


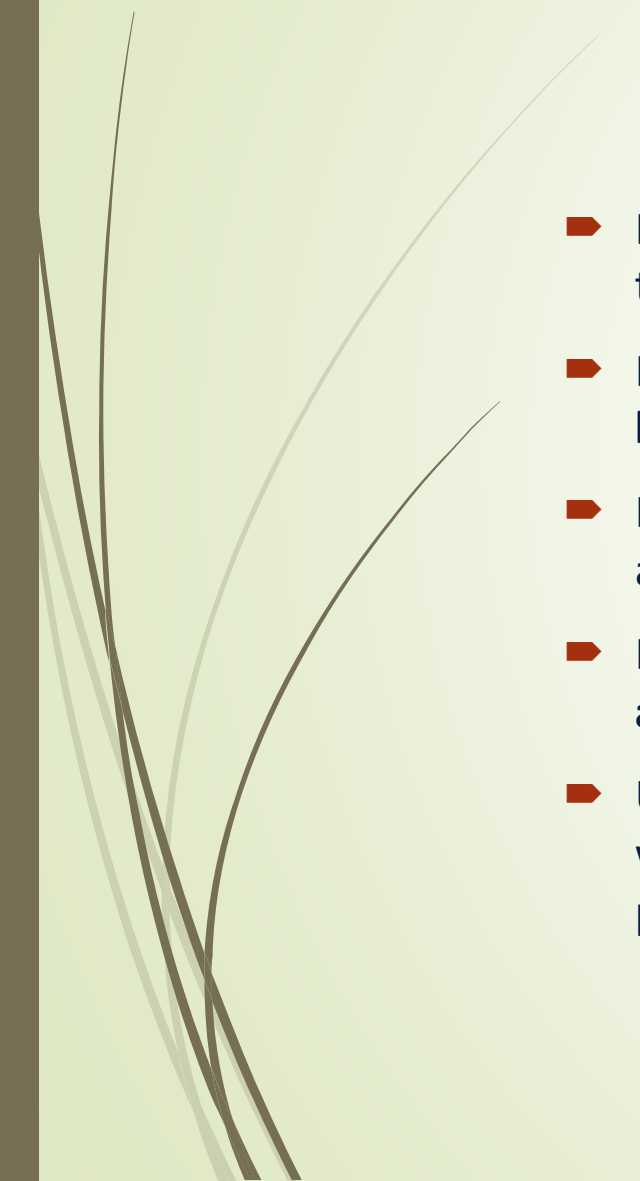
Lending Club EDA Case Study

Submitted by:

Shashi Kiran C

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Objectives of this Case Study

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- Several thin, curved, light brown lines on the left side of the slide, resembling stylized grass or reeds.
- If we are able to identify these risky loan applicants, then such loans can be reduced thereby cutting down the amount of credit loss.
 - If the applicant is **likely to repay the loan**, then not approving the loan results in a **loss of business** to the company.
 - If the applicant is **not likely to repay the loan**, i.e. he/she is likely to default, then approving the loan may lead to a **financial loss** for the company.
 - In this case study, we will perform EDA to understand how **consumer attributes** and **loan attributes** influence the tendency of default.
 - Understanding **driving factors (or driver variables)** behind loan default, i.e. the variables which are strong indicators of default. The company can utilize this knowledge for its portfolio and risk assessment.

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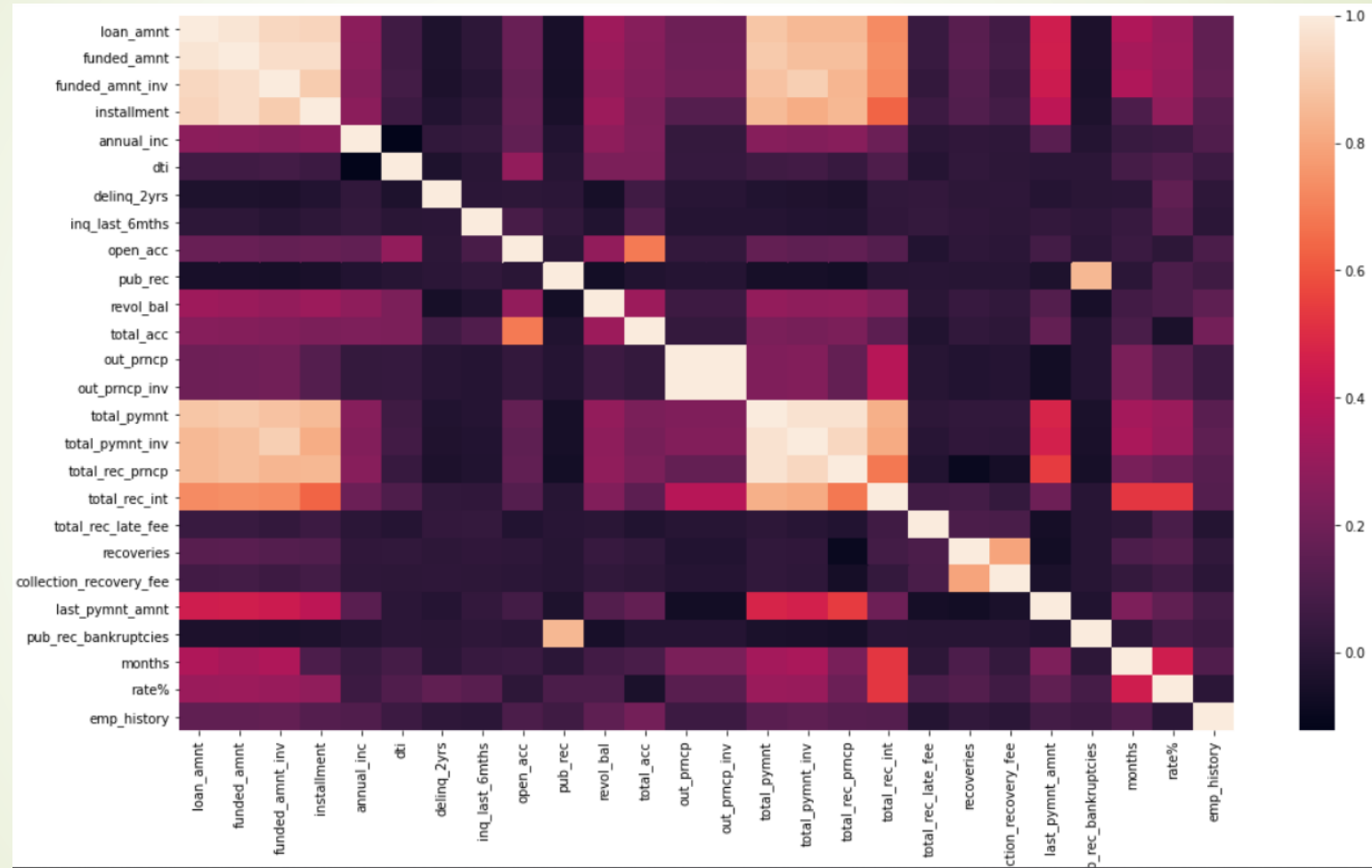
Data Cleaning

- Cleaning out the **Null value rows**.
- Unnecessary rows cleaning.
- Columns with only **one unique value**.
- Creating **derived columns** based on the data that we have.
- **Filter and group by** based on the plotting requirement.

Data Analysis

- Performing **Univariate and Bivariate analysis**.
- Utilizing the **plotting methods** i.e. Histogram, Distplot, Line plot etc.....
- **Box plot** to identify the outliers and to identify the mean and IQR ranges.
- **Correlation matrix** to identify the similarity of the variables.

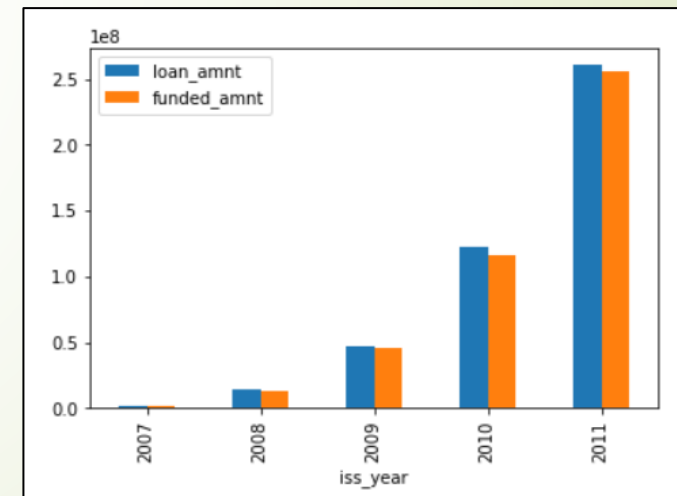
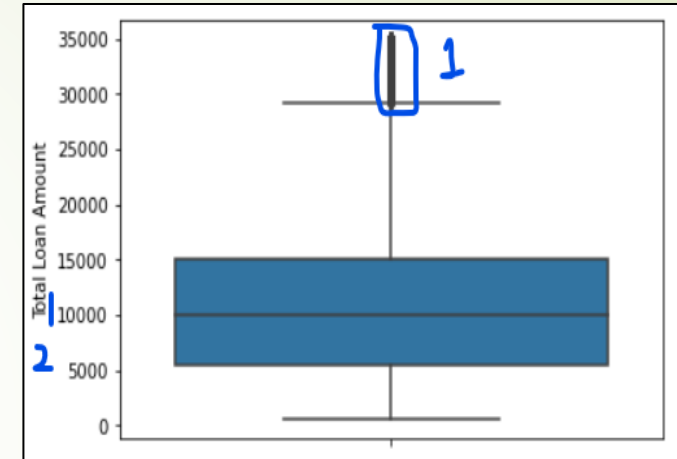
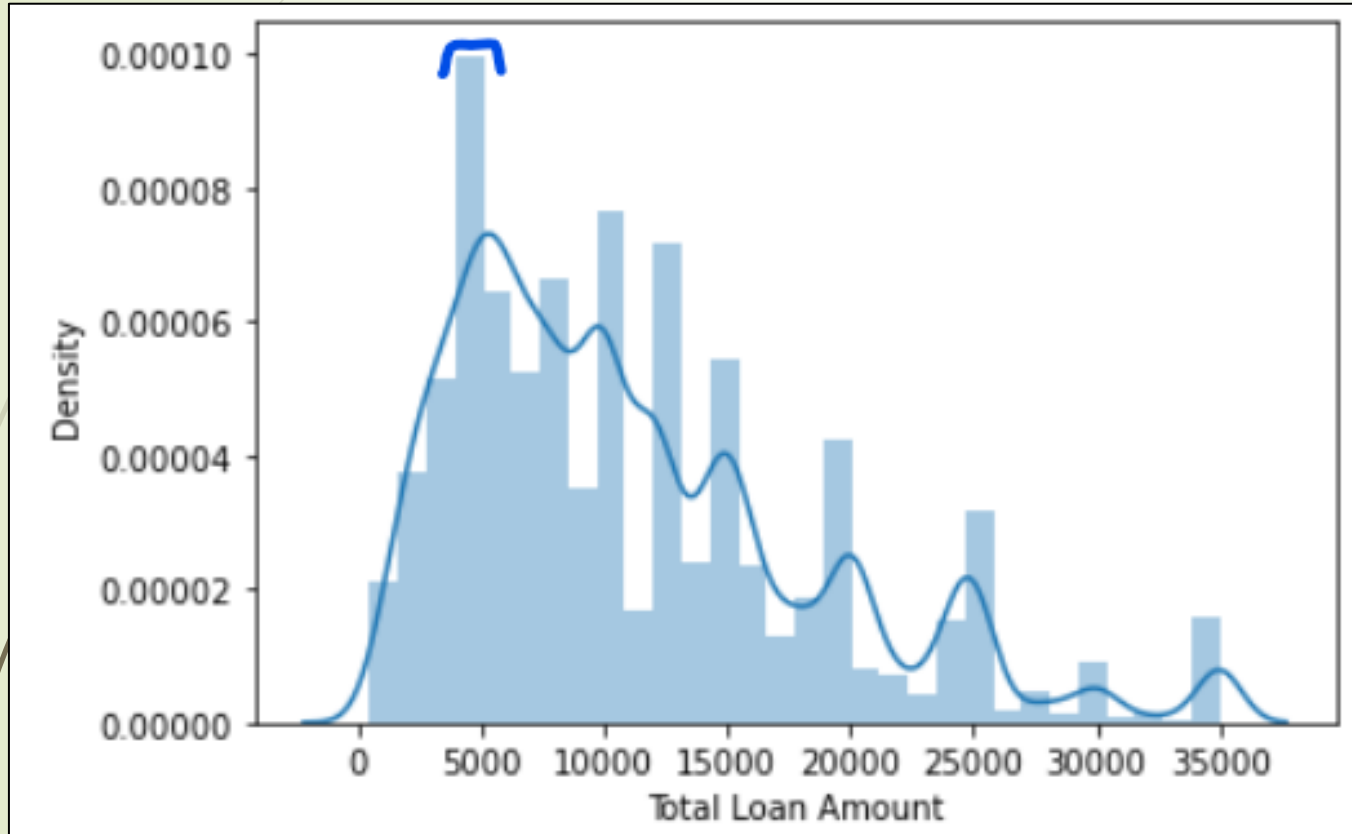
Co-Relation between the variables



Observation:

1. Most of the variables are co-related with each other. Especially the funding amount.
2. Employee experience is more co related with the rate of interest.

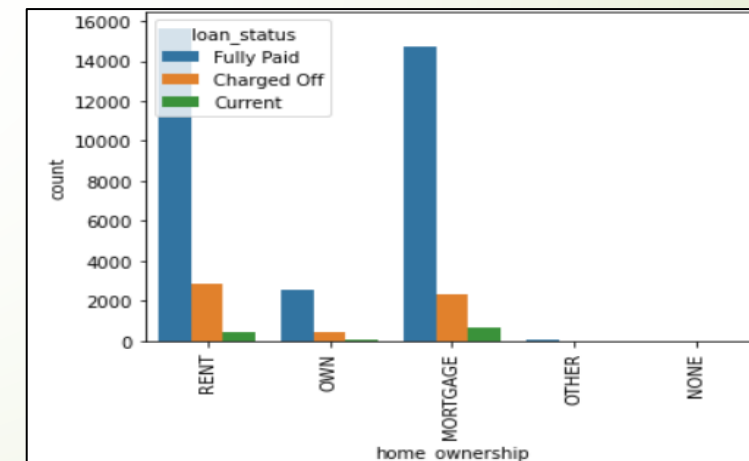
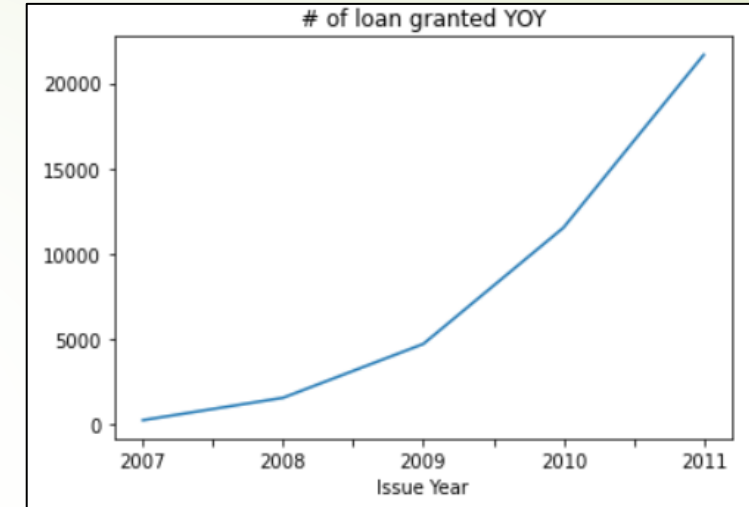
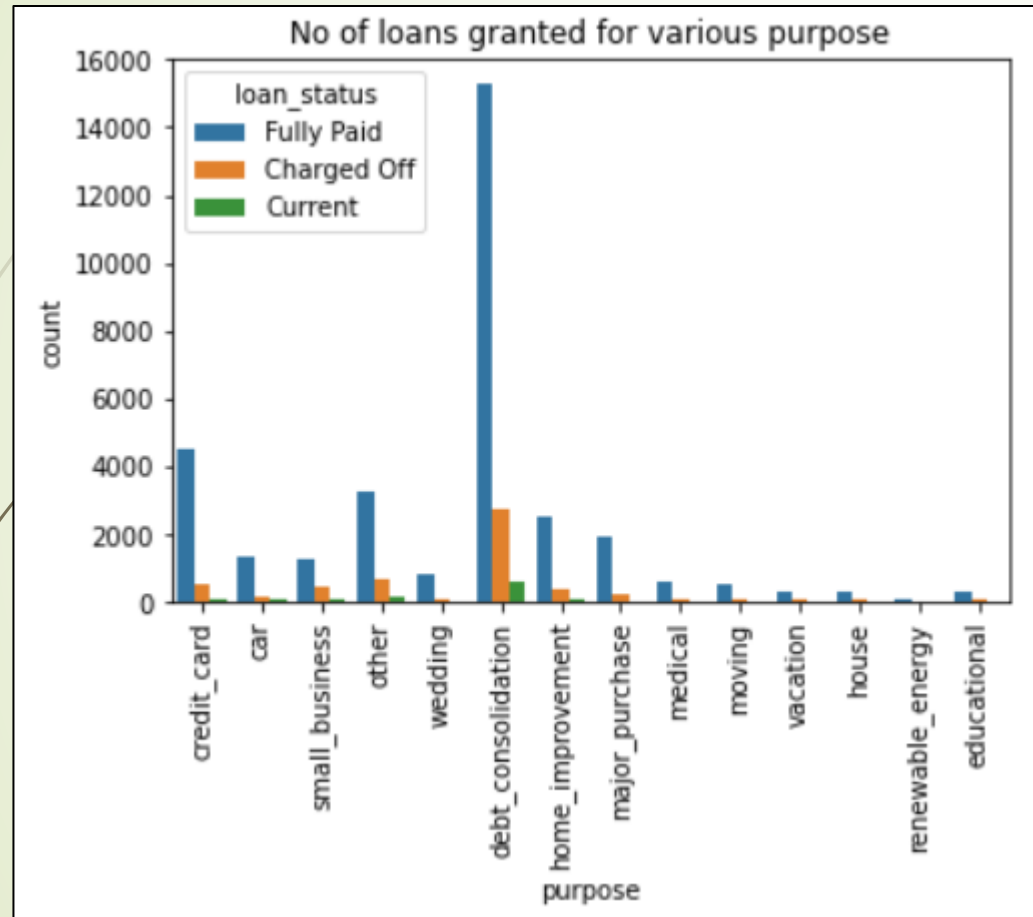
Loan Amount Analysis



Observation:

1. We have a positive trend in the loan amount YOY.
2. It is observed that we have more left skewed as the loan amount stacking up @\$5000.

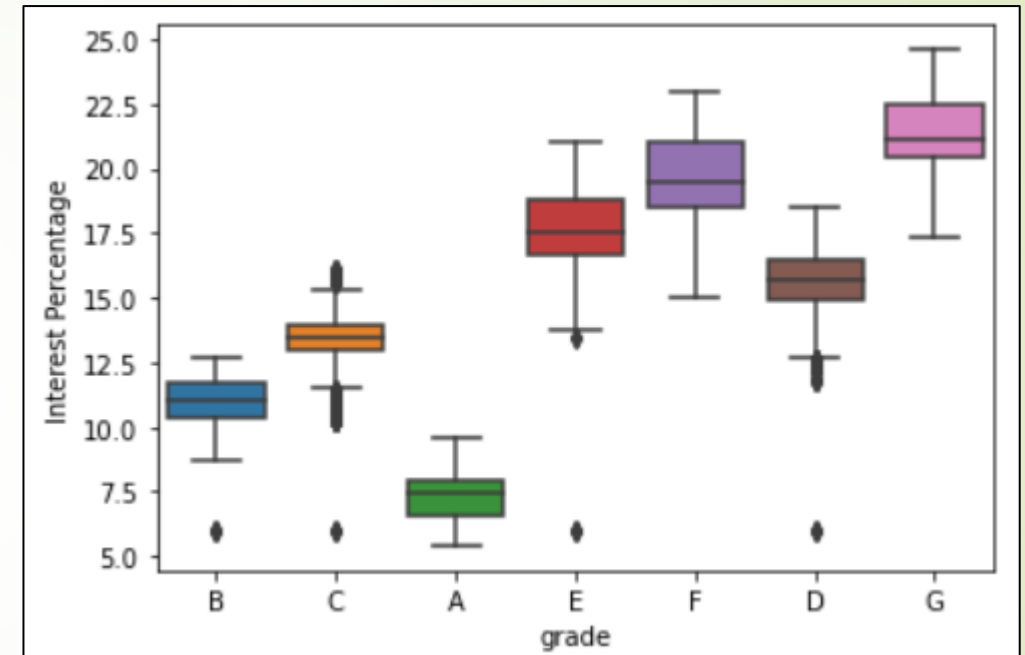
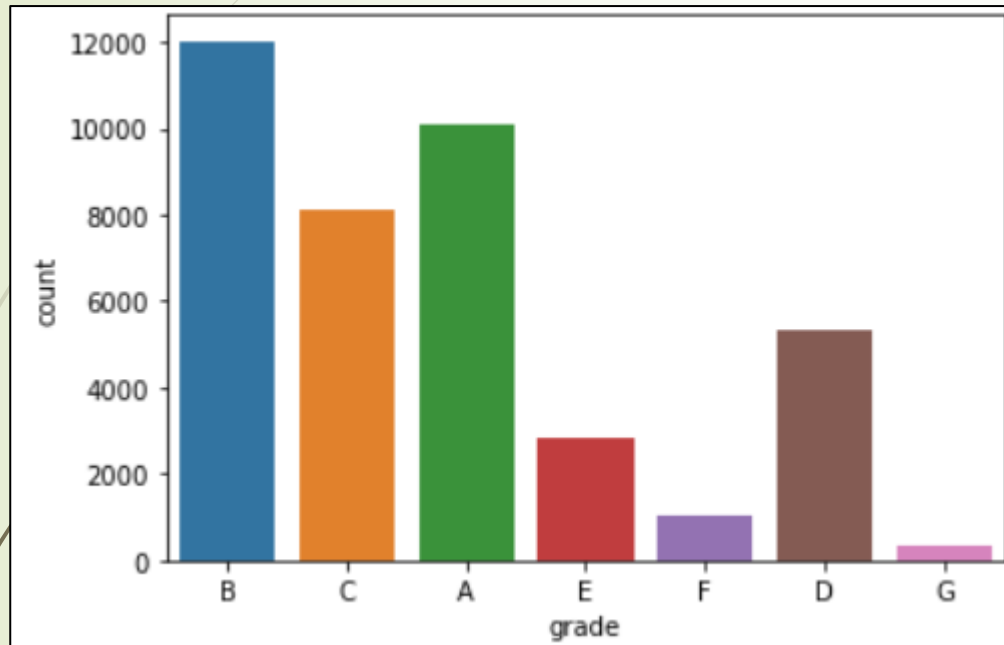
Loan Status Analysis



Observation:

1. Debt Consolidation is more likely to have a high default rate .
2. Mortgage and Rent ownership individuals are likely to take more loans and the risk to default is almost 10-15%

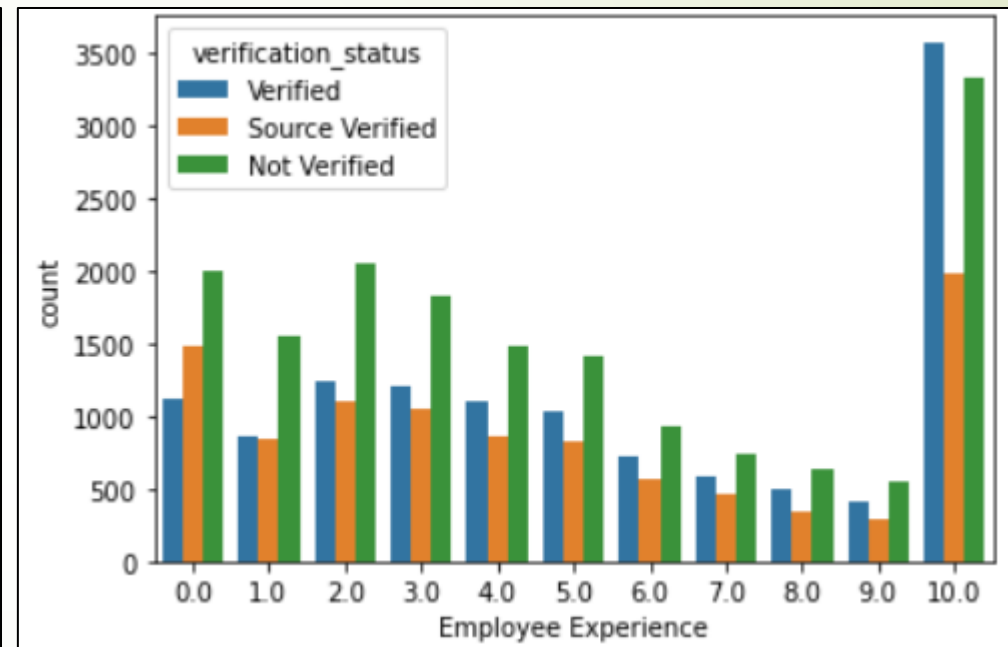
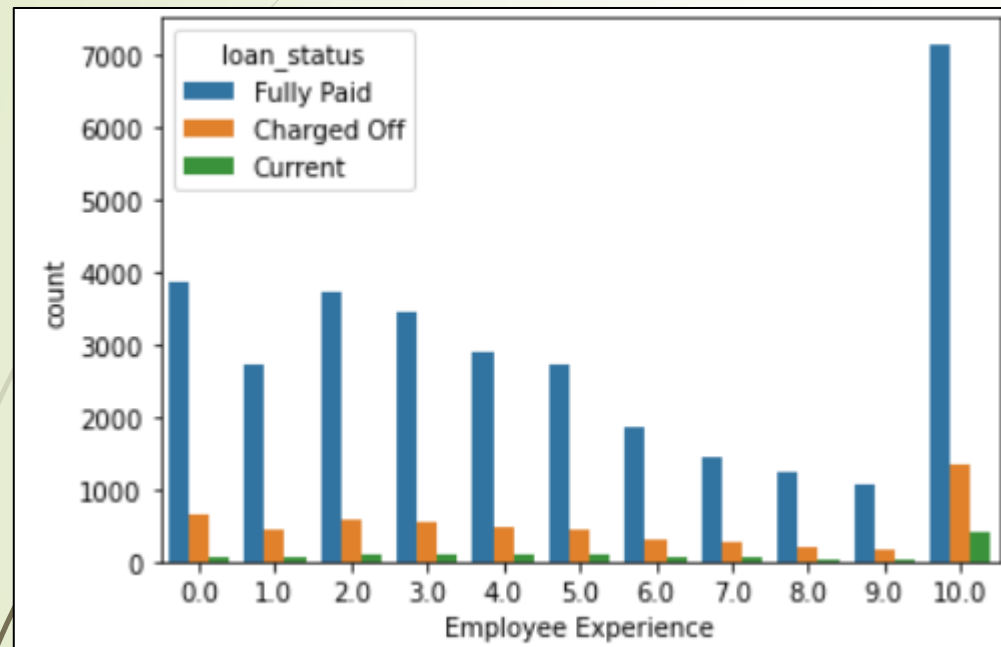
Loan Grade Analysis



Observation:

1. Interest rate is rightly mapped to the Grade individuals as they tend to make the regularly.
2. ABC Grade individuals are likely to get loan approvals more as compared to others

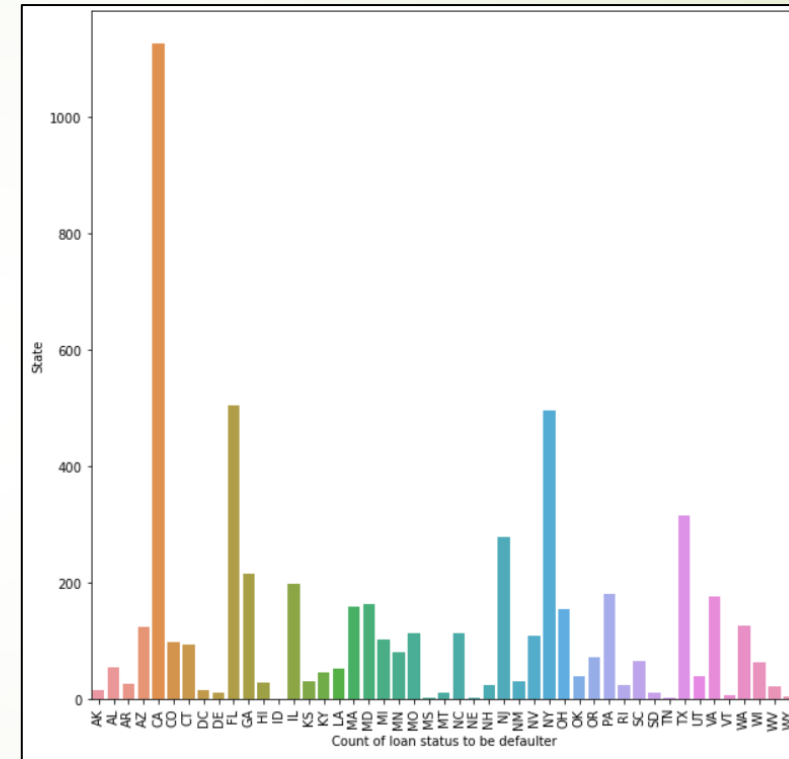
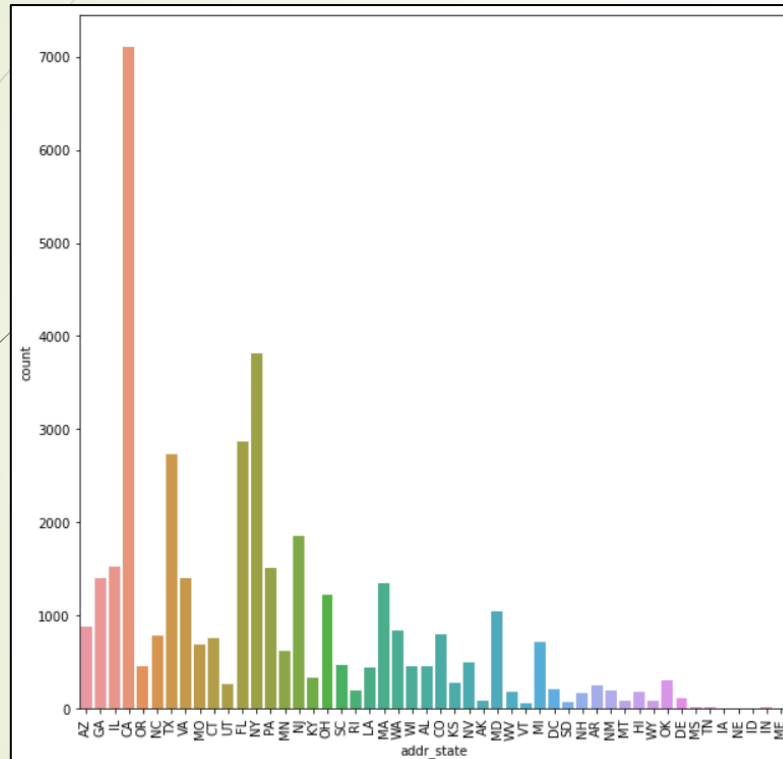
Employee Experience Analysis



Observation:

1. Individuals with 10+ years of experience are likely to take more loans as compared to others.
2. Extra screening for loan approval for 10+ years to be initiated as we see the default rate can increase.

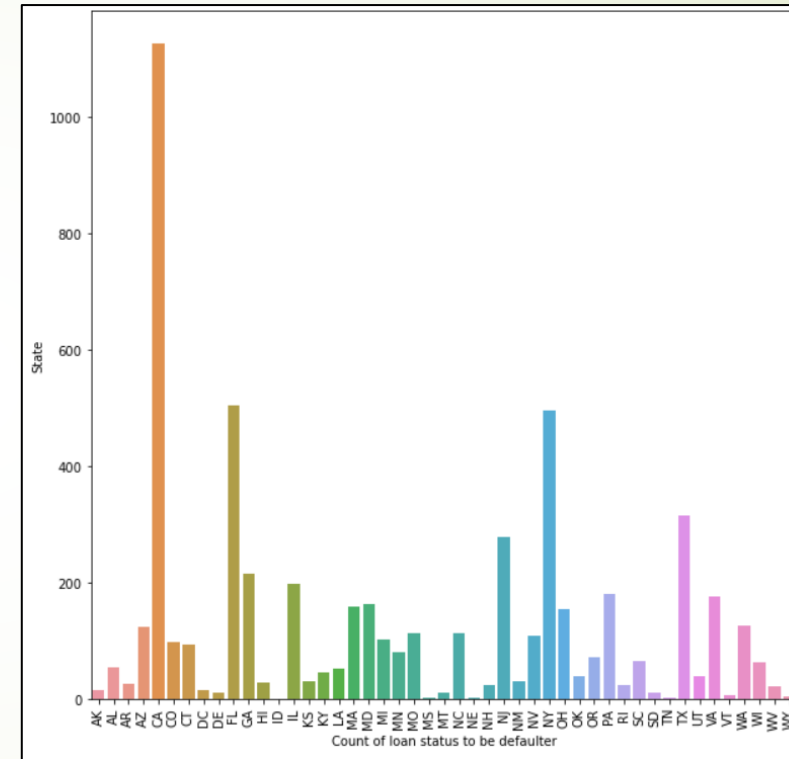
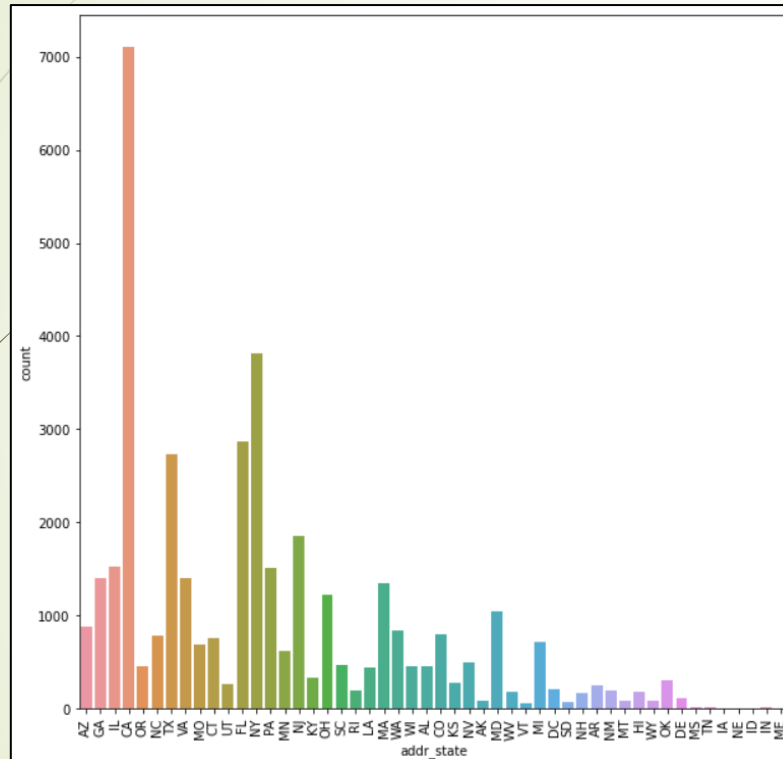
State Default Analysis



Observation:

1. California people tend to take more loans, but we see there is almost ~15% Default rate.
2. New York individuals tend to repay onetime as their default rate is ~2%

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Conclusion

- Loan offering is on positive trend as the company is moving in right direction.
- Mortgage and Rent ownership individuals are likely to take more loans and the risk to default is almost 10-15%.
- California people tend to take more loans, but we see there is almost ~15% Default rate.
- Extra screening for loan approval for 10+ years to be initiated as we see the default rate can increase.
- Low Grade loans are more likely to get defaulted (Interest rate to be increased)



Thank you