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Institute of Information
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LENDING CLUB CASE STUDY

PRESENTATION

By.

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(ML C40)

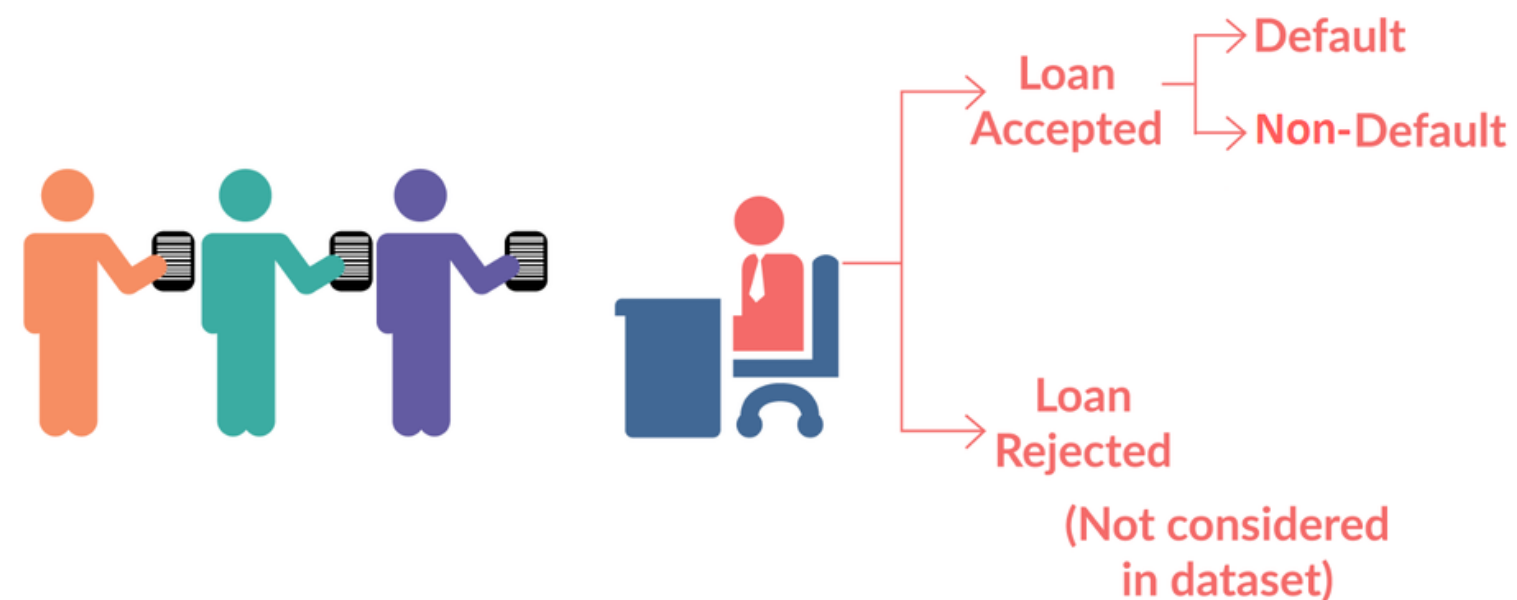
Lending Club Case Study



About Lending Club

Lending Club is the largest online loan marketplace, facilitating personal loans, business loans, and financing of medical procedures. Borrowers can easily access lower interest rate loans through a fast online interface.

LOAN DATASET



Problem Statement

**Identify the risky
loan applicants**

We have to identify the risky loan applicants, and avoid approving loans to defaulters and reduce financial loss for the company there by cutting down the amount of credit loss.

**Understand the
driving factors**

company wants to understand the driving factors (or driver variables) behind loan default, i.e. the variables which are strong indicators of default.

Utilise this knowledge

The company can utilise this knowledge for its portfolio and risk assessment.

Problem Solving Method

EXPLORATORY DATA ANALYSIS

Understanding Data

- dataset contains the complete loan data for all loans issued through the time period 2007 to 2011.

DATA CLEANING



- Deleting Unnecessary columns
- Removing Outliers.
- Removing columns with >60% missing values
- Removing Duplicate Data
- Filtering and standardizing the data

ANALYZE VARIABLES



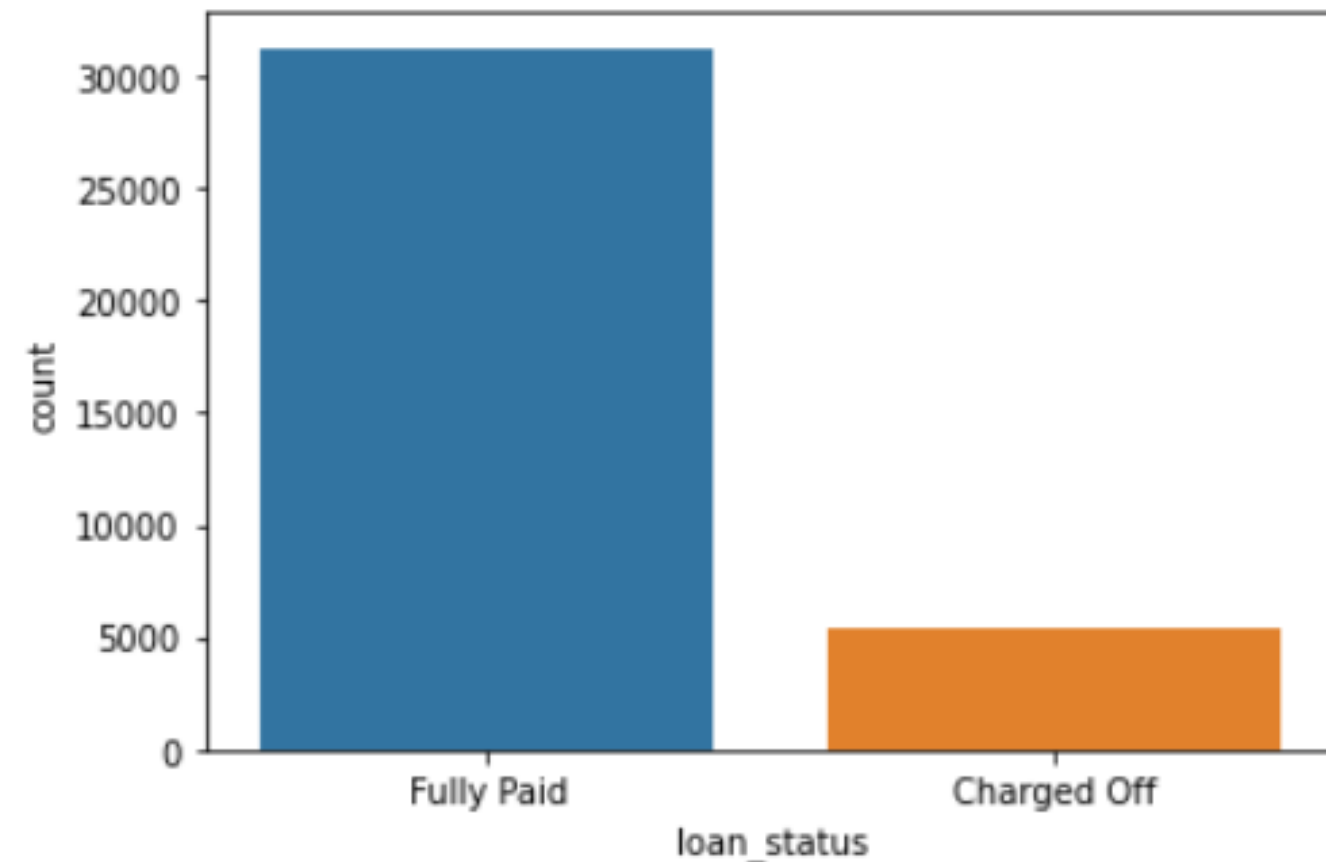
- Univariate Analysis
- Bivariate Analysis
- Categorical Vs Continuous.
- Multivariate Analysis.

VISUAL ANALYSIS



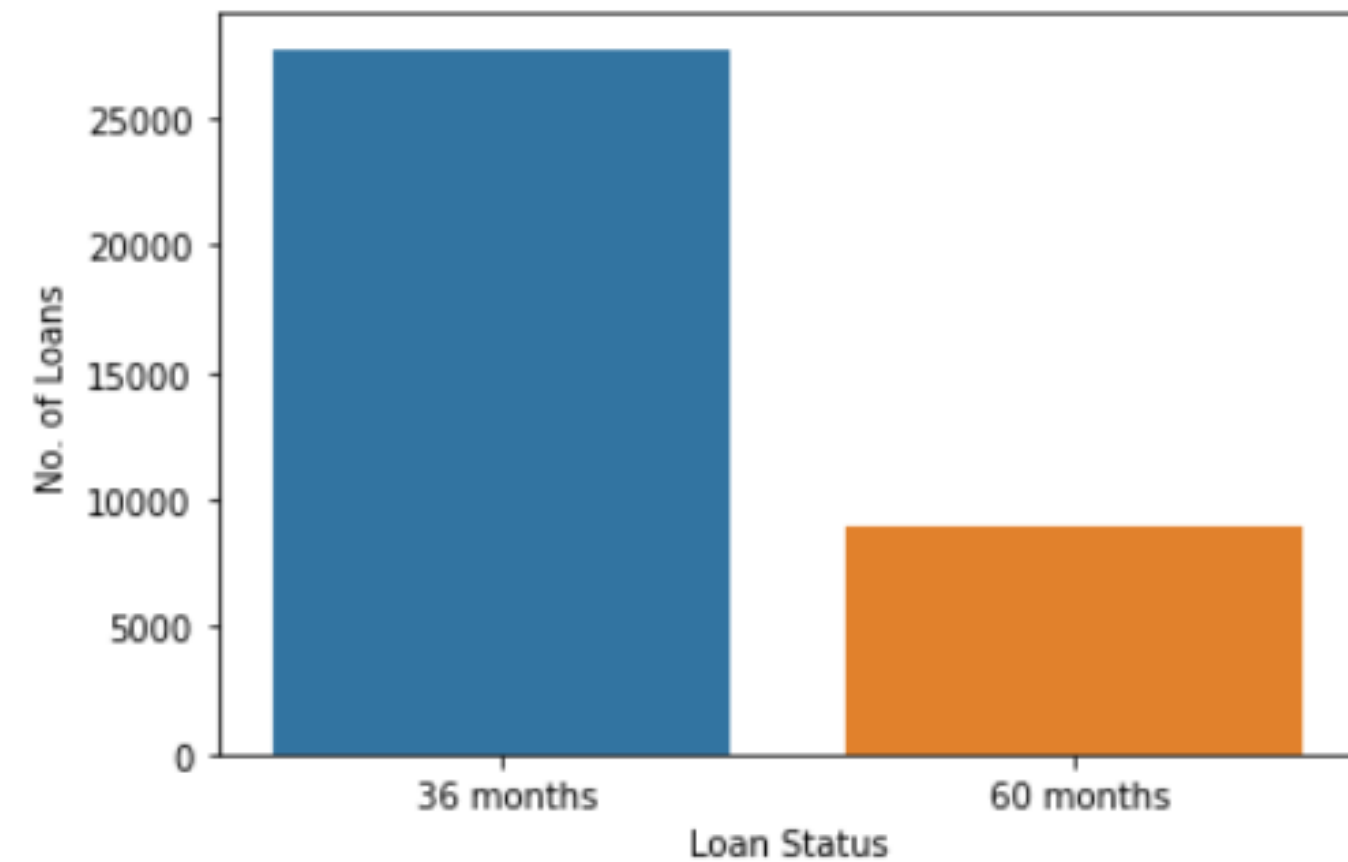
- Using Histogram, Bar Charts to check Distribution
- BoxPlots, detect outliers
- Root Cause Analysis.
- Highlighting key insights

Loan Status Data Analysis



Obesrvations :

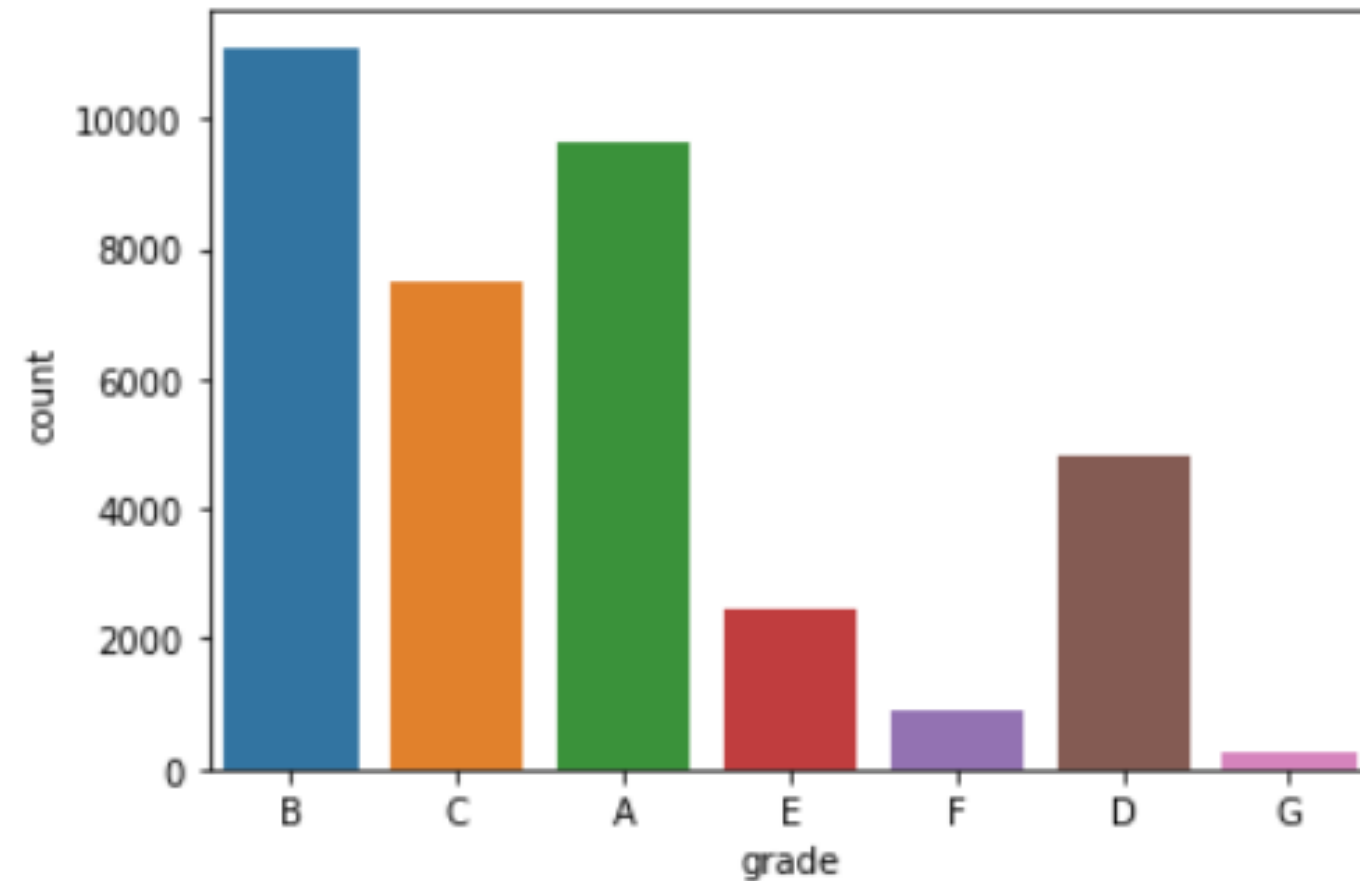
- Majority of Loans Are Fully paid.
- About 14% of the total loans are Charged off i.e Defaulters



Obesrvations :

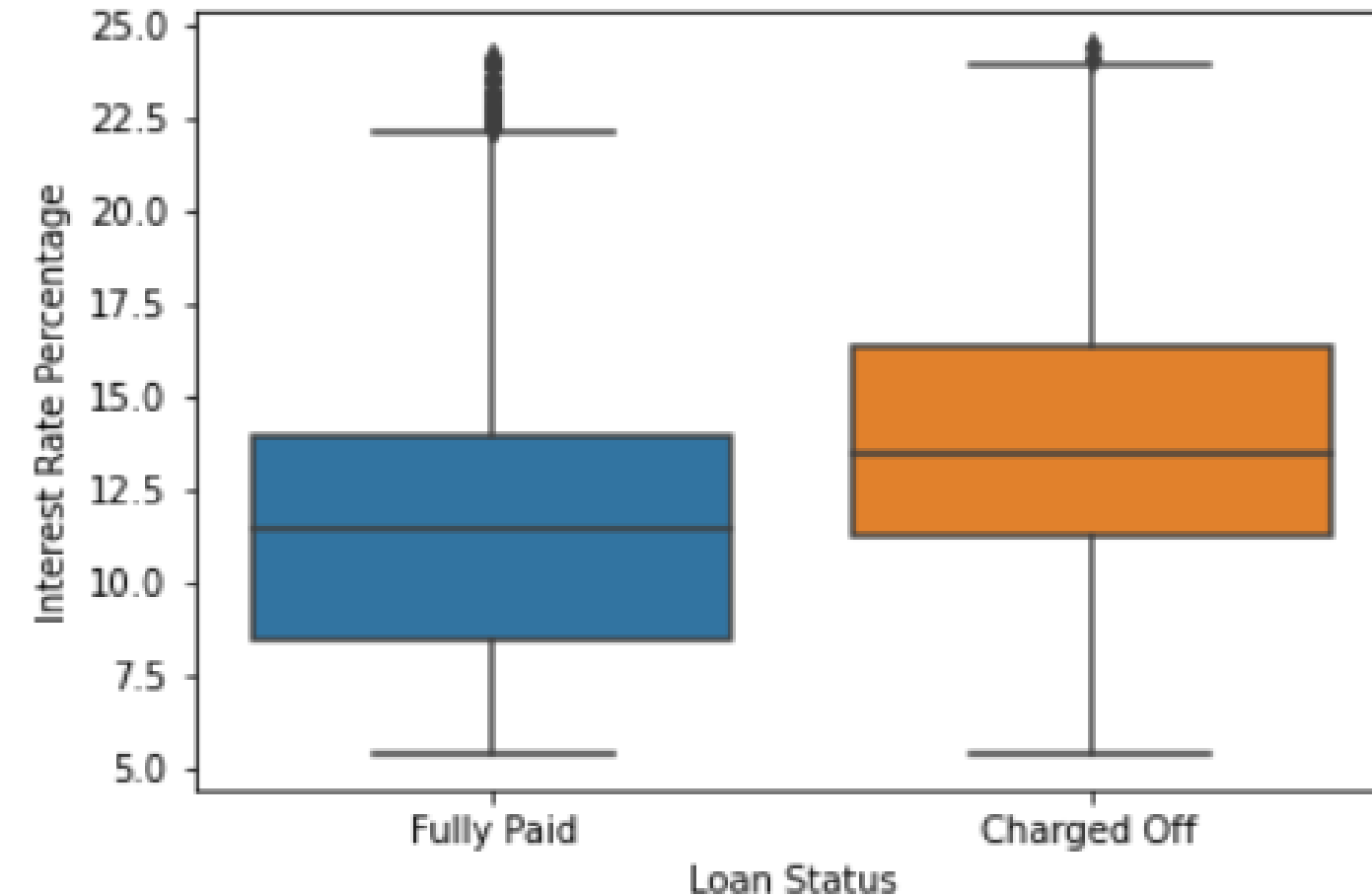
- Number of loans borrowed for the term of 36 months is more as compared to the Number of loans borrowed for the term of 60 months

Loan Grade Data Analysis



Obesrvations :

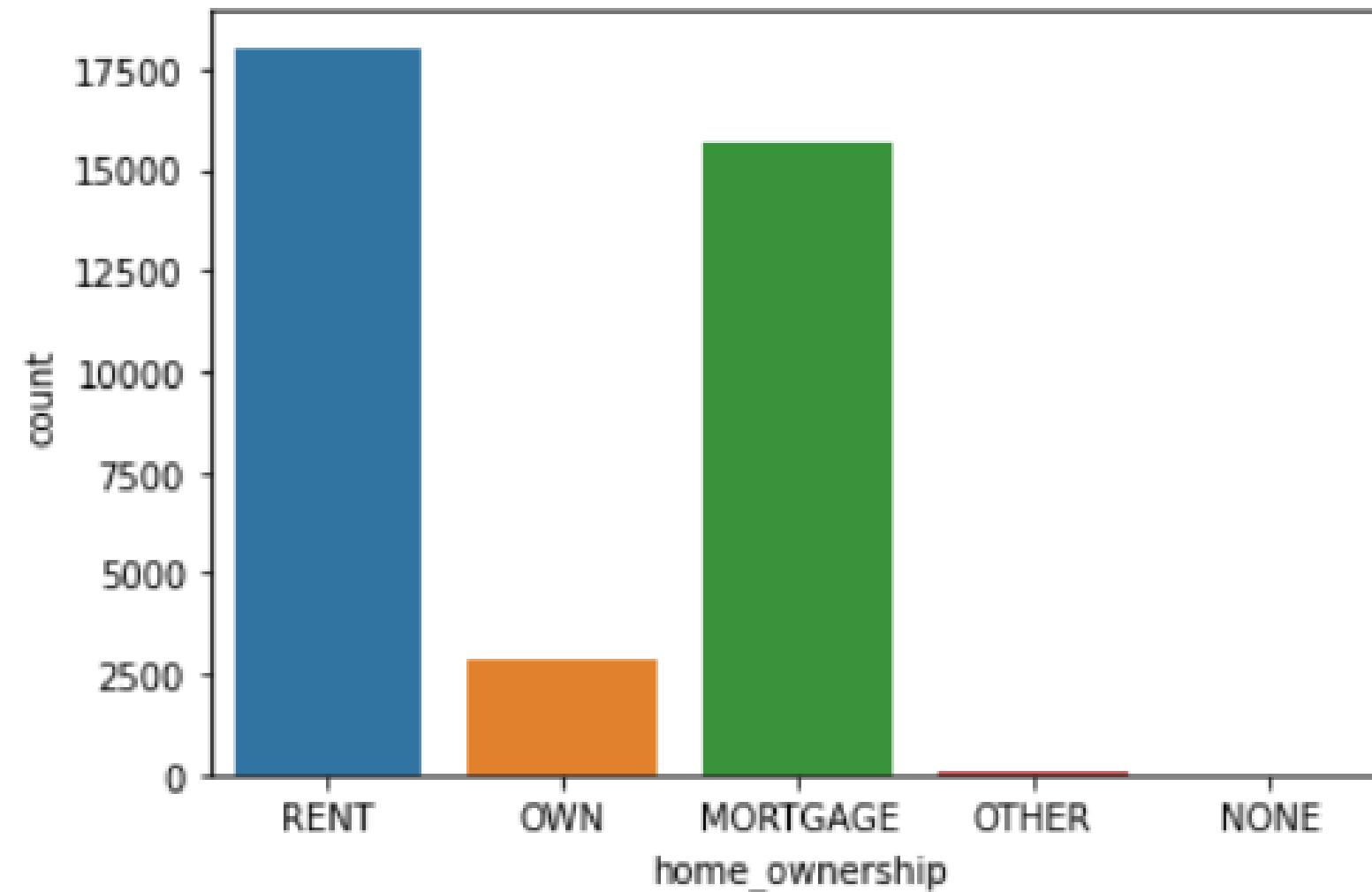
- Maximum loans are taken by A, B an C grade applicants



Obesrvations :

- Fully Paid loans have lower interest rates than Charged off loans.
- Hence higher interests rates have higher chance to default

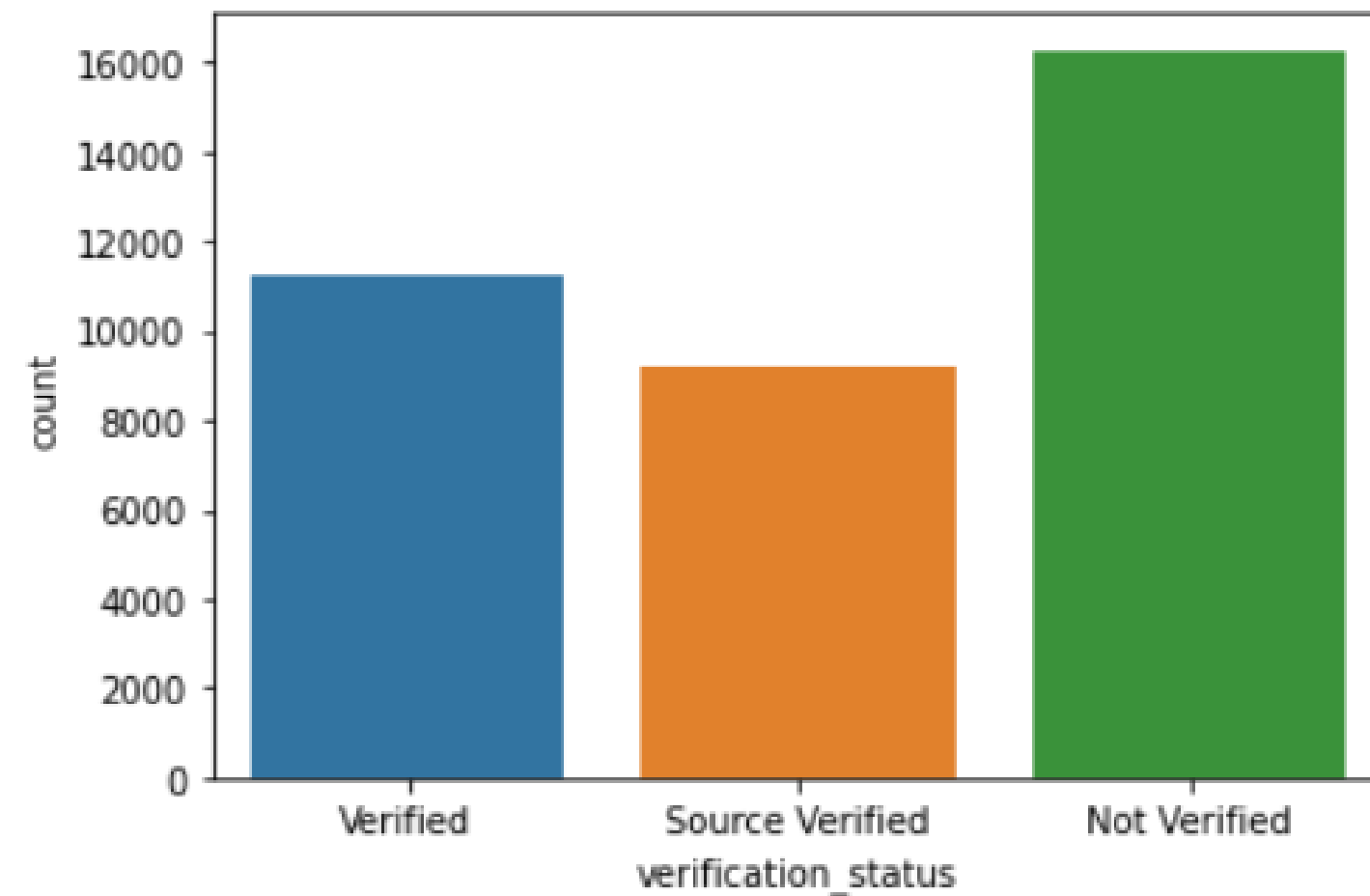
Home Ownership Data Analysis



Obesrvations :

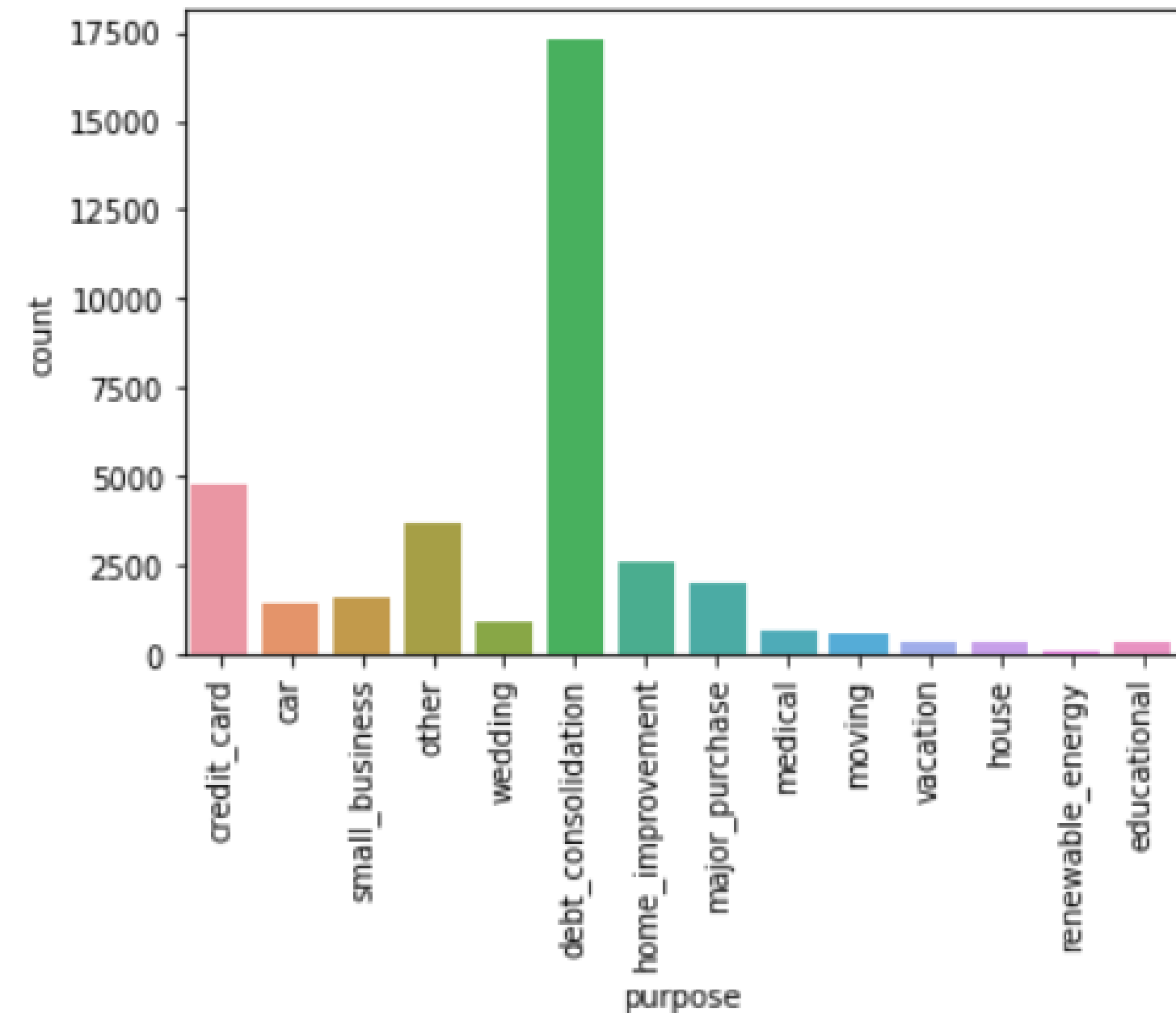
- Majority of the loan applicants are living in Rented and 2nd most largest number of applicants with Mortgaged homes.
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Varification Status and Purpose of loan



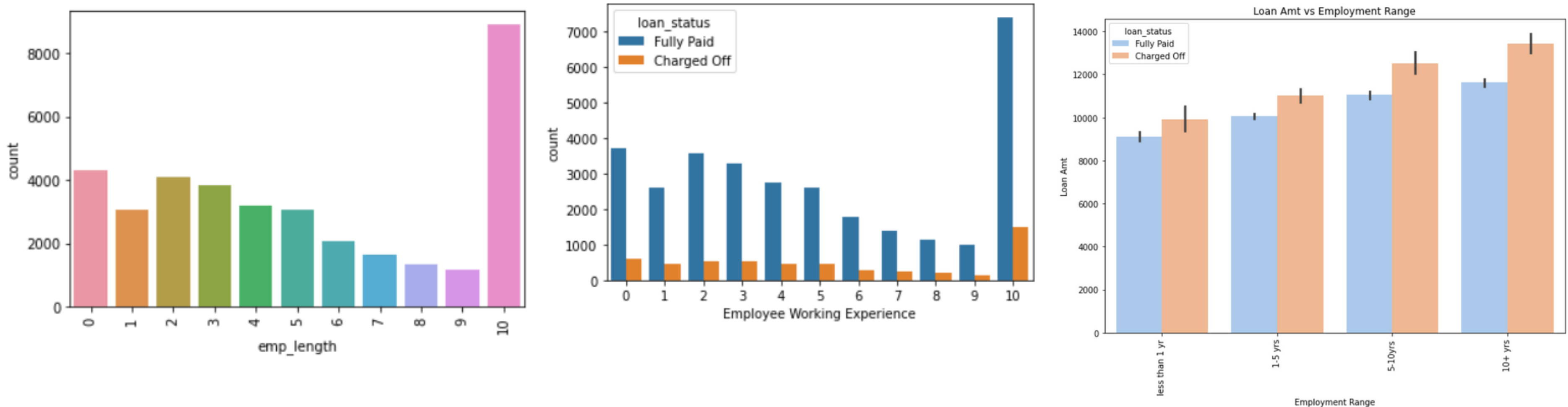
Obesrvations :

- Maximum Number of loans are not Verified



- Majority of loans are taken for the debt consolidation purpose

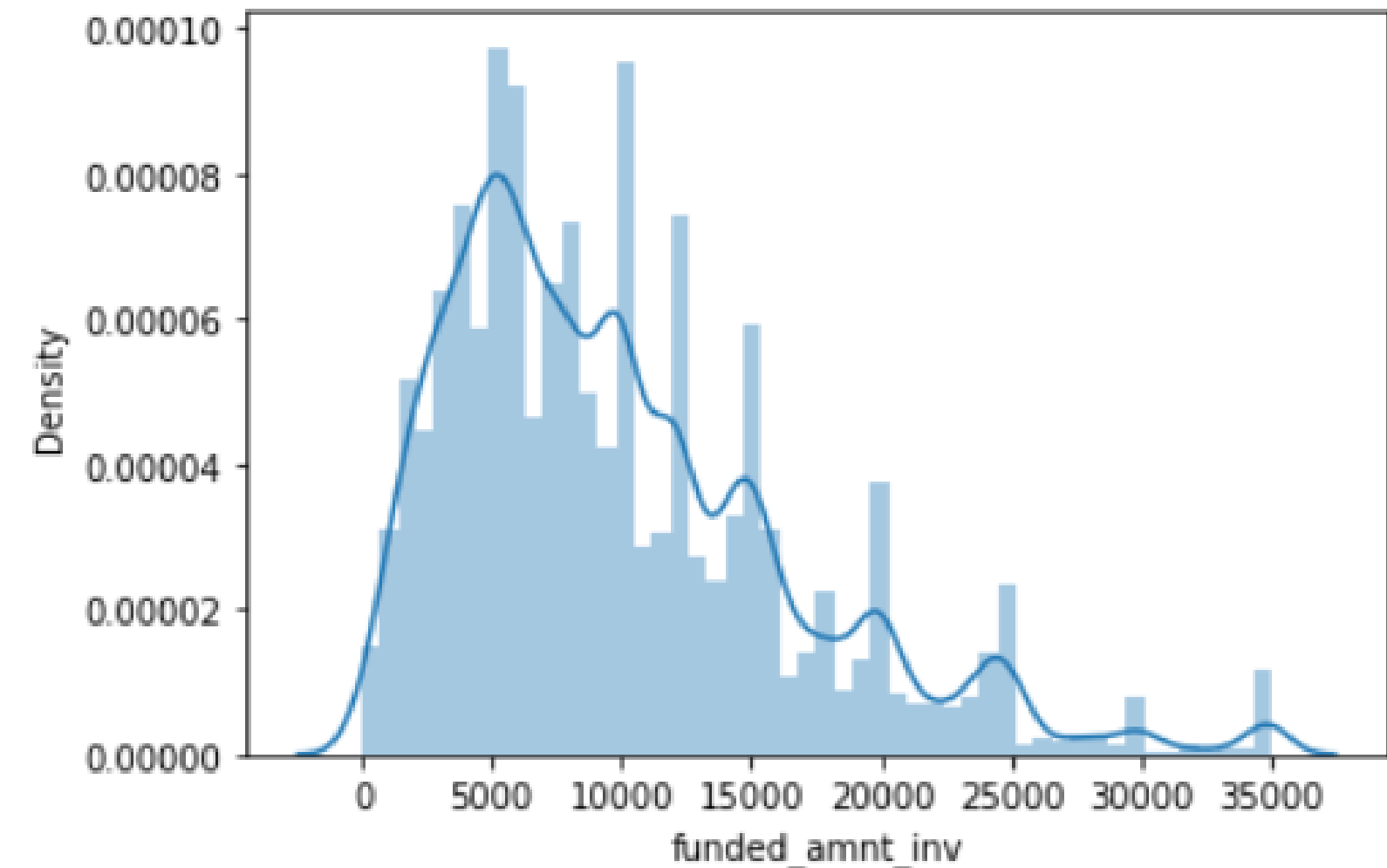
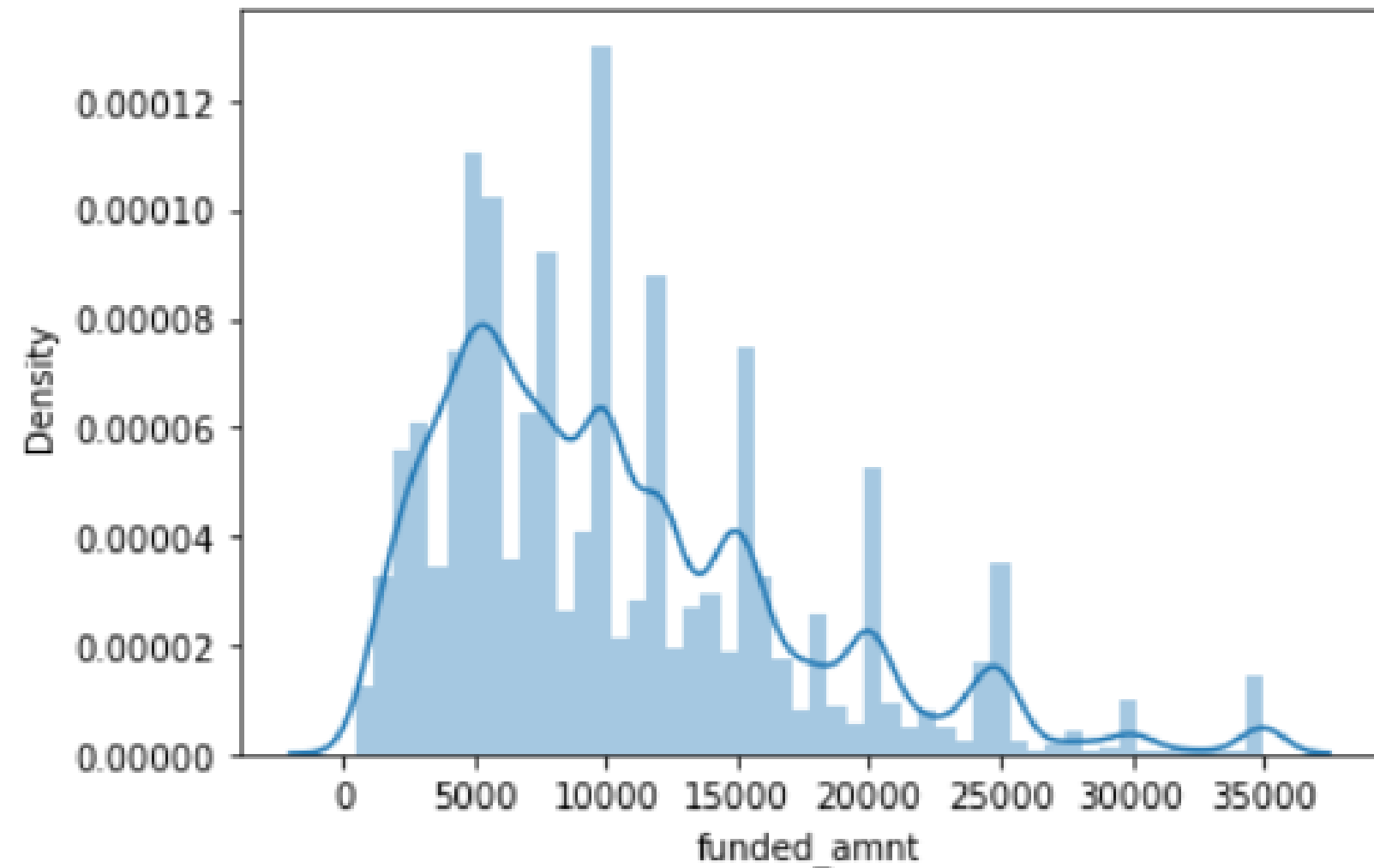
Employment length and loan count analysis



Obesrvations :

- Applicants who have 10 and more years of experience are applying more for the loan and less than 1 years stand at the 2nd position.
- People Who have 10 years of employment length have higher chances of defaulting.
- High loan amount i.e above 12K and 10+ years of experience are majorily charged off.

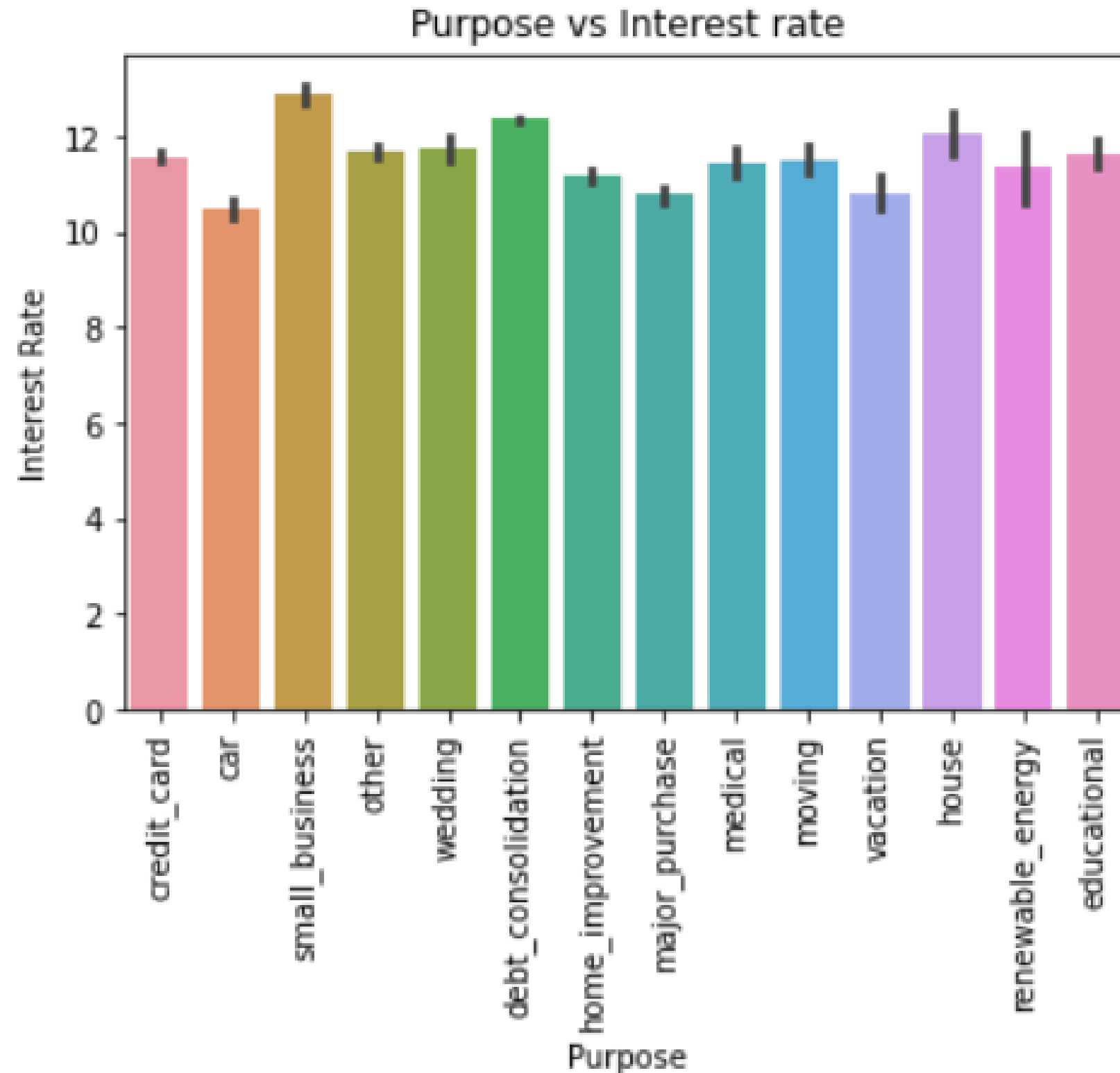
Funded Amount and Amount funded by investors



Observations :

- Expect funded amount is 10000.
- but Majority of Amount funded by invertors is 5000

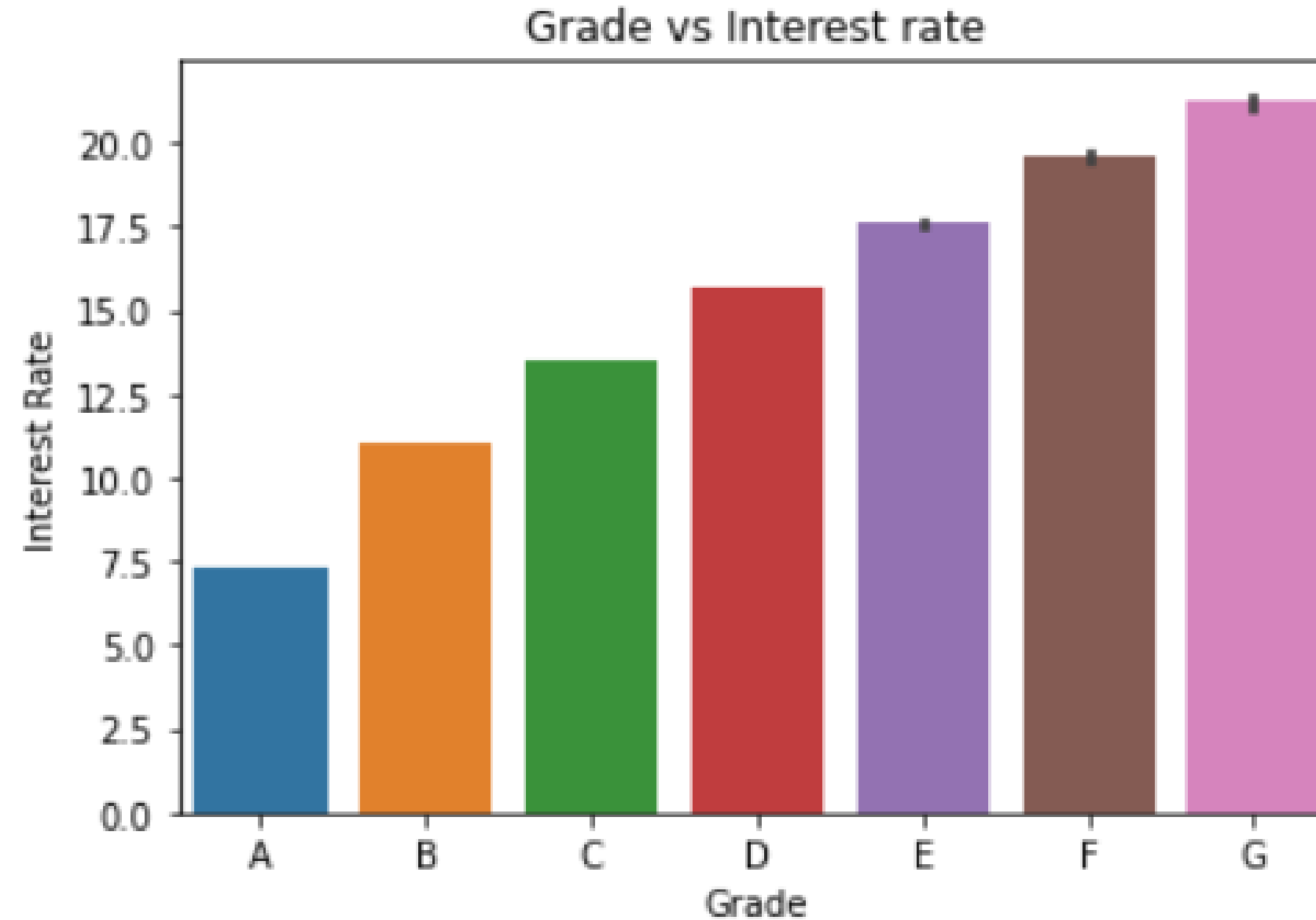
Loan purpose and interest rates.



Obesrvations :

- Interest rate is on an average 10% for all types of loan purposes

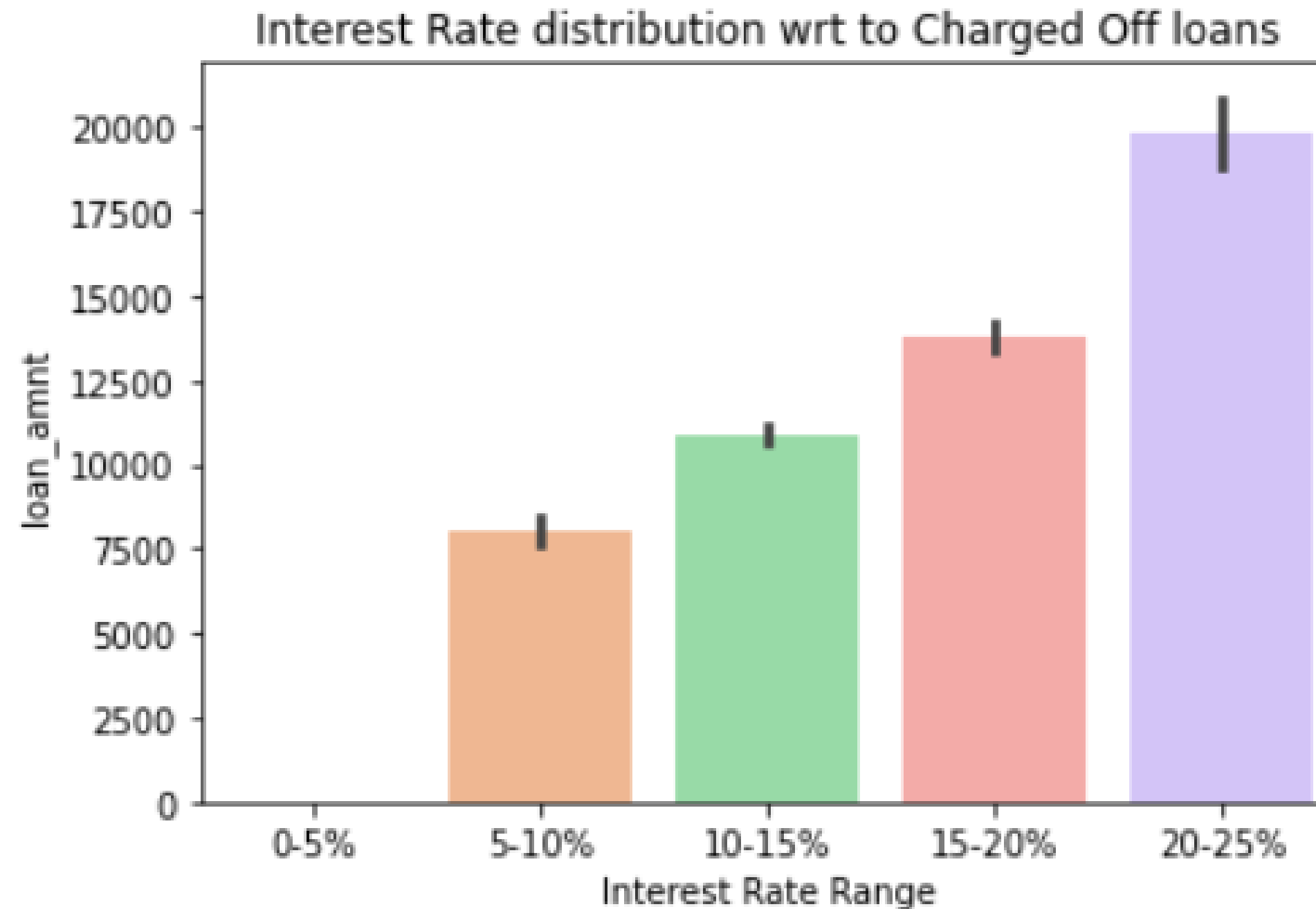
Relation of Interest rates and Grades



Observations :

- Interest rate is high for lower grades
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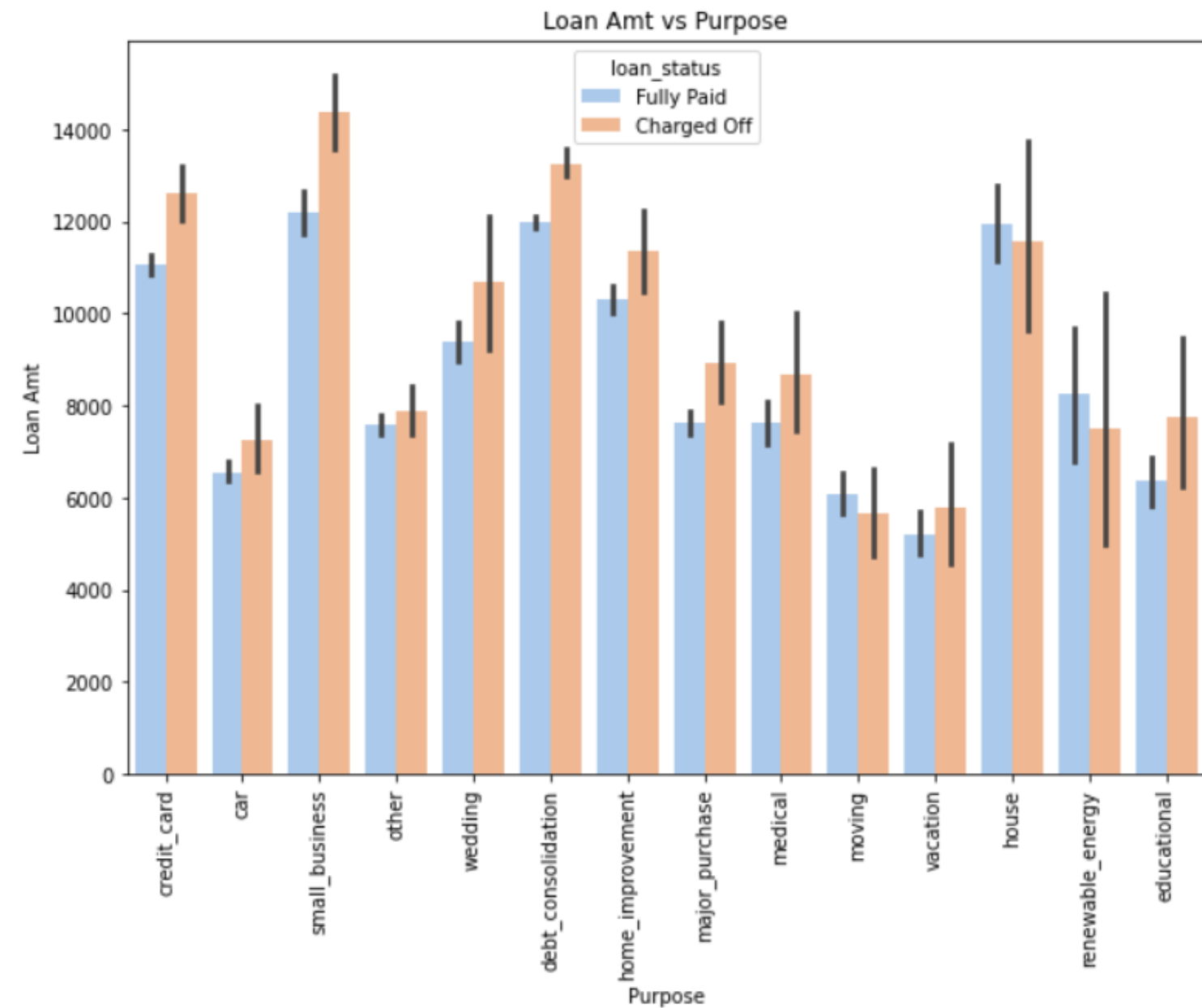
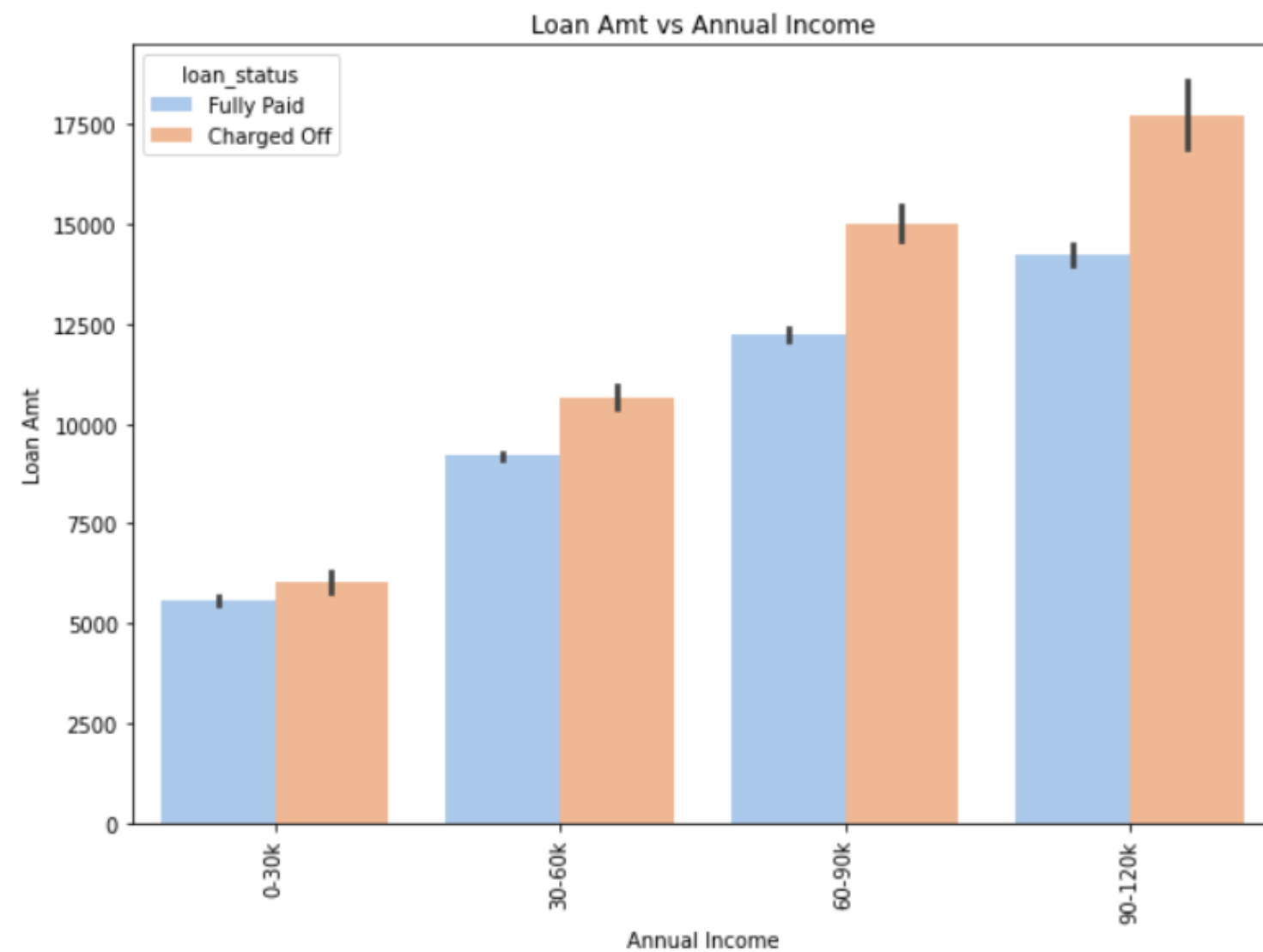
Relation of Interest rates and Charged off Loans



Obesrvations :

- Interest Rate within 10-15% are majorily charged off.
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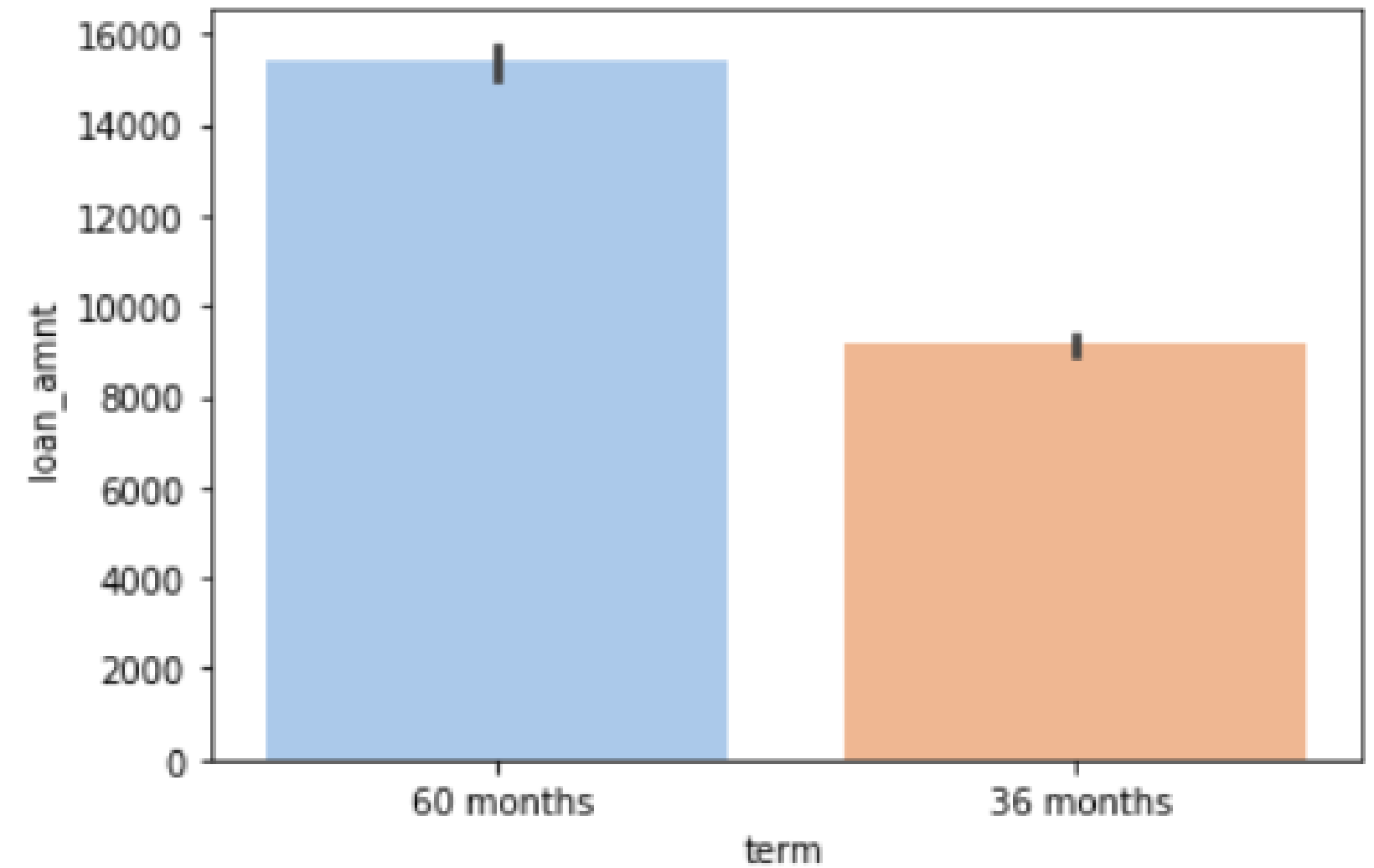
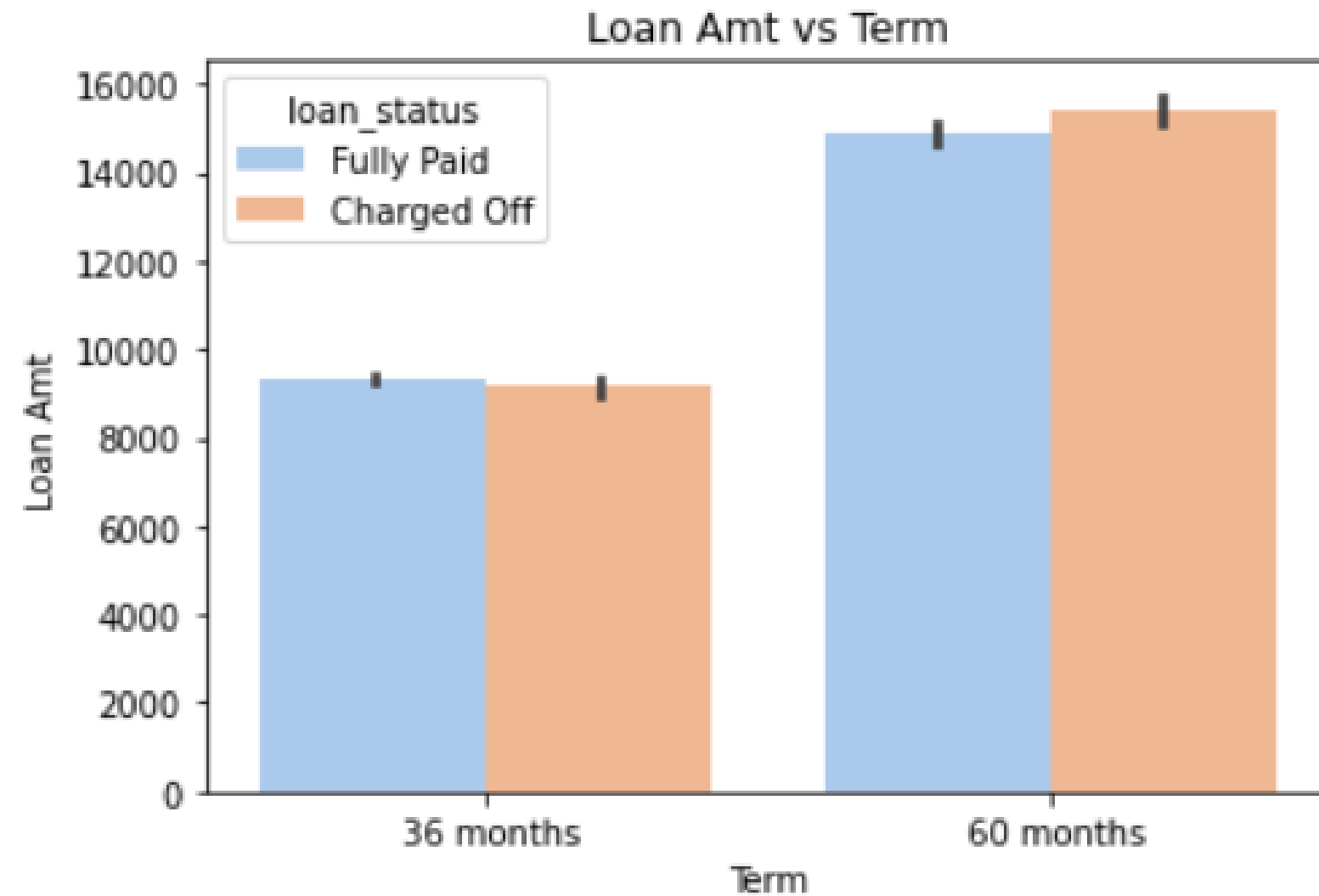
Loan Amount vs Annual income and Purpose



Obesrvations :

- High Annual Income and loan amount above 15K are majorily Charged off.
- Loan applications for Small Businesses and amount greater than 12K are majorily Charged off.

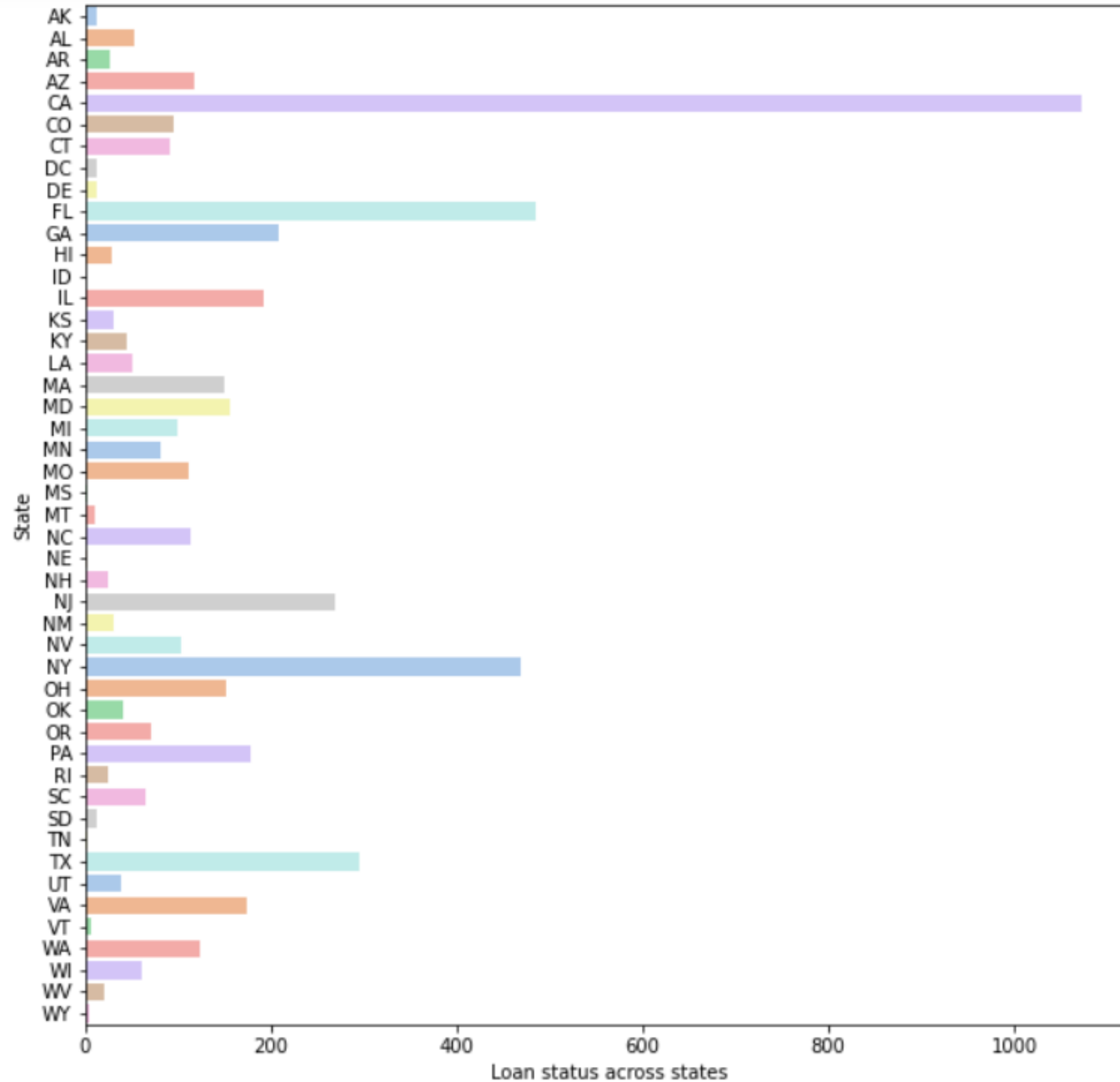
Loan amount Vs Term



Observations :

- We can say that applicants applying for long term has high loan amount.
- Loans applied for 60 months term.

State wise Loan Defaulter analysis



Obesrvations :

- State CA has high charged off loans.

Summary for the provided dataset:

- Charged off loans are about 14.3% of the total loans.
 - Majority of the loans are high graded loans.
 - Majority of the loan applicants are living either in Rented or Mortgaged homes.
 - Majority of loans are not varified
 - Maximun loans are given for debt consolidation.
 - Majority of Amount funded by invertors is 5000
 - Interest rate is on an average above 10% for all purposes of loans.
 - Interest rate is high for lower grades
-

Possible Driving Factors for loan default:

- 10+ years of employment experience.
 - High Interest Rate
 - Loans applied for 60 months term.
 - High Annual Income and loan amount above 15K
 - Loan applications for Small Businesses and amount greater than 12K
 - High graded loans
 - Loan applied for above 15K
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Thank You

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