

House Loan Data Analysis

The aim of this project is to build a model that predicts whether or not an applicant will be able to repay a loan using historical data.

STEPS TO BE TAKEN TO COMPLETE THE TASK:

- Load the dataset
- Check for null values in the dataset
- Print the percentage of default to the payer of the dataset for the TARGET column
- Balance the dataset if the data is imbalanced
- Plot the balanced data or imbalanced data
- Encode the columns that are required for the model
- Calculate Sensitivity as a metric
- Calculate the area under the receiver operating characteristics curve

MODEL RESULT:

```
loss: 0.2332 - Accuracy: 0.9076 - precision: 0.9467 - recall: 0.8639 -  
val_loss: 0.2235 - val_accuracy: 0.9129 - val_precision: 0.9630 -  
val_recall: 0.8588
```

TP,FP,FN,TN 54673 1865 7982 48555

sensitivity = 0.8726039422232863

specificity = 0.9630107100357002

roc_auc_score is 0.9129157276355646

CONCLUSION:

Hence, the model is able to predict the repayment of the loan based on historical data. The type I error in the model is 1865, and the type II error in the model is 7982.

