**Credit-Risk Analysis Report**

**Model Performance:** After developing and training the predictive model using the provided dataset, the following performance metrics were obtained:

* **Train Accuracy:** 82.14%
* **Test Accuracy:** 81.94%
* **Train ROC AUC Score:** 88.93%
* **Test ROC AUC Score:** 86.35%

**Analysis:** The predictive model exhibits reasonable performance in terms of accuracy, with both train and test accuracies showing similar values, indicating good generalization to unseen data. Moreover, the ROC AUC scores, which measure the model's ability to distinguish between positive and negative classes, are also satisfactory, with the test ROC AUC score slightly lower than the train ROC AUC score. This suggests that the model effectively captures the underlying patterns in the data and performs well in predicting the probability of financial distress.

**Conclusion:** The developed model demonstrates promising potential in improving credit scoring methodologies by accurately predicting the probability of financial distress for borrowers. By leveraging advanced machine learning techniques, borrowers can utilize this model to make informed financial decisions, thereby mitigating the risk of financial distress. However, continuous refinement and validation of the model may be necessary to ensure its reliability and robustness in real-world applications.

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