**Lab Exercise: Understanding the Perceptron Logically (Note: functions should not be called directly)**

* Understand the working of a perceptron model through logical implementation.
* Implement a perceptron to classify linearly separable data.

**Exercise**

1. Implementing Perceptron from Scratch: Implement a single-layer perceptron using Python (NumPy). Use a simpl AND gate or OR gate.
   * Initialize weights and bias randomly.
   * Use the sigmoid function as the activation function.
   * Update weights using the perceptron learning rule or with guess
   * Train the perceptron and test
2. **Visualizing the Decision Boundary:**
   * After training, plot the decision boundary to show how the perceptron separates the classes.
   * Use matplotlib for visualization.
3. **Extension:**
   * implementing a perceptron for the XOR gate.
   * Show a single-layer perceptron fails for XOR.
   * Introduce multi-layer perceptrons (MLP) to overcome