

EDA ASSIGNMENT

CREDIT EDA CASE STUDY

BY- AMIT KUMAR CHAUDHARY

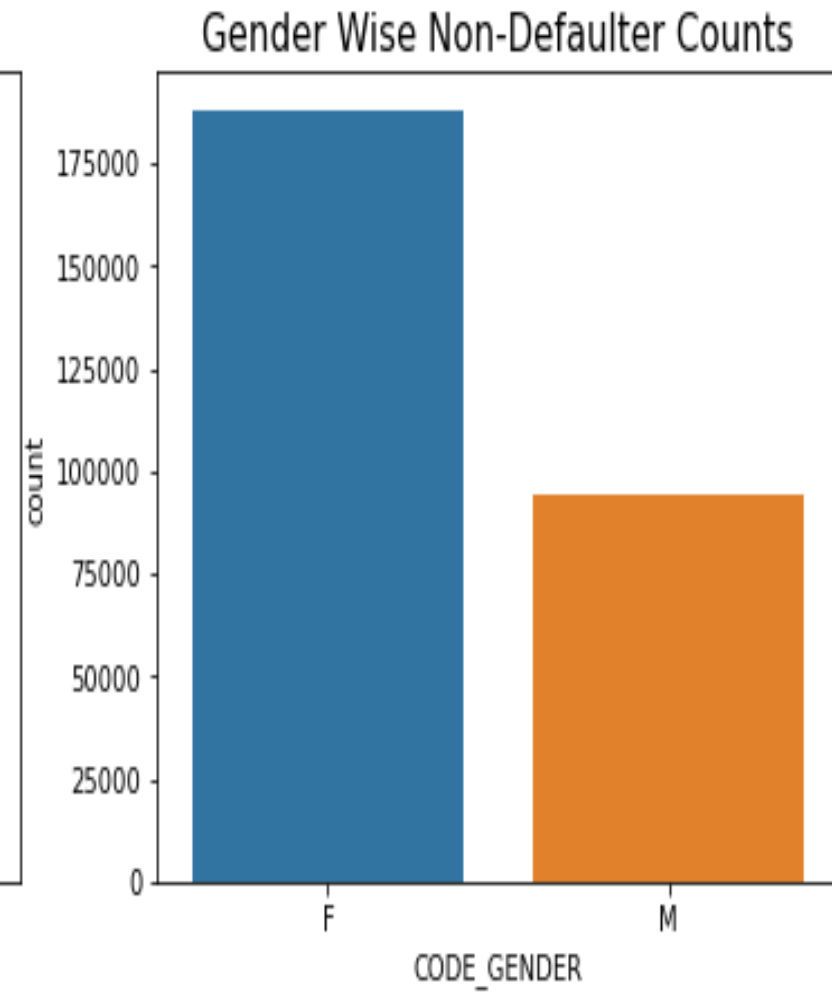
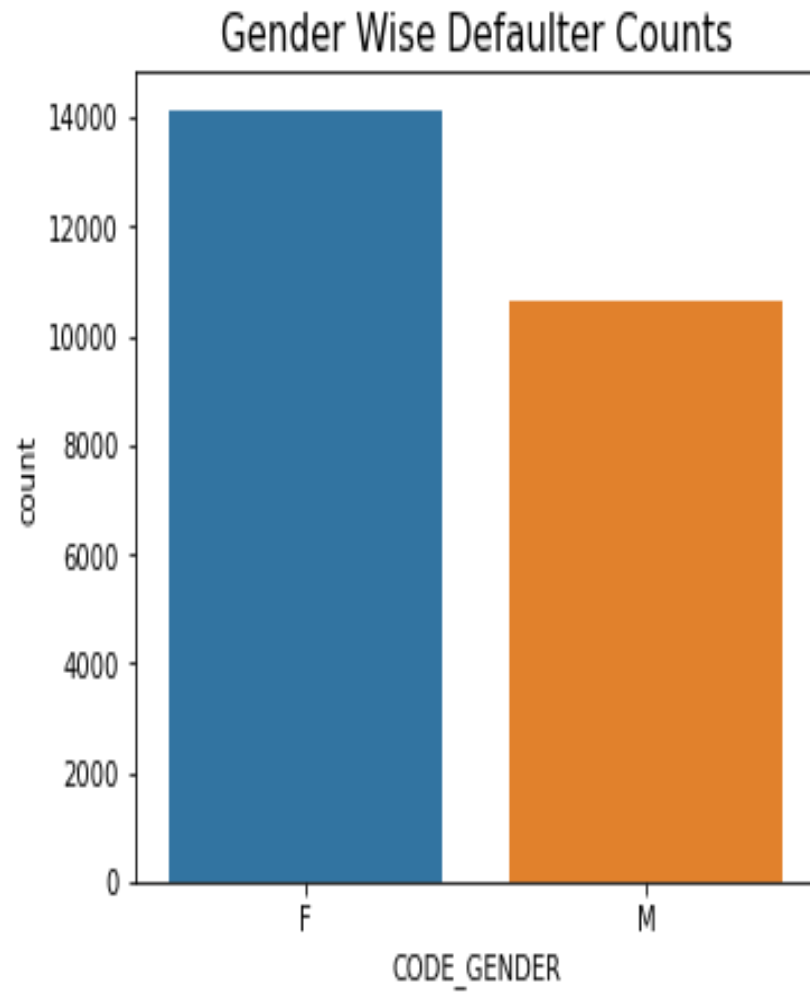
PROBLEM STATEMENT

The loan defaulter data set contains information on customers who have taken out loans and their repayment history. The objective of the EDA is to understand the factors that contribute to loan default and to identify patterns or trends in the data that can inform the development of strategies for reducing loan defaults.

GENDER WISE DEFAULTER COUNTS

Points to be concluded from the graph on the right side.

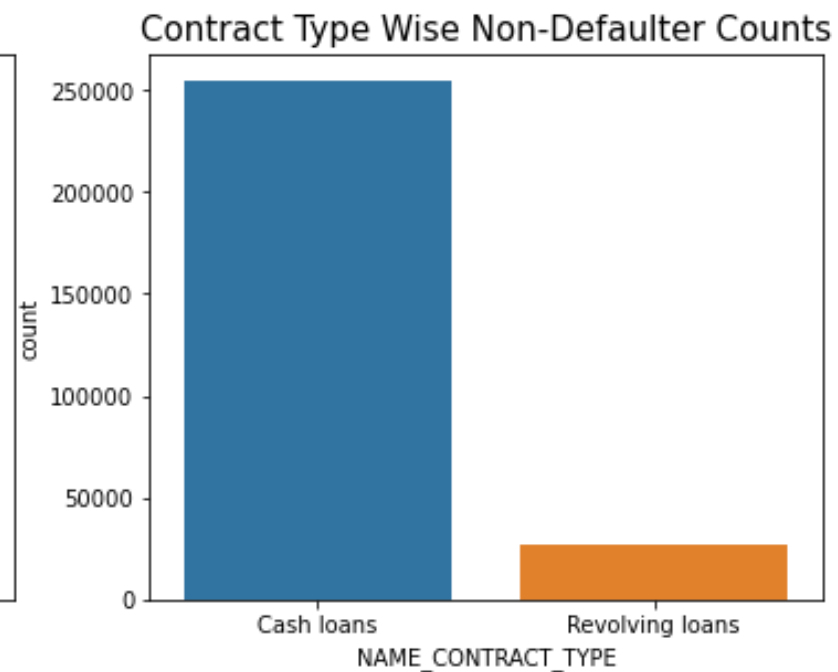
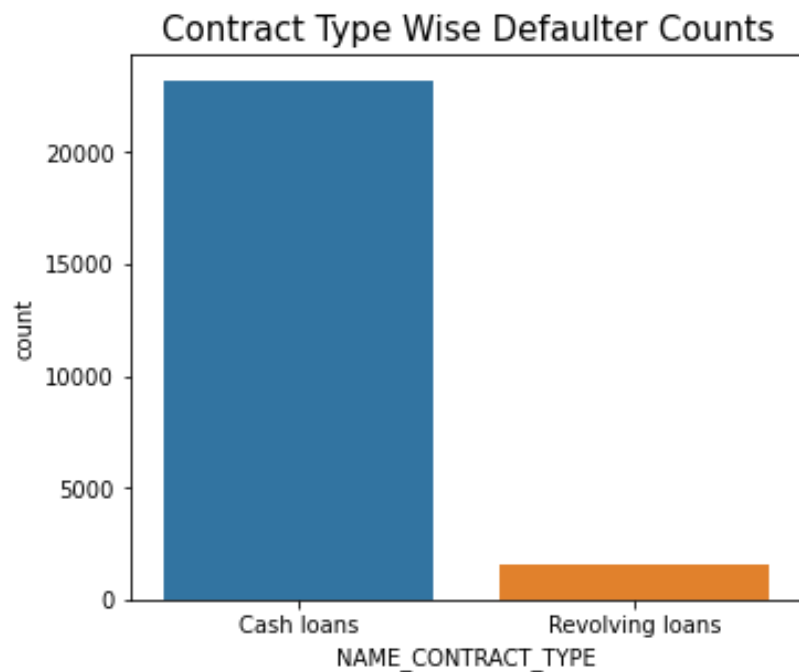
- From chart it is clearly visible that the number of Females are more than the number of Males in both the cases(Defaulters / Non-Defaulters)



CONTRACT TYPE WISE DEFAULTER COUNTS

Points to be concluded from the graph on the right.

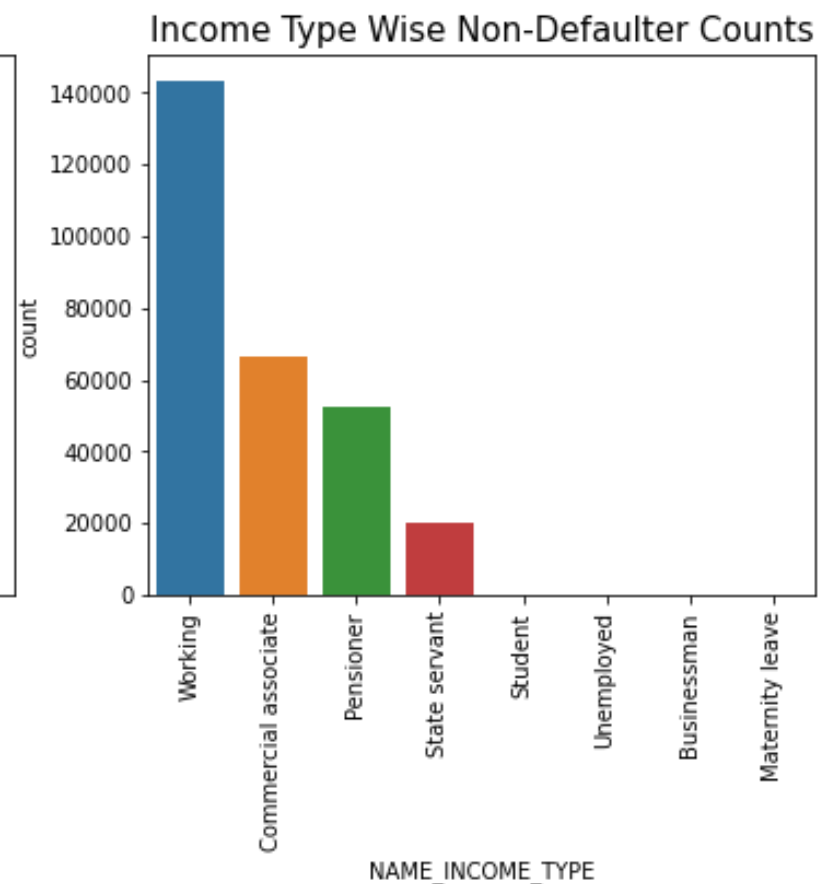
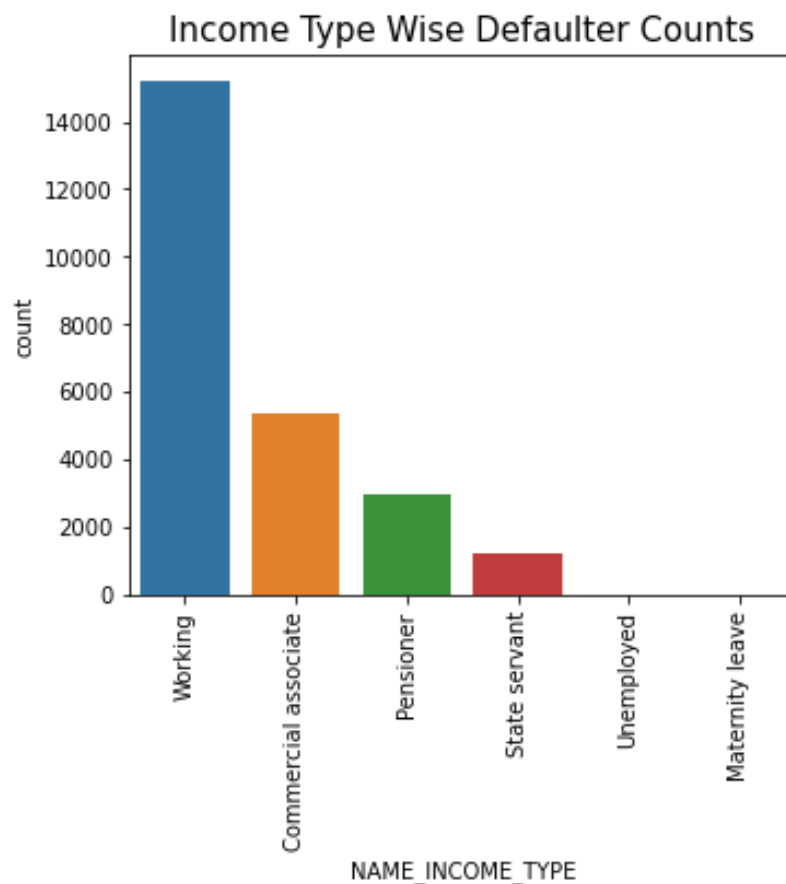
- In both the Defaulter and Non-defaulter cases mostly people has Cash Loan Contract



INCOME TYPE WISE DEFAULTER COUNTS

Points to be concluded from the graph on the right.

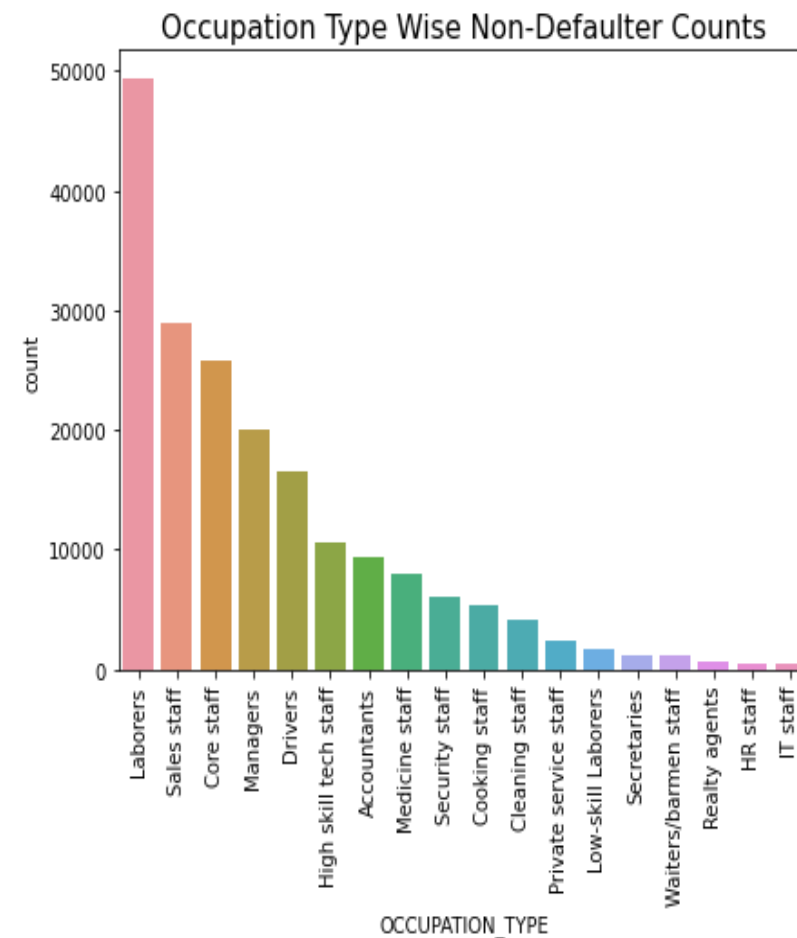
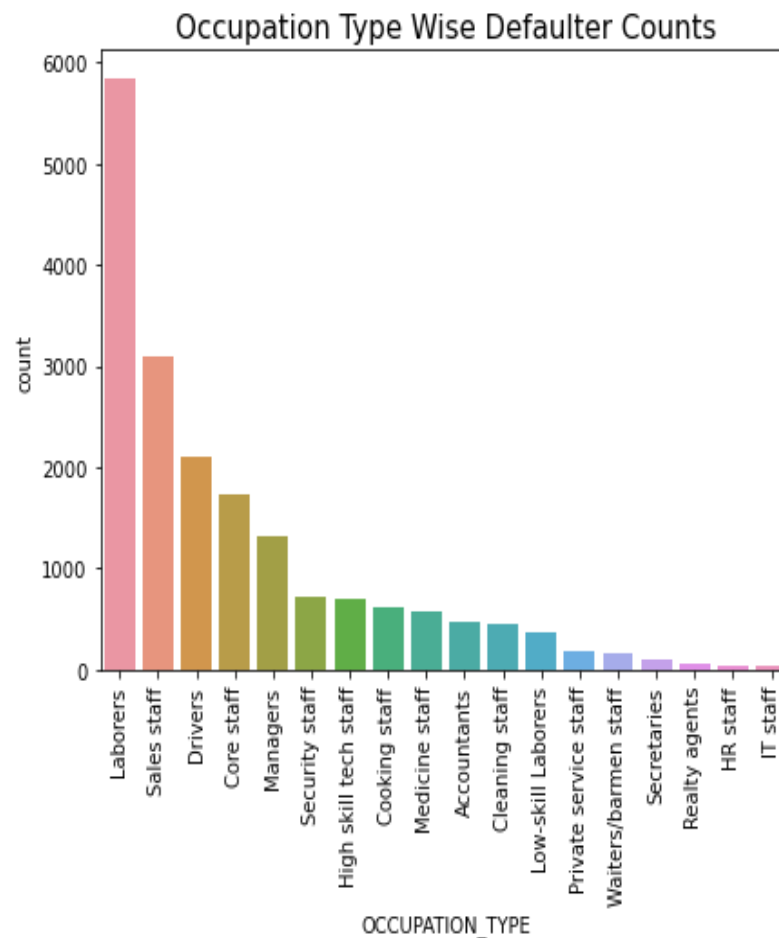
- The Defaulters are mostly working professionals following by commercial Associates, Pensioner and State servant.



OCCUPATION TYPE WISE DEFAULTER COUNTS

Points to be concluded from the graph on the right.

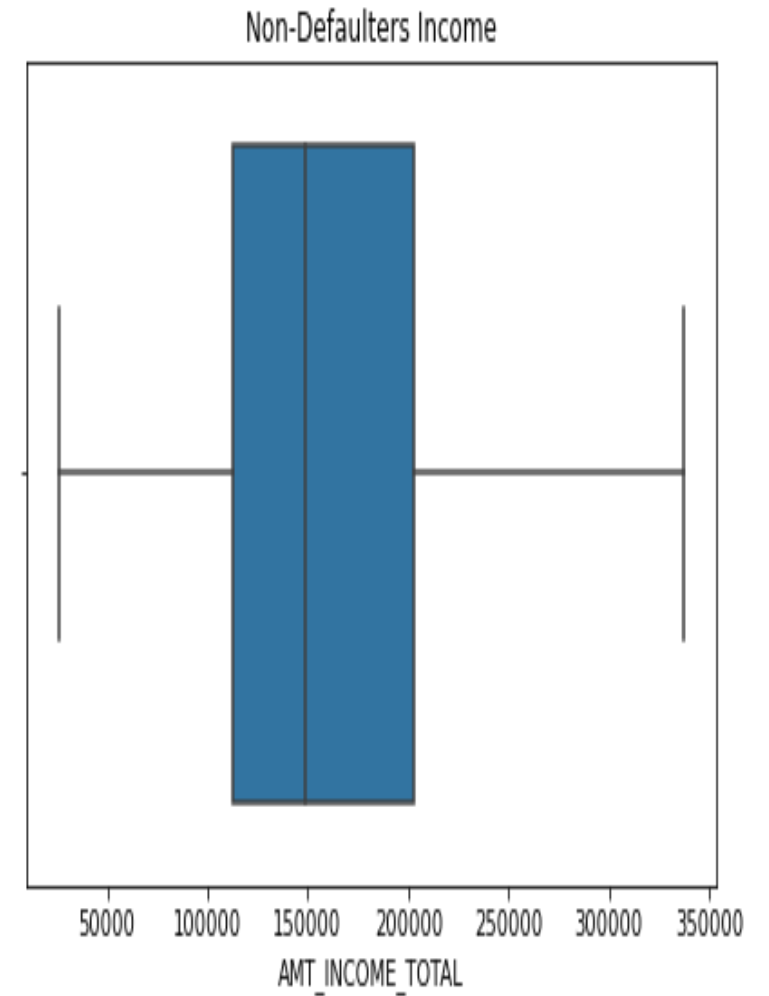
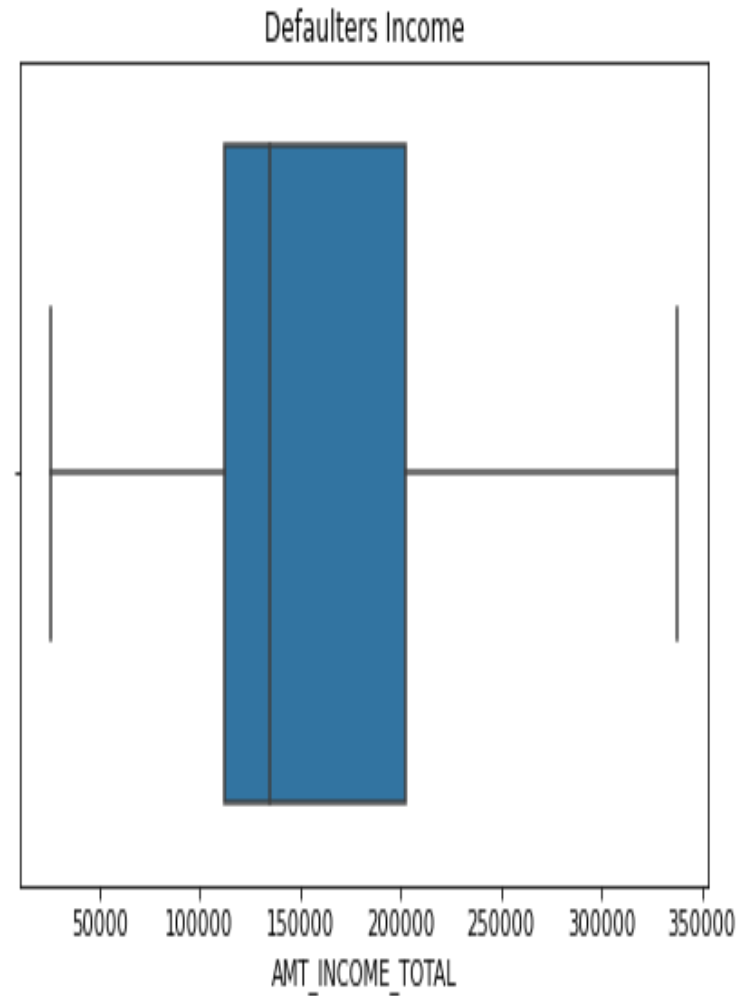
- Laborers occupation has maximum number of defaulters following by Sales staff and Drivers.
- The labours are the one who is lower skilled people so, they are struggling with the loan bill payment and becoming defaulters.



DEFAULTERS INCOME

Points to be concluded from the graph on the right side.

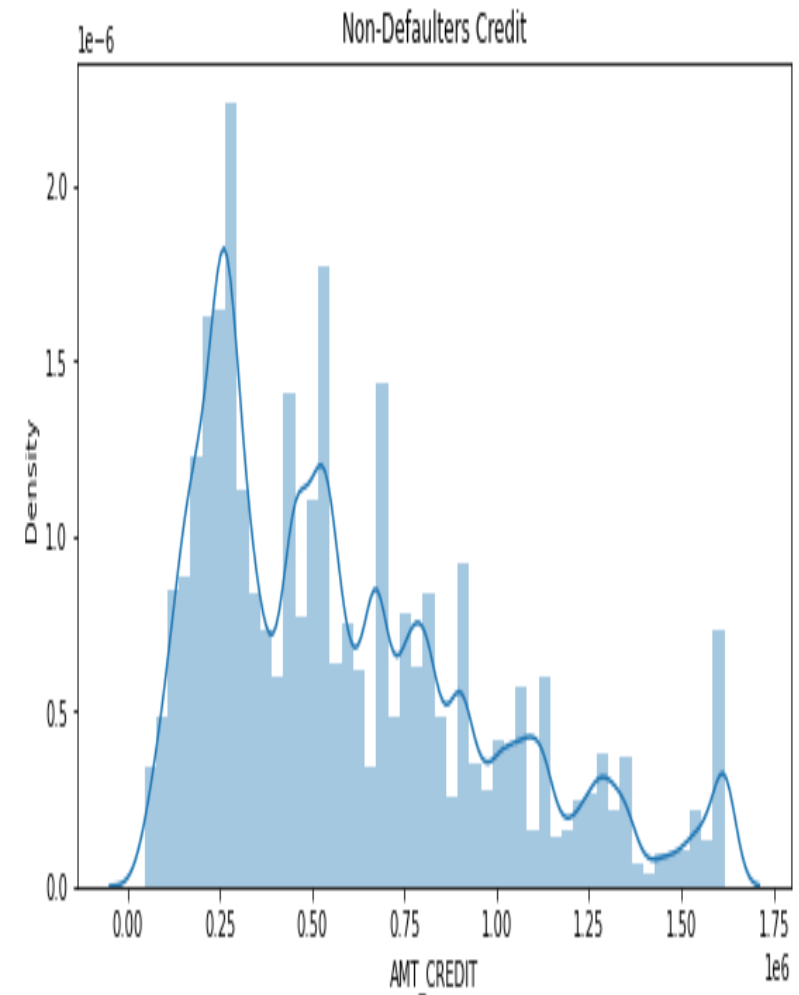
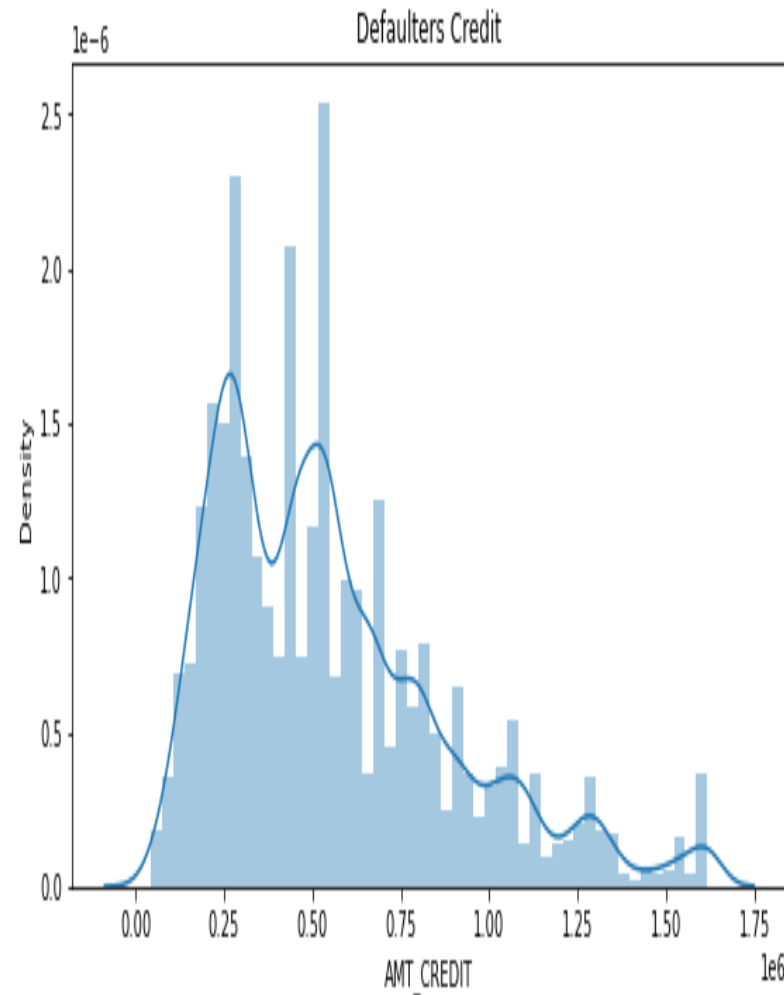
- Most of the Defaulters are earning 1.2 to 2 Lakh per Annum



DEFAULTERS CREDIT

Points to be concluded from the graph on the right side.

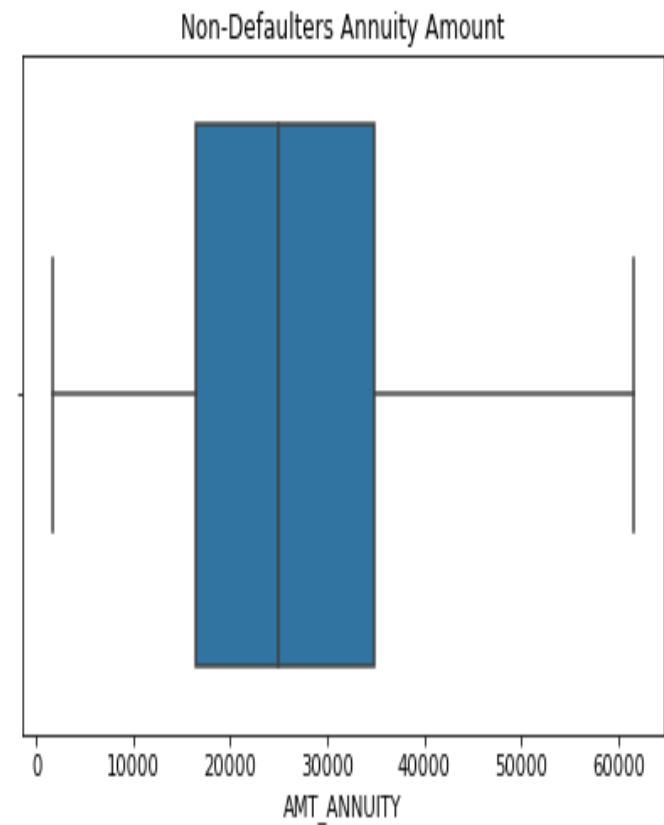
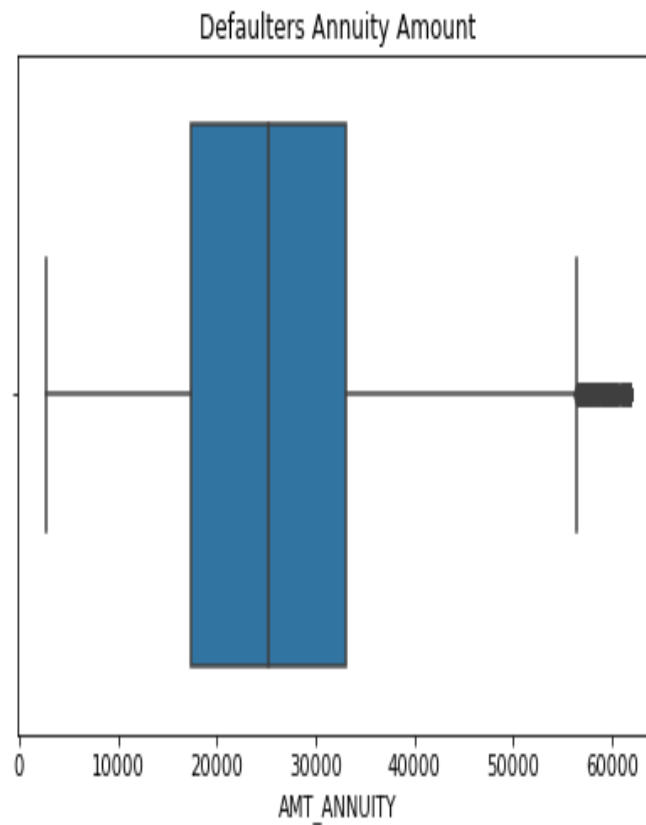
- We can see that the lesser the credit amount of the loan, the more chances of being a defaulter.
- Most of the Defaulters are credited by 3 to 7 lakh.



DEFAULTERS ANNUITY AMOUNT

Points to be concluded from the graph on the right.

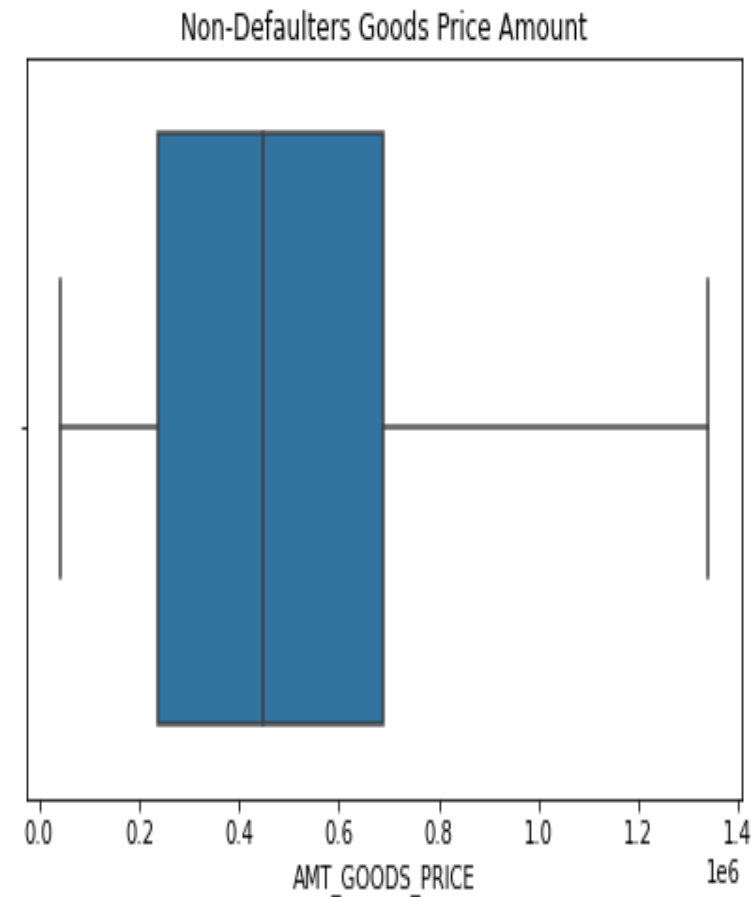
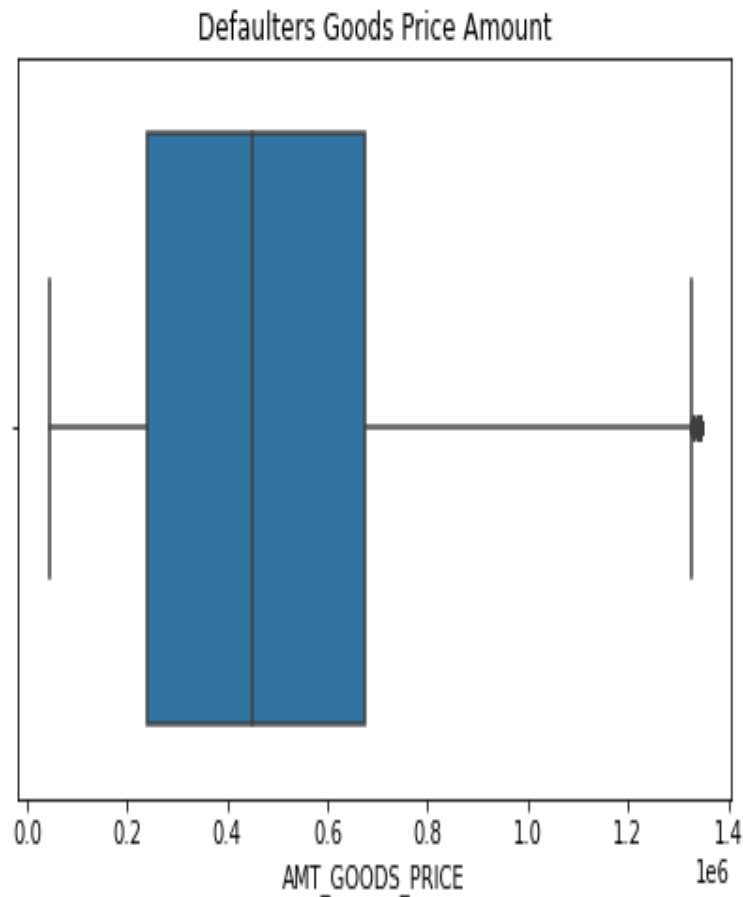
- Most of the defaulters having Loan Annuity ammount between 17000 to 32000.



DEFAULTERS GOODS PRICE AMOUNT

Points to be concluded from the graph on the right.

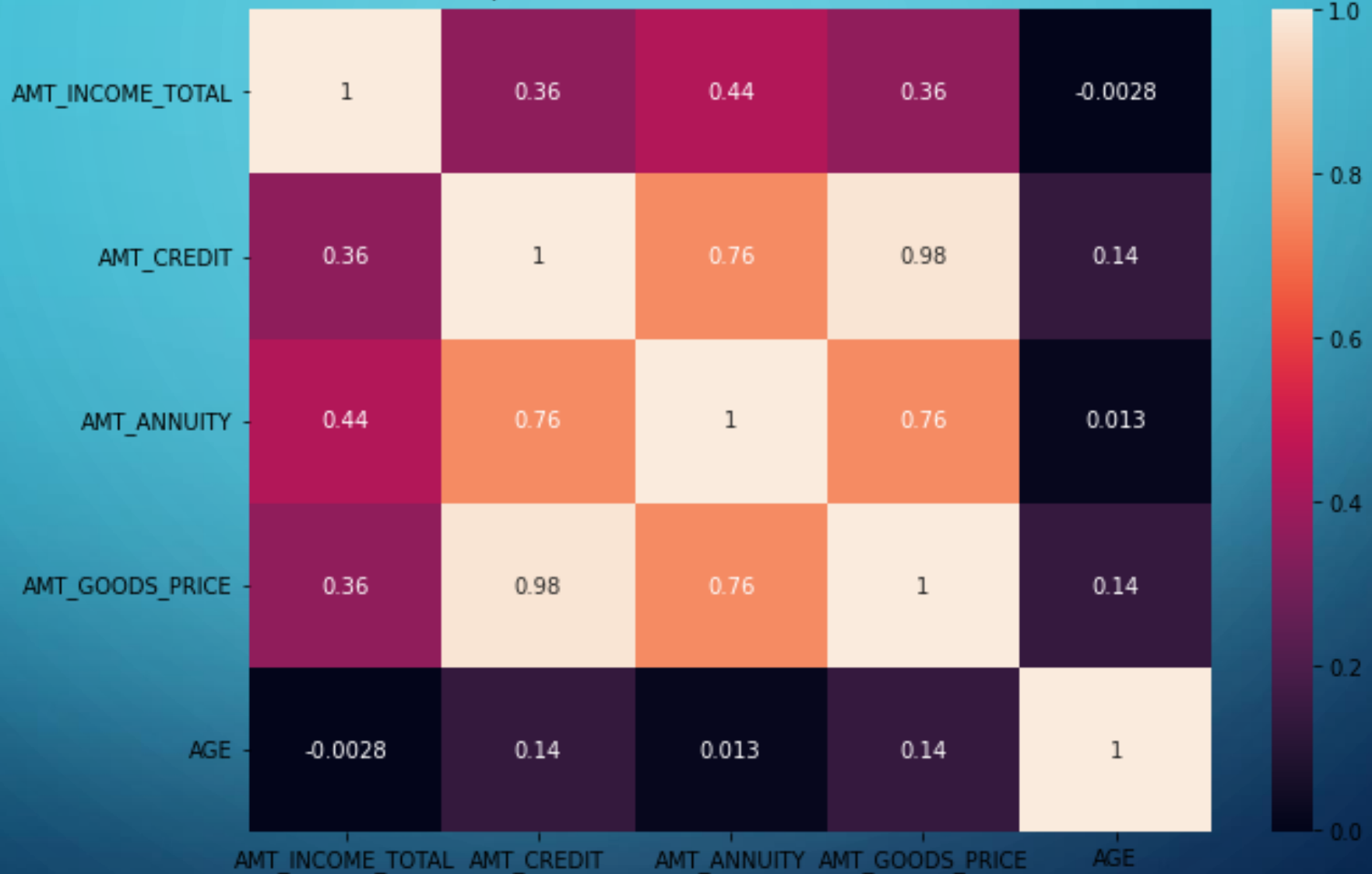
- Defaulters Goods price amount is largely lying between 2 to 7 lakh.



The background is a blue gradient with decorative white circuit-like lines in the corners. The lines consist of straight segments and small circles, resembling a stylized electronic circuit or data paths.

CORRELATION OF TARGET 0

Corelation b/w cont. columns of the defaulter dataset

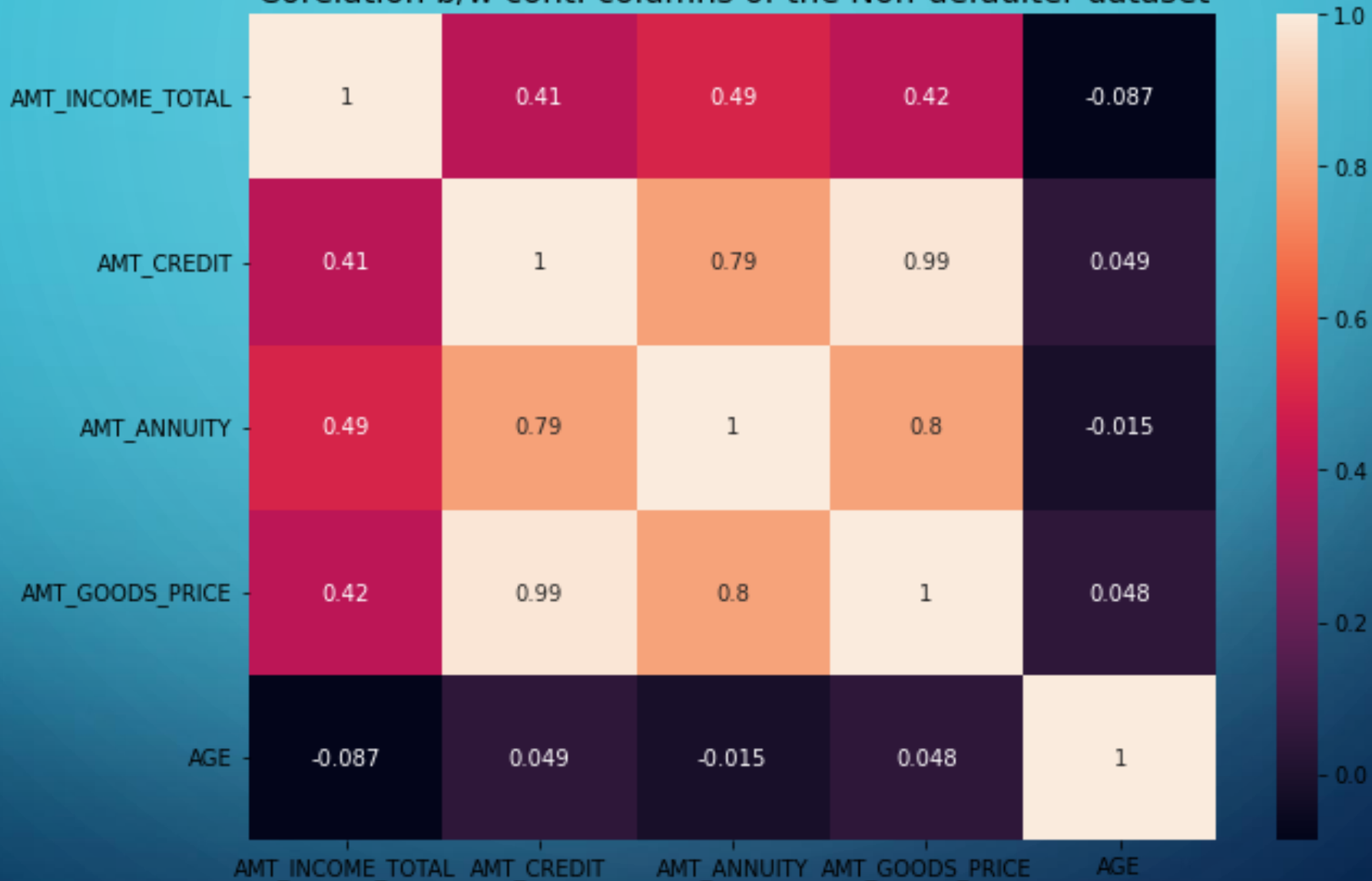


CORRELATION FOR TARGET 0

Points to be concluded from the graph presented before.

- The more the correlated percentage means the high value for being a defaulter.
- 0.98% = AMT_CREDIT & AMT_GOODS_PRICE.
- 0.76% = AMT_CREDIT & AMT_ANNUIITY.
- 0.76% = AMT_GOODS_PRICE & AMT_ANNUIITY.

Corelation b/w cont. columns of the Non-defaulter dataset



CORRELATION FOR TYPE 1

This heat map for Target 1 is also having quite a same observation just like Target 0. But for few points are different. They are listed below.

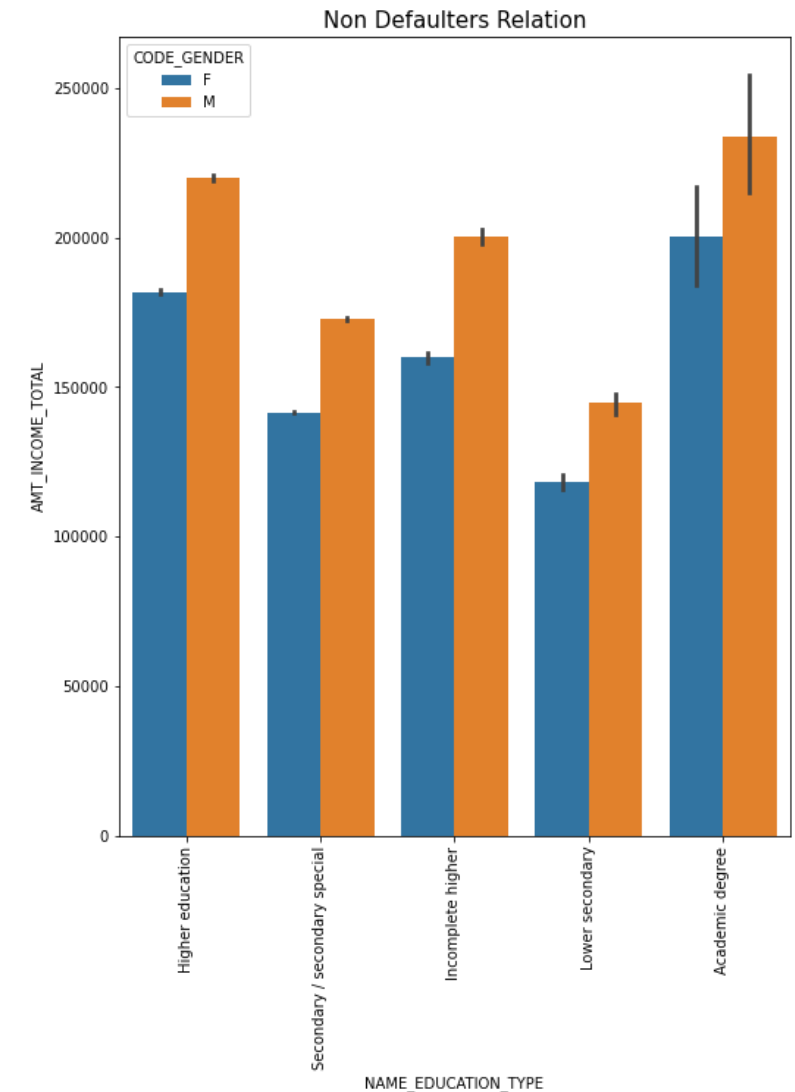
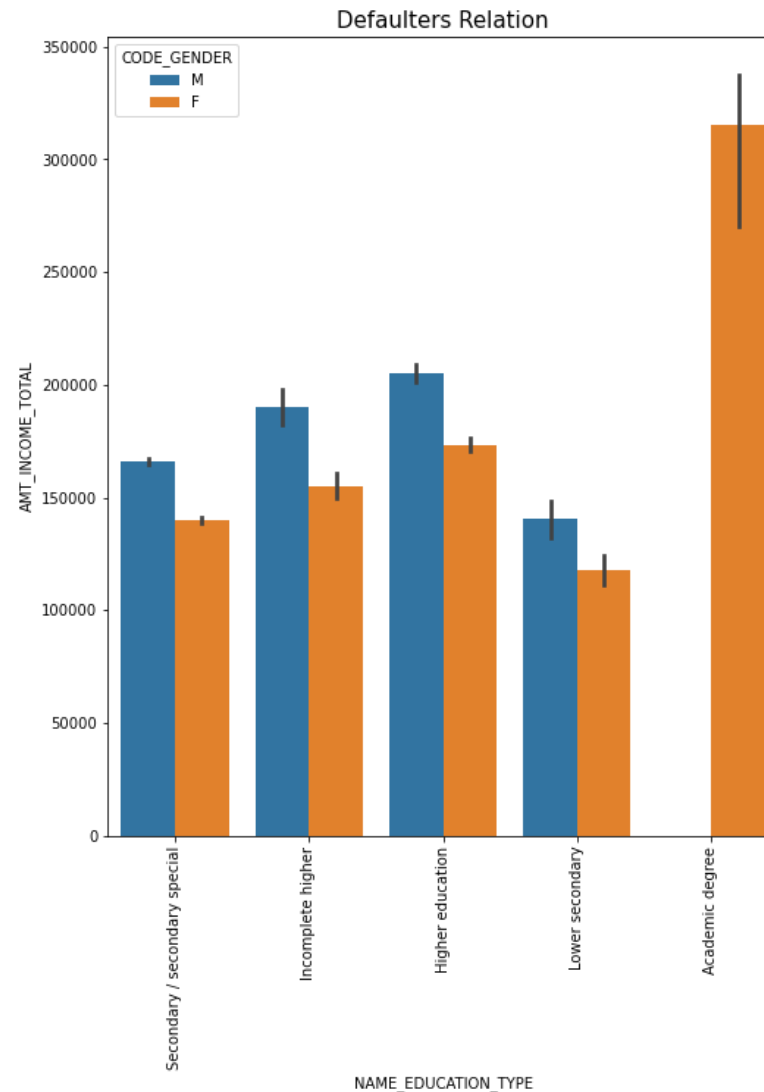
- The more the correlated percentage means the high value for being Non-defaulter.
- 0.99% = AMT_CREDIT & AMT_GOODS_PRICE.
- 0.79% = AMT_CREDIT & AMT_ANNUIITY.
- 0.80% = AMT_GOODS_PRICE & AMT_ANNUIITY.

BIVARIATE ANALYSIS

CREDIT AMOUNT VS EDUCATION STATUS

Few points can be concluded from the graph.

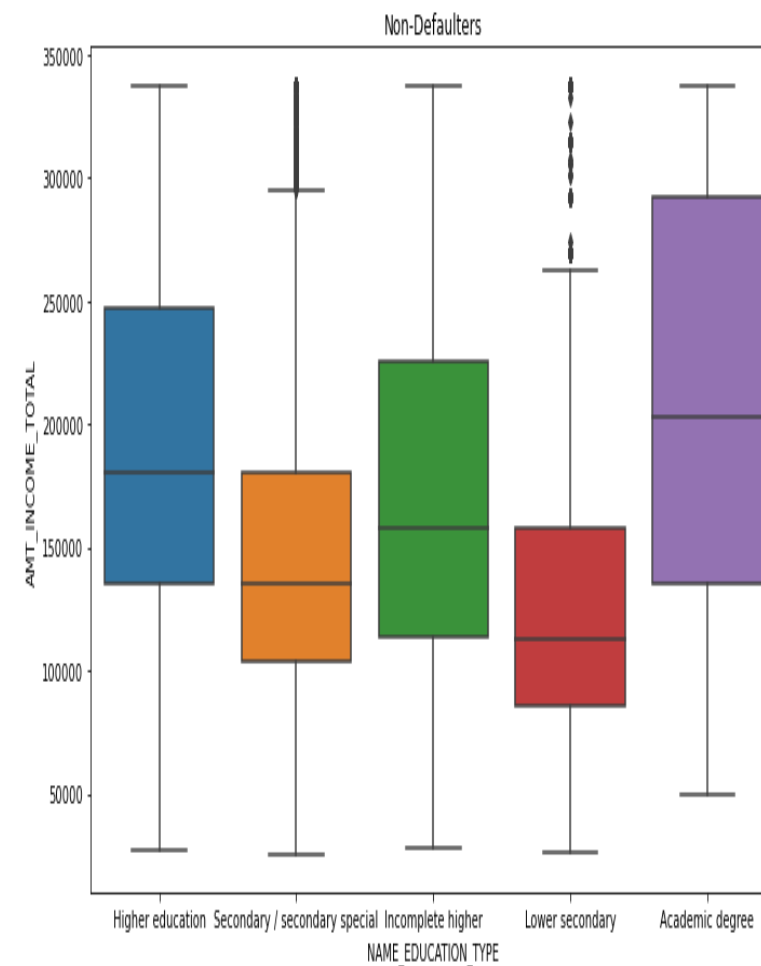
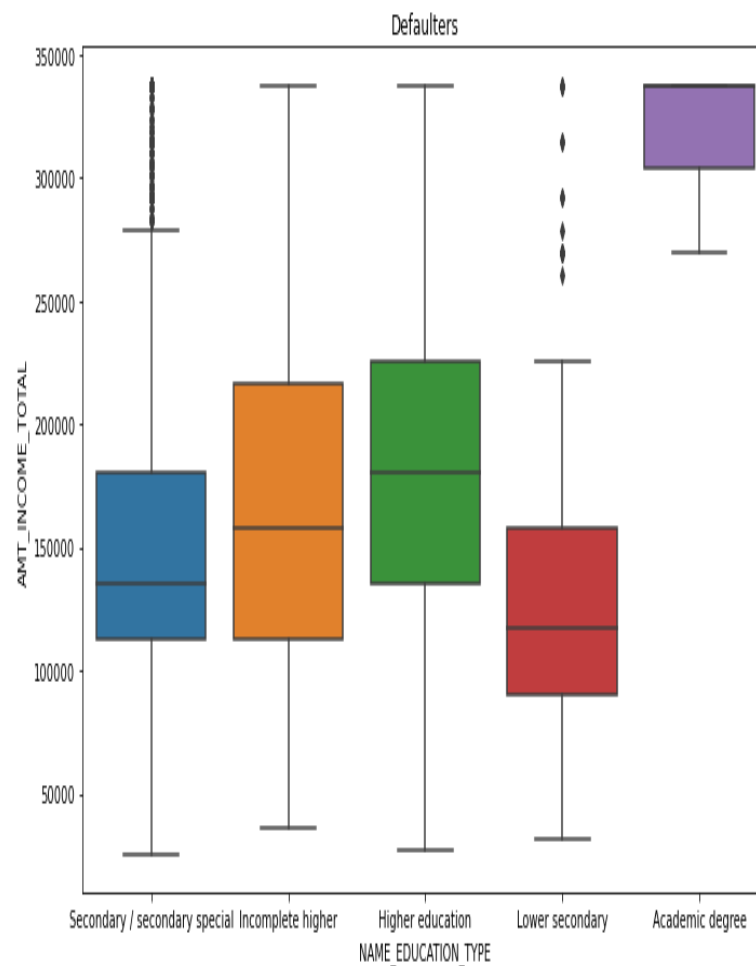
- **Defaulters:** Female Academic Degree holders are earning more but still they are in defaulter list more. Where as not a single Academic male holders are in defaulter list. But for rest of the education type we can see that males are earning more as well being the more defaulters.
- **Non Defaulters:** Here also Female Academic degree holders are more and they are in high count when it comes to non defaulters. Nearly same amount of non defaulter are there for guys who studied Higher education. Applied to both male and female. Female in all educational aspects are more non-defaulters than male.



INCOME AMOUNT VS EDUCATION STATUS

Few points can be concluded from the graph.

- For Education type 'Higher education' the income amount mean is mostly equal with family status. It does contain many outliers.
- Less outlier are having for Academic degree but they are having the income amount is little higher than Higher education.
- Lower secondary of civil marriage family status are have less income amount than others.



The background is a blue gradient. In the corners, there are white line-art illustrations of circuit boards or data paths, with lines and small circles representing components.

UNIVARIATE ANALYSIS AFTER MERGING PREVIOUS DATA

DISTRIBUTION OF CONTRACT STATUS WITH PURPOSES

Few points can be concluded from the graph.

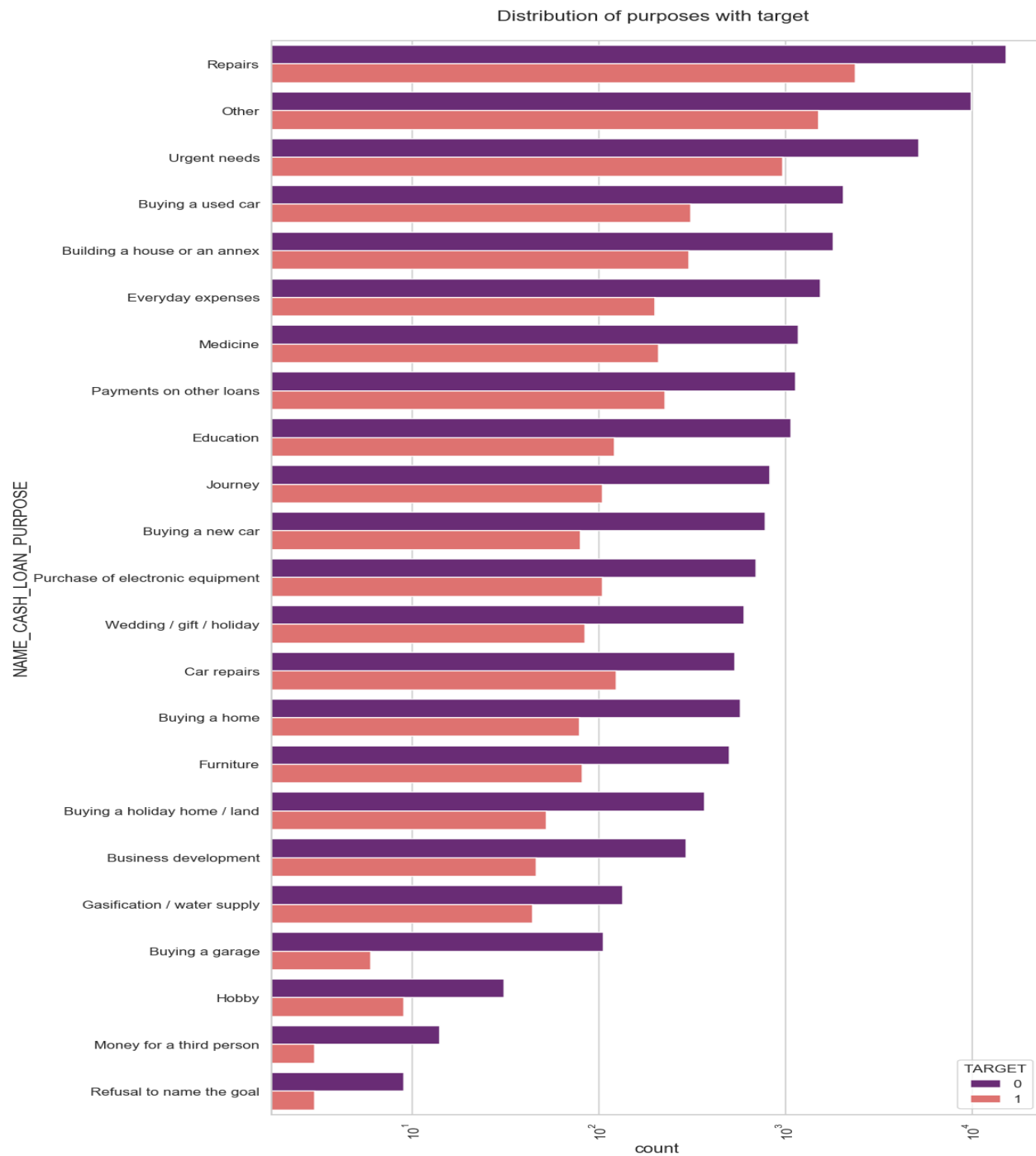
- Most rejection of loans came from purpose 'repairs'.
- For education purposes we have equal number of approves and rejection
- Paying other loans and buying a new car is having significant higher rejection than approves.



DISTRIBUTION OF PURPOSES WITH TARGET

Few points can be concluded from the graph.

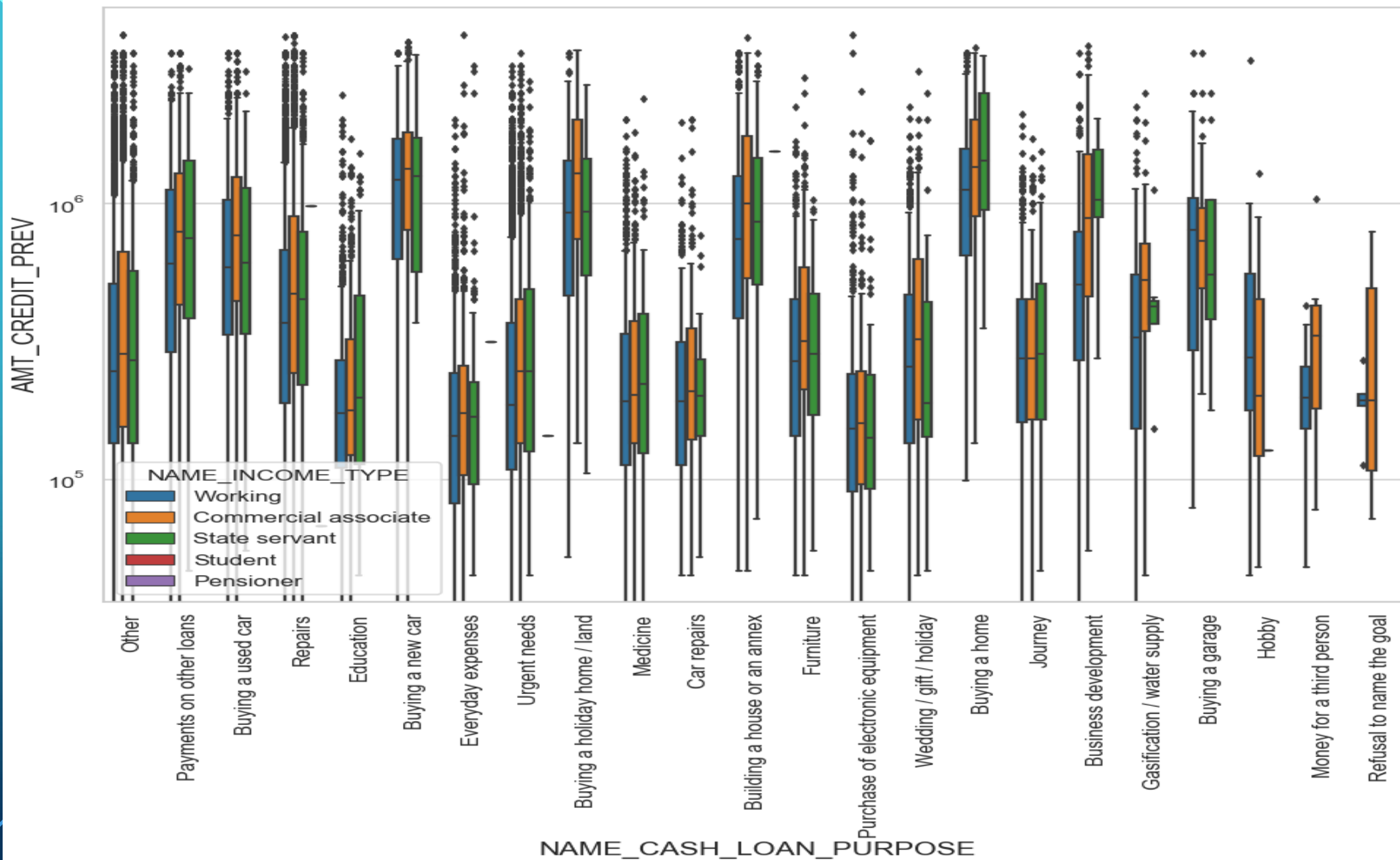
- Loan purposes with 'Repairs' are facing more difficulties in payment on time.
- There are few places where loan payment is significant higher than facing difficulties. They are 'Buying a garage', 'Business development', 'Buying land', 'Buying a new car' and 'Education' Hence we can focus on these purposes for which the client is having for minimal payment difficulties.



The background is a blue gradient with decorative white circuit-like lines in the corners. These lines consist of straight segments and small circles, resembling a stylized electronic circuit or data paths.

PERFORMING BIVARIATE ANALYSIS

Prev Credit amount vs Loan Purpose



PREV CREDIT AMOUNT VS LOAN PURPOSE

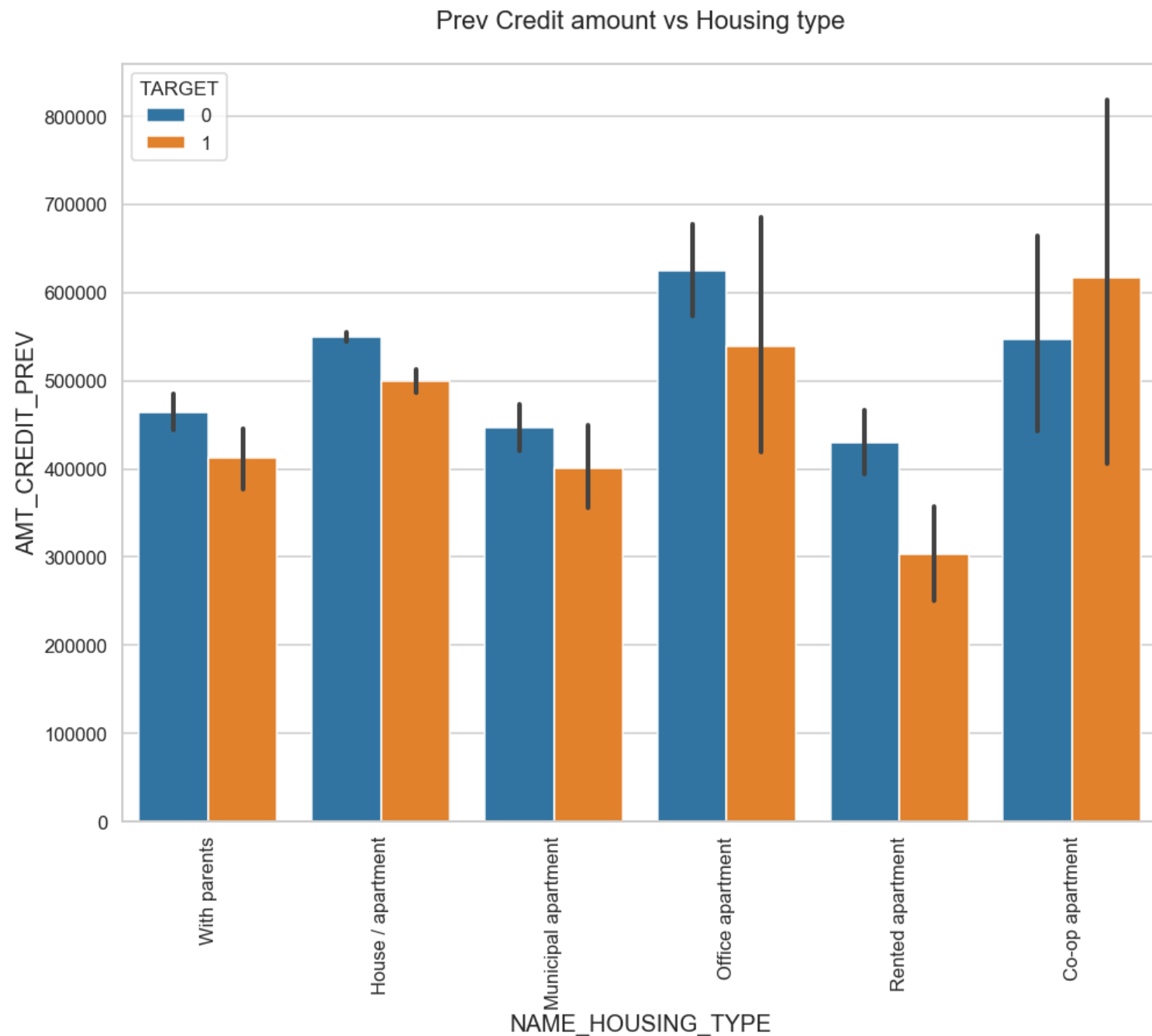
From the previous graph we can conclude the below points:

- The credit amount of Loan purposes like 'Buying a home', 'Buying a land', 'Buying a new car' and 'Building a house' is higher.
- Income type of state servants have a significant amount of credit applied
- Money for third person or a Hobby is having less credits applied for.

PREV CREDIT AMOUNT VS HOUSING TYPE

Few points can be concluded from the graph.

- Here for Housing type, office apartment is having higher credit of target 0 and co-op apartment is having higher credit of target 1.
- So, we can conclude that bank should avoid giving loans to the housing type of co-op apartment as they are having difficulties in payment.
- Bank can focus mostly on housing type with parents or House\apartment or municipal apartment for successful payments.



CONCLUSION

- In Contract type, female with consumer loans type are in more no of defaulters.
- Married people are struggling to pay the loan bill compared to single and separated people. More no of approved people are married. From next time onwards we need to give loan to those who are either single or divorced.
- Secondary/ secondary special people with education are struggling to pay their loan bill and becoming defaulters.
- Lower credit amount people else really higher credit amount people are having high chance to becoming a defaulters.
- Female Gender are more likely to not face payment difficulties then the male and hence it is recommended to approve more loans of Female Gender than the male gender at the same Female are High in number than who face difficulties than males.
- The Repeater applicant has High chance of non-Defaulting and also has high chance of defaulting when compared to new applicants.

The background is a blue gradient with abstract white lines resembling circuit traces or data paths in the corners. These lines connect to small circles, some of which are arranged in a grid-like pattern.

THANK YOU