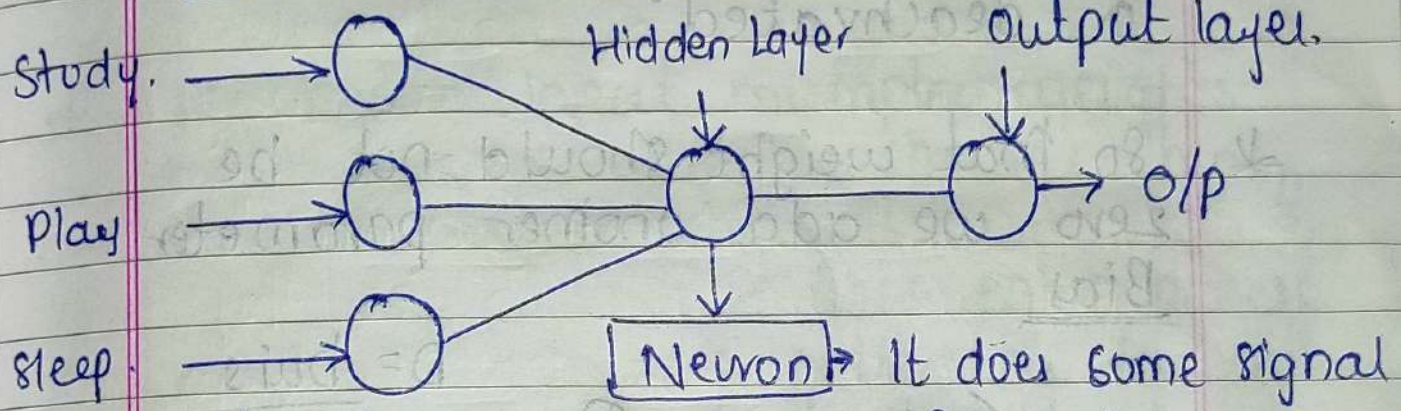
Deep Learning :

1. Perceptron : { Single Layer Neural Network }

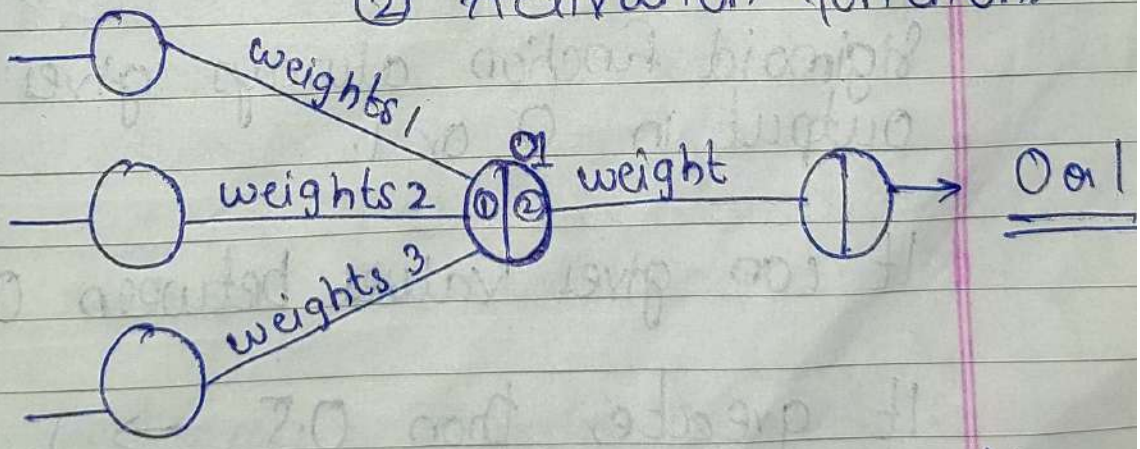


Dataset

Study	Play	Sleep	Pass/Fail.
7	3	7	1
2	5	8	0
4	3	7	1

Input to Hidden Layer.

① Input multiply by weights.
② Activation function.



① $\Sigma x_i w_i = x_1 w_1 + x_2 w_2 + x_3 w_3 + \text{bias}$

Weights:

→ Weights says that how much the neuron should get activated or deactivated

* So that weight should not be zero we add another parameter Bias

b = bais.

$y = \Sigma x_i w_i$ → ①.

Activation function → Act (y) → ②

① Sigimoid Act function : $\frac{1}{1+e^{-y}}$

$= \frac{1}{1+e^{-(\Sigma x_i w_i + b)}}$

= 0 or 1.

Sigimoid function always gives the output in 0 or 1.

It can gives values between 0 to 1

It greater than 0.5 → 1.
It less than 0.5 → 0

the main reason of the sigmoid Act function is to basically says that wheather this neuron is achivated or not

*. We took an input multipled weights ~~with the~~ we added with the bias and achivated → This entire process is called as forword propagation.

$\hat{y}$ = predicted value.
y = Truth value.
$y = 0 \quad y = 1.$

$(y - \hat{y}) = 1$ → loss function

↘ This difference where ~~the~~ near to 0

loss function

loss function bisically find out the difference between your predicted value and your real value.
And always the main aim is should be that we should try to minimize the difference.

The difference should be very much near to zero

Conculsion

1. I/p layer.
2. Weights.
3. Bias.
4. Activation function

} forward Propagation.

5. Loss function
6. optimizers.
7. updated the weight

} Backward Propagation