

ANALYSED BY
BINU NAIR & RITWIK RAO

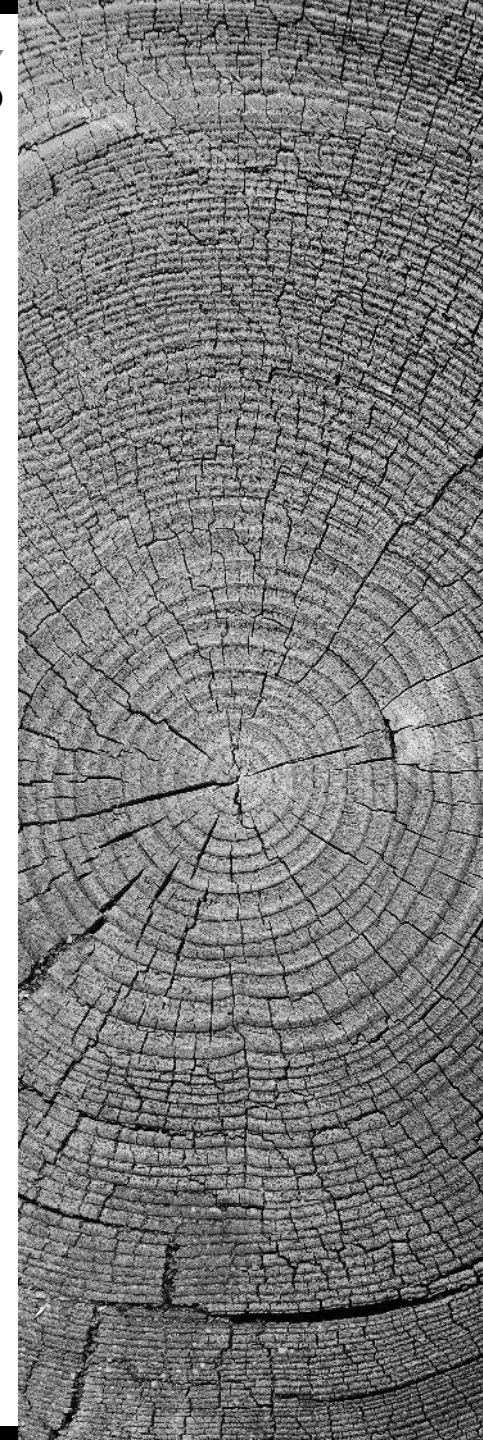
LENDING CLUB CASE STUDY

*ML C44 Cohort Of EPGP – ML &
AI by IIIT-B and upGrad Education*



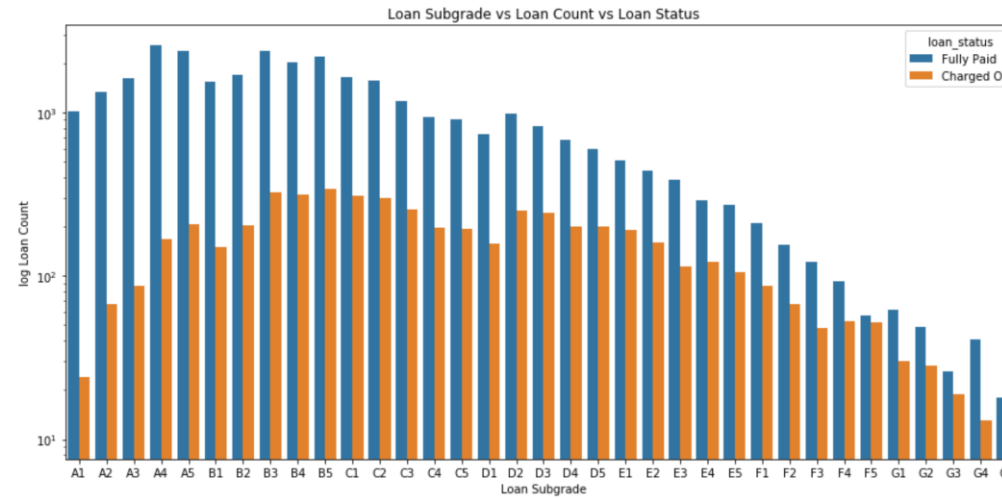
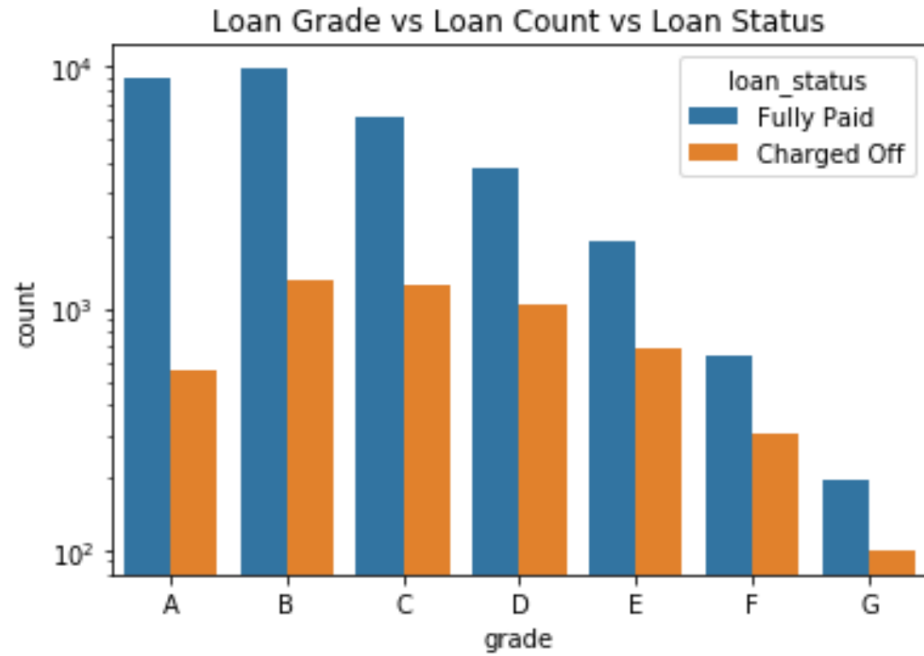
PROBLEM STATEMENT

- ❖ Lending Club, a consumer finance company wants to understand how Consumer Attributes and Loan Attributes influence the tendency of a default
- ❖ 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
- ❖ As analysts we have performed Exploratory Data Analysis on the dataset provided and have made few observations that might help Lending Club in taking informed decisions whether or not to accept particular loans



OBSERVATIONS ON LOAN GRADE

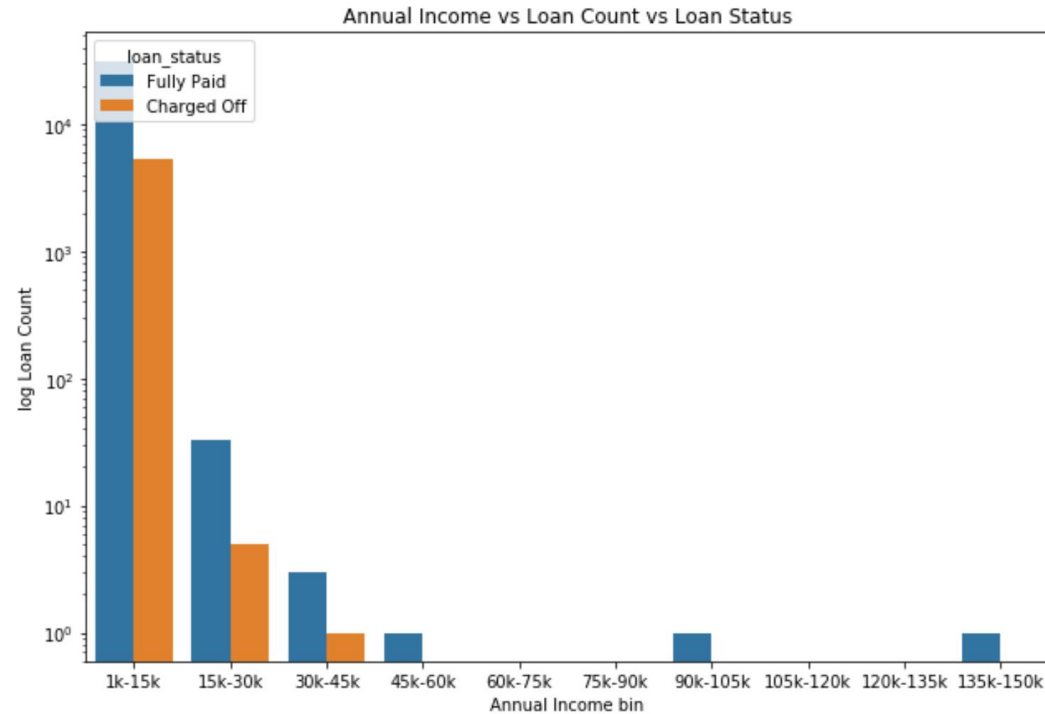
From the below graph it is evident that defaulted loans are more in B grade compared to A grade



Lending Club should consider accepting more loans of grade A than B as B contributes more to defaulted loans due to higher interest rates.

OBSERVATIONS ON ANNUAL INCOME

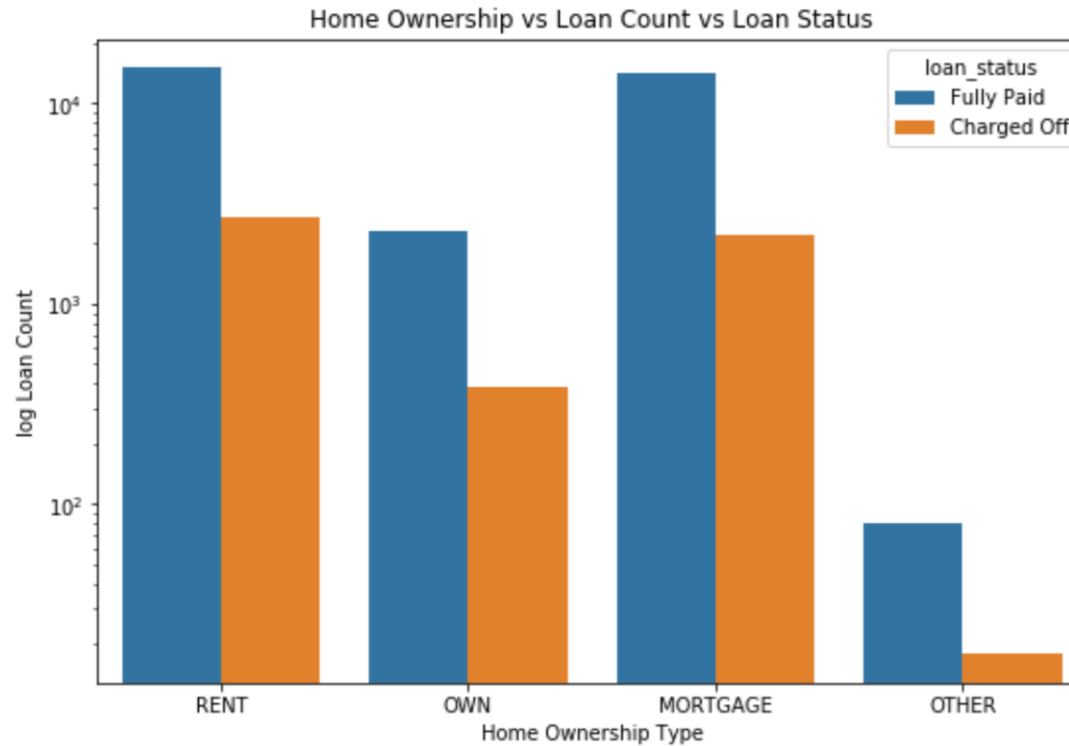
From the below graph it is evident that people having annual income more than 30K pay off their loans



Lending Club should consider accepting more loans from applicants whose annual income is greater than 30K as their probability of charge off is minimum

OBSERVATIONS ON HOME OWNERSHIP

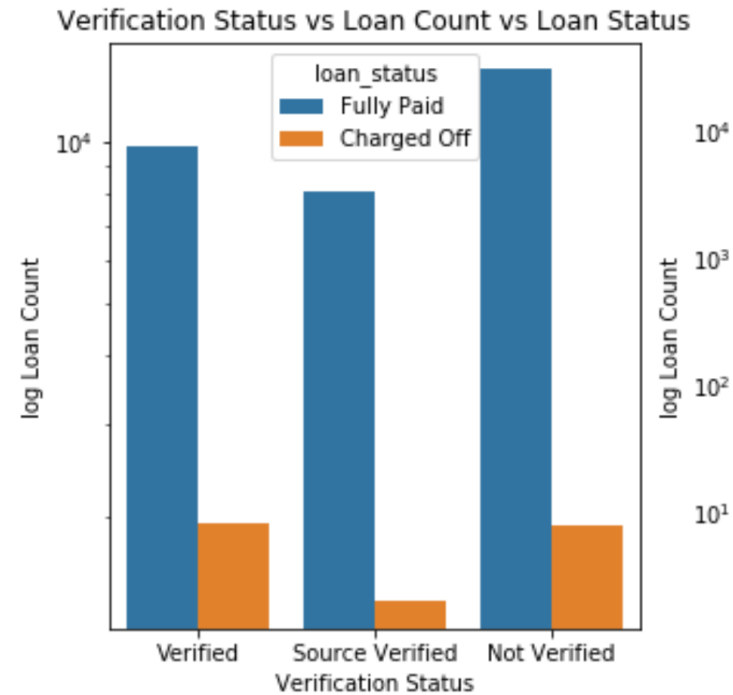
From the below graph it is evident that people having own house ownership pay off their loans



Lending Club should consider accepting more loans from people with own house ownership

OBSERVATIONS ON VERIFICATION STATUS

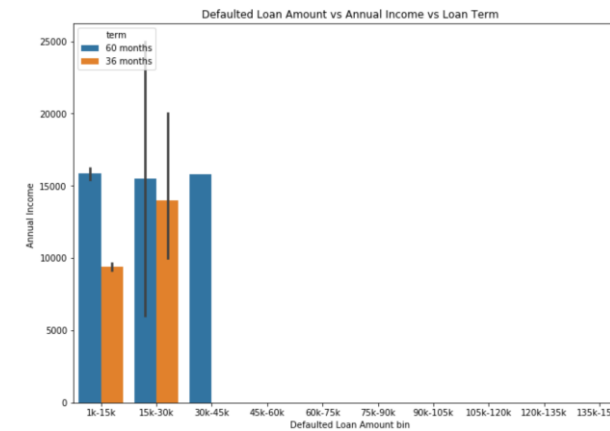
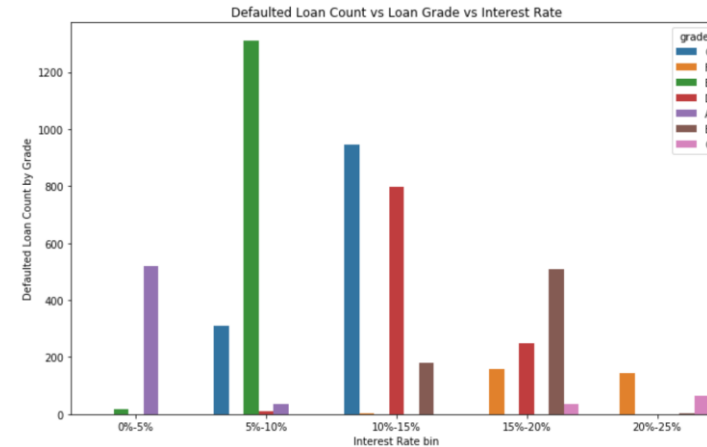
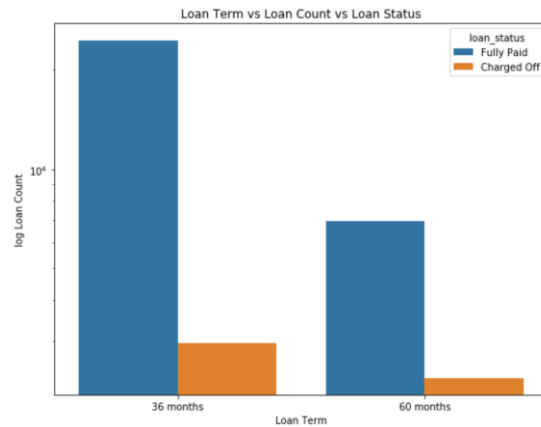
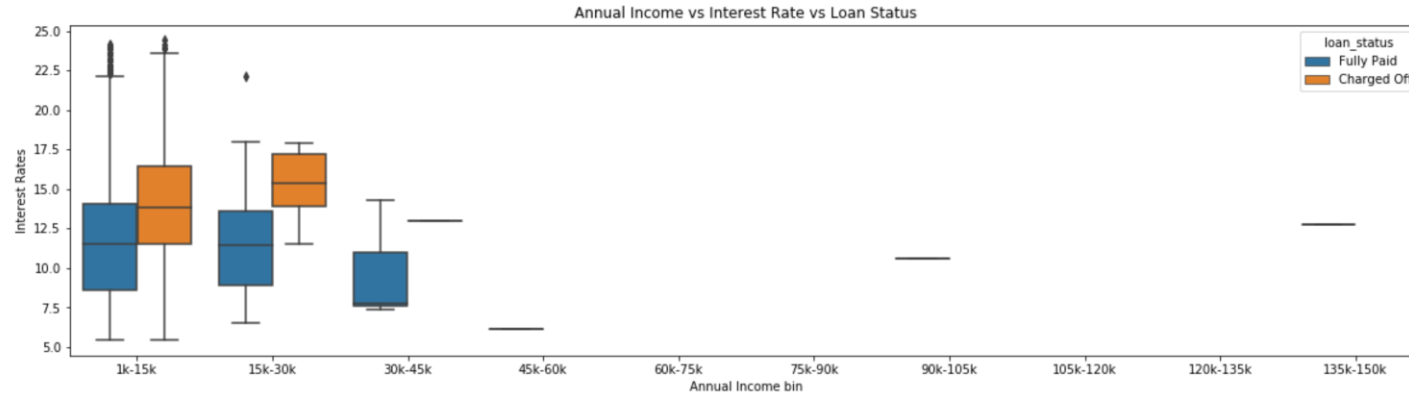
From the below graph it is evident that people whose source is verified has a very less tendency of defaulting



Lending Club should consider accepting more loans from people whose source is verified

OBSERVATIONS ON INTEREST RATE, TERM & GRADE

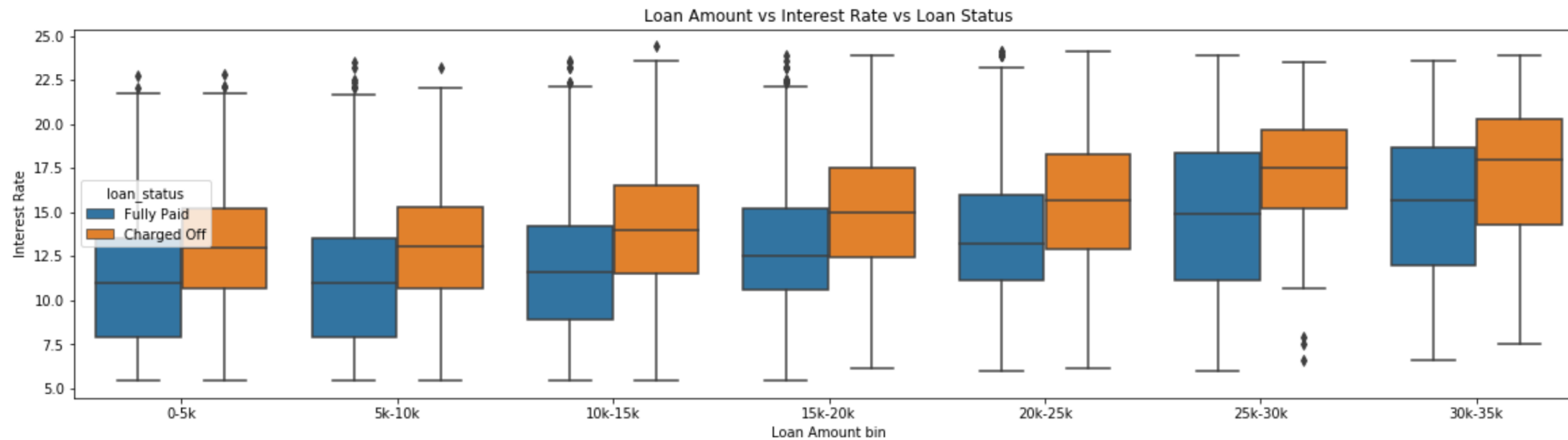
From the below graphs we can see that higher interest rates and less loan term is affecting to loan defaults. We also can infer that as grade increases, interest rate is impacted



Lending Club should look at the grades for loans before accepting as loan grade is proportional to term and interest rates

OBSERVATIONS ON LOAN AMOUNT & INTEREST

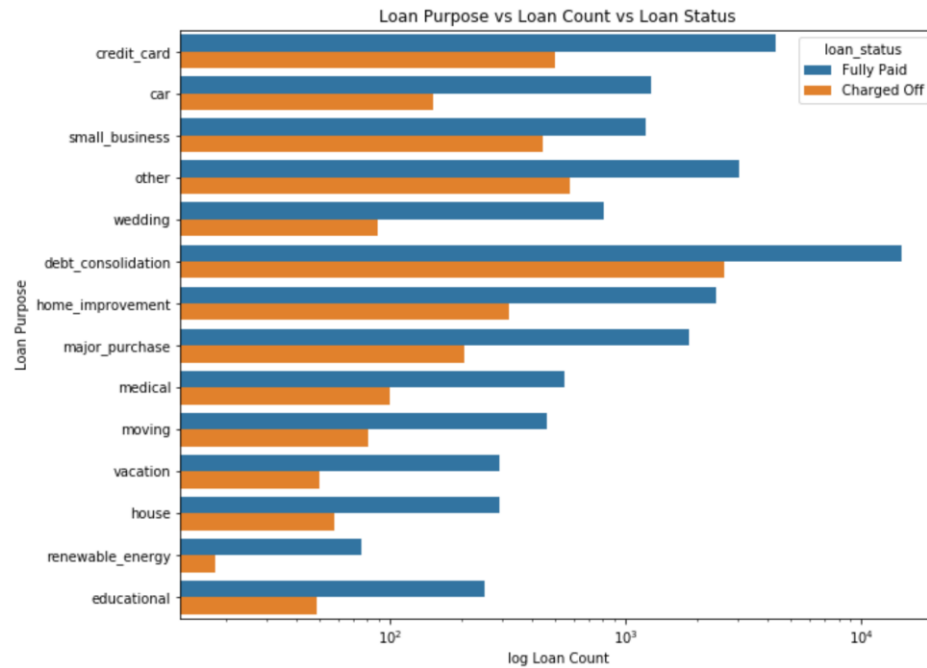
Continuing from the previous slide, the below graph shows that in almost every loan amount category, if the interest rate is high, they are likely to be defaulted



Lending Club should have a close watch on the interest rate being applied for loans under each category

OBSERVATIONS ON PURPOSE

From the below graph it is evident that people who request loans for the purpose of opening a small business are more likely to default

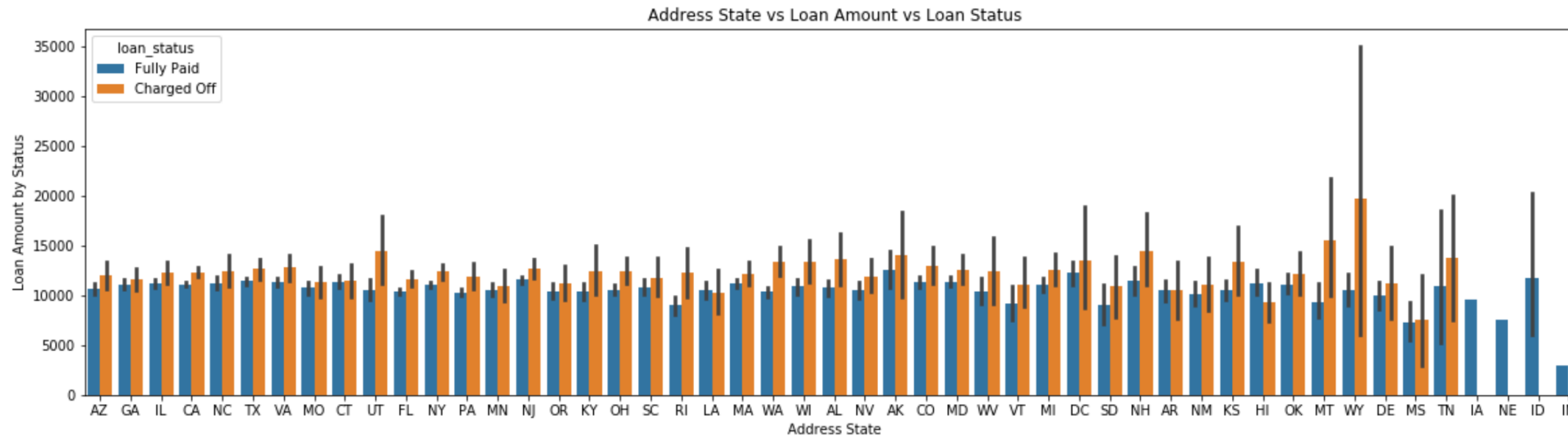


loan_status	Charged Off	Fully Paid	default%
purpose			
car	1115900	8626925	11.45
credit_card	6608850	49406800	11.80
debt_consolidation	35811575	183124175	16.36
educational	400200	1626225	19.75
home_improvement	3881775	27335800	12.43
house	730775	3753925	16.29
major_purchase	1911375	14758650	11.47
medical	866850	4368250	16.56
moving	501525	3102500	13.92
other	4868700	24127325	16.79
renewable_energy	157500	663650	19.18
small_business	6501425	15600200	29.42
vacation	285350	1605575	15.09
wedding	978350	7804350	11.14

Lending Club should be wary of the loans where the purpose is Small Business as the percentage of a loan being charged off is almost 30%

OBSERVATIONS ON ADDRESS STATE

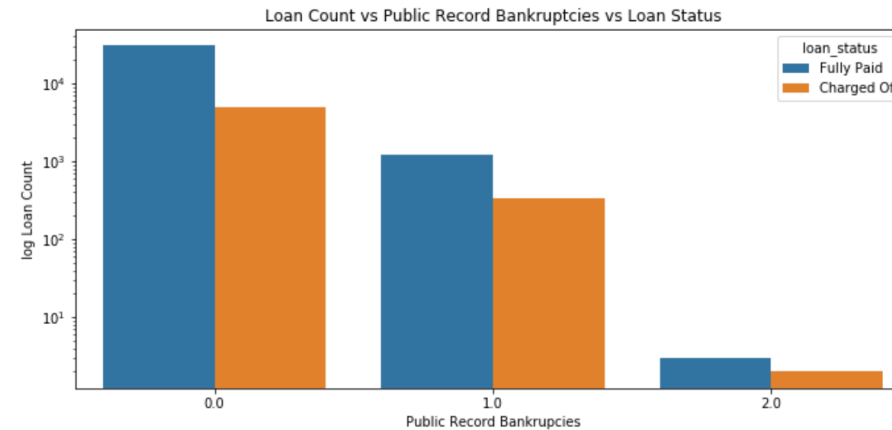
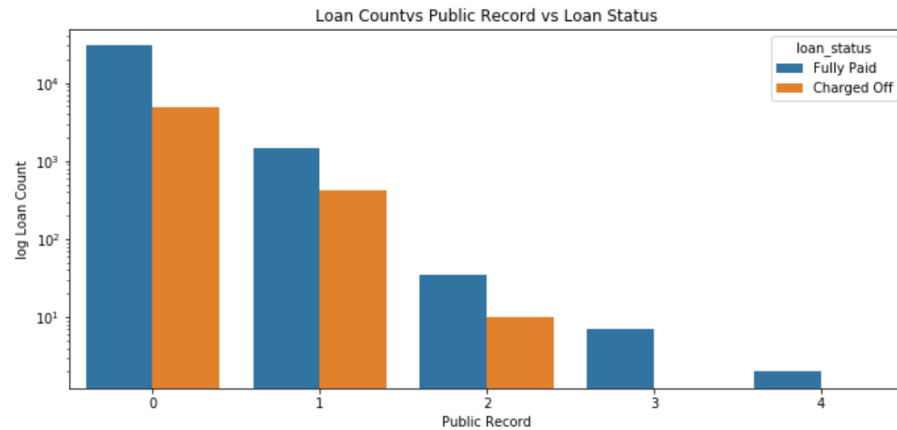
From the below graph it is evident that people who request loans for higher loan amounts from Wyoming has a huge tendency to default



Lending Club should be looking closely into people who apply for loans from Wyoming

OBSERVATIONS ON PUBLIC RECORD & PUBLIC RECORD BANKRUPTCIES

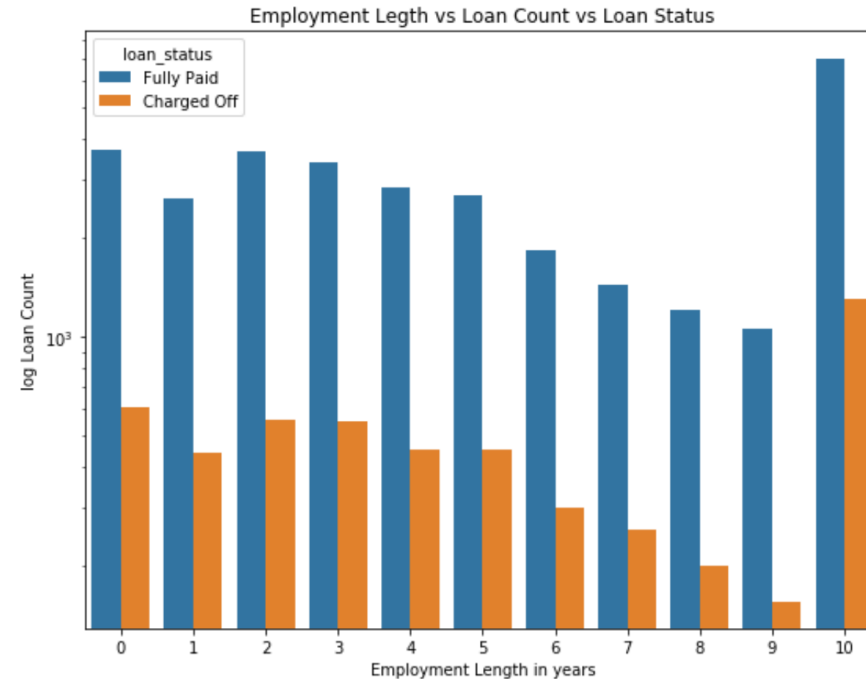
From the below graph it is evident that customers having 0 public records and public record bankruptcies are more likely to default



Lending Club should be looking closely into customers who have 0 derogatory public record and public record bankruptcies

OBSERVATIONS ON EMPLOYMENT LENGTH

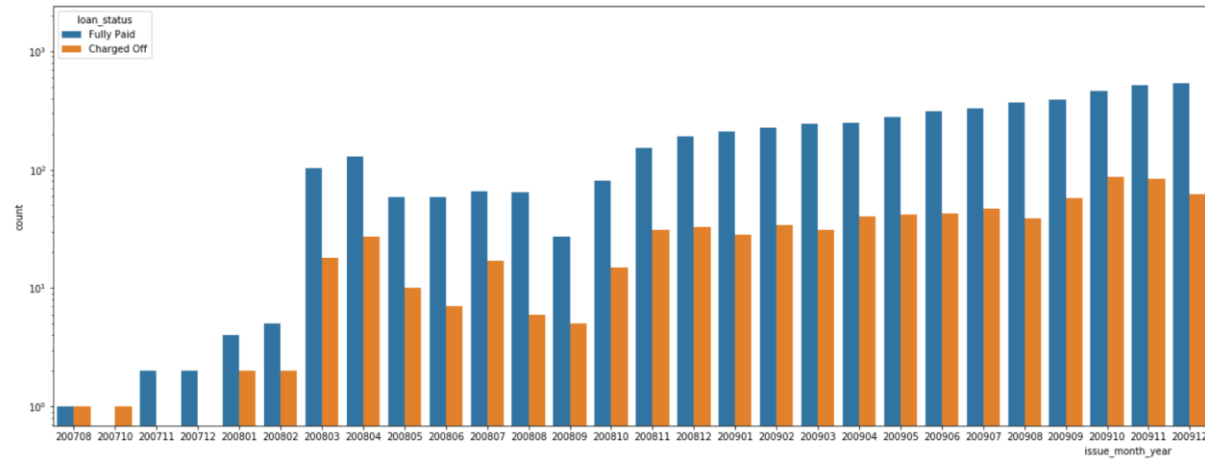
From the below graph it is evident that customers who have been employed for more than 10 years are likely to default



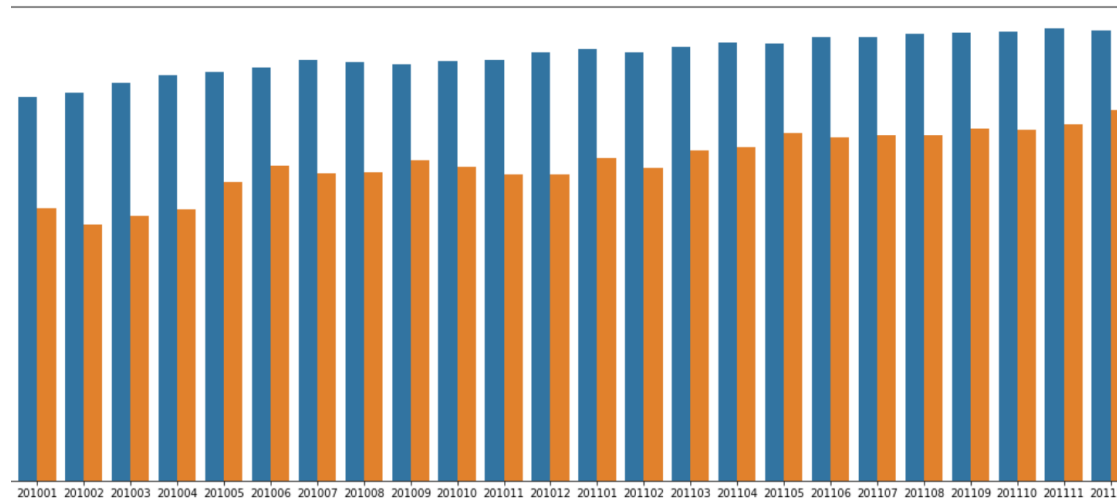
Lending Club should be looking closely into customers whose employment length is more than 10 years

OBSERVATIONS ON ISSUE DATE

From the below graph it is seen that there is a spike in loans availed in the last 3-4 months of every year.



Lending Club should be looking closely into customers who apply for loans during the last quarter of every year



REMARKS

These were the most prominent areas where Lending Club can focus to identify customers who are most likely to default or most likely to pay off.

THANK YOU

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