**Credit Risk Analysis Report**

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**Overview of the Analysis**

This analysis aimed to develop a machine learning model to assess loan risk for a peer-to-peer lending company. Using historical lending data, we created a logistic regression model to predict whether a loan would be healthy (0) or high-risk (1). The model was trained on a dataset containing 77,536 loans with seven distinct features, split into training (75%) and testing (25%) sets.

**Results**

Machine Learning Model Performance Metrics:

* Overall Accuracy: 99.2% of all predictions were correct
* Healthy Loans (0): 100% precision with 99% recall, indicating excellent performance in identifying safe loans
* High-Risk Loans (1): 84% precision with 94% recall, showing strong capability in detecting risky loans

**Summary**

The logistic regression model demonstrates exceptional performance, particularly with its 99.2% overall accuracy. The model's strength lies in its balanced performance across both loan categories. I strongly recommend implementing this model for the company's loan assessment process, as it shows remarkable accuracy in identifying both healthy and high-risk loans. The high recall rate (94%) for high-risk loans is particularly valuable, as it effectively catches potentially problematic loans, which is crucial for risk management. The model's ability to maintain high precision while achieving strong recall makes it a reliable tool for credit risk assessment.