

Name: Swastik Dubey

Roll No: 24IM61R06

Date: 23-01-2025

1. Laboratory project details (Problem Statement):

- a) Regularize the linear regression model from the first assignment
- b) Use decision tree to predict if an accident would occur or not

2. Language Chosen: Python

3. Framework and libraries used to implement: Sklearn, Pandas and Matplotlib

4. Dataset used (link): <https://www.kaggle.com/datasets/denkuznetz/traffic-accident-prediction>

5. Codebase Developed (please share files using google drive or github):

https://github.com/scorch056/ML-Lab/blob/main/ML_Lab_1/sales%20forecasting.ipynb

6. Results obtained:

- a) The total sales for the 1st quarter of 2025 are 90658.87
- b) Decision tree gave 64% accuracy when regularized

7. Conclusions and Lessons learnt:

Regularization (L1 & L2) help overcome the issue of getting negative total sales (by avoiding overfitting),

Decision tree also results in better score when regularized but, the number of features is high thus creating a sparse matrix and a relatively low accuracy