Lending Case Study

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Problem Statement

To understand how consumer attributes and loan characteristics influence the likelihood of loan default for a consumer finance company. The goal is to identify patterns within past loan applicant data to inform decision-making processes, such as loan approvals, interest rates, and risk management strategies.

Analysis approach

We have made use of Exploratory Data Analysis (EDA) to comprehend the impact of consumer attributes on the probability of loan default. Our approach included data exploration, visualization and correlation analysis along with outlier detection. We have predominantly used Univariate and Bivariate analysis to get an understanding of the provided dataset and draw meaningful insights, leading to better decision making related to loan default(s).
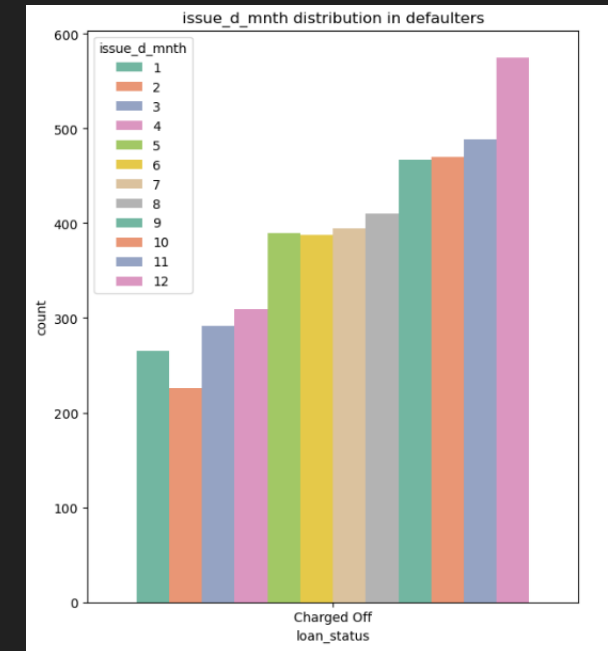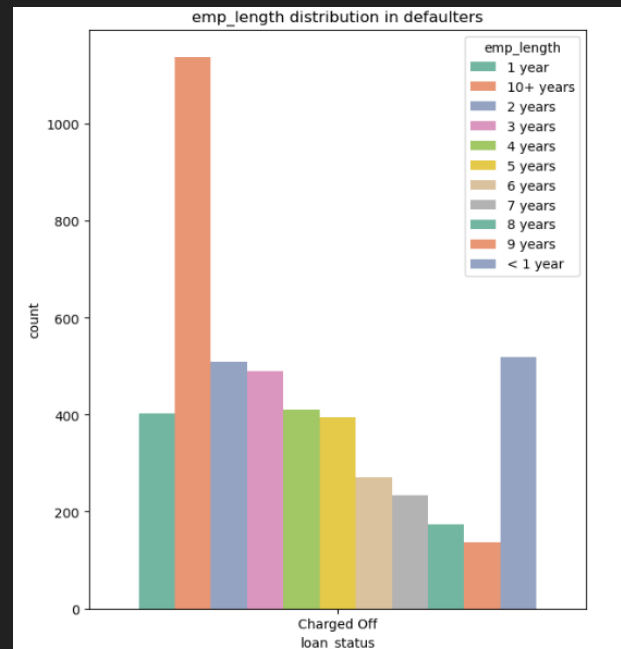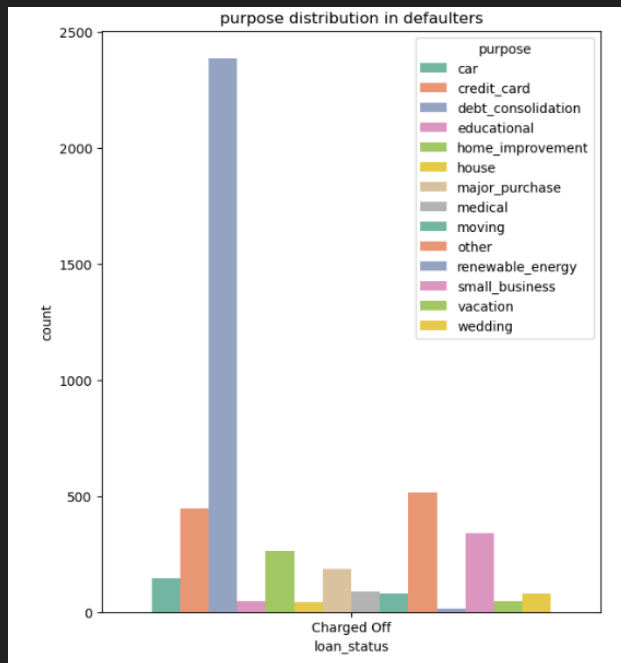
Observations – Univariate Analysis

The following are the observations for categorical columns:

- Grade distribution indicates Grade A loans are less likely to be defaulted compared to others
- Seen the occurrence of more defaults when the income source is 'Not Verified' and 'Verified' compared to 'Source verified' status
- Observed that applicants with own houses are less likely to default the loan than the ones on 'rent' and 'mortgage'
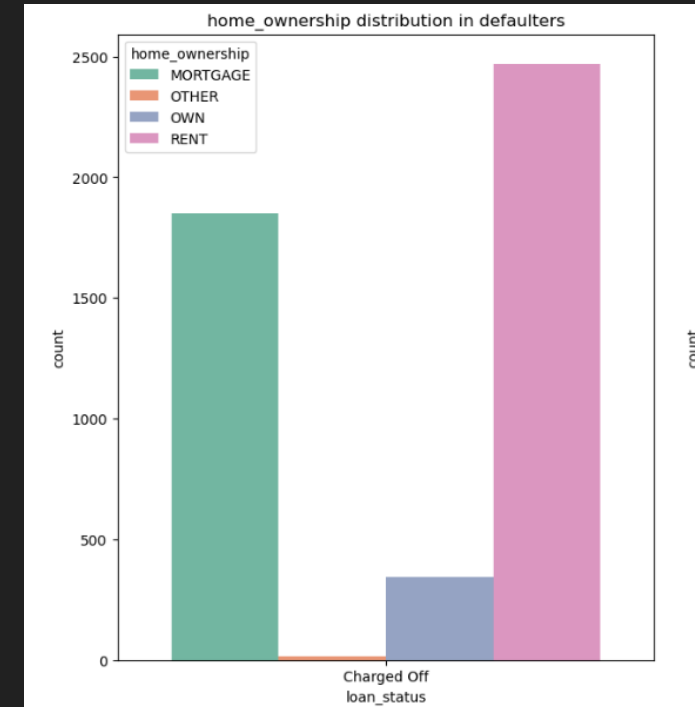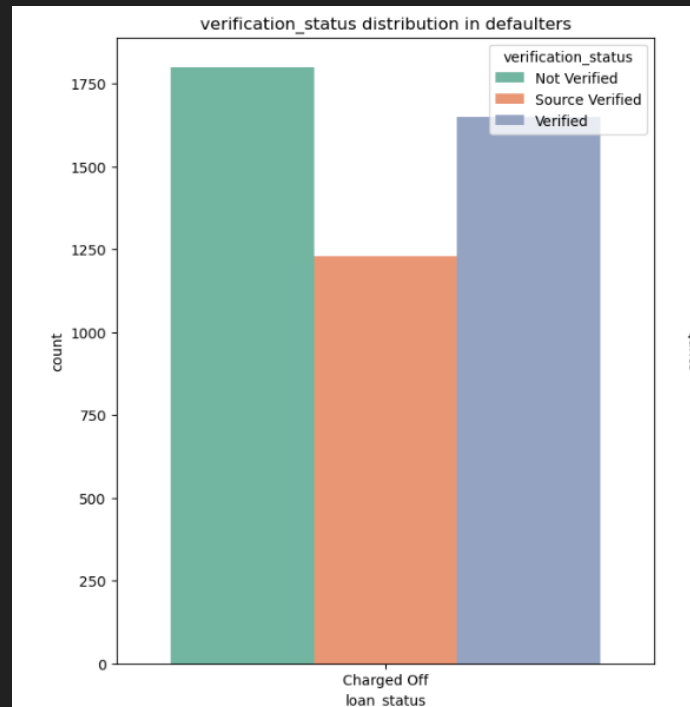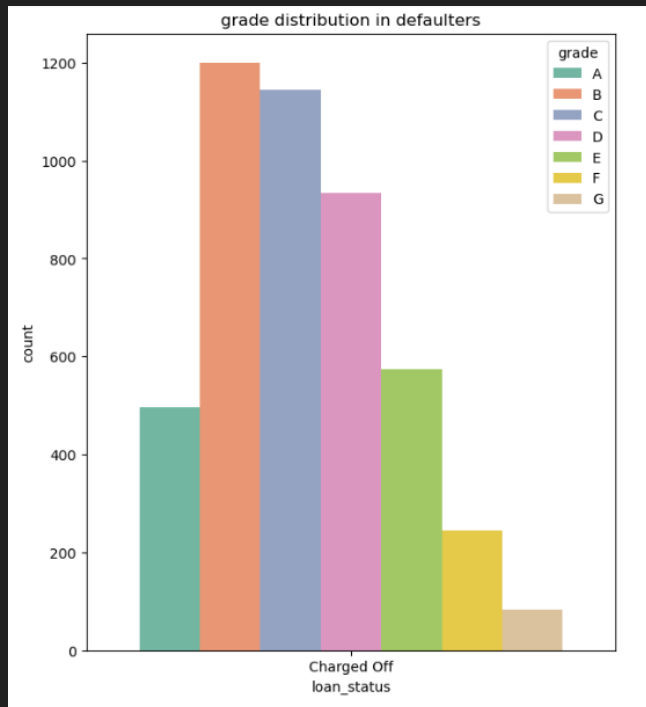
# Observations – Univariate Analysis (cont..)

- More number of loans are taken for 'debt cosolidation'
- Most loans were given to applicants with employment of 10+ years
- Default numbers for loans issued in the month of Feb is comparatively smaller in size

Observations – Bivariate Analysis

Bivariate analysis Observations are as follows:

○ Interest rate for 'Defaulters' are higher than 'Fully paid' customers

○ The quartiles of annual income for 'Defaulted' loan applicants were lower than 'Fully paid'

○ 'Revolving line utilization rate' was found to be higher for 'Charged off' or defaulted applicants.
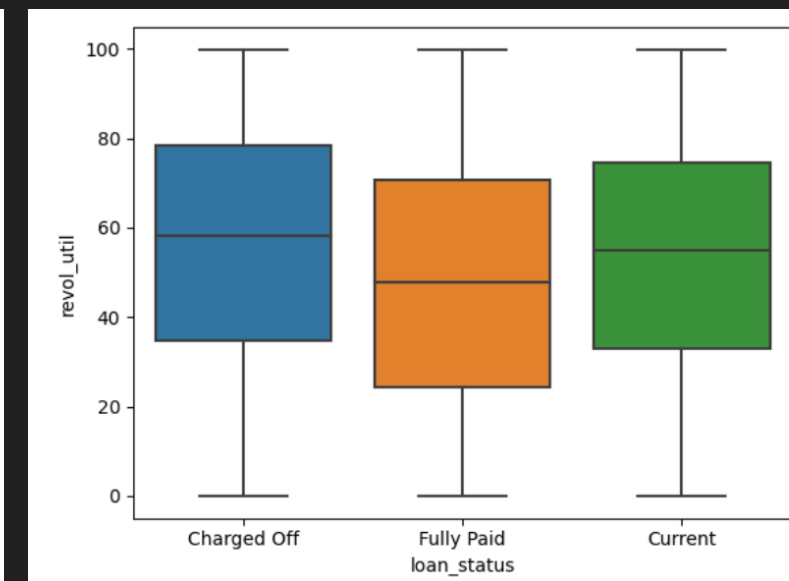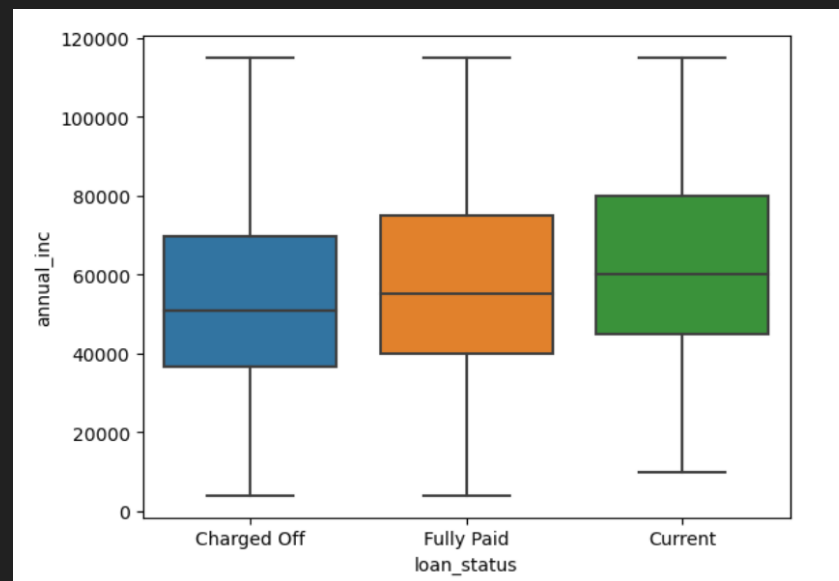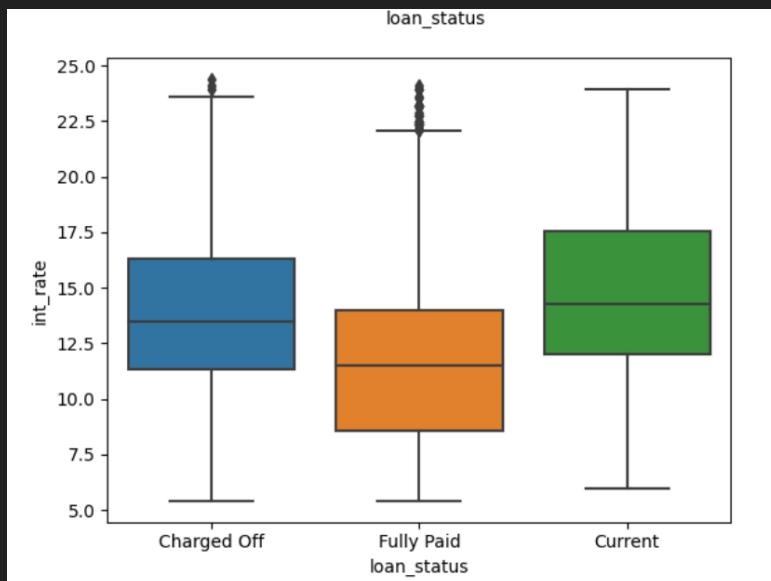
Correlation on Numerical variables

Observation on 'Correlation' between the numerical variables for charged off members:

○ The monthly payment owed by the borrower aka 'installment' is positively correlated with the loan amount.