Credit Risk Analysis Report

The purpose of this analysis is to evaluate a machine learning model's performance in predicting the credit risk of loans.The loans have been classified into healthy loans and high_risk loans.

Let us take a look at the classification report

	precision	recall	f1-score	support
0	1.00	1.00	1.00	18759
1	0.87	0.95	0.91	625
accuracy			0.99	19384
macro avg	0.94	0.97	0.95	19384
weighted avg	0.99	0.99	0.99	19384

The overall accuracy is 99 percent which indicates that the logistic regression model has a good prediction.

Now let's look at the healthy loans performance(0)

- Precision: The model has perfect precision meaning that it predicts all the healthy loans correctly without any room for errors.
- Recall : The value for recall is 1.00 meaning that there are no false negatives.
- F1 score: the score looks perfect indicating that the balance between precision and recall is perfect.

Now let's focus on the high_risk loans performance(1)

- Precision: The model correctly predicts 87% of the high-risk loans, but 13% of high-risk loans are wrongly classified as healthy
- Recall: The value is 95% indicating that it predicts 95 percent of the high-risk loans, though there are some false negatives .
- F1 score : The score indicates that there is balance between precision and recall but is not perfect.

This is our confusion matrix

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[[18673    86]
 [   32   593]]
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The matrix shows 86 false positives and 32 false negatives.

The logistic regression model looks like a decent model but in the case of healthy loans it does exhibit overfitting.