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import numpy as np
import pandas as pd

def nlinear(x, deriv=False):
    if (deriv==True):
        return x*(1-x)
    return 1/(1+np.exp(-x))

X=np.array([[0,0,1],[0,1,1],[1,0,1],[1,1,1]])
y=np.array([[0,0,1,1]]).T

np.random.seed(1)
synapse0=2*np.random.random((3,1))-1

for i in range(10000):
    layer0=X
    layer1=nlinear(np.dot(layer0, synapse0) )
    layer1_error=y-layer1
    layer1_delta=layer1_error * nlinear(layer1, True)
    synapse0 +=np.dot(layer0.T, layer1_delta)

print("Outputafter training")
print(layer1)
print ("Actual Output")
print(y)

```

```

Outputafter training
[[0.00966449]
 [0.00786506]
 [0.99358898]
 [0.99211957]]
Actual Output
[[0]
 [0]
 [1]
 [1]]

```

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