ProsperLoan Data Exploration

The [data](#) we work to display contains: 113937 row and 81 columns Most of the columns are in digital form, but there are text columns as well. The rows are loans, and the columns are the variables they describe them, such as the number and amount of loans, loan status, interest rate, and borrower status. and a lot of additional variables, [ProsperLoanData.pdf](#) file describes all the variables . We will not be able to explore all the variables, but we have worked on a few of them.

Summary of conclusions

- TotalTrades: Number of trade lines ever opened at the time the credit profile was pulled ranges between 10 and 30 and the highest value is at 20
- LoanOriginalAmount: The origination amount of the loan is mostly in the numbers 5, 10, 15 and 20 thousand with large numbers from 0 to 10 thousand.
- Employment Status of all Loans are mostly current or completed and there are a few chargedoff and defaulted.
- ProsperScore: is considered the most risky score is 4 then 6, 8 and 7 and score 1 is the least dangerous and it is clear that most borrowers are in the 1 grade, which is the least dangerous, and a few are in the 2 and 3, and it is also among the least dangerous grades.
- Term 36 months is the most desired period for borrowers, as more than 80,000 borrowers.

- ProsperRating (Alpha): The most common rating among borrowers was C, with a percentage of 21.6%, and the least common of them was with only 3.6%.
- It is clear that the correlation between Term and Loan Original Amount columns is positive, but not significantly, and that the higher the loan amount, the longer it will be repaid. This is very normal.
- If we look at the relationship between Estimated Loss and Debt to Income Ratio, we will find that most Estimated Loss are between 0 and 2.0 and that the more Estimated Loss increases, the Prosper Score decreases, while the Debt-to-Income Ratio is concentrated between 0 and 1.4 with the presence of Outlers and concentration Simple at the ratio 10.
- From the relationship between Borrower Rate and Prosper rating, it is clear that the Borrower Rate increases as the Prosper rating decreases.
- If we draw a box plot between Credit Grade and Borrower Rate, we find a large distance for Outlers.
- Also, in the relationship between Debt-to-Income Ratio and Prosper Rating (Alpha), there are many these Outlers.

Key Insights for Presentation

For the presentation, I focus on just the Prosper Rating on Borrower Rate

It started by showing the Distribution of Total Trades for each Loan, followed by the Distribution of Loan Original Amount, then Employment Status of all Borrower and knowing the riskiest Prosper Score which is 4 and the least is 1. Then we started providing the distribution of the number of loans for each Prosper Score.
And finally knowing the relationship between Borrower Rate and Prosper rating