

Lending Club Case Study

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Background – Lending Club Case Study

Background

Lending Club is a consumer finance company that specializes in providing various types of loans to urban customers.

Upon receiving a loan application, the company evaluates the applicant's profile to determine whether to approve or reject the loan.

Business Objective

The goal is to identify key variables that serve as strong indicators for making loan approval or rejection decisions

Data Understanding

Source of Data

The Loan Data Set Provided by Lending Club finance company,
It includes the complete loan data for all loans issued through the time period 2007 to 2011

A data dictionary is also available, which provides detailed descriptions of the variables included in the dataset.

Data Understanding

Identified potential important variables by reviewing Data dictionary.

Data Cleaning

Clean data set by making sure that there are no missing values or incorrect data types

For Missing Values:

- Dropping the column missing containing too much missing values
- Dropping the rows containing the missing values
- Imputing the missing values

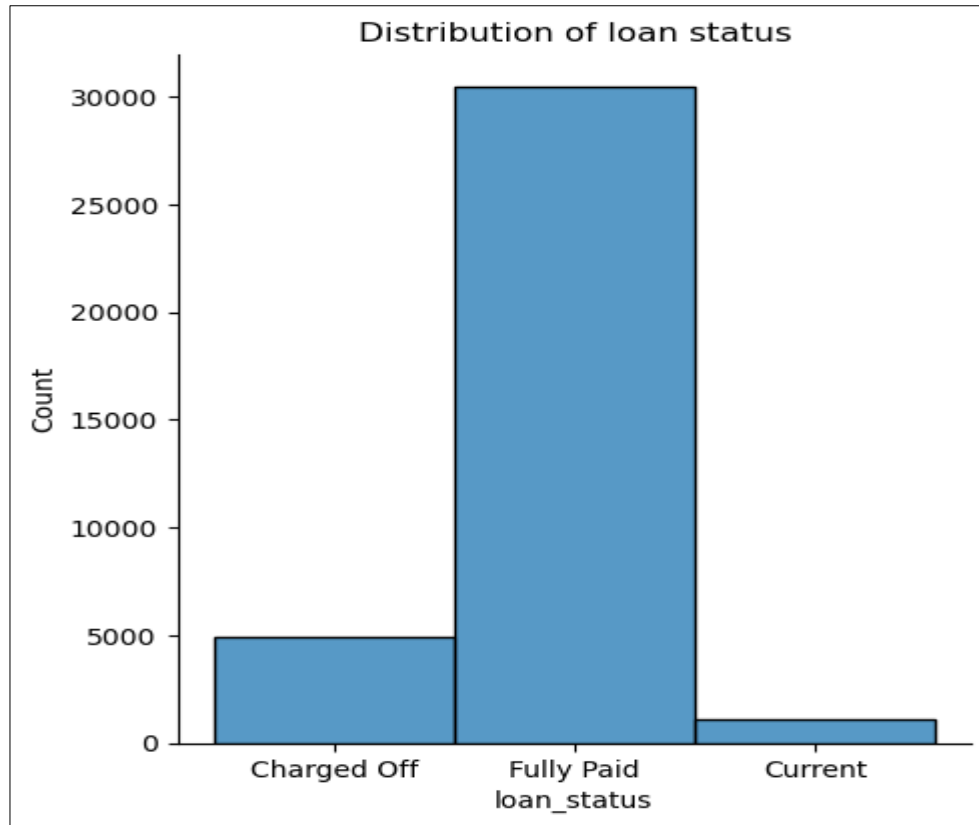
Incorrect Data Types:

- Clean certain values
- Clean and convert an entire column

Data Analysis – EDA

Univariate Analysis

Loan Status Distribution



Loan Status - Number of Loans

Fully Paid - 30423

Current - 1066

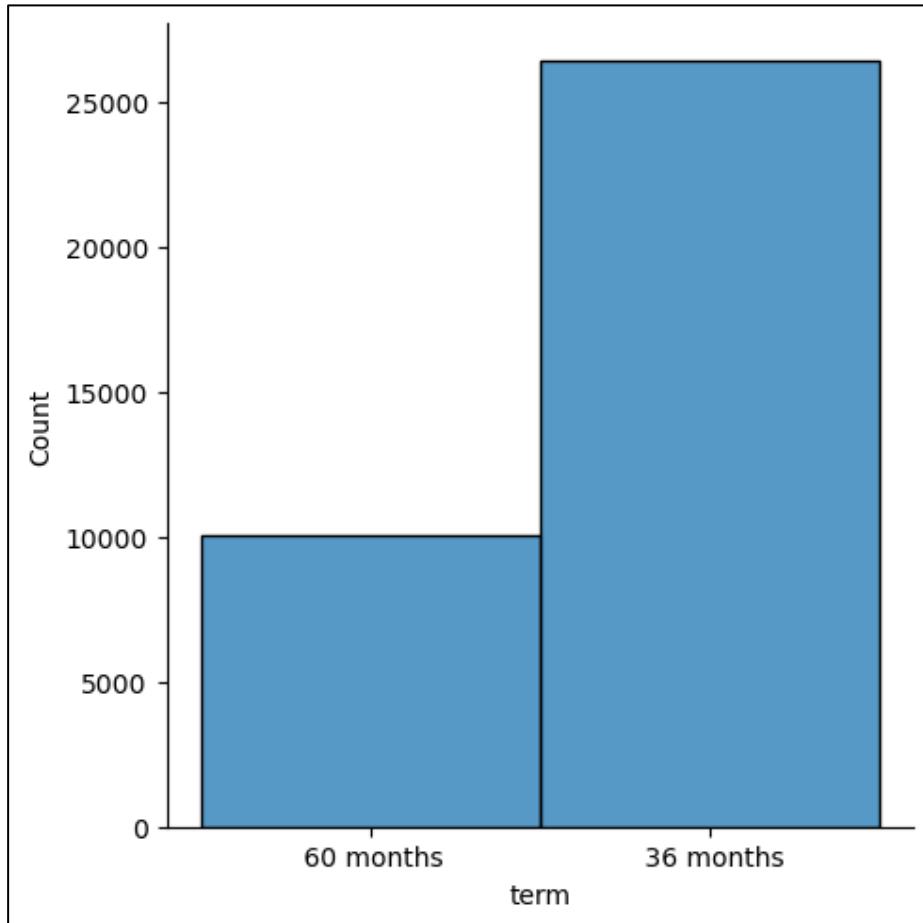
Charged Off (Defaulter) - 4942

The majority of loans fall under the "Fully Paid" category, followed by "Charged Off (Defaulter)."

Terms Distribution

Terms - The number of payments on the loan.

Values are in months and can be either 36 or 60



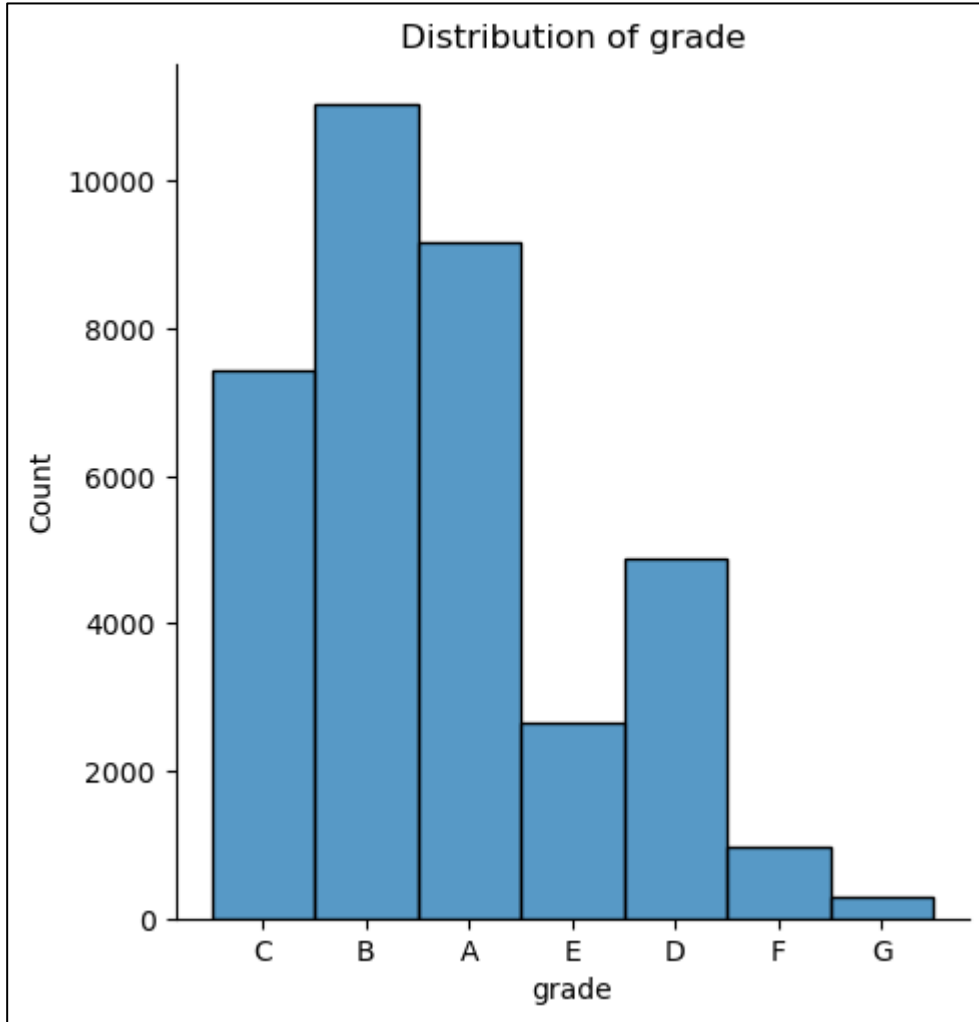
Term - Loans Counts

36 months - 26375

60 months - 10056

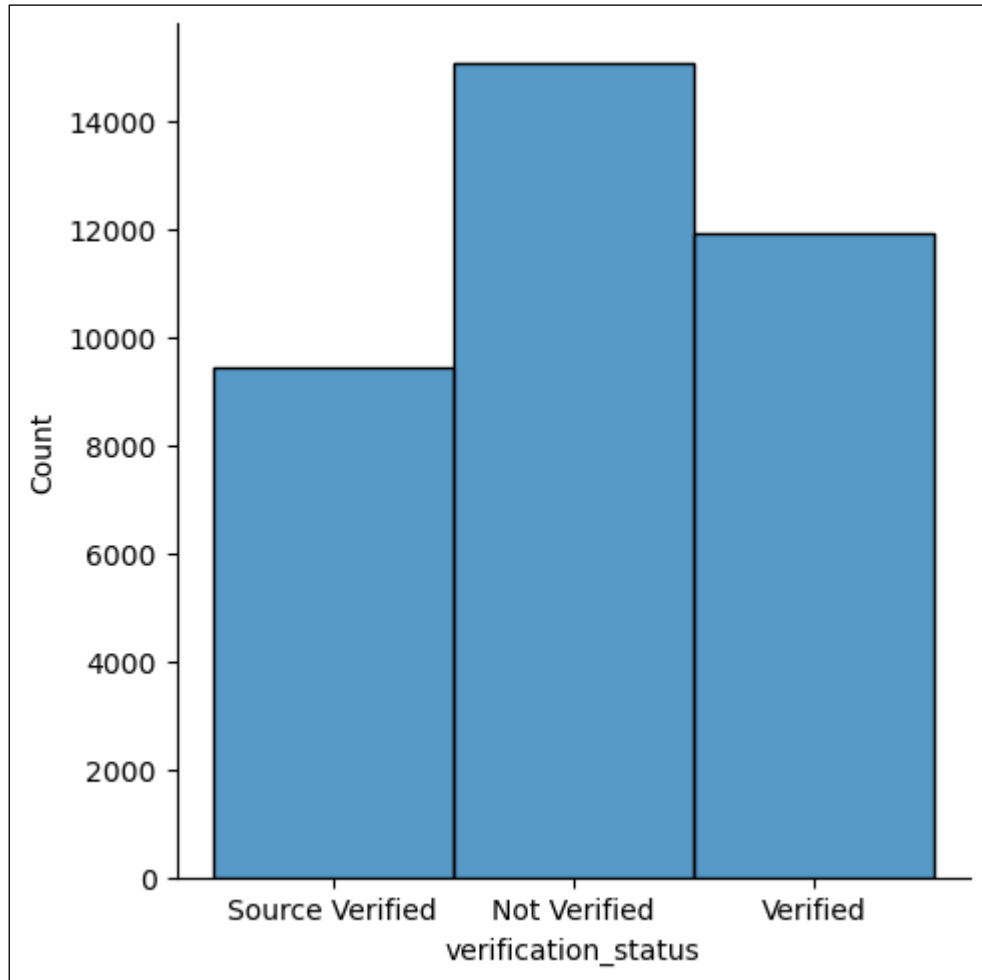
**The majority of loans fall under the “36 months”
Term**

Loan Grade Distribution



Majority of loans fall under Grade B, A and C Category

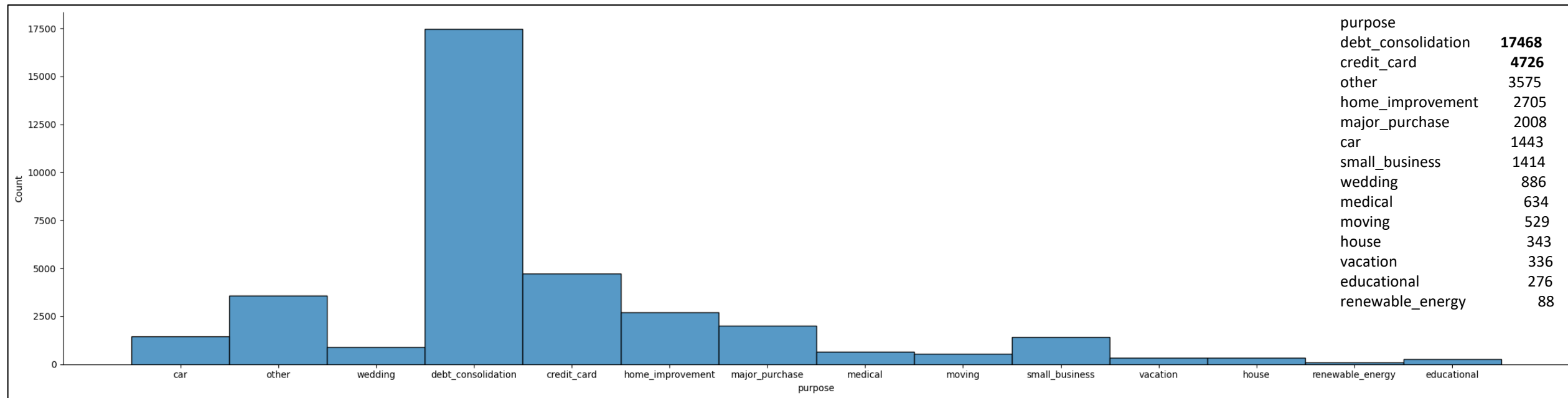
Verification Status Distribution



The majority of loans belong to the "Not Verified" category, followed by the "Verified" category, while "Source Verified" has the least number of loans

Purpose Distribution

Purpose – A category provided by the borrower for the loan request.

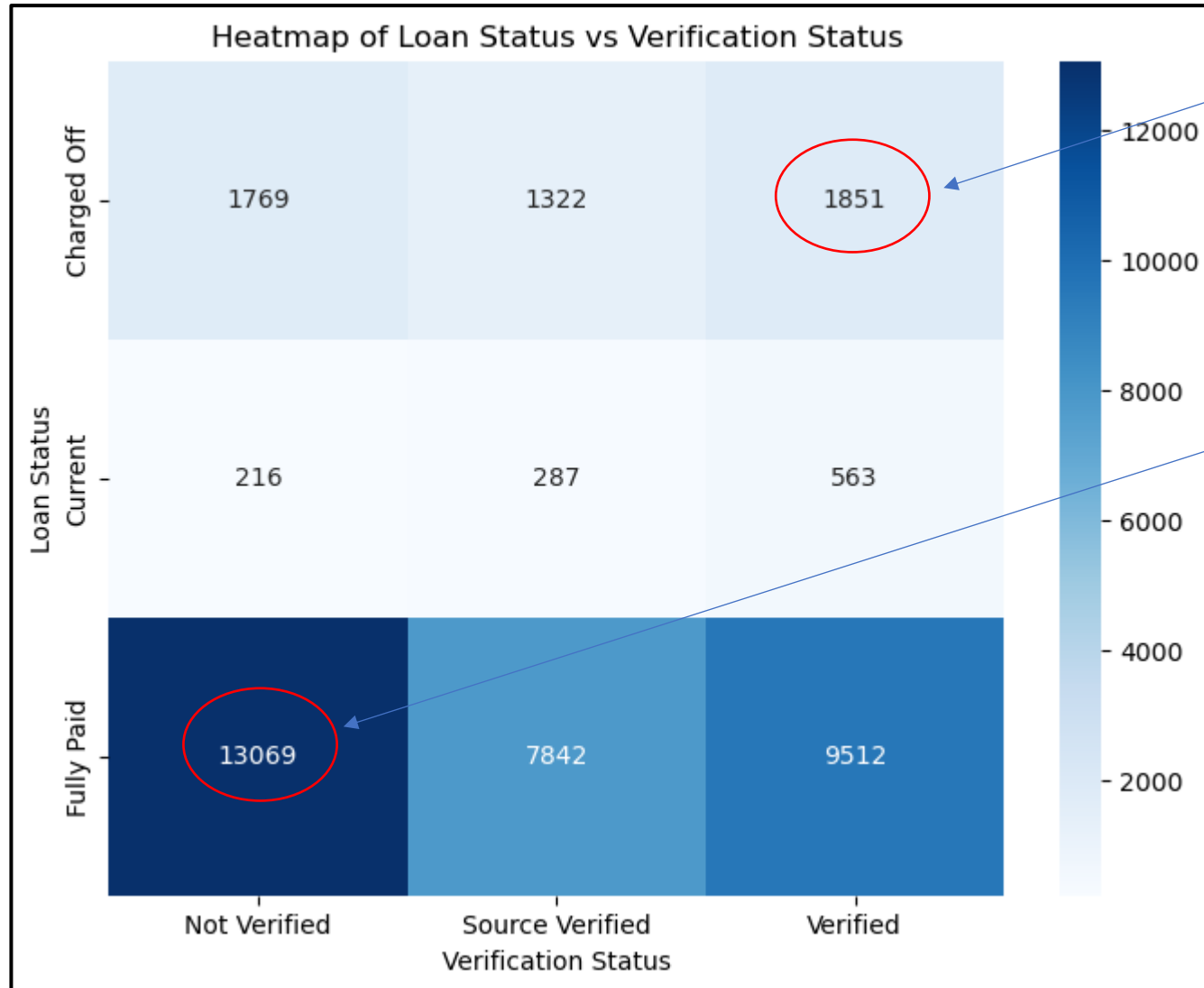


- “Debt_consolidation” is highest selling Loan product category
- “Credit_card” is 2nd highest selling product

Data Analysis – EDA

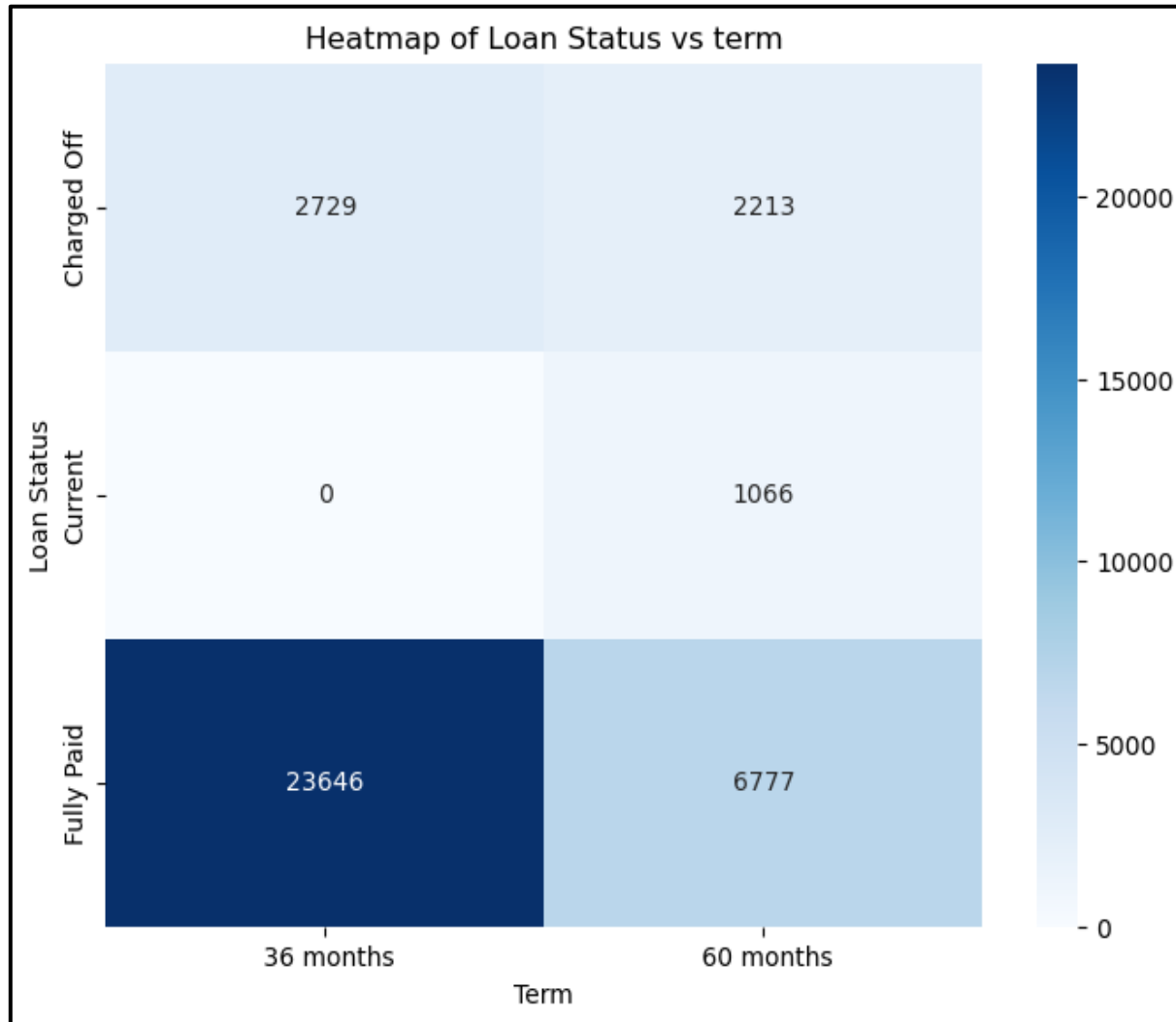
Bivariate Analysis

Verification Status vs Loan Status



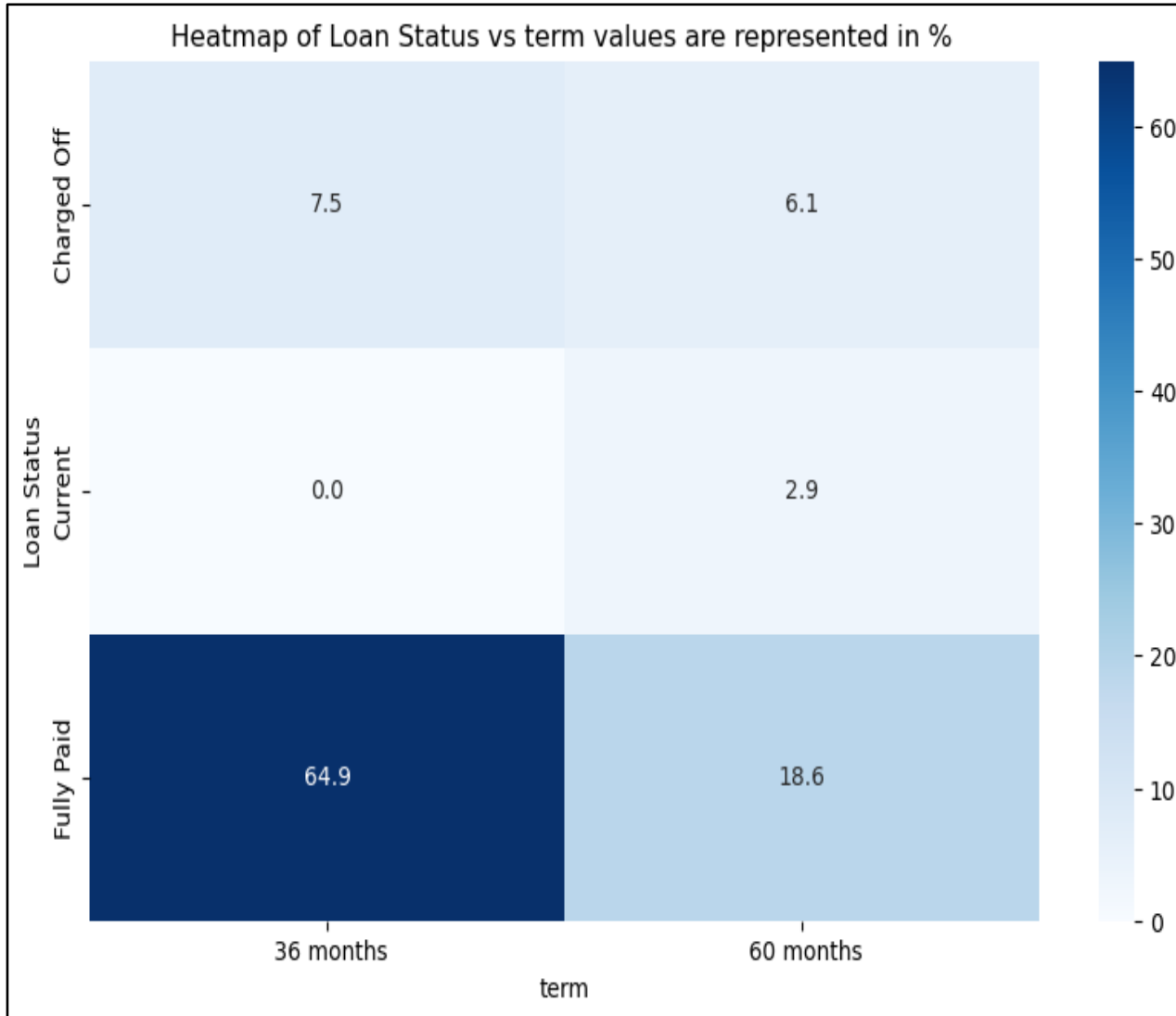
- **Verified status has highest number of defaulter**
- **Verified loans defaults are more than not verified**
- **Not Verified is having highest number of Fully Paid loan status**

Term vs Loan Status



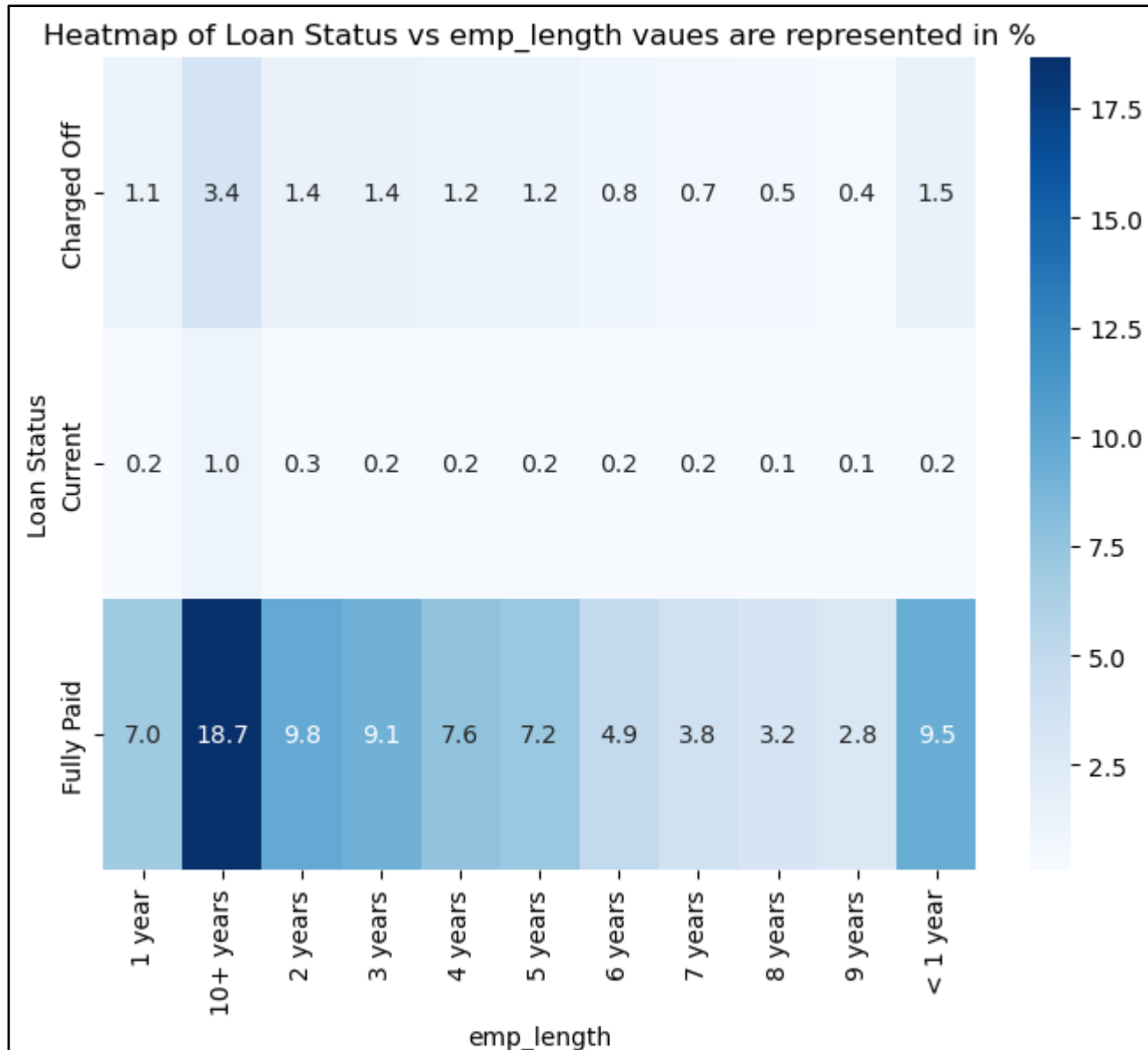
- **Loan term 36 months has higher number of fully paid loan status**
- **36 months shorter loan terms are more favourable for the business, as they result in a higher proportion of fully paid loans status**
- **60 months Long loan terms are not favourable for the business as defaulter numbers are high**

Term vs Loan Status



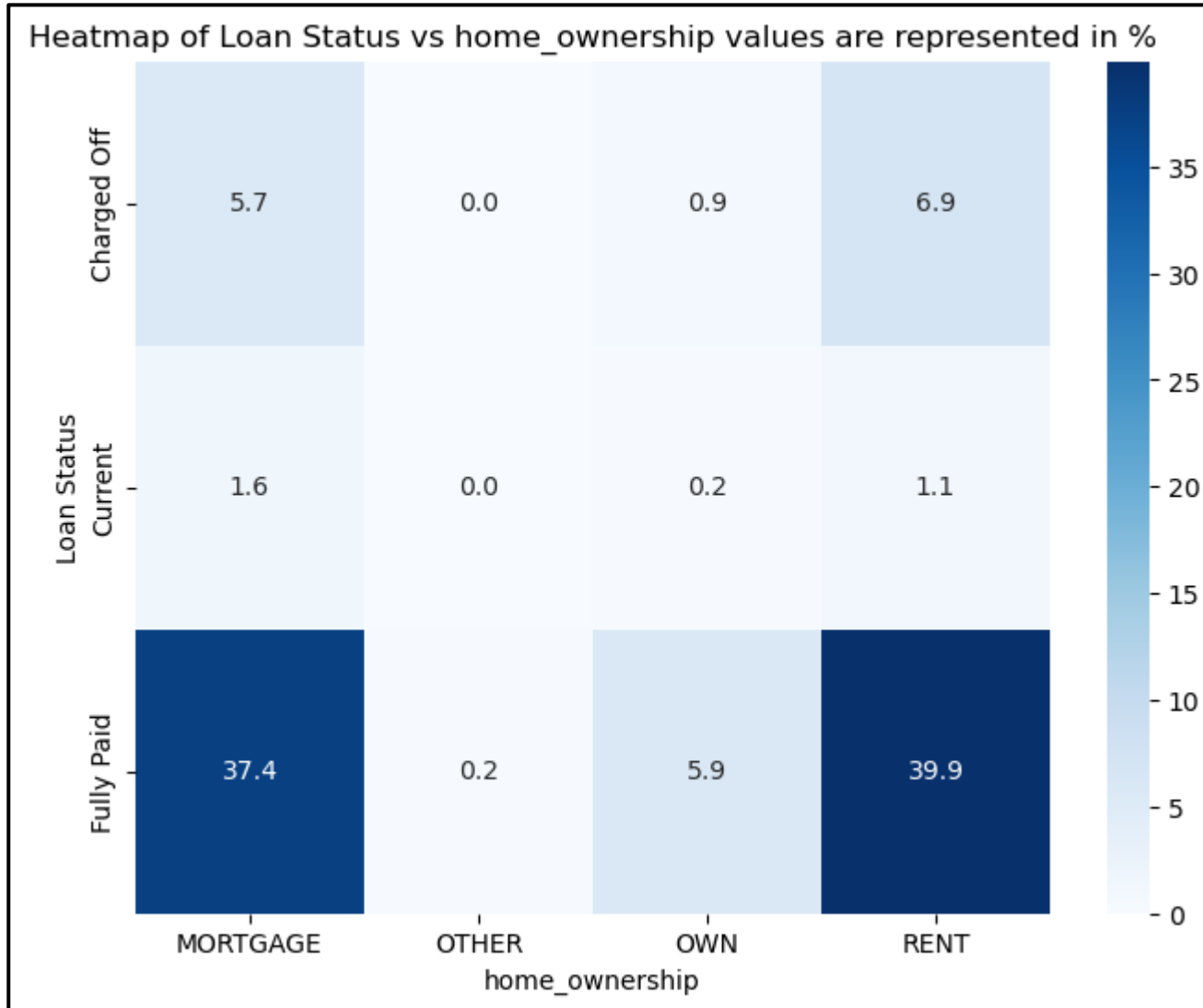
- **Loan term 36 months has higher number as well higher percentage of fully paid loan status**
- **36 months shorter loan terms are more favourable for the business, as they result in a higher proportion of fully paid loans status**
- **60 months Long loan terms are not favourable for the business as defaulter percentage is high**

Employment length vs Loan Status



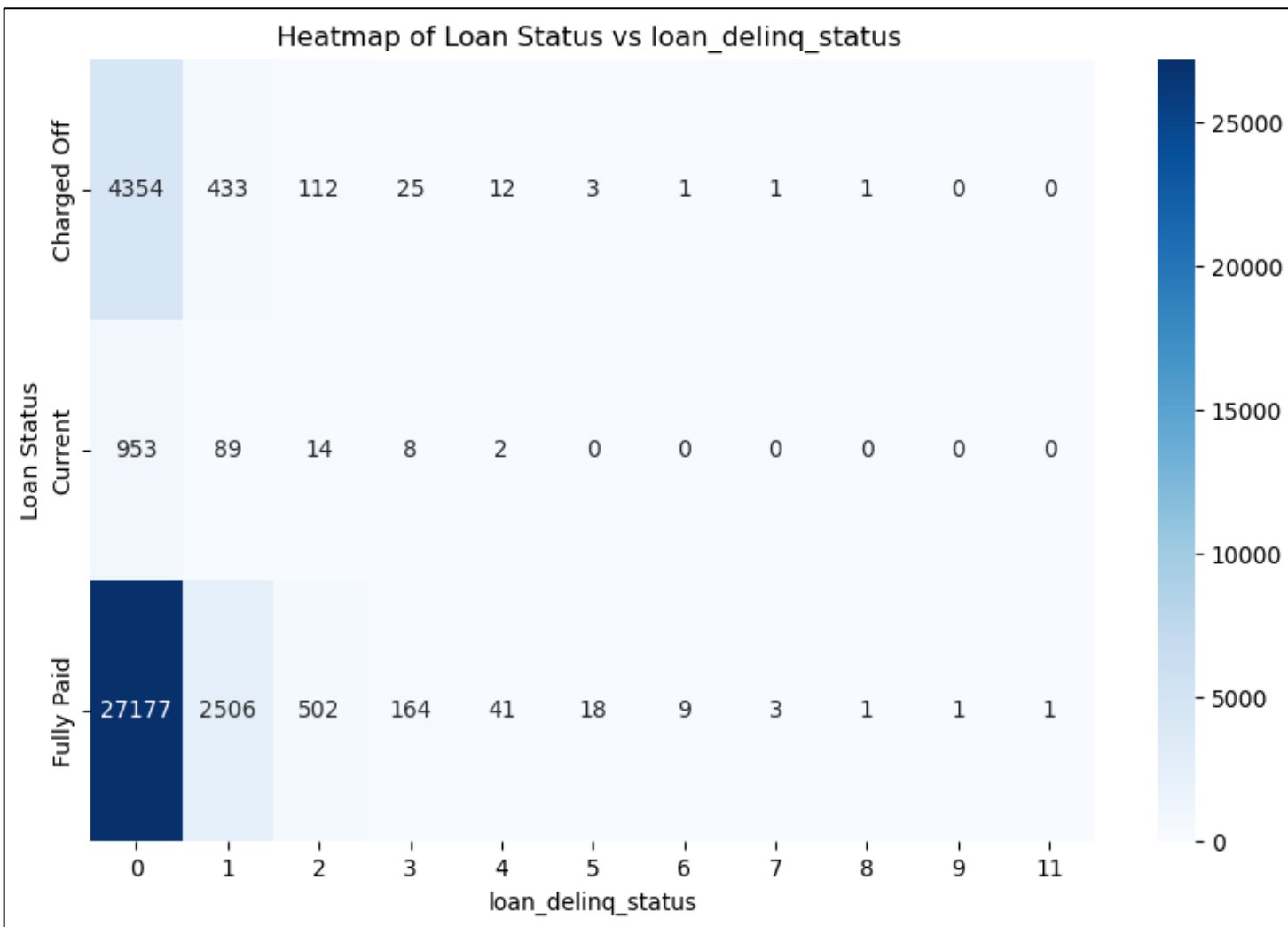
- A Employment length of 10+ year are having highest percentage of Fully paid loan status
- Loan applicants with 10+ years of employment more favourable for the business, as they are more likely to result in fully paid loans

Home owner vs Loan Status



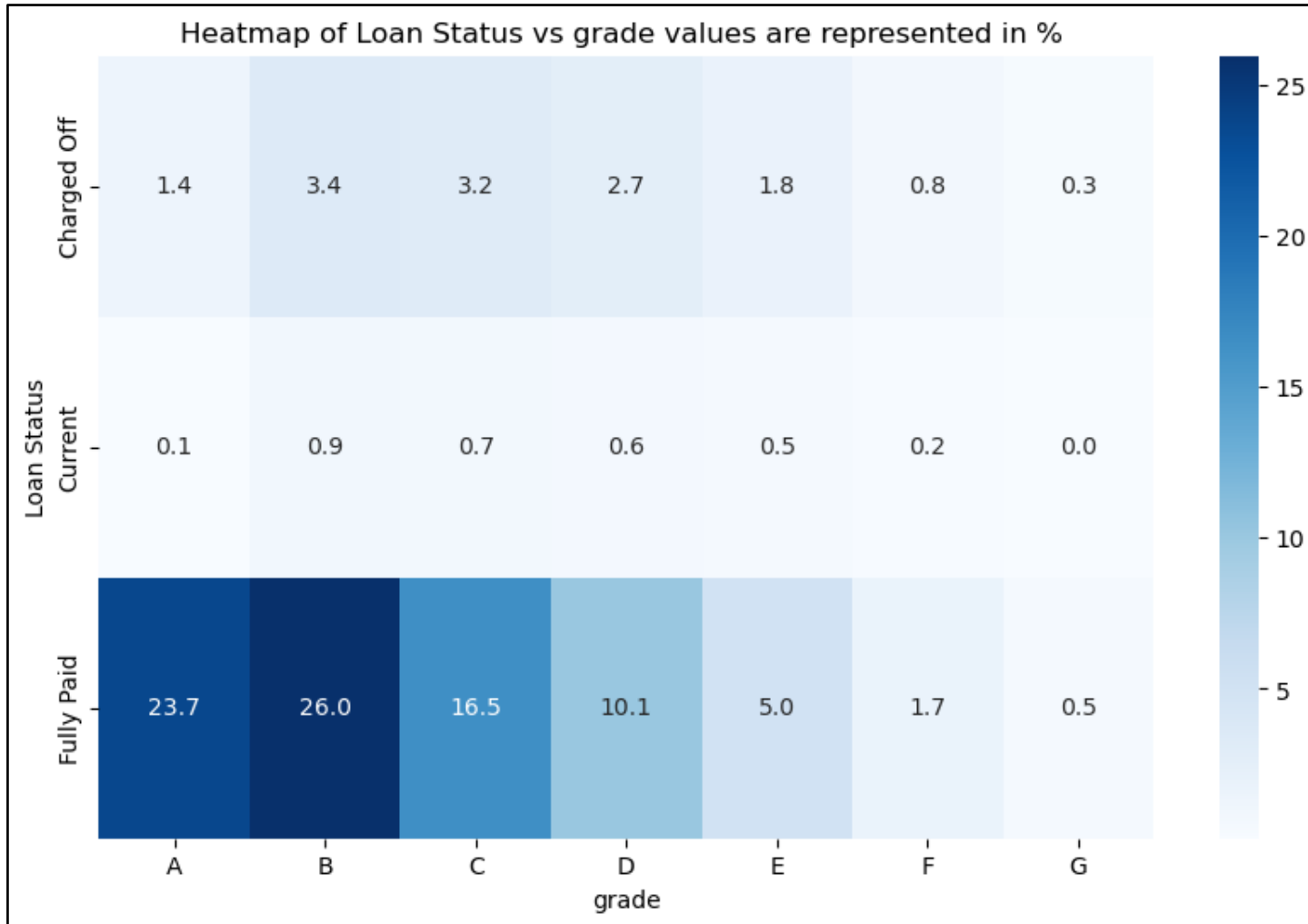
- Home owner status as Mortgage or Rental are more favourable for the business
- Home owner status as OWN and Other are not the higher number of loan applicant, Not favourable for business

Loan delinq vs Loan Status



- The number of 30+ days past-due incidences of delinquency in the borrower's credit file for the past 2 years

Grade vs Loan Status



- **Grade A and B are more favourable for business compare to Grade C,D,E,F and G**
- **Loan Fully paid percentage is higher for Grade A and B compare to C,D,E,F and G**

Summary

- The "Debt Consolidation" category is the top-selling loan product, followed by "Credit Card" as the second most popular product
- The verified status has the highest number of defaulters, with verified loans defaulting more frequently than non-verified loans. Lending Club Finance Company should review and enhance its loan applicant verification process for better outcomes
- 36 months shorter loan terms are more favourable for the business, as they result in a higher proportion of fully paid loans status
- 60 months Long loan terms are not favourable for the business as defaulter numbers are high
- Loan applicants with 10+ years of employment more favourable for the business, as they are more likely to result in fully paid loans and less defaulter
- Home owner status as Mortgage or Rental are more favourable for the business
- Home owner status as OWN and Other are not the higher number of loan applicant, Not favourable for business
- Loan Fully paid percentage is higher for Grade A and B compare to Grade C,D,E,F and G . Grade A and B are more favourable for business compare to Grade C,D,E,F and G