GROUP 4

Project Mentor

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Project Members

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Abstract:

Loan Analysis is an evaluation method that determines if loans are made on feasible terms and if potential borrowers can and are willing to pay back the loan. It checks the eligibility of the potential borrower against the criteria set forth for lending. Rate of Interest is an important aspect of Loan Analysis. It influences the cost of borrowing and the return amount directly. Our project includes determination of **Loan Interest Rate Category** for each customer. The customers will be classified on the basis of different parameters and will then be categorized into one of the categories of Loan Interest Rate. We will be applying Supervised and Unsupervised Learning using Machine Learning models on the given dataset.
The process prior to application of ML models will include steps like EDA, Feature Selection, Feature Engineering (if required), etc. The goal is to build a model that gives maximum accuracy keeping in mind all the features that contribute for the betterment of the model.

Problem Statement 1:

Classifying customers into different Loan Interest categories based on their profiles.

Problem Statement 2:

To arrive at the segmentation of customers concerning their past data of loans on different parameters. This segmentation will then be used to map different interest rate slabs (1 / 2 / 3) to these customers.

Methodology:

We will be using Supervised and Unsupervised Machine Learning Algorithms like

- Supervised Learning Classification:
  1. Logistic Regression
  2. K-Nearest Neighbours
  3. Naïve-Bayes Classifier
  4. Decision Tree Classifier
  5. Random Forest Classifier
- Unsupervised Learning:
  1. K-Means Clustering
  2. Hierarchical Clustering (Agglomerative Clustering)

Apart from these, we will use other algorithms if required while going through the dataset.

Timeline Chart:

Week 1
Exploratory Data Analysis (handling missing values, Outlier Treatment, Visualization)

Week 2
Feature Engineering, Statistical Analysis and Feature Selection

Week 3
Creating a base model and evaluating it. Also, testing with other models

Week 4
Hyperparameter tuning to further increase the accuracy and build a better model

References:

https://www.kaggle.com/mayankgupta96/interest-rate-prediction/discussion