Assignment - 3

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manual calculations :

step-1 : $m=1,\ c=-1\ \ \eta=0.1, x, y$

epoches = 2, ns = 2

step-2 : iter = 1

step-3 : sample = 1

step-4 : $\frac{\partial E}{\partial m} = -(3.4-11)(0.2)-(-1)]0.$

$= -0.84$

$\frac{\partial E}{\partial c} = -(3.4-(1)(0.2)+1)$

$= -4.2$

step-5 : $\Delta m = -(0.1)(-0.84)$

$= 0.084$

$\Delta c = -0.1(-4.2)$

$= 0.42$

step-6 : $m = m+\Delta m = 1+0.084 = 1.084$

$c = c+\Delta c = -1+0.42 = -0.58$

step-7 : sample = sample+1

= 1+1 = 2.

step-8 : if (sample > ns) (2 > 2)

goto step 9

else

goto step 4

step-4 : $\frac{\partial E}{\partial m} = -(3.8 - (1.084)(0.4) + 0.58)) \times 0.4$

$= -1.5785$

$\frac{\partial E}{\partial c} = -(3.8 - (1.084)(0.4) + 0.58)$

$= -3.9464$

step-5 : $\Delta m = -(0.1)(-1.5785) = 0.1578$

$\Delta C = -(0.1)(-3.9464) = 0.3946$

step-6 : $m = m + \Delta m = 1.084 + 0.1578 = 1.2418$

$C = C + \Delta C = -0.58 + 0.3946 = -0.1854$

step-7 ; sample = sample+1

= 2+1

= 3

step-8 : if (sample > ns) (3 > 2)

goto step 9

else

goto step 4

Step-9 iter = iter+1

= 1+1 = 2

Step-10 : if (iter > epoches) (2>2)

goto step 11

else goto step 3

Step-3 : sample = 1

Step-4 : $\frac{\partial E}{\partial m} = -(3.4-(1.2)(0.2)+0.18)0.2$

$= -(3.4-0.24+0.18)0.2$

$= -(3.34)0.2$

$= -0.668$

$\frac{\partial E}{\partial c} = -(3.4-(1.2)(0.2)+0.18)$

$= -3.34$

Step-5 : $\Delta m = -(0.1)(-0.668)$

$= 0.066$

$\Delta c = -(0.1)(-3.34)$

$= 0.33$

Step-6 : $m = m+\Delta m = 1.24+0.066 = 1.3$

$c = c+\Delta c = -0.18+0.33 = 0.15$

step :-7 sample = sample + 1

= 1 + 1 = 2

step-8 if (sample > ns) (2 > 2)

goto step 9

else

goto step 4

step-4 :- $\frac{\partial E}{\partial m} = -(3.8 - (1.3)(0.4) - 0.15)0.4$

$= -(3.8 - 0.52 - 0.15)0.4$

$= -1.25$

$\frac{\partial E}{\partial C} = -(3.8 - (1.3)(0.4) - 0.15)$

$= -3.13$

step-5 :- $\Delta m = -(0.1)(-1.25)$

$= 0.12$

$\Delta C = -(0.1)(-3.13)$

$= 0.31$

step-6 : $m = m + \Delta m = 1.3 + 0.12 = 1.42$

$C = C + \Delta C = 0.15 + 0.31 = 0.46$

step-7 : sample = sample + 1

= 2 + 1 = 3

Step: 8 if (sample > ns) (3 > 2)

goto step 9

else

step 4

Step-9 : iter = iter + 1

= 2 + 1

= 3

Step-10 : if (iter > epoches)

3 > 2

Goto step 11

else

goto step 3

Step 11 :- print m & c

m = 1.42 , c = 0.46