

# Lending Club Case Study

ML C64 April 2024

Batch ID : 5800

## Team Members

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# Problem Statement

A consumer finance company which specialises in lending various types of loans to urban customers, **needs to make a decision** on loan applications based on the **applicant's profile**.

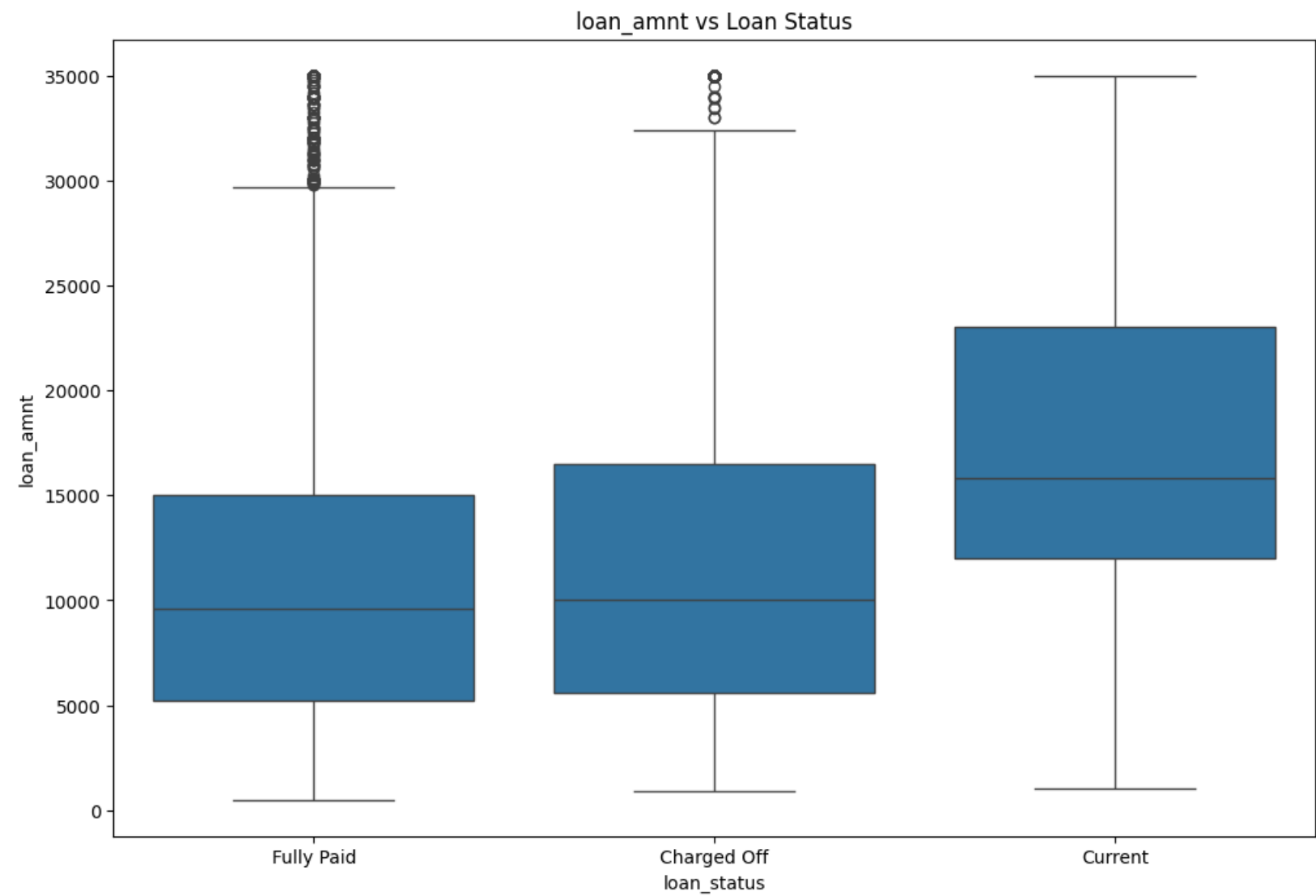
Decision can be

- **Approval** – if applicant is likely to repay the loan
- **Rejection** – if applicant is not likely to repay the loan

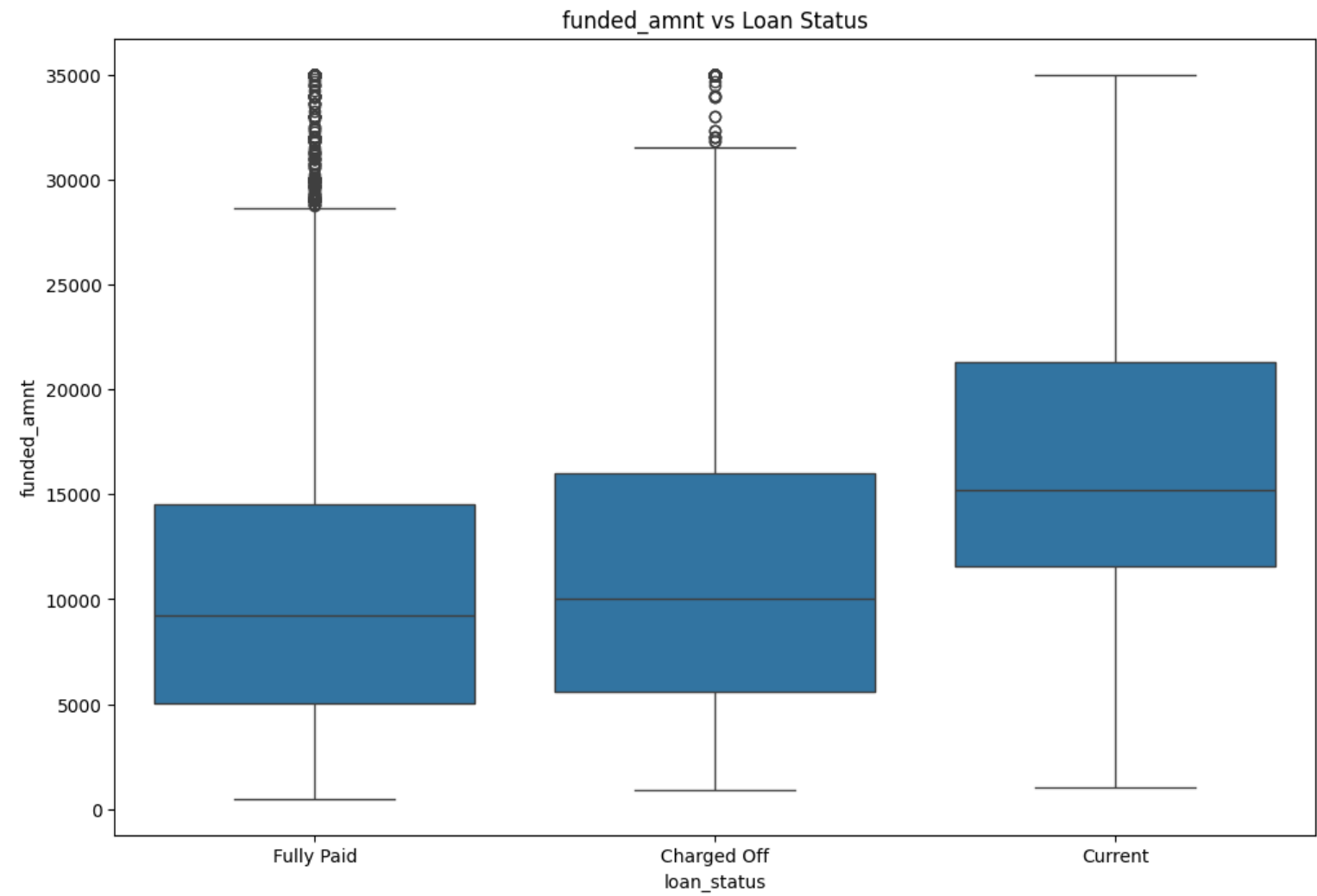
# Objective

- Analyse past loan applicant's data
- Identify key variables that help in predicting likelihood of loan defaulters based on the data pattern
- Visualize the analysis with different charts and graphs along with conclusions

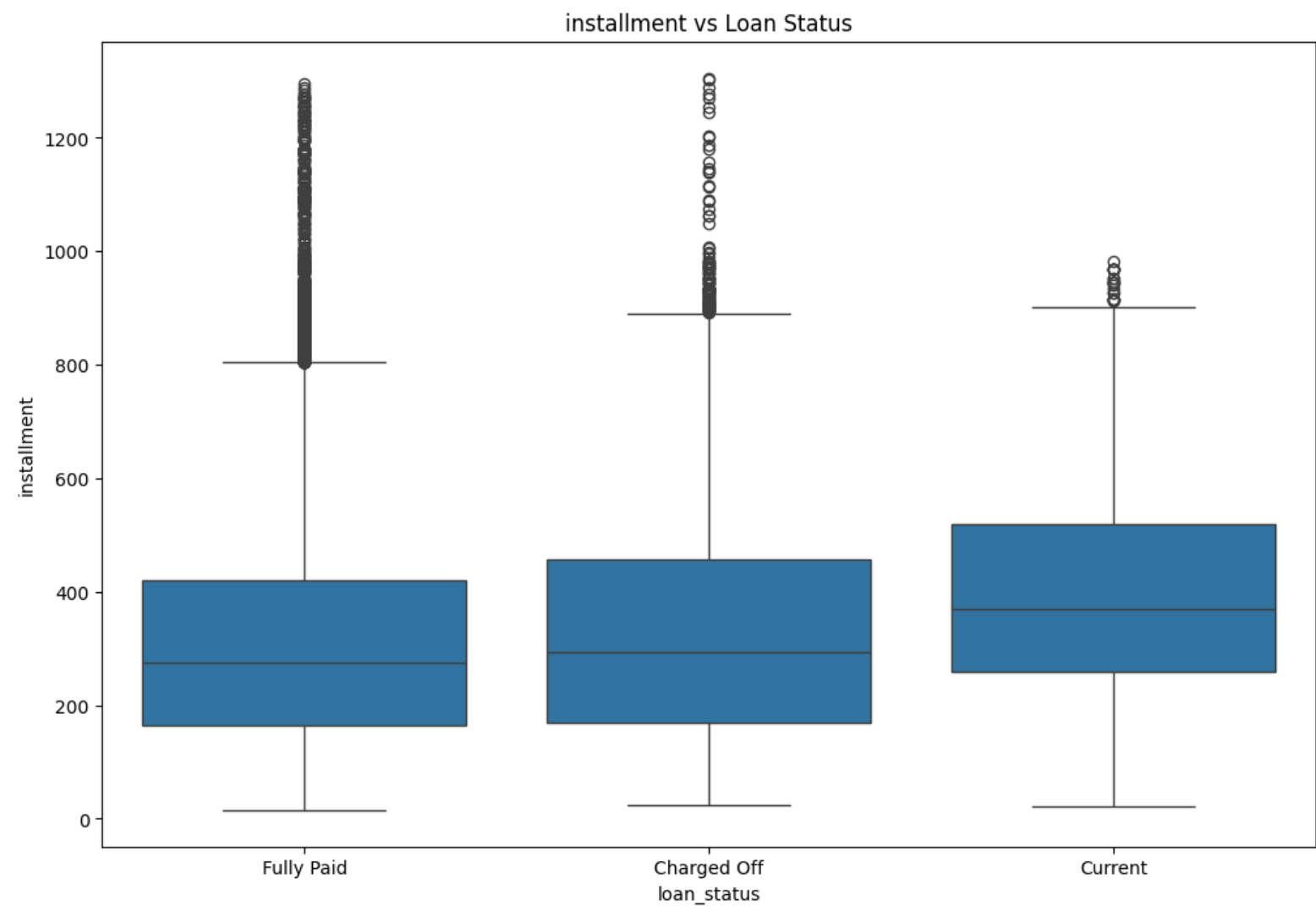
# Numerical columns distribution analysis



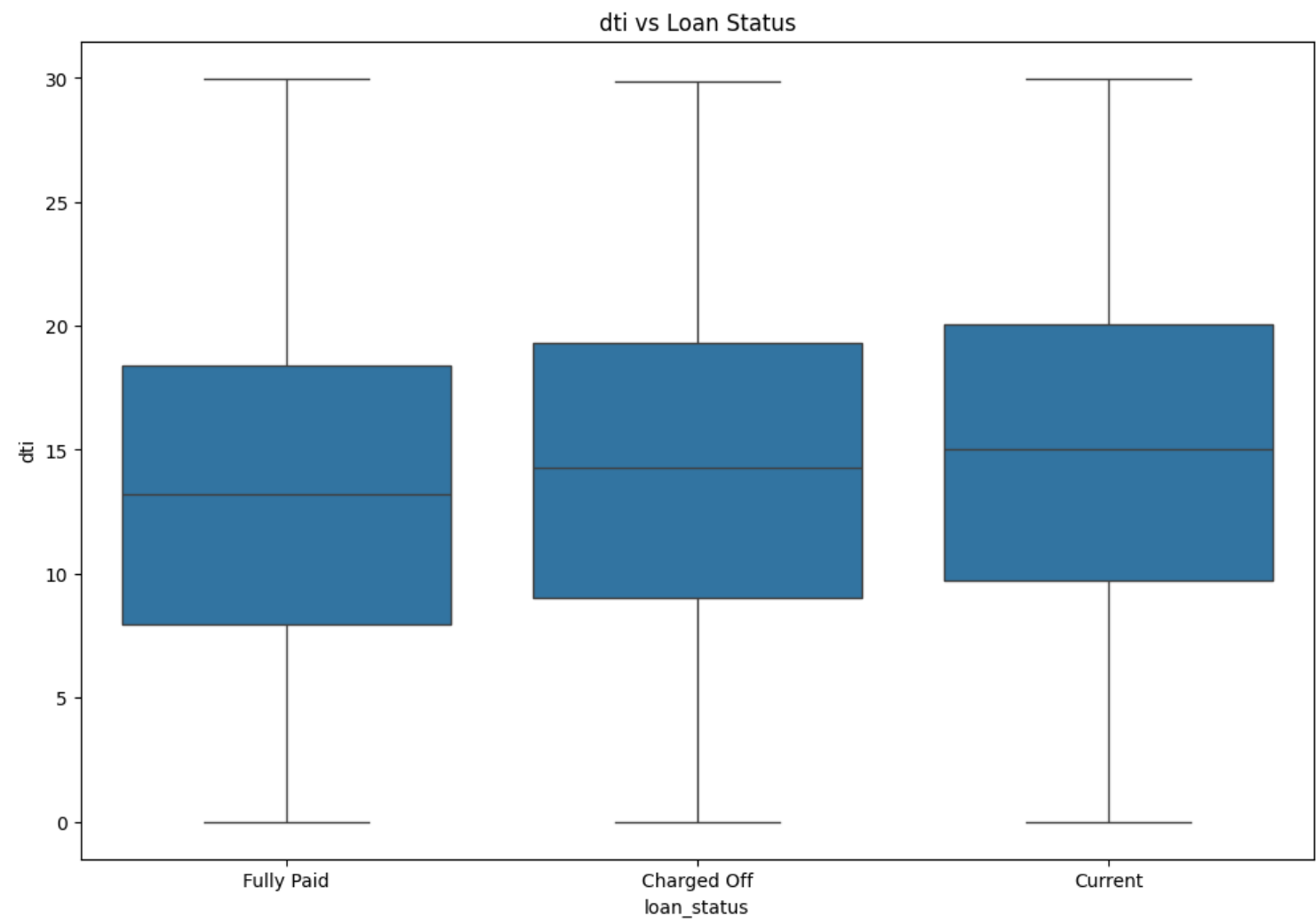
# Numerical columns distribution analysis



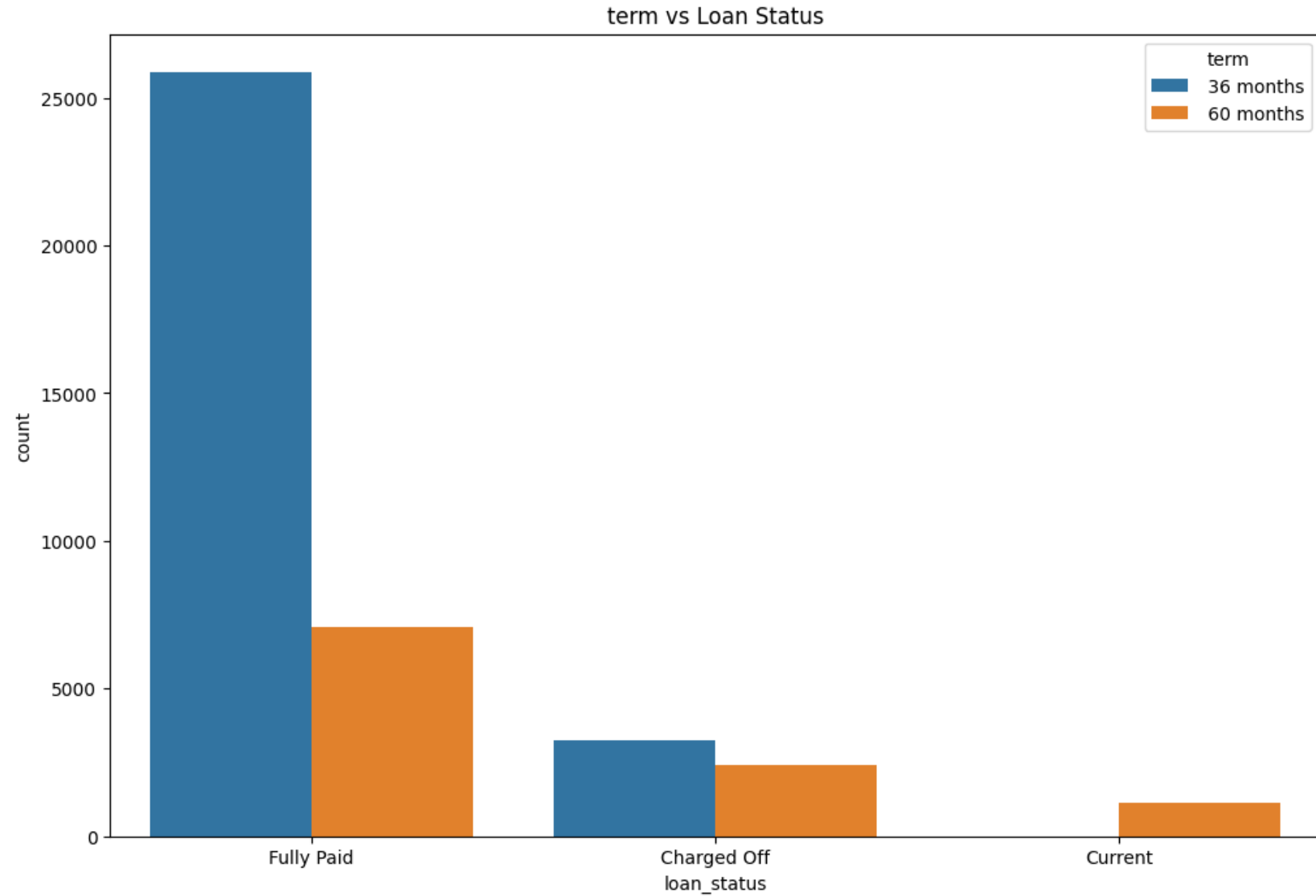
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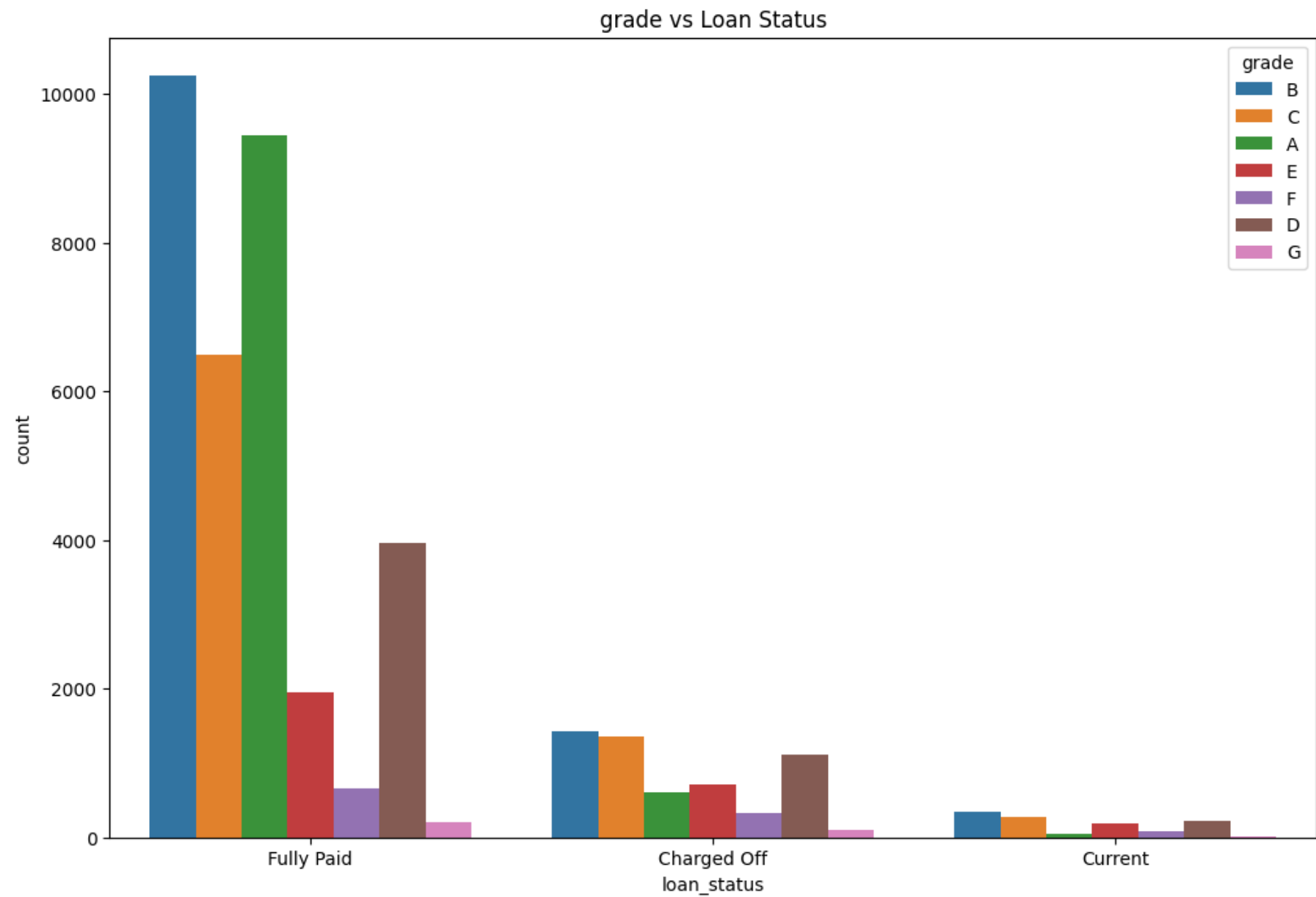


## Categorical columns distribution analysis

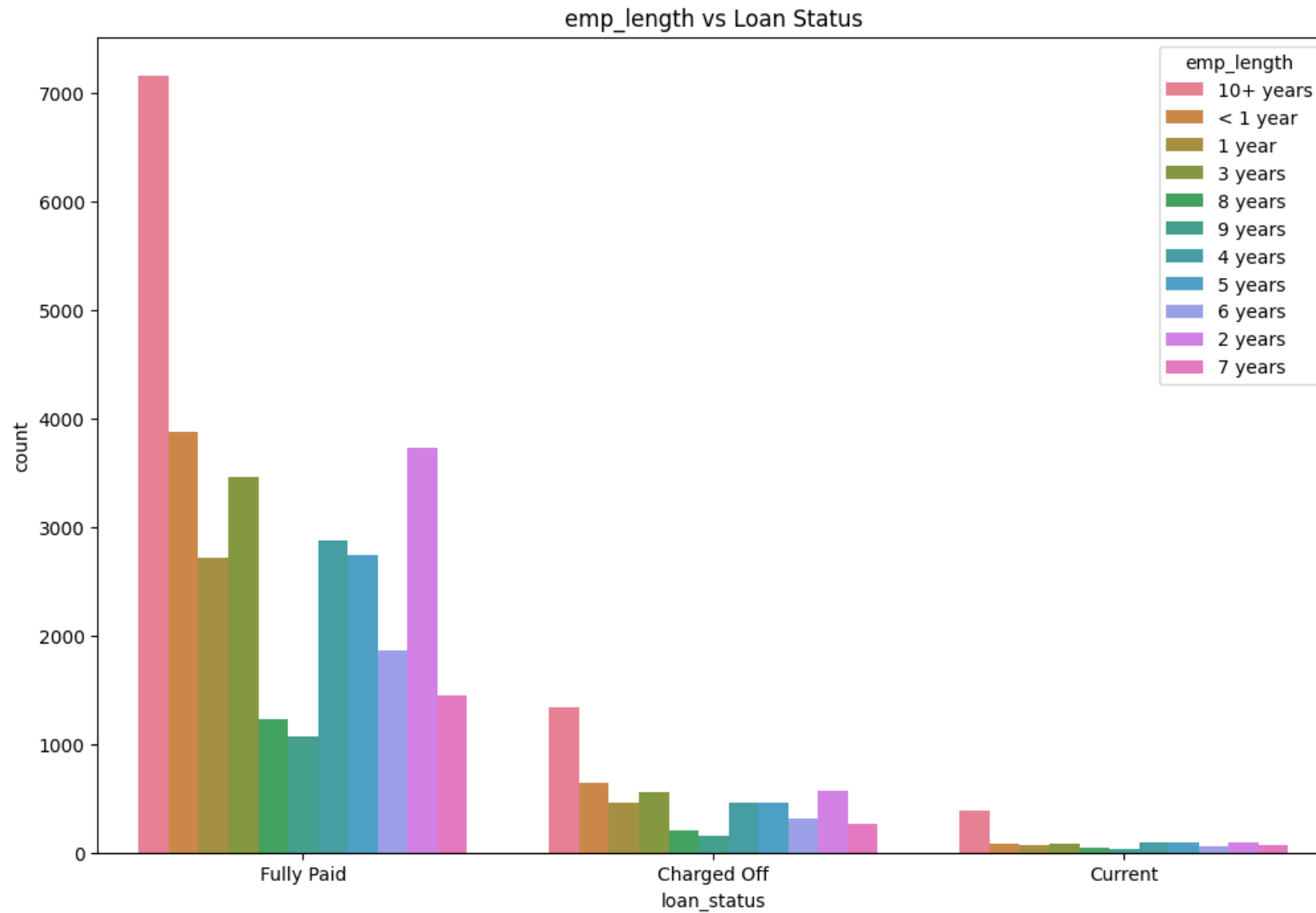




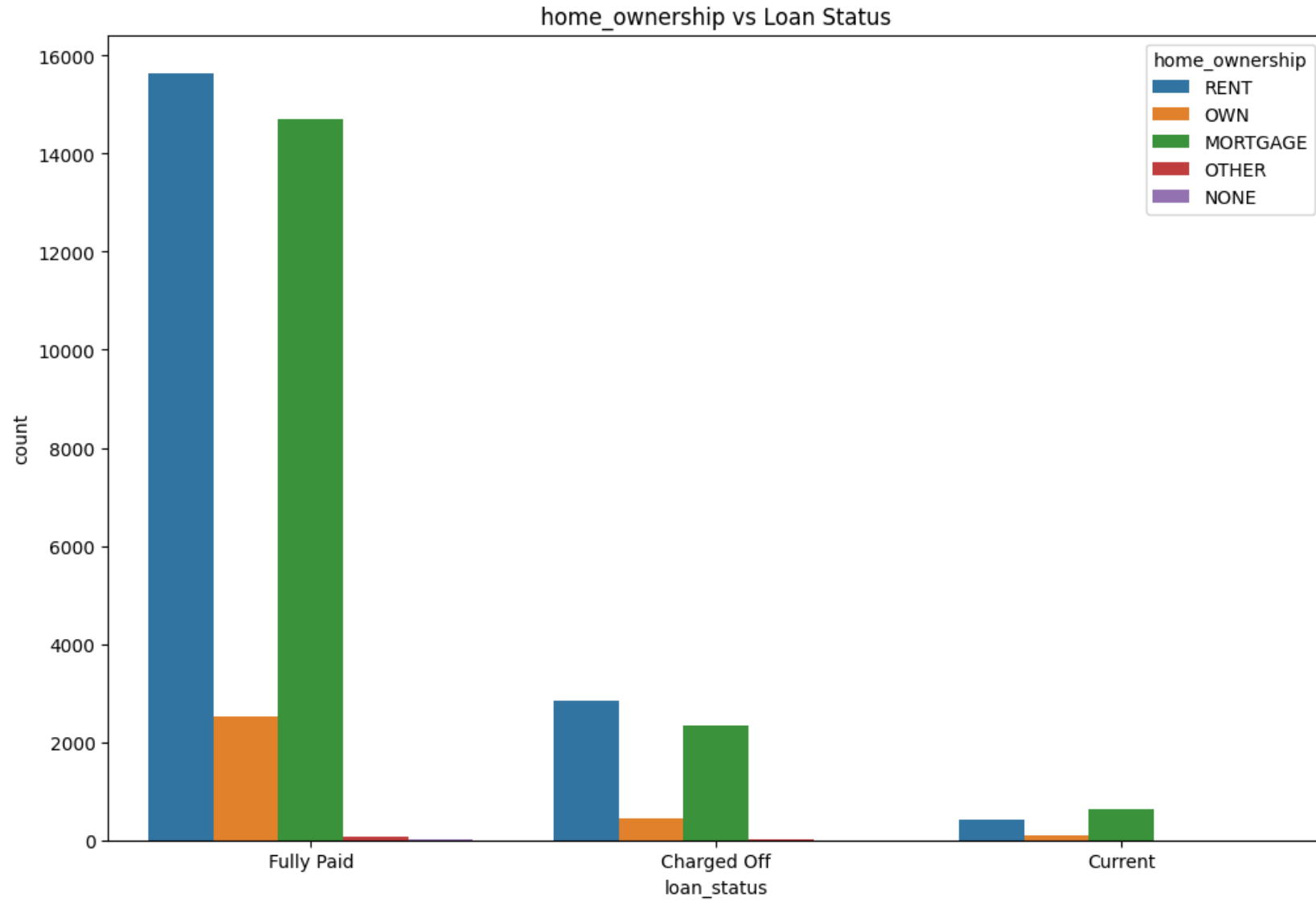
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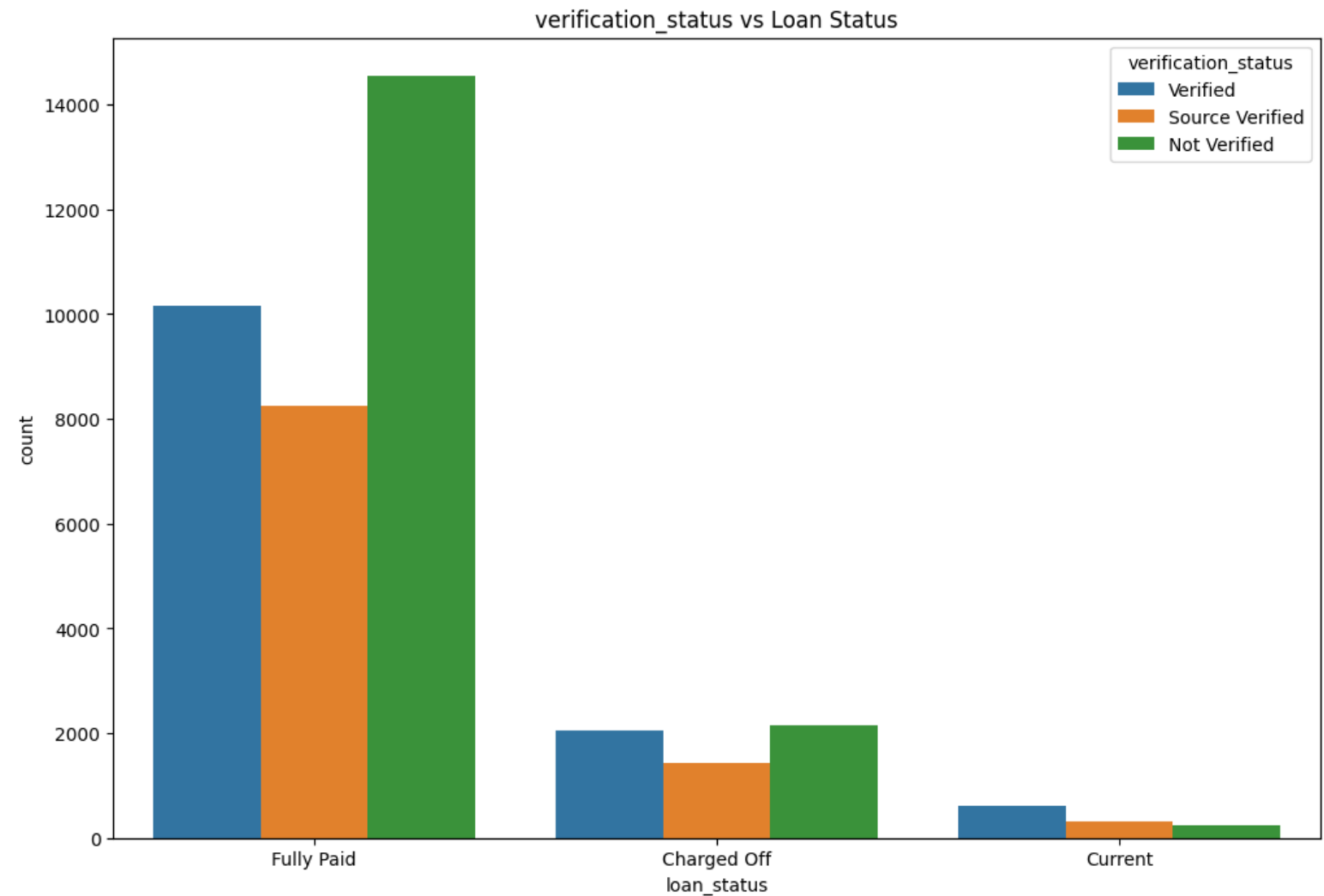
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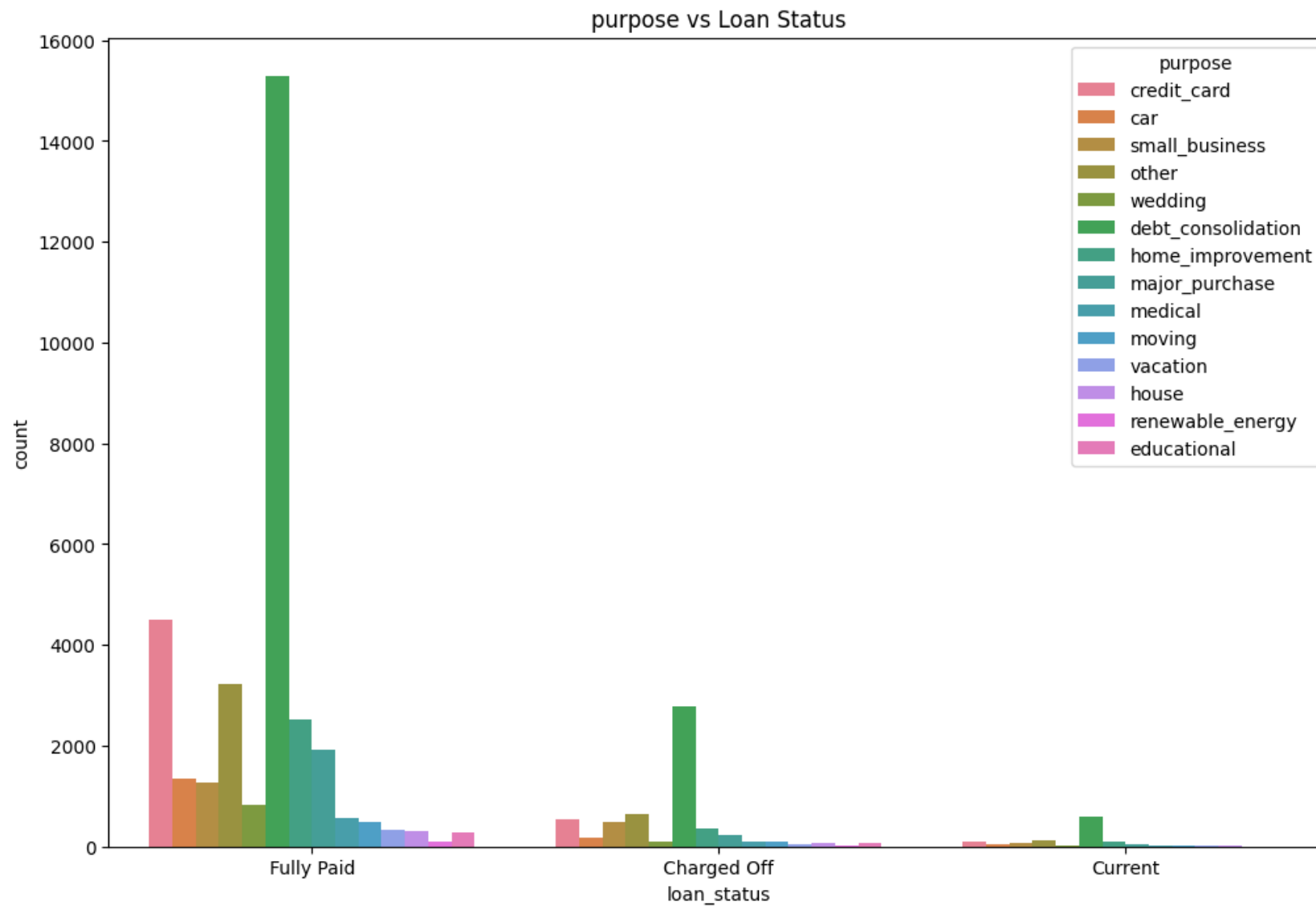
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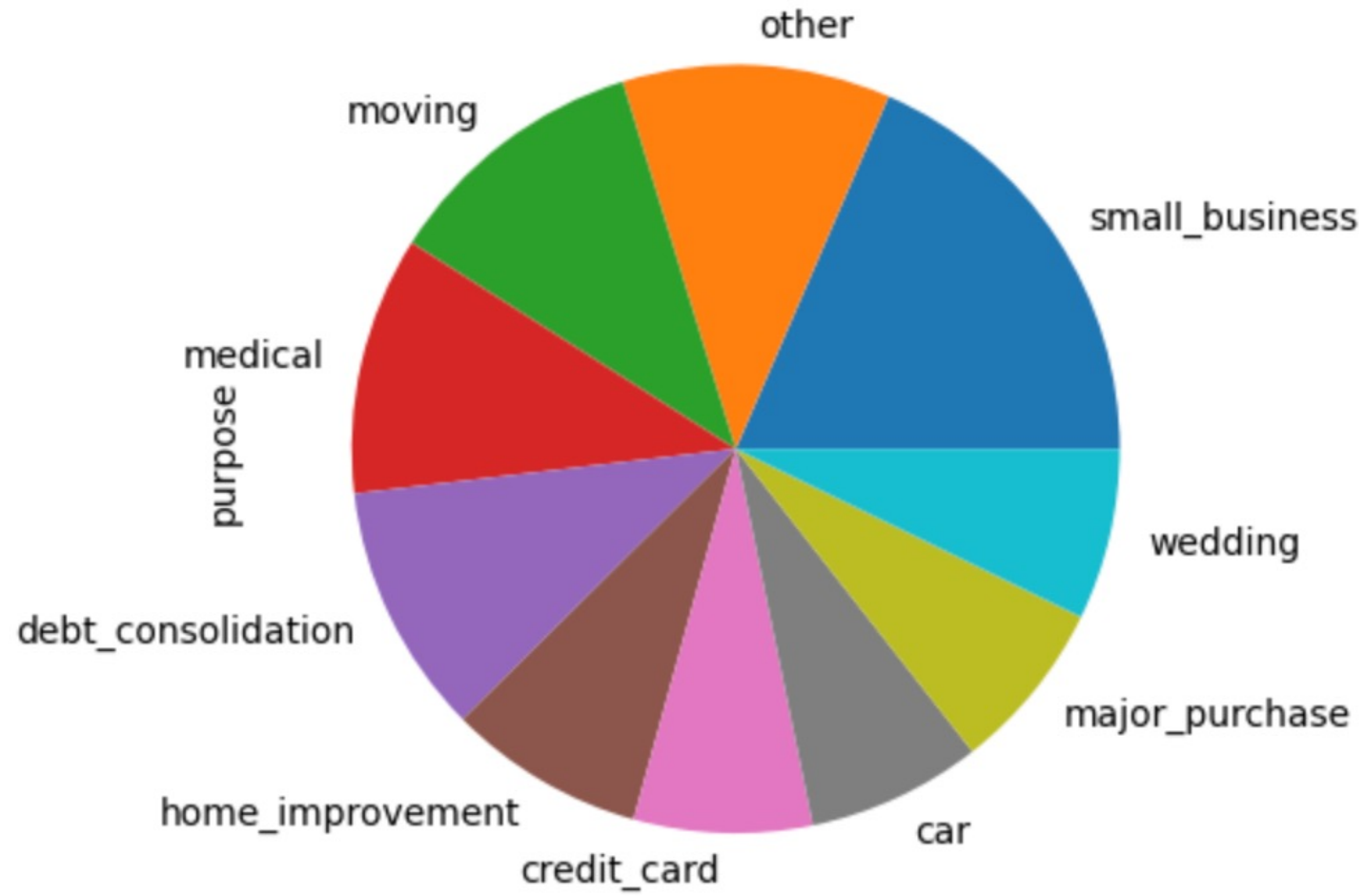
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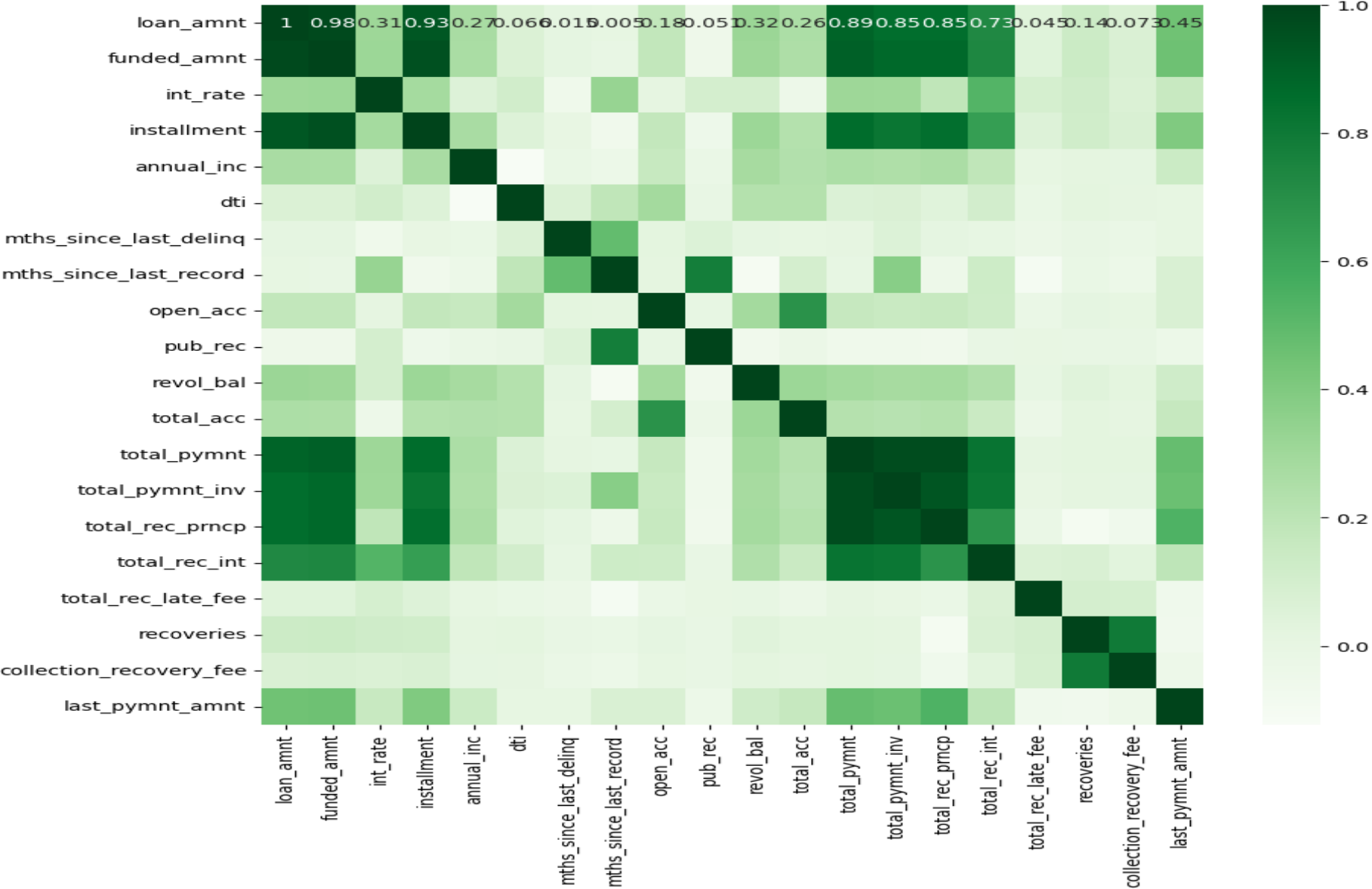
## Categorical columns distribution analysis



## Loan purpose distribution for Defaulted applicants



# Multivariate Analysis



## **Conclusions**

1. Applicants with shorter Loan Term are more likely to default
2. Applicants with Annual income of less than 120,000 are more likely to default
3. Applicants with DTI ratio more than 10% have struggled to replay the loan most
4. Verification Status has no impact on Defaulter rate, as verified applicants are the most who defaulted on repayment
5. Interest Rate has positive correlation with loan defaults. Applicants are more likely to default with higher interest rate.
6. Grades have positive correlation with defaulter percentage. Applicants with lower grades are more likely to default.
7. Applicants with Rented home are slightly more likely to default than applicants with Mortgaged or Own homes.