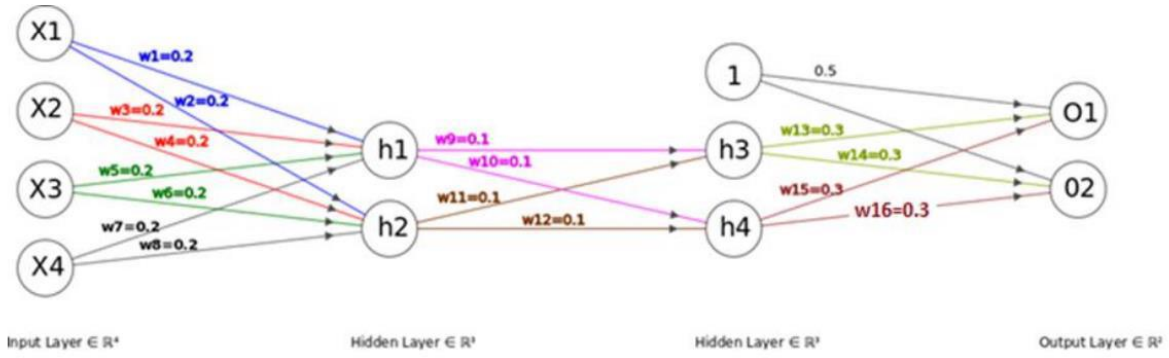

Calculate the output of the above neural network. Consider the following parameters:

x1 = (<SSID>/8964879)*23

x2 = (<SSID>/8964879)*32

x3 = (<SSID>/8964879)*56

x4 = (<SSID>/8964879)*48

Relu – Hidden layer

Sigmoid = Output layer

Step 1: Calculate Input Values

Given:

- SID = 2353465
- x1 = (SID / 8964879) * 23
- x2 = (SID / 8964879) * 32
- x3 = (SID / 8964879) * 56
- x4 = (SID / 8964879) * 48

First, compute the value of SID / 8964879:

SID/8964879 = 2353465/8964879

≈ 0.2625

Now, calculate the input values:

x1 = 0.2625∗23 ≈ 6.0375

x2 = 0.2625∗32 ≈ 8.4

x3 = 0.2625∗56 ≈ 14.7

x4 = 0.2625∗48 ≈ 12.6

Step 2: Calculate Hidden Layer 1 (H1 and H2)

We will use the perceptron formula:

$Z = b+\sum(wi*xi)$

For H1:

$zH1 = w1*x1+w3*x2+w5*x3+w7*x4$

$zH1 = 0.2*6.0375+0.2*8.4+0.2*14.7+0.2*12.6$

$zH1 = 8.3475$

Apply ReLU activation:

$H1 = \max(0, zH1) = \max(0, 8.3475) = 8.3475$

For H2:

$zH2 = w2*x1+w4*x2+w6*x3+w8*x4$

$zH2 = 0.2*6.0375+0.2*8.4+0.2*14.7+0.2*12.6$

$zH2 = 8.3475$

Apply ReLU activation:

$H2 = \max(0, zH2) = \max(0, 8.3475) = 8.3475$

Step 3: Calculate Hidden Layer 2 (H3 and H4)

For H3:

$zH3 = w9*H1+w11*H2$

$zH3 = 0.1*8.3475+0.1*8.3475$

$zH3 = 1.6695$

Apply ReLU activation:

$H3 = \max(0, zH3) = \max(0, 1.6695) = 1.6695$

For H4:

$zH4 = w10*H1+w12*H2$

$zH4 = 0.1*8.3475+0.1*8.3475$

$zH4 = 1.6695$

Apply ReLU activation:

$H4 = \max(0, zH4) = \max(0, 1.6695) = 1.6695$

Step 4: Calculate Output Layer (O1 and O2)

For O1:

$zO1 = w13 * H3 + w15 * H4 + 0.5$

$zO1 = 0.50085 + 0.50085 + 0.5$

$zO1 = 1.5017$

Apply Sigmoid activation:

$O1 = 1/1 + e^{(-zO1)} = 1/1 + e^{(-1.50171)} \approx 0.8176$

For O2:

$zO2 = w14 * H3 + w16 * H4 + 0.5$

$zO2 = 0.3 * 1.6695 + 0.3 * 1.6695 + 0.5$

$zO2 = 0.50085 + 0.50085 + 0.5$

$zO2 = 1.5017$

Apply Sigmoid activation:

$O2 = 1/1 + e^{(-zO1)} = 1/1 + e^{(-1.50171)} \approx 0.8176$

Final Output

The final output of the neural network is:

$O1 \approx 0.8176$

$O2 \approx 0.8176$

This means that the neural network, given the inputs and weights, produces outputs O1 and O2 both equal to 0.8176.