Ex:6. Implement gradient decent and back propagation in deep neural network

Aim :

To implement anradient descent and Back Propagation in deep neural network

Objective

* To understand gradient in an optimized method
* To implement Back Propagation in deep neural network to update weights
* To implements a simple neural network for classification task
* To objective how loss decrease with iteration

Observation

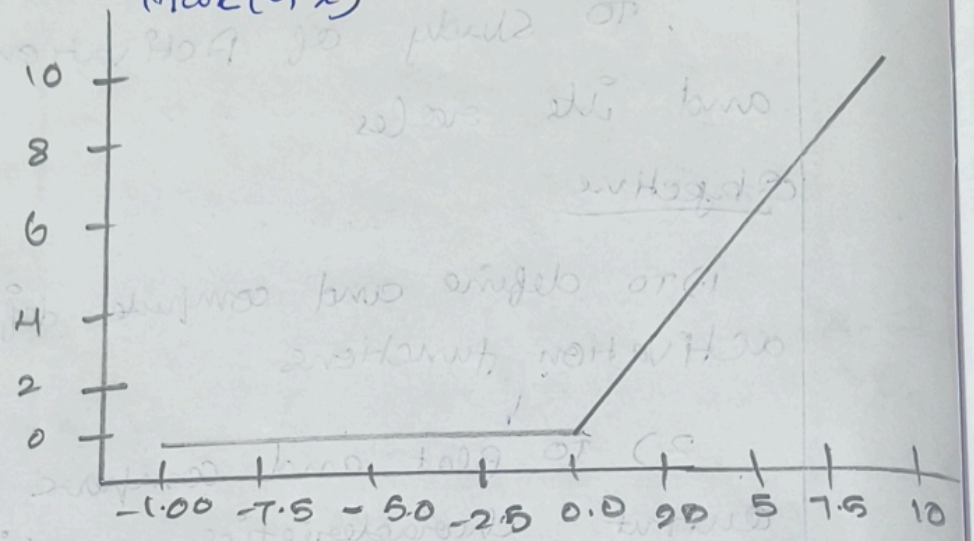
* Loss decreases as nuclear of iterations
* weight and bais object
* Back propagation ensures errors are efficiently layer.

Result

Successfully implemented activation. (Sigmoid, Tanh, ReLU, Leaky ReLU in Pytorch and visualized their behavior graphically.

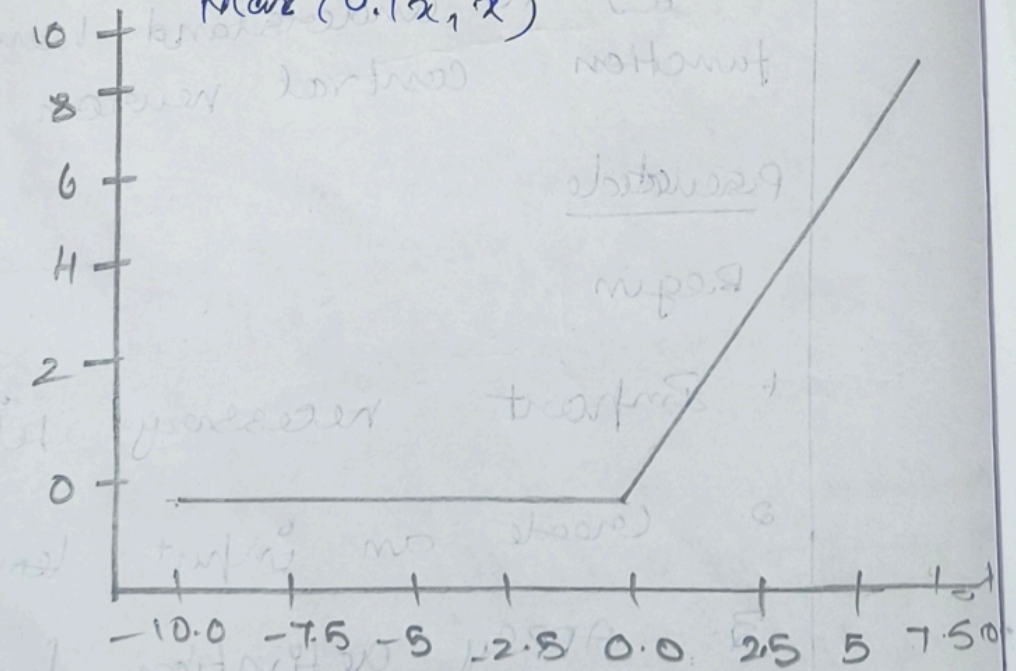
ReLU

Max(0, x)



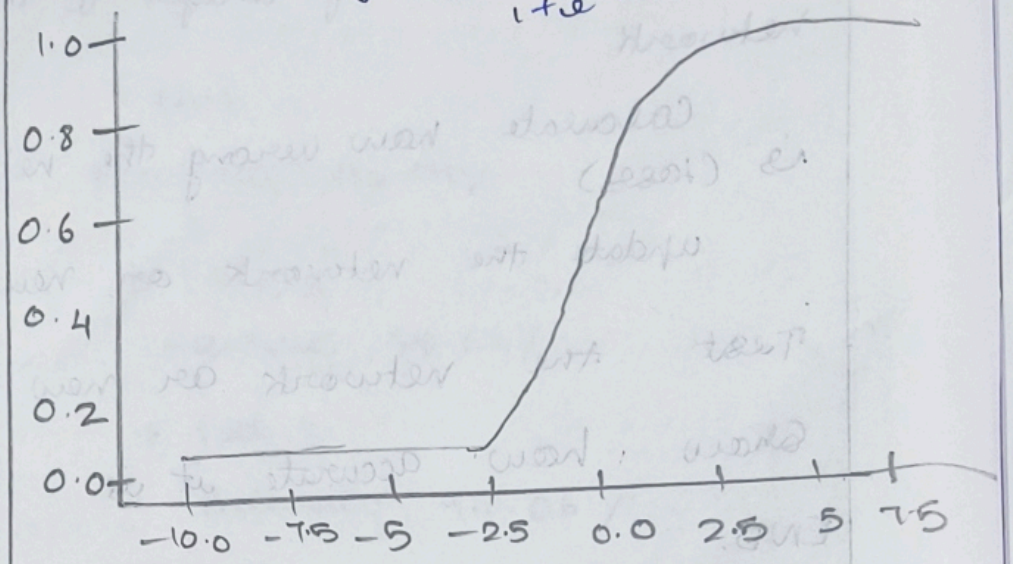

Leaky ReLU

Max(0.1x, x)



Sigmoid.

$$\sigma(x) = \frac{1}{1+e^{-x}}$$




tanh

tanh(x)