A diagram of a network

Description automatically generated

**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+∑(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 = *w*2∗*x*1+*w*4∗*x*2+*w*6∗*x*3+*w*8∗*x*4

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 = *w*10∗*H*1+*w*12∗*H*2

zH4 = 0.1∗8.3475+0.1∗8.3475

zH4 = 1.6695

Apply ReLU activation:

H4 = max (0, *zH*4​) = max (0, 1.6695) = 1.6695

**Step 4: Calculate Output Layer (O1 and O2)**

For O1:

zO1 = w13∗H3+w15∗H4+0.5

*zO*1 ​=0.50085+0.50085+0.5

zO1 ​= 1.5017

Apply Sigmoid activation:

O1 = 1/1+*e^(*−*zO*1​)​ = 1/1+*e^ (*−1.50171) ​≈ 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^(*−*zO*1​)​ = 1/1+*e^ (*−1.50171) ​≈ 0.8176

**Final Output**

The final output of the neural network is:

O1 ≈ 0.8176

O2 ≈ 0.8176

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