

# Lending Club Case Study

PRATHAMESH MORE

# Objective

---

The Objective of this case study is to implement EDA technique on a real-world problem and understand the insights and present in a business first manner via presentation.

## **Benefits of the case study:**

- ❑ Identification of Loan Applicant traits that tend to 'default' paying back.
- ❑ Understand the 'Driving Factors' or 'Driver Variables' behind Loan Default phenomena.
- ❑ Loan Lending Organizations may choose to utilize this knowledge for its portfolio and risk assessment of new loan applicants.

# Business Understanding

---

The business objective is to take a decision whenever they receive a loan application whether to reject or approve based on certain variables.

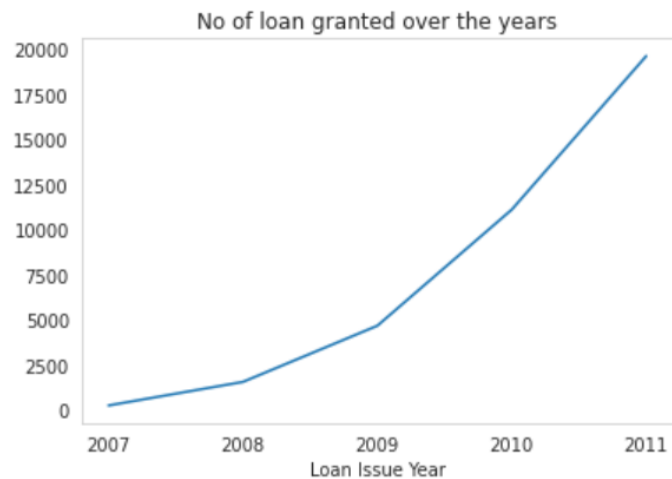
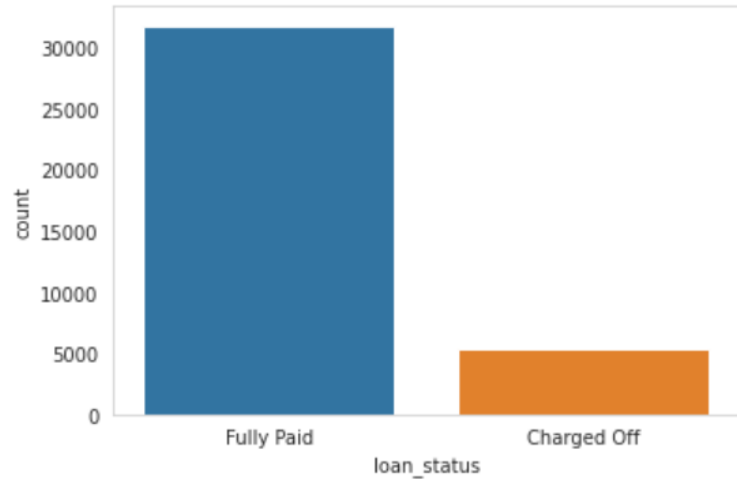
## **Dataset Details:**

The data given below contains information about past loan applicants and whether they 'defaulted' or not. Data has details regarding approved loan not the rejected ones. It has 3 status of loan which is Fully Paid, Current and Charged-Off.

# Data Clean-up and Preparation process:

---

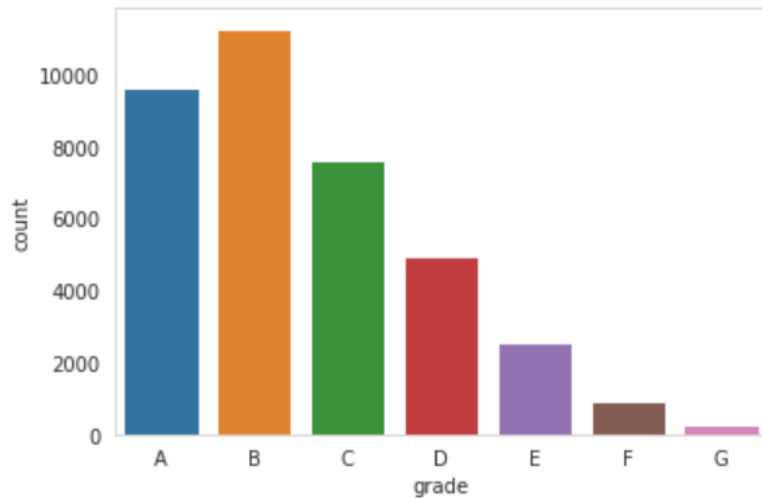
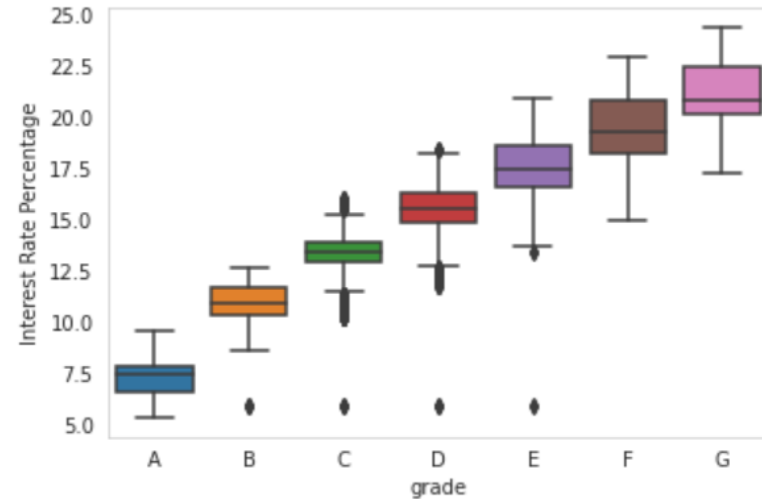
- ❑ Importing the Data
- ❑ Removing large null value irrelevant columns
- ❑ Removing Fixing null values and Duplicate Data
- ❑ Correcting data types and deriving new columns
- ❑ Filter Data for requirement.
- ❑ Removing outliers



# Loan Status Analysis

**Loan Status:** The number of charged off loan is much smaller compared to total count.

**Loan Amount:** It varies from 500 to 35000 with a median of approx 10000. Loan amount is majorly small and very few clients have taken large loans and larger it goes we have higher chance of defaulting.



# Loan Grade Analysis

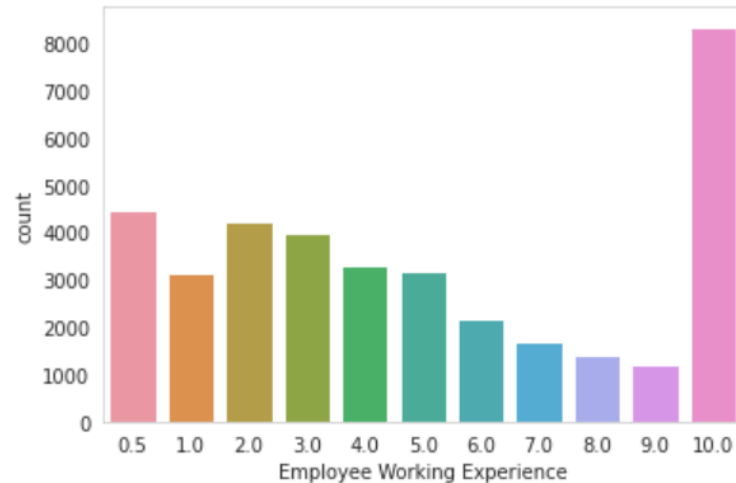
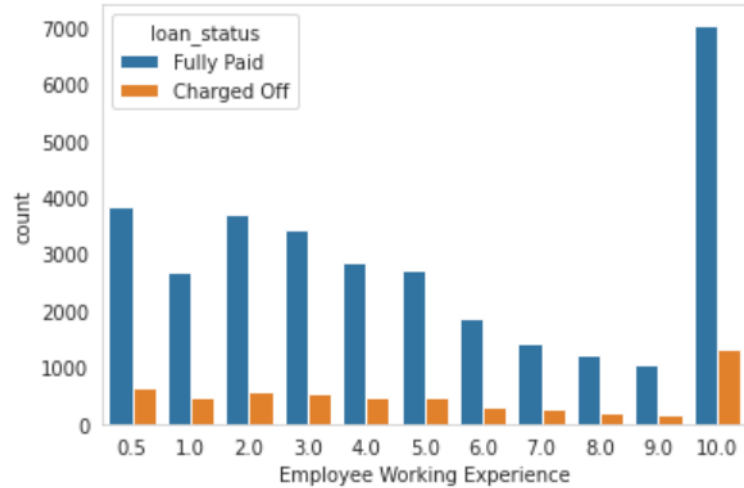
## Observation:

1. Most of the loans have grade of A and B. Therefore stating most of the loans are high graded loans.
2. High Quality loans have low interest rate.
3. Which depicts, higher interest rate have higher tendency to default the loan.

# Loan Applicants work Experience Analysis

## Observation:

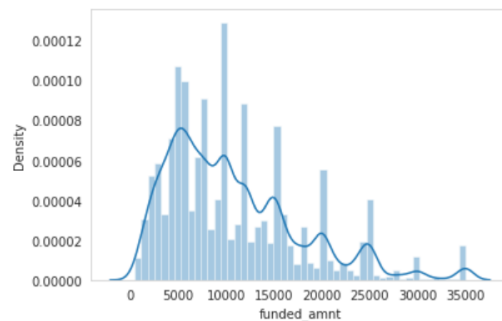
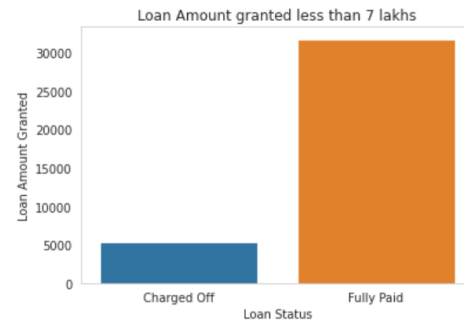
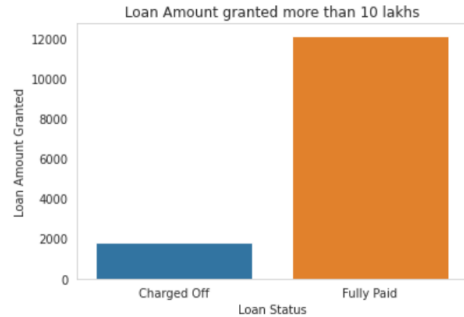
1. Majority of employees applying for the loan have more than 10 years of experience
2. Tendency of person to default the loan with 10 years of experience is also high. So company need to be careful when granting loan.



# Loan Amount Analysis

## Observation:

1. Funded amount is left skewed. Most of the loan amount given is below 7 lakhs.
2. Probability of people with loan amount greater than 7 lakhs tends to default is more than the people with less than 7 lakh

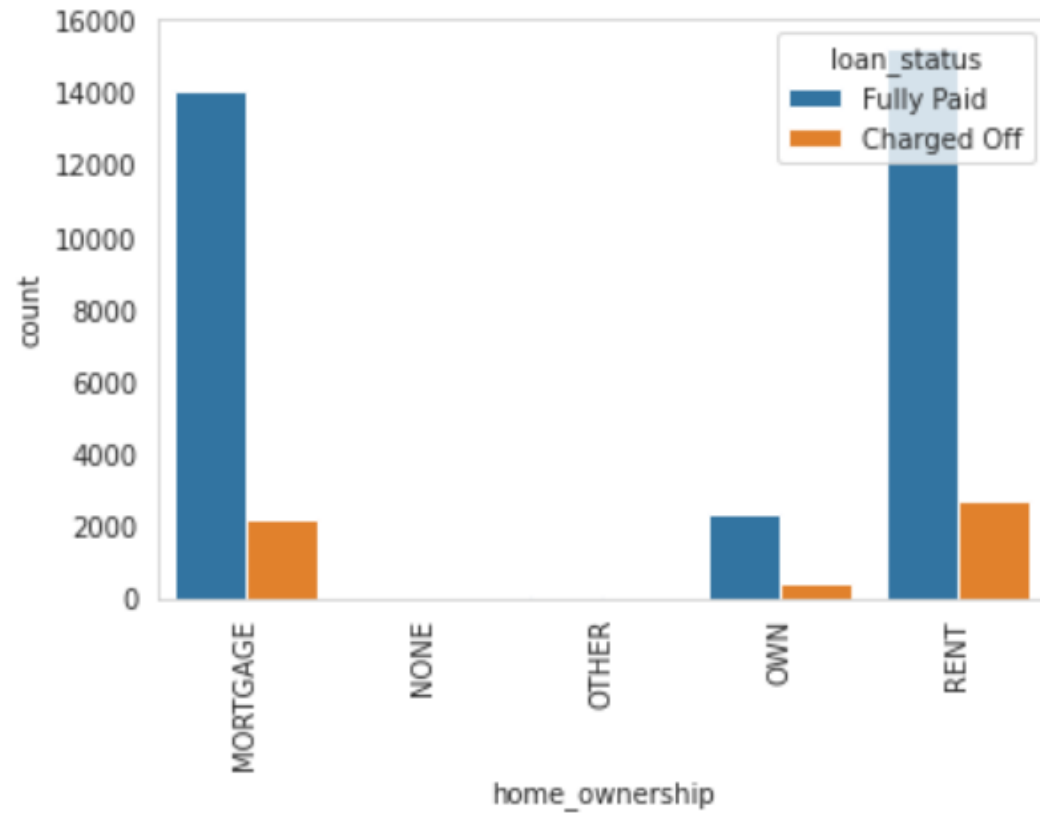




# Loan Status by Home Ownership

## Observation:

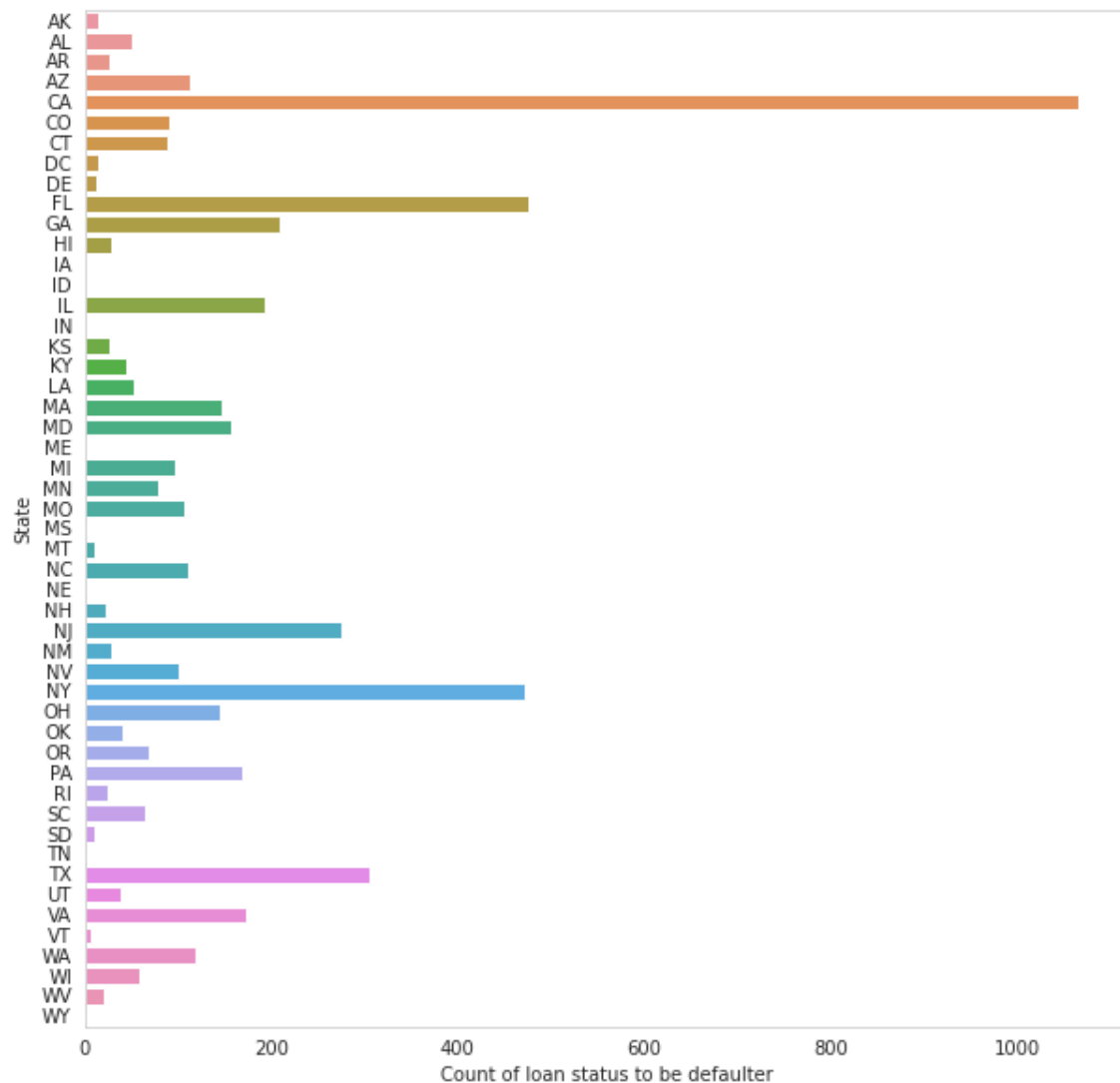
Applicants having there home rented or on mortgage have almost equal tendency to default the loan.



# Loan Defaulters by State Analysis

## Observation:

Applicants from state CA have high tendency to default the loan



# Conclusion

---

- The Defaulted loan are lower for the borrowers which own their property compared to mortgage or rent.
- The 60 months term has higher chance of defaulting than 36 months term whereas the 36 months term has higher chance of fully paid loan.
- The loans in 36 months term majority consist of grade A and B loans whereas the loans in 60 months term mostly consist of grade B, C and D loans.
- Low grade loans have high tendency to default. Grading system is working as expected.
- Extra verification and background check must be done for the applicants belonging to CA state, as tendency to default is high.
- The default loan amount increases with interest rate and shows are decline after 17.5% interest rate.
- Loans having higher interest rate have more defaulters. Check the background of applicant thoroughly if interest rate is high.
- Risk are with the Borrowers having Public Recorded Bankruptcy.
- The Grade represent risk factor thus we can say interest rate increases with the risk.
- When the purpose is debt consolidation check applicant thoroughly as it has high tendency to default.