

Lending Club Case Study

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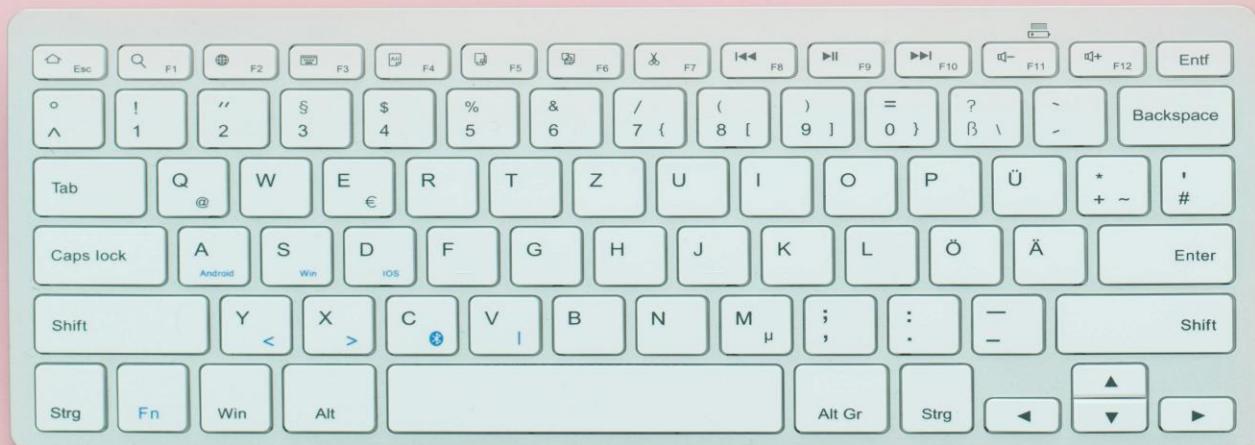


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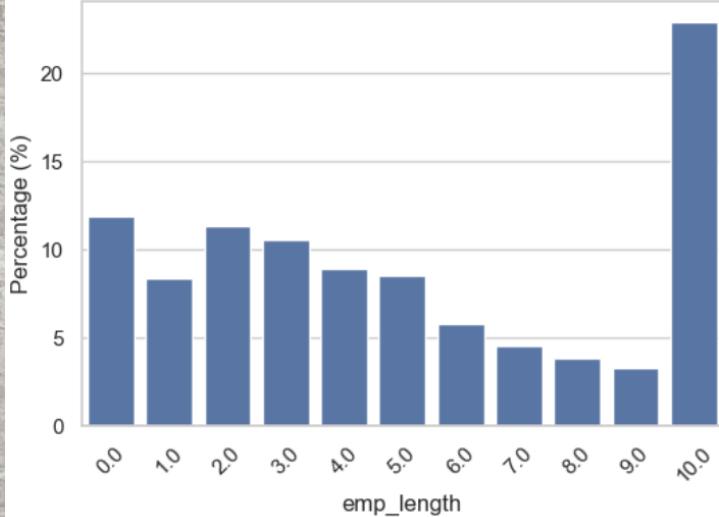
Problem Statement :

Lending a loan is risky decision that a company takes and the borrowers who default cause the largest amount of loss to the lenders, reduces lender's cash flow. Identifying those risky applicants helps in cutting down the amount of credit loss to the organization.

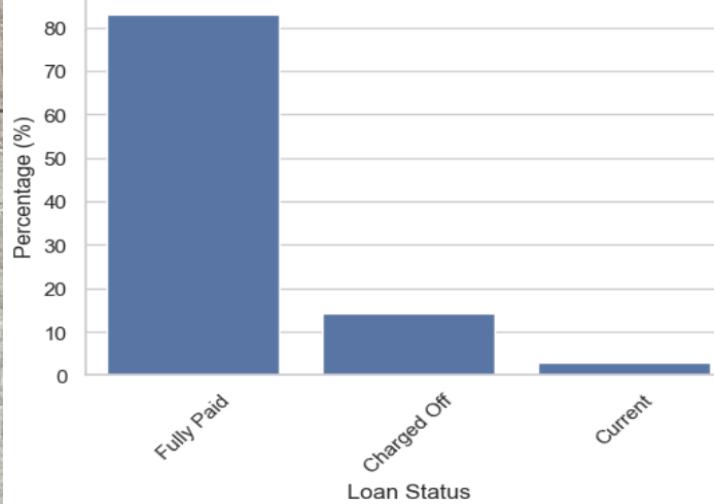


Univariate Analysis

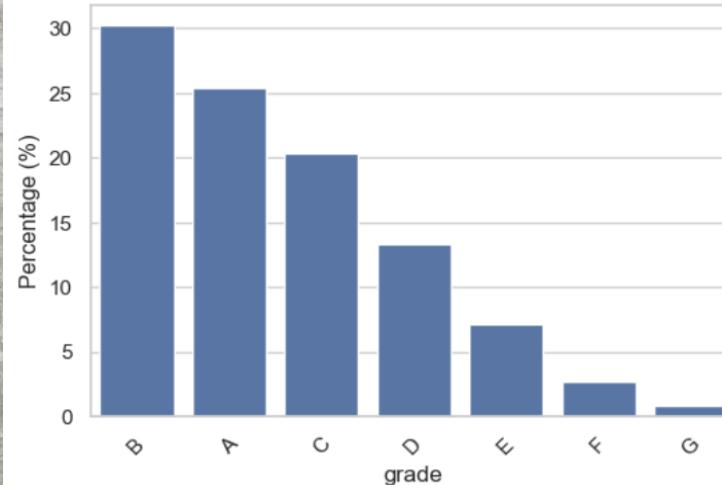
Percentage Distribution of emp_length



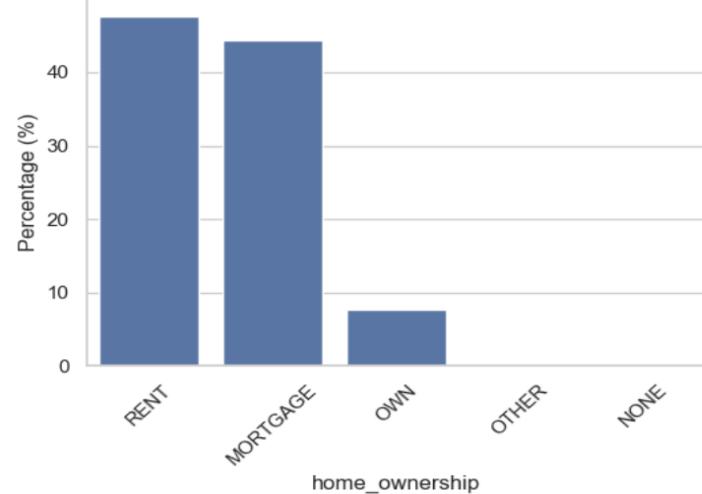
Percentage Distribution of Loan Status



Percentage Distribution of grade

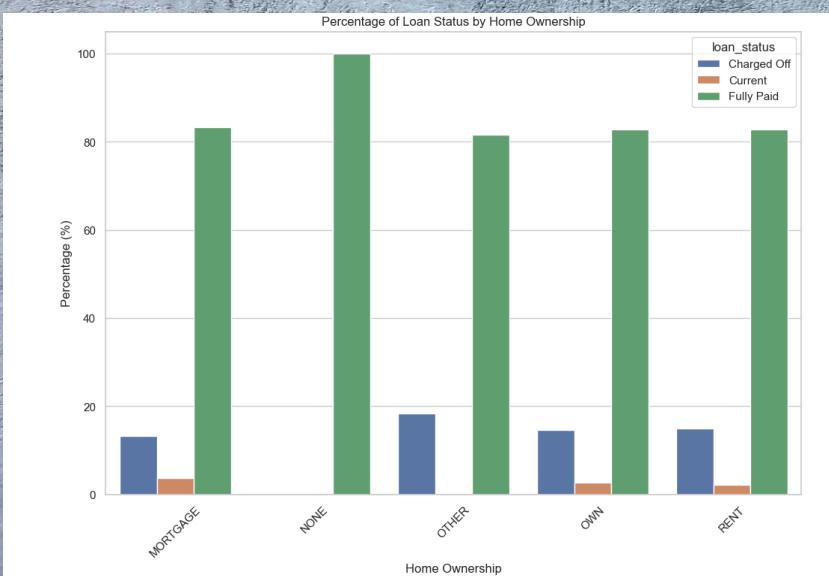
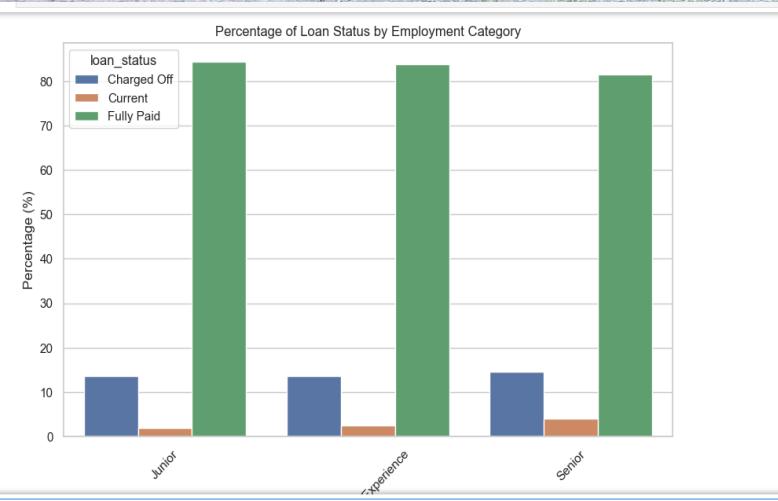


Percentage Distribution of home_ownership

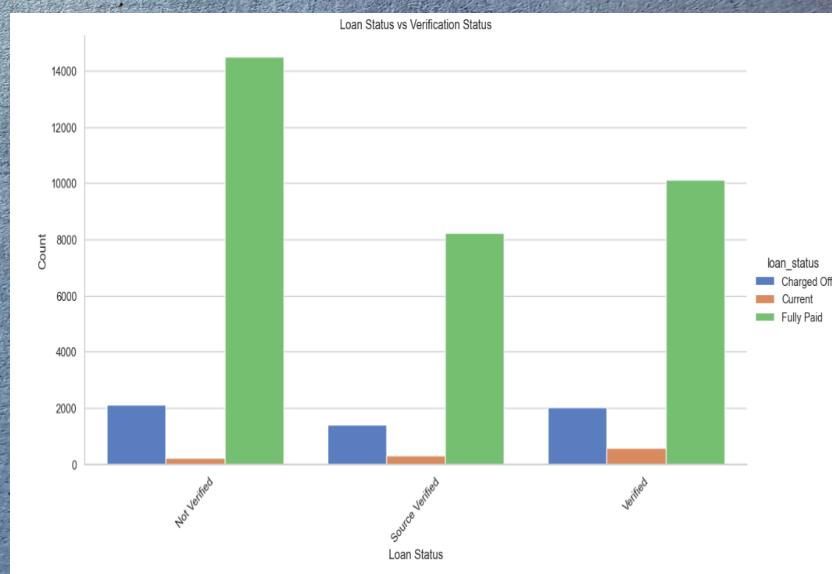
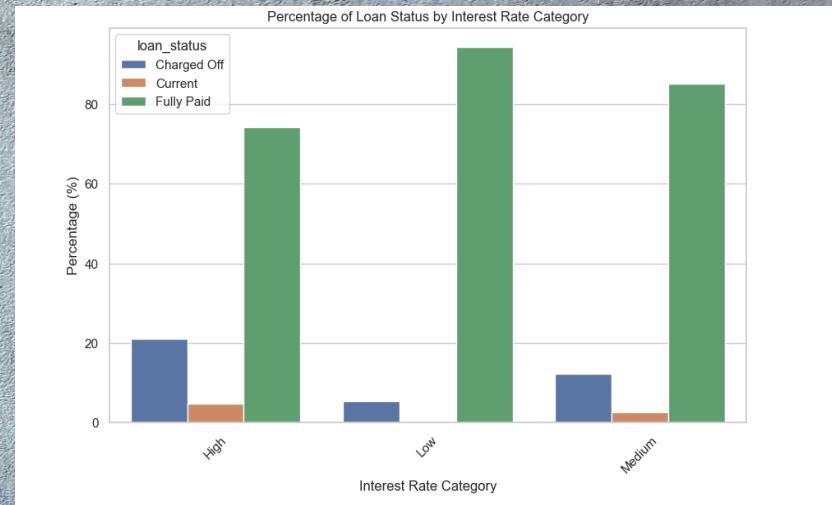


Over 80% of loans were fully repaid, while approximately 15% were charged off. Most loans were taken by customers in the "Rent and Mortgage" category, with the majority falling under the "Not Verified" category. Employees with 10 years of experience secured the highest number of loans, followed by newly joined and 2-year experienced employees. Customers were predominantly classified as Grade B, followed by Grades A, C, and D.

Segmented :

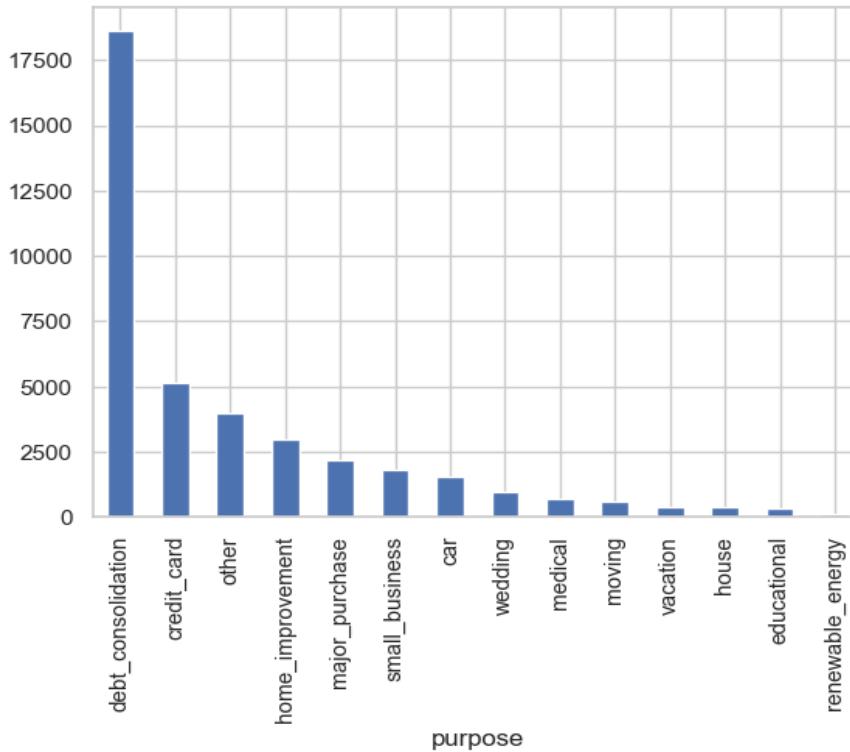


There is no significant correlation between loan verification status and defaults, as defaulter rates remain consistent across experience levels. High-interest rates (above 20%) are a key factor contributing to defaults. Additionally, no strong relationship was observed between ownership status, DTI, and loan defaults.

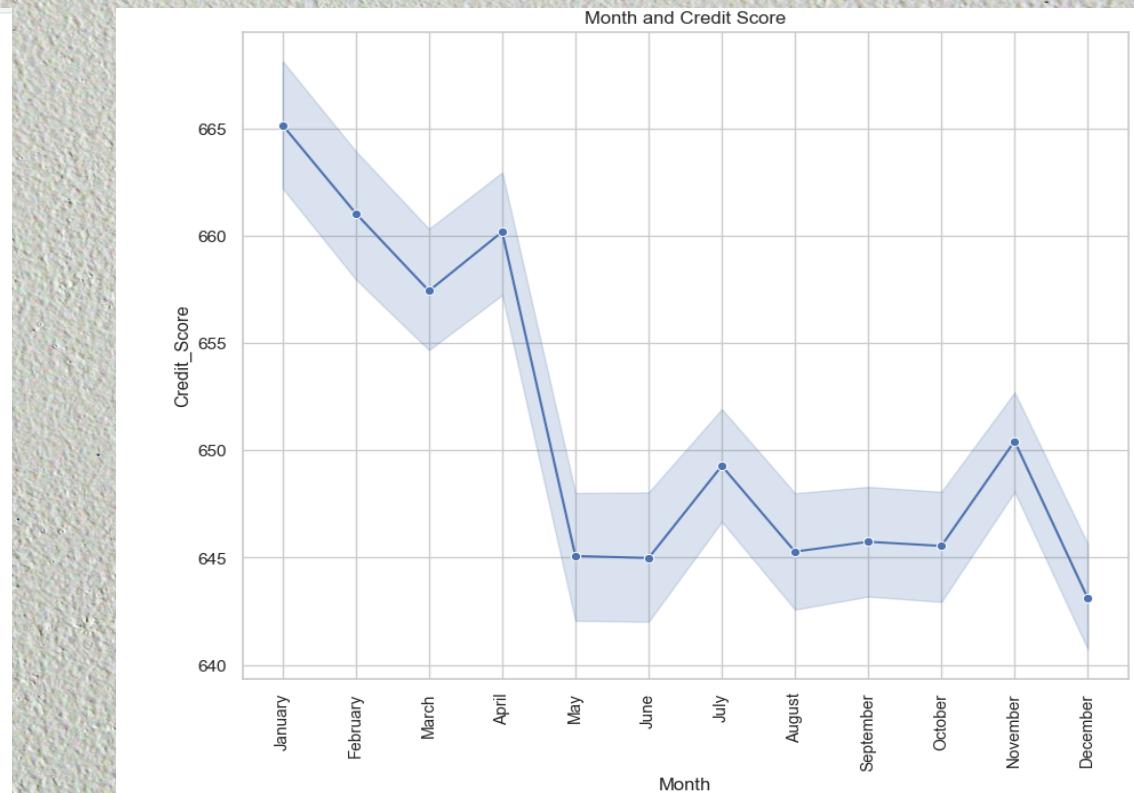


Bi-Variate Analysis :

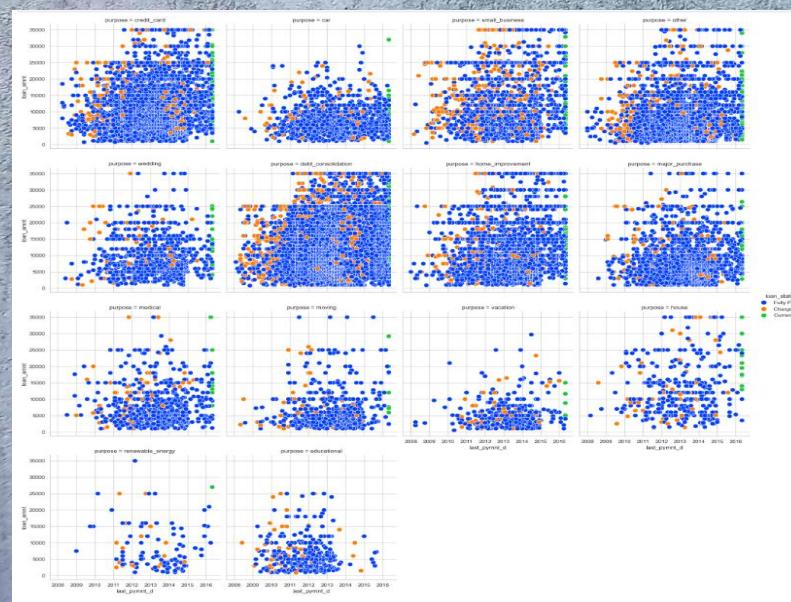
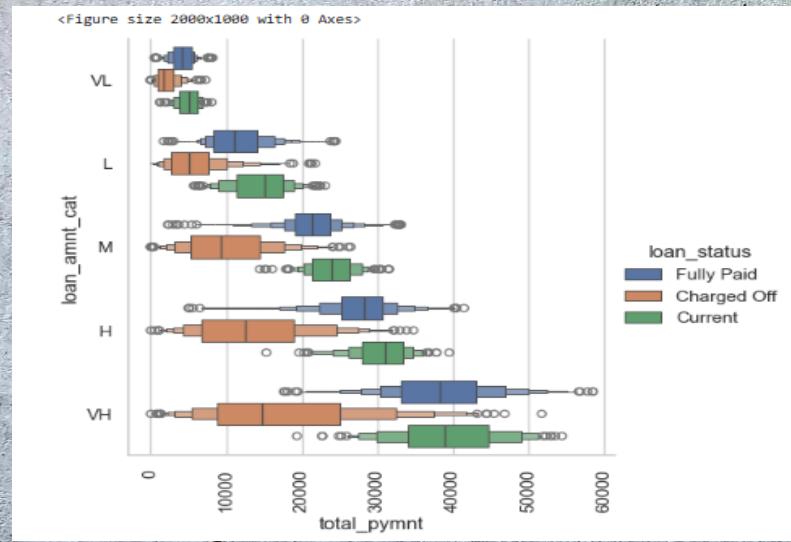
Data Science Special 2020



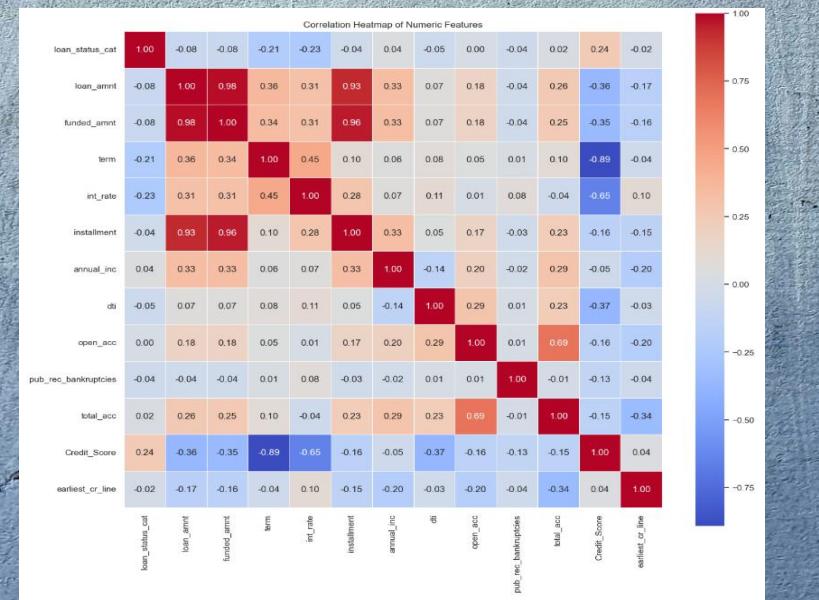
The Month From January to April are the safest month to give the Loan
Among the total customers loan is taken for the purpose debt consolidation and credit card



Multi Variate Analysis :



Small businesses, renewable energy, and education loans have higher default risks. Categories like Small Businesses, Debt Consolidation, and Other show the most defaults. Mid-level employees have fewer fully paid loans, and high-interest rates are linked to higher default rates. Defaults are common for low revolving credit utilization and loans above \$20,000, while low loan amounts show higher recovery rates. The earliest credit line is also related to loan status.



Recommendations :

- **Adjust Interest Rates:** Reassess and potentially lower interest rates for loans over 20% to reduce default risks.
- **Sector-Specific Strategies:** Develop tailored risk mitigation strategies for sectors like small businesses, renewable energy, and education that are more prone to defaults.
- **Refine Credit Scoring:** Enhance credit scoring models to better factor in the number of open and total credit accounts.
- **Manage Loan Sizes:** Implement stricter underwriting criteria for loans above \$20,000 and encourage smaller loan amounts to decrease default likelihood.
- **Proactive Monitoring:** Continuously monitor borrower's financial health and implement early intervention for loans at risk of defaulting.

