Credit EDA – Case Study

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Purpose

- This case study aims to identify patterns which indicate if a client has difficulty paying their instalments which may be used for taking actions such as denying the loan, reducing the amount of loan, lending (to risky applicants) at a higher interest rate, etc. This will ensure that the consumers capable of repaying the loan are not rejected. Identification of such applicants using EDA is the aim of this case study.

- In other words, 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.

Client with Clean record

Client with Payment difficulties

Client with clean record – We can see the majority of females tend to maintain a clean record
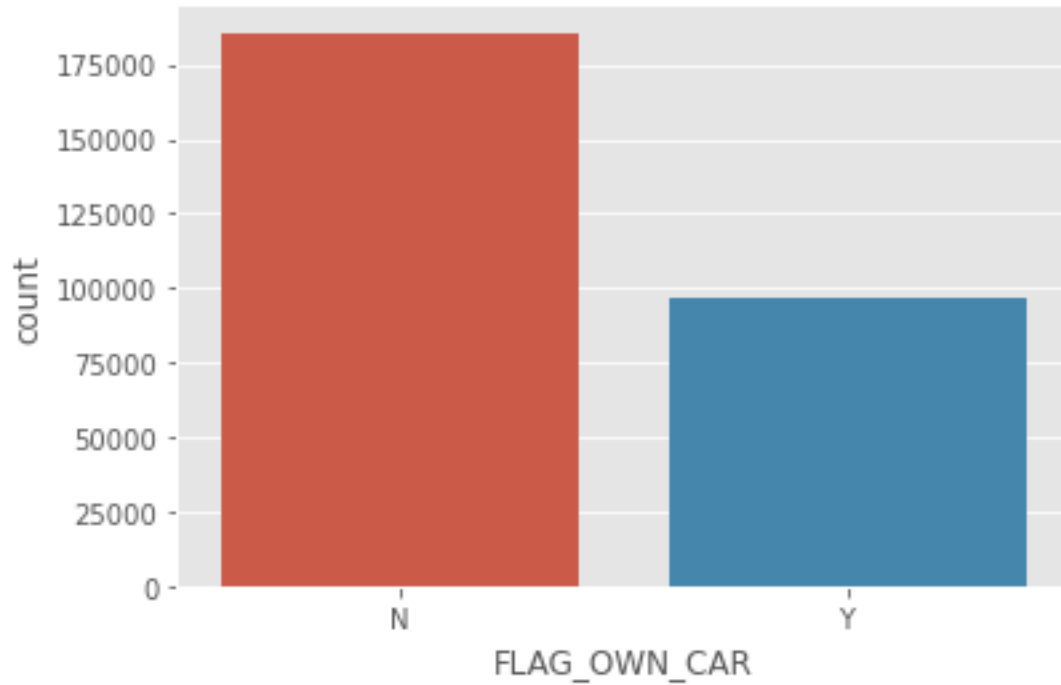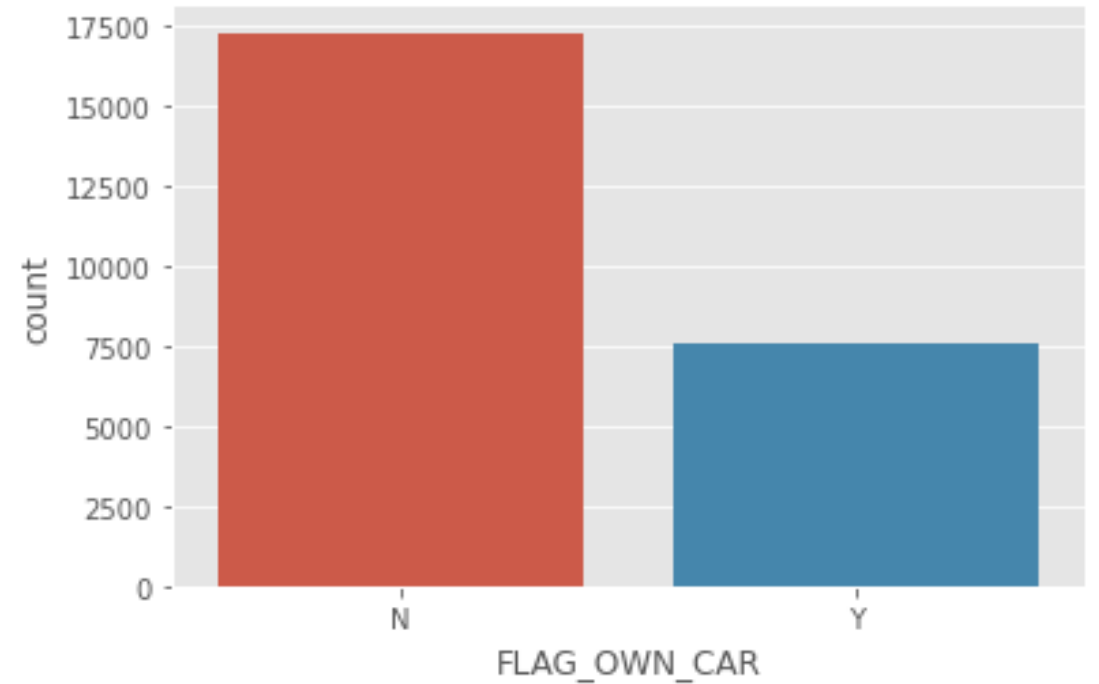
Client with Payment difficulties – We see females tend to be majority.

We can conclude the more females tend to take loan more and also comparatively maintain a clean record compared to male.
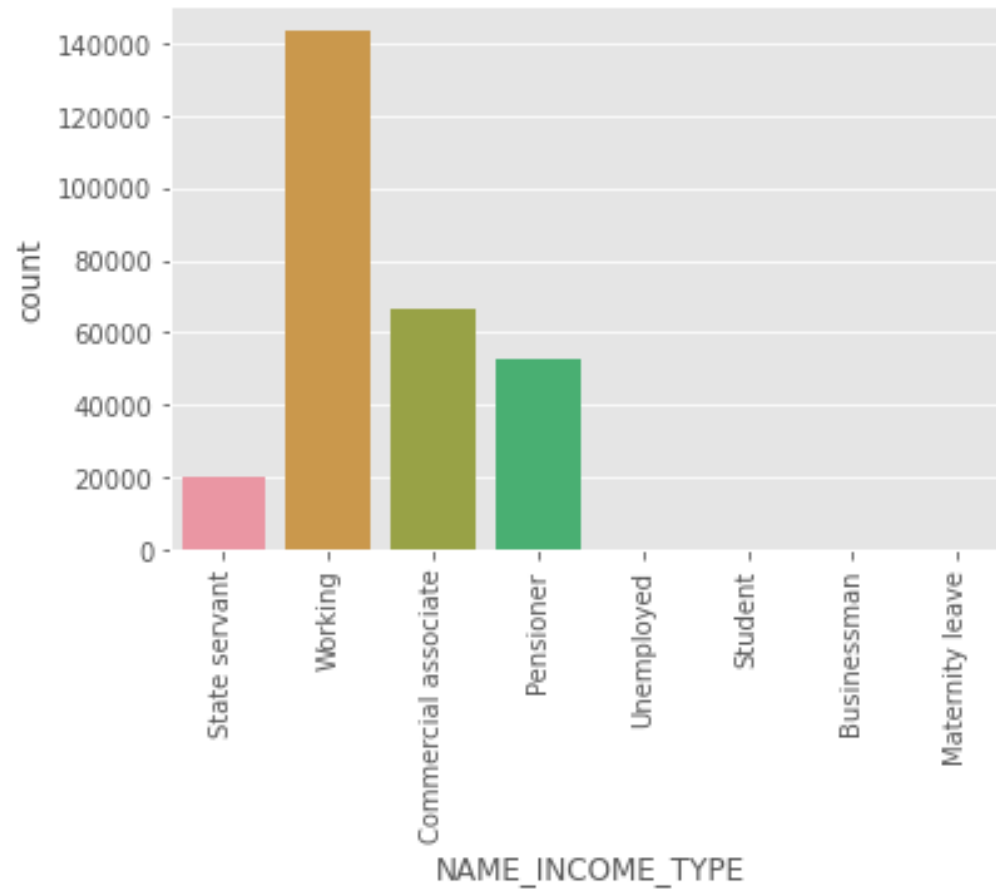
Client with Clean record

Client with Payment difficulties

While people who have car default more often, the reason could be there are simply more people without cars Looking at the percentages in both the charts, we can conclude that the rate of default of people having car is low compared to people who don't.

Client with Clean record

## Client with Payment difficulties
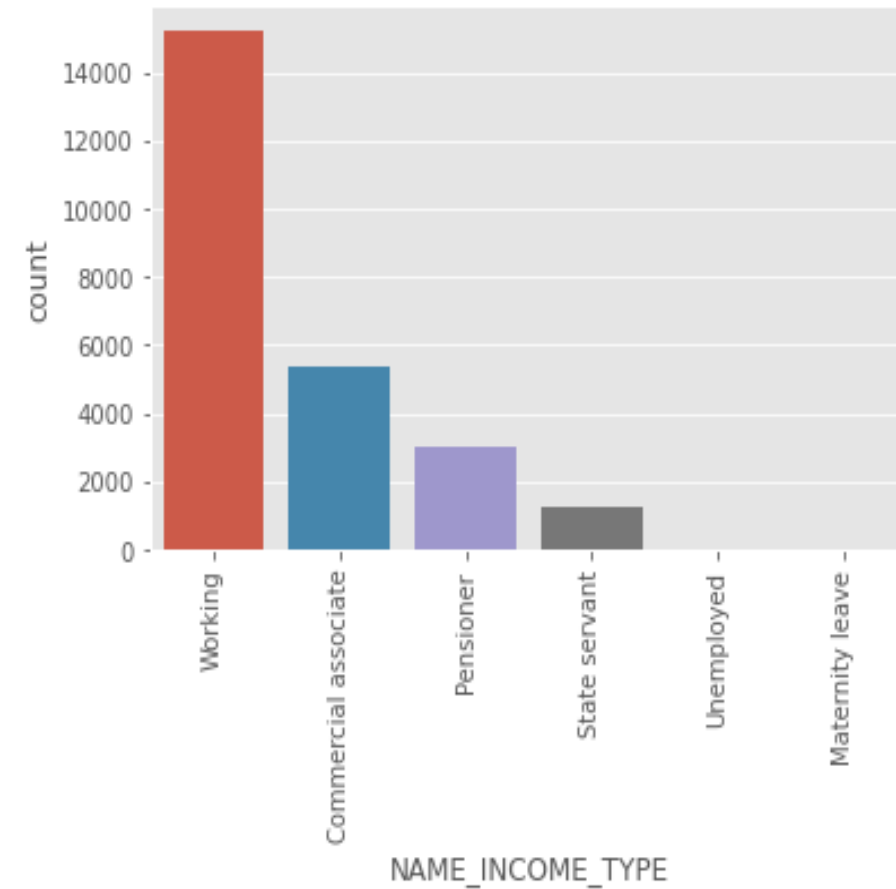
We can notice that the students don't default. The reason could be they are not required to pay during the time they are students. We can also see that the Businessmen never default. Most of the loans are distributed to working class people. We also see that in working class people, the chances of defaulting are more.
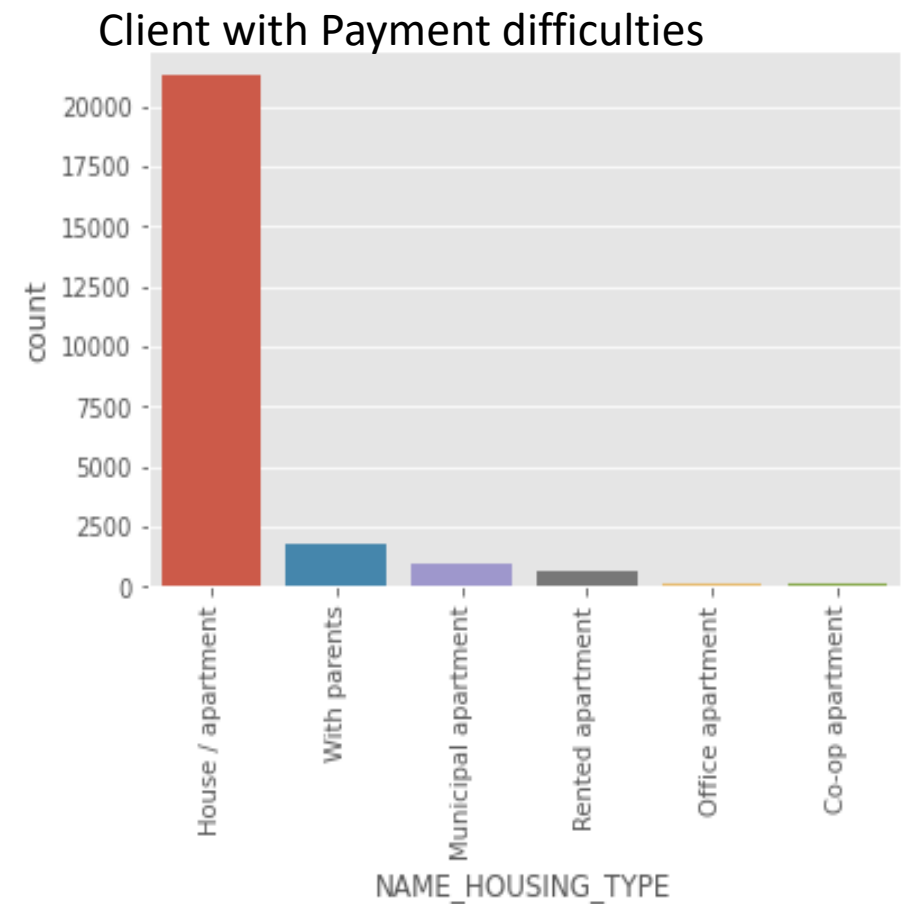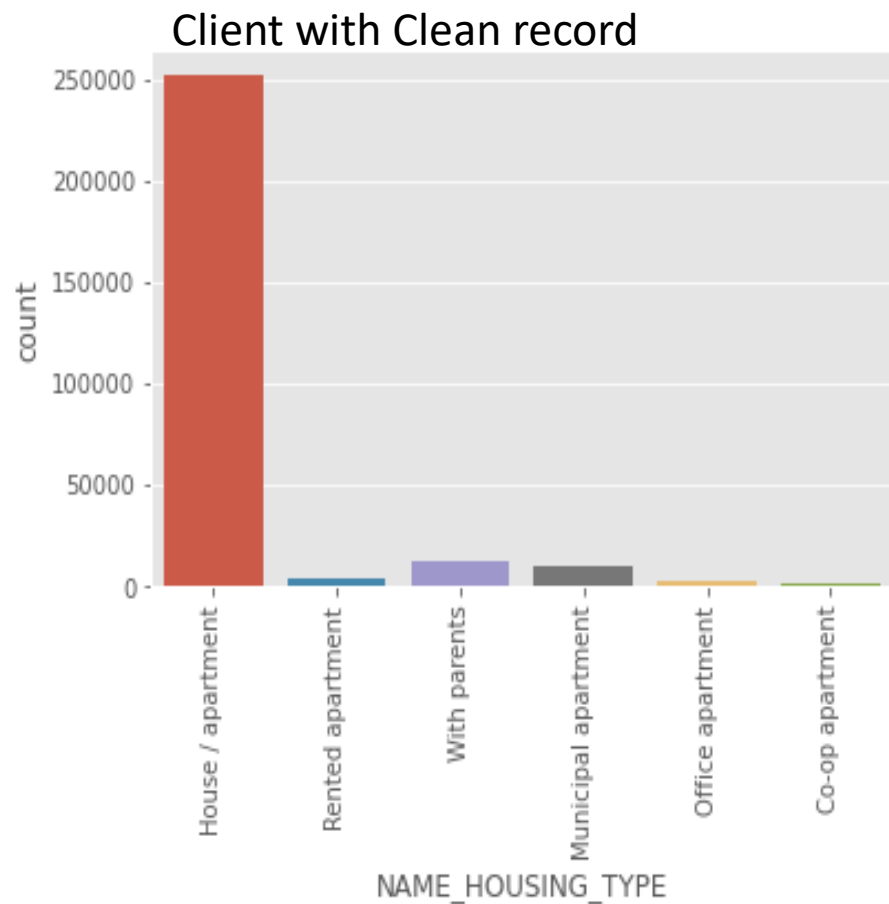
Client with Clean record
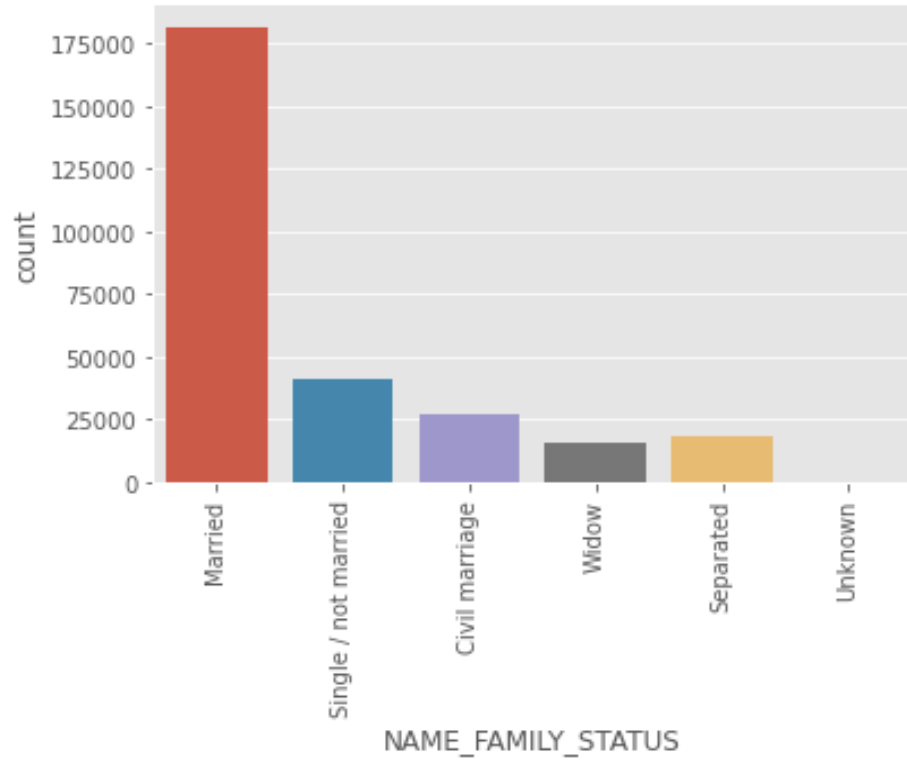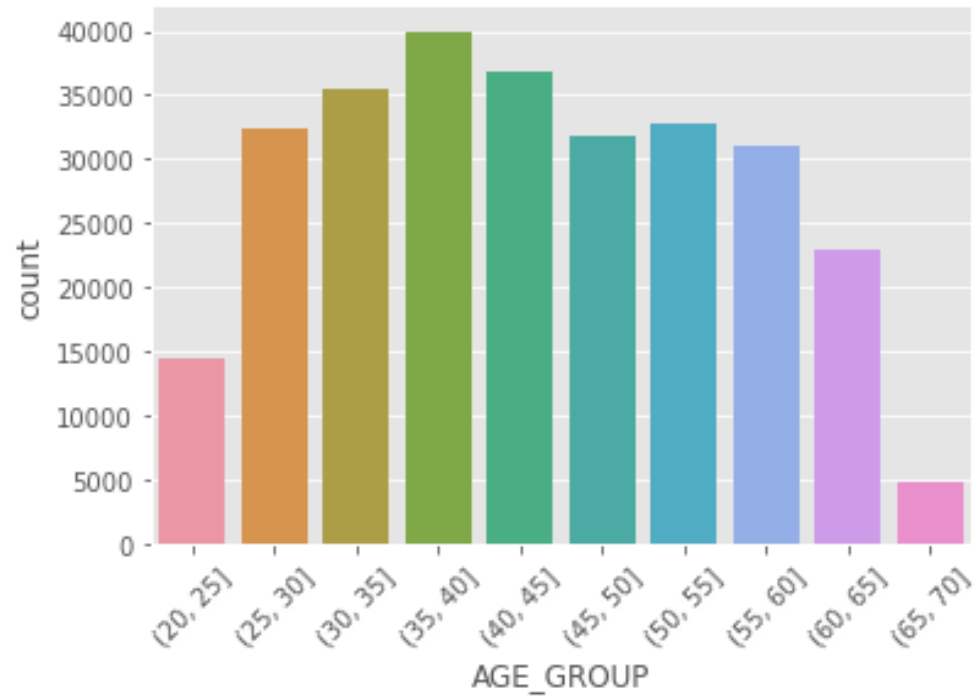
Client with Payment difficulties
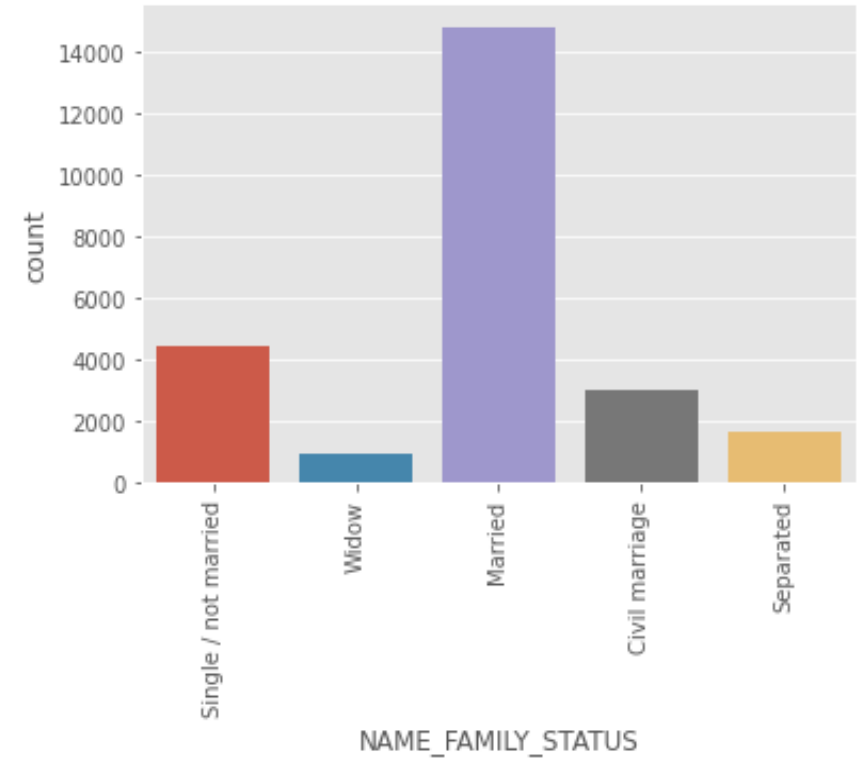
Married people tend to apply for more loans comparatively.
But from the graph we see that Single/non Married people, more risk is associated with them.

Client with Clean record — Client with Payment difficulties

It is clear from the graph that people who have House/Apartment, tend to apply for more loans. People living with parents tend to default more often when compared with others. The reason could be their living expenses are more due to their parents living with them.

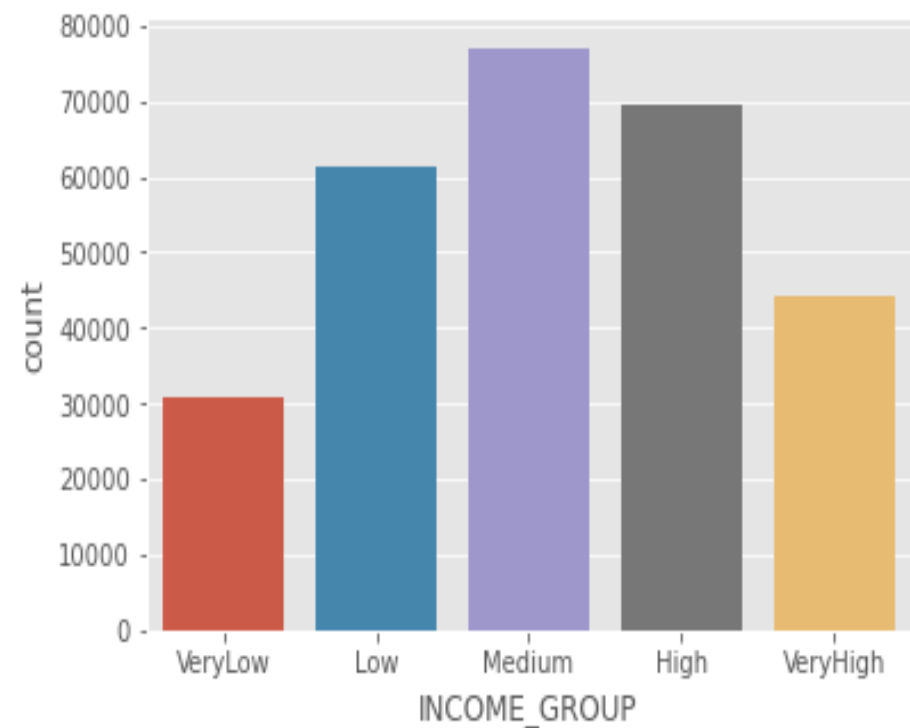Client with Clean record   Client with Payment difficulties
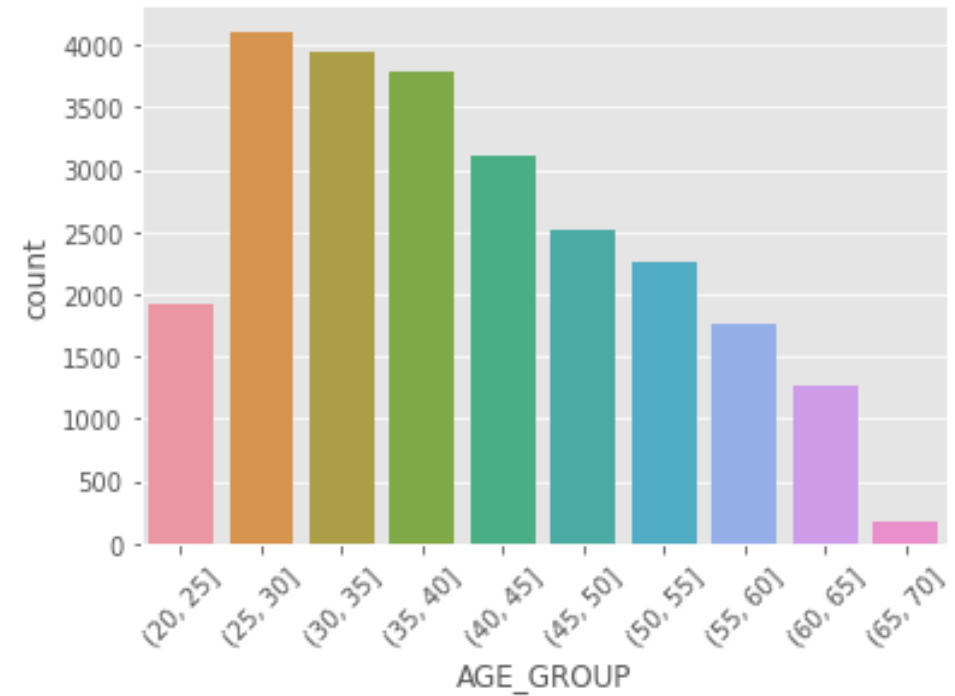
We see that (25,30] age group tend to default more often. So they are the riskiest people to loan to.
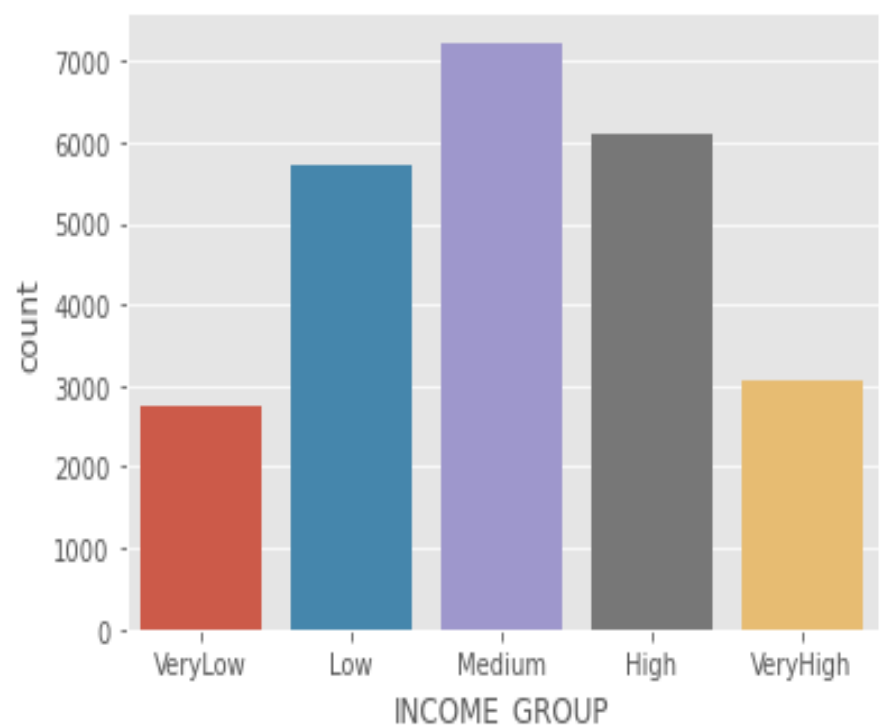With increasing age group, people tend to default less starting from the age 25. One of the reasons could be they get employed around that age and with increasing age, their salary also increases.
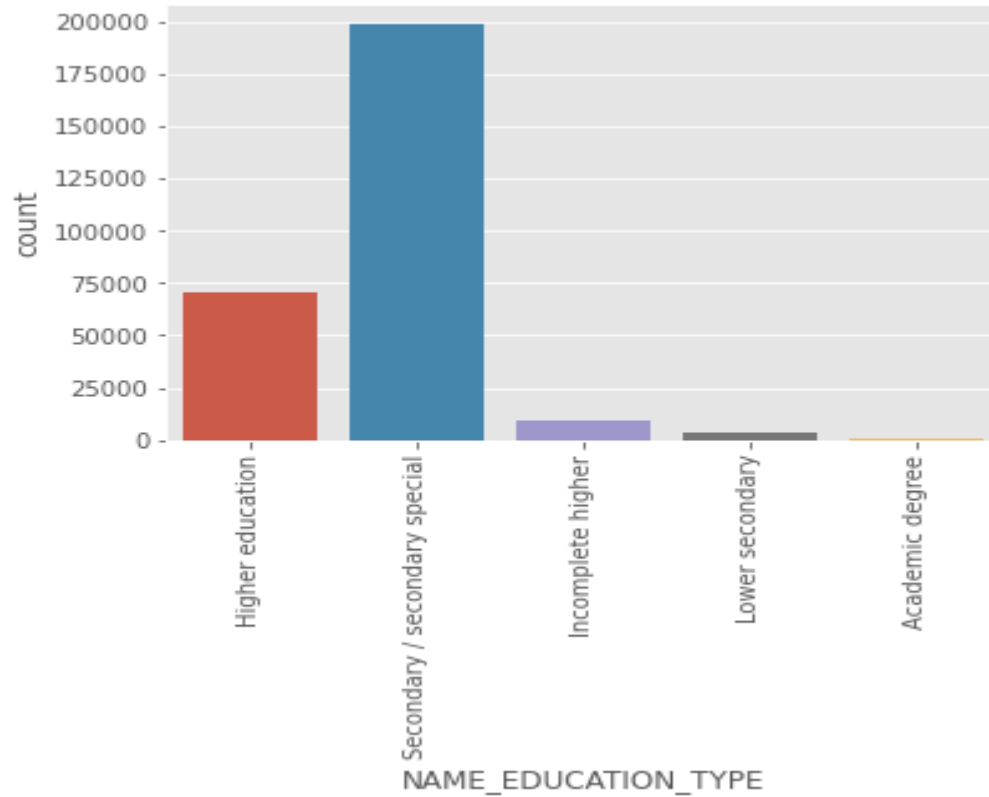
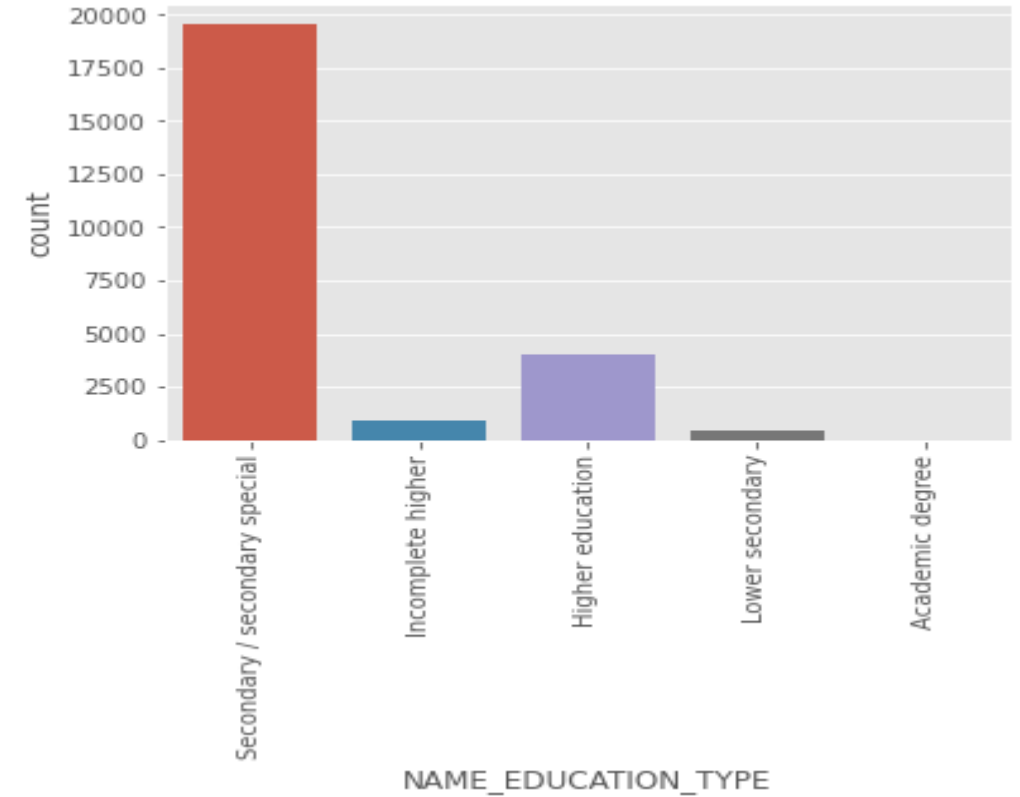Client with Clean record   Client with Payment difficulties

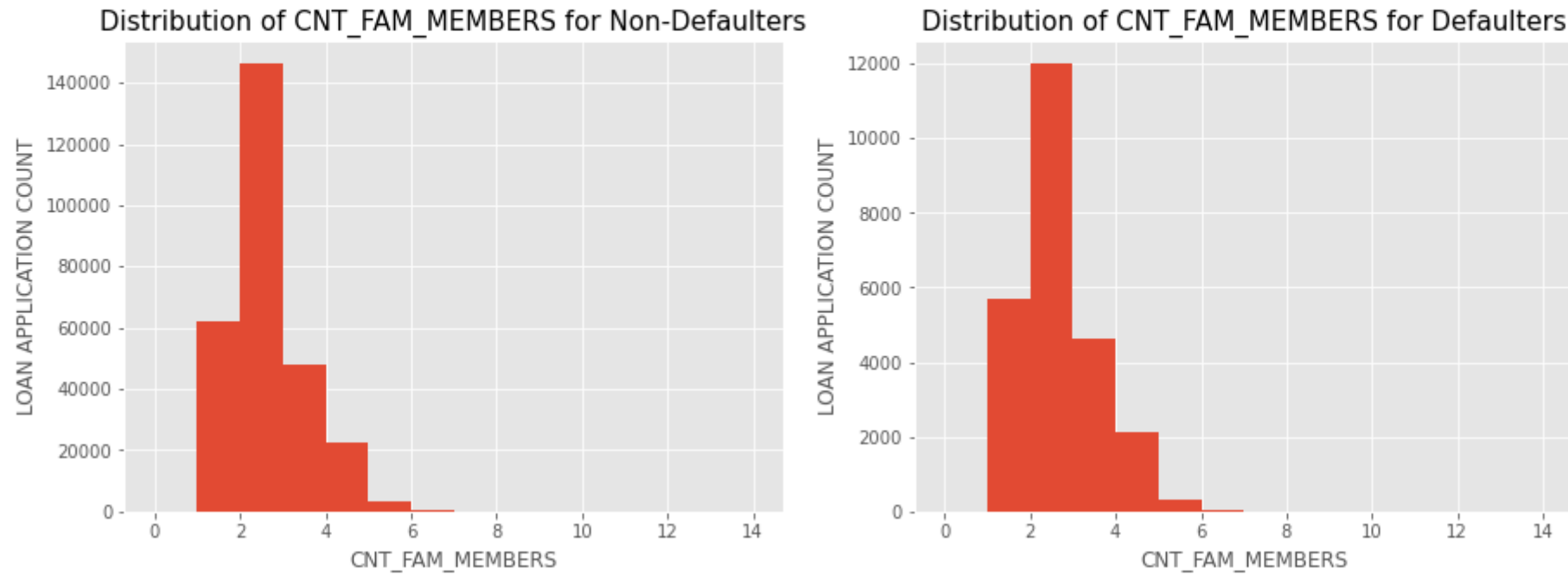The Very High income group tend to default less often.

Client with Clean record

Client with Payment difficulties

Almost all of the Education categories are equally likely to default except for the higher educated ones who are less likely to default and secondary educated people are more likely to default

We can see that a family of 3 applies loan more often than the other families

AMT_CREDIT vs CNT_FAM_MEMBERS for Non-Defaulters

AMT_CREDIT vs CNT_FAM_MEMBERS for Defaulters
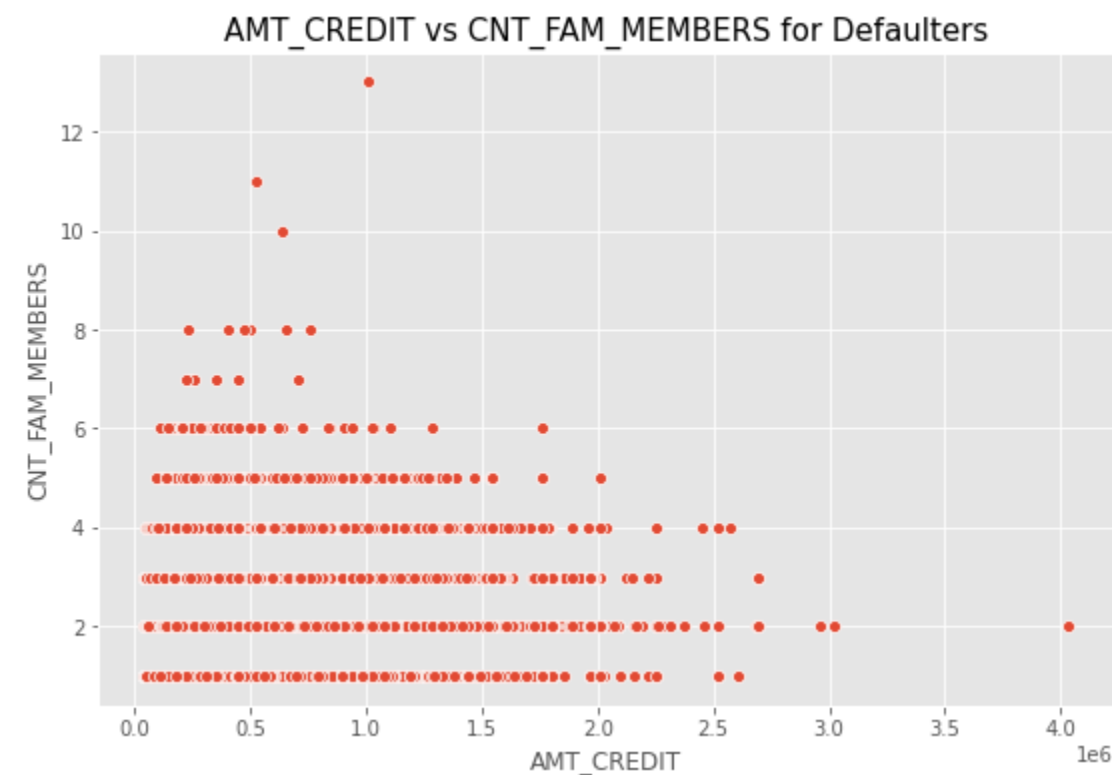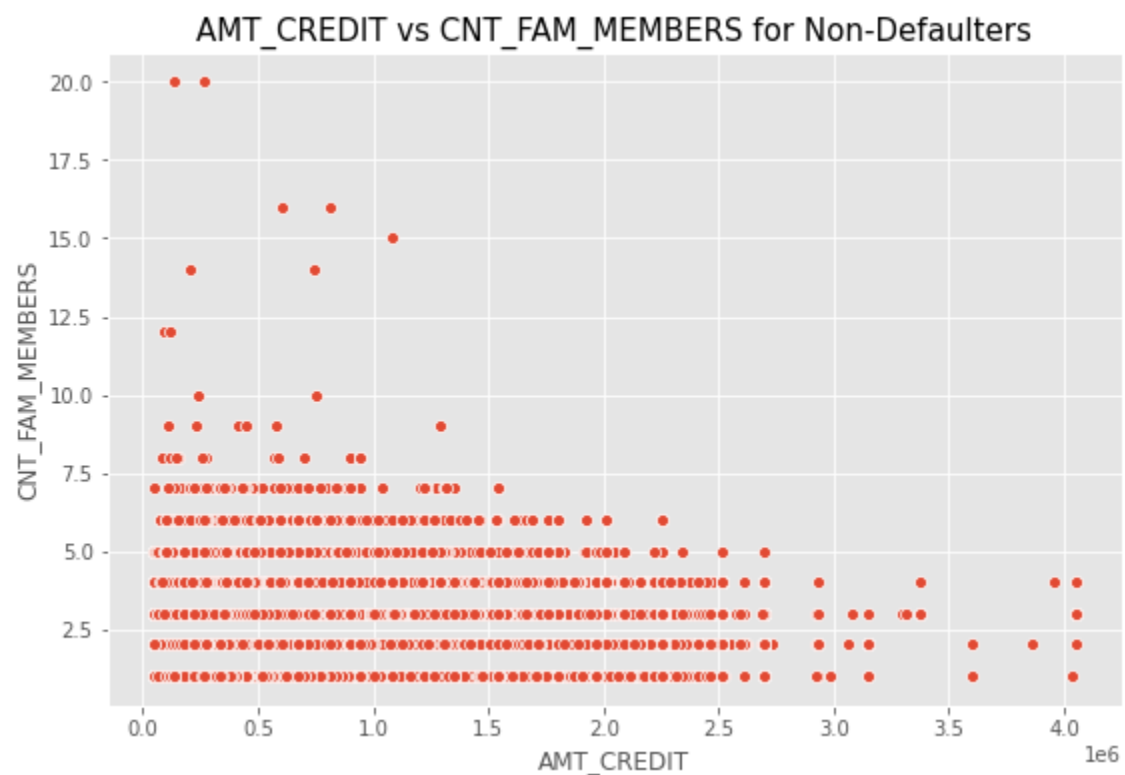
We can see that the density in the lower left corner is similar in both the case, so the people are equally likely to default if the family is small and the AMT_CREDIT is low. We can observe that larger families and people with larger AMT_CREDIT default less often
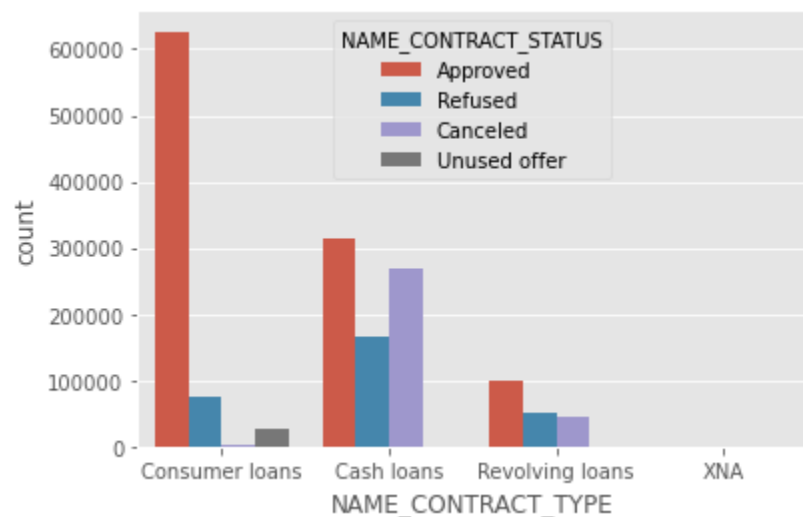
From the above chart, we can infer that, most of the applications are for 'Cash loan' and 'Consumer loan'. Although the cash loans are refused more often than others.
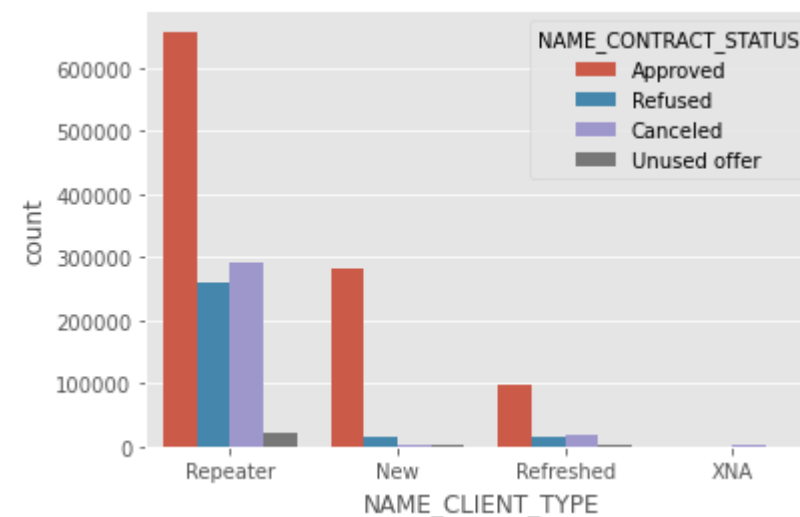
Most of the loan applications are from repeat customers, out of the total applications 70% of customers are repeaters. They also get refused most often.
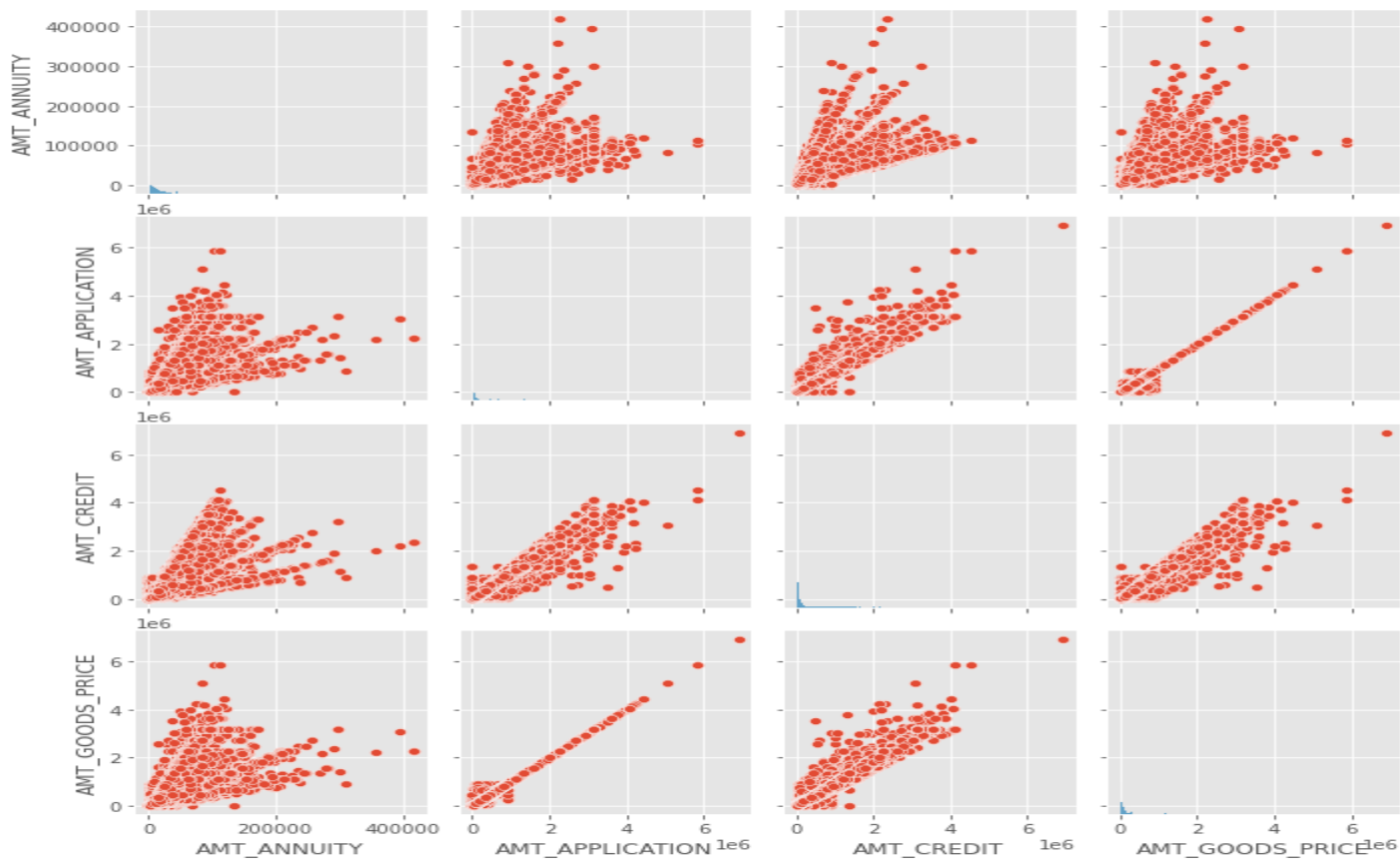
1.Annuity of previous application has a very high and positive influence over: (Increase of annuity increases below factors)
(1) How much credit did client asked on the previous application
(2)Final credit amount on the previous application that was approved by the bank
(3) Goods price of good that client asked for on the previous application.

2.For how much credit did client ask on the previous application is highly influenced by the Goods price of good that client has asked for on the previous application

3.Final credit amount disbursed to the customer previously, after approval is highly influence by the application amount and also the goods price of good that client asked for on the previous application.

THANK YOU