

# LENDING CLUB CASE STUDY ASSIGNMENT

## SUBMISSION

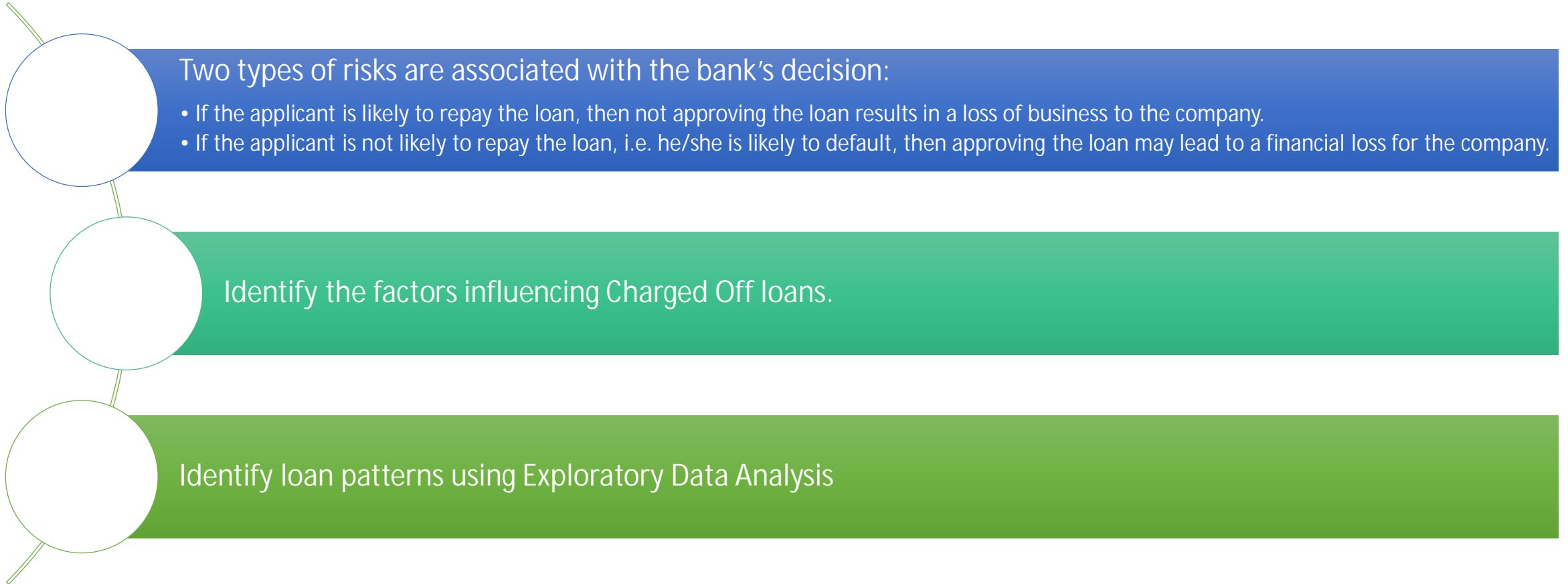
Subhasis Jethy

Soumyaranjan Mishra

# Business Understanding

- 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.
- Like most other lending companies, lending loans to 'risky' applicants is the largest source of financial loss (called credit loss). The credit loss is the amount of money lost by the lender when the borrower refuses to pay or runs away with the money owed. In other words, borrowers who default cause the largest amount of loss to the lenders. In this case, the customers labelled as 'charged-off' are the 'defaulters'.

# Objectives



# Assumptions

---

Analysis done for data between the years 2007 & 2011.

---

We only consider Charged Off & Fully Paid Loans.

---

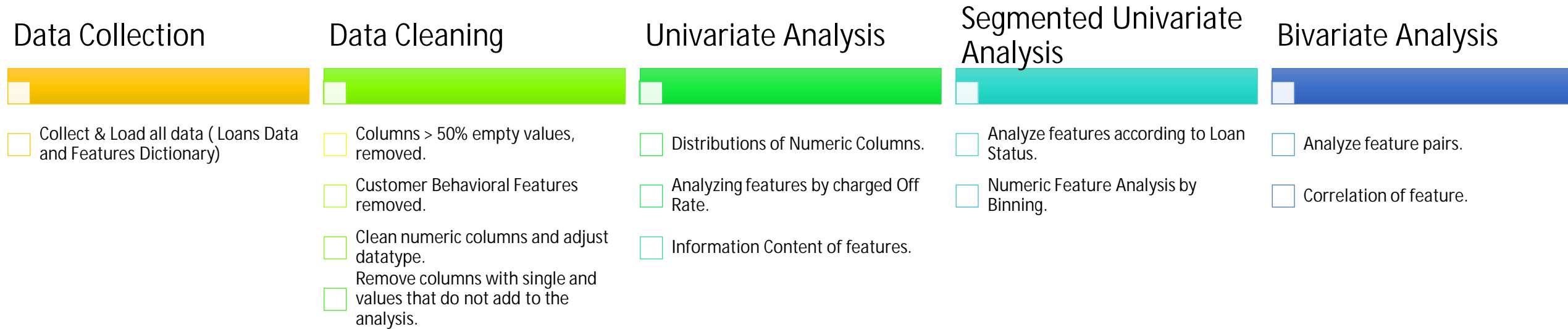
Customers Behavior Variables are ignored for analysis.

---

The Grades are assumed to be in order  $A > B > C > D > E > F > G$

---

# Analysis Methodology



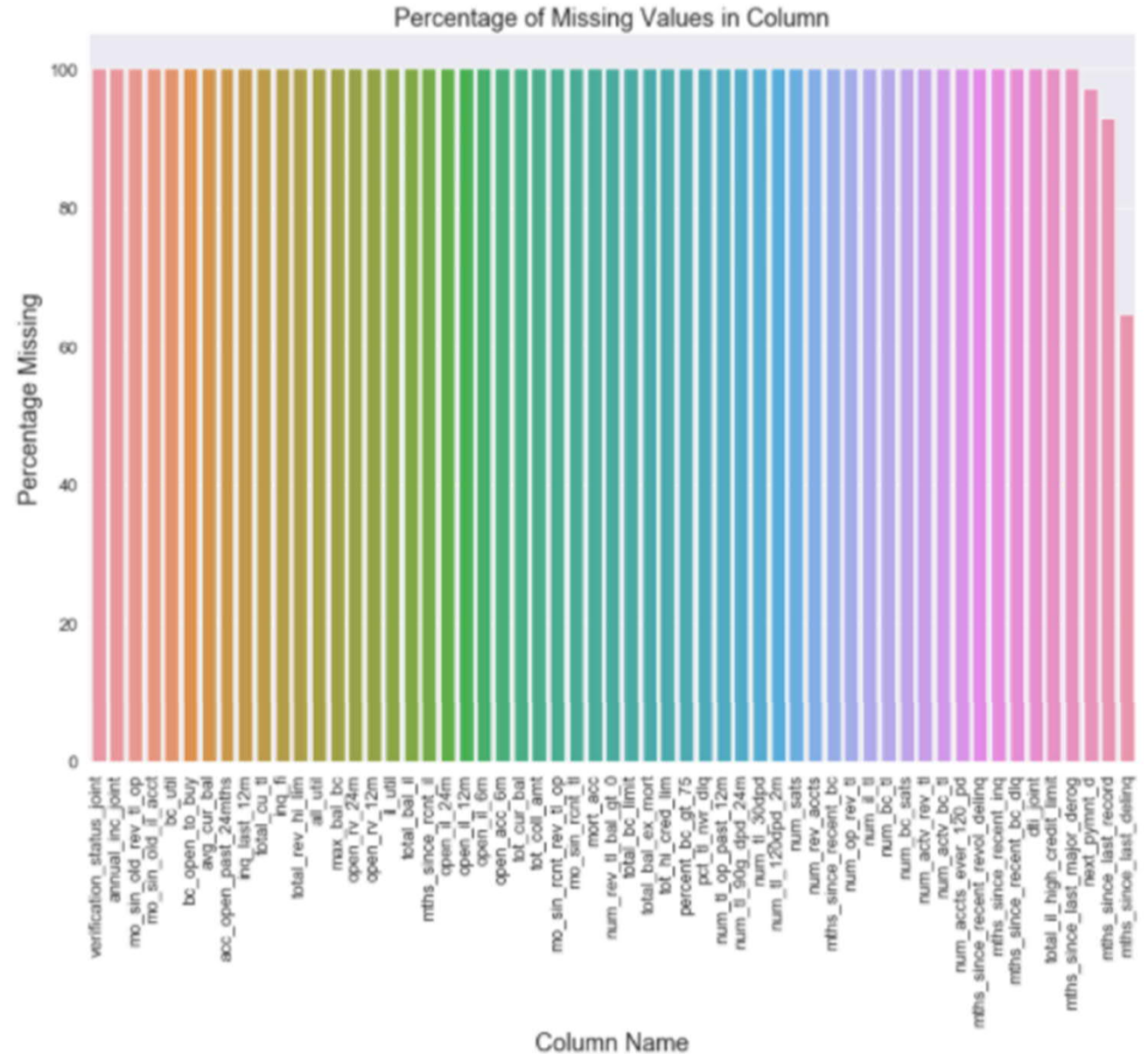
# Data Cleaning

There are 111 columns and 39716 rows in the dataset.

There are several columns which have either entirely empty or have majorly Empty values.

Remove columns > 50% missing value for analysis.

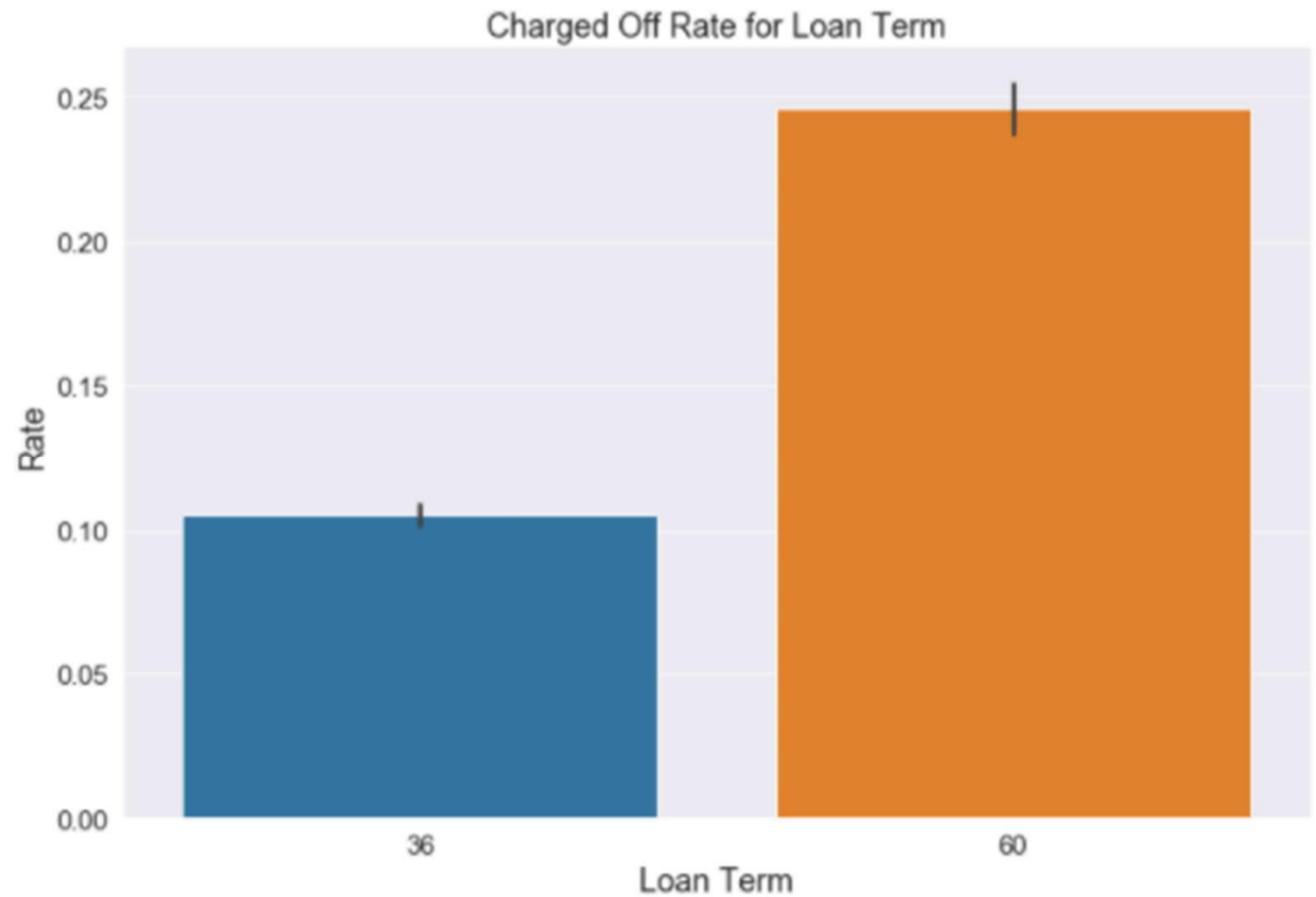
Remove Customer Behavior columns .



# Univariate Analysis

# Loan Term

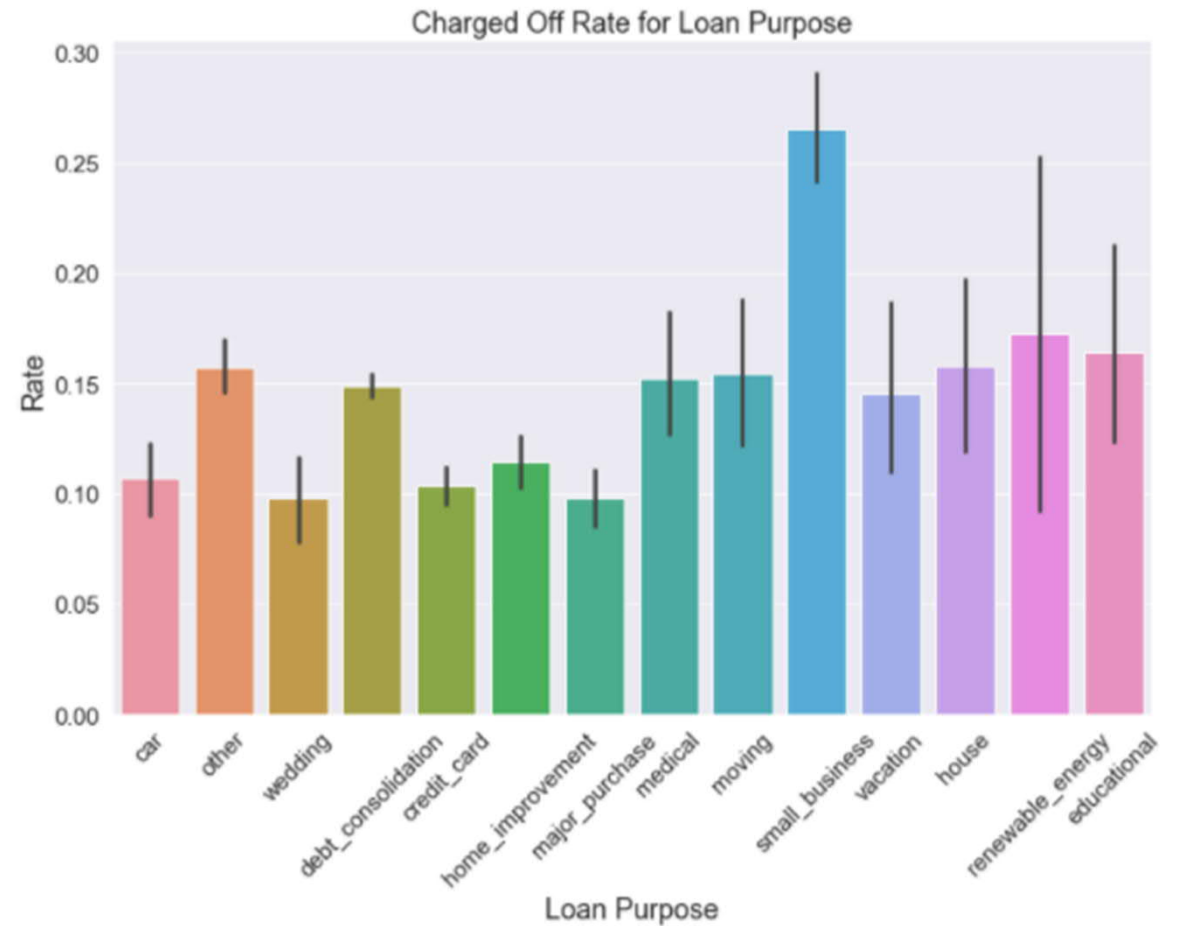
Charged Off rate is more in case of 60 Months duration loan tenure.



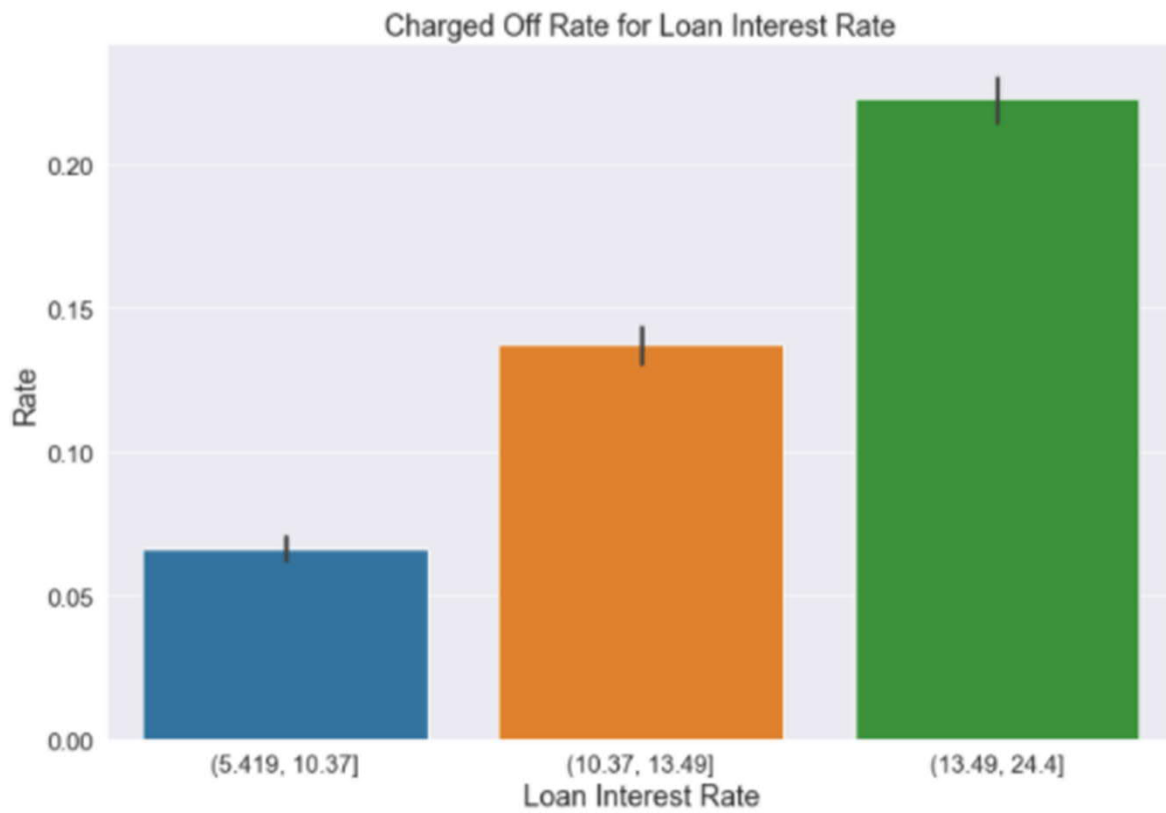


# Loan Purpose

Loans that are being availed for Small Businesses, renewable energy, Debt Consolidation, housing and education have a higher charged off rate.

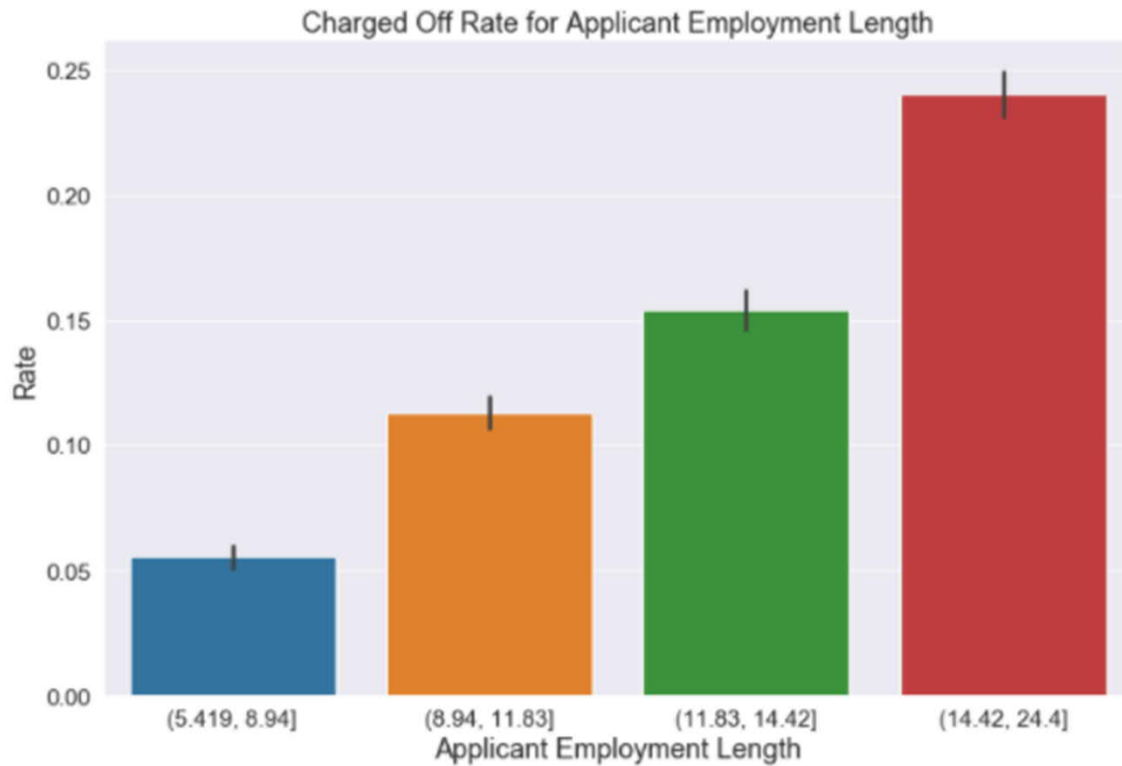


# Loan Interest Rate



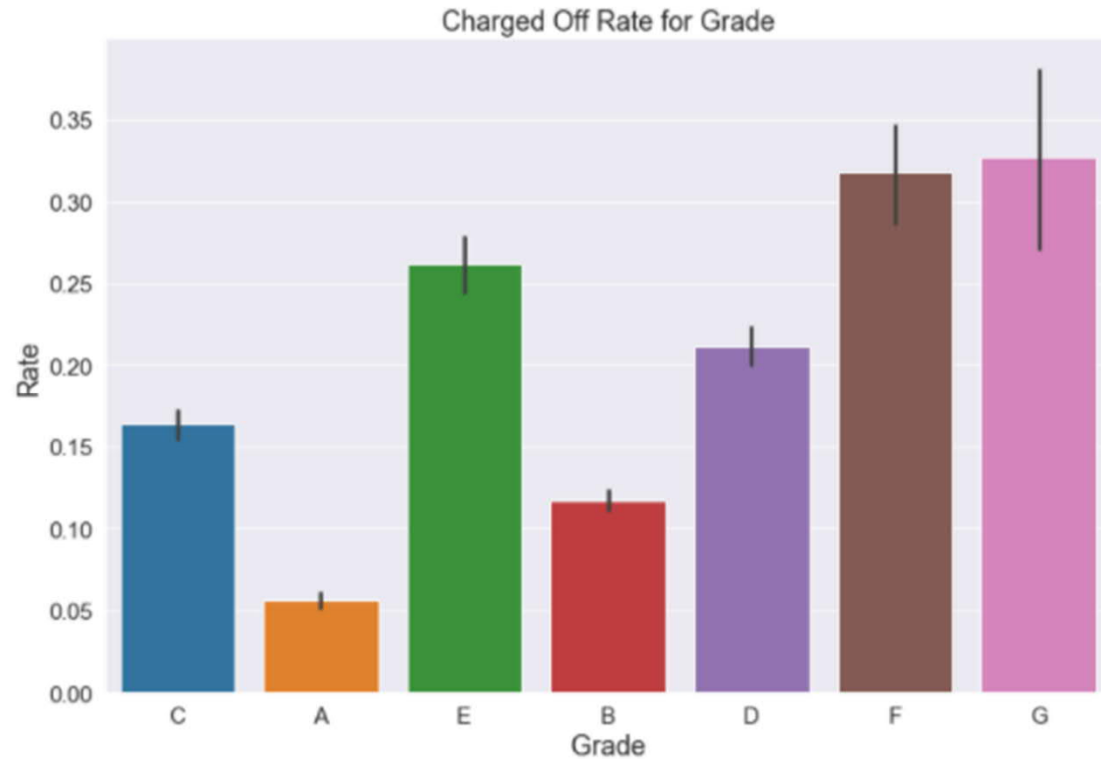
The higher the interest rate the higher the chances of the loan getting charged off.

# Applicant Employment Length



As the employment length among the applications is increasing the charge off rate also seems to increase.

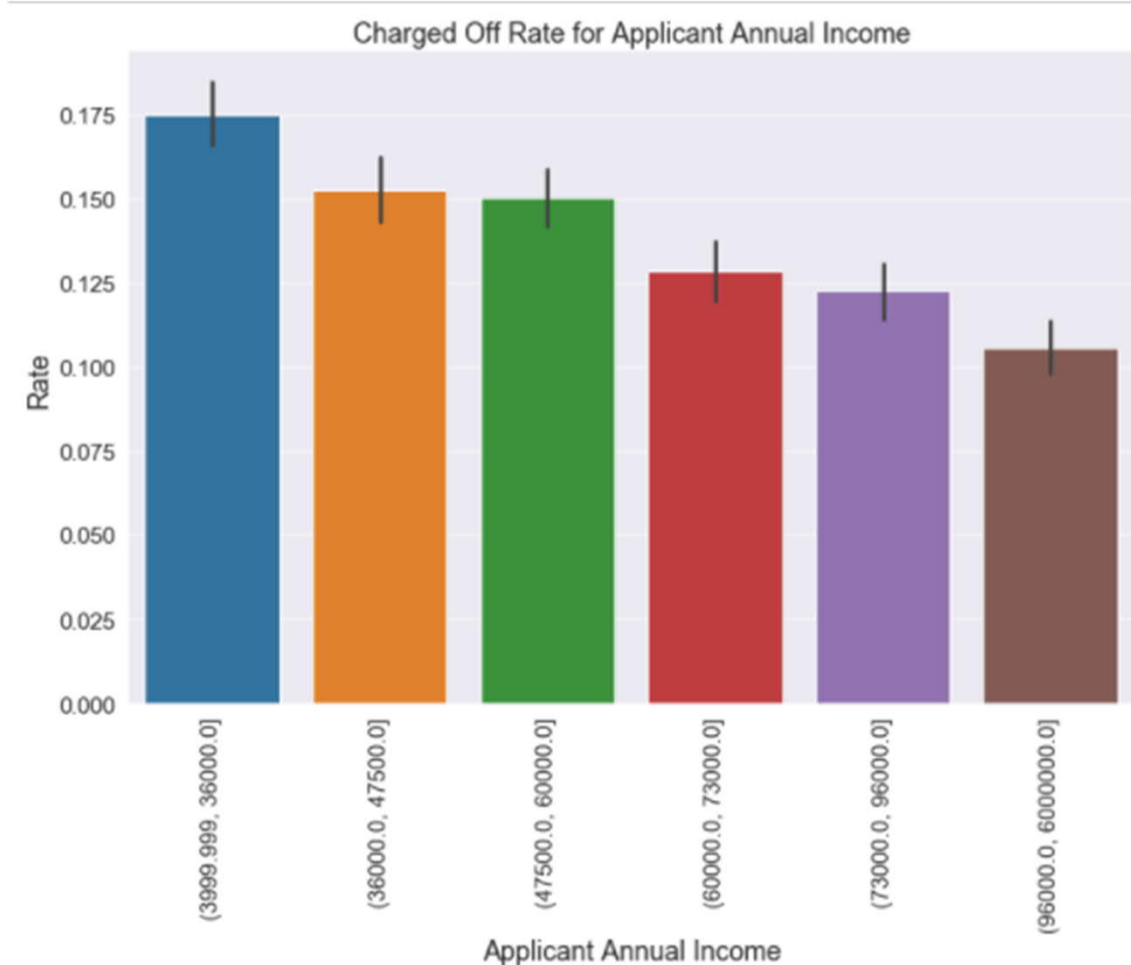
# Loan Grade



Grades D,E,F,G have higher charged off rates than the other grades.

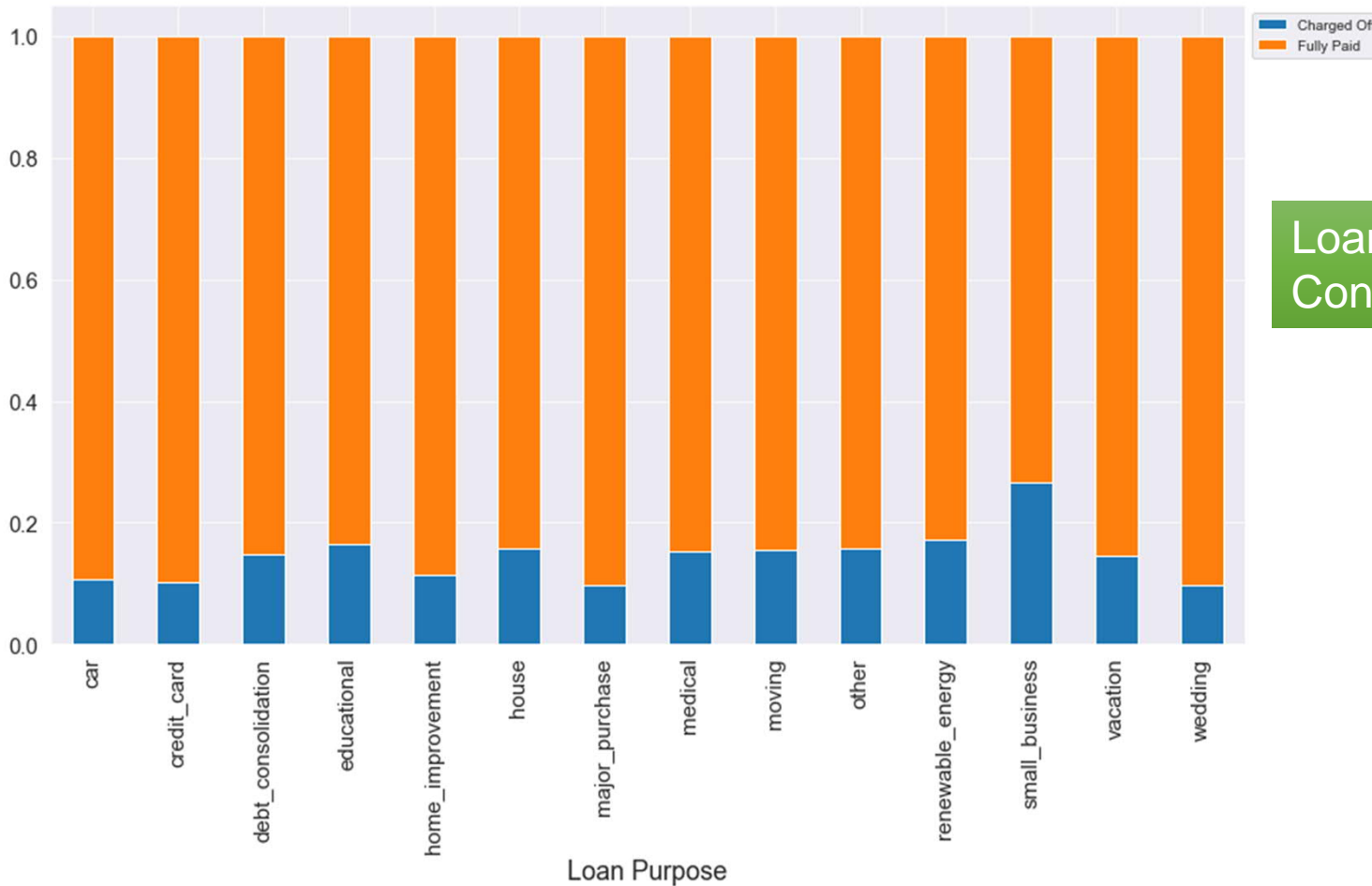
# Applicant Annual Income

There are evidences of higher Charged Off Rate in case of lower income brackets.



# Segmented Univariate Analysis

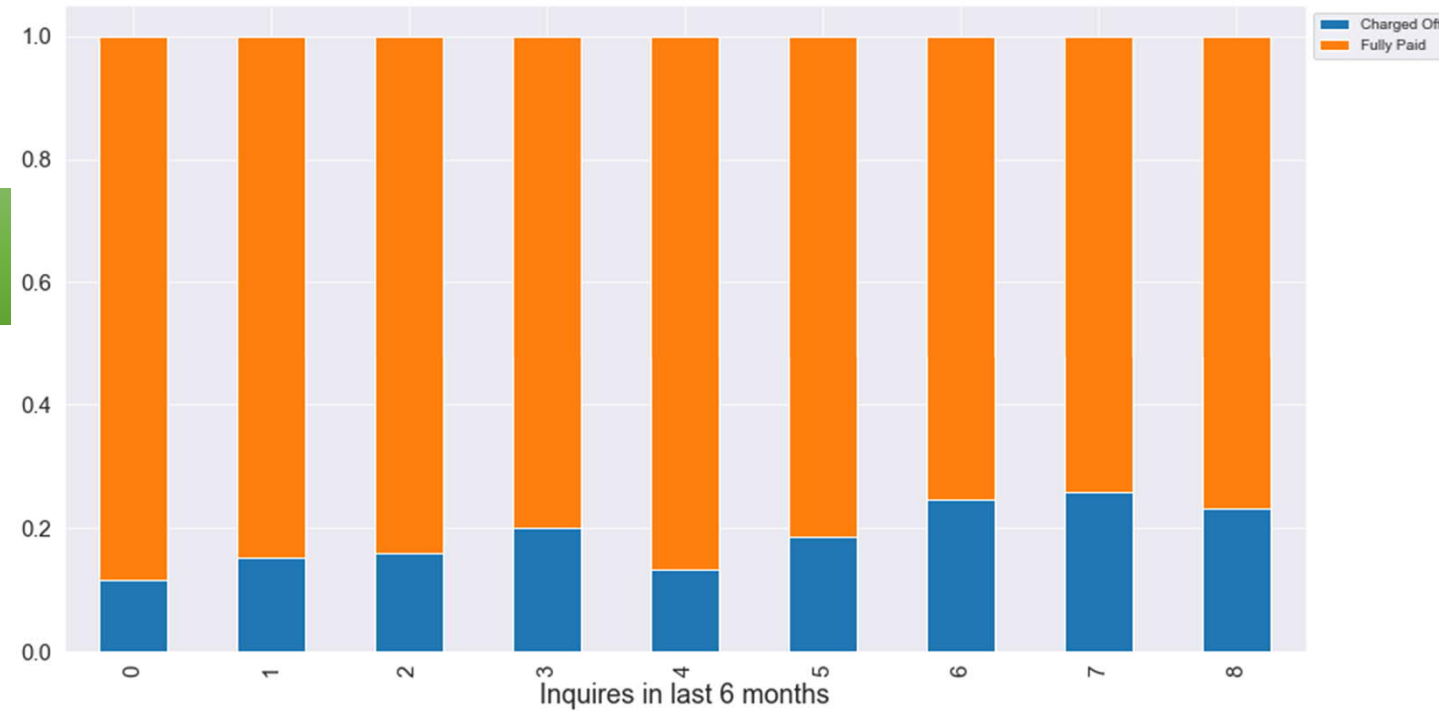
# Loan Status vs Loan Purpose



Loans taken for Small Business and Debt Consolidation have higher charged off rate.

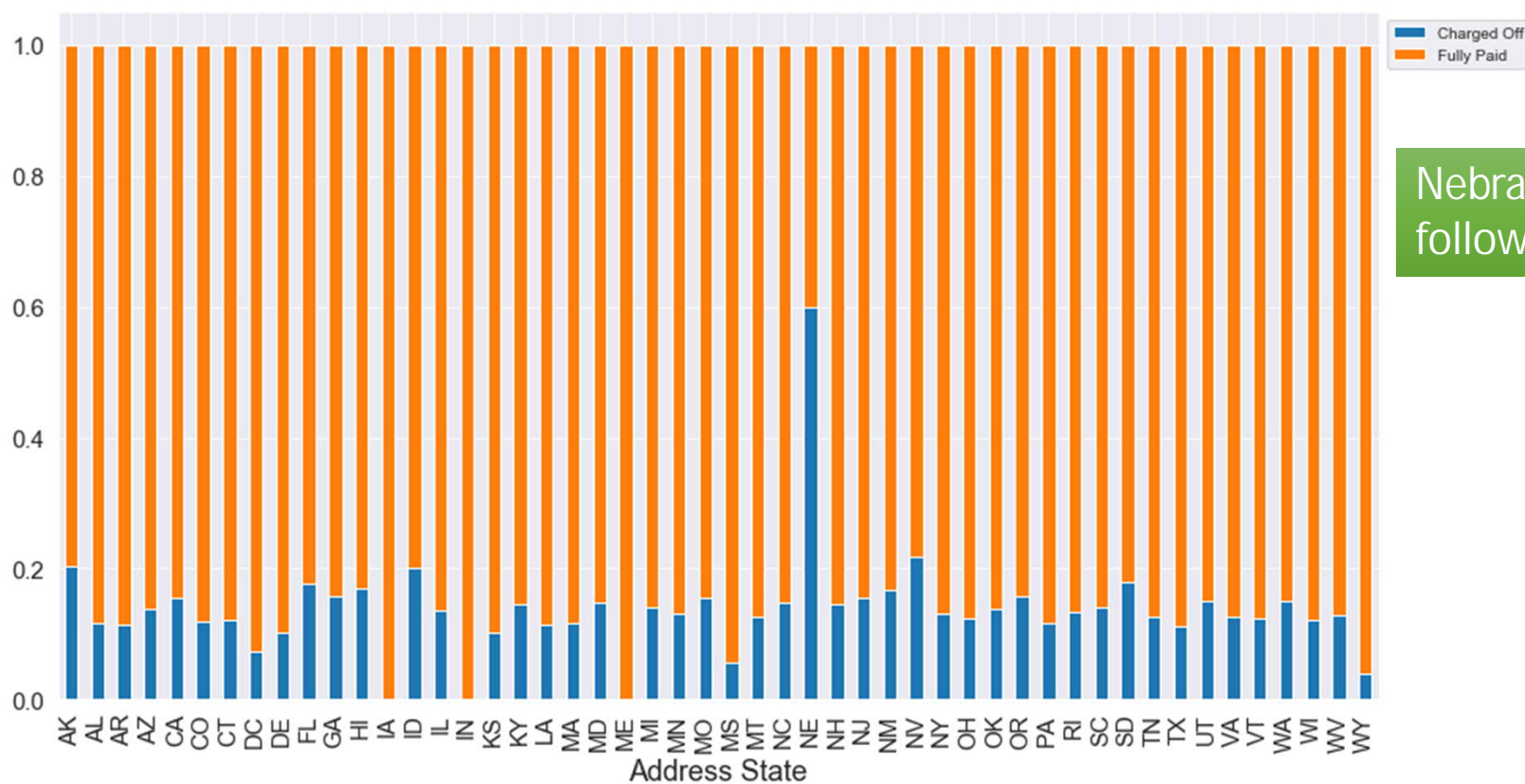
# Loan Status vs Inquiries in Last 6 Months

Higher the no of inquiries within the last 6 months, higher is the chance of the loan getting charged off.





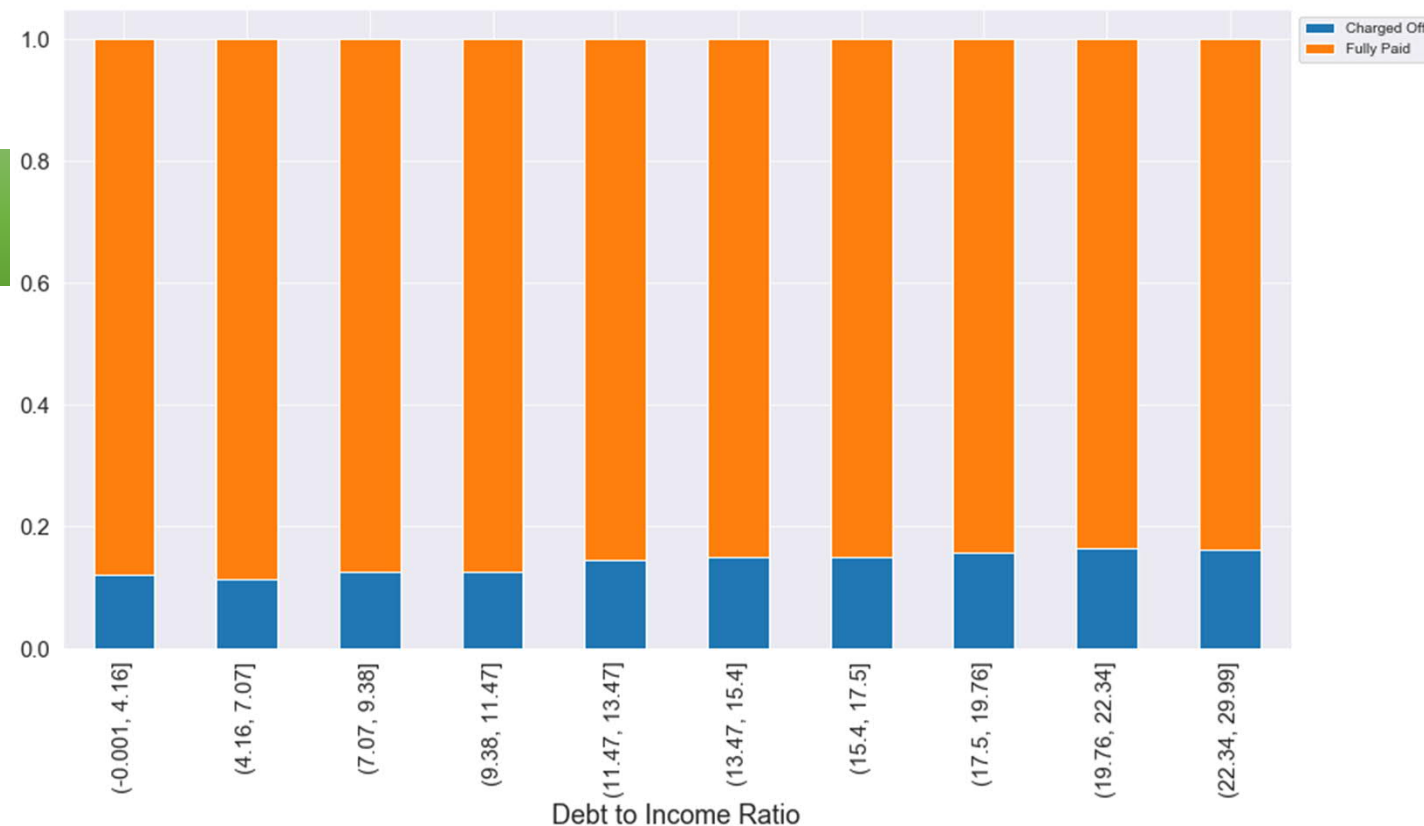
# Loan Status vs Address State



Nebraska(NE) has the highest charged off loans followed by Nevada(NV) and Alaska(AK).

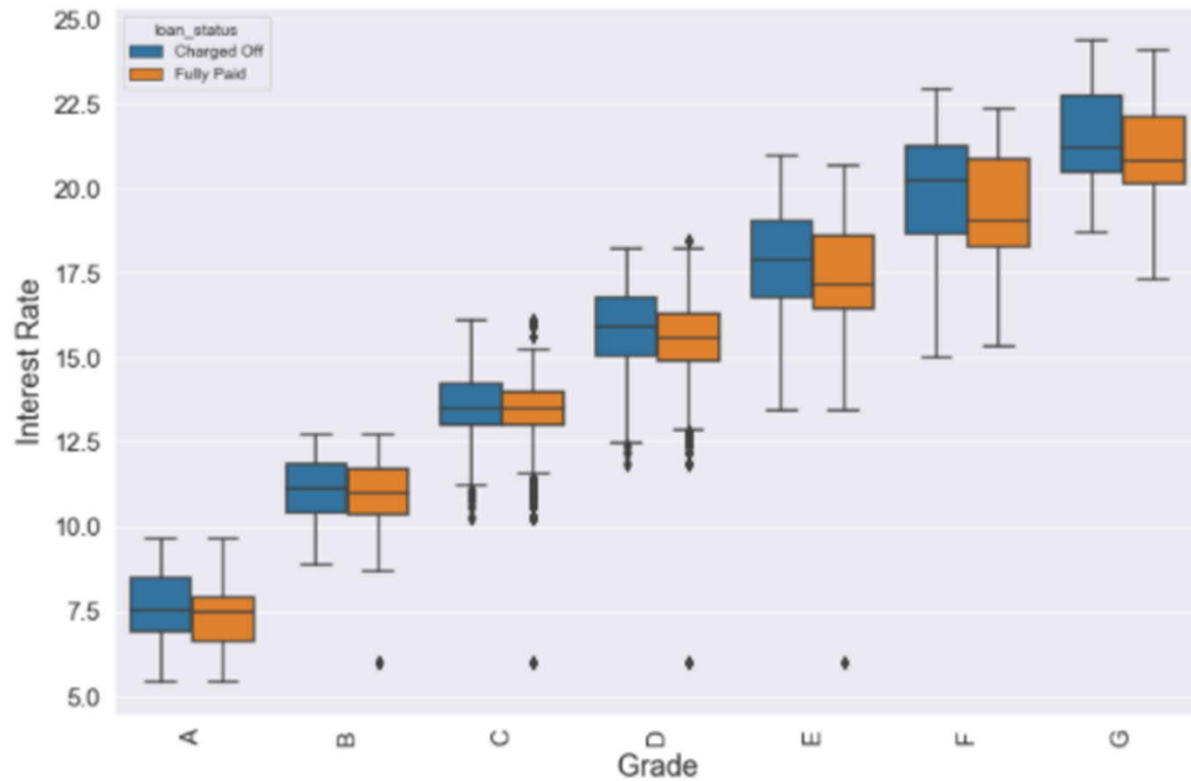
# Loan Status vs Debt to Income Ratio

The loan defaulting status slowly increases with the increase in one's debt-to-income ratio.



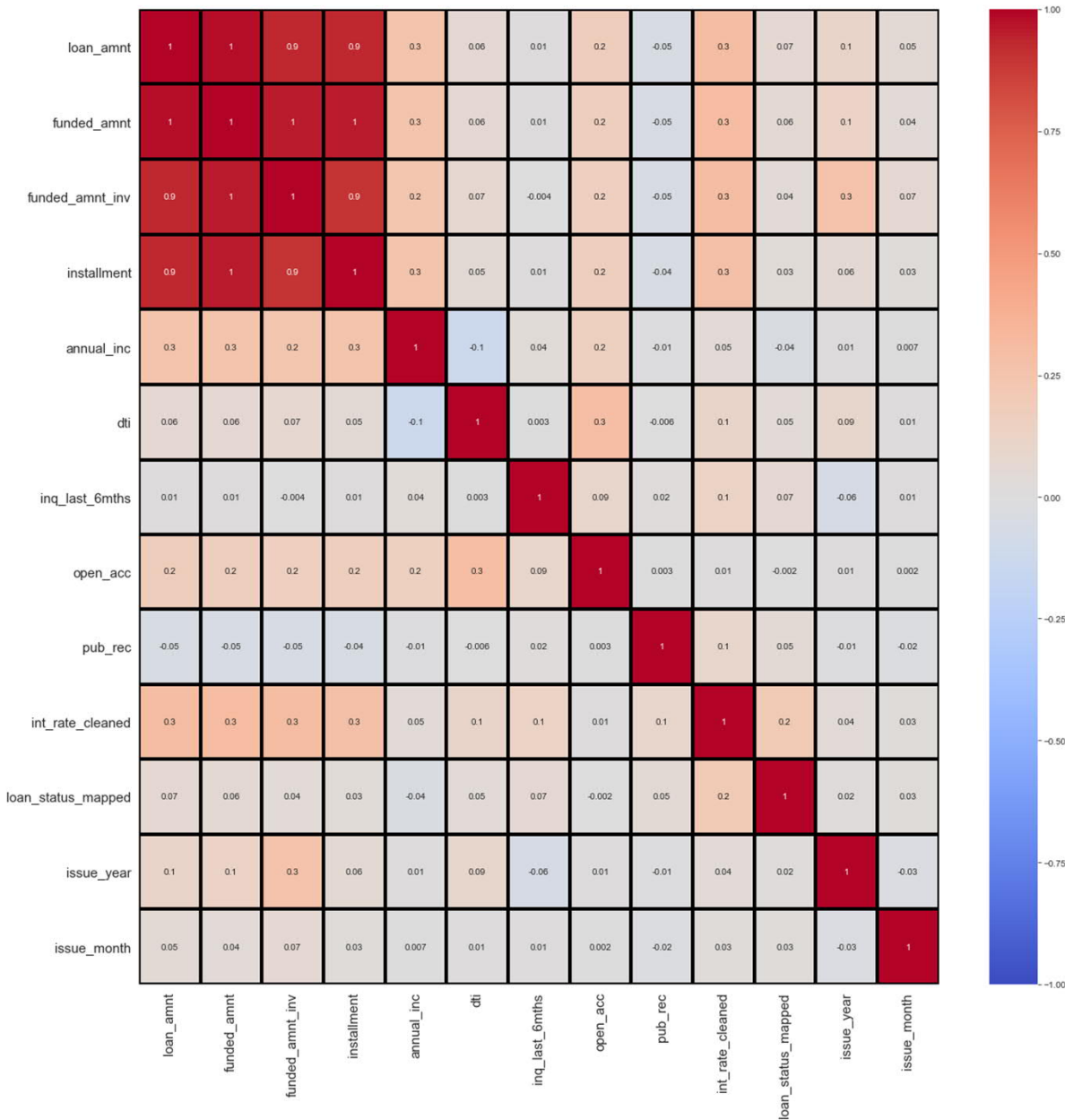
# Bivariate Analysis

# Percentage of Charged Off Loans



This makes it clear that as the Grades change from good to bad the interest rate also increases

# Correlation between Features



Few features that are positively correlated with each other are Loan Amount, Funded Amount, Funded Amount Invoice and Installment.

# Summary

The key variables or features as per our analysis are as follows as well as our recommendations to keep a check on bad loans.

