$b = 1$

x_1 0.1

0.2

x_2

$\alpha = 0.1$

model initialization

$b_{n+1} = b_n + \alpha(d_n - y_n)$

$w_{n+1} = w_n + \alpha x_n (d_n - y_n)$

update Rules

x_1	x_2	NAND.
0	0	1
0	1	1
1	0	1
1	1	0

Dataset

---

①   input = [0, 0] $d = 1$

$y = 0 \times 0.1 + 0 \times 0.2 + 1 = 1$

$b_{new} = 1 + 0.1(1-1) = \boxed{1}$

$w_{1\,new} = 0.1 + 0.1(0)(1-1) = \boxed{0.1}$

$w_{2\,new} = 0.2 + 0.1(0)(1-1) = \boxed{0.2}$

②   input = [0, 1] $d = 1$

$y = 0 \times 0.1 + 1 \times 0.2 + 1 = 1.2$

$b_{new} = 1 + 0.1(1-1.2) = \boxed{0.98}$

$w_{1\,new} = 0.1 + 0.1(0)(1-1.2) = \boxed{0.1}$

$w_{2\,new} = 0.2 + 0.1(1)(1-1.2) = \boxed{0.18}$

③   input = [1, 0] $d = 1$

$y = 0.1 \times 1 + 0.18 \times 0 + 0.98 = 1.08$

$b_{new} = 0.98 + 0.1(1-1.08) = \boxed{0.972}$

$w_{1\,new} = 0.1 + 0.1(1)(1-1.08) = \boxed{0.092}$

$w_{2\,new} = 0.18 + 0.1(0)(1-1.08) = \boxed{0.18}$

④ input = [.1 , 1]   d = 0

$y = 0.092 \times 1 + 0.18 \times 1 + 0.972 = 1.244$ ~~error~~

$b_{new} = 0.972 + 0.1(0 - 1.244) = 0.8476$

$W_{1new} = 0.092 + 0.1(1)(0 - 1.244) = ~~0.092~~ - 0.0324$

$W_{2new} = 0.18 + 0.1(1)(0 - 1.244) = 0.0556$