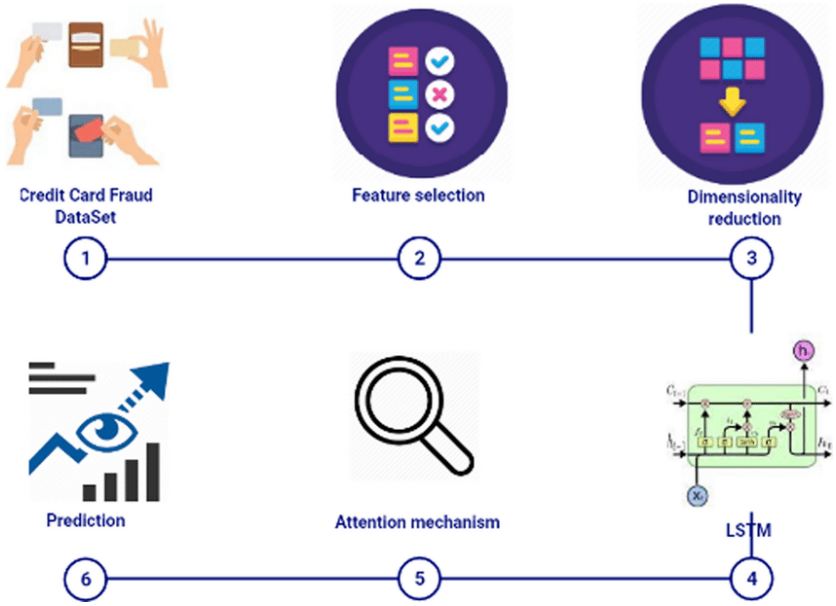
Lending Club Loan

Analytics Project - Phase 1

ISDS 577- Group 7

Preliminary Data Visualization



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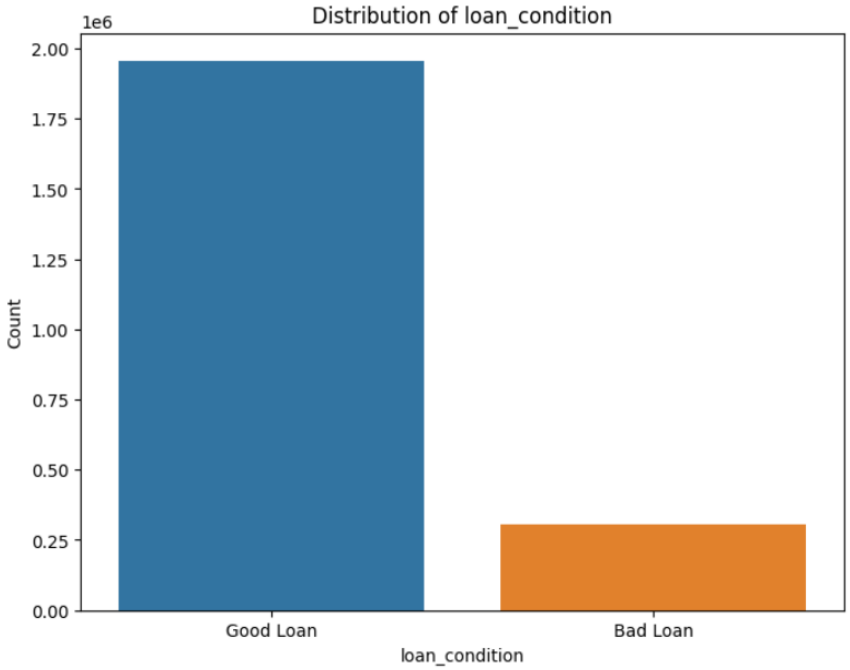
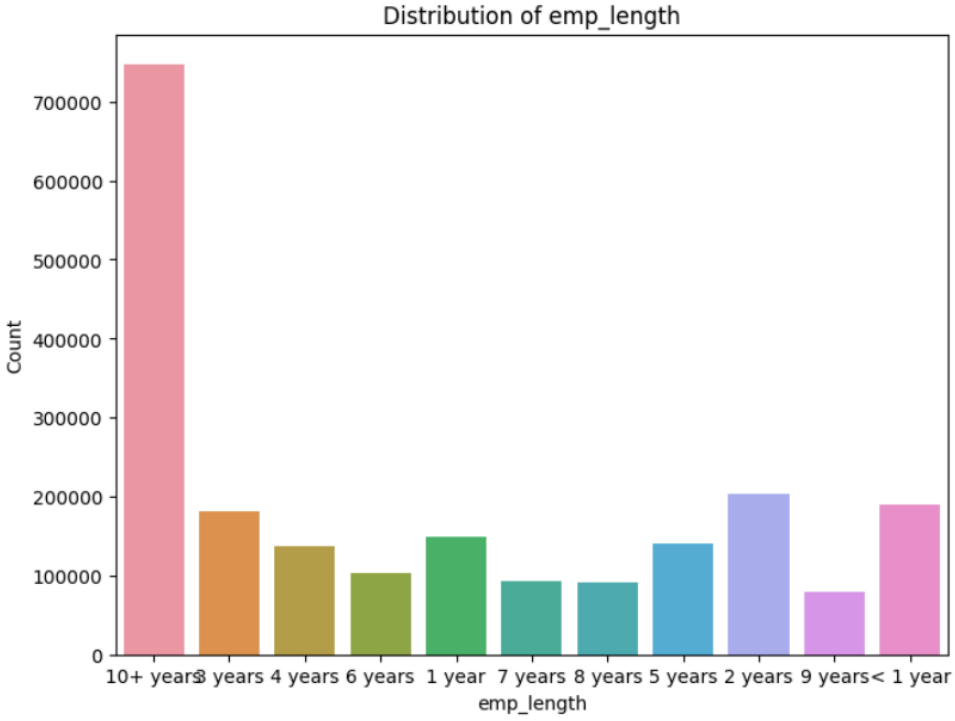
1. Distribution of loan condition:



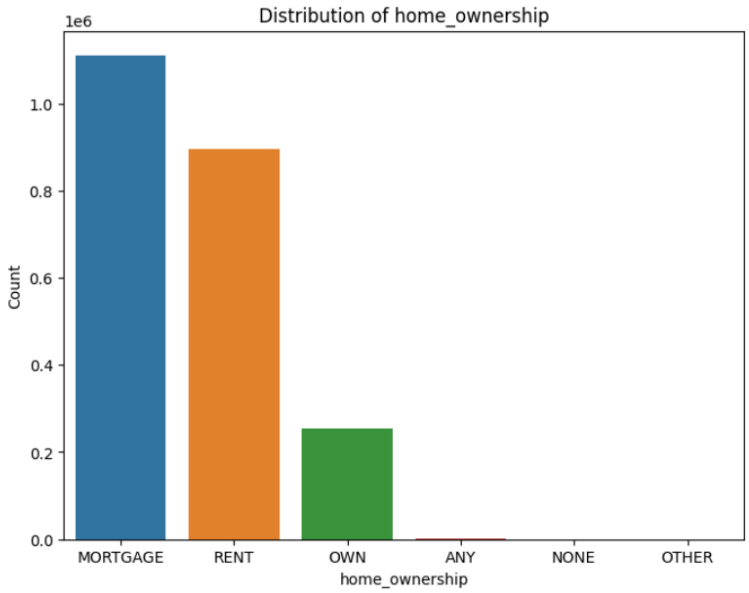
The graph demonstrates the significant difference between both good and bad loan conditions. The large number of good loans shows a borrower pool with a higher possibility of repaying loans compared to bad loans.

2. Distribution of Employment length:



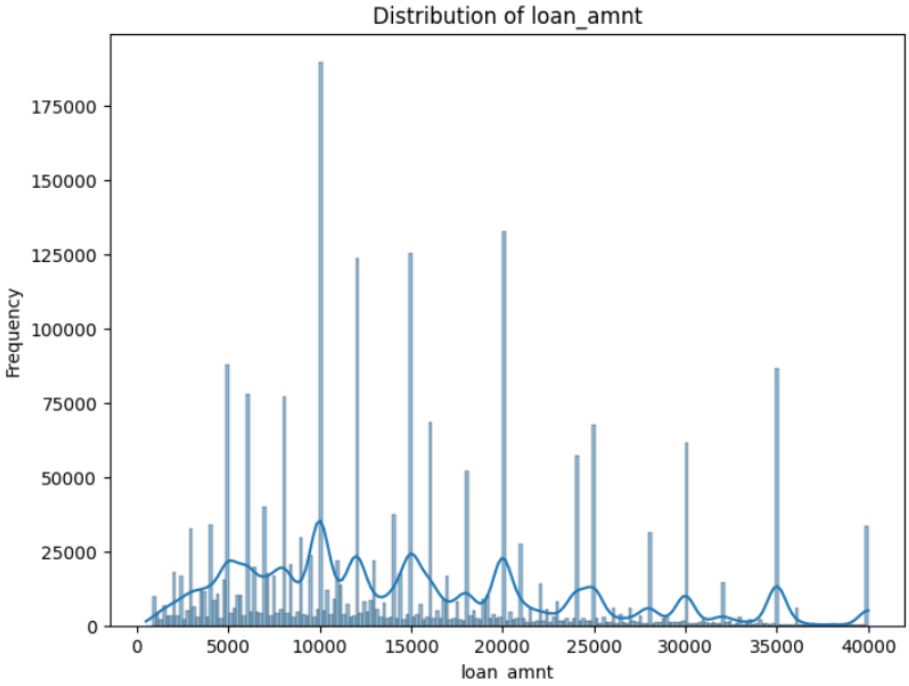
The following graph shows the borrower have the employment tenure of more than 10 years tend to have or get more amount in loan where as 7, 8 and 9 years shows the least and rest follows an uneven distribution.

3. Distribution of home ownership:



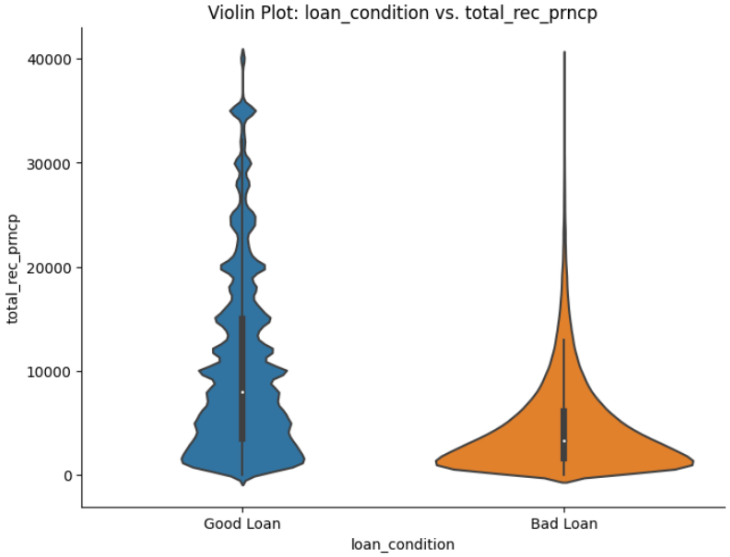
The following graph explains that the borrowers with more loans tend to live in mortgage houses compared to the borrowers live in rent house and less amount loans are taken by people living in own houses

4. Distribution of loan amount:



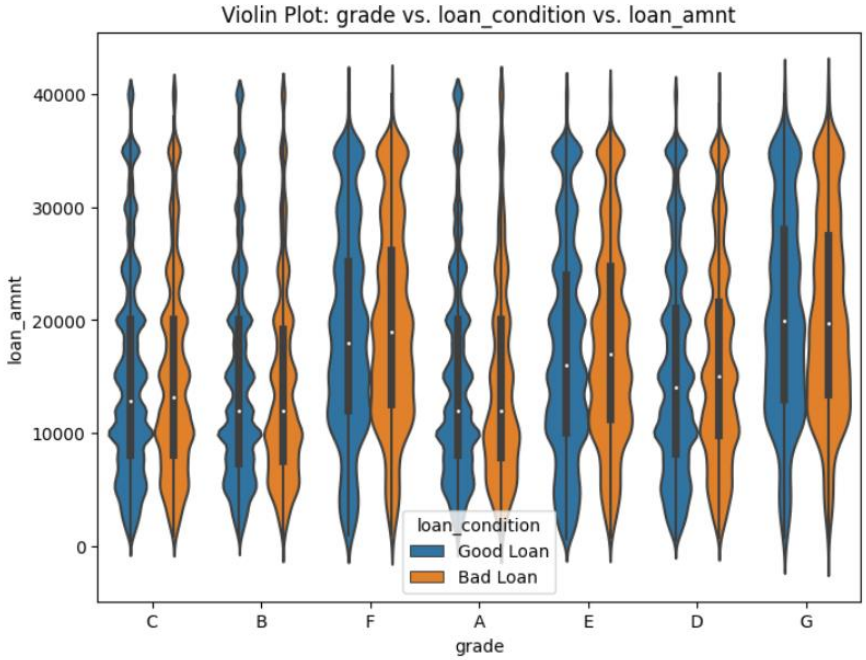
It's evident from the loan amount distribution that smaller loan amounts are preferred. Only a small percentage of loans roughly exceed $100,000. This may indicate that the lender focuses on smaller loans or serves consumers with less demanding credit requirements.

5. Violin plot visualization of loan condition vs total received principle:



The graph makes the difference between good and bad loans evident. Good loans are dispersed over a larger range with a greater median principle received amount, whereas bad loans are focused on lower principle received amount. This implies that borrowers with smaller principle received amount are bad at repaying their debts.

6: Violin plot visualization of grade vs loan condition vs loan amount:



A distinct difference in the distribution of loan grades between good and bad loan conditions can be seen in the violin plot. Its like adding another dimension to the previous plot which is grades as assigned by the lending club.

Future Scope:

- Predictive Modeling: Create a model that forecasts the outcome of a loan (good or poor) based on variables such as the loan amount, employment history, credit score, and house ownership status using the insights from individual graphs.
- Borrower Segmentation: Assemble borrowers according to loan details and past payback performance. This can assist in customizing loan offers and marketing tactics to borrower categories.
- Interactive Dashboards: Provide dynamically explorable interactive dashboards that let lenders examine different loan attributes.
- Time Series Analysis: Examine loan trends over time using time series analysis, such as changes in the distribution of credit grades or the average loan amount from year to year. This may indicate more general economic patterns that affect debtors.
- Geographic Analysis: Plotting good versus bad loan performance on a map will help you find any regional trends in loan payback rates. This is known as geographic analysis.
- Network Graphs: Using network graphs, investigate possible relationships between borrowers based on traits in common or, if relevant, guarantors. This could reveal possible risk clusters or fraud networks.