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OBJECTIVE:

- Lending loan to risky applicants is largest source of credit loss for a financial company.
The main aim is to identify & reject these risk loan applicants so the credit loss can be reduced.

APPROACH STRATEGY:

- To analyze historical data and identify high risk customers.

•PROBLEM SOLVING METHODOLOGY:

•Data Cleaning

- Eliminating column having NA's, single value & reducing the data file for further analysis.
- Standardizing Date format and removing special characters symbols like "%".
- Removing Outliers(Quartile considered: 10% to 90 % of annual income).

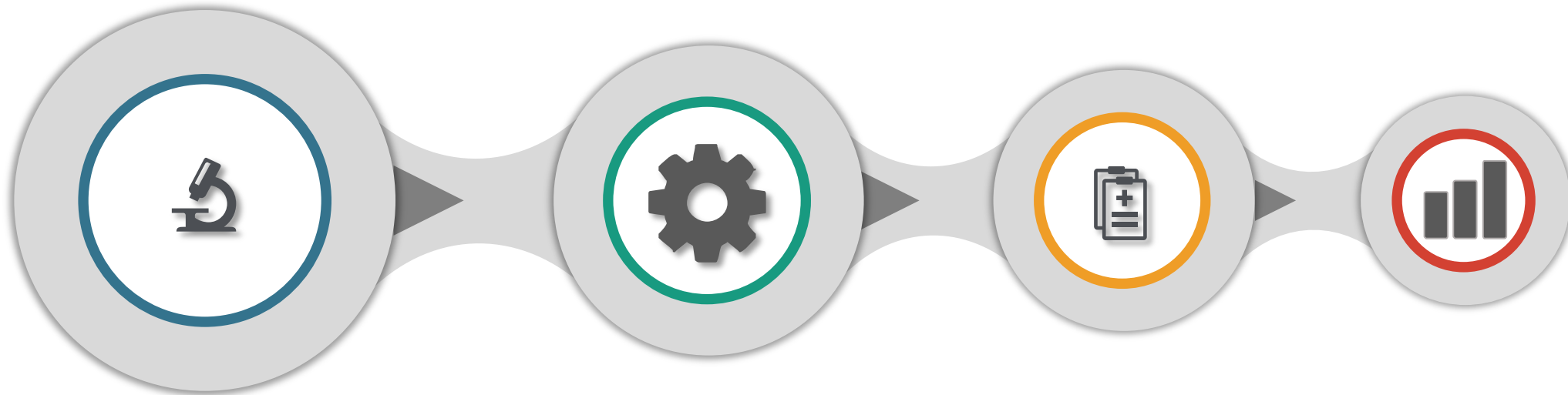
•Analyse by grouping Loan/Customers based on various parameters like:

- Loan term
- Grade
- Purpose
- Employment length

•Constraints:

- Data contains three type of loan applicants: 1)Fully paid, 2)Current,3) Charge off out of which Current loan is not considered in analysis.

DATA FLOW



DATA UNDERSTANDING AND PREPARATION

(Identifying unique keys for given data frames, Collating files and checking for Data Quality issues)

DATA CLEANING

(DataCorrection, Data Conversion and Data Manipulation)

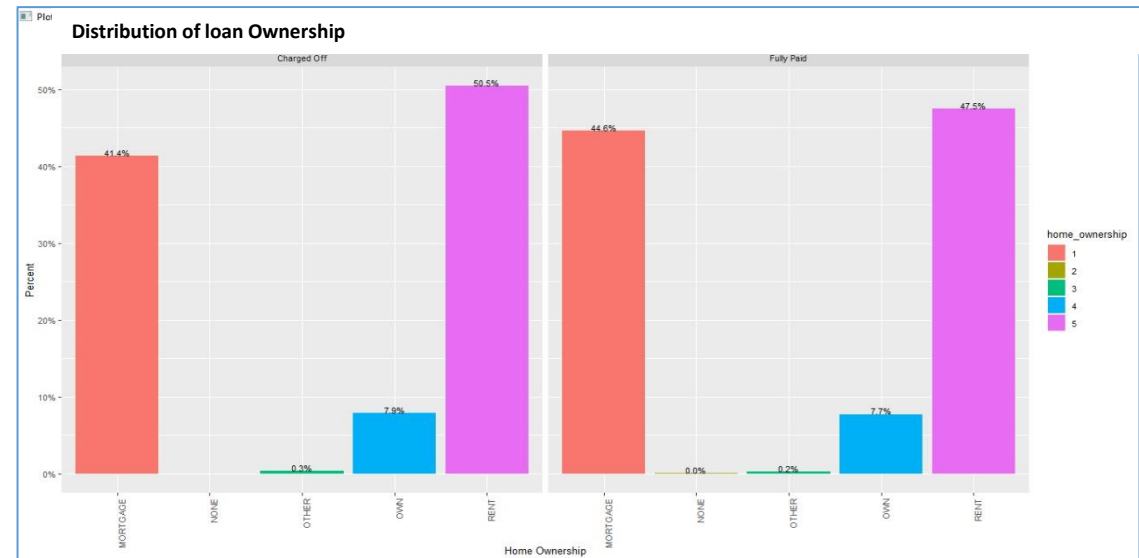
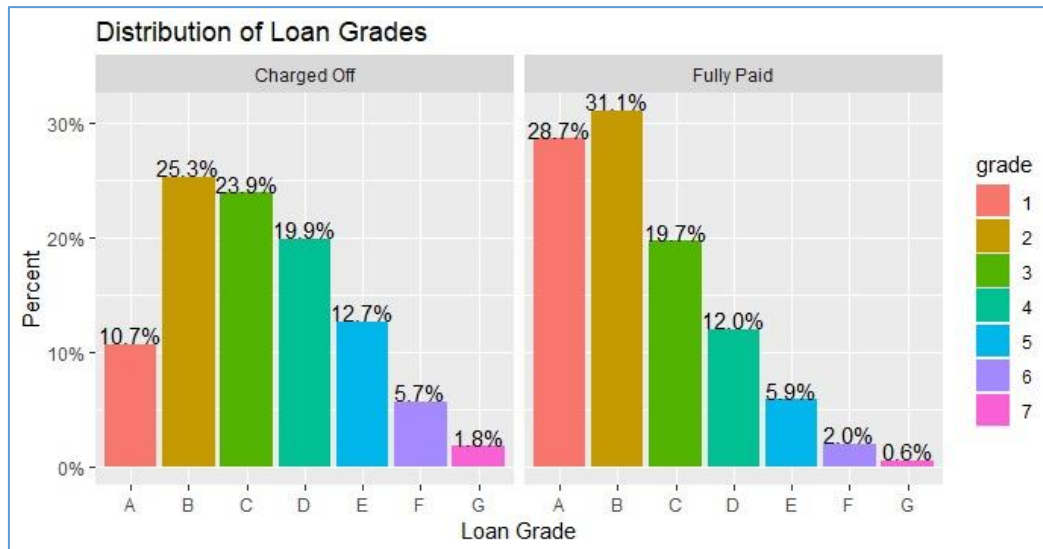
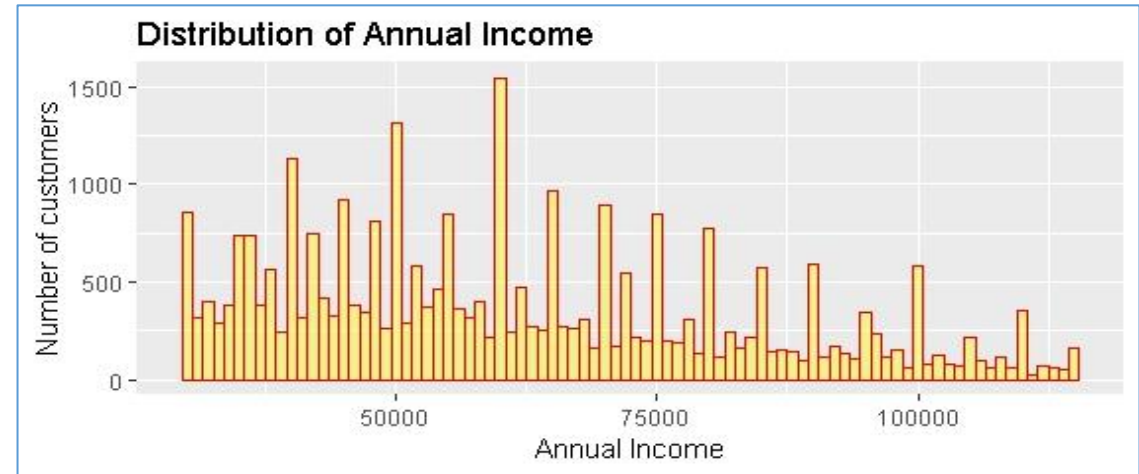
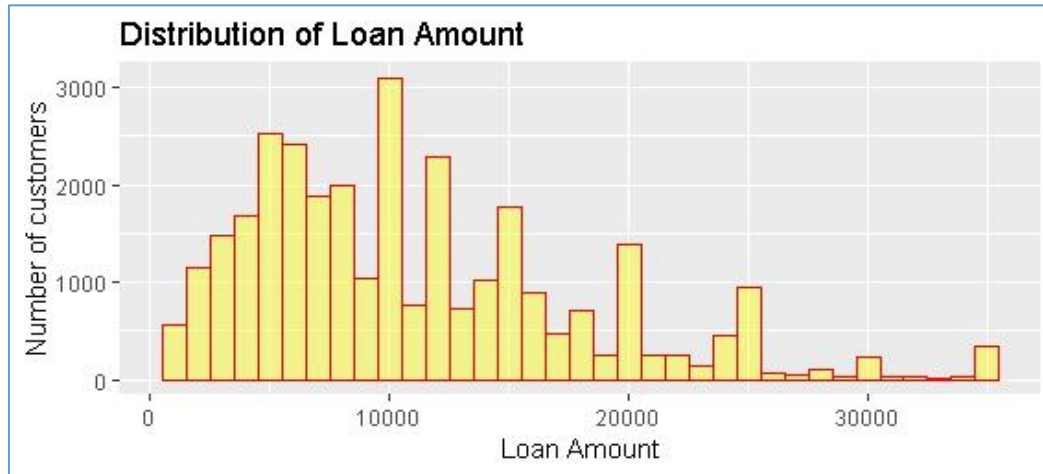
DATA COMPUTATION

(Computing the ratio defaulters vs total loan for different segment)

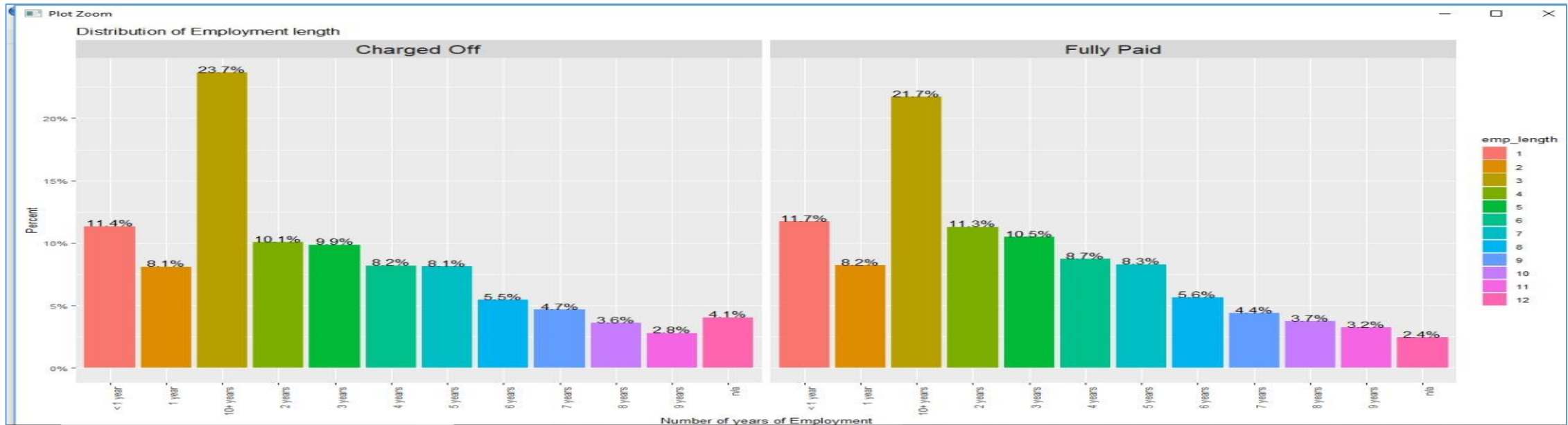
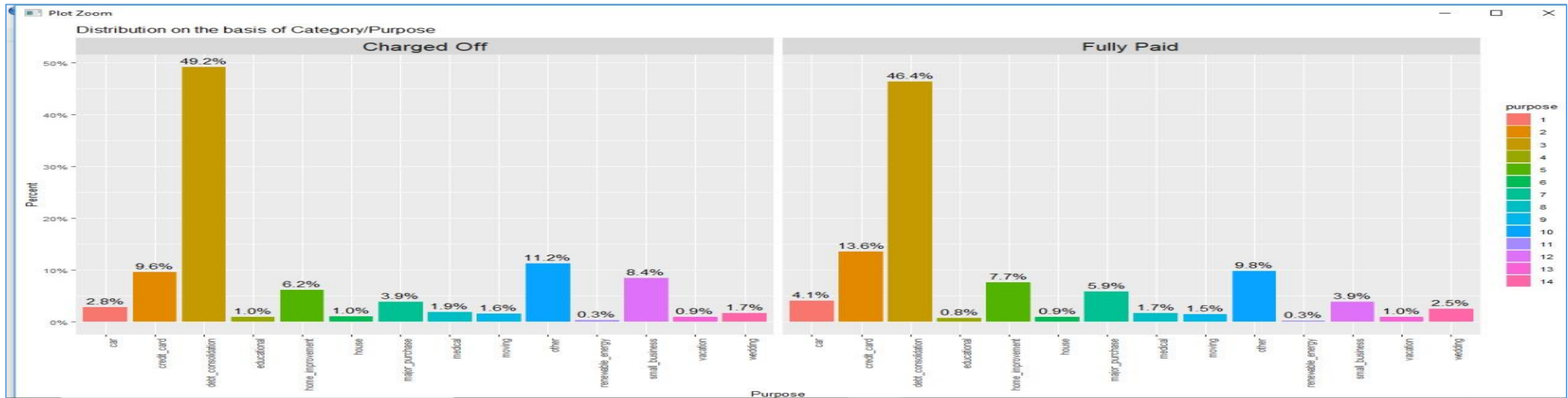
DATA ANALYSIS

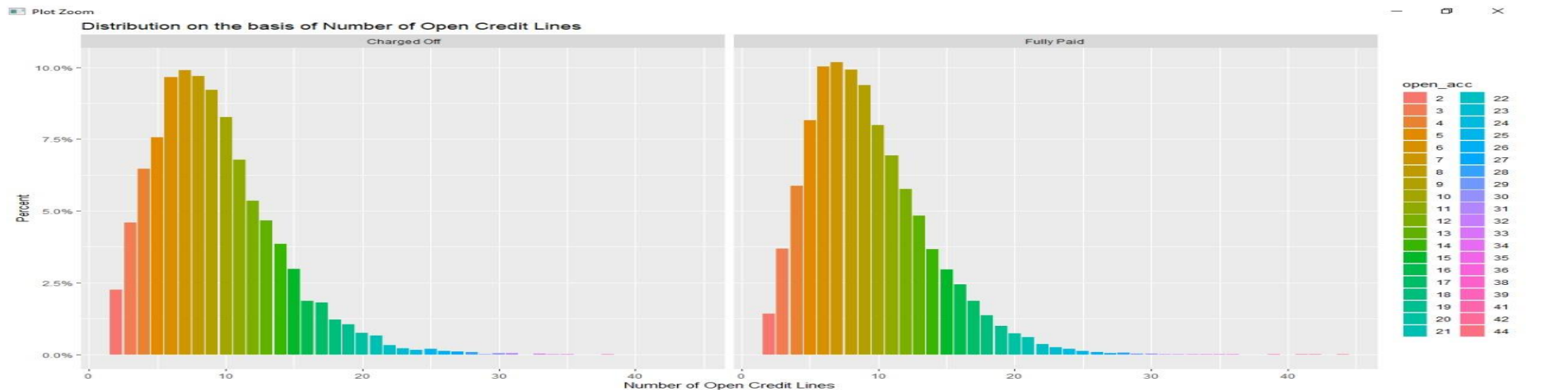
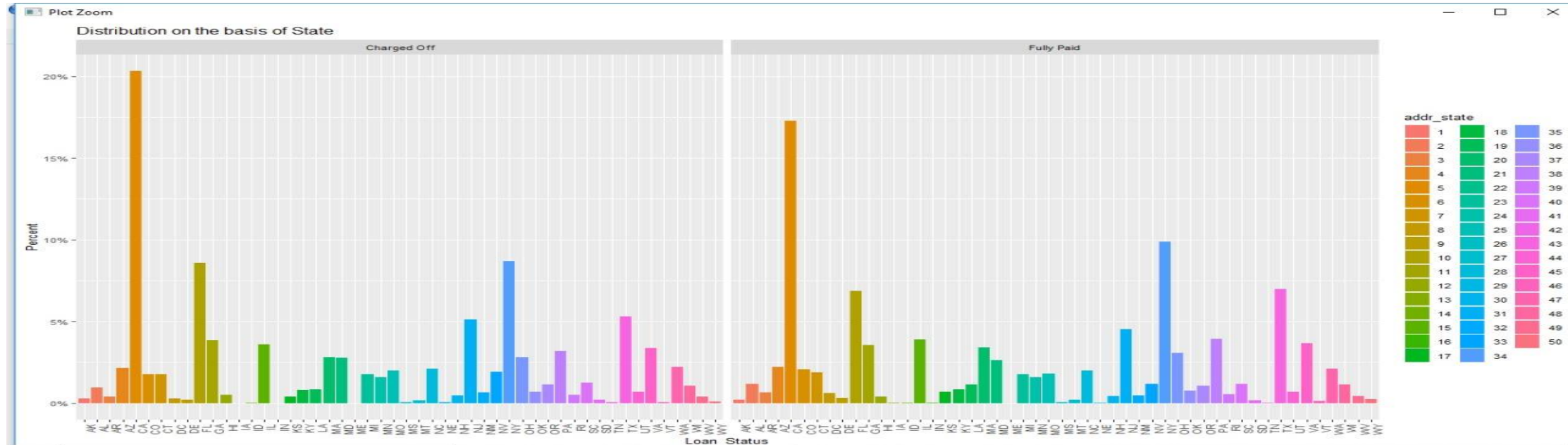
(Analyzing various factors related to customers & approved loans & find out the high risk customers)

Univariate Analysis

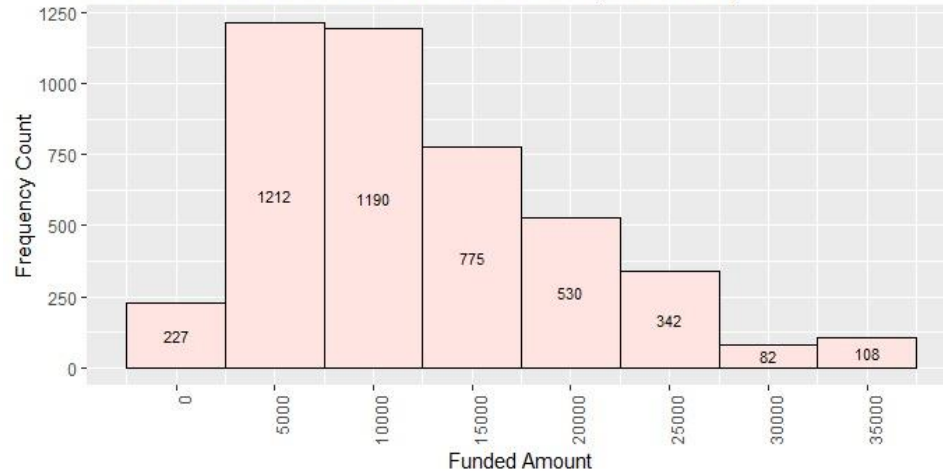


Univariate Analysis

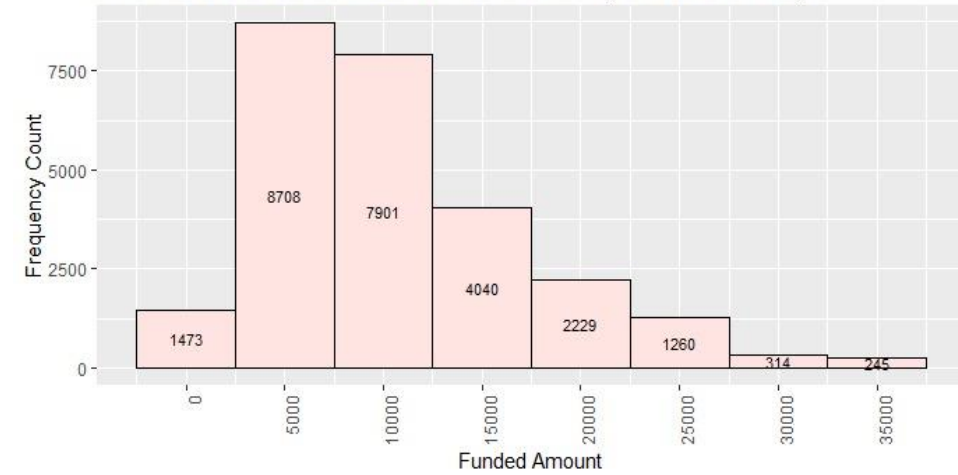




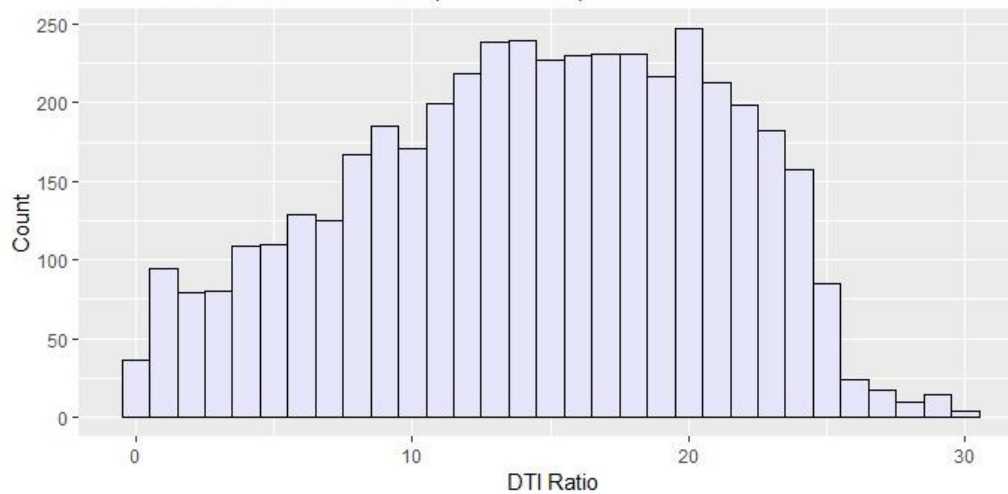
PLOT 2.1: FUNDED AMOUNT HISTOGRAM (Defaulters)



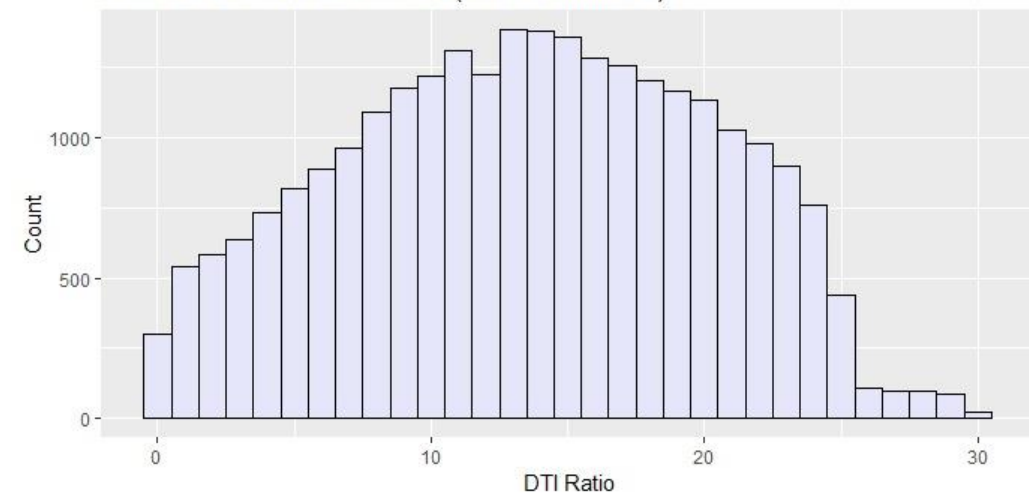
PLOT 2.2: FUNDED AMOUNT HISTOGRAM (Non Defaulters)



PLOT 6.1: DTI HISTOGRAM (Defaulters)



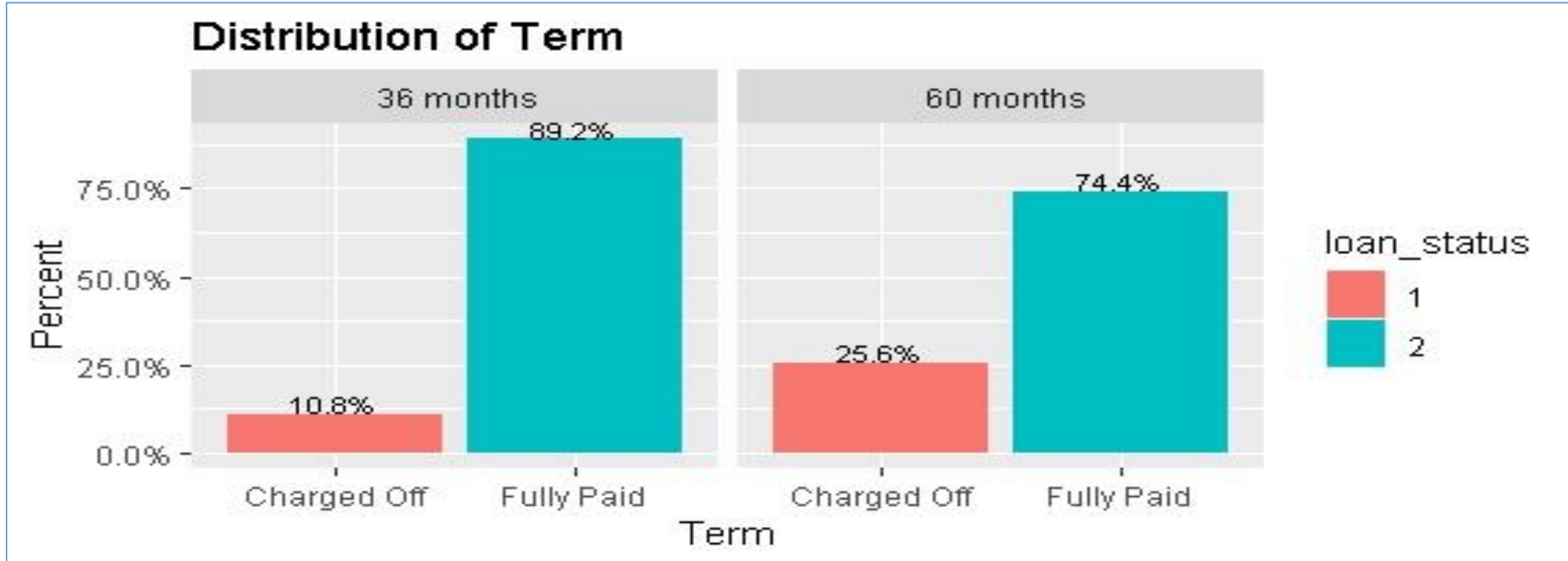
PLOT 6.2: DTI HISTOGRAM (Non Defaulters)



Term Wise Analysis

In below plot we can observe that loans have 60 months have higher charge off ratio indicating higher risk.

Term vs Loan Status

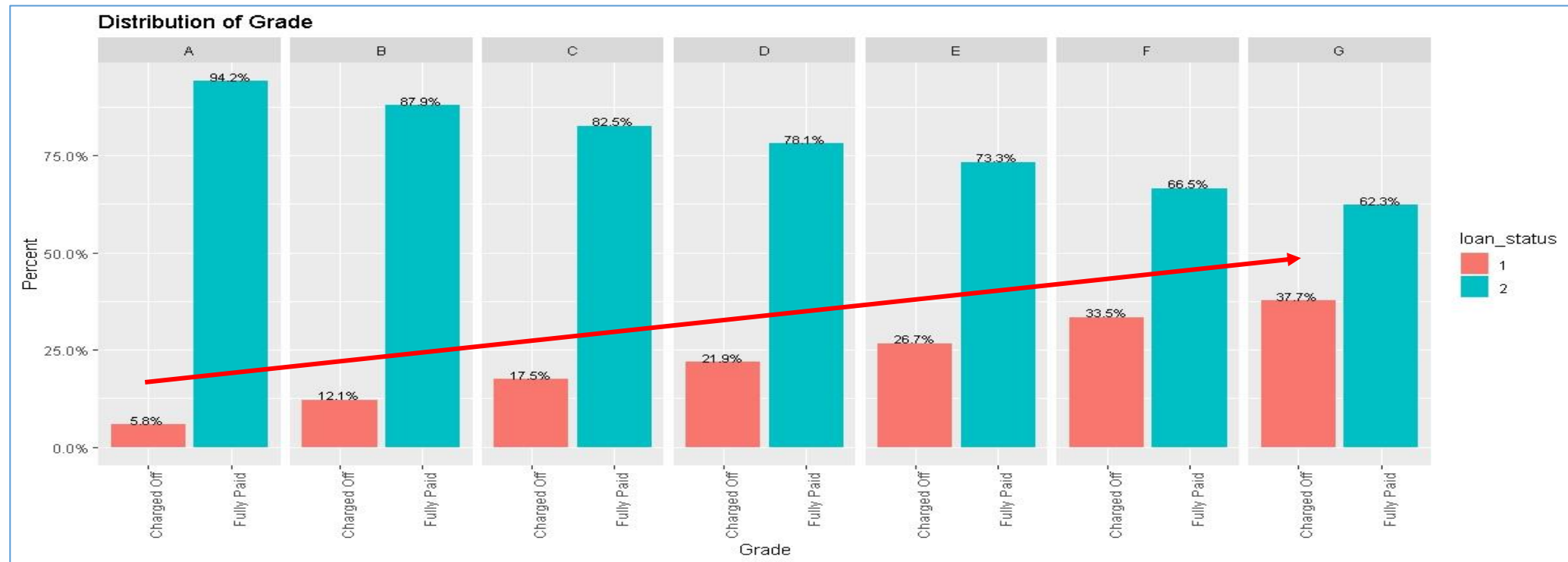


% Ratio indicated is count of (Charged off or Fully paid loan)/Total loan count for individual facet.

Grade Wise Analysis

In below plot we can observe that lower the grade higher the charge off ratio hence higher risk involved.

Grade vs Loan Status

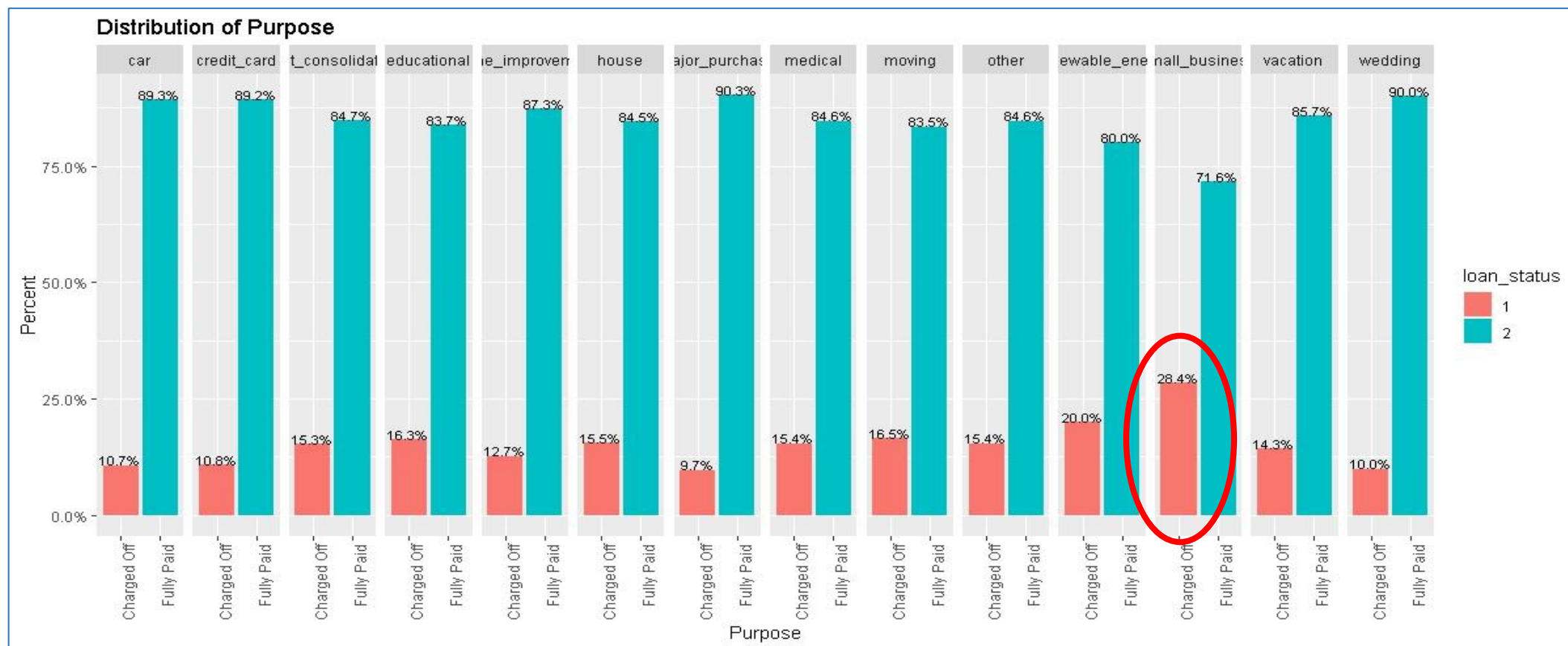


% Ratio indicated is count of (Charged off or Fully paid loan)/Total loan count for individual facet.

Loan Purpose Wise Analysis

Loans taken for small business have highest charge off ratio of 28.4% .

Purpose vs Loan Status

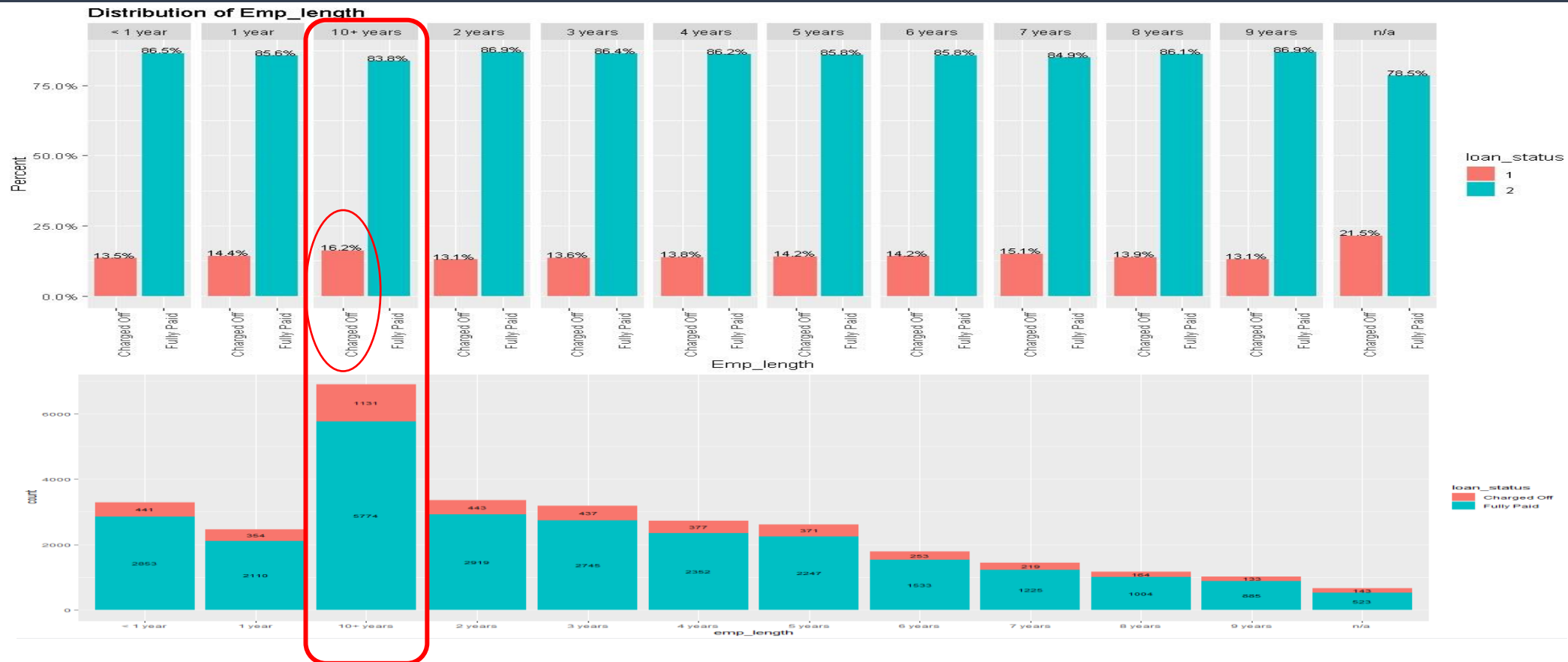


% Ratio indicated is count of (Charged off or Fully paid loan)/Total loan count for individual facet.

Employment Length Wise Analysis

Loans taken by person having employment 10+ years have highest count loans approved & highest charge off ratio of 16.2% which is a major concern.

Employment Length vs Loan Status



% Ratio indicated is count of (Charged off or Fully paid loan)/Total loan count for individual facet.

CONCLUSION & RECOMMENDATIONS

- Loans having term 60 months have higher charge off ratio indicating higher risk so need to reduce it & prefer 36 Months term.
- Need more strict rule for Low grade loans as lower the grade higher the risk involved.
- Small Business loans are of higher risk so need strict rules before approving.
- Loans taken by person having employment 10+ years have highest count loans approved & highest charge off ratio of 16.2% which is a major concern where needs to be more strictness.