```
import numpy as np
import matplotlib.pyplot as plt
x=[[1,1,1],[2,2,1],[3,3,1],[4,5,1],[5,4,1],[6,6,1],[8,7,1],[-2,3,1],[-1,4,1],[1,5,1],[3,6,1],[4,7,1],[2,8,1],[
5,9,1]]
x1=np.array([[1,1],[2,2],[3,3],[4,5],[5,4],[6,6],[8,7]])
x2=np.array([[-2,3],[-1,4],[1,5],[3,6],[4,7],[2,8],[5,9]])
p, q = x1.T
plt.scatter(p,q)
p, q = x2.T
plt.scatter(p,q)
y=[1,1,1,1,1,1,1,-1,-1,-1,-1,-1,-1,-1]
h=[0,0,0,0,0,0,0,0,0,0,0,0,0,0]
eta=0.1
a=[0,0,0,0,0,0,0,0,0,0,0,0,0,0]
#t=[0,1,1,1]  # OR
t=[1,1,1,1,1,1,1,0,0,0,0,0,0,0]
w=[12,-6,20]
flag=0
count=0
for k in range(50):

        for i in range(0,14):
        h[i]=0.0
        a[i]=0
        for j in range(0,3):

        h[i]+=(w[j]*x[i][j])
        # h = w*x
        if(h[i]>0.0):
        a[i]=1

        else:
        a[i]=0
        print("i:",i)
        print("h[]:",h[i])
        print("a[]:",a[i])
        if(t[i]!=a[i]):
        count=0
        print("iteration no: ",i)
        for j in  range(3):
                w[j]=w[j]-eta*(a[i]-t[i])*x[i][j]
                print("weight",j," :",w[j])
        if(t[i]==a[i]):
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        print("count:",i)
        count+=1
        if(count==22):
                flag=1
                break

        if(flag==1):
        print("final weight are :")
        print(w)
        print(a)
        break
print(w[0],"x+",w[1],"y+",w[2],"=0")
if(flag==1):
        x1=-w[2]/w[0]
        x2=10
        y1=0
        y2=-(w[0]*10 + w[2])/w[1]

        x=[x1,x2]
        y=[y1,y2]
        plt.plot(x,y)

        x=[x1,x2]
        y=[y1+1,y2+1]
        plt.plot(x,y)
        x=[x1,x2]
        y=[y1-1,y2-1]
        plt.plot(x,y)
        plt.show()
else:
        print("it does not find the correct weight:\n")
```