

LENDING CLUB CASE ASSIGNMENT SUBMISSION

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Lending Club Case Analysis

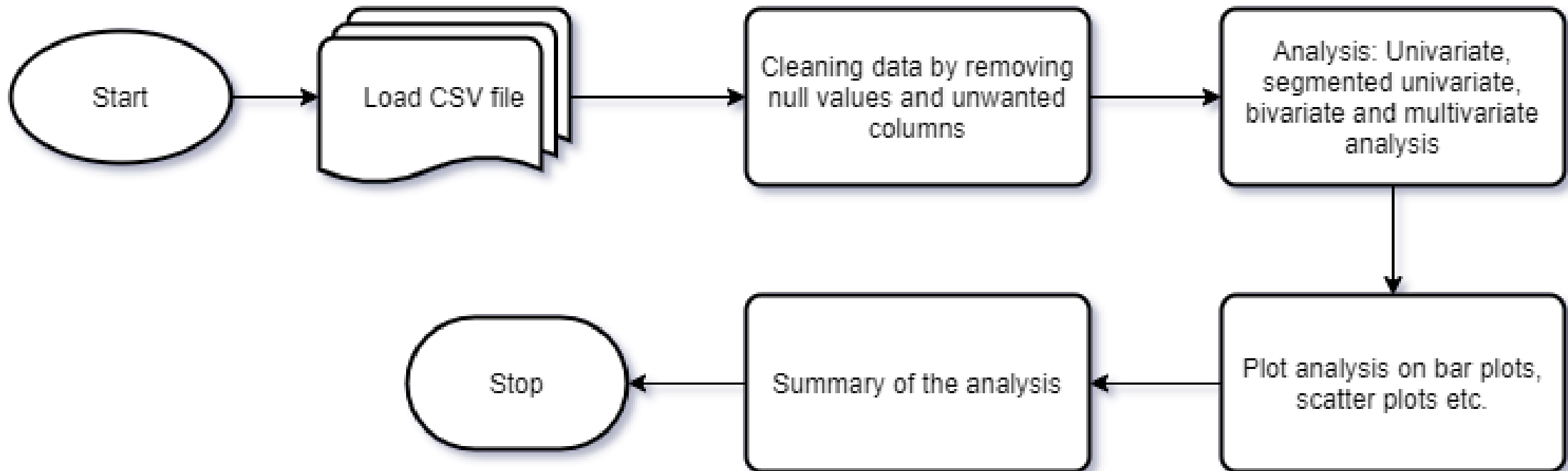
Lending Club is a consumer finance company which specialises in lending various types of loans to urban customers. When the company receives a loan application, the company has to make a decision for loan approval based on the applicant's profile. Two **types of risks** are associated with the bank's decision:

- 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

Business objective: The company wants to understand the **driving factors (or driver variables)** behind loan default, i.e. the variables which are strong indicators of default. The company can utilise this knowledge for its portfolio and risk assessment.

2. Goals of data analysis: Identify risky loan applicants and the factors that leads to loan default.

Steps in the Analysis



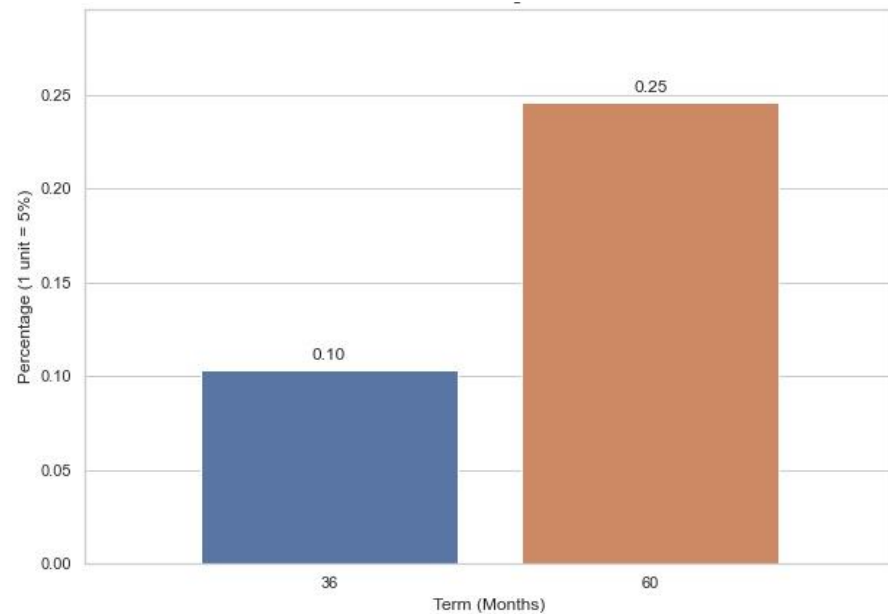
Data for Analysis

For the analysis we are using 2 excel files

1. **Loan Data Set.csv**: It contains the complete loan data for all loans issued through the time period 2007 to 2011.
2. **Data Dictionary.xlsx**: It describes the meaning of all column.

**We assume that the data provided to us is accurate*

Analysis on different terms

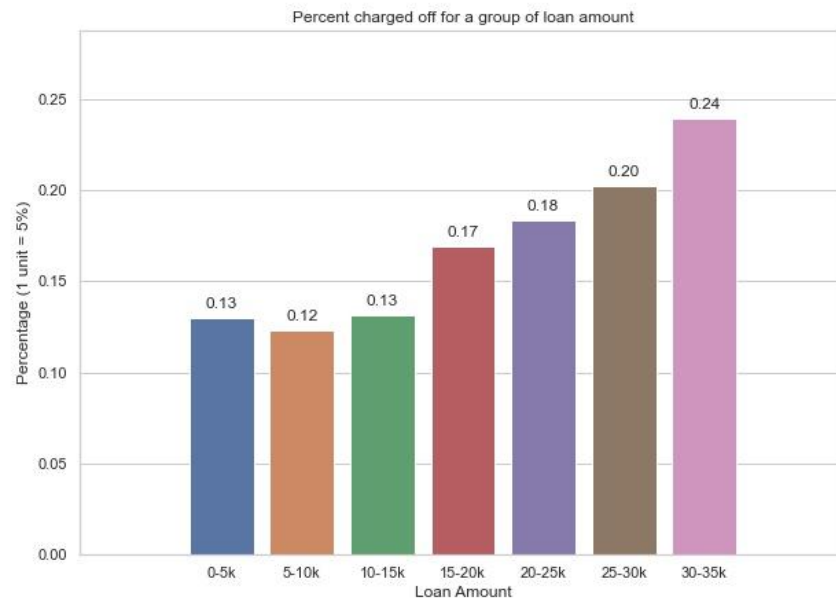


Here we can see that almost 14% of the customers are charged off

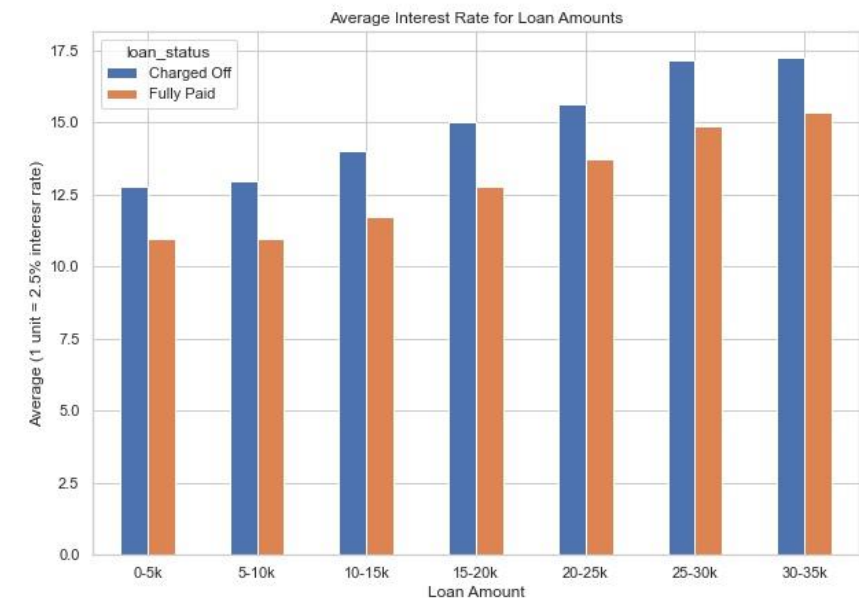


Here we can see that almost ~25% of the customers who have taken 60 months of terms period are charged off

Loan Amount Analysis

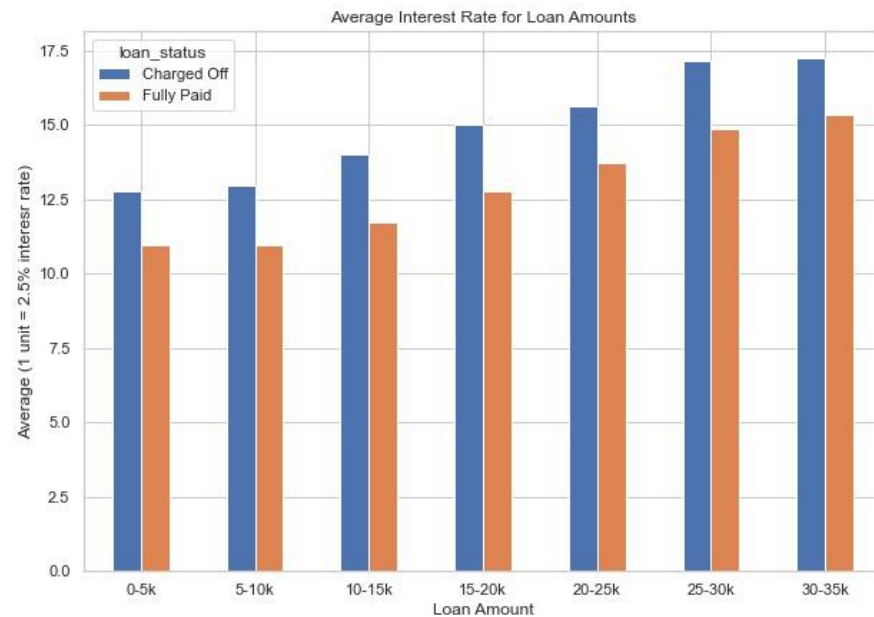


From the graph we can see that there is a gradual increase in charged off percentage as the loan amount increases.

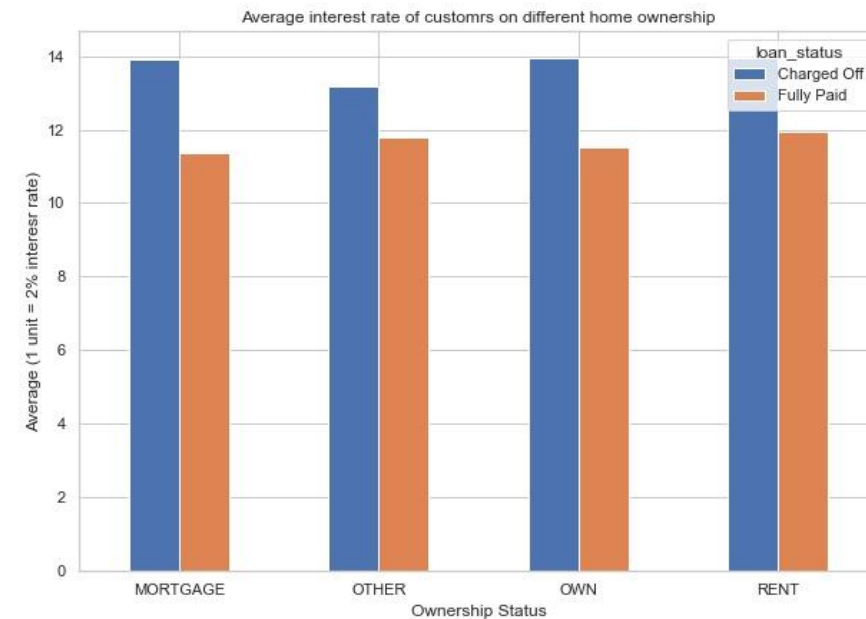


We can see the charged off average increases with the loan amount, showing the same trend as the graph in the left.

Interest rate analysis



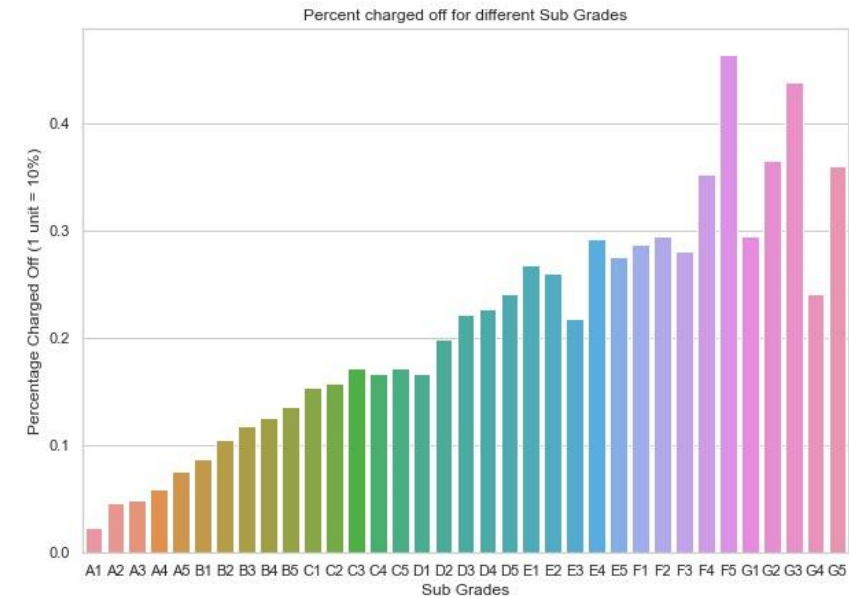
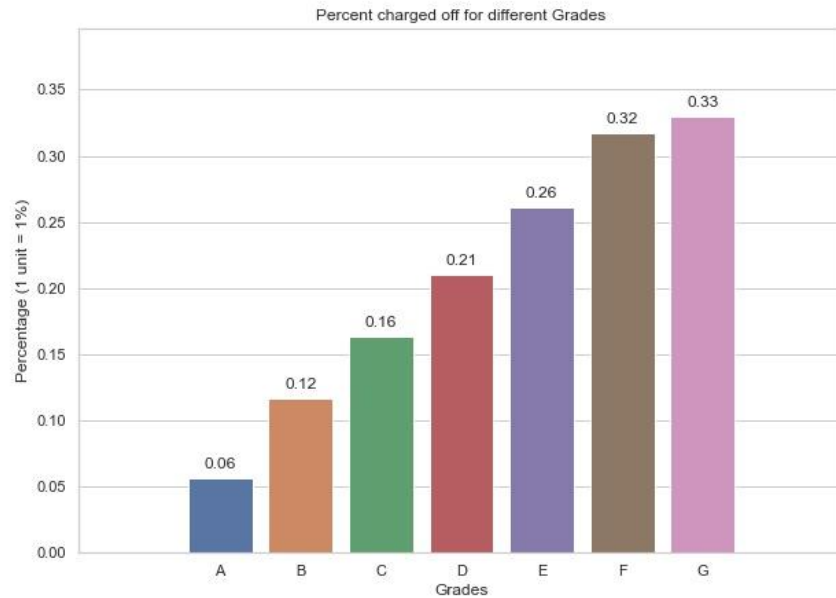
We can see that as the loan amount increases, the interest rate also increases. But in each loan amount category we see that charged off are high because of high interest rates.



We can see that with different home ownership status, the charged off is more where the average interest rate is high

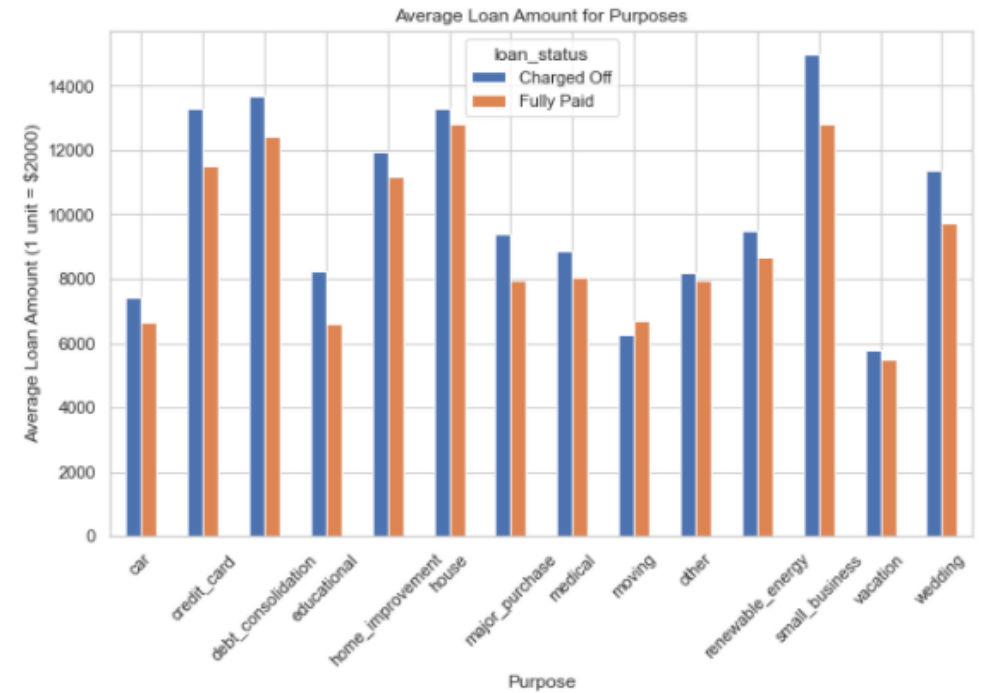
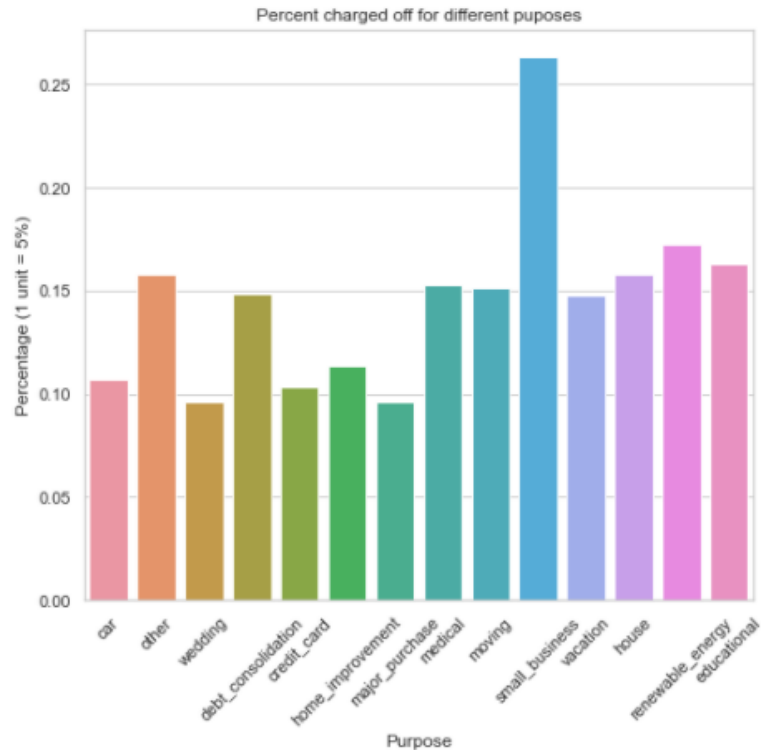
Analysis on Grade

- We can see that as the grade increases, the charged off also increases. We can see the same trend in sub grades as well. The charged off in Grades is directly proportional to interest rates.



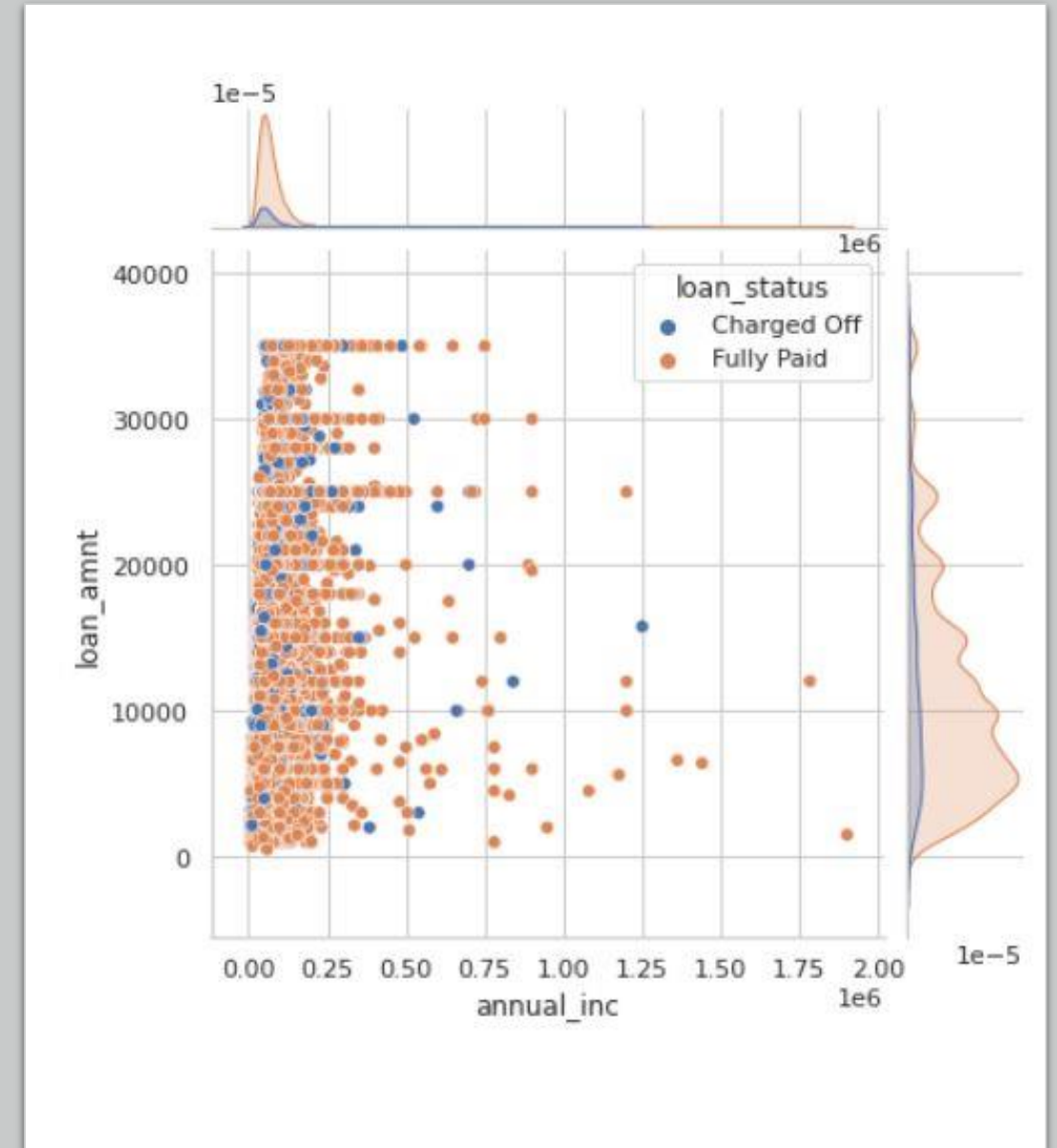
Analysis on Purpose

- In both the plots we can see the for purpose “**small business**” both default percentage (~26%) and average loan amount is higher. We also notice that the charged off is also highest in loan amount for “**small business**”.



The Risky Loans

From the plot we can see that there many customers that have low income and have taken a big loan. And few of them have resulted in Charged off (Blue dots)





Conclusions

Based on the analysis performed, we conclude that Lending club should consider these factors while handing out loans.

Factors	Reason
Interest Rate	We notice that increase in interest rate with different loan amount group, home ownership status,etc, the charged off also increases. We recommend to not to increase the interest rate with increase in loan amount
Grade	We notice that as the grade increses, the risk of charged off also increases. We recommend to give loans to customer with lower grade (A,B,C)
Purpose	We notice that customer with purpose "small business" has taken more loans and also has defaulted the most having high interest rate. We recommend to reduce giving loan to "small business" purpose.
Annual Income and Loan Amount	We see that there are few customers who have less annual income but have taken a big loan. We reccomend not to approve high loan amount to cutomer having less annual income