Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam – 603 110
(An Autonomous Institution, Affiliated to Anna University, Chennai)

UCS2612 Machine Learning Laboratory

Academic Year: 2023-2024 Even   **Batch: 2021-2025**
Faculty In-charges: Y.V. Lokeswari & Nilu R Salim   **VI Semester A & B**

A. No. : 2   **Loan Amount Prediction Using Linear Regression and Visualization**

1. **Apply linear regression for Loan amount prediction and visualize the interpretation.**
[CO1, K3]

Download the Loan Amount Prediction dataset from the link given below:

https://www.kaggle.com/datasets/phileinsophos/predict-loan-amount-data

Dataset contains records of the amount of loan that has been sanctioned to a user along with the features to predict the sanctioned amount.

Develop a python program to predict the loan amount to be sanctioned using Linear Regression (LR) Model using Scikit-learn library. Visualize the features from the dataset and interpret the results obtained by the model using Matplotlib library. **[CO1, K3]**

Use the following steps to do implementation:
1.   Loading the dataset.
2.   Pre-Processing the data (Handling missing values, Encoding, Normalization, Standardization).
3.   Exploratory Data Analysis.
4.   Feature Engineering techniques.
5.   Split the data into training, testing and validation sets.
6.   Train the model.
7.   Test the model.
8.   Measure the performance of the trained model.
9.   Represent the results using graphs.