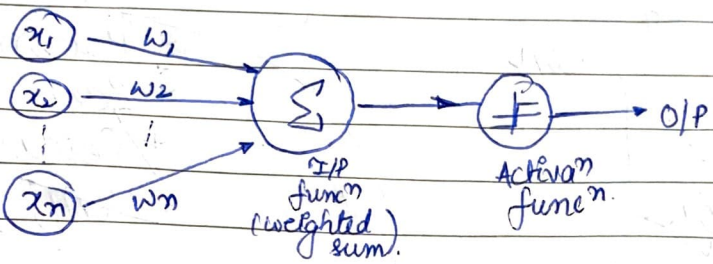
Perceptron → neural network unit, that can perform certain computations.

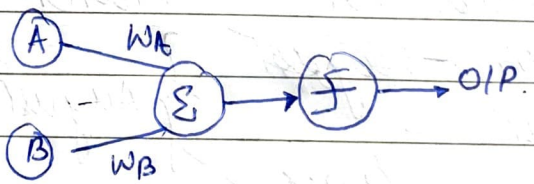


Perceptron usually classifies the data into two parts.
∴ Linear Binary classifier

Implement Gates

AND

A	B	A.B
0	0	0
0	1	0
1	0	0
1	1	1



$W_0 + AW_A + BW_B \rightarrow O/P$

$A_{max} = 1 \quad B_{max} = 1$

If $A = B \quad W_0 > -1 * (A)$

or $W_0 > -1 * (A + B)$ Eg. $-4 + 2A + 2B$.

$A < W_0 \quad B < W_0$

OR

A	B	A + B
0	0	0
0	1	1
1	0	1
1	1	1

Hence. $A > W_0$

$B > W_0$

~~$-3 + AW_A + B$~~

~~Eg $A + B - 1$~~

Eg $-1 + 2A + 2B = f(A, B)$

NOT

A	A'
0	1
1	0

Eg. $-(x_1 - 1) = f(x_1)$

~~if $f(x_1) < 0$ return 1~~

~~$f(x_1) = 0$ return 0~~

XOR

A	B	A ⊕ B
0	0	0
0	1	1
1	0	1
1	1	0

i.e. $A'B + B'A$

$= A'B + AB' + AA' + BB'$

$= A(B' + A') + B(A' + B')$

$= (A + B)(B' + A')$

$= (A + B)(AB)'$

XOR gate maybe achieved with a multilayer perceptron