

# Lending Club Case Study

## **Group Members**

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# Case Study Objective

- Lending club is the largest online loan marketplace, utilizes a group of private investors to fund loan request from any individual. The loan type may be personal loans, home loans, business loans, and financing of medical procedures.
- Borrowers can easily access lower interest rate loans through a fast online interface.
- The objective of analysis is to find the key insights and condition to predict new borrowers would be defaulter or not by using the information about past loan applicants data.

# Problem Analysis Approach

## Understanding the data

- Working with the **Data Dictionary** and getting knowledge of all the columns and their domain specific uses.

## Data Cleaning

- Removing non relevant variables
- Checking null character percentage and decide to remove or impute
- Standardization of data – Converting or formatting quantitative variable in to numeric

## Data Analysis

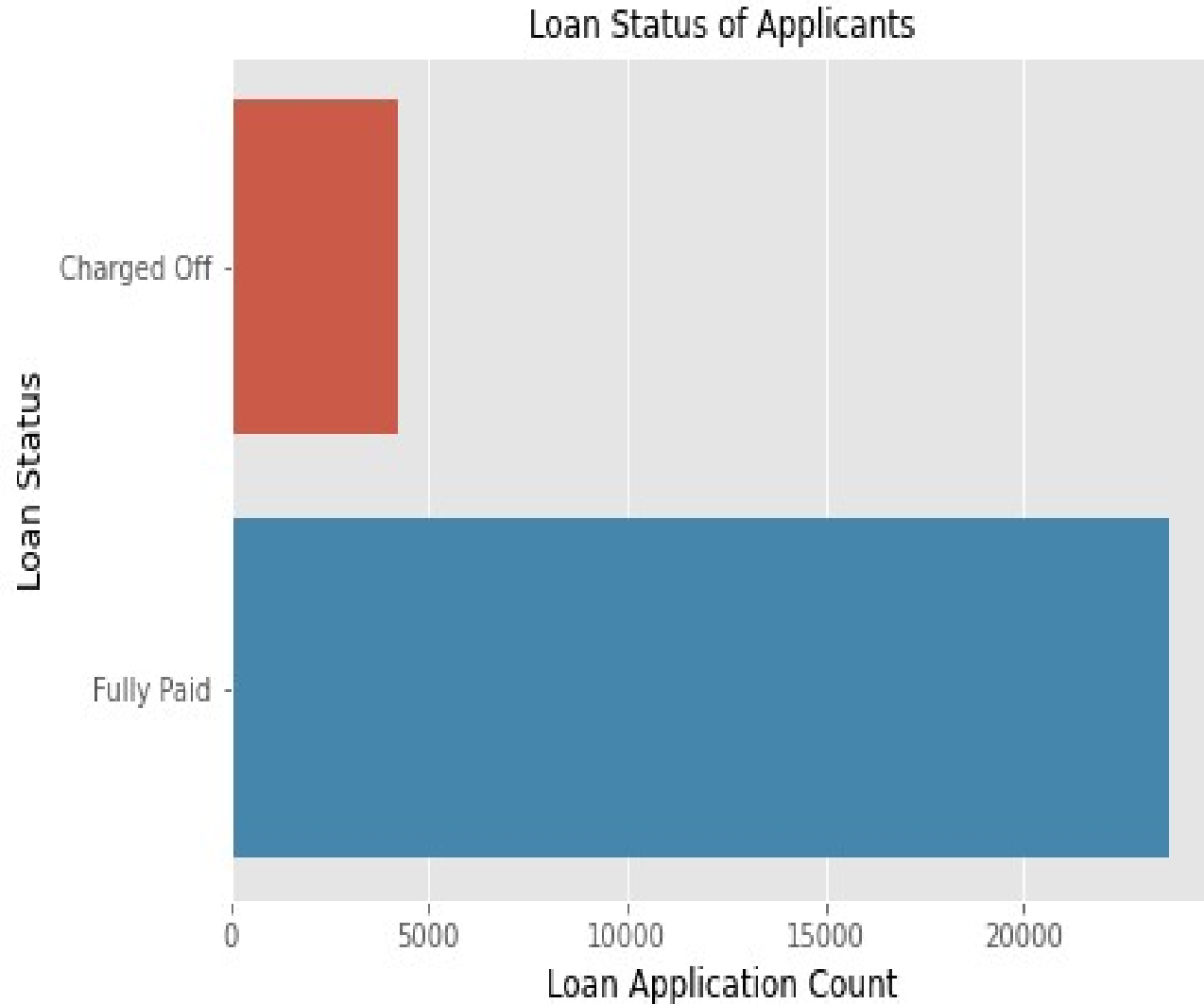
- **Univariate Analysis**
  - Analyzing each variable, by plotting the distributions of each object.
- **Segmented Univariate Analysis**
  - Analyzing the continuous data columns with respect to the categorical field.
- **Bivariate Analysis**
  - Analyzing the two variable behavior like term and loan status with respect to loan amount.

## Conclusions

- Analyzing all visuals and derived recommendations to avoid the loss of business by predicting key variable which confirms the loan defaulters.

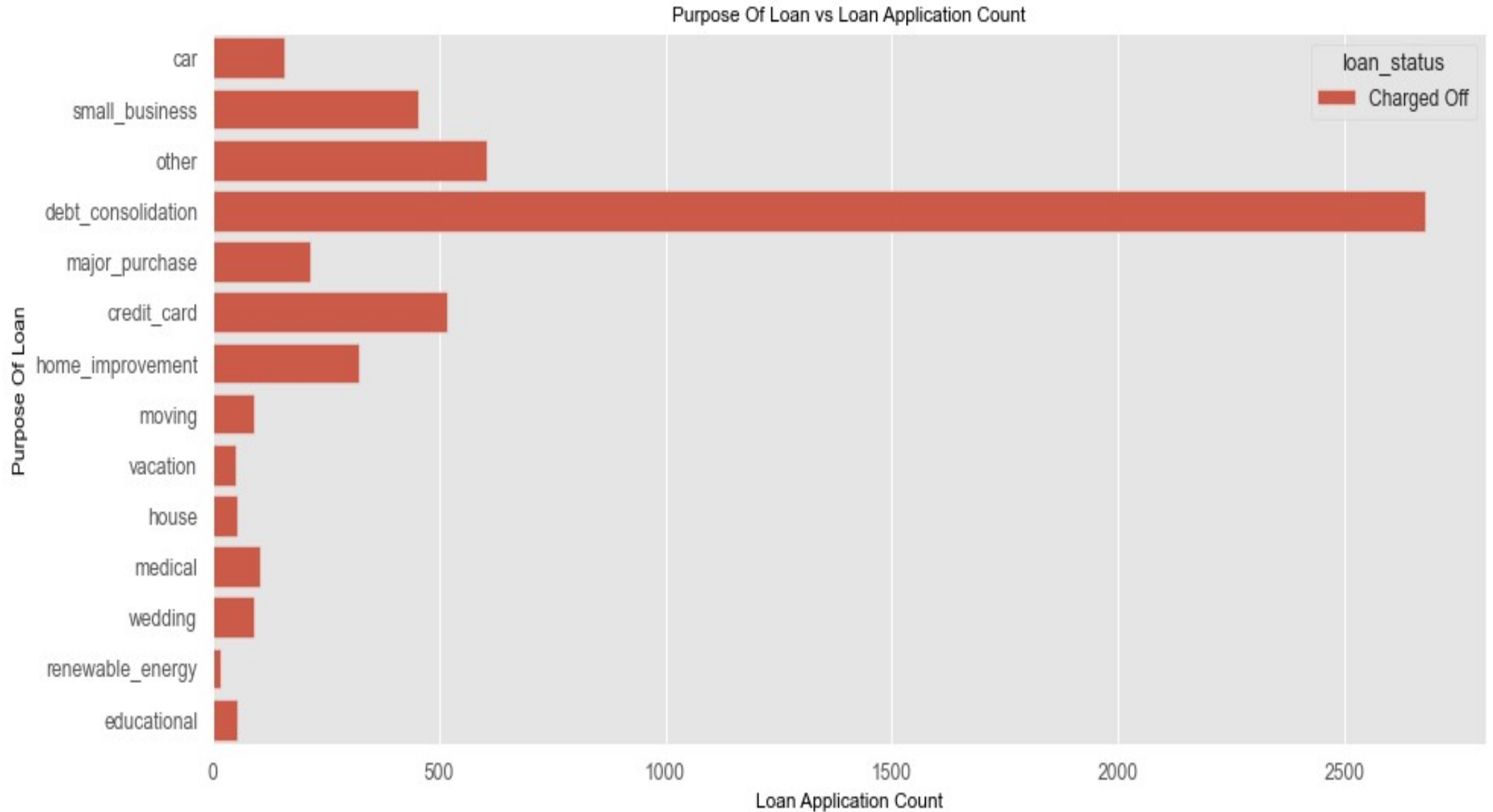
# EDA Graphs and Insights

- Most of loan status is fully paid. Approximated 5K applicants are not paying installments on time.



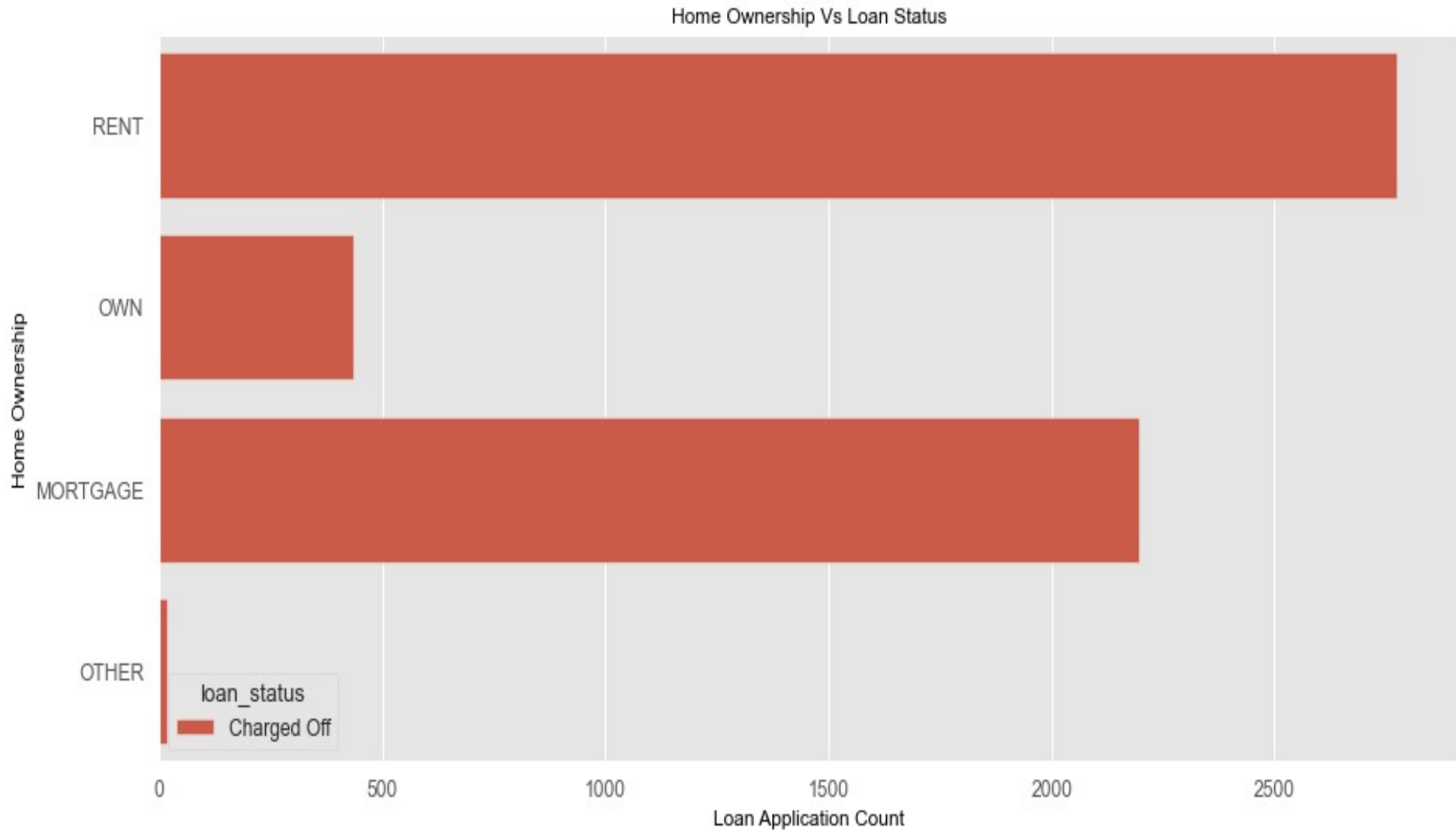
# Conti...

- ❑ Most of defaulter applicants are taking loan for debt\_consolidation.



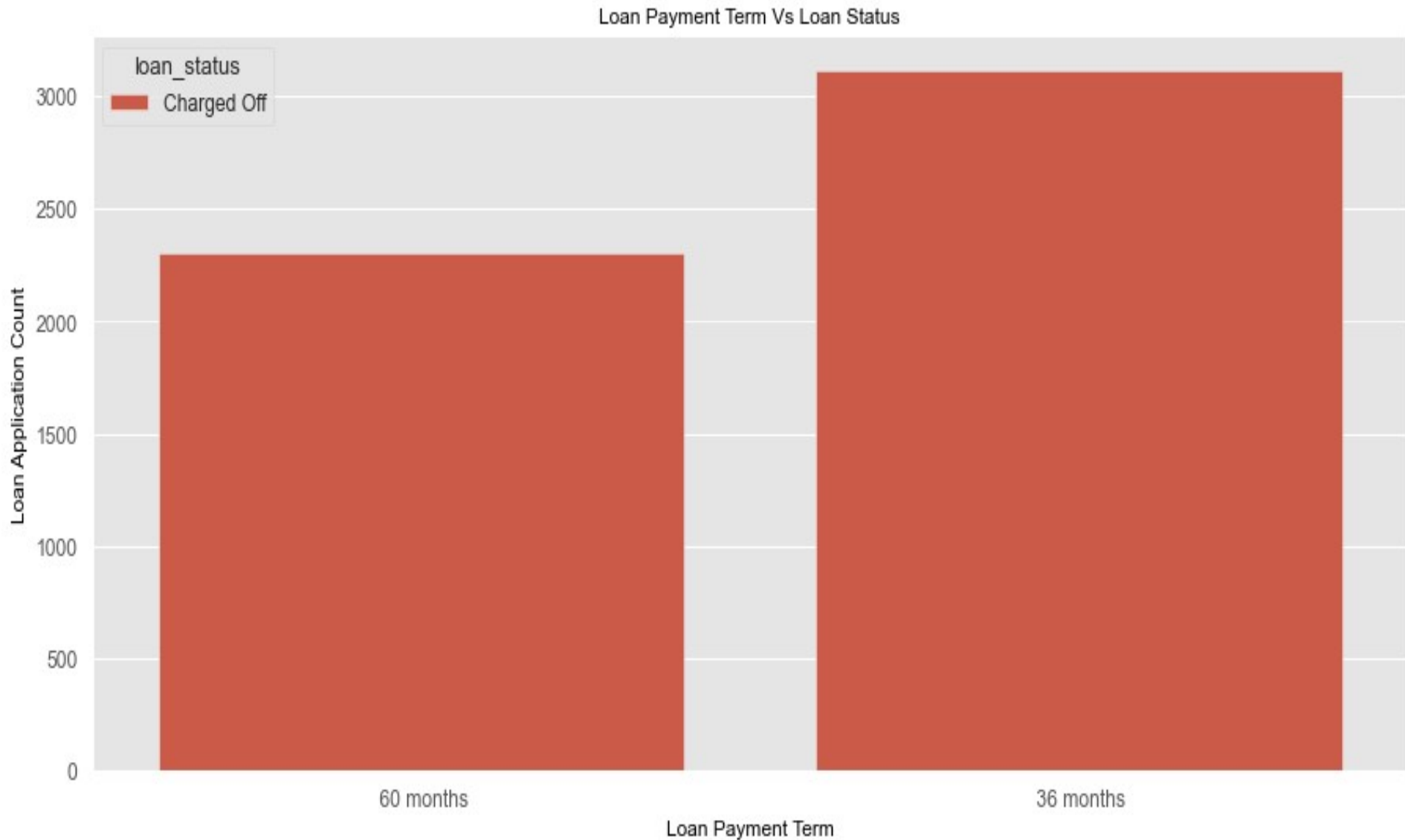
# Conti...

- ❑ Most of the defaulter loans are taken for the people who are living in rented home and mortgaged their home.



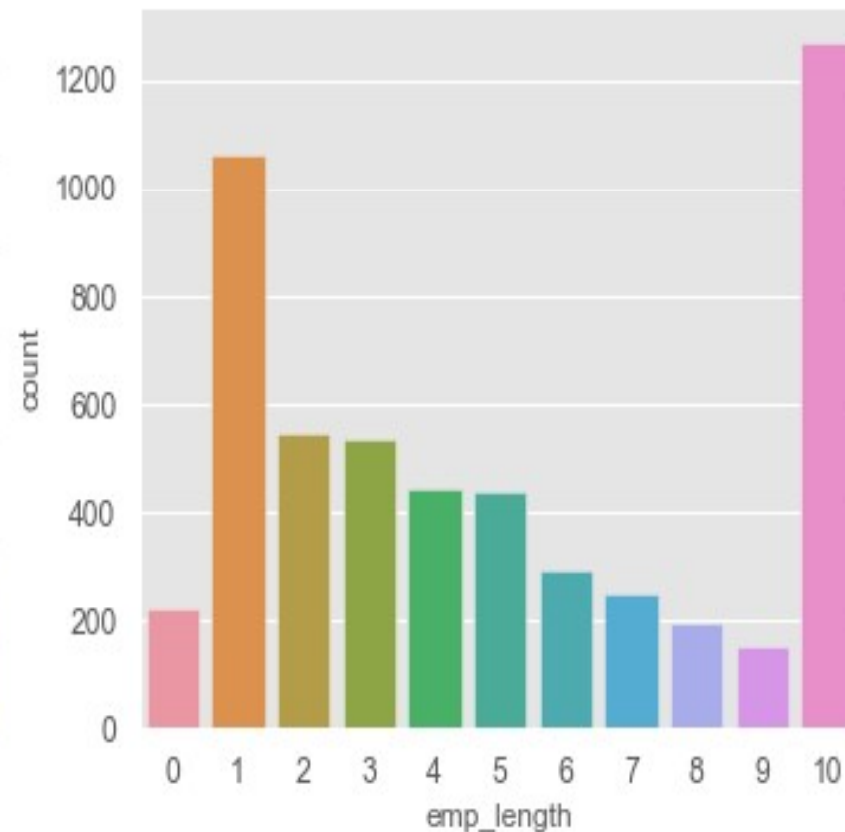
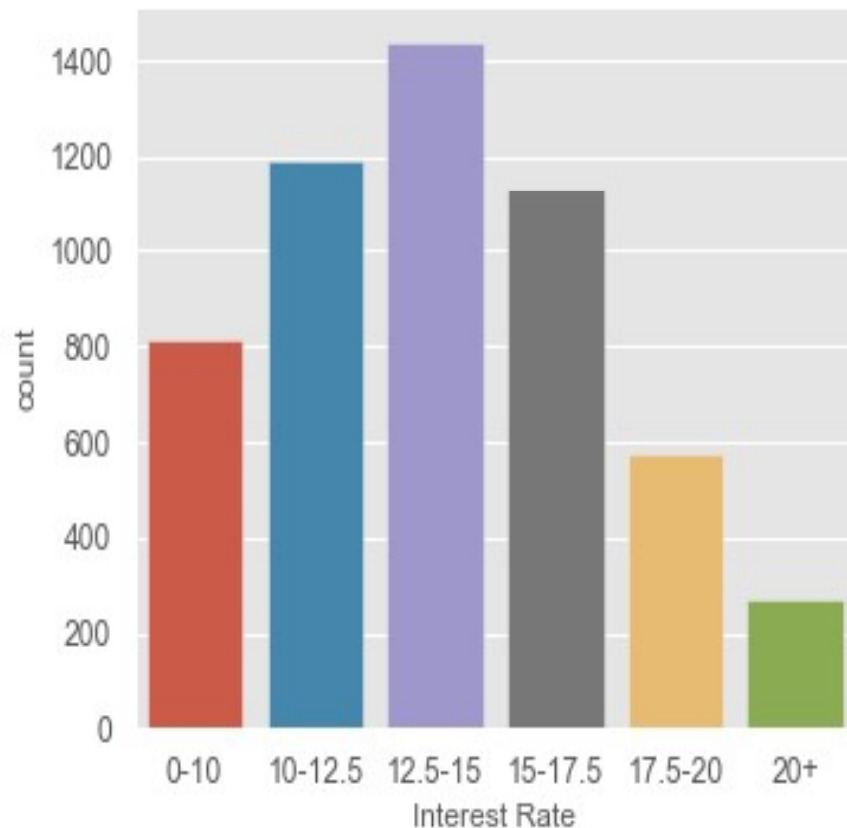
# Conti...

- ❑ Mostly defaulters had taken loan to repay for 36 months.



# Conti...

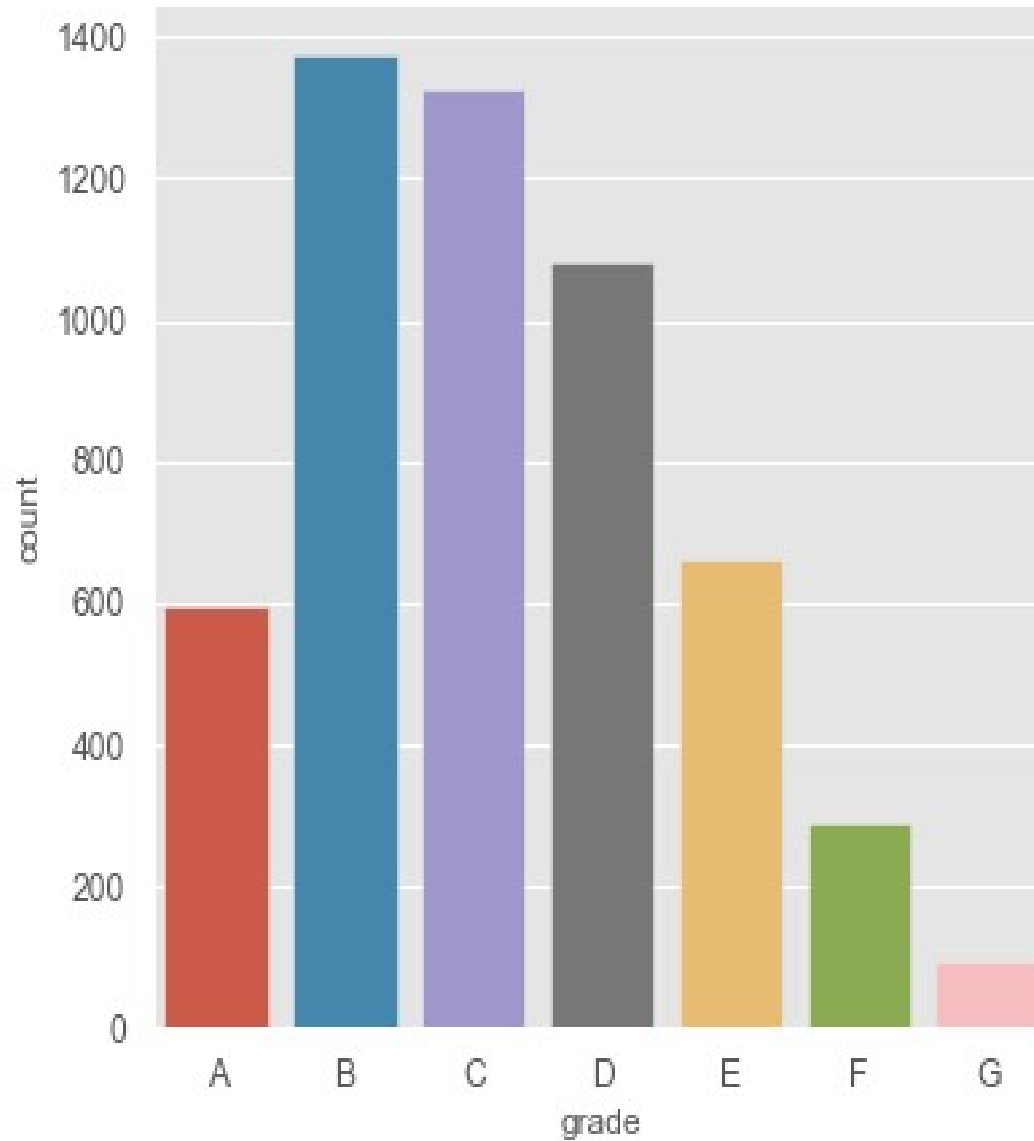
- ❑ Clients who have got loan at interest rate of 12.5-15%, are mostly defaulters.
- ❑ Clients with employment length of 10 years and more than 10 years are mostly defaulters.





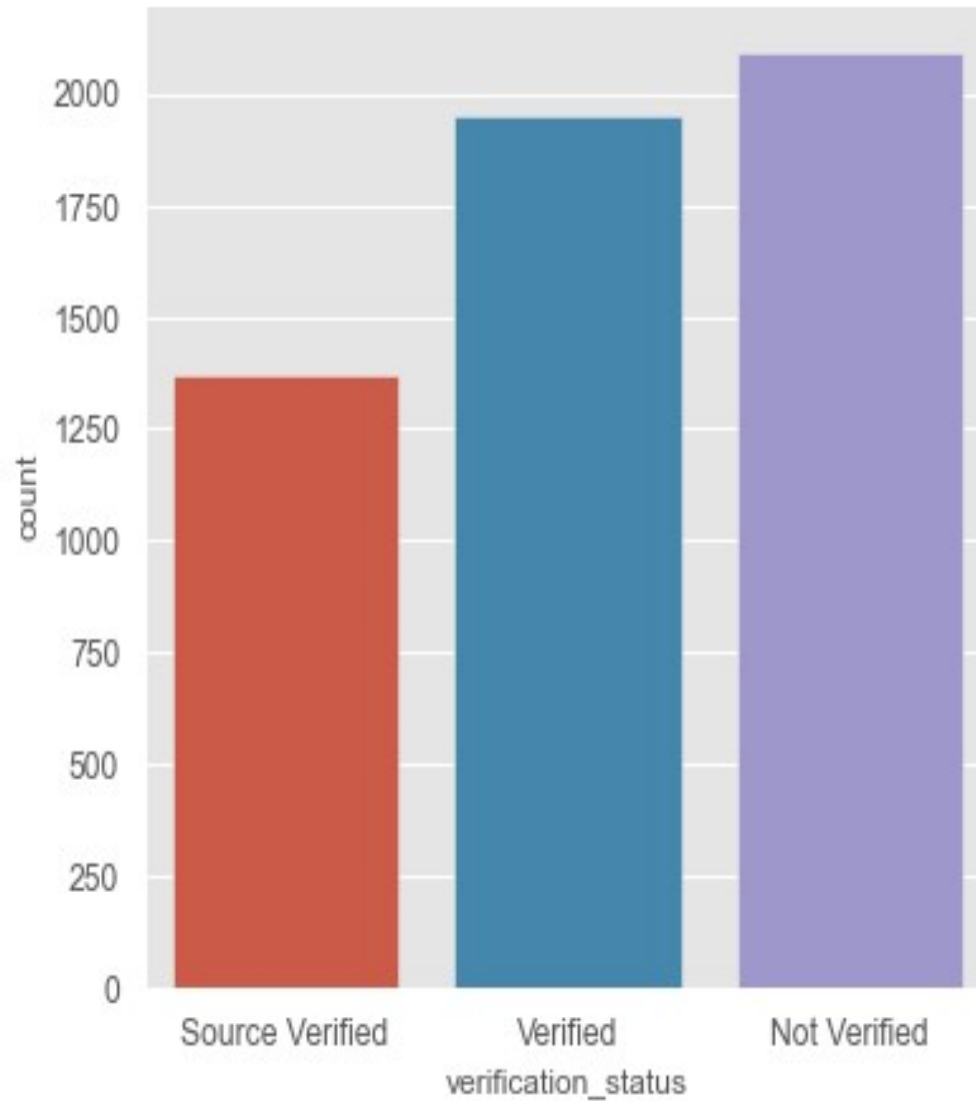
# Conti...

- Grade B Applicants are most defaulters in between add grades.



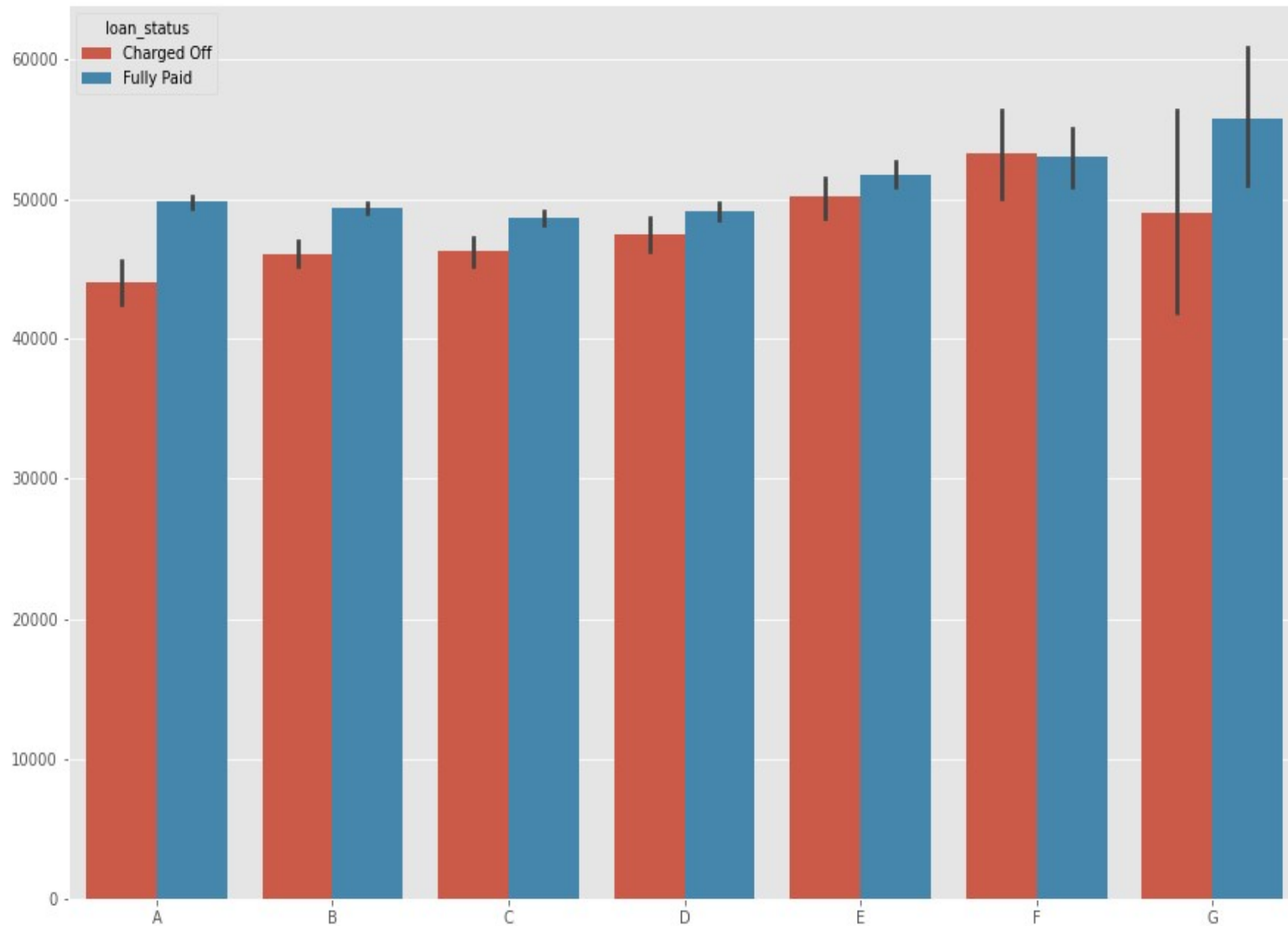
# Conti...

- ❑ Mostly defaulters applicant forms are not verified.



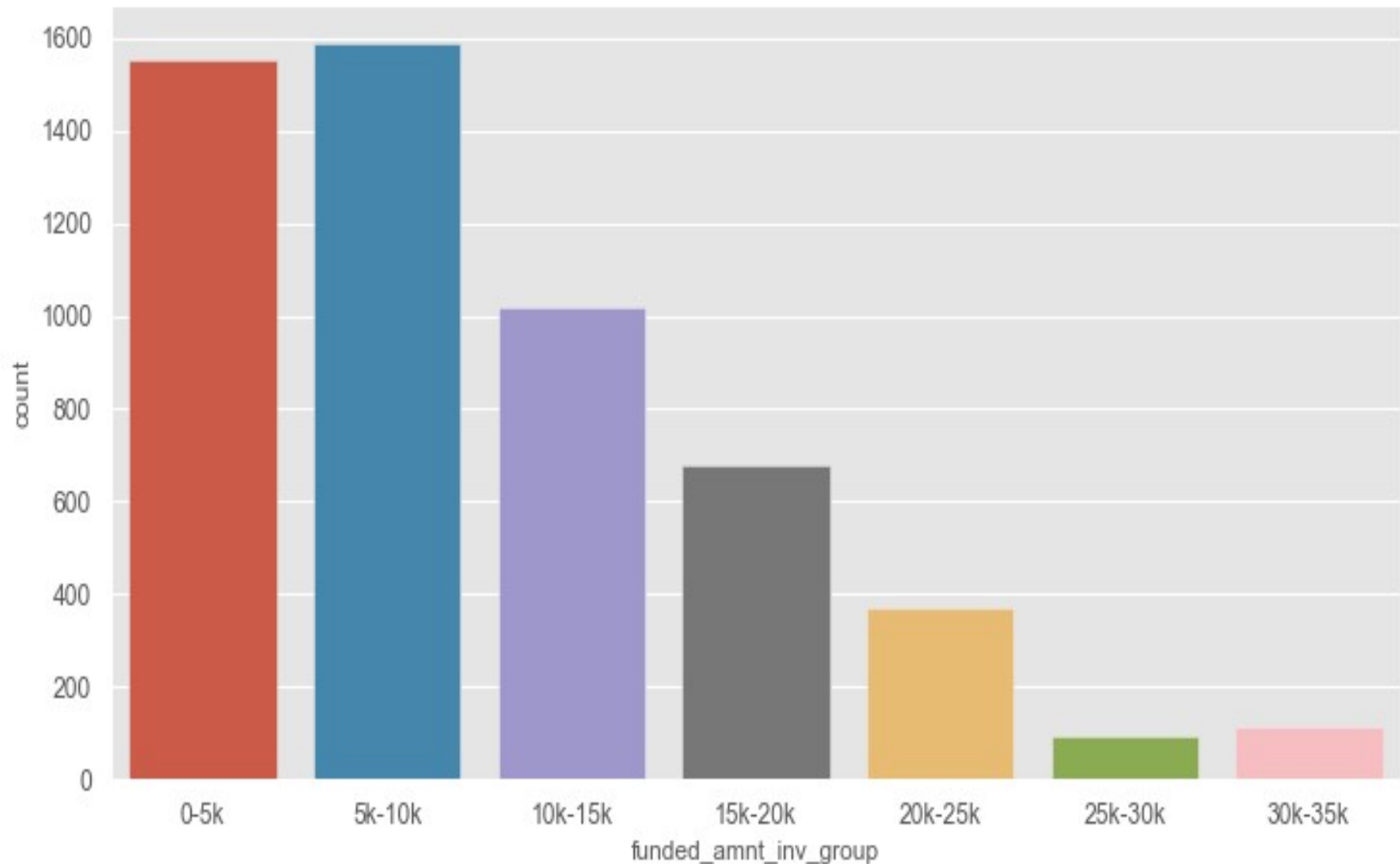
# Conti...

- ❑ Applicants who are getting 'charged off' have lower annual incomes than Fully Paid applicants for each and every grade.



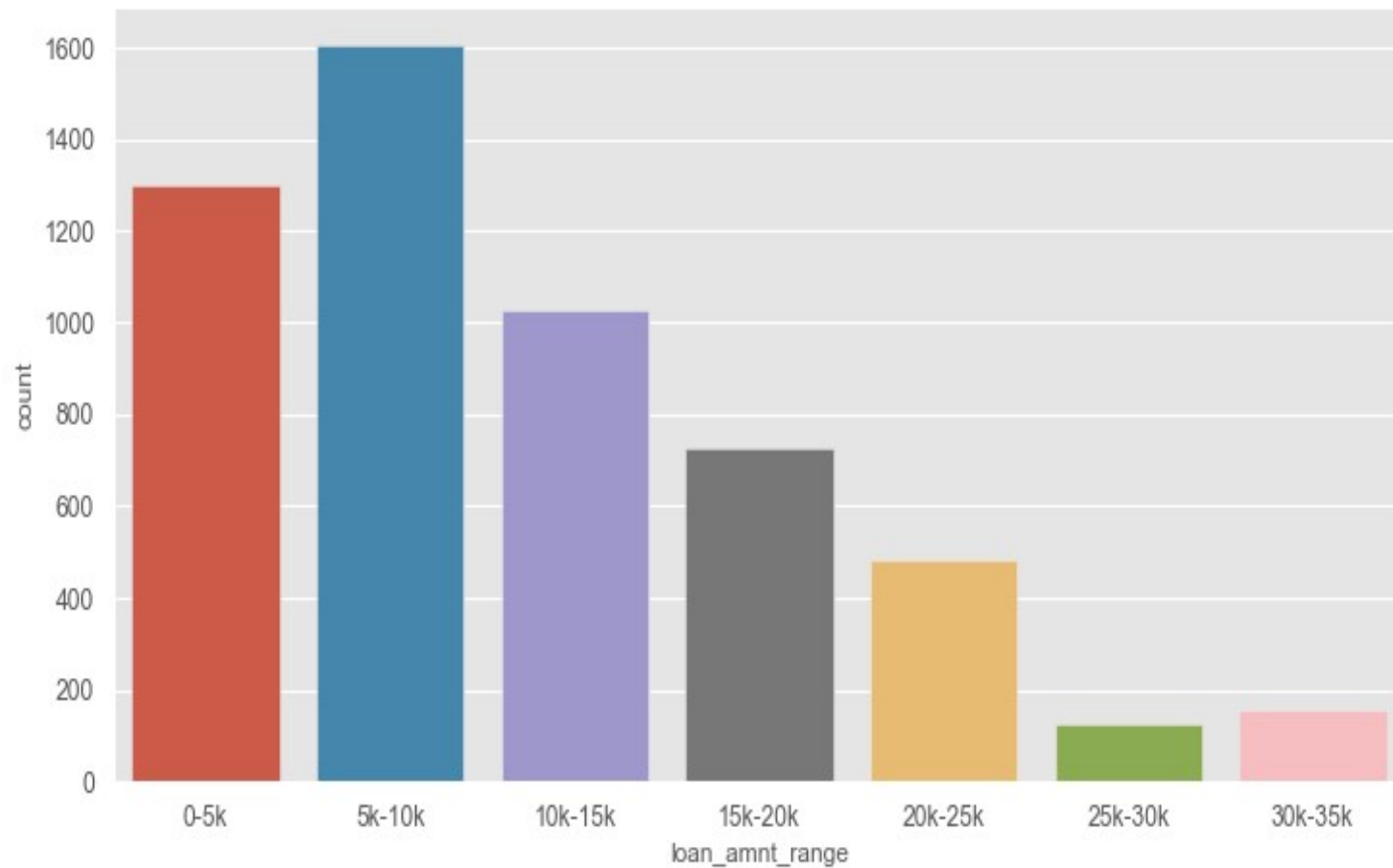
# Conti...

- ❑ Applicants who have invested 5k-10k amount, they are mostly defaulters.



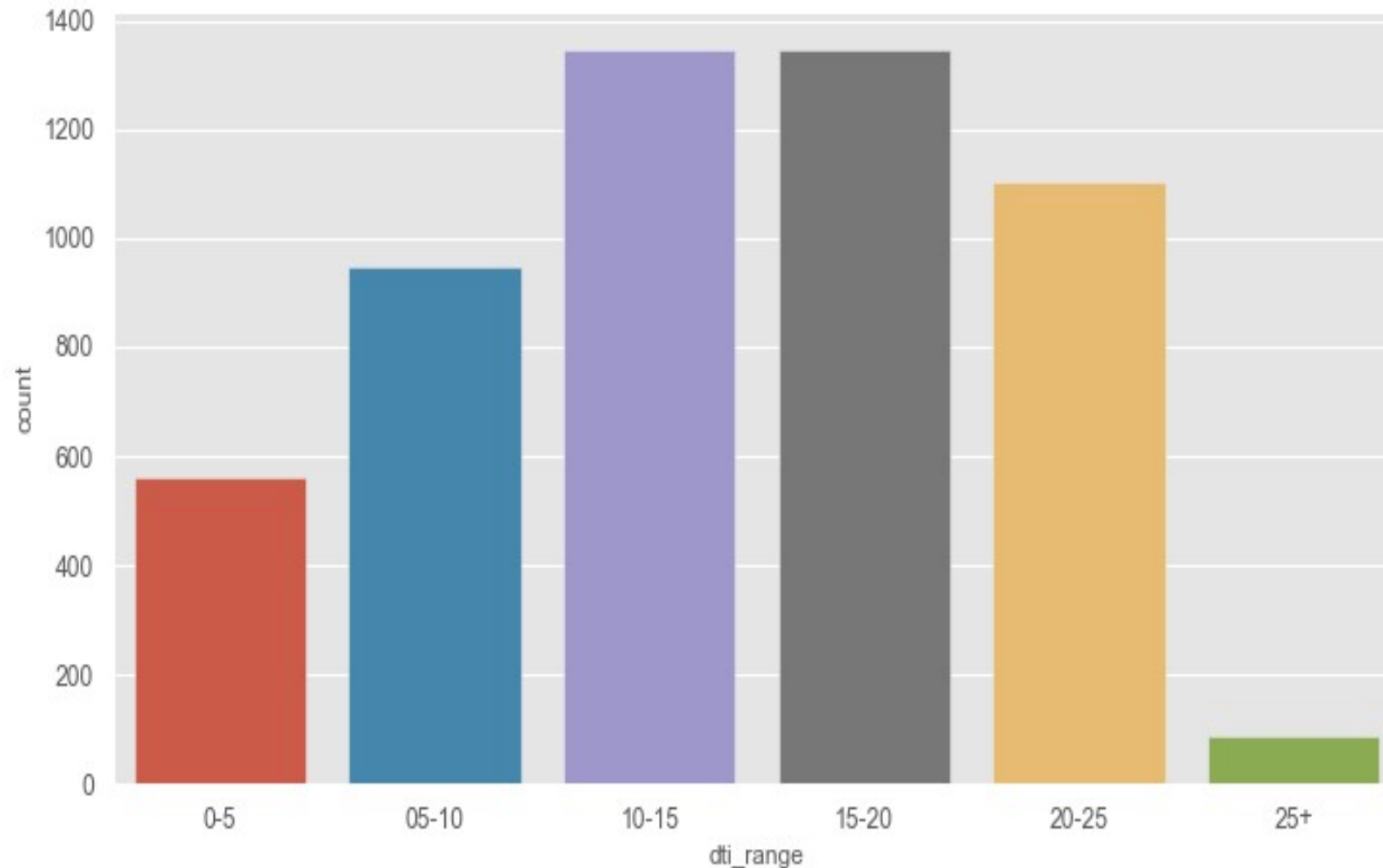
# Conti...

- ❑ Applicants who have got loan amount 5k-10k, they are mostly defaulters.



# Conti...

- ❑ Applicants who have DTI range of 10-20, they are mostly defaulters.



# Conclusion/ Recommendation

The insights and its category has more probability to be as defaulter

- Clients who under grade B
- Client who having home as Rent or Mortgage
- Clients who has loan at interest rate of 12.5-15%
- Clients with employment length of 10 years and more than 10 years
- When the loan asked for 'debt\_consolidation'
- 36 months Term
- When funded amount by investor is between 5k-10k
- Loan amount is between 5k-10k
- DTI is between 10-20