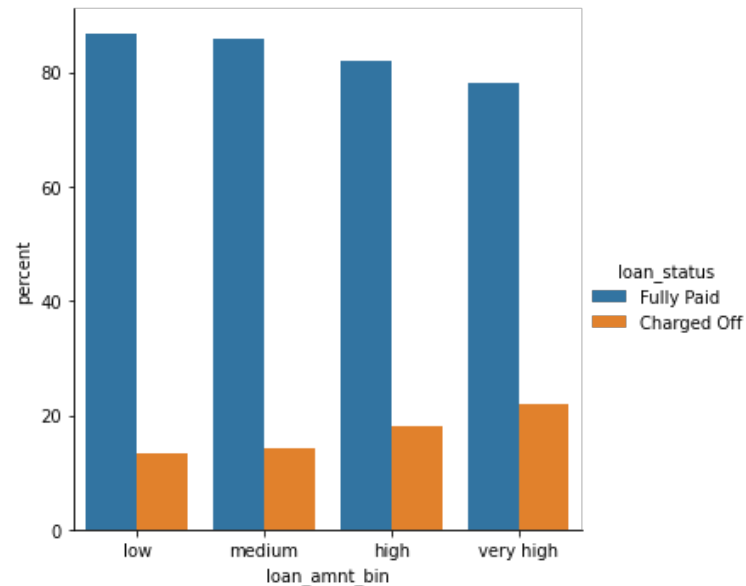
- Both fully paid and charged off counts is more for employee with 10+ years of experience than others.
- Cases where income source is not verified have surprisingly more number of fully paid loan status.
- For us to determine the driving factors which strongly indicate the default loan status case, we need to do bivariate analysis.



Analysis

Bivariate Analysis

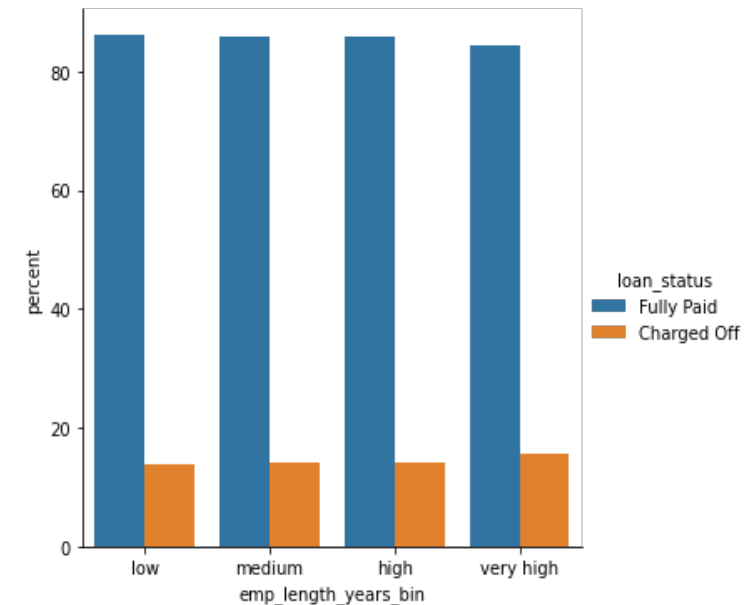
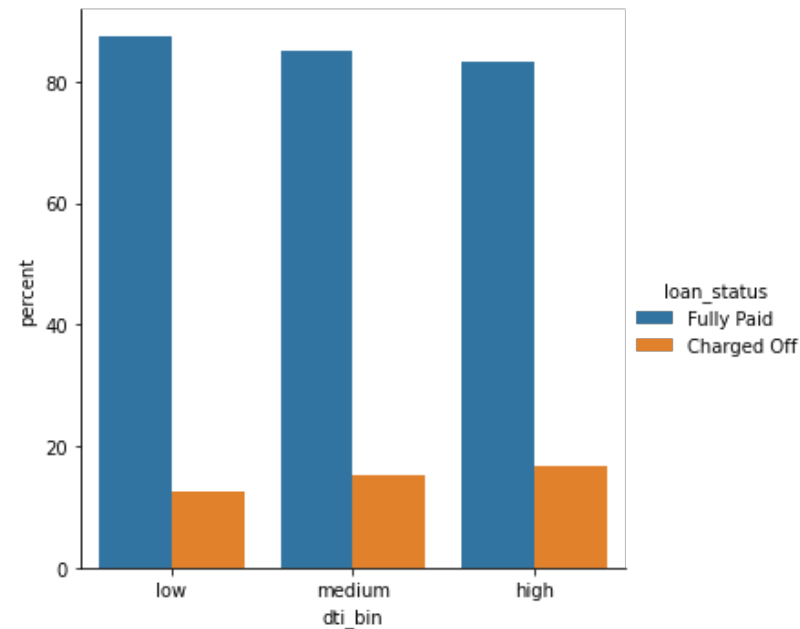
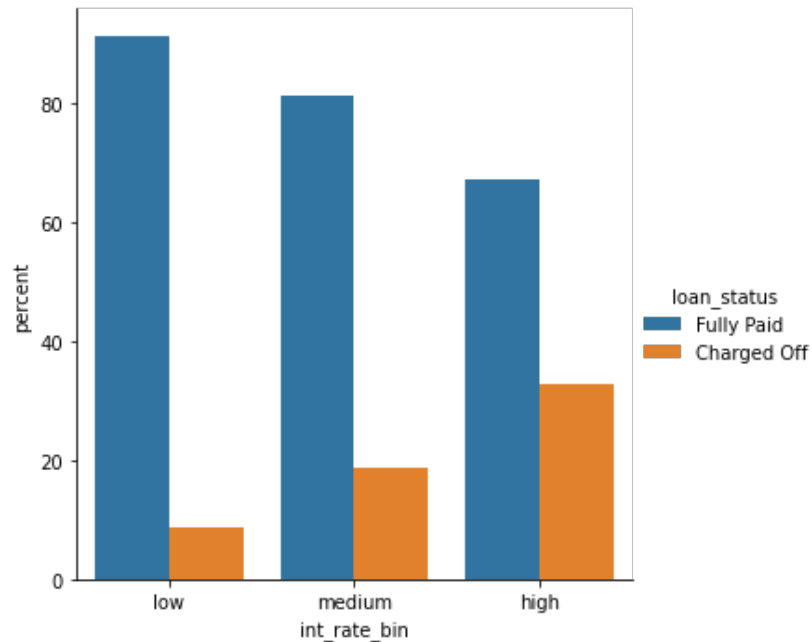
- We are grouping by each category and finding percentage of Charged off loan status in each to know the driving factors.
- Charged off % is more for high and very high loan amounts
- Charged off % is more for 60 months term period
- The cases where annual income is low have slightly higher charged off %



Analysis

Bivariate Analysis

- The cases with higher interest rates tend to have higher % of defaulting or getting charged off
- The cases with high debt to income ratio have slightly higher Charged off %
- The number of years of employment in very high category have slightly higher charged off percentage



Conclusions

- 1) It is better to avoid giving high and very high category loan amounts.
- 2) As charged off percentage is more for 60 months term period, better to provide loans with lesser term periods.
- 3) It is better to avoid giving loans if annual income is low. Only small amounts of loan suitable for their income can be provided.
- 4) It is better to avoid giving higher interest rate loans without strong background checking as they tend to have higher percentage of defaulting.
- 5) High debt to income ratio tend to have slightly higher Charged off percentage, so DTI ratio must be thoroughly monitored before giving loans.