

LENDING CLUB CASE STUDY SUBMISSION

Lending Club :

This company 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.

Objective:

1. Understand the driving factors (or driver variables) behind loan default.
2. Identify loan applicant traits which will tend to be 'defaulter'.

Problem Statement:

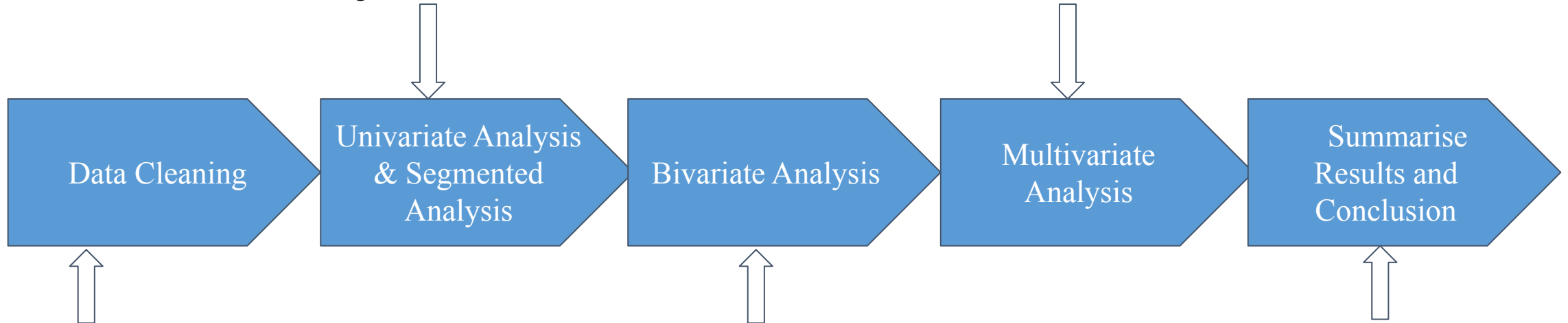
- Analyse the lending club dataset which contains information about past loan applicants using EDA and understand how loan parameters and various parameters are affecting the loan dataset and on defaulter value.

Problem solving methodology:

Approach :

- Created frequency and distribution plots of numerical and categorical variables.
- Analysed the variables with segment of other variables.

- Analysed important multiple variables at a time.



- Dropped the columns having null values.
- Converted the columns into numeric columns.
- Removed the outliers.

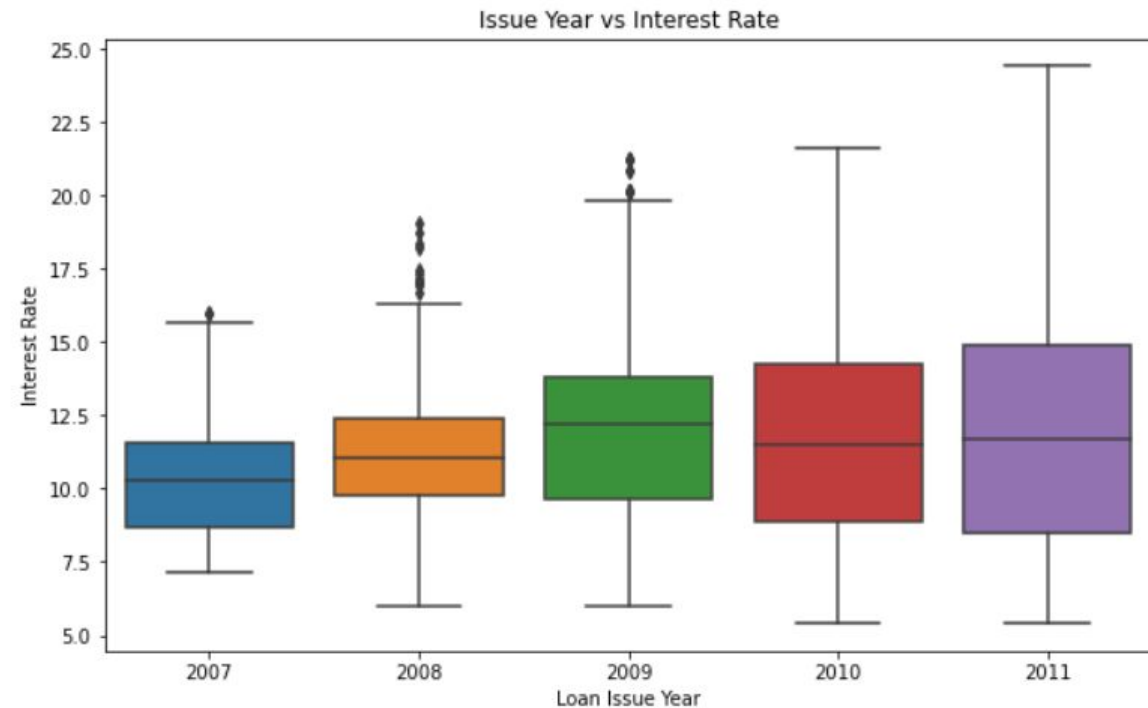
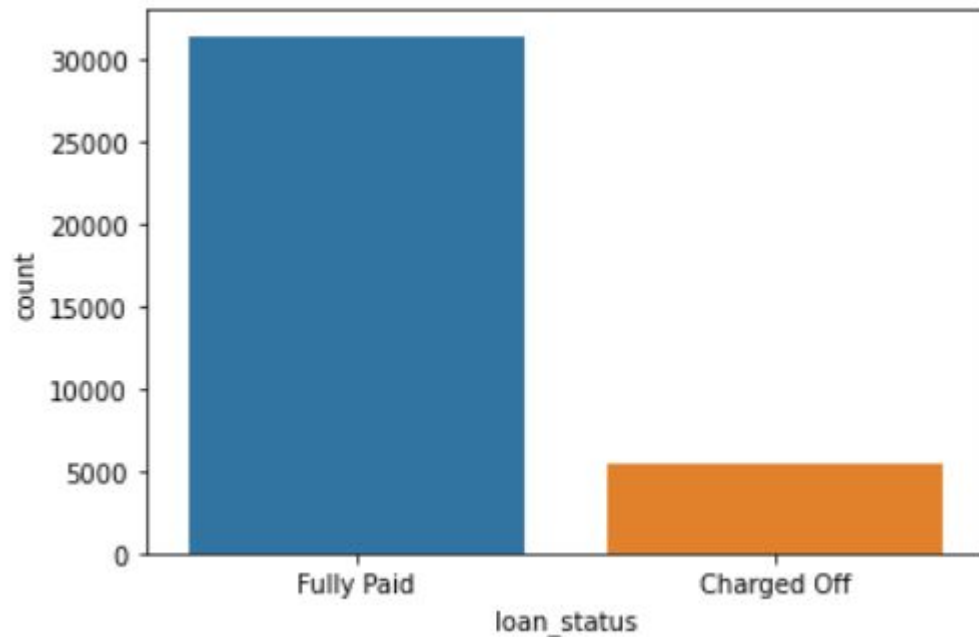
- Analysed the relationship between two variables and its impact on the third variable.

- We have plotted the graph for each analysis and added conclusion for that.

Loan Status Analysis:

Based on the loan status analysis:

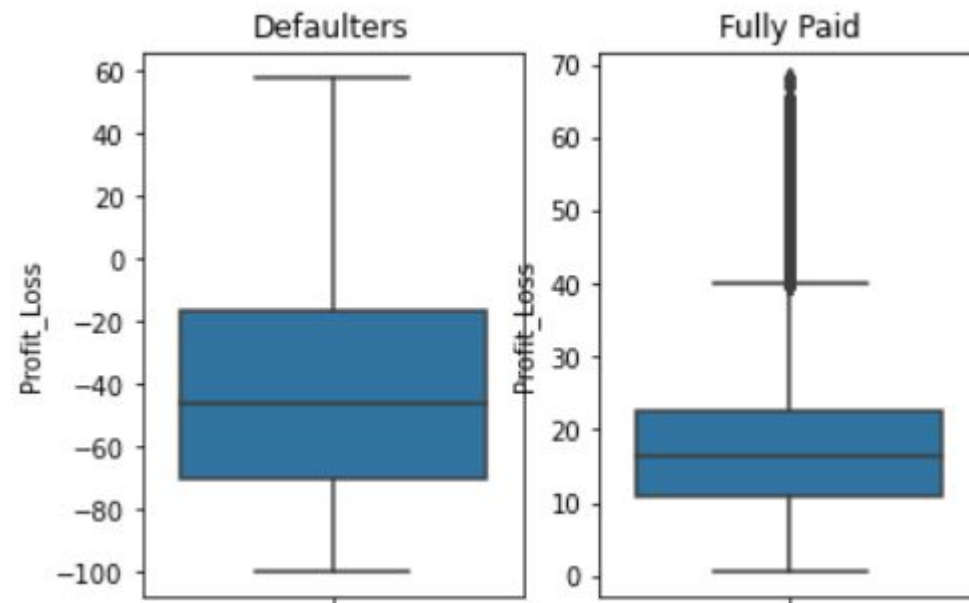
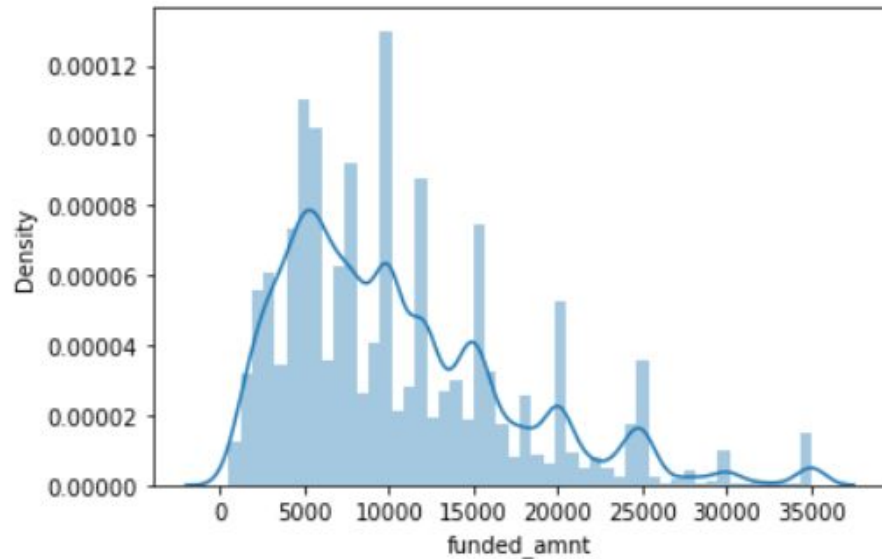
1. It is clear almost loan are **Fully Paid**.
2. About **14.16%** loan **charged off** out of total loan issued
3. With **increase in year**, the **interest rate on the loan** also **increasing slowly**.



Loan Amount Analysis:

Based on the loan amount analysis :

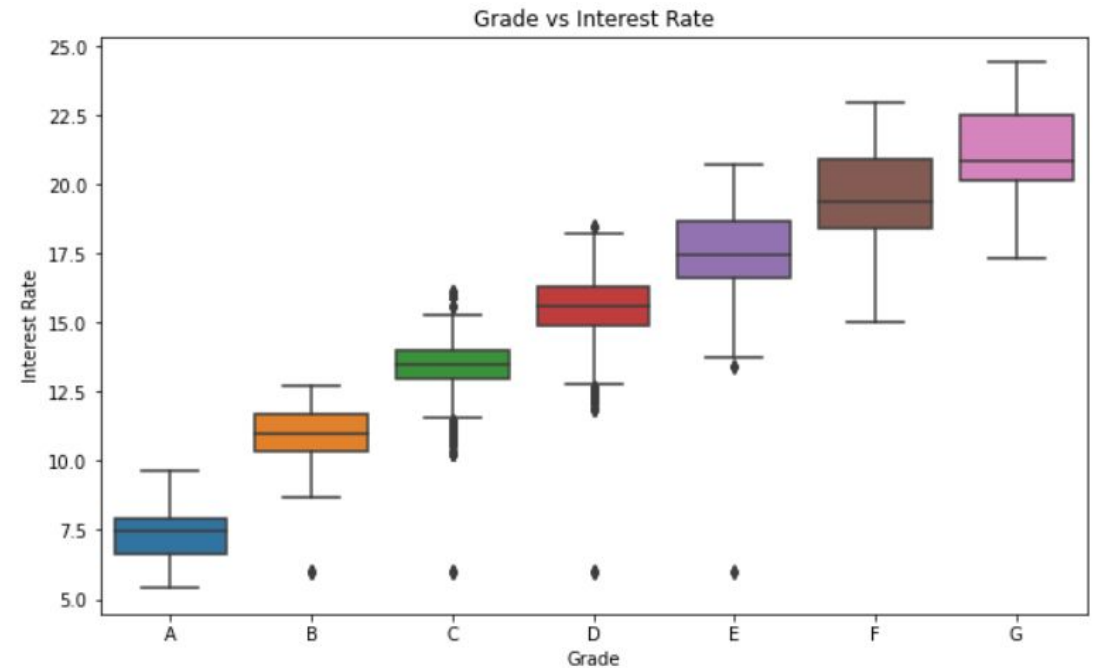
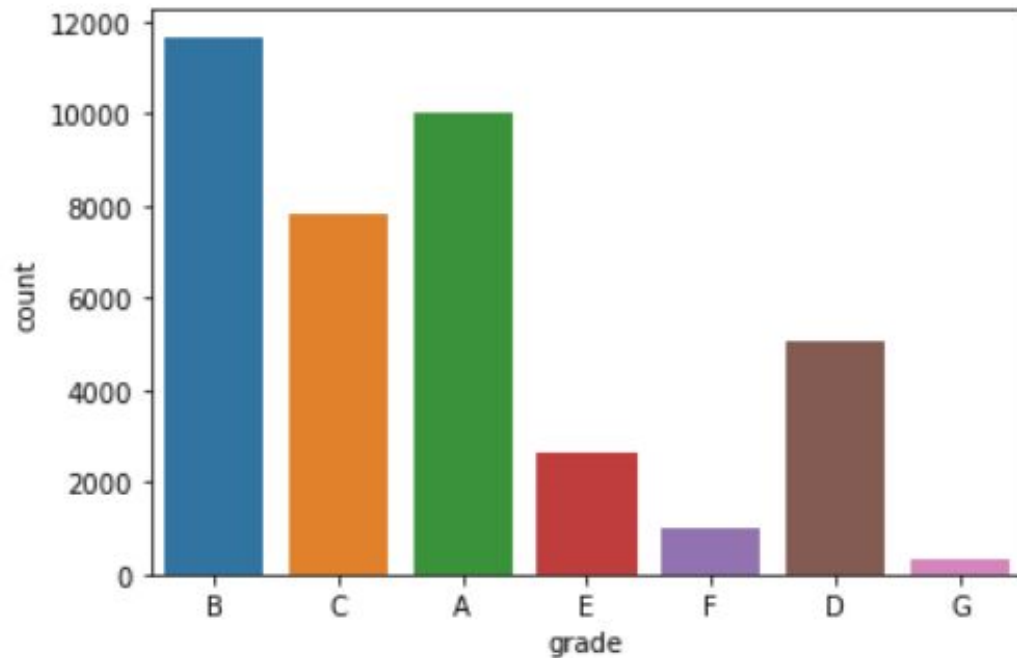
1. Most loans are given at **5 Lakh**.
2. Loan amount having **7 lakh or more than** that tend to be **defaulters** compared to the loan amount which is less than 7 lakh.



Loan Grade Analysis:

Based On loan grade analysis:

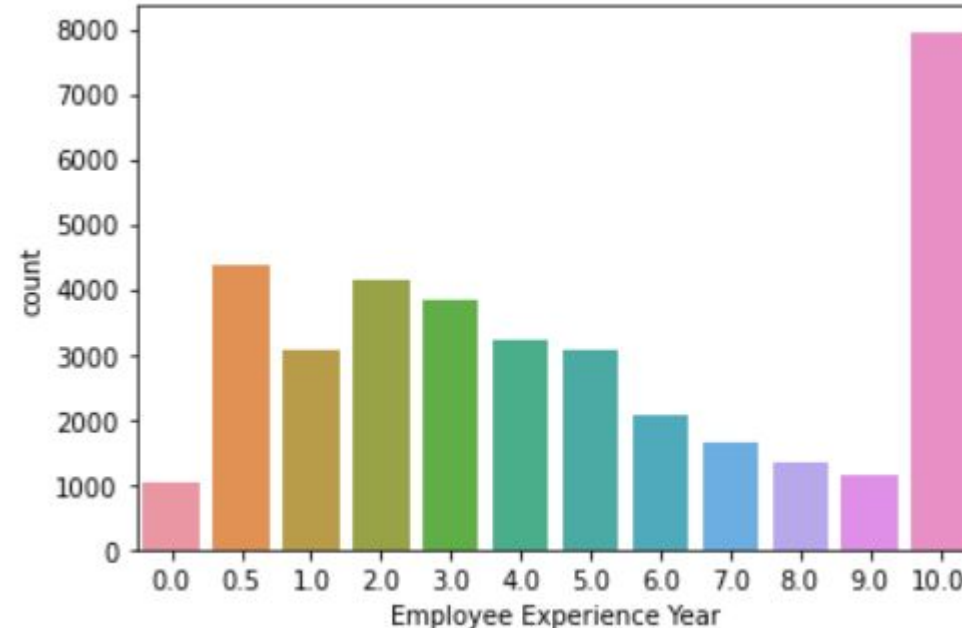
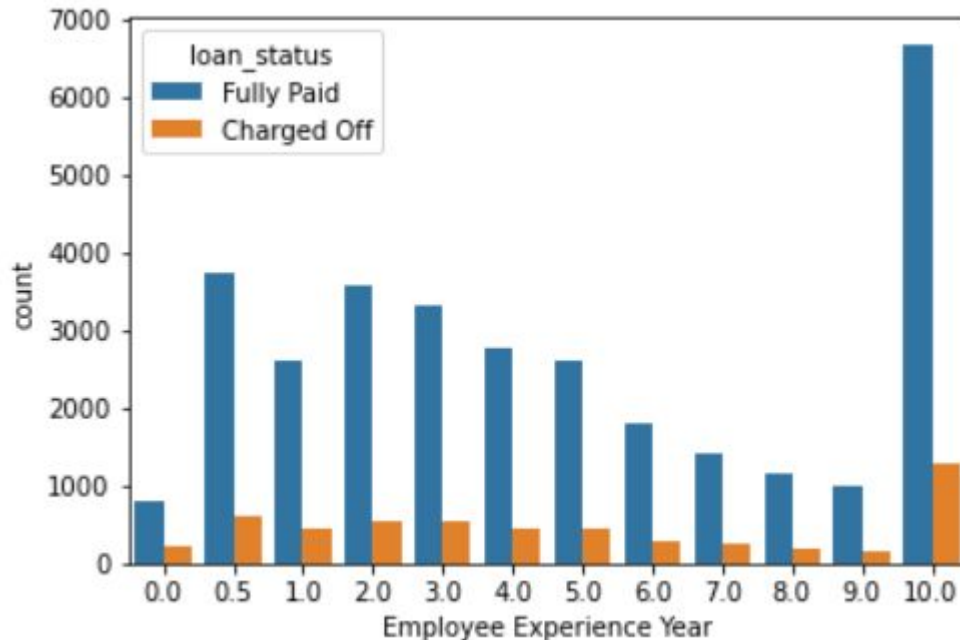
- Most loan grades are A,B and C that means good loans count most.
- Higher the grade,lower the interest rate.
- Interest rate is increasing with grades from A to F.



Analysis with respect to work experience:

Based on the work experience analysis:

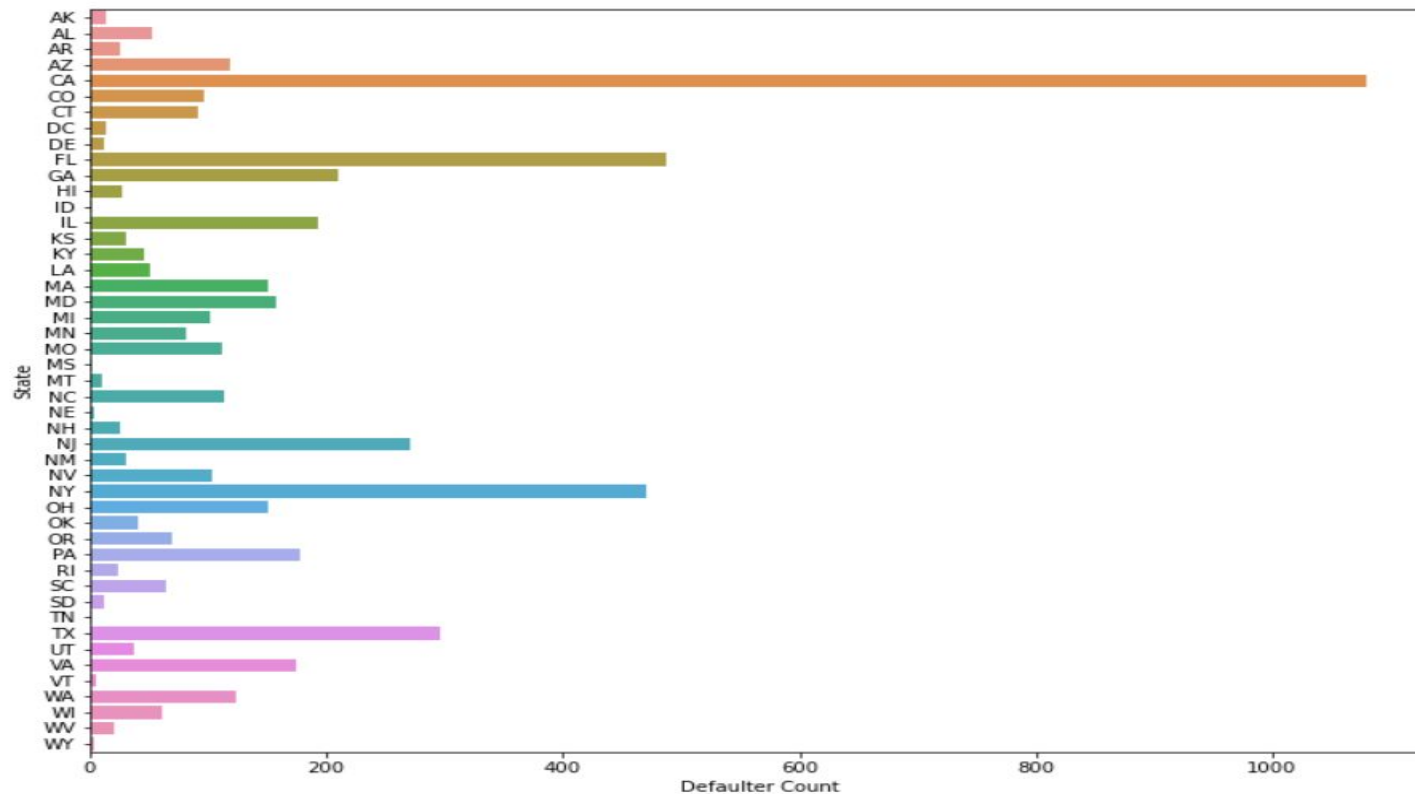
1. Loan applicants having **experience of 10 years** are having **more chances** of to get **defaulted**(Charged off).
2. Most applicants having experience of 10 years who have applied for loan.



State Analysis with respect to defaulters:

Based on state analysis:

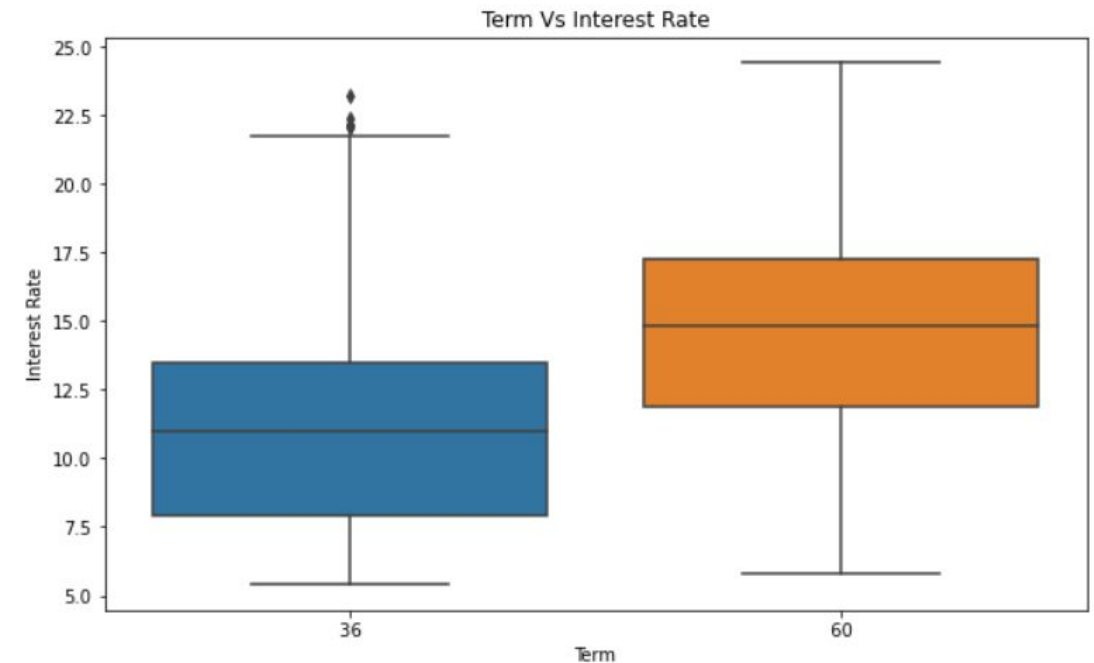
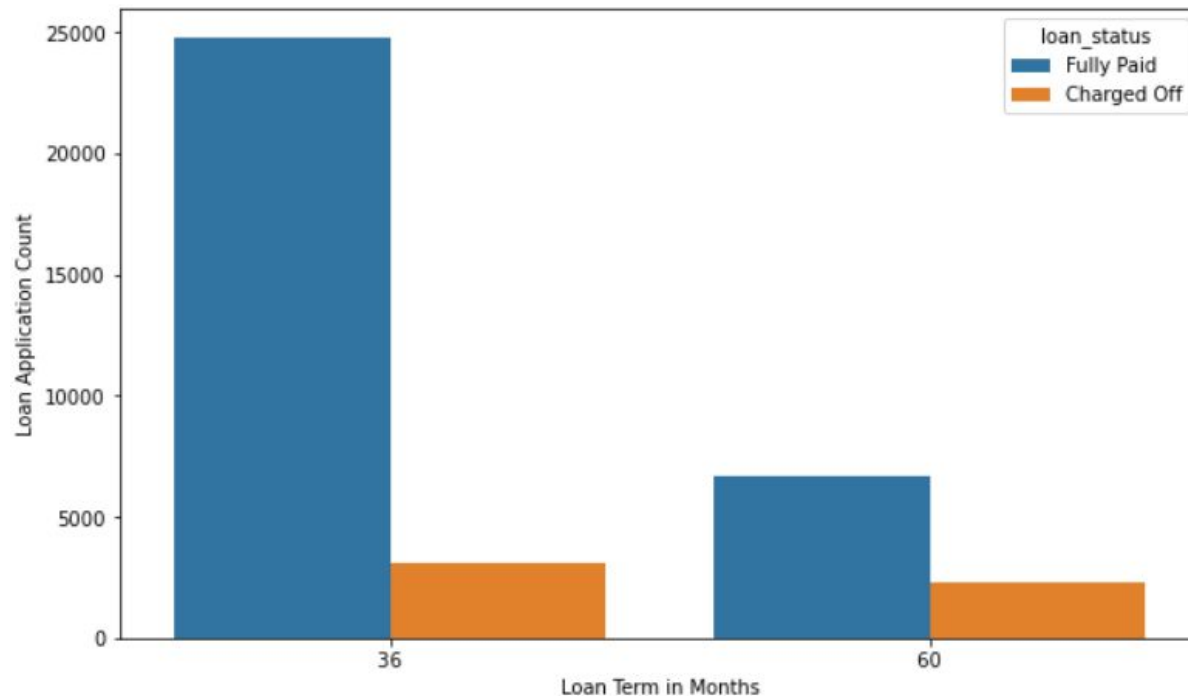
1. **Most defaulters** from state **CA**.
2. **FL,NY,TX** having **good number** of charged off/defaulters.



Analysis Defaults By Loan Term & Int Rate by Loan Term:

Based on the above analysis, inference as below:

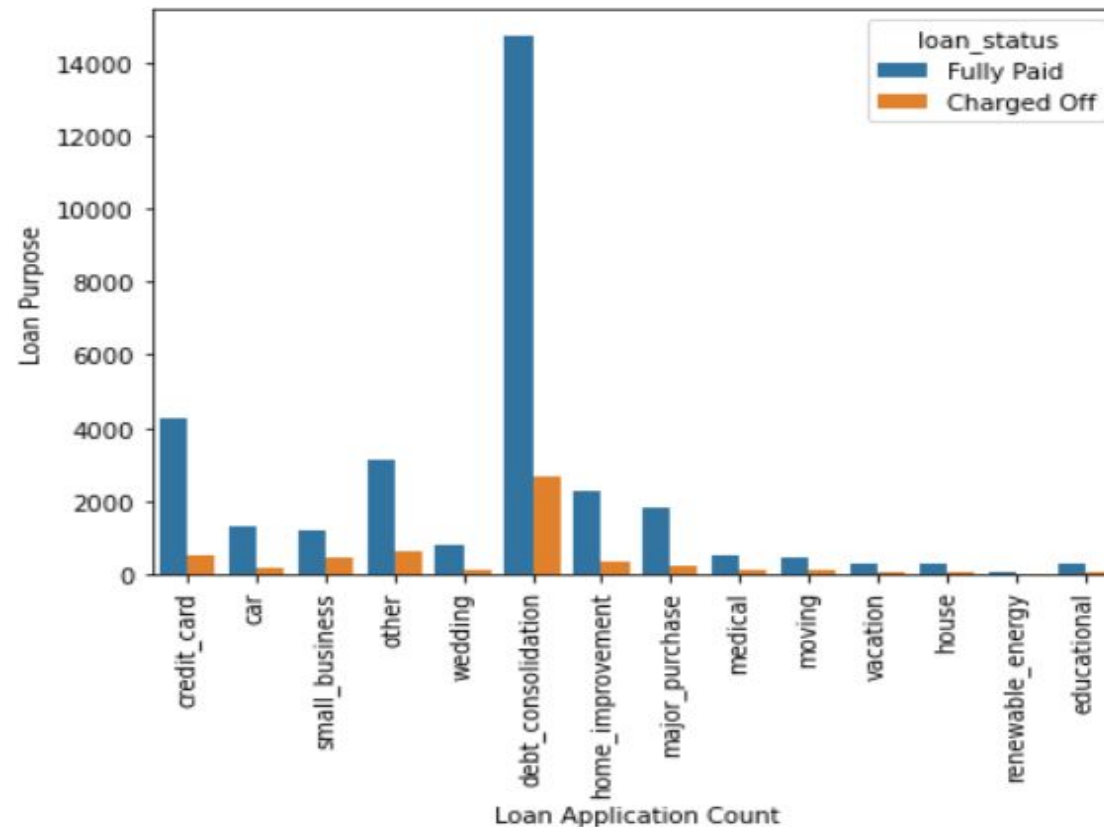
- Tenure of **36 months** have have **high chances** to be defaulters.
- Avg interest rate is **higher** for **60 months** loan term.



Analysis Loan Purpose :

Based on the above analysis,inference as below:

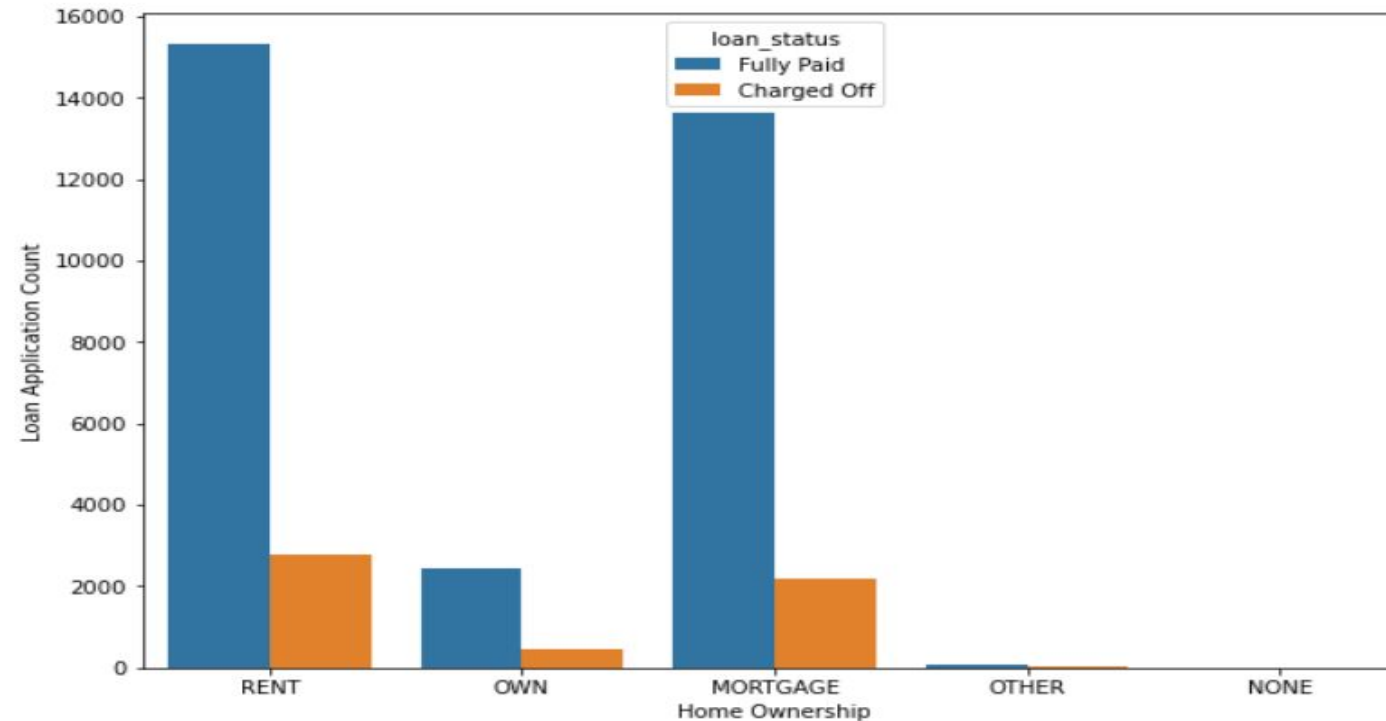
- **Most of the loans** are taken for the purpose of **debt_consolidation**.
- Charged off count and current count is also high for these loan.



Analysis Loan Status by Home Ownership:

Based on the above analysis,inference as below:

- **Most of the people living in rented home or mortgaged their home.**
- **Most of these people come in the category of charged off.**



Conclusions:

Based on the overall analysis ,we can conclude that:

- Loan applicants with **higher interest rate** tend to have **higher charged off amount** ratio.
- **Maximum loans** belongs to more populous state **CA**(California),**FL**(Florida),**NY**(New York) and **TX**(Texas).
- As the **loan amount increases**,the chance of **defaults**(charged off) also **increases**.
- When the purpose is **debt_consolidation**,then it has **high tendency to default**.
- Loans with **higher grades** having **lower interest rate**.
- With **increase in year** (2007-2011),the **interest rate** also **increasing slowly**.