

CREDIT RISK PREDICTION

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Problems

Credit risk refers to the risk of loss that a lender faces due to a borrower's failure to repay any type of loan or debt

Time

It will takes a long time if we do the assessment manually.

Objective 2

It can be happen if we make wrong decisions & will cause considerable losses

Objective 3

Credit loss is the amount of money lost by the lender when the applicant refuses to pay or runs away with the money owed.

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By using machine learning techniques, we hope to forecast the approval of a secured loan before the application is submitted. Lending institutions may also use this model to give information on interest rates, loan terms, and loan duration.

Data Analysis

Data
Preparation

Modeling

Business
Recommendation


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CUSTOMER CLASSIFICATION STATUS



Current, Fully Paid & 'In Grace Period

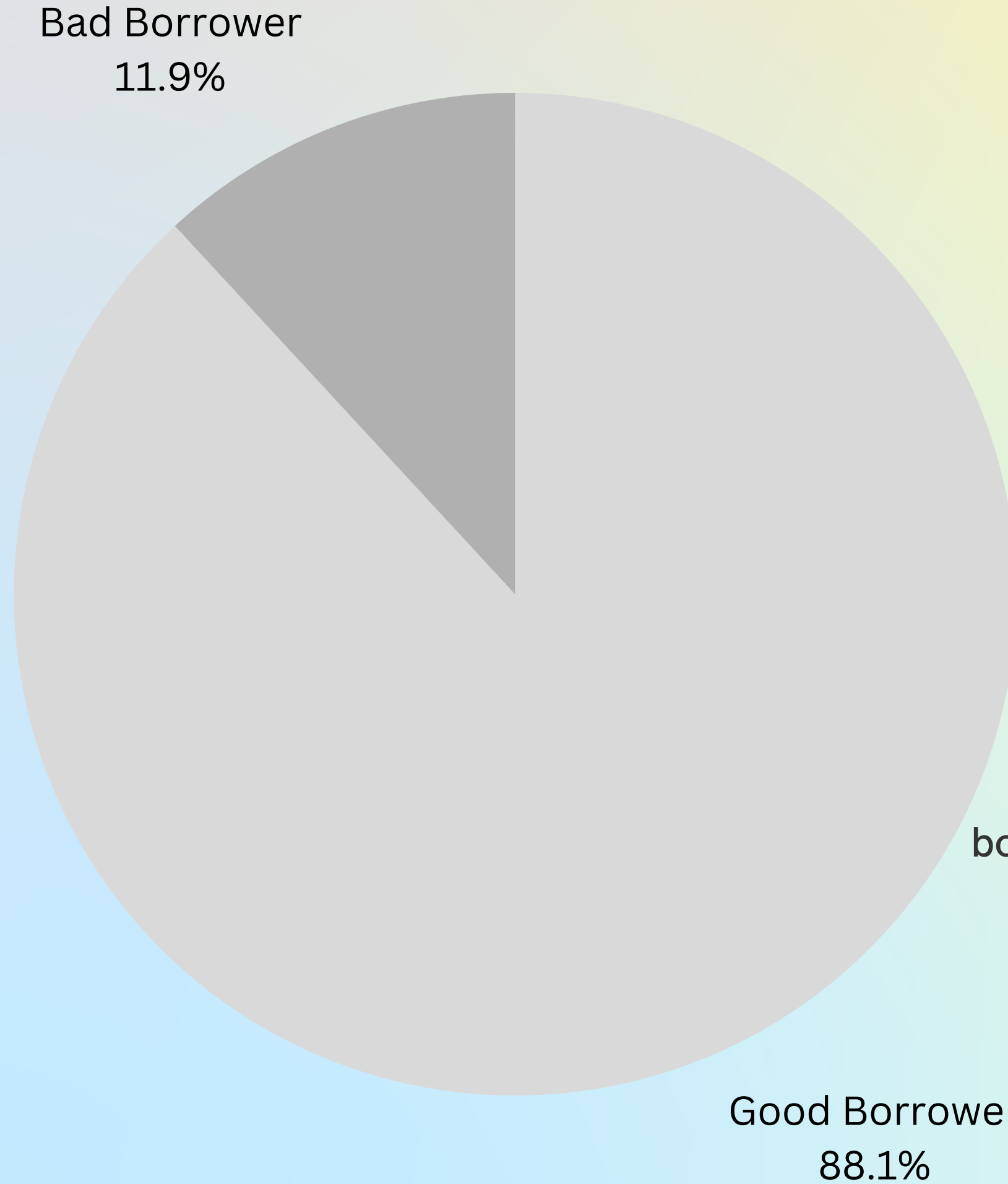


Good

Bad



All data other than the "good" part



The loan's problem

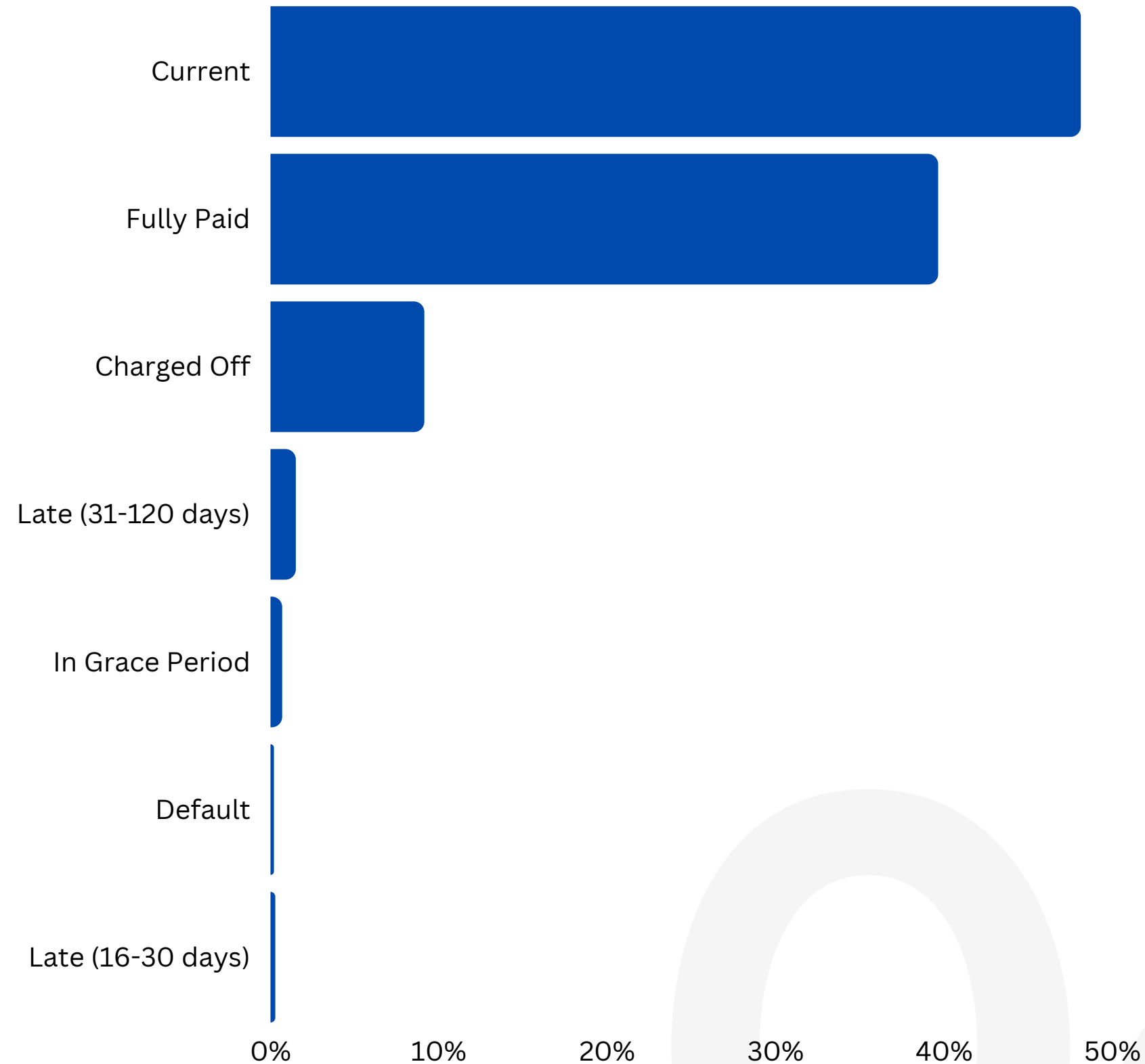
From 2007 to 2014, there were 88,1% good borrowers and 11,9% bad borrowers, according to the data on the imbalance.



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Applicants by Loan Status

This is the data that has been
analyzed



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Academy

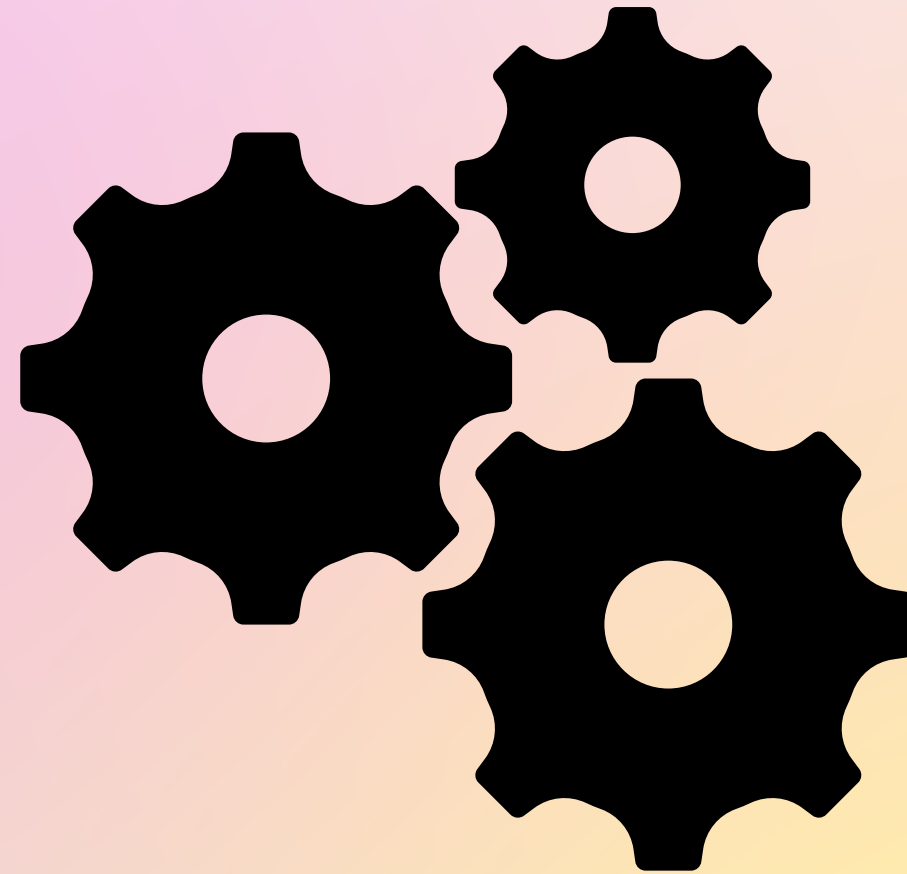
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- Drop the feature if null is greater than 50%
- Remove all superfluous features and leave only those with a single unique value.



Data Cleansing

Feature Engineering



- Features selection based on the strength of the evidence and information value
- Label encoding and one hot encoding should be used to encode all features for modeling.

Modelling & Evaluation

Model	Accuracy	Recall	AUC
Random Forest	0.93	1	0.84
KNN	0.92	0.99	0.73
Logistic Regression	0.921	1	0.83

- AUC Score is a key metric for this model's evaluation.
- With the highest score and shortest runtime, Random Forest is the best model.

BUSINESS RECOMMENDATION

To guarantee that the loan is practical and sustainable for both the lender and the borrower, it is crucial to carefully examine the borrower's creditworthiness and any potential hazards related to the loan amount. This can entail carrying out an exhaustive credit risk assessment or putting in place a risk-based pricing plan.

Amount

Loan

Interest
Rate

Flexible interest rates that can be altered in accordance with the borrower's creditworthiness and payment history would be advantageous. This enables a more individualized approach to lending and may enable the lender to better control their credit risk.

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Thank you!

