|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Threshold*** | ***Learning rate*** | ***Input*** | ***Predicted output*** | ***Actual output*** | ***Weights (Bias,w1,w2)*** |
| 4 | 0.01 | [1,1]  [0,1] | 1  0 | 0  0 | [0. 0. 0.]  [-0.01 0. 0. ]  [-0.01 0.01 0. ]  [-0.02 0.01 0. ] |
| 5 | 0.01 | [1,1]  [0,1] | 1  0 | 1  0 | [0. 0. 0.]  [-0.01 0. 0. ]  [-0.01 0.01 0. ]  [-0.02 0.01 0. ]  [-0.02 0.01 0.01] |
| 6 | 0.01 | [1,1]  [0,1] | 1  0 | 1  0 | [0. 0. 0.]  [-0.01 0. 0. ]  [-0.01 0.01 0. ]  [-0.02 0.01 0. ]  [-0.02 0.01 0.01]  [-0.02 0.02 0.01] |
| 4 | 1 | [1,1]  [0,1] | 1  0 | 0  0 | [0. 0. 0.]  [-1. 0. 0.]  [-1. 1. 0.]  [-2. 1. 0.] |
| 5 | 1 | [1,1]  [0,1] | 1  0 | 1  0 | [0. 0. 0.]  [-1. 0. 0.]  [-1. 1. 0.]  [-2. 1. 0.]  [-2. 1. 1.] |
| 4 | 100 | [1,1]  [0,1] | 1  0 | 0  0 | [0. 0. 0.]  [-100. 0. 0.]  [-100. 100. 0.]  [-200. 100. 0.] |
| 5 | 100 | [1,1]  [0,1] | 1  0 | 1  0 | [0. 0. 0.]  [-100. 0. 0.]  [-100. 100. 0.]  [-200. 100. 0.]  [-200. 100. 100.] |
| 4 | 1000000 | [1,1]  [0,1] | 1  0 | 0  0 | [0. 0. 0.]  [-1000000. 0. 0.]  [-1000000. 1000000. 0.]  [-2000000. 1000000. 0.] |
| 5 | 1000000 | [1,1]  [0,1] | 1  0 | 1  0 | [0. 0. 0.]  [-1000000. 0. 0.]  [-1000000. 1000000. 0.]  [-2000000. 1000000. 0.]  [-2000000. 1000000. 1000000.] |

***Observations:***

* Threshold for AND is 5
* Upon increasing the Learning rate (too high), the ability of the model to predict the value might get lost. Simultaneously, upon decreasing the Learning rate (too less), the model might get slow in its prediction
* Also with increasing Learning rate, Bias decreases and Weights increases.