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6COSC023W – Final Project Report

**Fortified – 411: Assisting in managing loans whilst
analysing, detecting false and synthetic identities and
predicting any potential loan frauds**

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Abstract

Loans are necessary for an economy's overall money supply to increase and for competition to emerge via financing to new enterprises. Interest and fees on loans are one of the most important sources of revenue for many banks.

In addition the escalation of the pandemic scenario, as well as the following lockdown, has put several countries' economy in jeopardy. In this context, the reduction in economic activity has a negative impact on credit quality, forcing banks to make large provisions for bad loans and face major penalties. Non-Performing Assets and delinquencies are serious issues for any bank, particularly in Sri Lanka, because they tend to weaken a bank's credit rating and trustworthiness. This increases the need of futuristic solutions to treat NPA pains which should be carefully addressed and recorded in order to handle these persistent concerns.

The identified problem for this project is the difficulties faced in identifying borrowers at risk of default and providing early warning signals based on monitoring and analysis of loans. As a solution to this problem this research combines historical loan data and machine learning to forecast fraud in bank loan administration and, as a result, avert loan defaults that would not have been detected by manual credit officer monitoring.

A comprehensive research was conducted to identify the requirements that would suit the solution and gain a better knowledge of the problem. Following that, Fortified-411 was built and developed with the integration of Machine Learning to identify borrowers at risk, approve or reject based on the risk classification, and view and alert any high risky customers.

The solution was tested and assessed as intended by industry professionals and non-experts, who offered comments on how to improve and make the implemented solution more helpful, which was taken into account and integrated in future enhancements.

Keywords: Loan, Non-Performing Assets, Non-Performing Loans, Default Payments, Machine Learning, Loan Management, Credit