```
Enter learning rate: 0.5
Enter target error: 0.1
Initial Weight (Input Layer):
 [[-0.16595599  0.44064899 -0.99977125 -0.39533485]
 [-0.70648822 -0.81532281 -0.62747958 -0.30887855]
 [-0.20646505  0.07763347 -0.16161097  0.370439  ]]
Initial Weight (Hidden Layer):
 [[-0.5910955 ]
 [ 0.75623487]
 [-0.94522481]
 [ 0.34093502]]
Initial Error: 0.49641003190272537
Error: 0.39527761406928297
Error: 0.18579401038812804
Error: 0.09990445399515975
 <<< Target Error Reached >>>
 <<< 1405 Iteration(s) >>>
Final Weight (Input Layer):
 [[ 1.76066849  1.49894451 -4.7815697  -2.71420051]
 [ 0.00783878 -3.64974568 -5.00066298 -1.44712004]
 [-0.16319333 -0.56438111  1.58651463  2.78608901]]
Final Weight (Hidden Layer):
 [[-3.9347918 ]
 [ 4.41748838]
 [-8.71124015]
 [ 5.28699838]]
Final Error:
 [[-0.07891216]
 [ 0.1033105 ]
 [ 0.09153806]
 [-0.12585709]]
Final Result:
 [[0.07891216]
 [0.8966895 ]
 [0.90846194]
 [0.12585709]]
```

Learn Rate = 0.5, Target Error = 0.1

```
Enter learning rate: 0.5
Enter target error: 0.2
Initial Weight (Input Layer):
 [[-0.16595599  0.44064899 -0.99977125 -0.39533485]
 [-0.70648822 -0.81532281 -0.62747958 -0.30887855]
 [-0.20646505  0.07763347 -0.16161097  0.370439  ]]
Initial Weight (Hidden Layer):
 [[-0.5910955 ]
 [ 0.75623487]
 [-0.94522481]
 [ 0.34093502]]
Initial Error: 0.49641003190272537
Error: 0.39527761406928297
Error: 0.19974732685619512
 <<< Target Error Reached >>>
 <<< 965 Iteration(s) >>>
Final Weight (Input Layer):
 [[ 1.17671317  0.92281148 -4.28845809 -2.35221805]
 [ 0.20664556 -3.05524462 -4.49933746 -0.91369117]
 [-0.02856917 -0.25854698  1.14905419  1.89325557]]
Final Weight (Hidden Layer):
 [[-2.68232056]
 [ 3.41894394]
 [-7.16794234]
 [ 4.02219374]]
Final Error:
 [[-0.14437776]
 [ 0.20733272]
 [ 0.18529452]
 [-0.26198431]]
Final Result:
 [[0.14437776]
 [0.79266728]
 [0.81470548]
 [0.26198431]]
```

Learn Rate = 0.5, Target Error = 0.2

```
Enter learning rate: 2
Enter target error: 0.1
Initial Weight (Input Layer):
 [[-0.16595599  0.44064899 -0.99977125 -0.39533485]
 [-0.70648822 -0.81532281 -0.62747958 -0.30887855]
 [-0.20646505  0.07763347 -0.16161097  0.370439  ]]
Initial Weight (Hidden Layer):
 [[-0.5910955 ]
 [ 0.75623487]
 [-0.94522481]
 [ 0.34093502]]
Initial Error: 0.49641003190272537
Error: 0.09984054970319889
 <<< Target Error Reached >>>
 <<< 199 Iteration(s) >>>
Final Weight (Input Layer):
 [[ 2.36609971  3.71572848 -5.93620686 -4.39584461]
 [-0.24596879 -5.73546422 -6.17995006 -0.60864452]
 [-0.21035949 -1.61966693  2.1988943   2.67958459]]
Final Weight (Hidden Layer):
 [[-2.71798379]
 [ 4.76861563]
 [-6.26485976]
 [ 3.79096074]]
Final Error:
 [[-0.07445059]
 [ 0.09969575]
 [ 0.09599839]
 [-0.12921747]]
Final Result:
 [[0.07445059]
 [0.90030425]
 [0.90400161]
 [0.12921747]]
```

Learn Rate = 2, Target Error = 0.1

All outputs are slightly more accurate except for the 4th, which worsened.

Higher learn rate, fewer iterations needed.

```
Enter learning rate: 0.4
Enter target error: 0.2
Initial Weight (Input Layer):
 [[-0.16595599  0.44064899 -0.99977125 -0.39533485]
 [-0.70648822 -0.81532281 -0.62747958 -0.30887855]
 [-0.20646505  0.07763347 -0.16161097  0.370439  ]]
Initial Weight (Hidden Layer):
 [[-0.5910955 ]
 [ 0.75623487]
 [-0.94522481]
 [ 0.34093502]]
Initial Error: 0.49641003190272537
Error: 0.44726012578882535
Error: 0.32989993016511354
Error: 0.19978296499256537
 <<< Target Error Reached >>>
 <<< 1360 Iteration(s) >>>
Final Weight (Input Layer):
 [[ 1.13034714  0.77278577 -4.14552364 -2.21720746]
 [ 0.20899178 -2.86211556 -4.33750932 -0.91843779]
 [-0.02168167 -0.19660176  1.04928395  1.81346766]]
Final Weight (Hidden Layer):
 [[-2.8605005 ]
 [ 3.50731798]
 [-7.56726323]
 [ 4.25823789]]
Final Error:
 [[-0.14475218]
 [ 0.20681112]
 [ 0.18659766]
 [-0.26097091]]
Final Result:
 [[0.14475218]
 [0.79318888]
 [0.81340234]
 [0.26097091]]
```

Learn Rate = 0.4, Target Error = 0.2

All outputs are slightly more accurate except for the 1st, which worsened.

Lower learn rate, more iterations needed.

```
Enter learning rate: 1
Enter target error: 0
Initial Weight (Input Layer):
 [[-0.16595599  0.44064899 -0.99977125 -0.39533485]
 [-0.70648822 -0.81532281 -0.62747958 -0.30887855]
 [-0.20646505  0.07763347 -0.16161097  0.370439  ]]
Initial Weight (Hidden Layer):
 [[-0.5910955 ]
 [ 0.75623487]
 [-0.94522481]
 [ 0.34093502]]
Initial Error: 0.49641003190272537

 <<< 60000 Iteration(s) >>>
Final Weight (Input Layer):
 [[ 4.6013571   4.17197193 -6.30956245 -4.19745118]
 [-2.58413484 -5.81447929 -6.60793435 -3.68396123]
 [ 0.97538679 -2.02685775  2.52949751  5.84371739]]
Final Weight (Hidden Layer):
 [[ -6.96765763]
 [  7.14101949]
 [-10.31917382]
 [  7.86128405]]
Final Error:
 [[-0.00260572]
 [ 0.00327791]
 [ 0.00298289]
 [-0.00386759]]
Final Result:
 [[0.00260572]
 [0.99672209]
 [0.99701711]
 [0.00386759]]
```

Learn Rate = 1, Target Error = 0

Maximum number of iterations reached (60000)