

LENDING CLUB CASE STUDY

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Business
Objective

Loan application

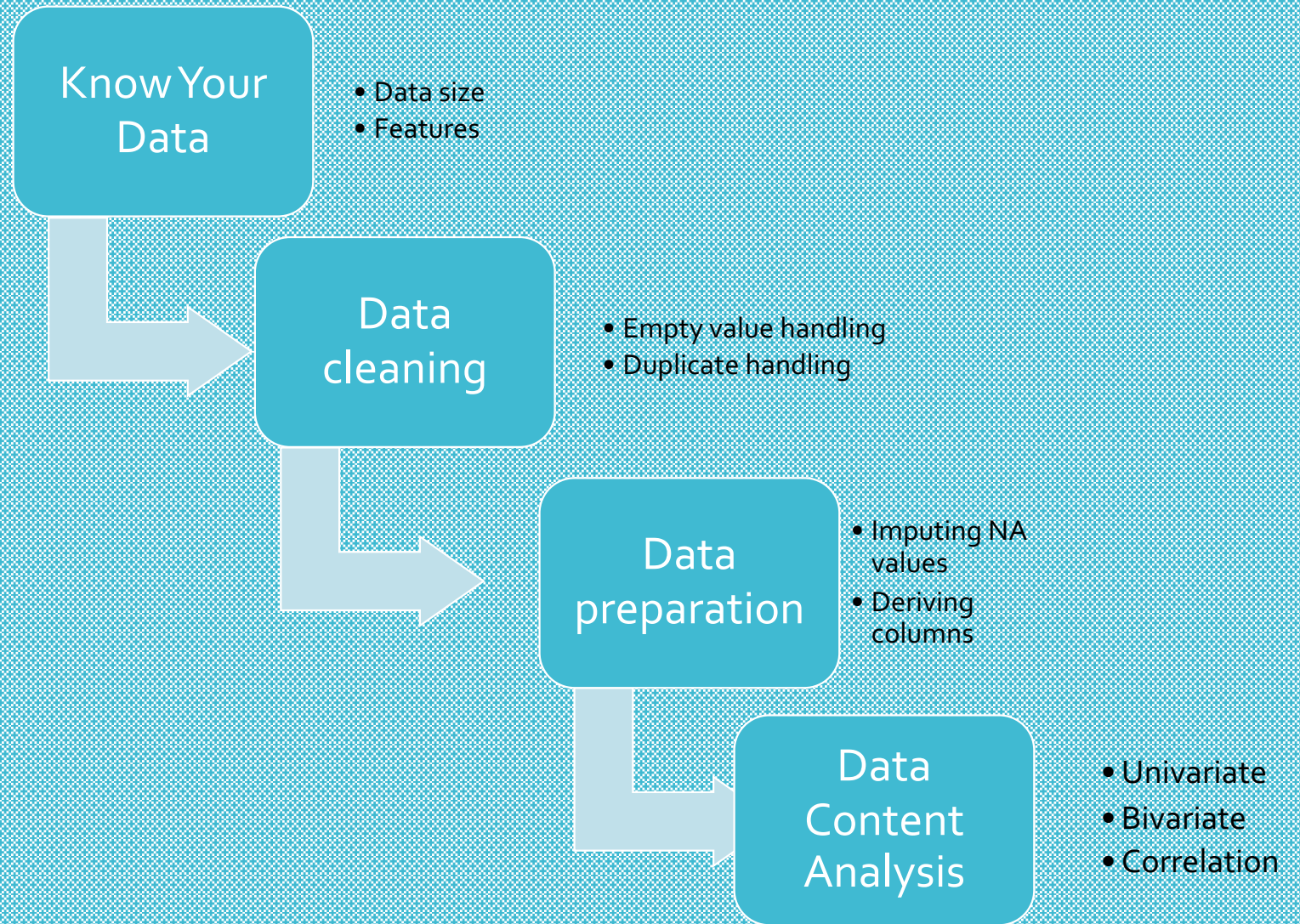


Predicting whether
loan defaults.



Loan processing

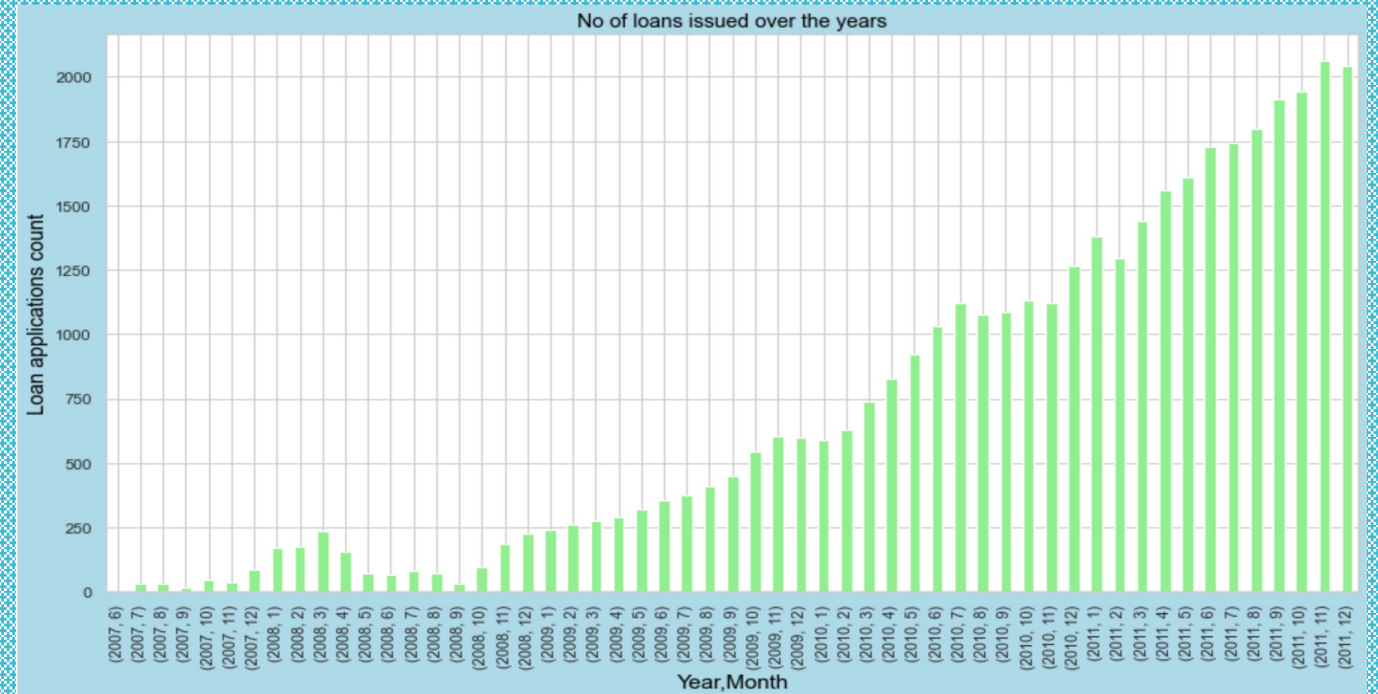
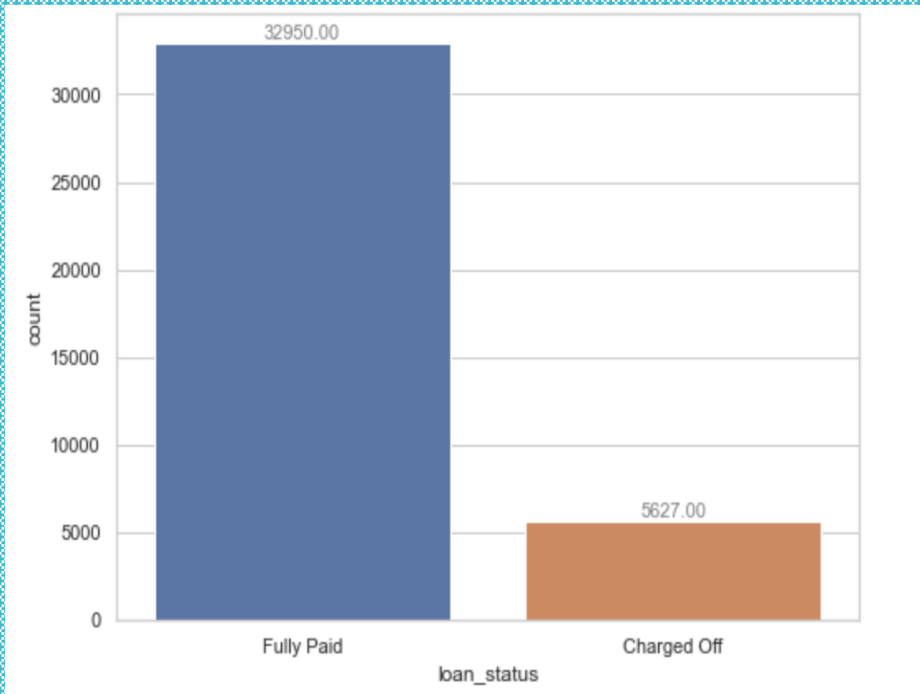
Analysis Process



Analysis Goals

1. The aim of this project is to **identify patterns** indicating if a person is likely to default.
2. Based on this identification we can **take actions** such as *denying* the loan, *reducing* the amount of loan, lending (to risky applicants) at a higher interest rate, etc.
3. Based on the data provided, we have analysed past loan applicants and their default status. We can now proceed with further insights and recommendations.

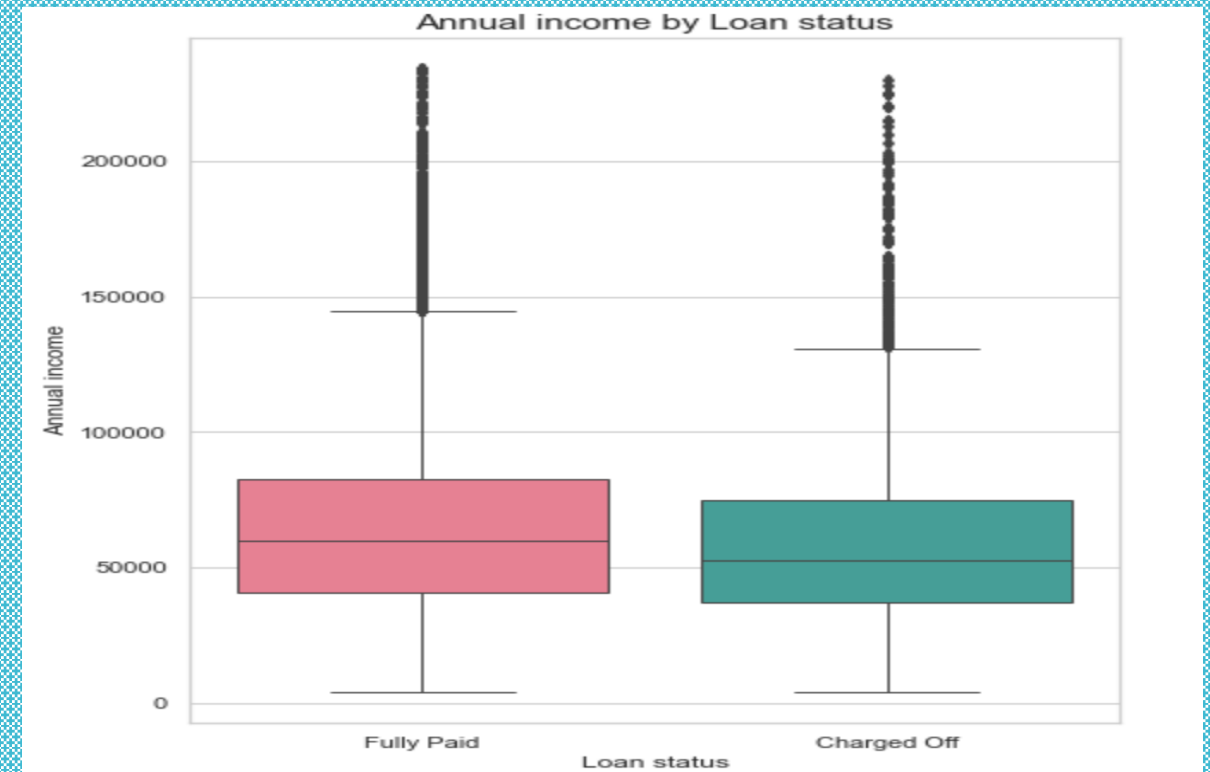
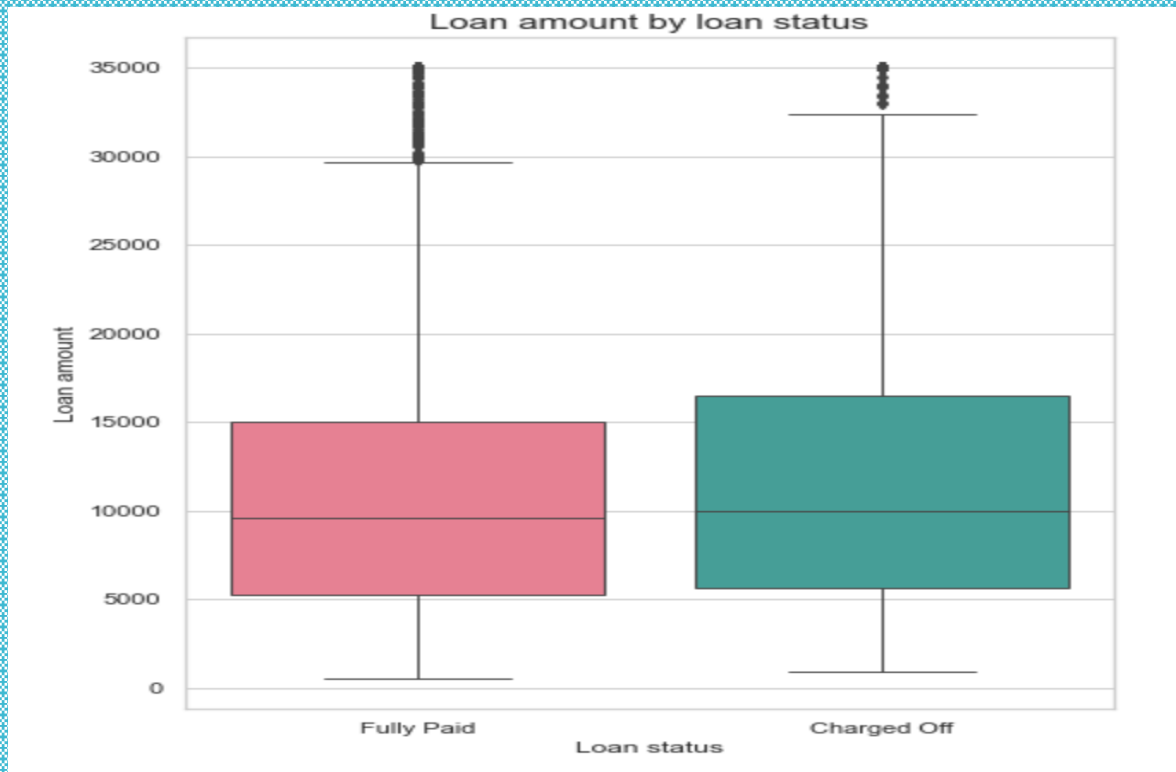
Loan Pattern Analysis



Observations:

- Charged Off aka default is around 6 times smaller than Fully Paid.
- The count of loan application increased every year, except for loans issued in 2008, this is probably due to Recession.

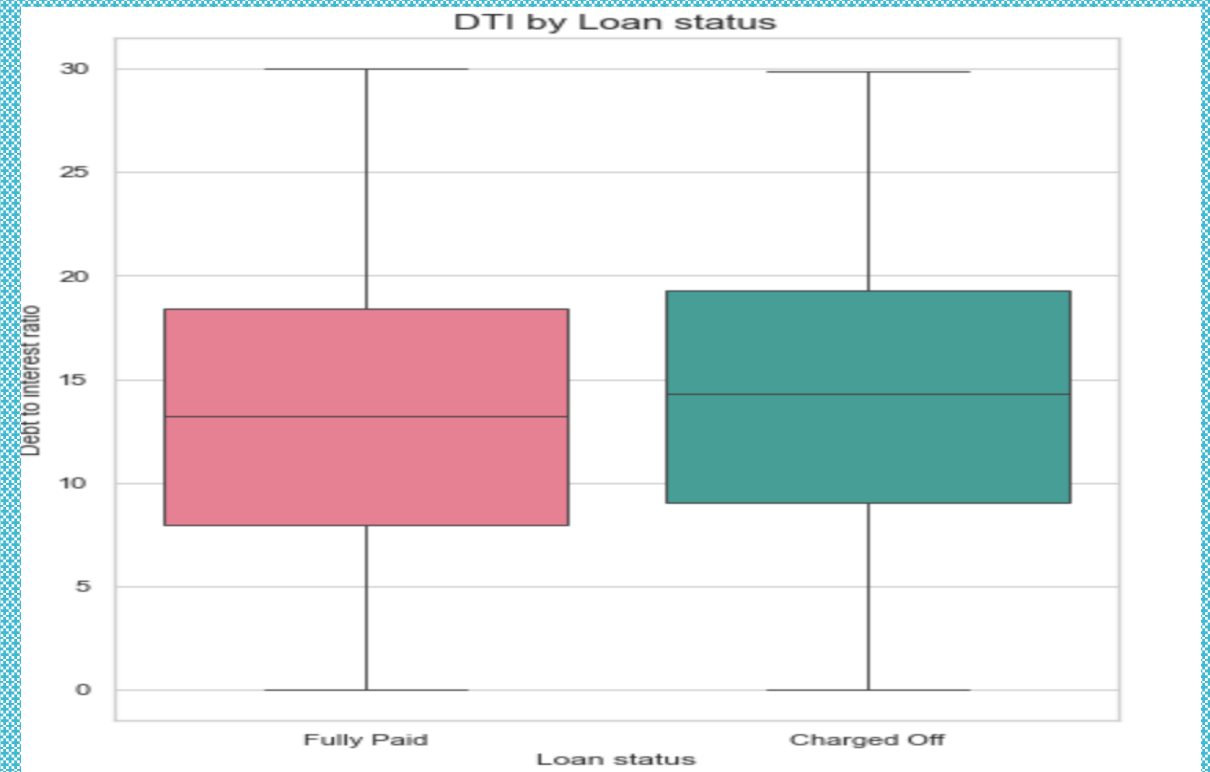
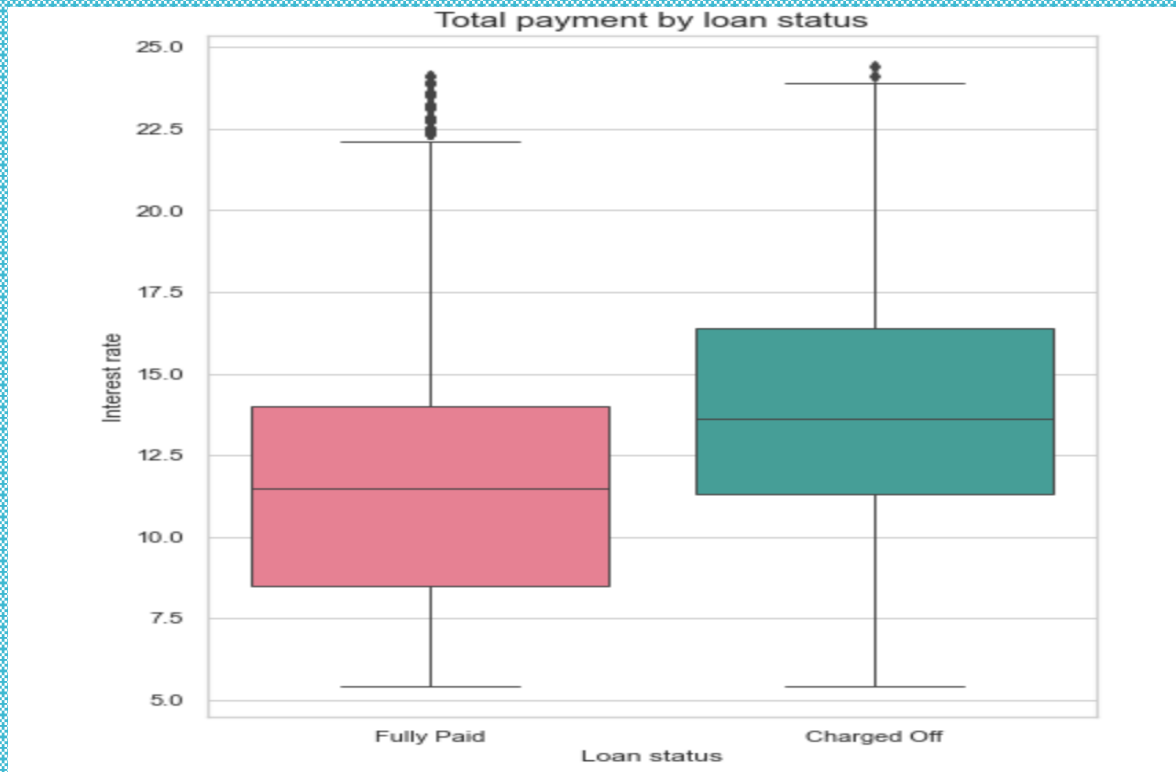
Loan amount & Annual Income Analysis



Observations:

- Loans with higher loan amount, have greater chances of being defaulted
- People with less annual income have more chance of defaulting.

Interest rate & DTI Analysis



Observations:

- People with high interest rate have more chance of defaulting.
- Lower debt to interest ratio have higher chance of paying back loan.

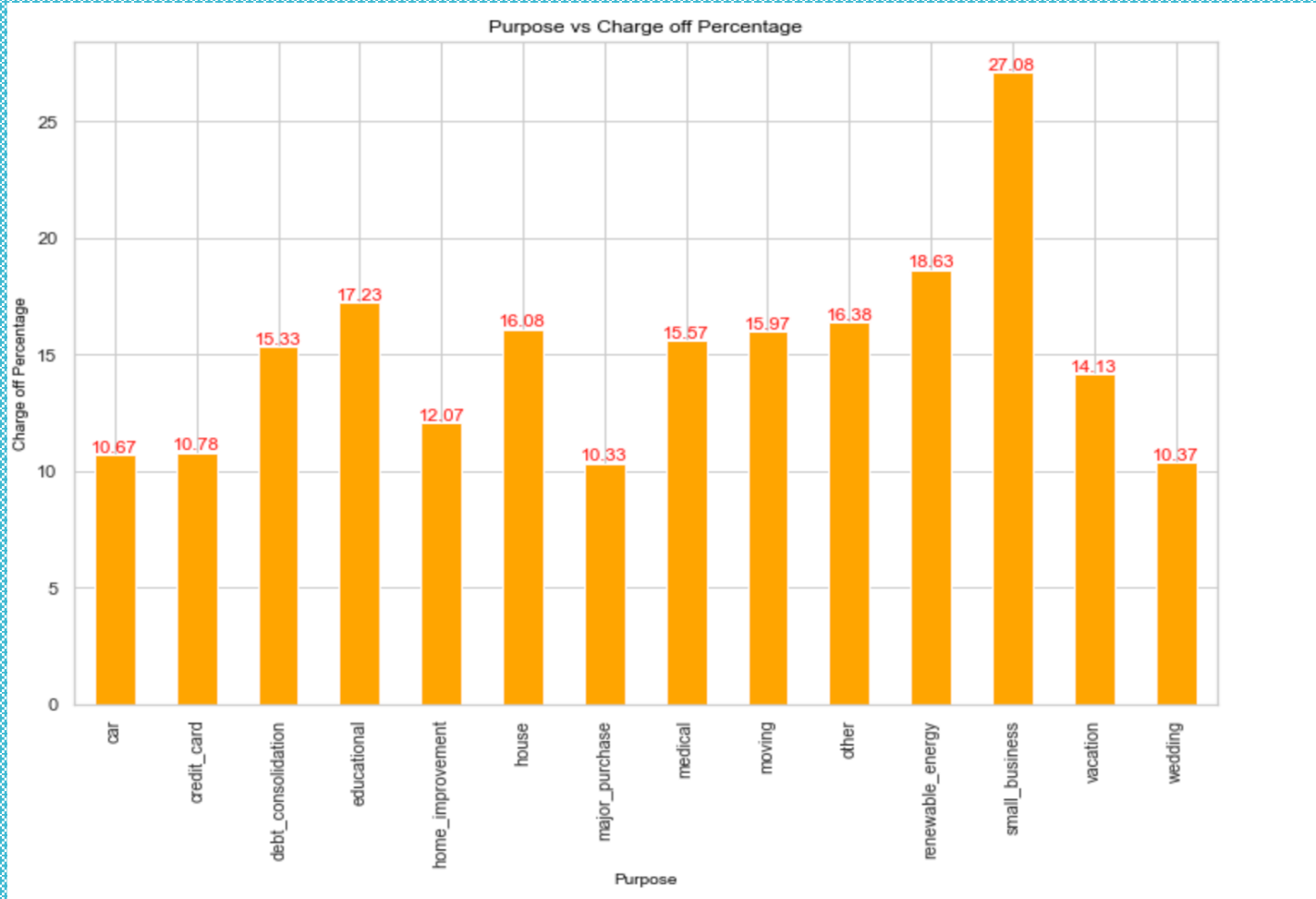
Credit utilization rate Analysis



Observations:

- Higher credit utilization rate increase the chance of default.

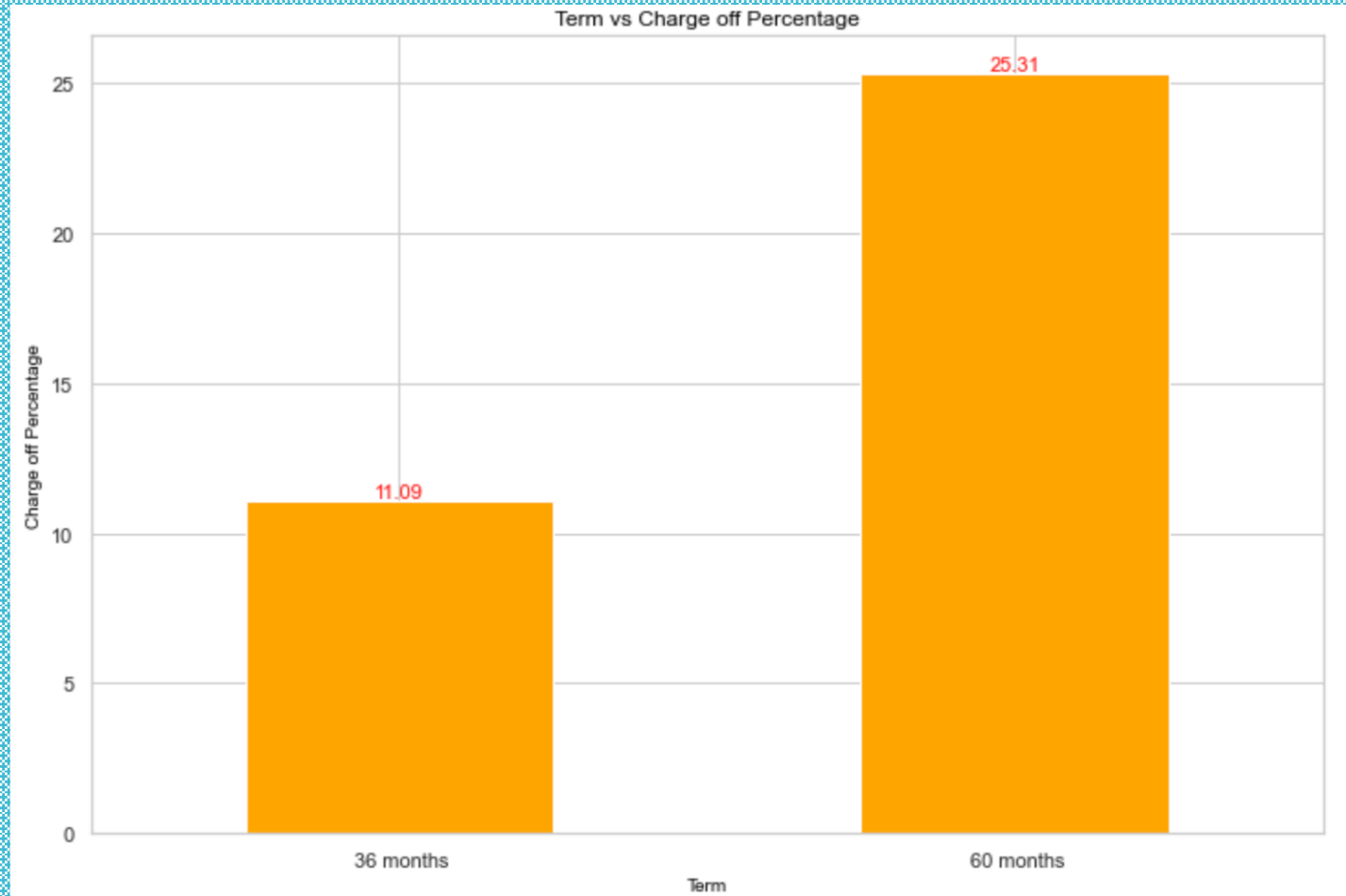
Purpose vs Default Analysis



Observations:

- High percentage of defaults happen for the small business, renewable energy and educational loans.

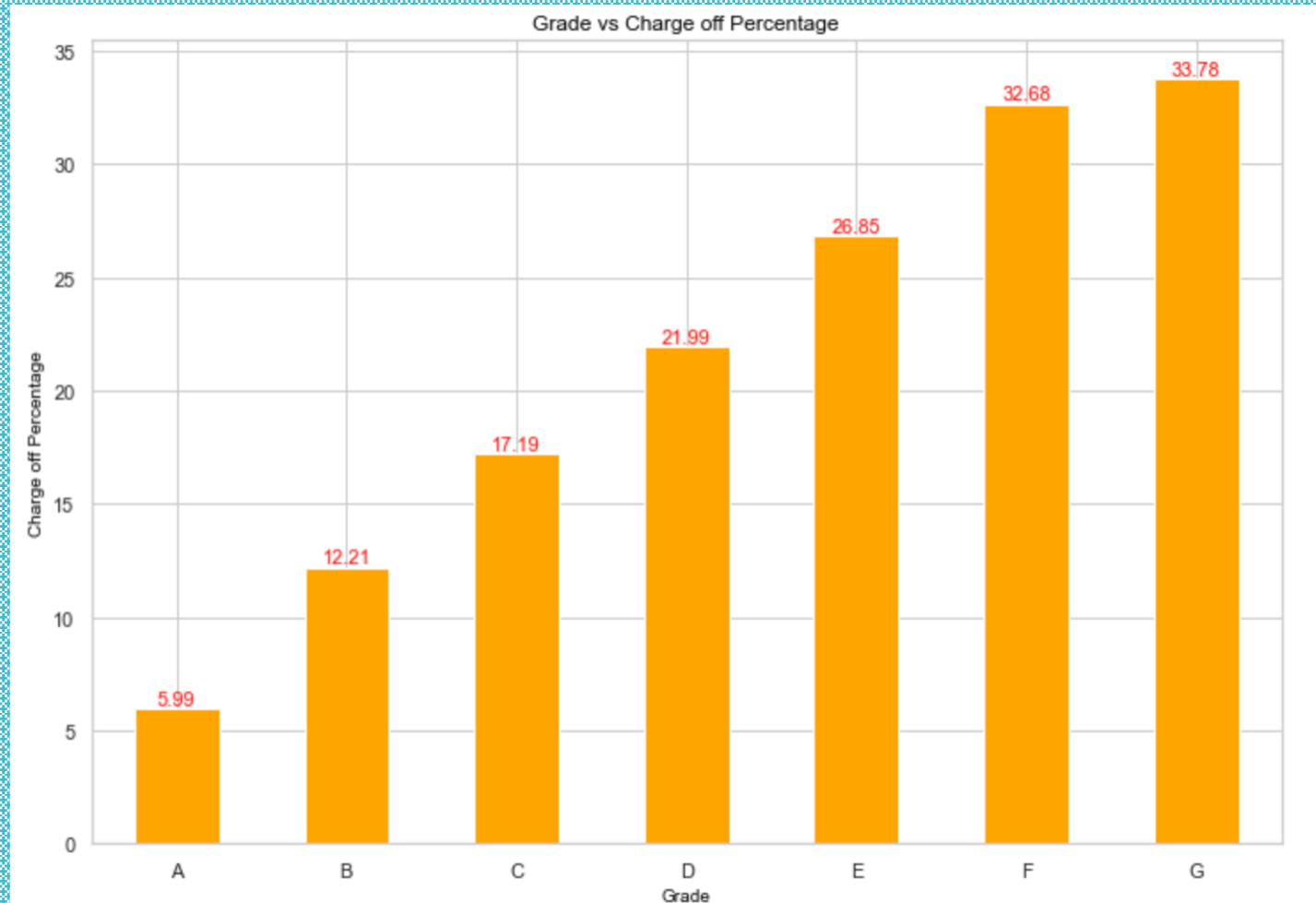
Term vs Default Analysis



Observations:

- There are higher chances of a default happen in 60 months term.

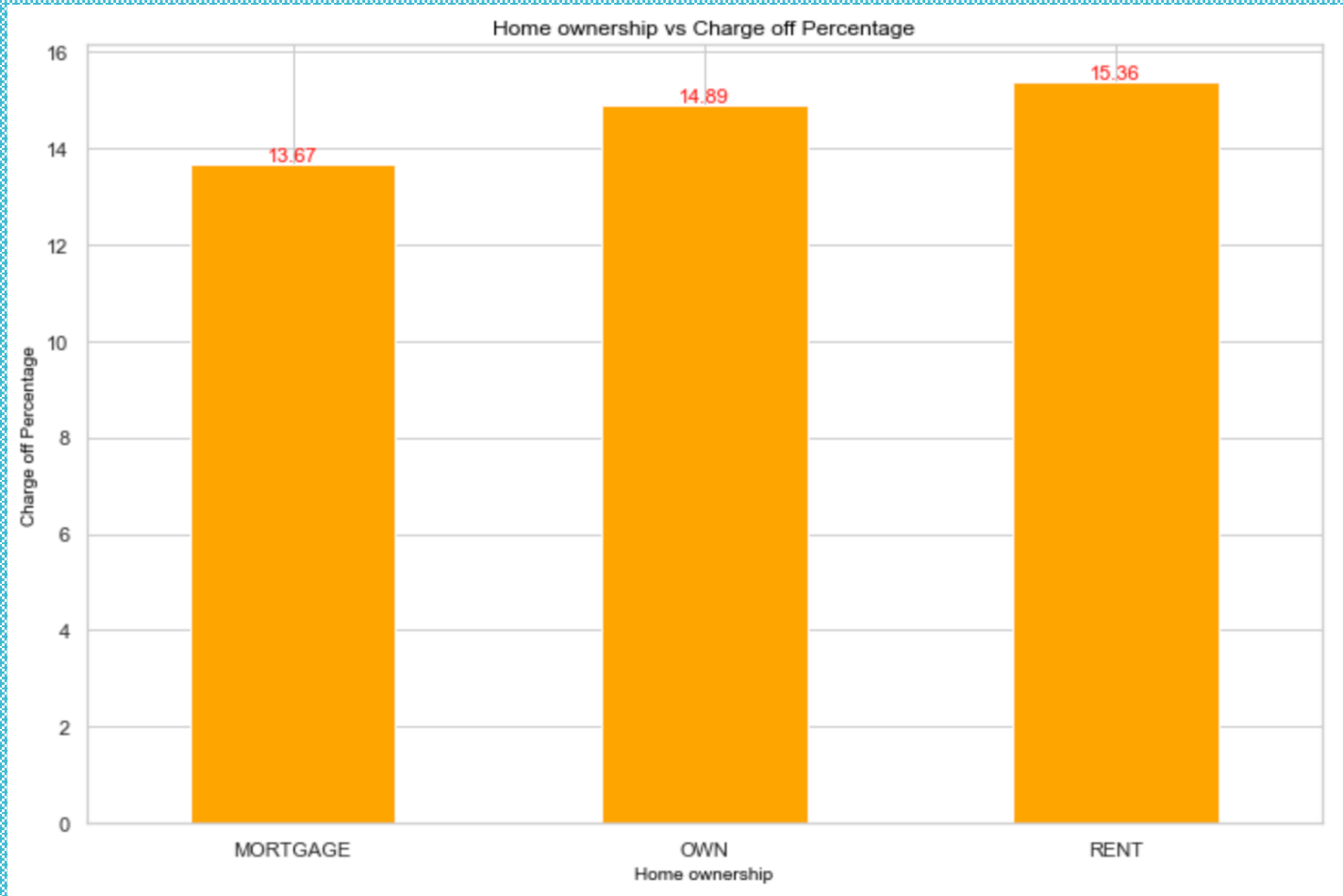
Grade vs Default Analysis



Observations:

- Defaults are inversely proportional to the loan grade. Higher the grade, lesser the defaults.

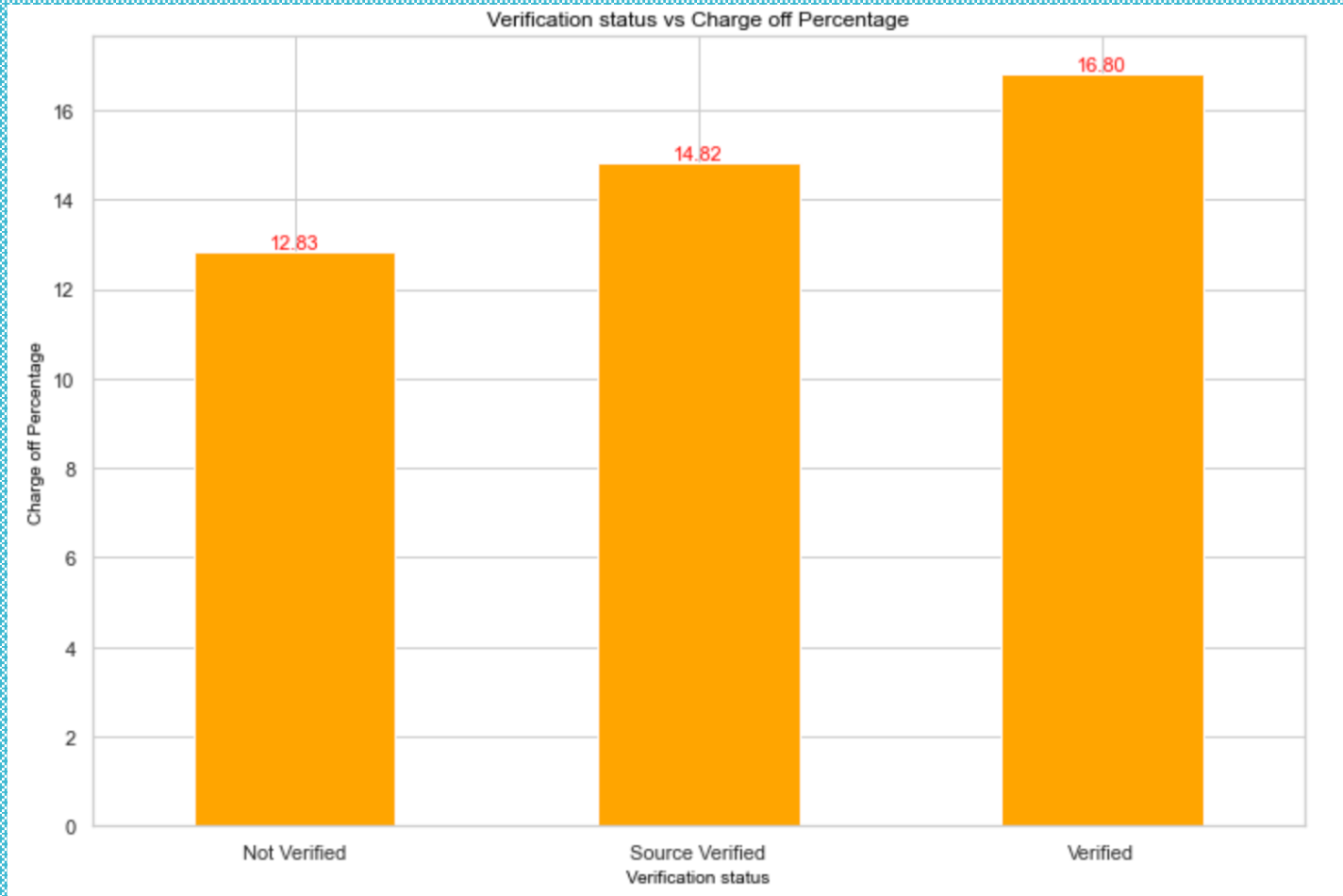
Home ownership vs Default Analysis



Observations:

- Applicants with home ownership marked as Rent have slightly higher chance to default

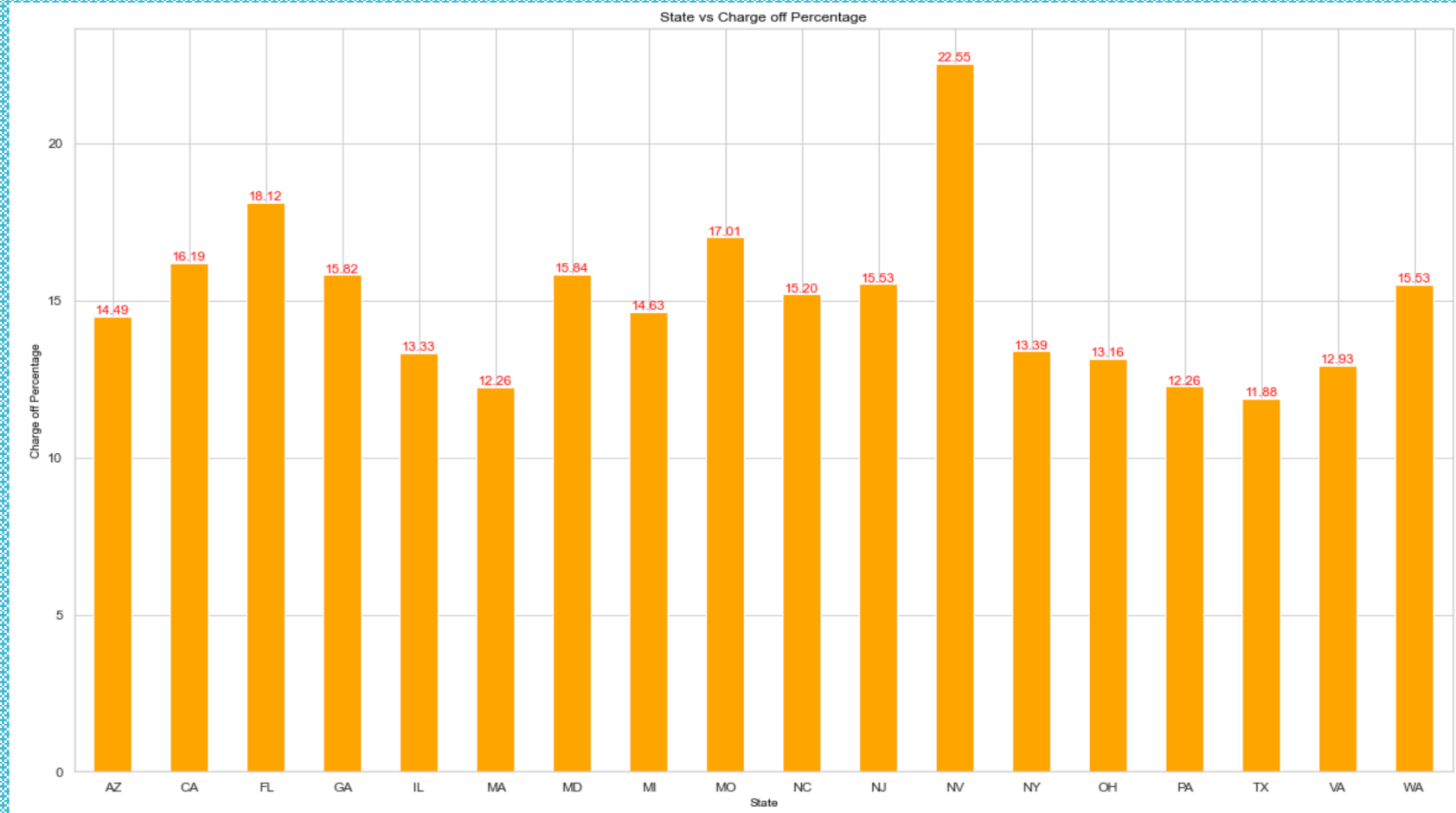
Verification status vs Default Analysis



Observations:

- Applicants with verified income source have higher chance to default.

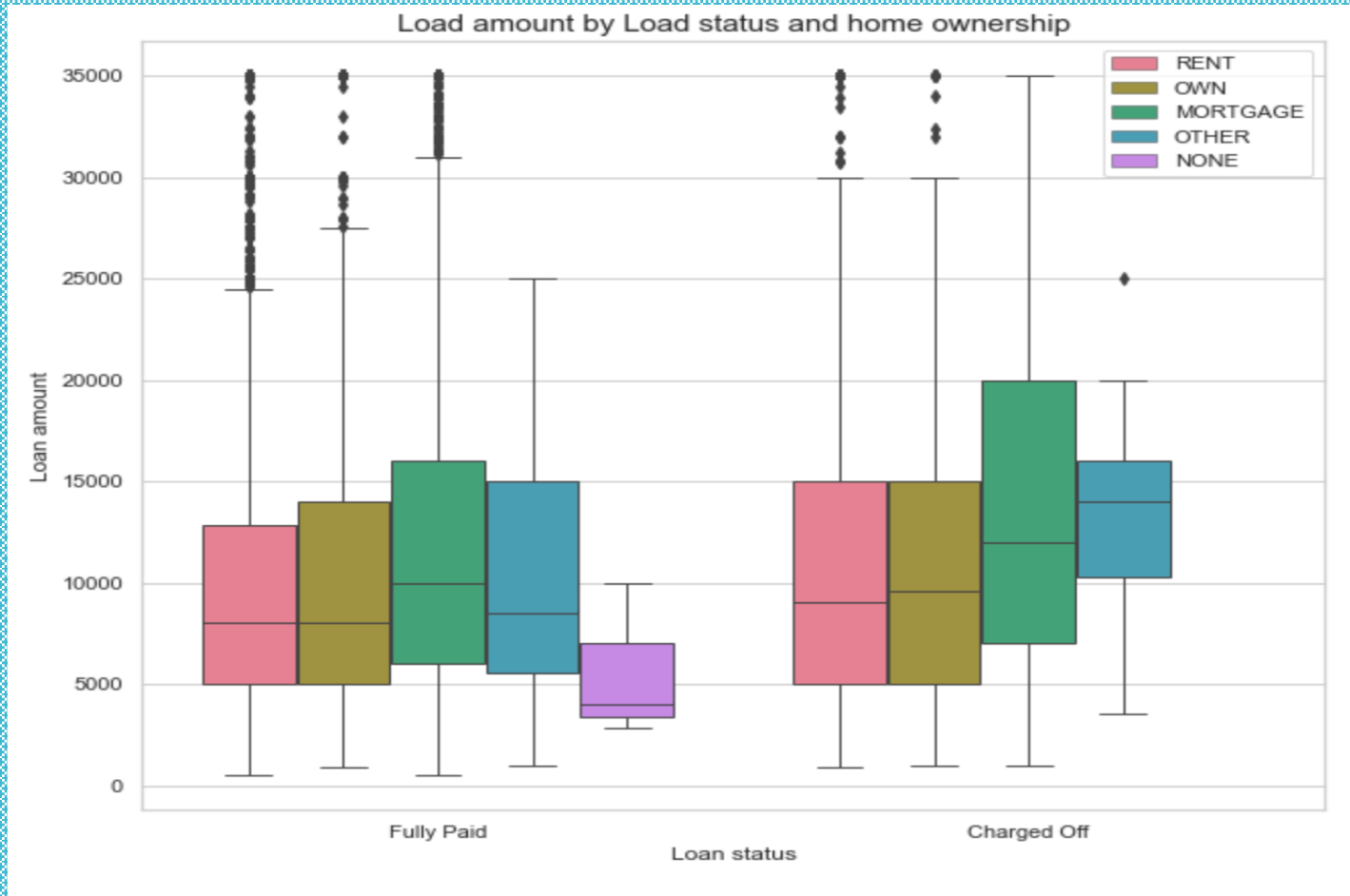
State vs Default Analysis



Observations:

- Applicants from states Nevada, Florida, Missouri have higher chances of defaults

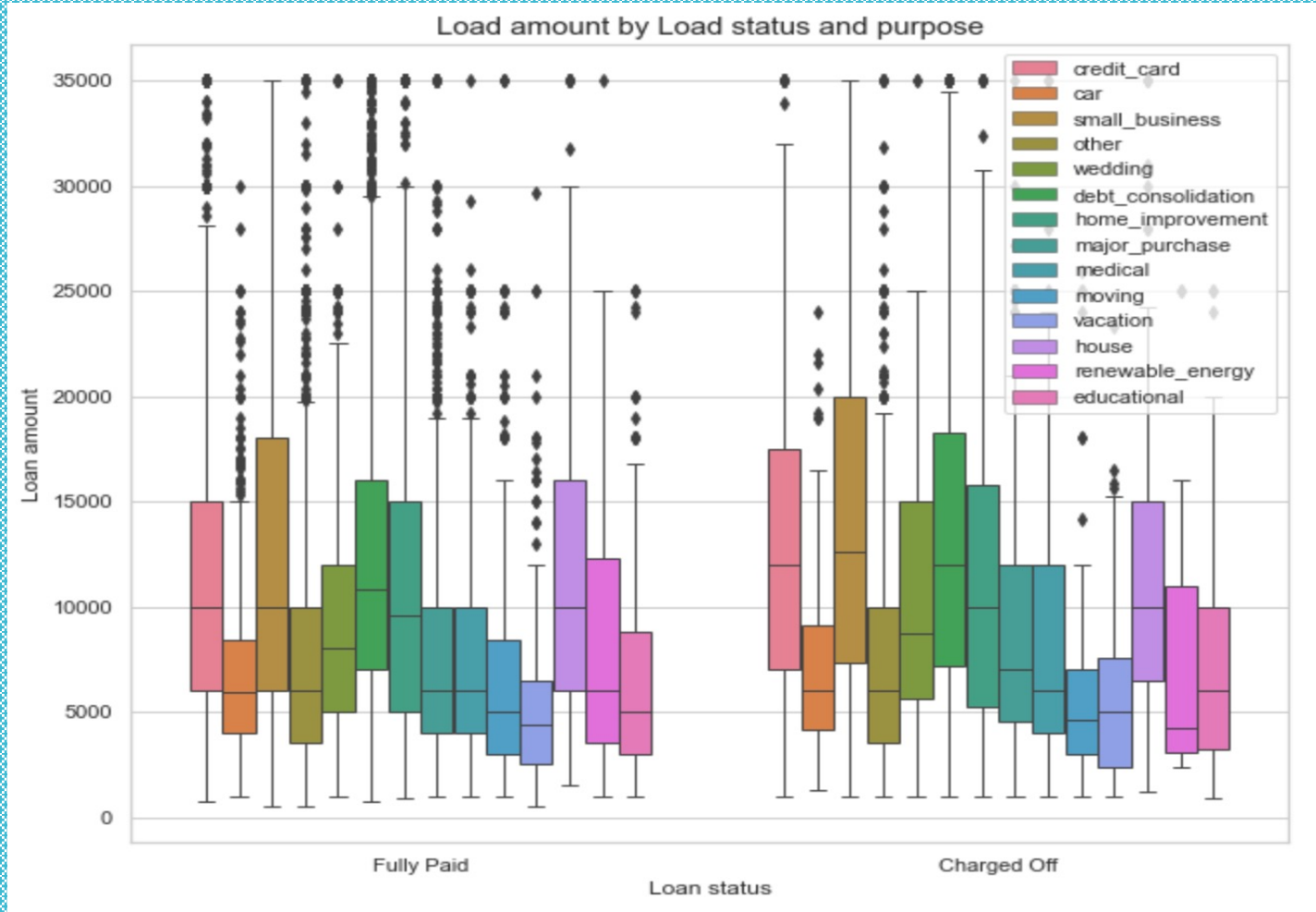
Loan amount by Home ownership and Default Analysis



Observations:

- If applicant's home ownership is mortgage and loan amount is high, there is a higher chance of default.

Verification status vs Default Analysis



Observations:

- As loan amount for small business increase, we have higher chances of default.

Conclusion



Loan application checks:

- Bank should avoid giving low quality loans.
- Special background checks should be run for applicants from Nevada, Florida, Missouri where default rate is high.
- 60-month loan term loan should be avoided as default is high.
- Interest rate should be decided meticulously, as higher rates often lead to defaults.
- If applicant wants higher loan amount, and has a mortgage, do background checks thoroughly before handing out loan.
- Keep a close eye if purpose of loan is debt consolidation, small business or renewable energy. There are higher chances of default