**AIM:** Write a program in Python to implement Madaline Neural Network in python language.

**CODE:**

**import** **numpy** **as** **np**

x=np.array([[1,1],[1,-1],[-1,1],[-1,-1]])

t=np.array([[1],[1],[1],[-1]])

w=np.array([[0],[0]])

b=0

theta=float(input("enter new theta "))

alpha=float(input("enter new alpha "))

yin=np.zeros(shape=(4,1))

y=np.zeros(shape=(4,1))

i=0

found=0

**while**(found==0):

yin=x[i][0]\*w[0]+x[i][1]\*w[1]

yin = yin+b

**if**(yin>theta):

y[i] = 1

**elif**(yin<=theta **and** yin>=-theta):

y[i]=0

**else**:

y[i]=-1

**if** (y[i]==t[i]):

print("NO UPDATION REQUIRED")

print(y[i])

**if**(i<3):

i=i+1

**else**:

i=0

**else**:

print("MODEL IS NOT TRAINED")

print("The value of output is ")

print(y)

w[0]=w[0]+alpha\*x[i][0]\*t[i]

w[1]=w[1]+alpha\*x[i][1]\*t[i]

b = b+alpha\*t[i]

**if**(i<3):

i=i+1

**else**:

i=0

**if**(y==t).all():

found=1

print("The final weight matrix is ")

print(w)

print("The final output is:")

print(y)

**OUTPUT:**

