HOME CREDIT DEFAULT RISK

TEAM MEMBERS

GROUP 7

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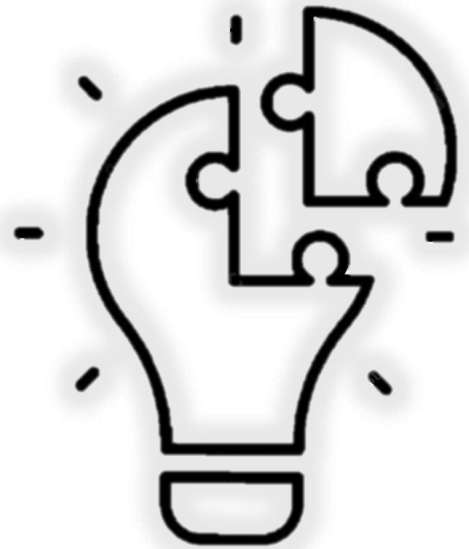
BUSINESS PROBLEM

PROBLEM

Challenges in extending loans to individuals with limited credit history hinder the achievement of our financial inclusion mission.



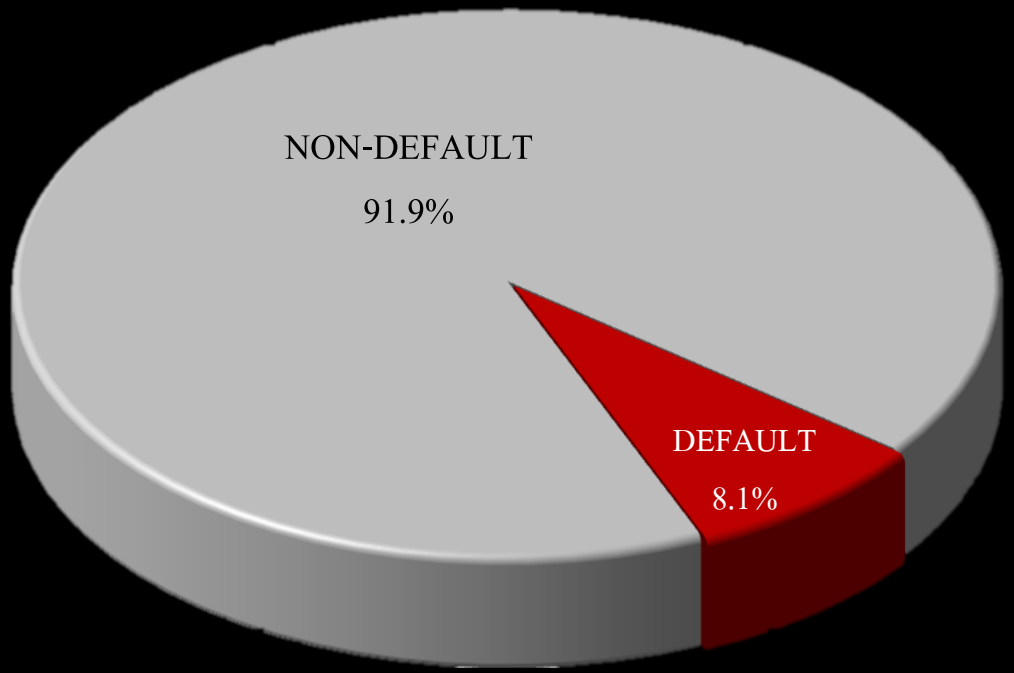
APPROACH

Predicting the ability of home loan applicant to repay the loan

DATASETS

- Prediction Dataset
  - Application Train Set
  - Application Test Set
- Client's Credit History Dataset
  - Bureau
  - Bureau Balance
  - Previous Application
  - Installment Payments
  - Credit Card Balance
  - POS Cash Balance

TARGET VARIABLE



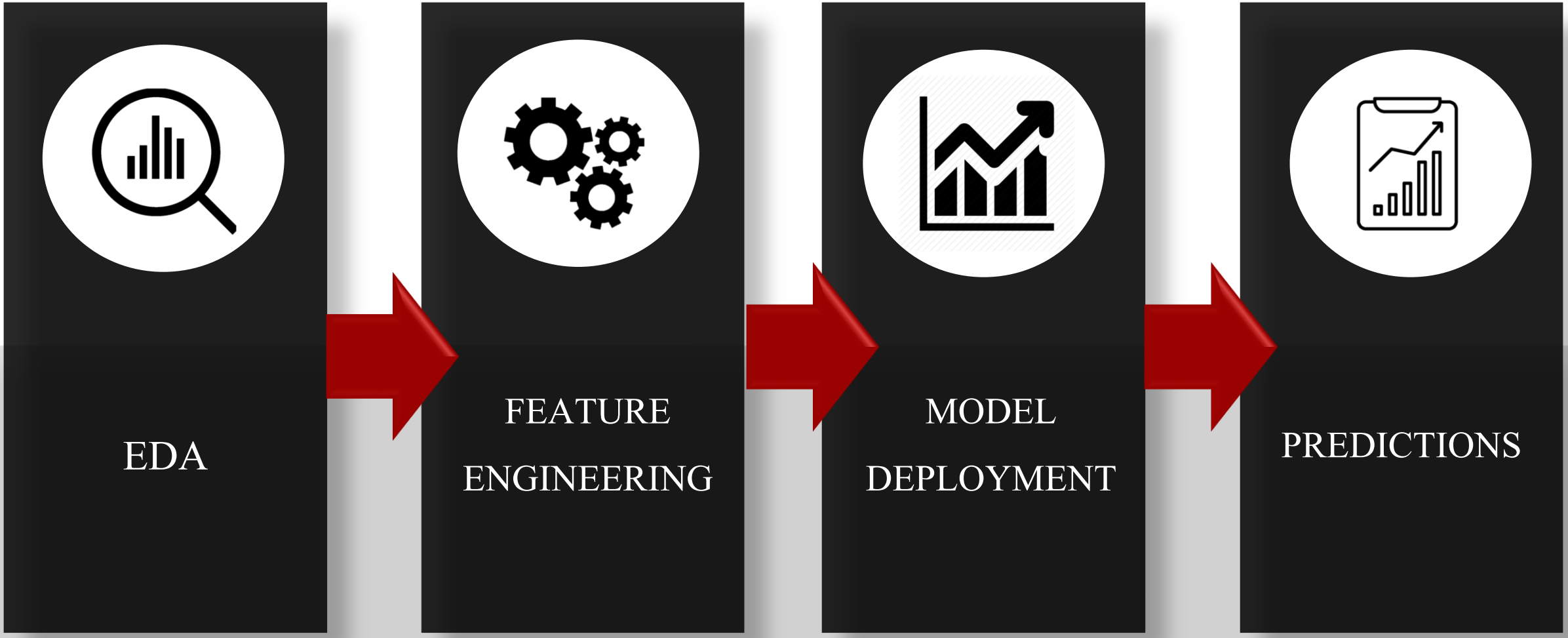
TARGET ‘0’

- Majority Class
- 91.9% - Non Defaulters

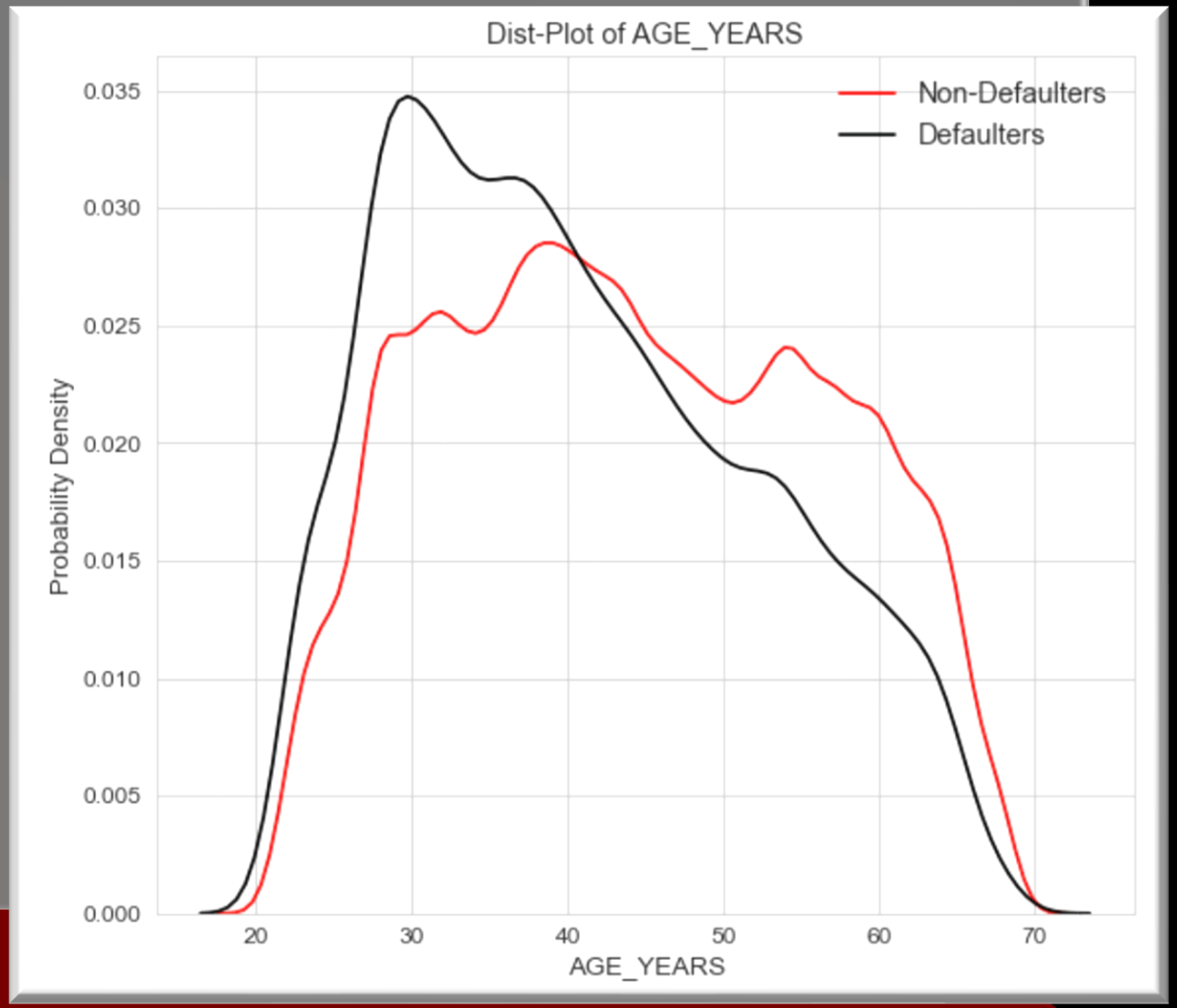
TARGET ‘1’

- Minority Class
- 8.1% - Defaulters

STATISTICAL APPROACH



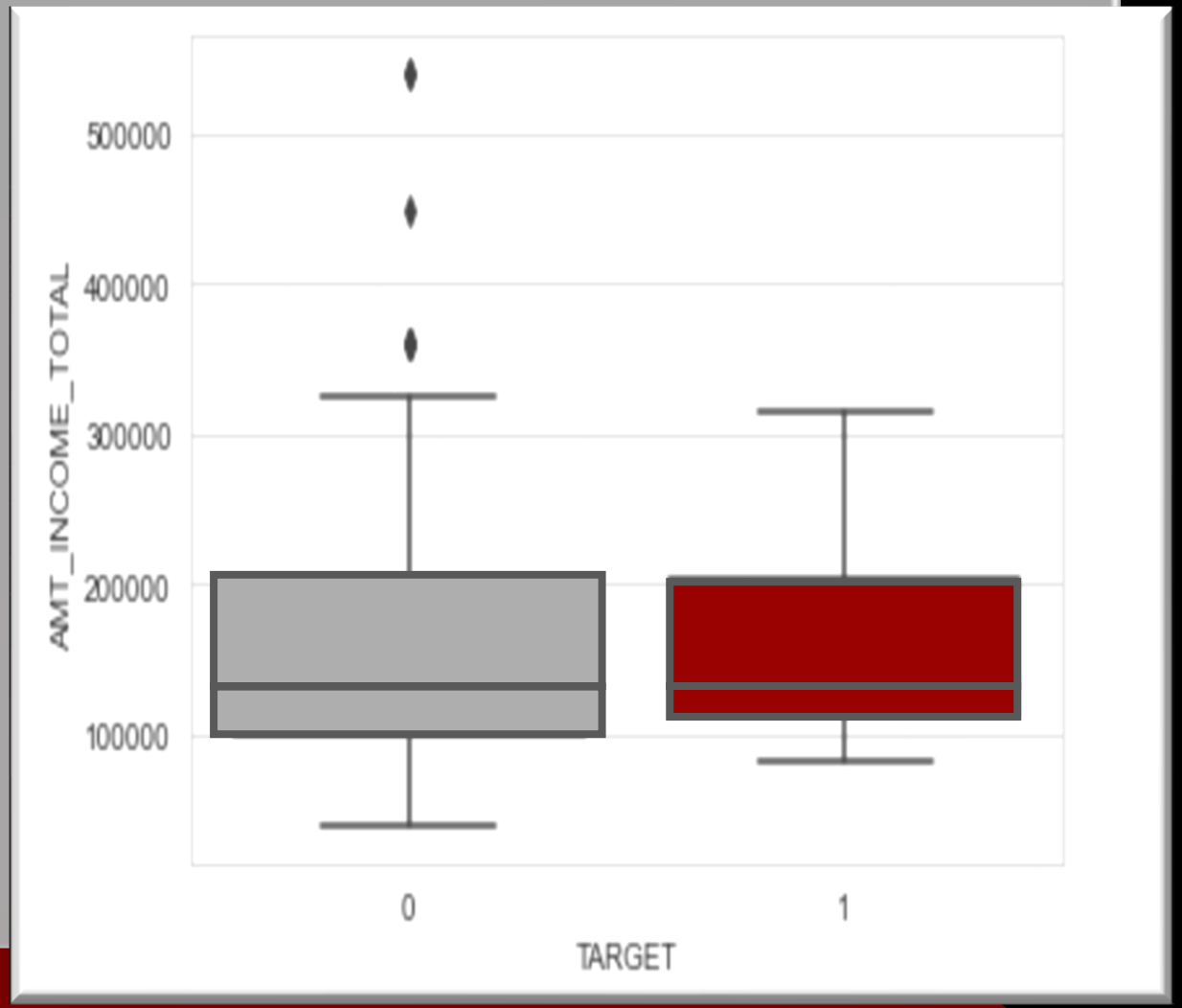
PREDICTOR ANALYSIS



Age

- Peak of Defaulter at 30 years
- Smaller probability density function for non-defaulters
- Defaulters younger than Non-Defaulters

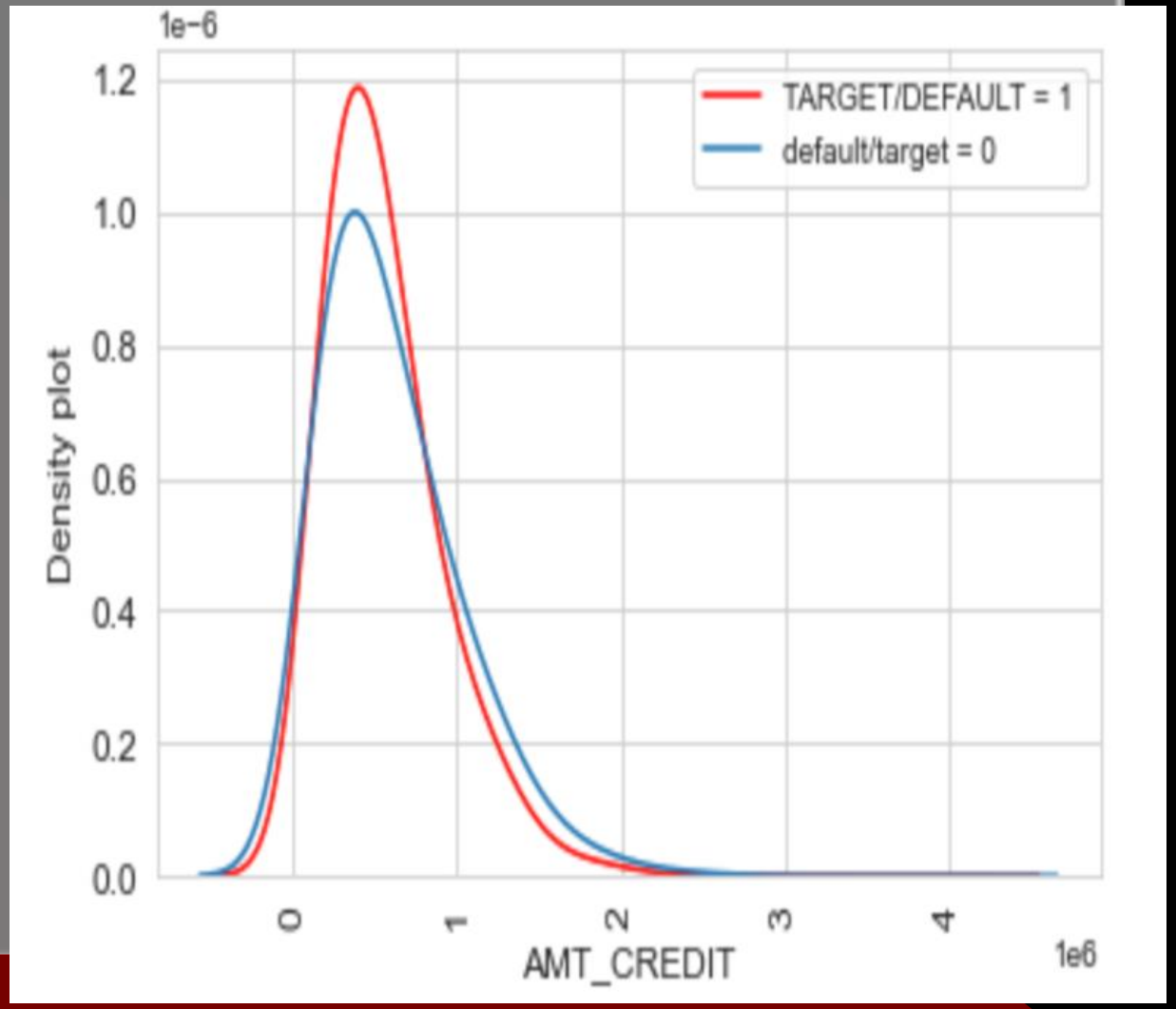
PREDICTOR ANALYSIS



Income

- No major effect on Default Classification
- Both classes have similar income brackets
- Few outliers for the non-defaulters which needs to be ignored.

PREDICTOR ANALYSIS



Amount Credit

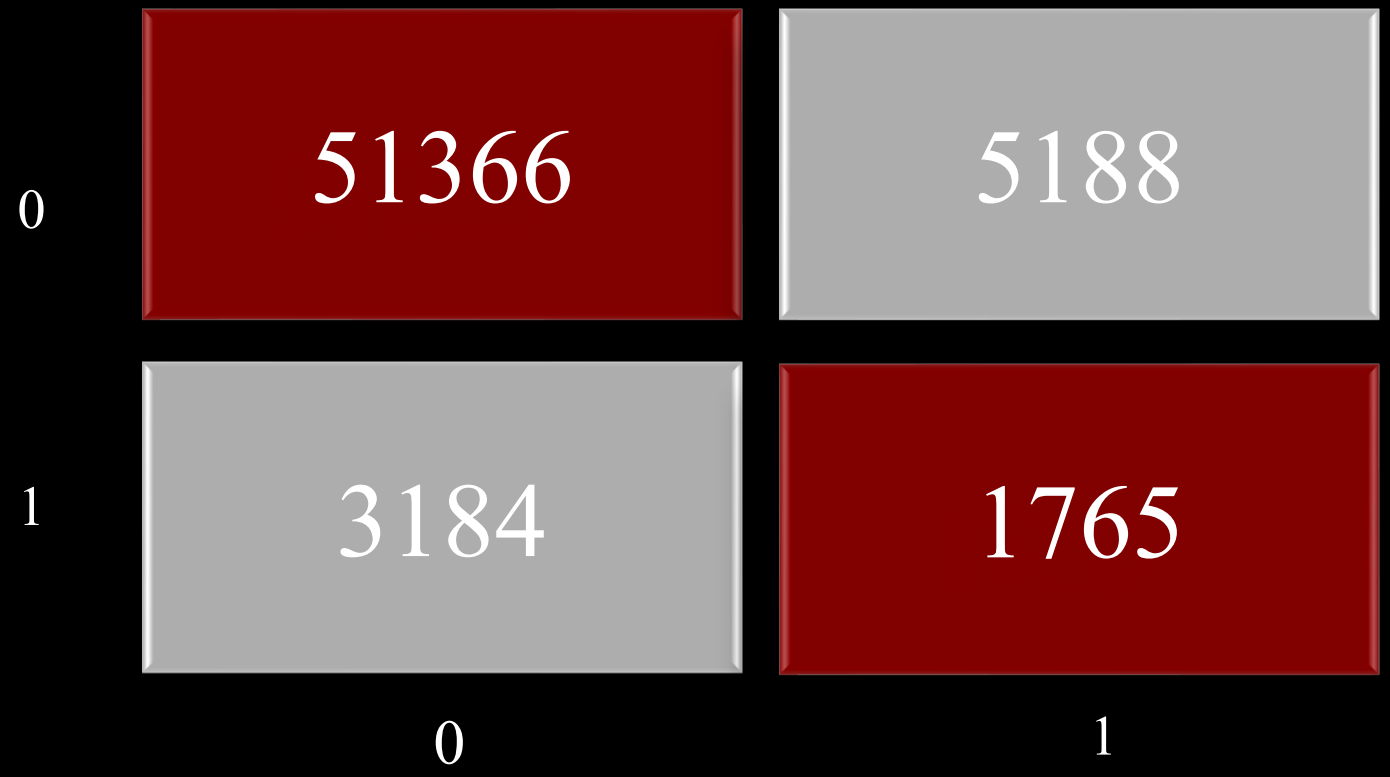
- Both target classes have a peak between 0 and 1, hence no much effect.
- Smaller probability density function for non-defaulters
- Non-defaulters have less amount of credit provided.

MODEL EVALUATION

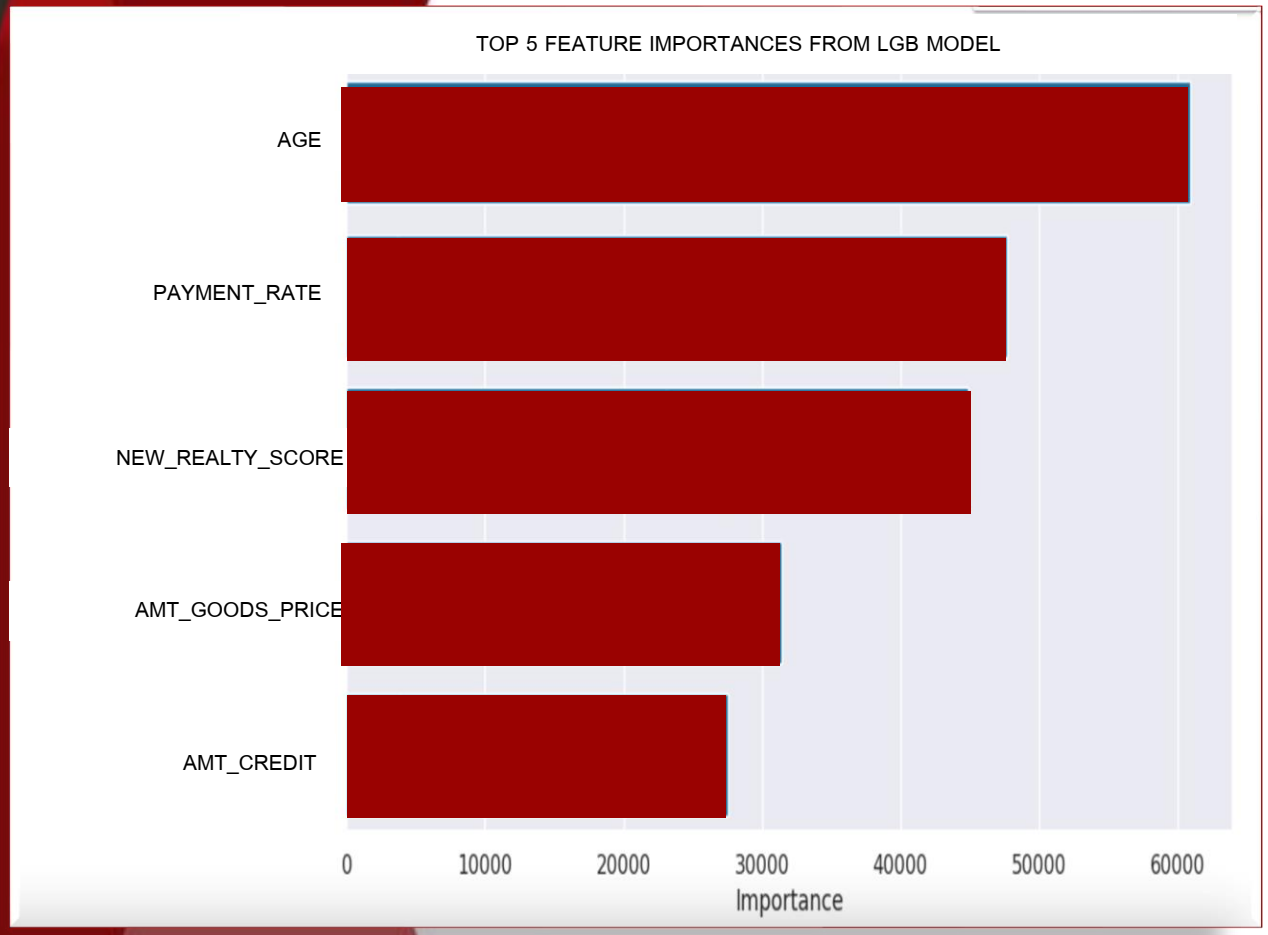
	RANDOM FOREST	LOGISTIC REGRESSION	EXTREME GRADIENT BOOST	LIGHT GRADIENT BOOST
AUC SCORE	**0.50**	**0.59**	**0.71**	**0.75**
KAGGLE SCORE	**0.53**	**0.54**	**0.74**	**0.75**

MODEL PERFORMANCE

CONFUSION MATRIX



CONCLUSION



Age – A key factor while consider default probability

Payment_Rate - Payment of Loan Installments

Realty_Score – Metric to determine property value

Amt_Goods_Price – The cost of goods that is offered on credit

Amt_Credit – Amount of Credit utilized

RECOMMENDATIONS

- Generate Probability of Default (PD)
- Risk Adjusted Return on Capital (RAROC)
- Ratio of Expected Return(ER) to Economic Capital: (EC)

$$RAROC = (ER-EL)/ EC$$

- Compare RAROC values for loan applications to prioritize higher expected returns considering risk.
- Establish RAROC thresholds aligned with risk appetite and business goals.

THANK YOU