```
def activation(out,threshold):
    if out > threshold:
        return 1
    else:
        return 0

def perceptron(and_input):
    a = [0,0,1,1]
    b = [0,1,0,1]
    y = [0,1,1,1] # Actual Output
    w = [0.0,0.3]
    threshold = 0.4
    learning_rate = 0.5
    i=0
    print("Perceptron Training : ")

    print("-----------------")
    while i<4:
        summation = a[i]*w[0] + b[i]*w[1]
        o = activation(summation,threshold)
        print("Input : " + str(a[i]) +" , "+ str(b[i]))
        print("Weights : " + str(w[0]) +" , "+ str(w[1]))
        print("summation : "+str(summation) + " threshold :
"+str(threshold) )
        print("Actual Output : "+str(y[i])+" Predicated Output :
"+str(o))
        if(o!=y[i]):
            # w = w + learning_rate(actual_output -
predicated_output)*input
            print("_______\nUpdating Weights")
            w[0]=w[0]+learning_rate*(y[i]-o)*a[i]
            w[1]=w[1]+learning_rate*(y[i]-o)*b[i]
            print("Updated Weights : " + str(w[0]) +" , "+ str(w[1]))
            i = -1
            print("\nWeights Updated Training Again : ")

        i=i+1
        print("------------------")
    # Prediction Part
    summation = and_input[0]*w[0] + and_input[1]*w[1]
    return activation(summation,threshold)


or_input = [0,0]
print("OR GAte Output For "+str(or_input) + " : " +
str(perceptron(or_input)))
```

```
Perceptron Training :
-----------------
Input : 0 , 0
```

```
Weights : 0.0 , 0.3
summation : 0.0 threshold : 0.4
Actual Output : 0 Predicated Output : 0
------------------
Input : 0 , 1
Weights : 0.0 , 0.3
summation : 0.3 threshold : 0.4
Actual Output : 1 Predicated Output : 0
_______
Updating Weights
Updated Weights : 0.0 , 0.8

Weights Updated Training Again :
------------------
Input : 0 , 0
Weights : 0.0 , 0.8
summation : 0.0 threshold : 0.4
Actual Output : 0 Predicated Output : 0
------------------
Input : 0 , 1
Weights : 0.0 , 0.8
summation : 0.8 threshold : 0.4
Actual Output : 1 Predicated Output : 1
------------------
Input : 1 , 0
Weights : 0.0 , 0.8
summation : 0.0 threshold : 0.4
Actual Output : 1 Predicated Output : 0
_______
Updating Weights
Updated Weights : 0.5 , 0.8

Weights Updated Training Again :
------------------
Input : 0 , 0
Weights : 0.5 , 0.8
summation : 0.0 threshold : 0.4
Actual Output : 0 Predicated Output : 0
------------------
Input : 0 , 1
Weights : 0.5 , 0.8
summation : 0.8 threshold : 0.4
Actual Output : 1 Predicated Output : 1
------------------
Input : 1 , 0
Weights : 0.5 , 0.8
summation : 0.5 threshold : 0.4
Actual Output : 1 Predicated Output : 1
------------------
```

```
Input : 1 , 1
Weights : 0.5 , 0.8
summation : 1.3 threshold : 0.4
Actual Output : 1 Predicated Output : 1
------------------
OR GAte Output For [0, 0] : 0
```