Name: Subodh Khanduri Roll No: 24IM61R02 Date: 10/02/25

1. Laboratory project details (Problem Statement):

Use the following dataset to develop a decision tree model to predict accidents occuring due to stormy weather in the current month. Apply L1 and L2 regularization to eliminate overfitting, and measure AICC, BIC metrics described in the second link given below.

2. Language Chosen: Python

3. Framework and libraries used to implement: Numpy, Pandas, Matplotlib, Scikit-learn

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

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

6. Results obtained:

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Decision Tree Accuracy after regularization: 0.72

AIC: 199.83 and BIC: 202.94
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7. Conclusions and Lessons learnt:

- Regularization (L1 & L2) helps 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