Credit Risk Analysis Report

The purpose of this analysis is to evaluate the performance of a Logistic Regression model in predicting credit risk. By analyzing the model's accuracy, precision, and recall, we can determine its effectiveness in minimizing financial risk for the company while ensuring fair and accurate loan classification.

Model Performance Data:

* Accuracy: 99%
  + The model correctly predicts the loan status in 99% of cases.
* Precision:
  + Healthy Loans (0): 1.00 (100% of predicted healthy loans are actually healthy)
  + High-Risk Loans (1): 0.86 (86% of predicted high-risk loans are actually high-risk)
* Recall:
  + Healthy Loans (0): 0.99 (99% of actual healthy loans are correctly identified)
  + High-Risk Loans (1): 0.93 (93% of actual high-risk loans are correctly identified)
* F1-Score:
  + Healthy Loans (0): 1.00
  + High-Risk Loans (1): 0.89

Results:

The logistic regression model performed really well in predicting healthy loans, with near-perfect precision and recall. For high-risk loans, the recall score of 0.93 is strong, ensuring that most risky loans are flagged correctly. However, the precision score of 0.86 suggests that some healthy loans are mistakenly classified as high-risk, which could lead to unnecessary rejections.

Although the model is generally accurate, its difficulty in predicting high-risk loans may result in financial inefficiencies. A model using Random Forest could potentially improve this by better identifying high-risk loans.