**Assignment 7, CS2672 - AIML-Lab, Spring 2025**

**Lab Assignment Questions:**

1. Implement Single layer perceptron for the given data set. A total of 13 samples with three features and one class label. The class label is defined in binary 0 and 1. The training dataset contains eight data samples, while the validation dataset contains five.
2. Modify the Perceptron to Use Sigmoid Activation, Tanh Activation, ReLU Activation functions by replacing the Step function.
3. Train the model and analyze the outputs.
4. Compare decision boundaries of Step Function vs. Sigmoid.
5. Compare decision boundaries of Sigmoid vs. Tanh.
6. Compare ReLU vs. Sigmoid for linear separability
7. Plot the decision boundary for different activation functions.