Assignment - 9

X	Y
0.2	2.4
0.4	3.8

Step-1: $m = 1,\ c = 0.1,\ \eta = 0.1,\ \text{epoch} = 2,\ \gamma = 0.9,$

$V_m = V_c = 0.$

Step-2: iter = 1

Step-3: sample = 1

Step-4: $g_m = \frac{\partial E}{\partial m} = -(y_i - mx_i - c)x_i = -0.84$

$g_c = -\frac{\partial E}{\partial c} = -(y_i - mx_i - c) = -4.2$

Step-5: ~~$m = m + V_m = 1 - 0.84 = 1.084$~~

$c = c + V.$

Step-5 $V_m = \gamma V_m - \eta g_m = 0.084.$

$V_c = \gamma V_c - \eta g_c = 0.42$

Step-6: $m = m + V_m = 1 + 0.084 = 1.084$

$c = c + V_c = -1 + 0.42 = -0.58.$

Step-7: $s = s + 1 = 1 + 1 = 2.$

$(2 > 2)$ x → Step-4

Step-4: $g_m = \frac{\partial E}{\partial m} = -1.57$

$g_c = \frac{\partial E}{\partial c} = -(y_2 - mx_2 - c) = -3.9464$

Step-5: $V_m = 0,\ V_c = 0.$

Step-6: $m = 0.233,\ c = 0.792$

Step-7: $s = s+1 = 2+1 = 3$

$(3 > 2)$ ✓ goto next step

Step-8: $iter = iter+1 = 1+1 = 2$

$(2 > 2)$ ×

Step-8: Sample = 1

Step-4: $g_m = \frac{\partial E}{\partial c} = -(y_1 - mx_1 - c)x_1 = -0.588.$

$g_c = -2.9438.$

Step-5: $v_m = 0.2689$

$v_c = 0.9897$

Step-6: $m = m + v_m = 1.586$

$c = c + v_c = 1.182$

Step-7: $s = s+1 = 1+1 = 2$

$(2 > 2)$ ×

Step-4: $g_m = -(y_2 - mx_2 - c)x_2 = -0.71$

$g_c = -1.9830.$

Step-5: $v_m = 0.3214$

$v_c = 1.0690$

Step-6: $m = m + v_m = 1.9078$

$c = c + v_c = 2.2714$

Step-7: $s = s+1 = 3 > 2$ (next step.

Step-8: $iter = iter+1 = 2+1 = 3 > 2$ (next step)