

CREDIT EDA ASSIGNMENT

Presented By
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Objective

The business needs to comprehend the elements that are reliable predictors of loan default, sometimes known as the driving factors (or driver variables) behind default. This information may be used by the business in portfolio management and risk analysis. Based on the applicant's profile, credit risk analysis will assist the organization in deciding whether to approve the loan. This will limit the company's business loss and prevent financial damage for the business.

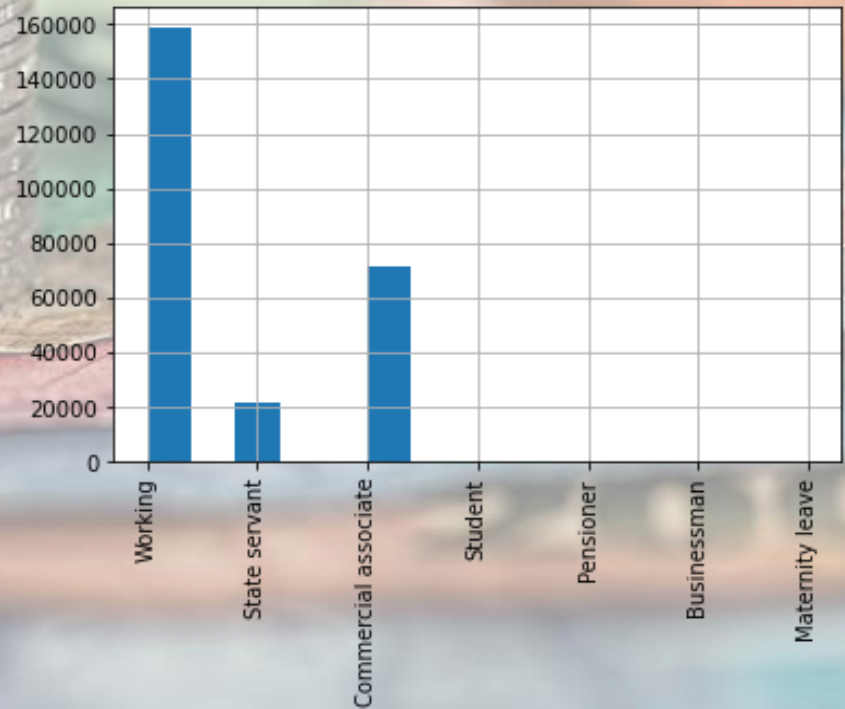
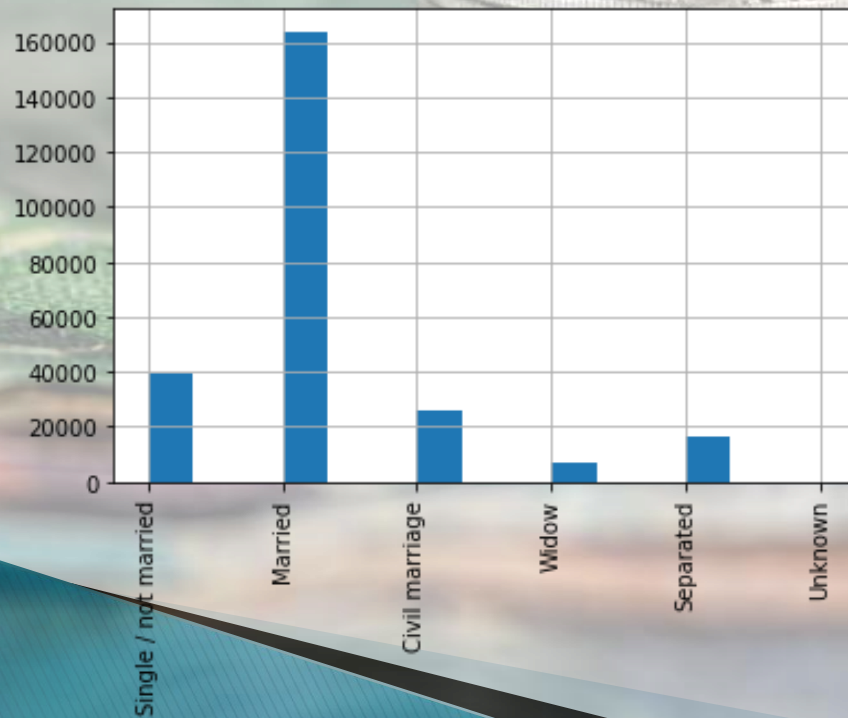
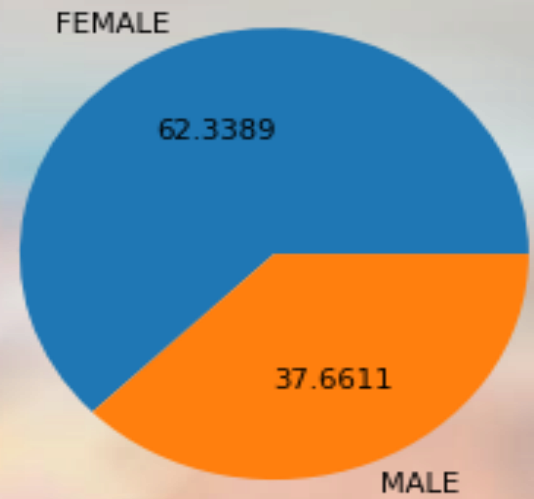
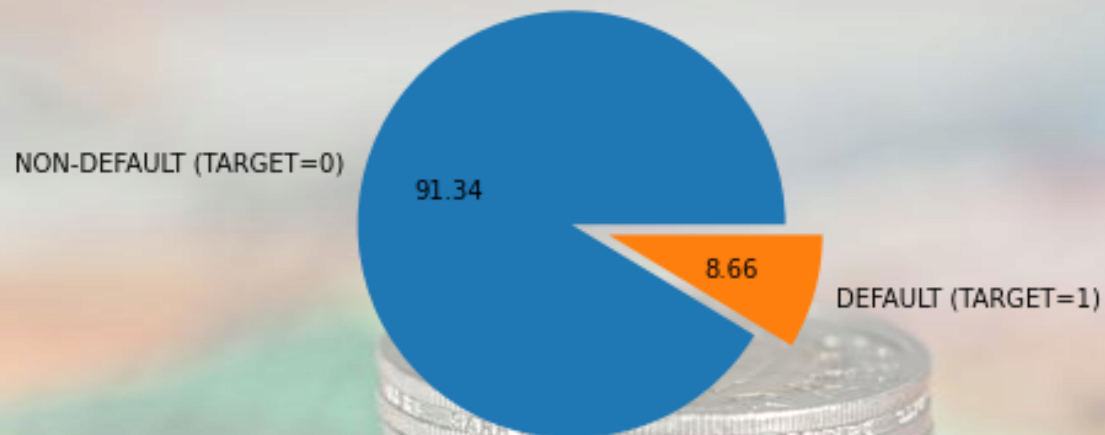
Steps:-

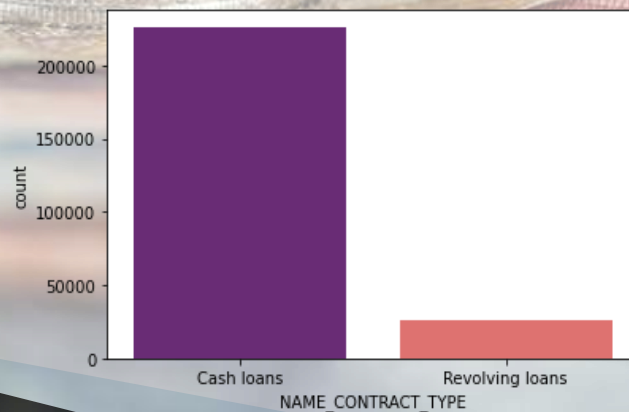
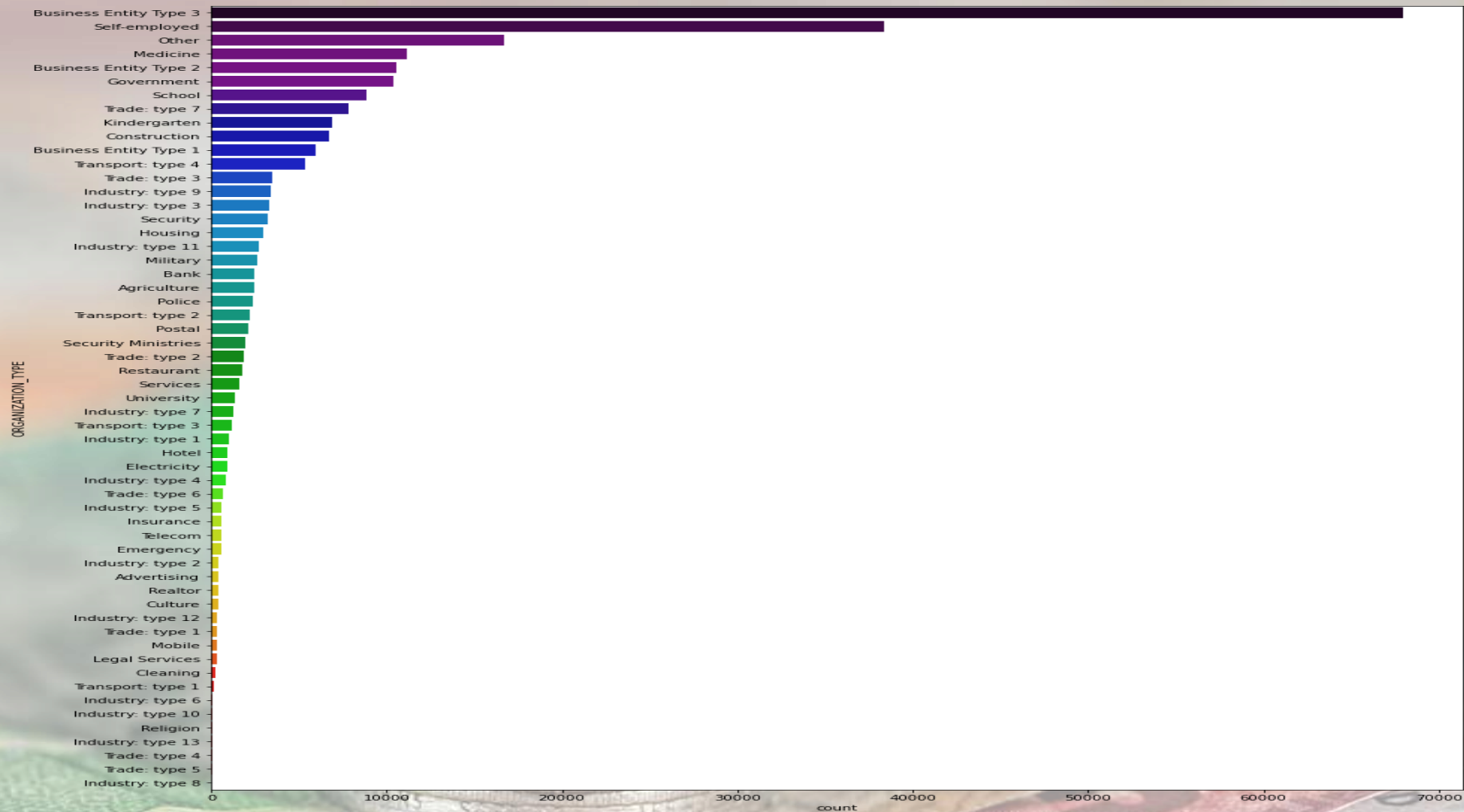
- ❖ Data sourcing and data understanding.
- ❖ Quality checks on the data – Data cleaning and Data manipulation.
- ❖ Checking outliers and understanding the numerical features.
- ❖ Checking categorical features.
- ❖ .Performing few Univariate and Bivariate/Multivariate Analysis.
- ❖ Performing this on both the data sets
- ❖ Merging both the data frames.
- ❖ Performing few sanity checks.
- ❖ Performing few Univariate and Bivariate/Multivariate Analysis.
- ❖ Making observations on the amount of risk factor.
- ❖ Recommendations and Risks.

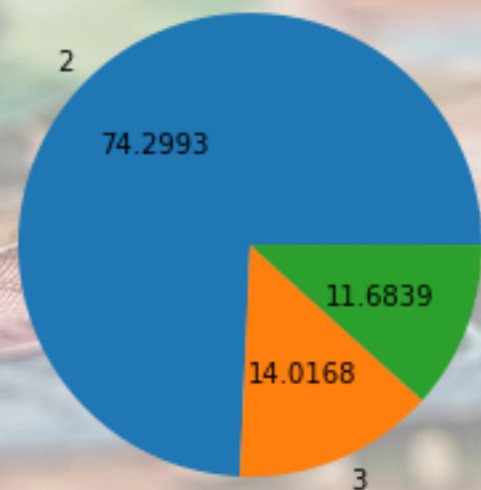
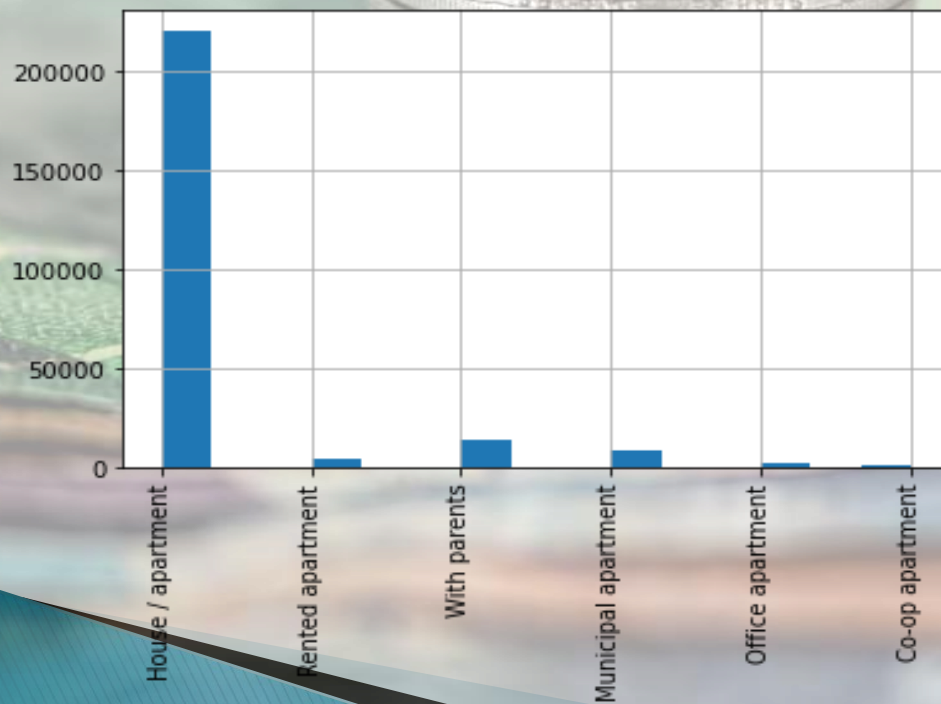
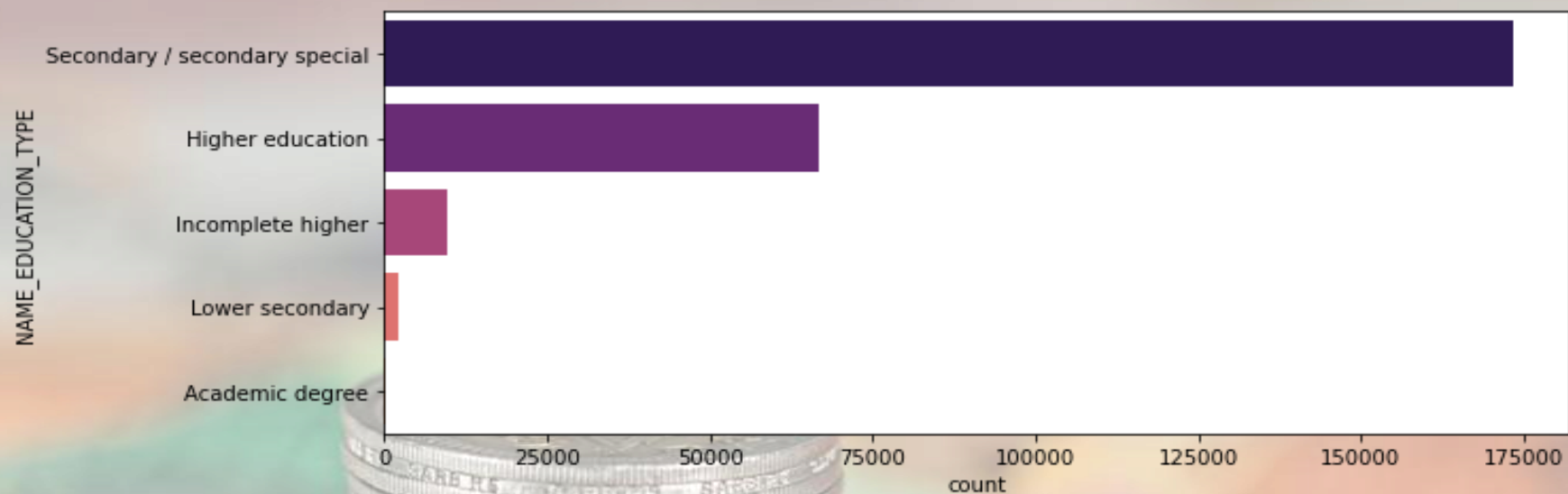
Presenting few important visualizations of Univariate, Bivariate and Multivariate Analysis

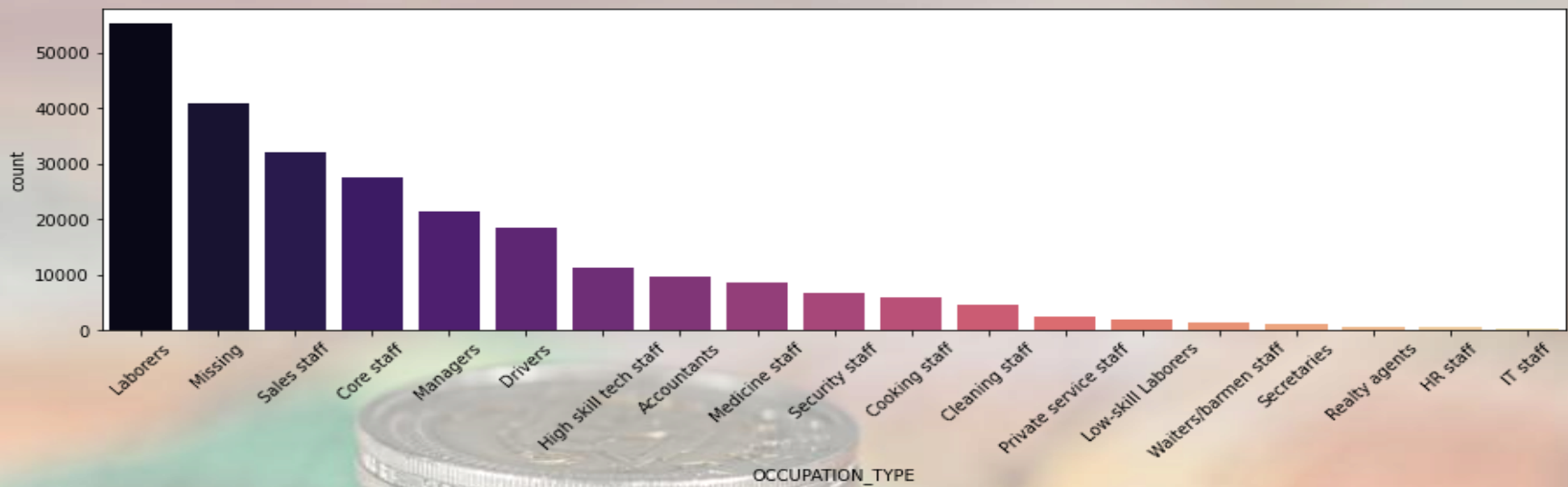


TARGET Variable - DEFAULTER Vs NONDEFAULTER





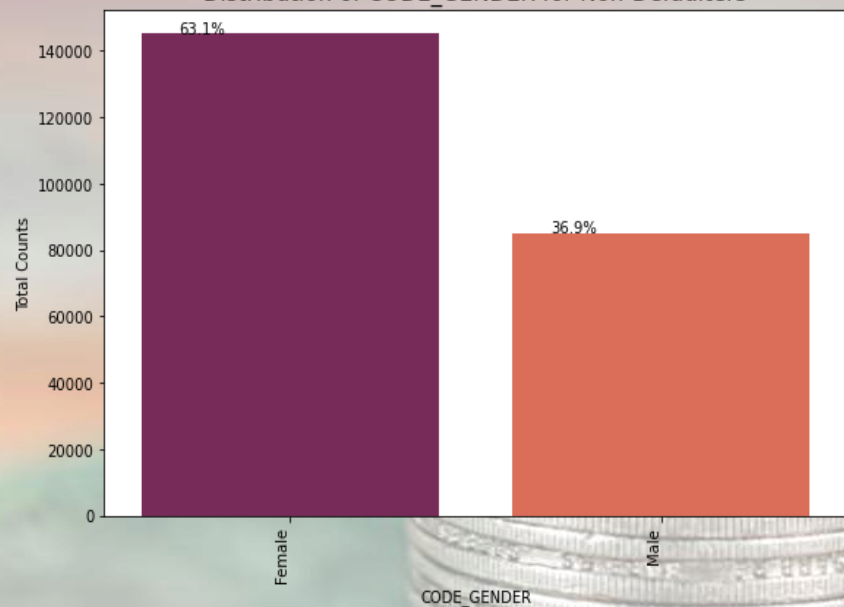




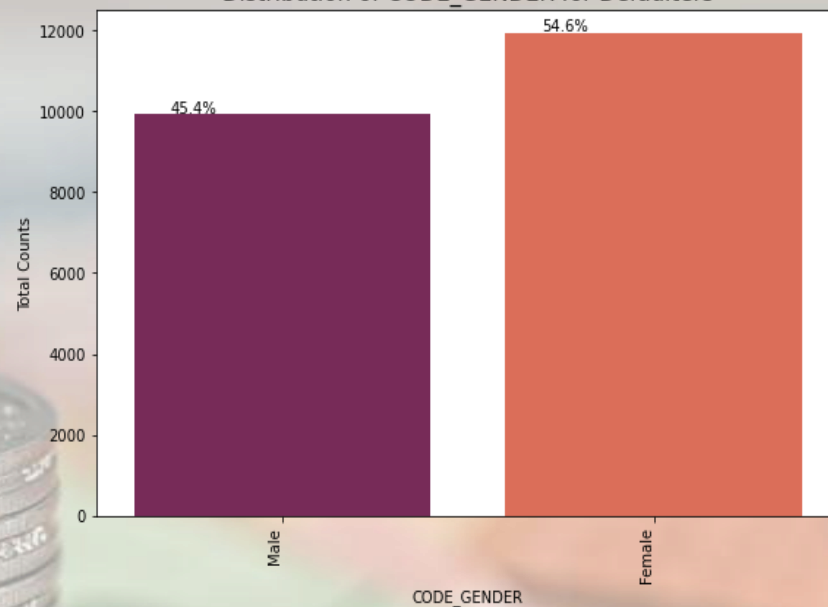
Important Observations

- 1.Highest frequency of income type of client is Working.
- 2.Highest frequency of family status of client is Married.
- 3.Highest frequency of income group of client is Medium income range.
- 4.Maximum contract type chosen by client is Cash loans.
- 5.Organization type of maximum client is Business type 3.
- 6.Maximum client has Secondary education.
- 7.Maximum client are married.
- 8.Maximum client stay in House/Apartment.
- 9.Maximum occupation type of client is of Laborers.
- 10.Family member count for most the clients is 2.
- 11.Region rating of most of the clients is 2.
- 12.Loan process done maximum on Tuesday and Wednesday.
- 13.98.27% clients permanent address match with the contact address.

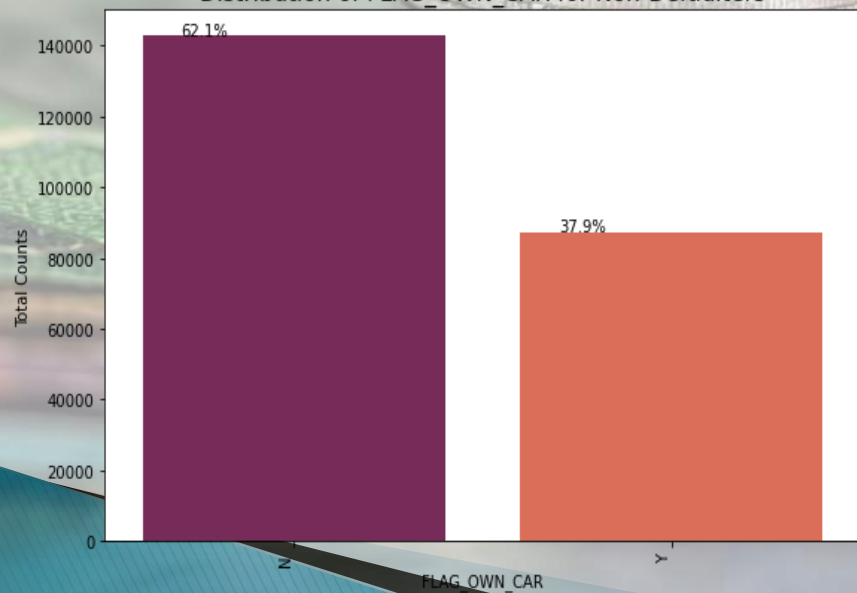
Distribution of CODE_GENDER for Non-Defaulters



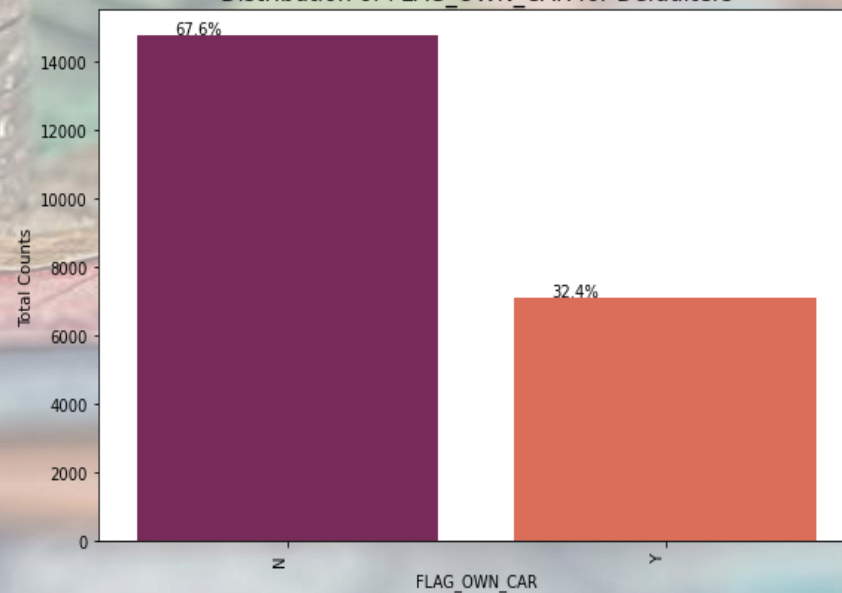
Distribution of CODE_GENDER for Defaulters



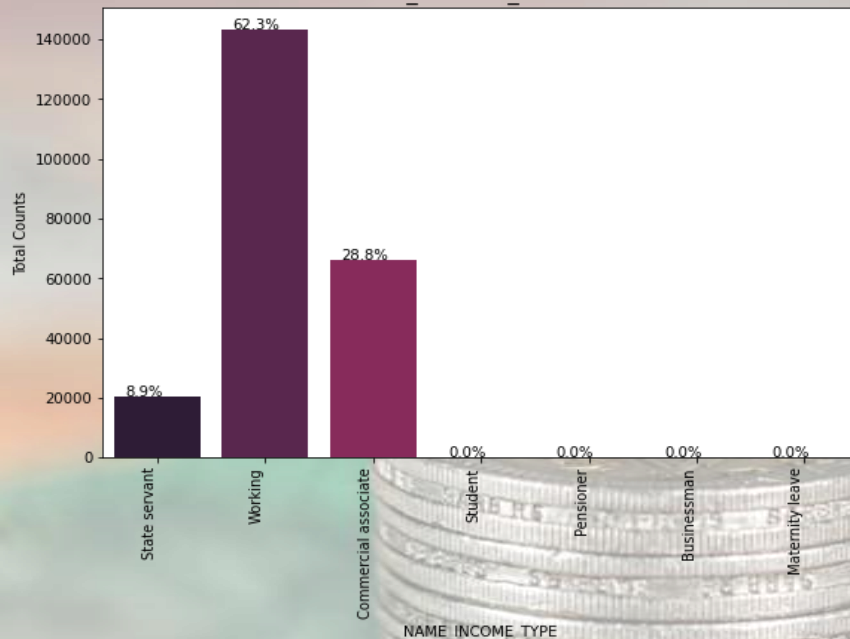
Distribution of FLAG_OWN_CAR for Non-Defaulters



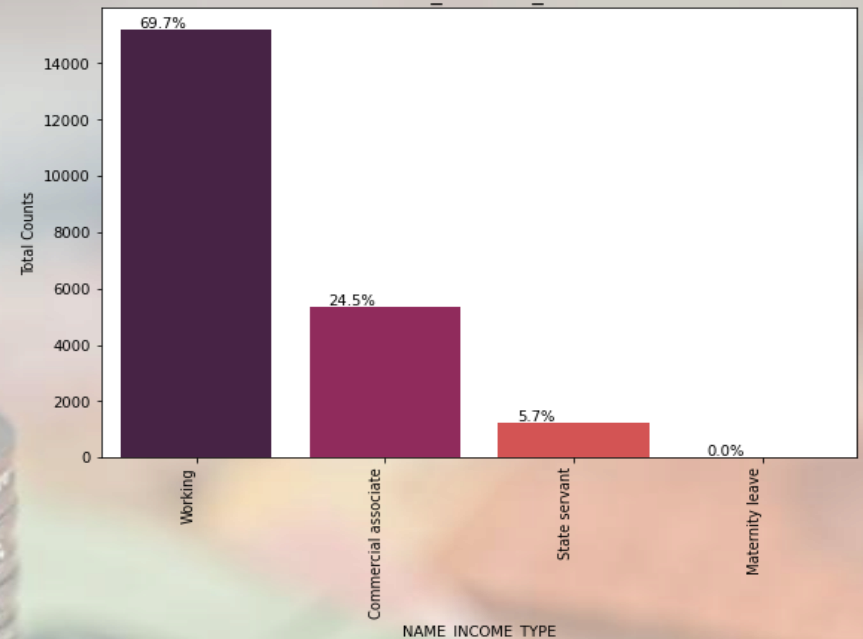
Distribution of FLAG_OWN_CAR for Defaulters



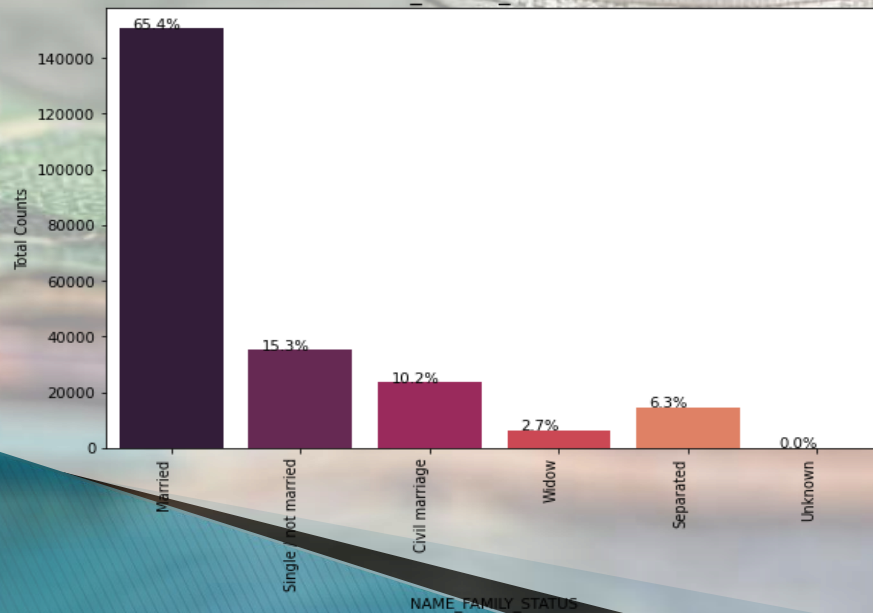
Distribution of NAME_INCOME_TYPE for Non-Defaulters



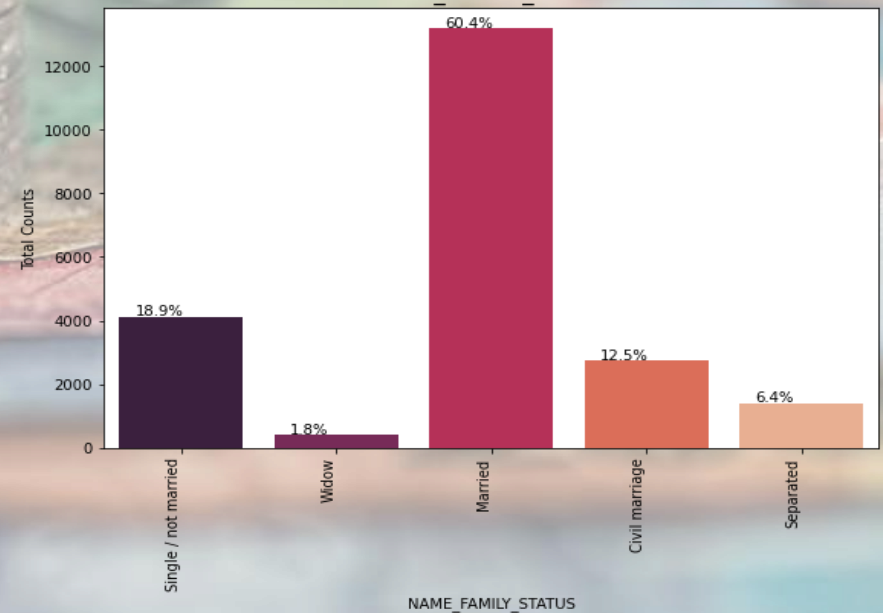
Distribution of NAME_INCOME_TYPE for Defaulters



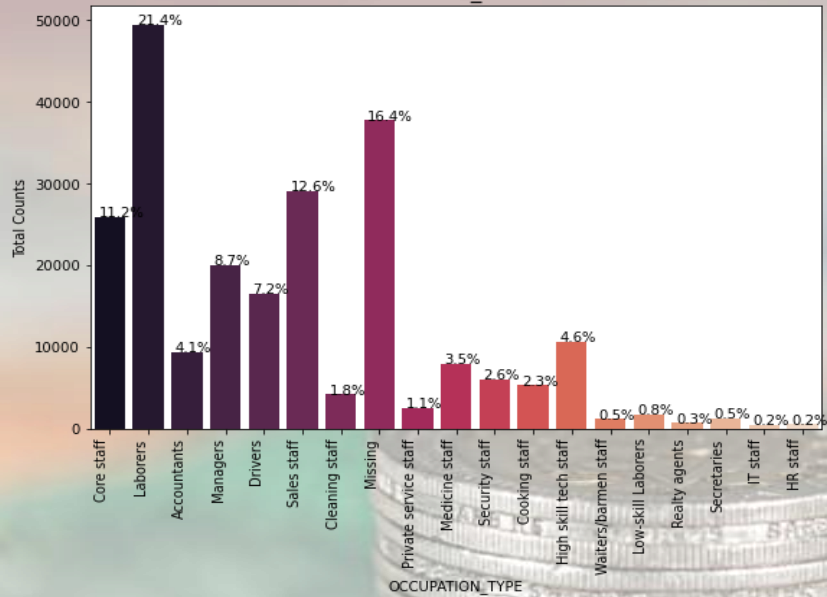
Distribution of NAME_FAMILY_STATUS for Non-Defaulters



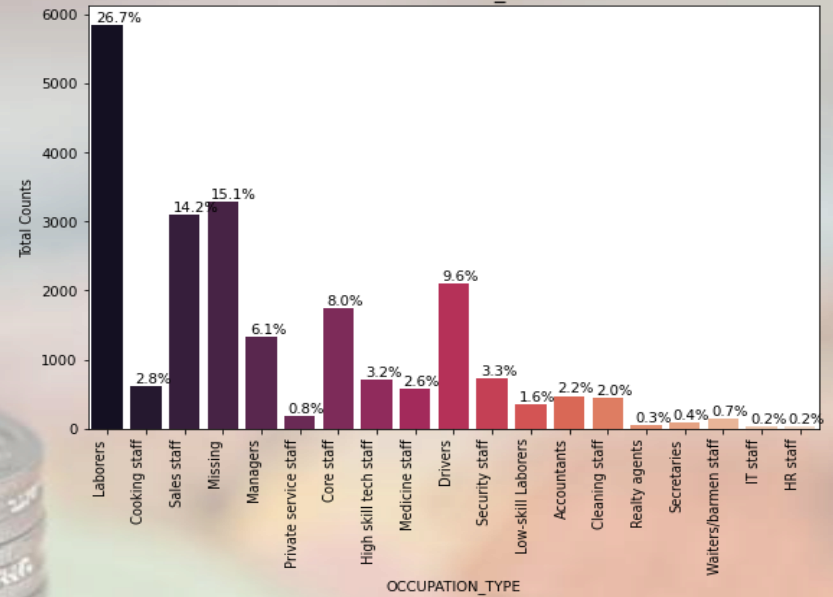
Distribution of NAME_FAMILY_STATUS for Defaulters



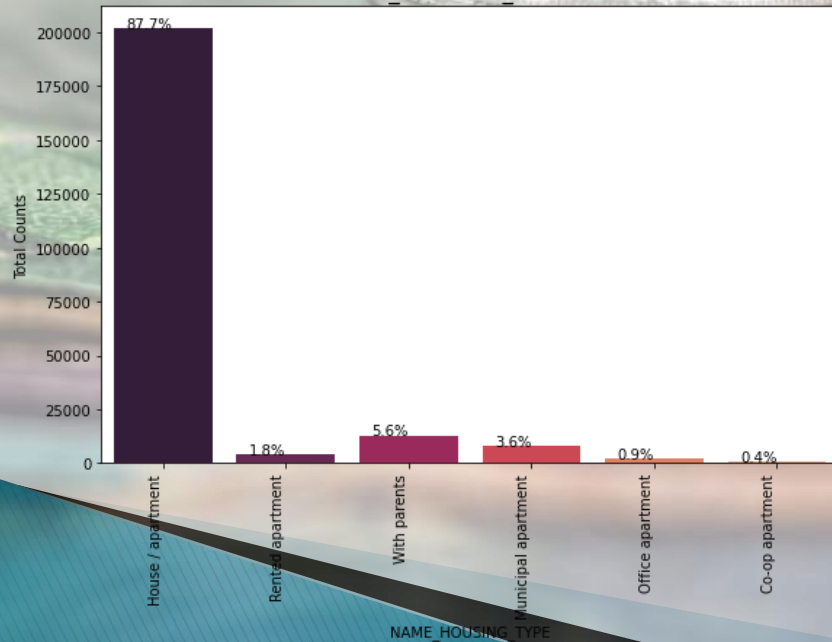
Distribution of OCCUPATION_TYPE for Non-Defaulters



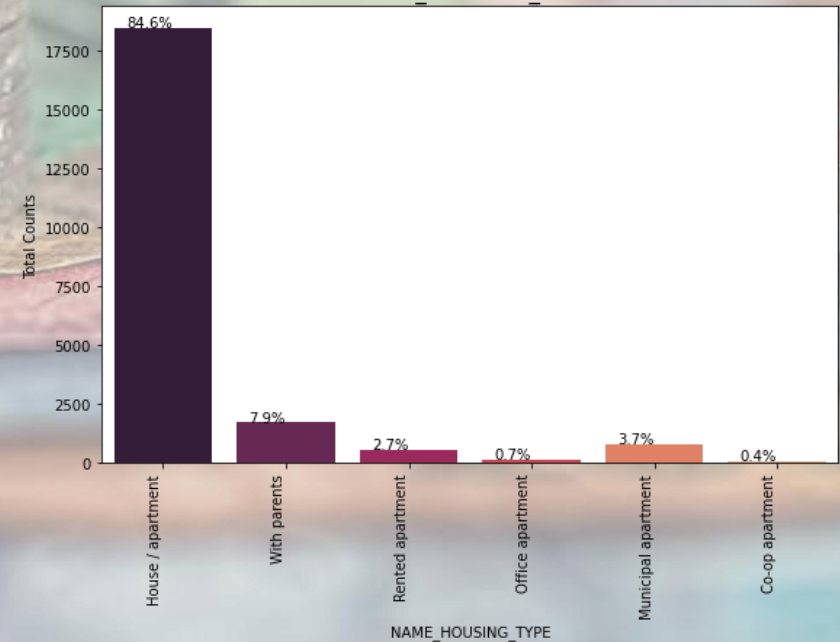
Distribution of OCCUPATION_TYPE for Defaulters



Distribution of NAME_HOUSING_TYPE for Non-Defaulters

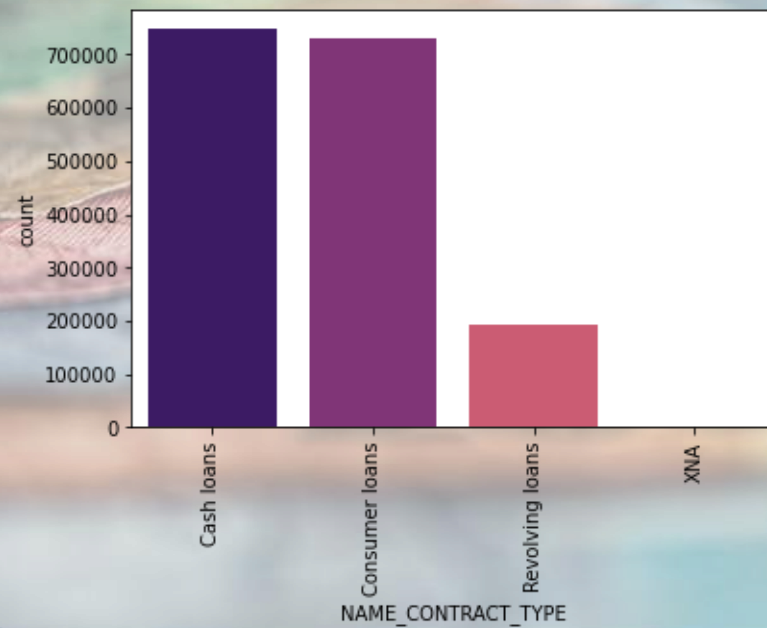
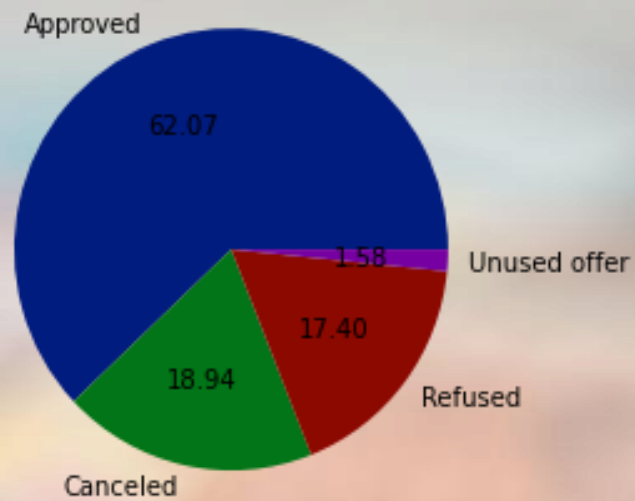
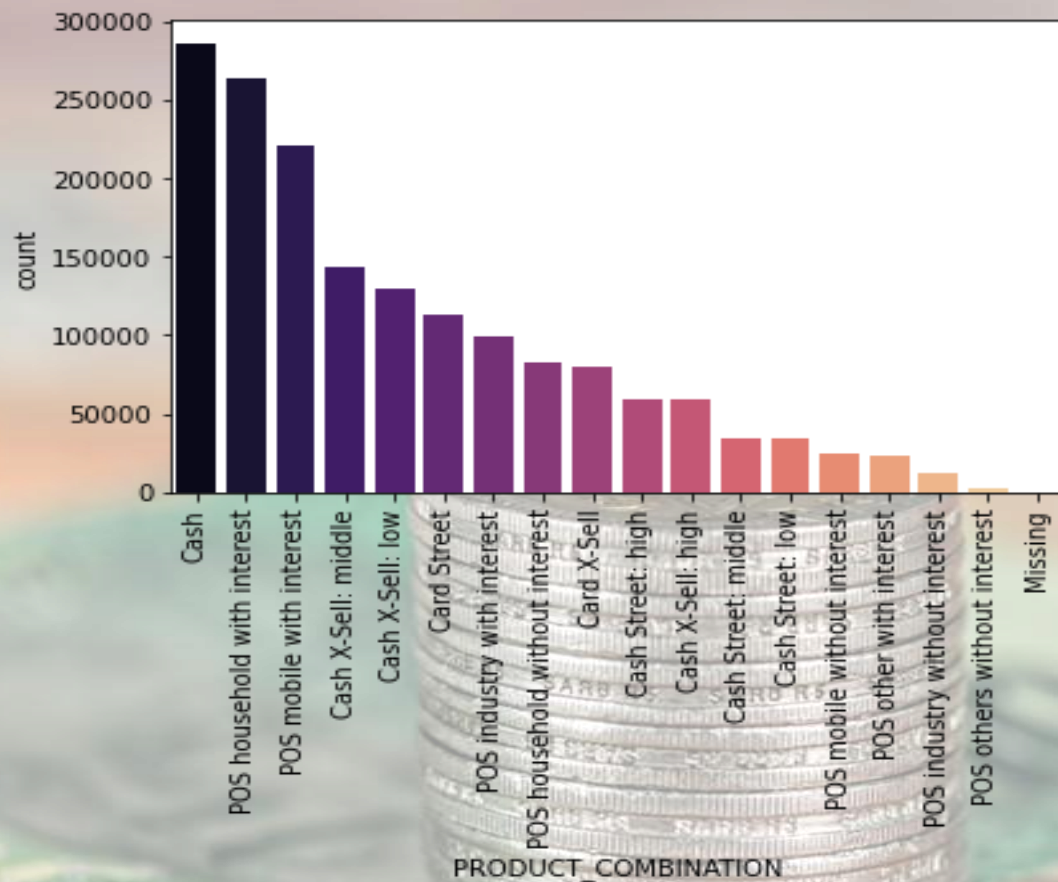


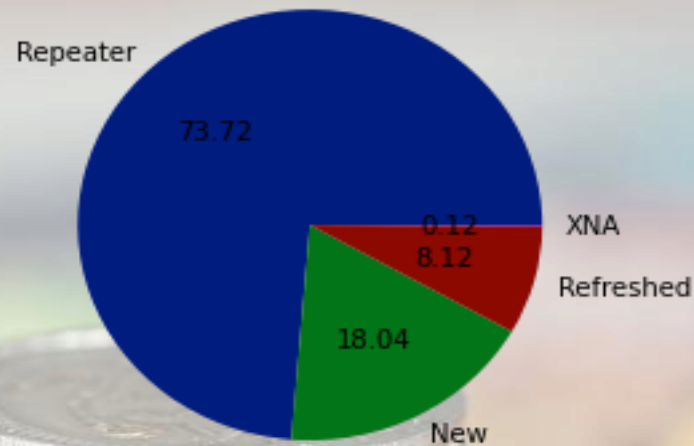
Distribution of NAME_HOUSING_TYPE for Defaulters



Important observations

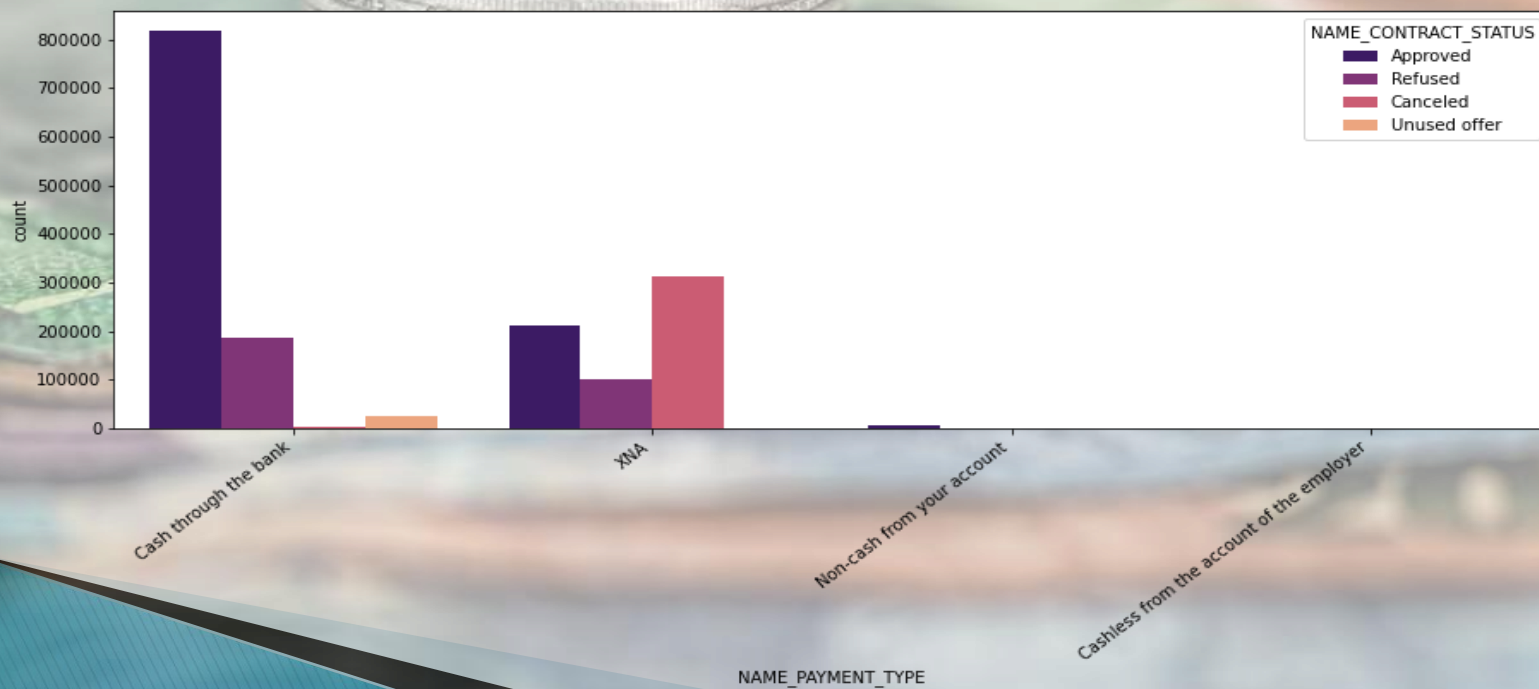
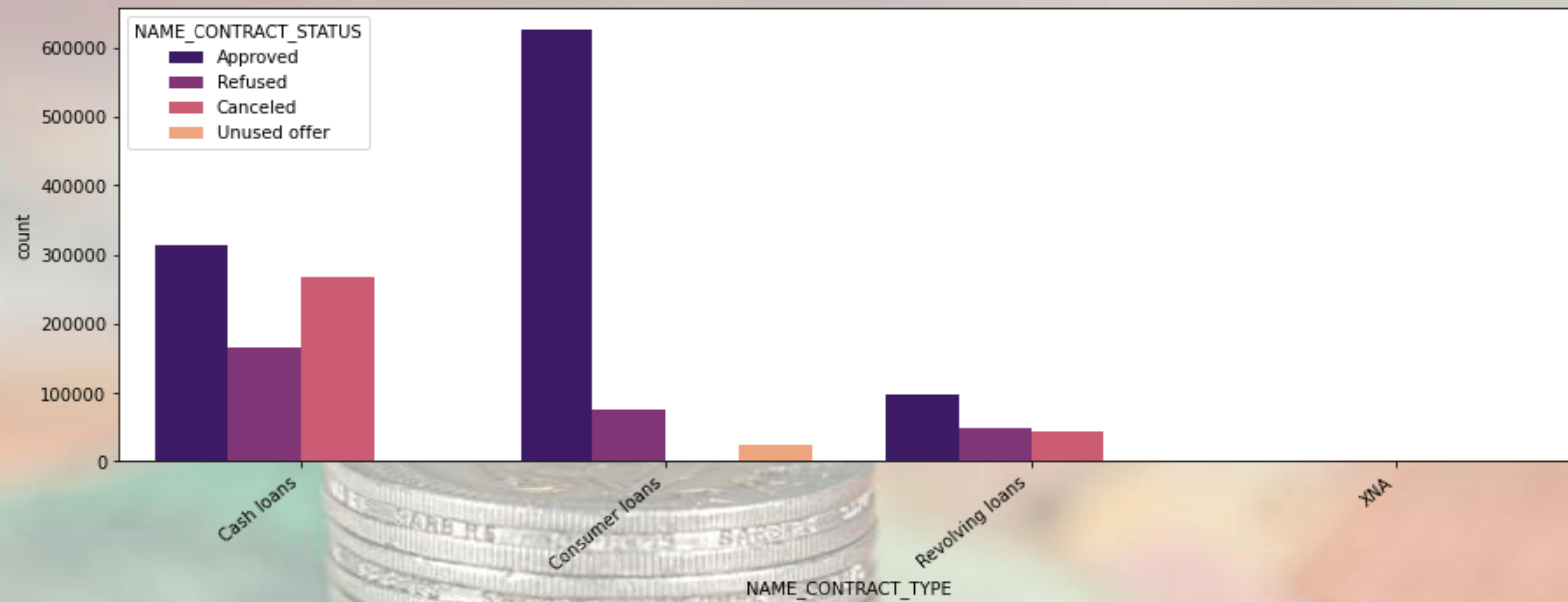
1. Female defaulters are more than male since more female are applying for loans. 2. Rate of default of people having car is low compared to people who don't. 3. Chances of defaulting of income type-Working is more whereas State servants default very less. 4. Married people take more loans but risk of defaulting lies more with single/not married. 5. People with house tend to apply for more loans but people staying with parents tend to default more. 6. Age group 25 to 30 tend to default more. 7. Very high income group tend to default less, whereas low income group has high chances of defaulting. 8. Higher educated clients are less likely to default and secondary educated clients are more likely to default. 9. We can observe that people living in better areas(Rating 3) tend contribute more to the defaulters by their weightage. We can infer that people living in better areas(Rating 3) tend contribute more to the defaulters by their weightage. 10. Labourers having more weightage tend to default more but sales staff, core staff and drivers tend to default more.

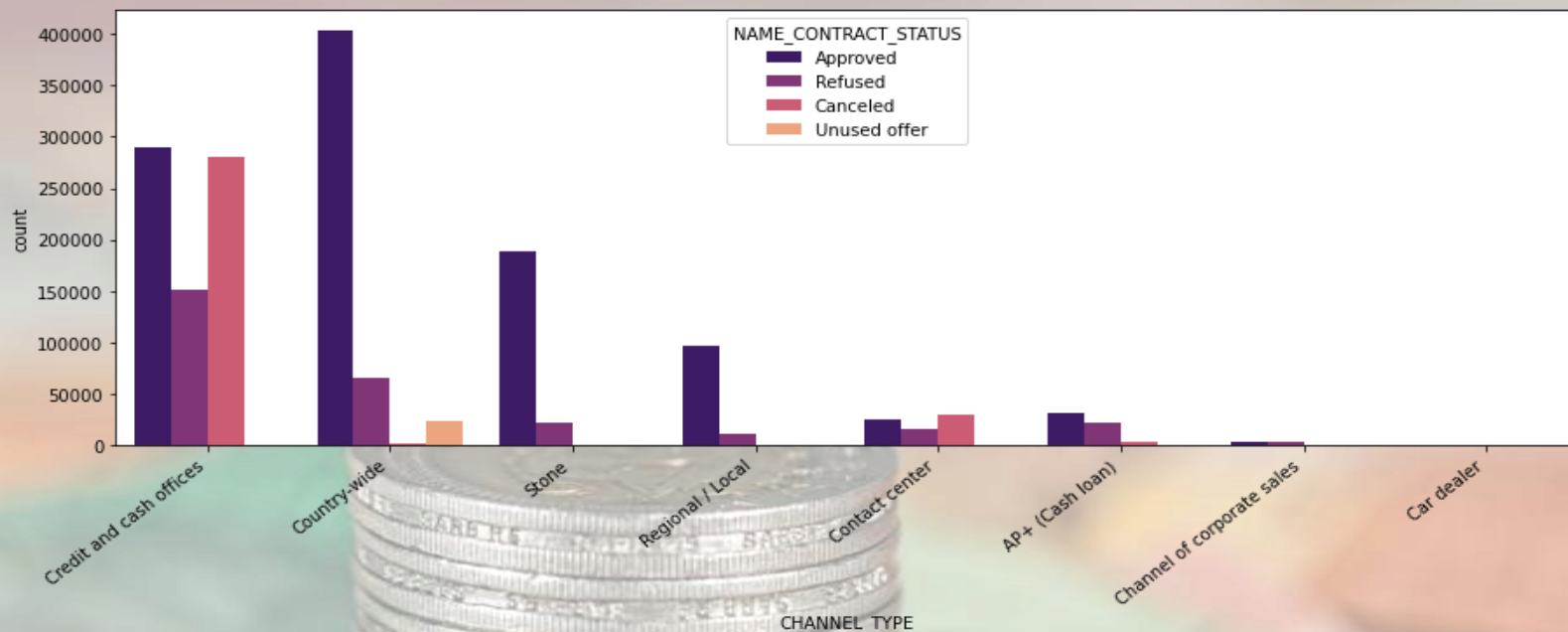




Important observations

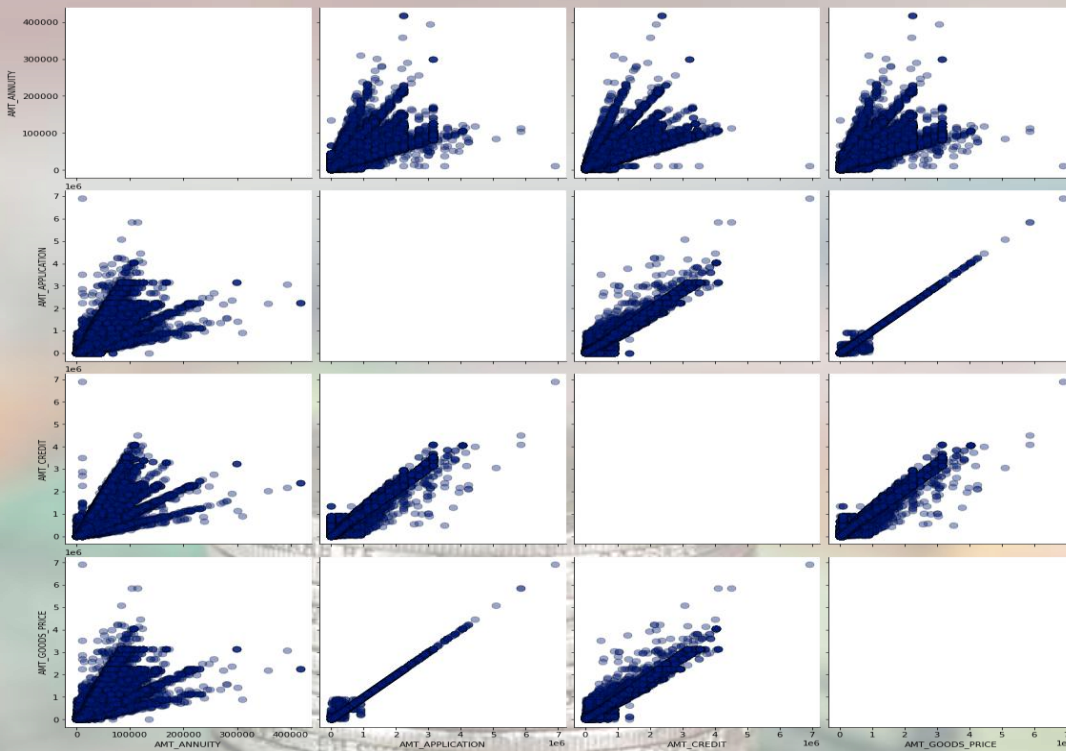
1.The highest frequency of cash loan purpose is repairs. 2.62.07% of the clients got the loan approval. 3.Max clients choose cash as the payment type. 4.Most of the client came unaccompanied. 5.The highest frequency of product combination applied for is cash and then Point of sale of household with interest. 6.Most of the clients(73.72%) opting for loan are repeater(previously applied for loan- old client). 7.Most of the previous application was for POS and then cash. 8.The bank acquired most the clients through credit and cash offices and then country wide. 9.The highest frequency of the seller industry is Consumer electronics. 10.Most of the clients did not request for insurance(80.14%). 11.Cash loan contract has the highest frequency followed by Consumer type.





Important observations

- 1.Consumer loans gets the maximum approval followed by cash loans.
- 2.Seller industry whose type is consumer electronics gets the maximum approval.
- 3.Payment type cash through the bank gets the maximum approval.
- 4.Since the repeater client type has maximum weightage so it gets maximum approval and rejection. But a bit of risk is associated with the refreshed client type.
- 5.Clients who requested for insurance has got all of their loans approved whereas who did not got refused a lot also.
- 6.Clients who came unaccompanied has got the highest approval followed by who came with family.
- 7.Clients acquired by channel type country wide has the highest approval rate whereas high risk is associated with clients acquired from credit and cash offices.



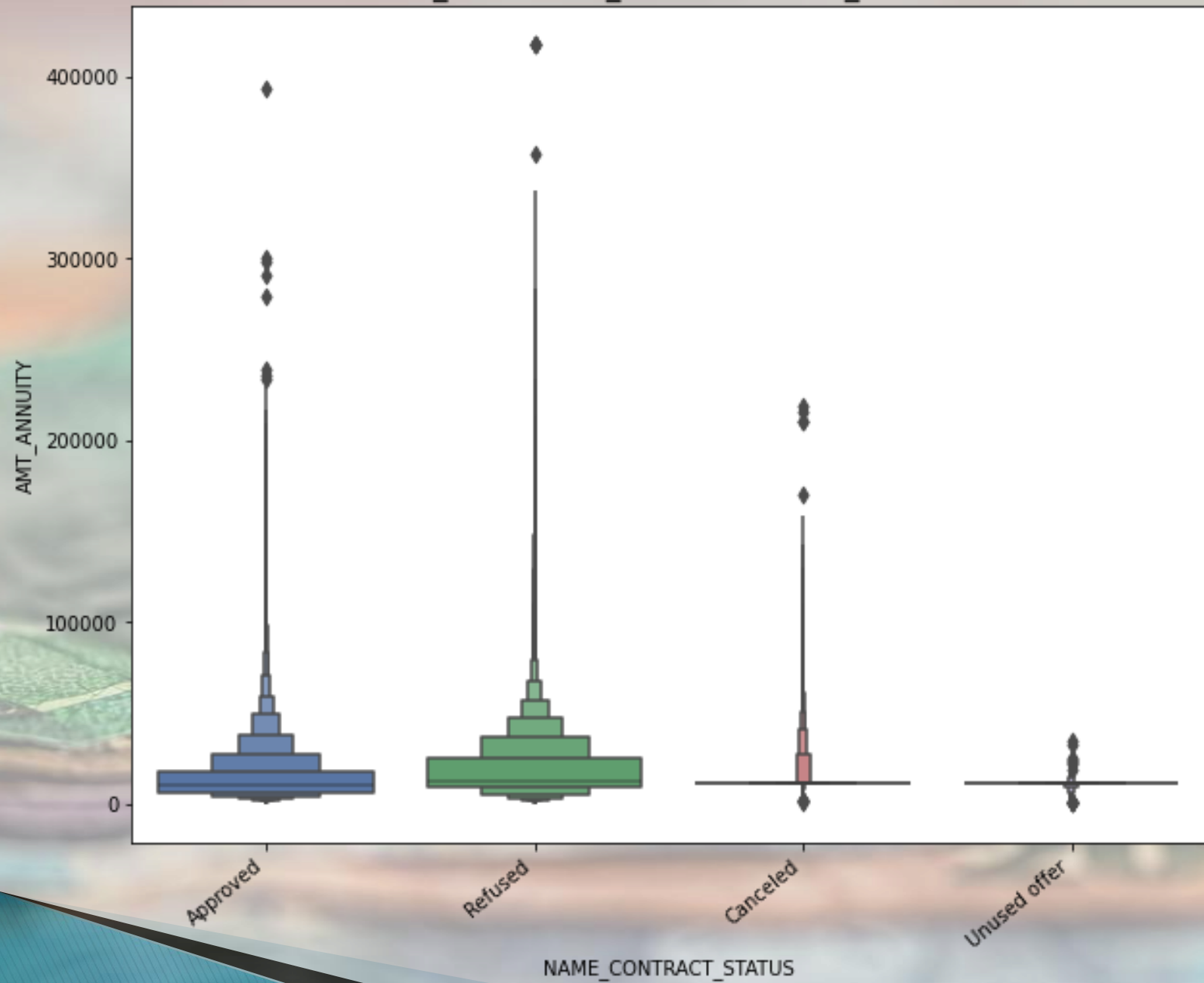
Important observations

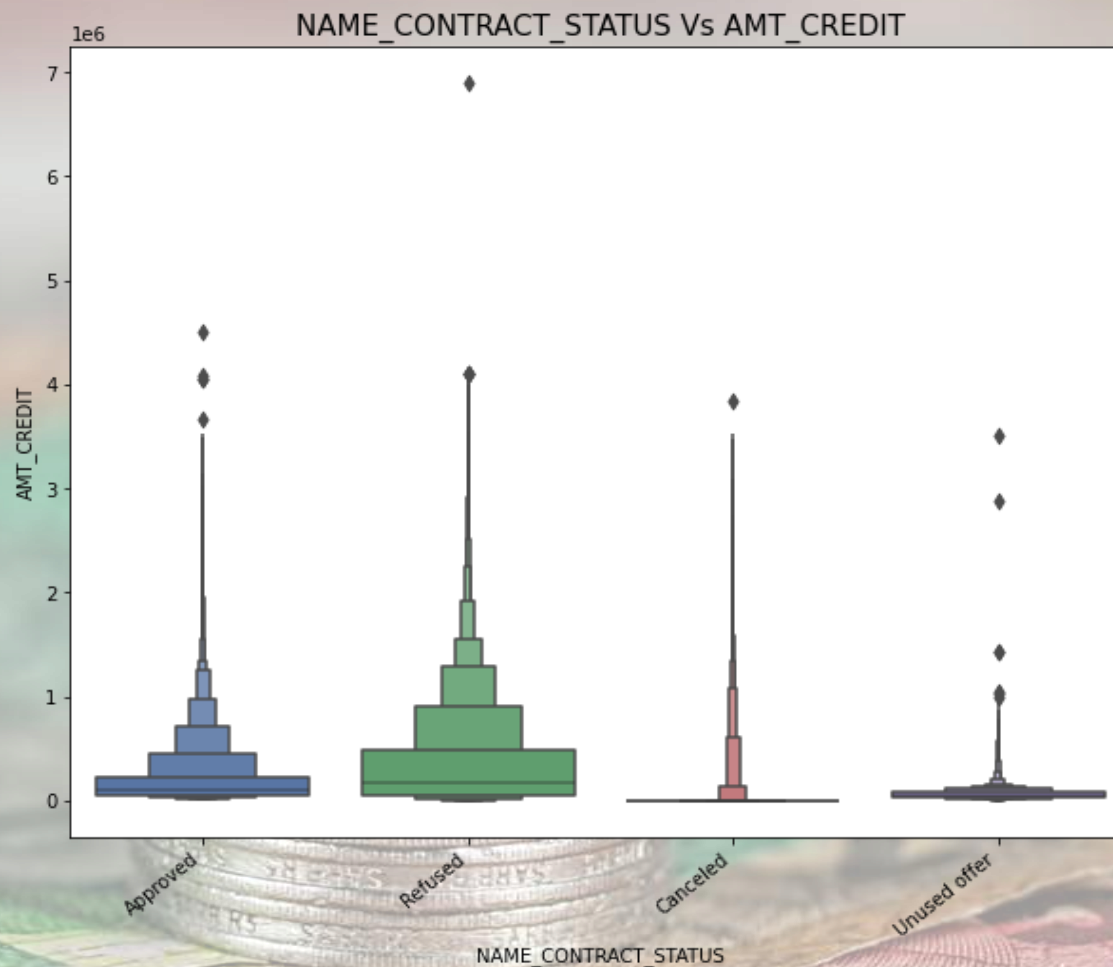
The previous application's annuity has a very strong and favorable impact on the following factors: (1) The amount of credit that the client requested on the prior application. (2) The final credit amount on the prior application that the bank approved and (3) The price of the goods that the client requested on the prior application.

The goods price of the goods that the customer requested on the prior application had a significant impact on how much credit the client had requested.

The application amount and the price of the items the client requested in the prior application have a significant impact on the final credit amount granted to the customer following approval.

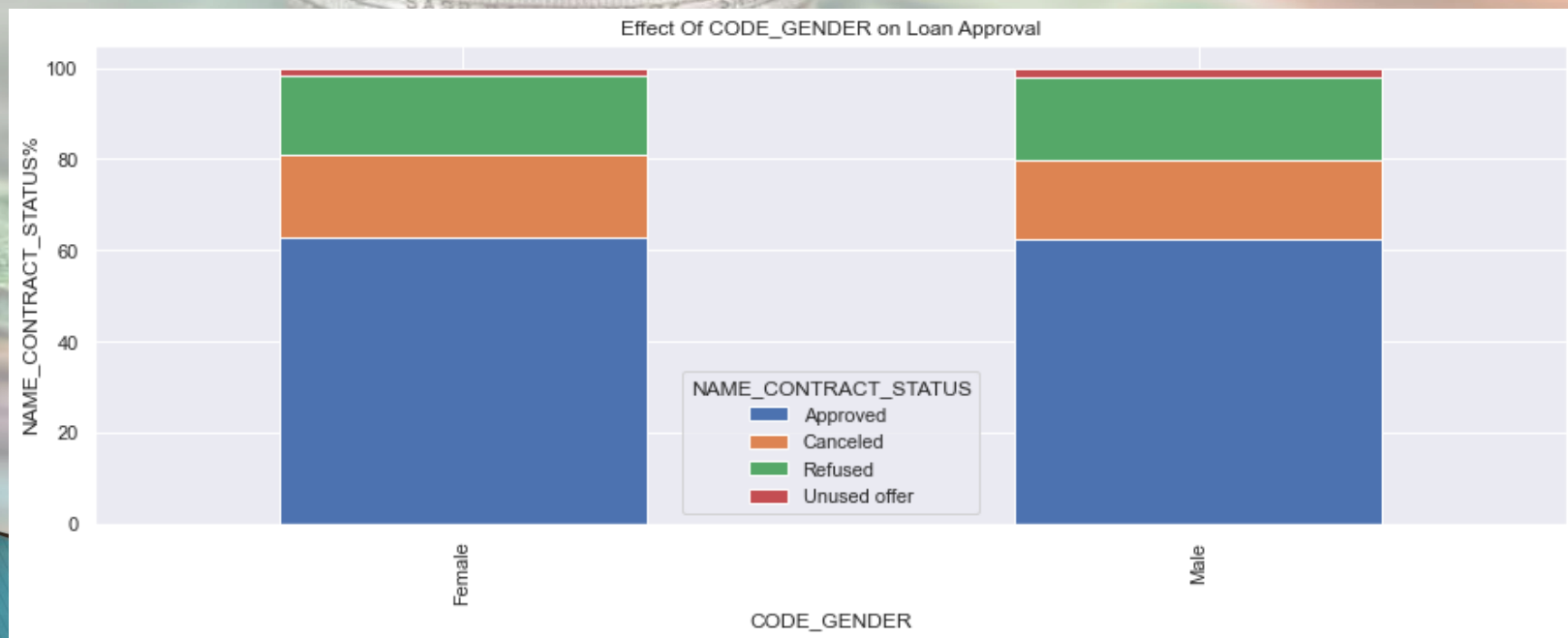
NAME_CONTRACT_STATUS Vs AMT_ANNUITY





Important observations

We can notice that loan applications for borrowers with lower AMT ANNUITY frequently get rejected or never used. We also see that applications with excessive AMT ANNUITY were refused more frequently than those without. The majority of the time, it gets cancelled or goes unused when the AMT CREDIT is too low.



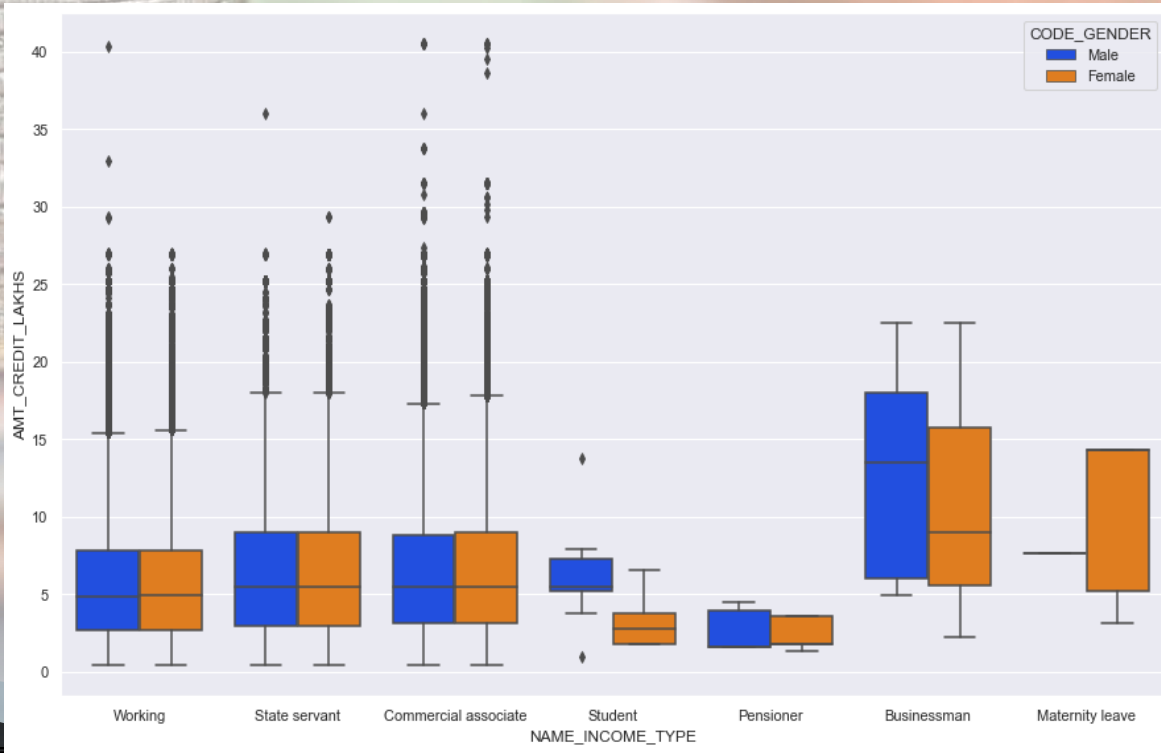
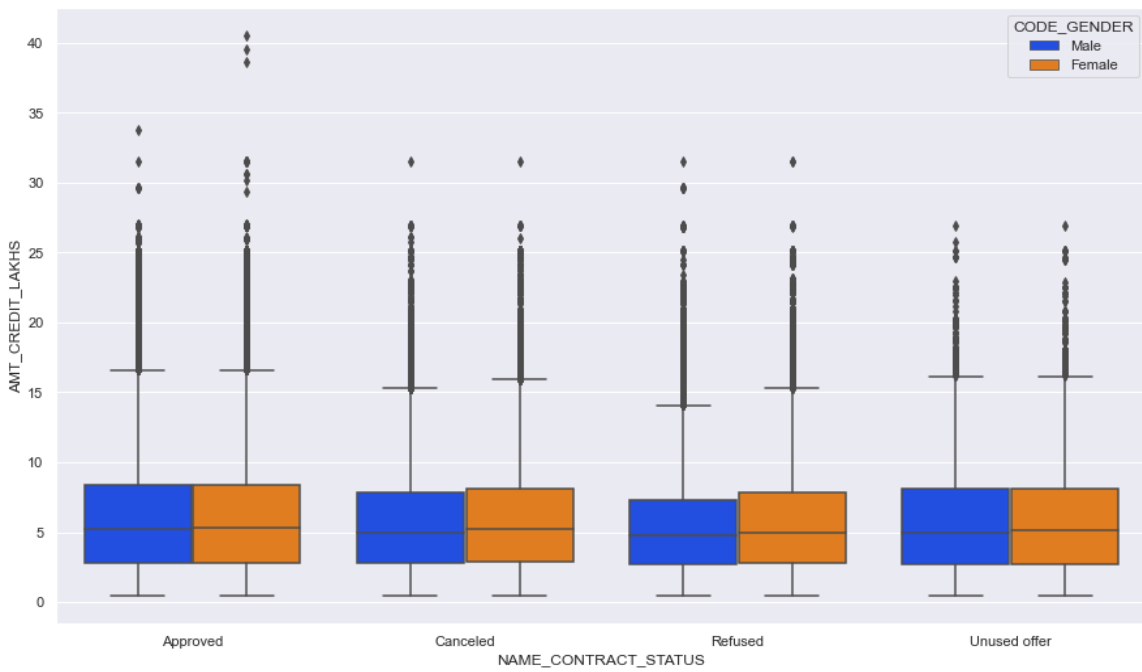


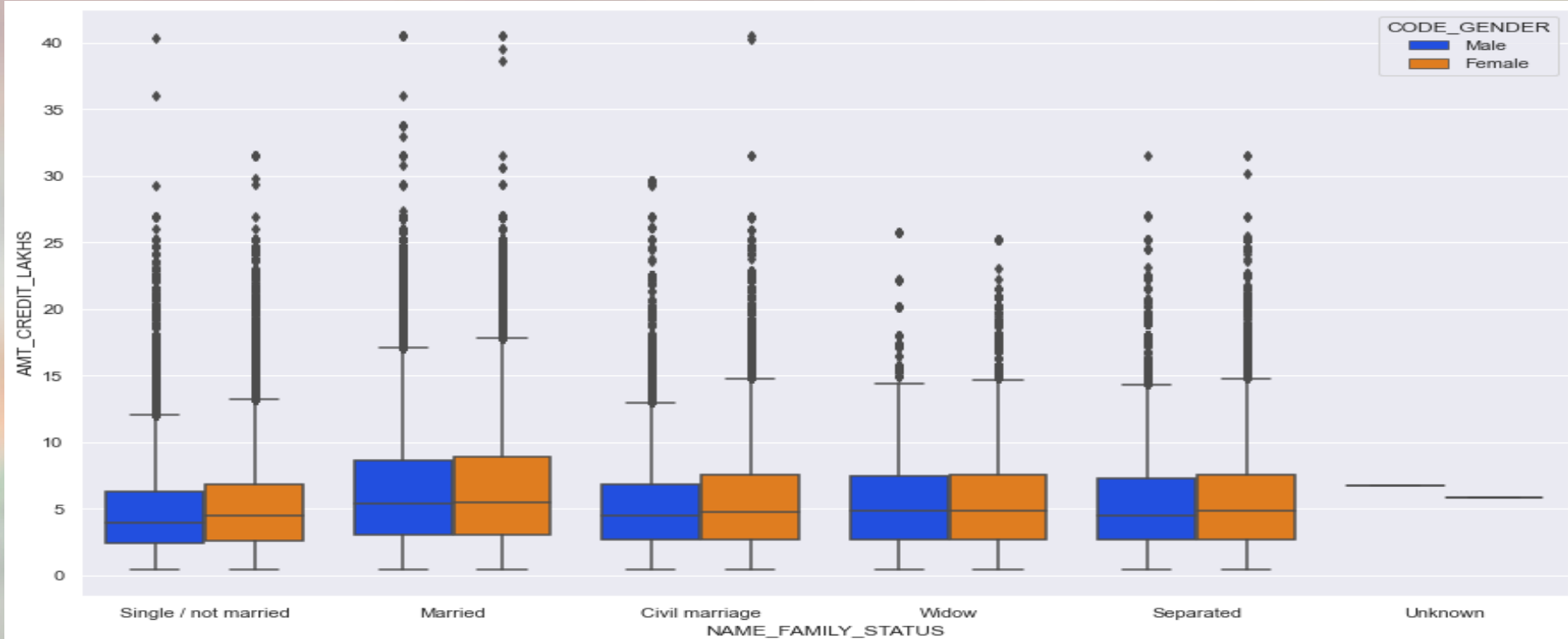
Important observations

1. We can see that having a car has no bearing on whether an application will be accepted or denied. However, as we just showed, those who own cars are less likely to default. When authorizing a loan amount, the bank may give ownership of an automobile additional weight.

2. We can observe that the code gender has no bearing on whether an application is accepted or rejected. But as we just showed, women are less likely to default than men are. When authorizing a loan amount, the bank may give women greater weight.

3. We can observe that borrowers who received loan approval earlier experienced default less frequently than borrowers who received loan denial sooner.

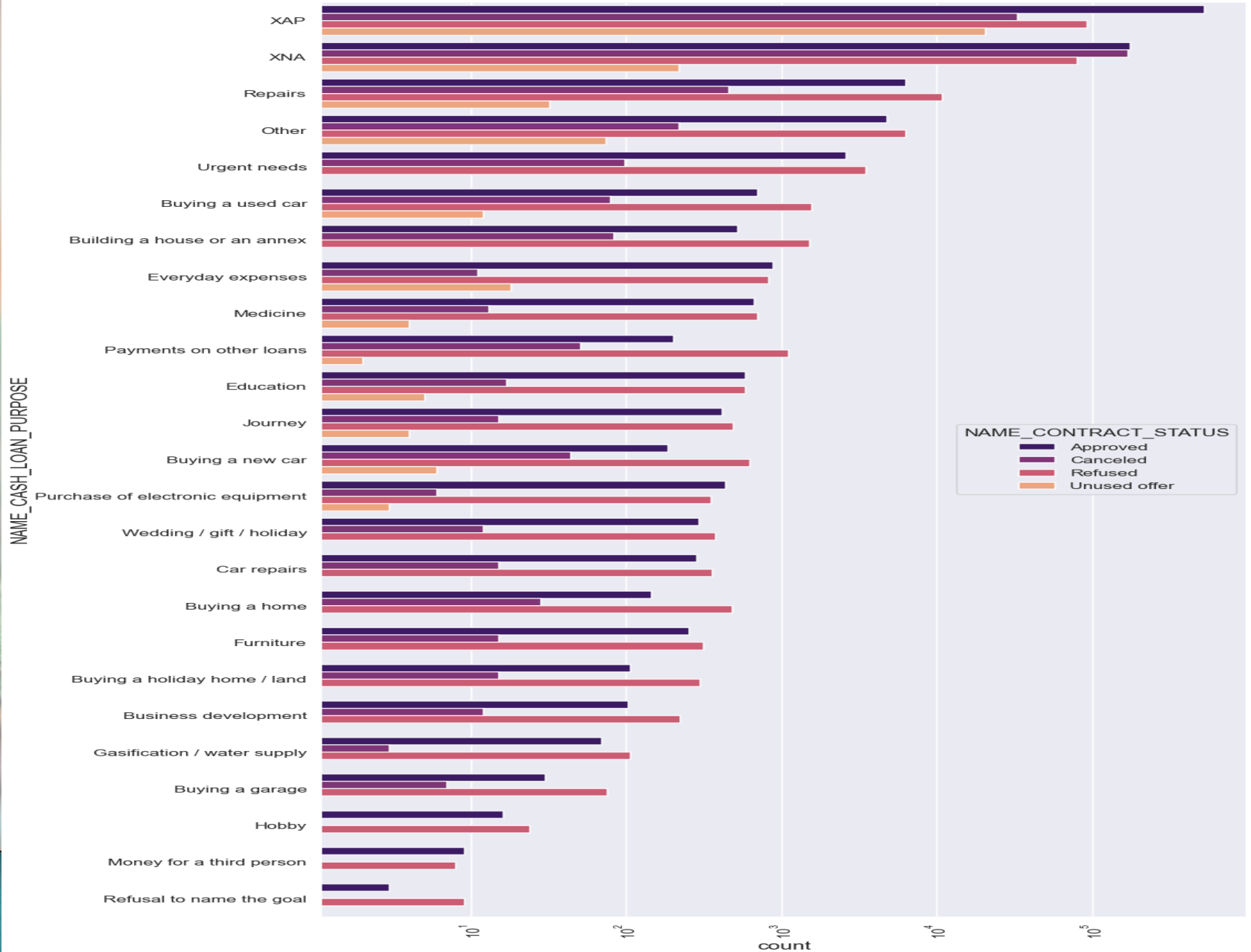




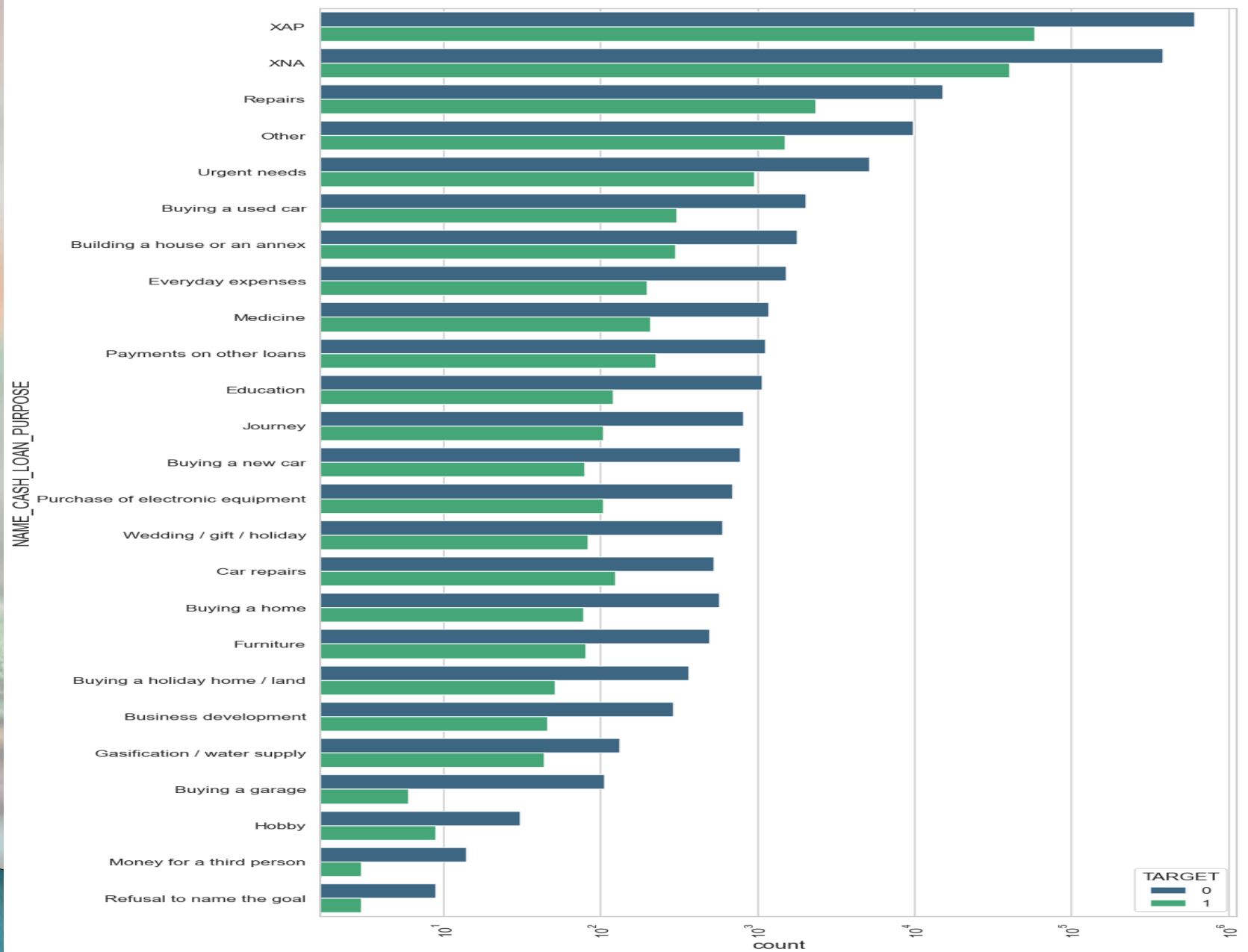
Important observations

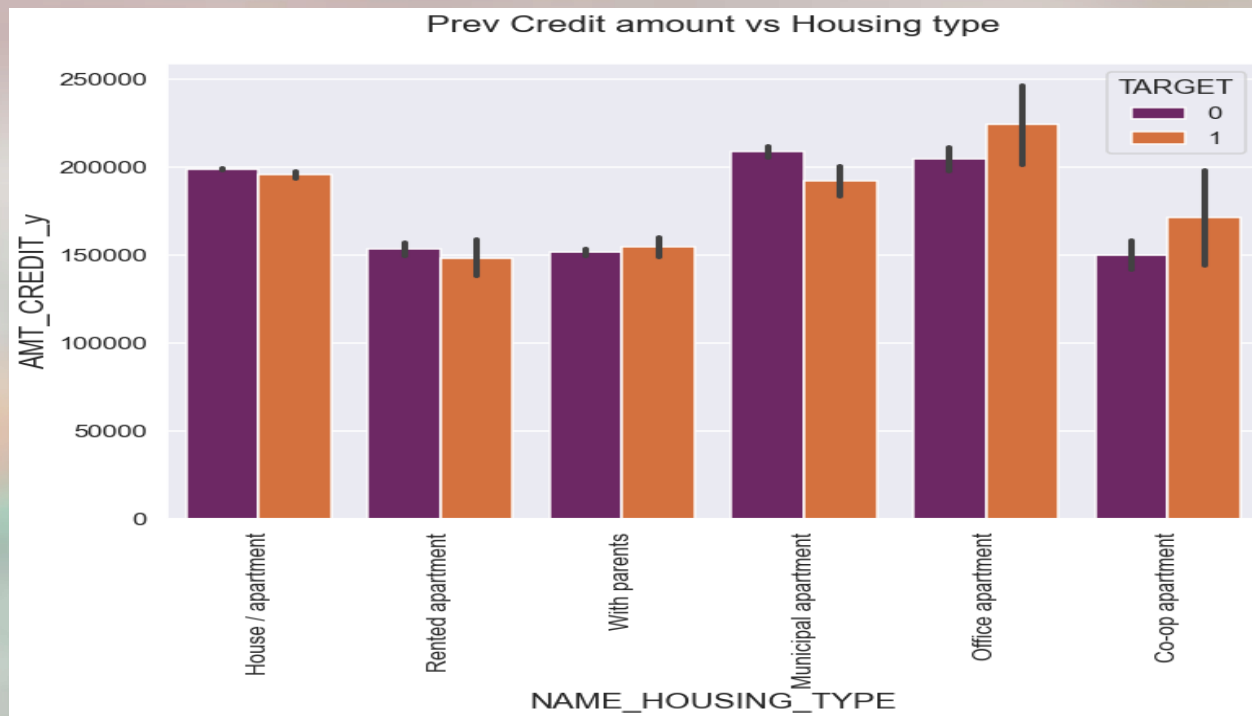
1. Male and female gets almost same approval but the credit amount for female is more. On the other hand for a lower credit amount female gets more refused and cancelled than males.
2. Female commercial associate clients takes almost same amount of loan (AMOUNT CREDIT) as male. Whereas male State servant takes more amount of loan (AMOUNT CREDIT) than female.
3. Female who are single, married and had civil marriage are more in number than male. Single female take less loan than male. Married female take almost same amount of loan as male. Whereas female who had civil marriage takes more loan than male.
4. Cash loan purpose is highest for repairs taken more by female.

Distribution of Contract Status with Purposes



Distribution of purposes with target

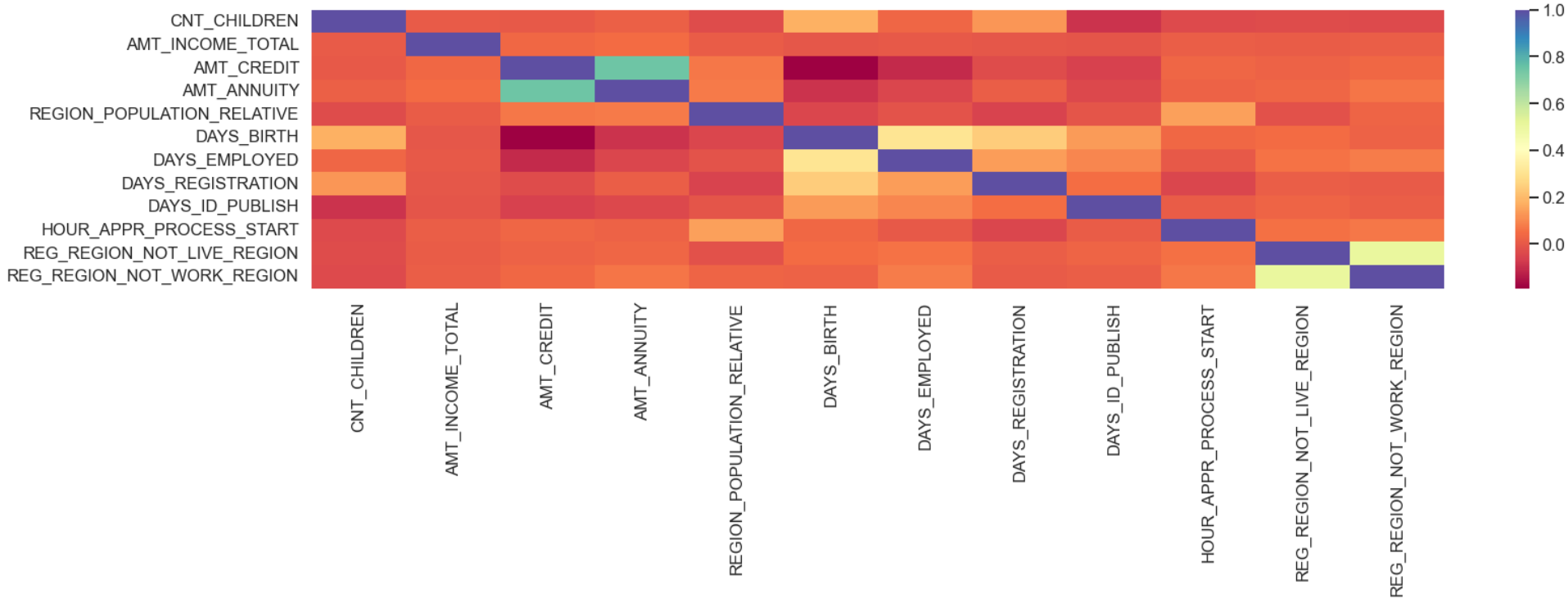




Important observations

1. Most loans were declined for repairs. Loan approval and rejection outcomes for education are comparable. The rejection rate for paying off other debt and getting a new automobile is significantly greater than the approval rate. Repairs are having increasing trouble being paid on schedule. The loan payments for purchasing a garage, expanding a business, purchasing property, purchasing a new automobile, and financing education are often greater. 2. Co-op apartments have higher credit from defaulters than office apartments do from non-defaulters. For successful payments, the bank can concentrate mostly on dwelling type categories like "with parents," "house/apartment," or "municipal apartment."

Payment_Difficulty



Important observations

1. Since credit amount and birth date are inversely related, credit amount is higher for younger people and vice versa. 2. The quantity of credit is inversely correlated with the number of children a client has, therefore the amount of credit is larger when the client has fewer children and vice versa. 3. The quantity of revenue is inversely correlated with the number of children a customer has, therefore a client with fewer children will have more income than a client with more children. 4. In a heavily populated location, clients have fewer children. 5. Credit is given in greater amounts to heavily inhabited areas. 6. In areas with high population density, income is also higher.

Similar observations to those for Target 0 are included in this heat map for Target 1. However, there are some differences. Below is a list of them.

1. There are fewer children being born at the client's permanent address than at their contact address, and vice versa. 2. Less children are being born to clients whose permanent addresses differ from their work addresses, and vice versa.

Recommendations and Risks

- ❖ For effective payments, banks should place more of an emphasis on contract types such as "student," "pensioner," and "businessman" with housing types other than "co-op apartments."
- ❖ Because there are the most failed payments for the income category "Working," banks should pay less attention to it.
- ❖ We can observe that the code gender has no bearing on whether an application is accepted or rejected. But as we just showed, women are less likely to default than men are. When authorizing a loan amount, the bank may give women greater weight
- ❖ The loan objective "Repair" also has a larger percentage of late payments that are unsuccessful.
- ❖ Target as many consumers who fall under the housing category "With Parents," as they have the fewest failed payments.
- ❖ The majority of consumers that fail after their prior loans are revoked or rejected are clients with lower secondary education.
- ❖ People living in better areas(Rating 3) tend contribute more to the defaulters
- ❖ It is risky to work with men who had civil marriage.
- ❖ Prior loan rejection status is a high-risk category.

A stack of several silver-colored coins is positioned in the center-left of the frame. The background is a soft-focus collage of various banknotes in different colors, including green, blue, and red. A dark blue rectangular box with a thin white border is superimposed over the middle of the image, containing the text "THANK YOU" in a white, bold, sans-serif font with a blue outline.

THANK YOU