**Laboratory Exercise:**

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**Post Experiment:**

1. **Logistic regression:**

Logistic regression is a statistical method used for binary classification, predicting the probability that an outcome belongs to one of two classes (e.g., yes/no, spam/not spam). It uses the logistic (sigmoid) function, which transforms the output of a linear equation into a probability between 0 and 1.



The formula is:

Where x1,x2,...x1, x2, ...x1​,x2​,... are the features, and b0,b1,...b0, b1, ...b0​,b1​,... are the model's coefficients. The model is trained to find the best coefficients by minimizing log loss (or binary cross-entropy). Based on the predicted probability, the model classifies the outcome as either class 1 (above 0.5) or class 0 (below 0.5).

**B. Questions**

1. **Use MNIST Dataset and apply logistic regression.**

