# -\*- coding: utf-8 -\*-

"""

Created on Wed Nov 18 14:20:53 2020

@author: danny

"""

import matplotlib.pyplot as plt

import numpy as np

x = np.linspace(-6, 6, 100)

S = 1/(1 + np.exp(-x))

R=[]

for num in x:

if(num>0):

R.append(num)

else:

R.append(0)

R=np.array(R)

T=np.tanh(x)

plt.subplot(3,1,1)

plt.plot(x, S)

plt.xlabel("x")

plt.ylabel("Sigmoid(X)")

plt.subplot(3,1,2)

plt.plot(x, R)

plt.xlabel("x")

plt.ylabel("ReLU(X)")

plt.subplot(3,1,3)

plt.plot(x, T)

plt.xlabel("x")

plt.ylabel("Tanh(X)")

plt.show()

# -\*- coding: utf-8 -\*-

"""

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@author: danny

"""

def sensor(x1,x2,b):

if x1+x2+b<=0:

return 0

else:

return 1

x1=[0,0,1,1]

x2=[0,1,0,1]

for i in range(4):

h1=sensor(x1[i],x2[i],-0.5)

h2=sensor(x1[i],x2[i],-1.5)

o1=sensor(h1,-h2,-0.5)

print('(%d,%d)->%d'%(x1[i],x2[i],o1))