Project Name: <u>Loan Approval Model Using Classification Algorithm</u>

<u>Abstract</u>

Problem Statement: A Housing Finance company with presence across all urban, semi urban and rural areas needs to check for loan approval to customers. The company validates the customer eligibility for loan. The idea behind this project is to build a Machine Learning Model that the bank can use to classify if a customer can be granted a loan or not. The main objective of this project is to predict whether a new applicant can be granted the loan or not using machine learning models trained on the historical data set. The historical data of candidates was used to build a machine learning model using different classification algorithms. The use of logistic regression, random forest classifier, support vector machine classifier, KNN etc. ML algorithms should result high success rate of right loan approval with minimum risk.

Literature Survey: In recent years, the use of machine learning (ML) techniques in the domain of credit risk assessment and loan approval has gained significant attention. The integration of ML algorithms promises more accurate and efficient decision-making processes compared to traditional credit scoring models.

Mohammad et al. (2010) proposed a study to predict whether or not a bank would give a loan to a customer. The goal of the model was to achieve classification; hence using Logistic Regression with sigmoid function was used for developing the model.

In Tejaswini et al. (2020) a robust predictive modelling method was presented to approve or reject loan applications based on the customers' historical financial and credit scores. The purpose of this paper was to create a quick, straightforward, and efficient method of selecting qualified applicants.

Dataset: Kaggle

https://www.kaggle.com/datasets/ssiddharth408/loan-prediction-dataset

Methodology (Proposed Solution):
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1. Gathering data

2. Data pre-processing with removing null value and using label encoder converting categorical value to numeric values

3. Data Visualization

4. Researching the classification model that will be best for the type of data

5. Training and testing the model

6. Evaluation

References:

1. Machine Learning for Absolute Beginners Oliver Theobald, Second Edition Copyright © 2017 by Oliver Theobald.
2. Hands-On Machine Learning with Scikit-Learn and TensorFlow Concepts, Tools, and Techniques to Build Intelligent Systems Aurélien Géron, Copyright © 2017 Aurélien Géron.

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