# Lending Club

PORTFOLIO & RISK ASSESSMENT

# Problem

❑Consumer Finance Company has to make a decision for loan approval based on the applicant's profile

❑Risks associated with the decision are –
- Loss of business
- Financial Loss

❑Company needs help in understanding the driving factors behind loan defaults.

# Data Available

☐Loan

- The file has information about customer attributes and loan attributes
- It has data about loans –
  - Fully paid
  - Charged-off
  - Current

# Cleansing & Transformation

❏Removal of Columns and Rows not required for analysis

   ❏Columns with sparse data and fields not directly related to the analysis

❏Identify potential imputation logics for columns with less missing value %

   ❏Employee Length had few values. Missing value has been replaced with 0 in the code. Other options are replaced it with mode ( in this case it would have been 10+)

❏Identification and removal of outliers

   ❏Applicants with more than 90% percentile removed for the analysis

❏Derive additional metrics/attributes if any

   ❏ segmentation for Interest Rate, Debt to Income, Charged Off % etc.

# Univariate Analysis – Loan Insights
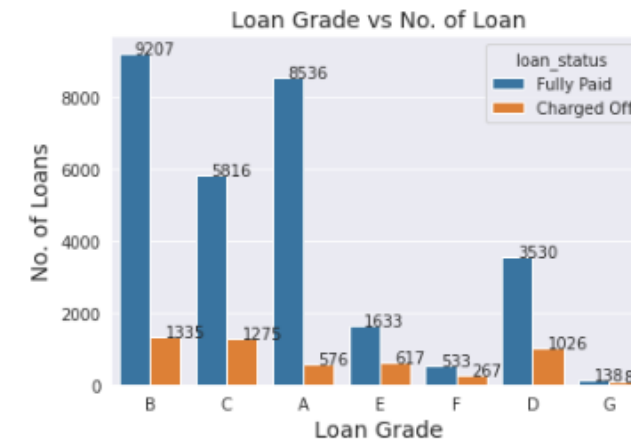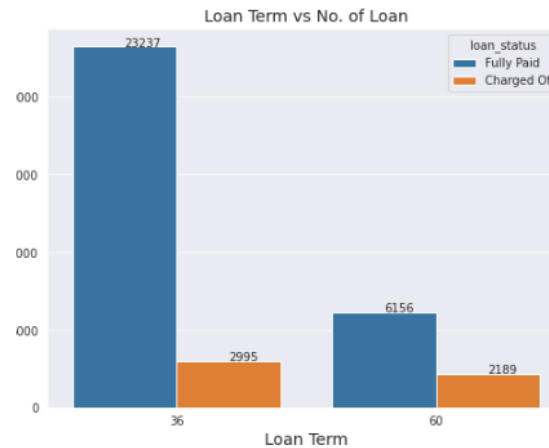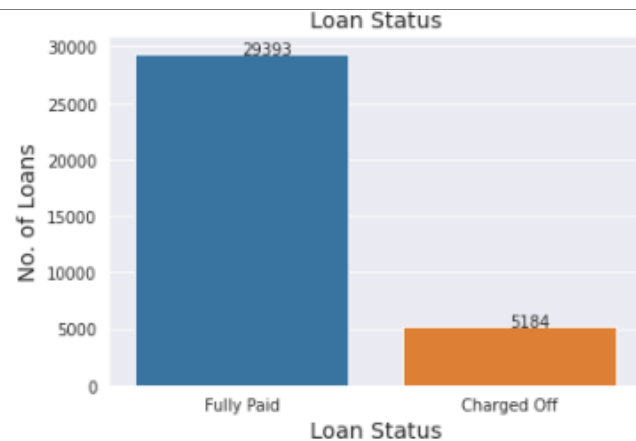


➤ ~15% loans were charged off

➤ Significant no. of loans were issued with 36 months term

➤ Ratio of default is higher in 60 months term

➤ Loans falling under Grade B, C and D have higher charged off

# Univariate Analysis – Loan Insights
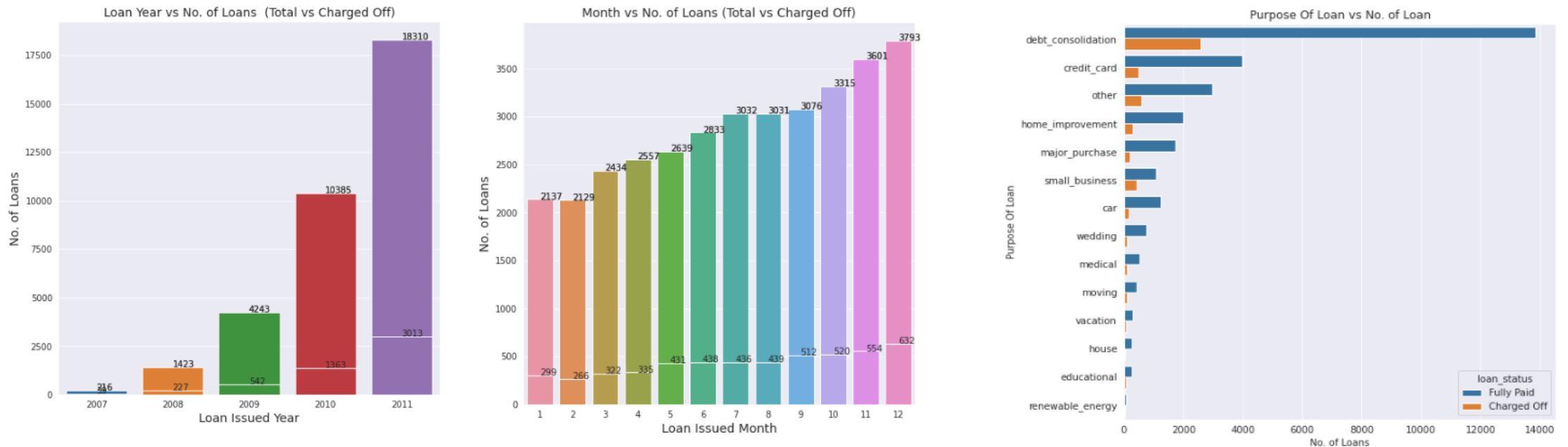


➢There is a significant increase in the no. of loans issued over the year and the defaulters too.

➢There is an increase in the no. of loans issued towards end of the year

➢Debt Consolidation, Credit Card and Other are the top 3 purpose behind the loans that were charged off.

# Univariate Analysis – Customer Insights
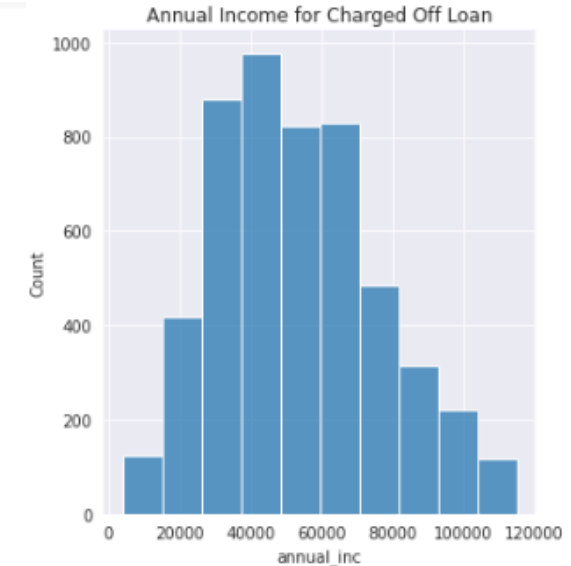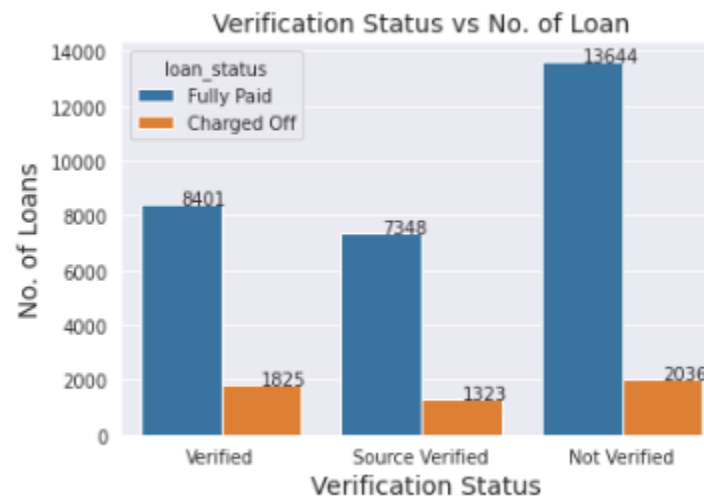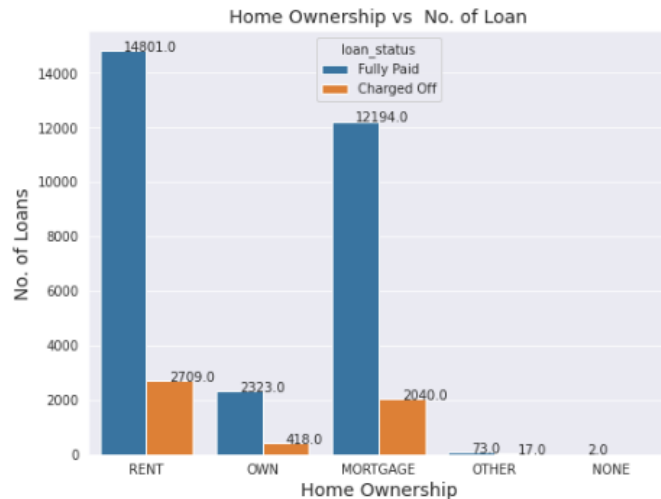


➤Applicants who fall under MORTGAGE and RENT have higher charged off loans compared to OWN

➤It doesn't look like Unverified has significantly higher defaulters compared the verified ones.

➤People with Annual Income around 40K have higher number of loans defaulted

# Bivariate Analysis - Insights
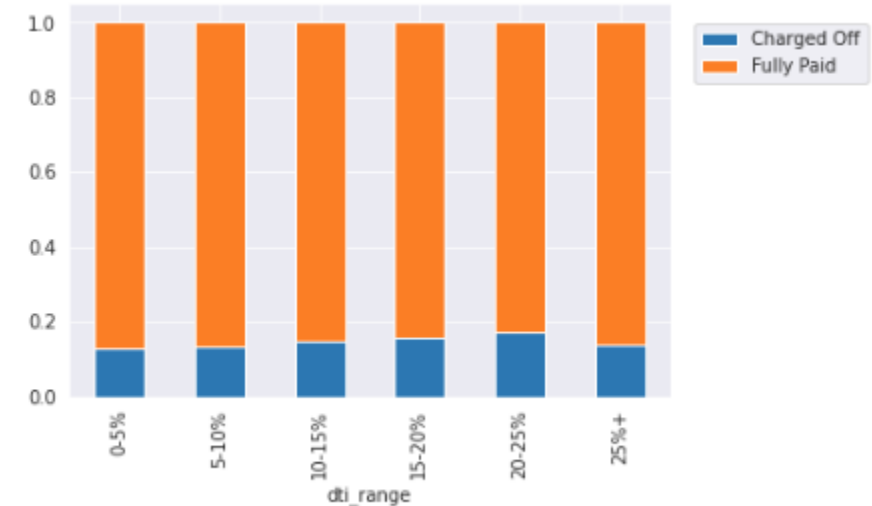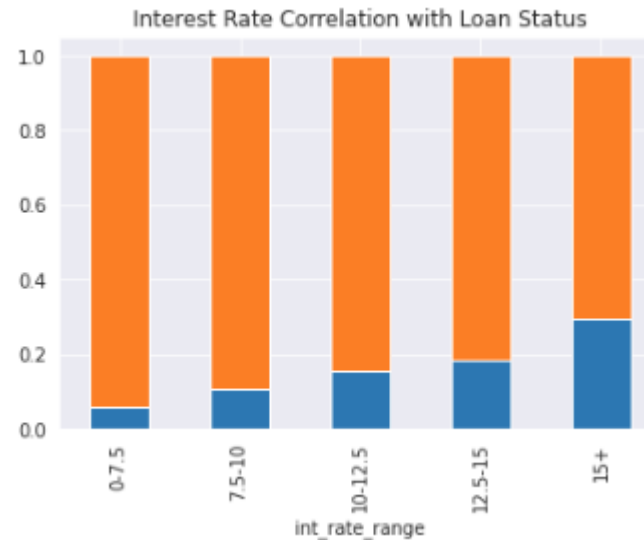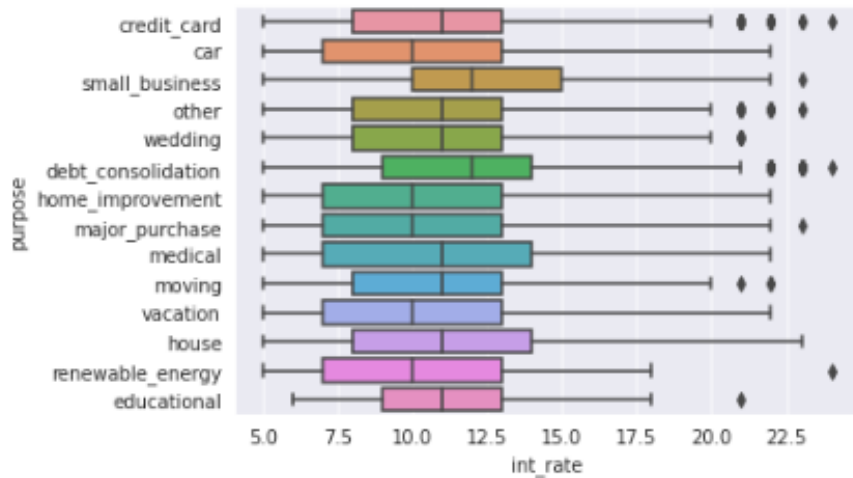


➤There is higher interest rate for the small business, debt consolidation ,medical & house.

➤ Debt Consolidation have higher interest rate as well from previous graph they have higher charge off.

➤Defaulters are within 20% across all DTI Range

➤Defaulters increase as the Interest Rate increases

# Bivariate Analysis - Insights
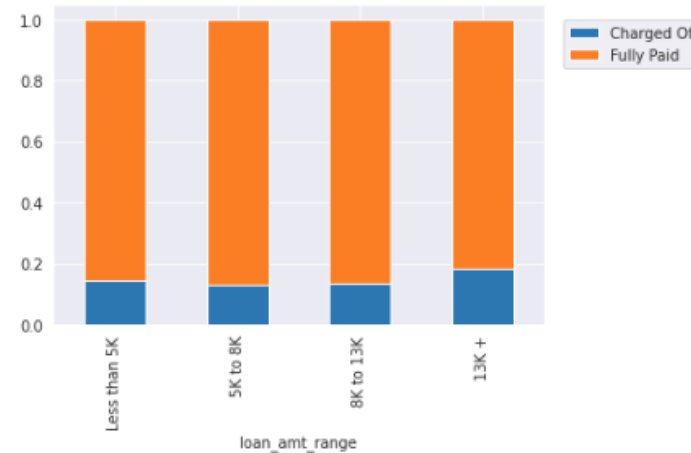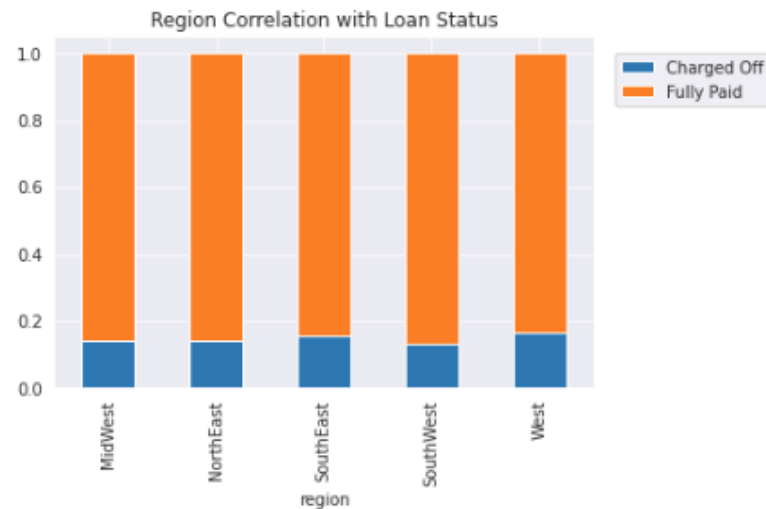


➤ Charged Off percentage is within 20 % across all regions

➤ Defaulters looks high in both of loan amount range i.e. lower (<5K) and higher end (>13K)

# Bivariate Analysis - Insights
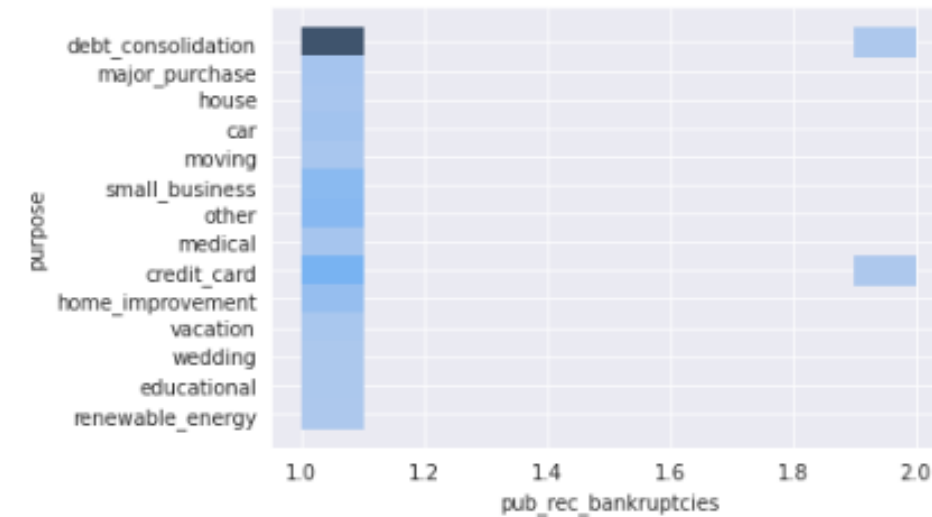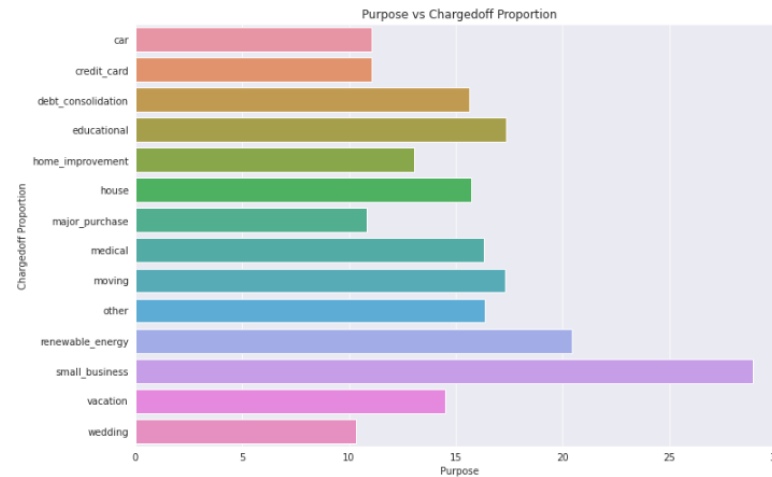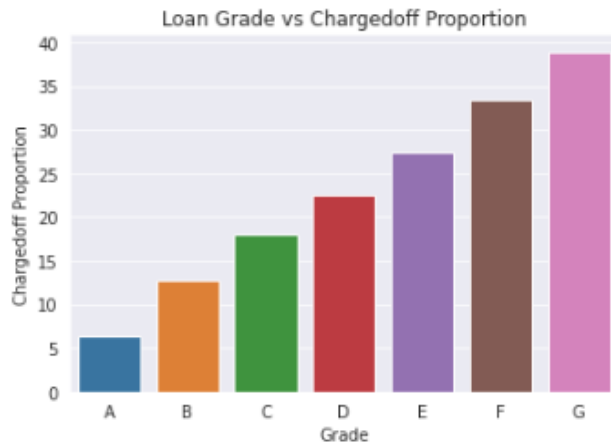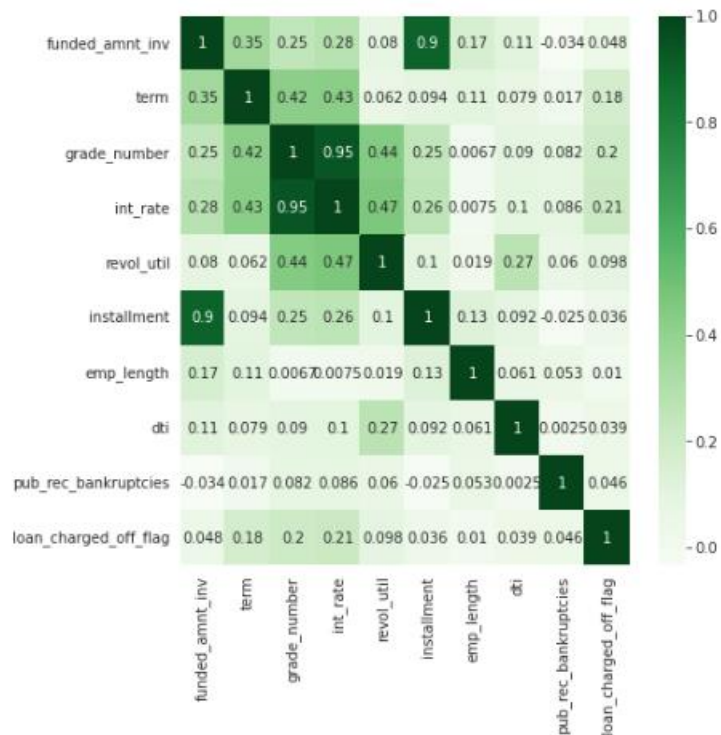


➤Grade G tops the Charged Off percentage

➤Small business has higher number of Charged Off loans and earlier we noticed this has higher interest rates as well.

➤People with bankruptcies majorly took loan for debt consolidation & credit card

# Multivariate Analysis



➤ Loan charge off have slightly positive correlation with term & interest rate

➤ Term have positive correlation with funded amount & interest rate

➤ Grade has positive correlation with Interest Rate, Term and Loan Status

➤ Revolving line utilization rate has positive correlation with Grade, Interest Rate and Debt to Income

# Summary and Recommendations

➢Applicants with loan amount <5K and >13K have higher number of defaulting

➢Applicants seeking loan for small business, debt consolidation, credit card seems to defaulting.

➢High risk Grade G has higher number of defaulters.

➢Defaulter Percentage is high in the high interest rates

➢Recommendation -

➢Attributes like Loan Purpose, Interest Rate, Purpose, Loan Grade, Loan Amount, Loan Term, Revolving Utilization Rate and Public Bankruptcy Count have shown relationship with Charged Off