import random

def tanh(x):

    return (2 / (1 + exp(-2 \* x))) - 1

def exp(x, terms=10):

    """ Compute exponential using a Taylor series approximation """

    result = 1

    factorial = 1

    power = 1

    for i in range(1, terms):

        factorial \*= i

        power \*= x

        result += power / factorial

    return result

def forward\_pass(i1, i2, w, b1, b2):

    net\_h1 = w[0] \* i1 + w[1] \* i2 + b1

    net\_h2 = w[2] \* i1 + w[3] \* i2 + b1

    out\_h1 = tanh(net\_h1)

    out\_h2 = tanh(net\_h2)

    net\_o1 = w[4] \* out\_h1 + w[5] \* out\_h2 + b2

    net\_o2 = w[6] \* out\_h1 + w[7] \* out\_h2 + b2

    out\_o1 = tanh(net\_o1)

    out\_o2 = tanh(net\_o2)

    return out\_o1, out\_o2

i1, i2 = 0.05, 0.1

random.seed(42)

w = [random.uniform(-0.5, 0.5) for \_ in range(8)]

b1, b2 = 0.5, 0.7

o1, o2 = forward\_pass(i1, i2, w, b1, b2)

print("Output of the network:")

print("O1:", o1)

print("O2:", o2)