Assignment - 7

Date	Time	Load (kW)
01/09/18	0:00	5551.822
01/09/18	1:00	4983.172

Since, the load has to predicted based on the same hour load in the previous day, the dataset has to be modified

Day-1 (x)	Day-2 (Y)
5551.82008	4931.26380
4983.17184	4975.53968

Step 1:- Read dataset, $\eta = 0.1$, epochs = 2, $m = 1$, $c = -1$, $\gamma = 0.9$, $V_m = 0$, and $V_c = 0$

Step 2:- Set iteration = 1

Step 3:- set sample i = 1

Step 4:- $y = (1)(5551.82208) \cdot 1 = 5550.82208$

Step 5:- $\frac{\partial E}{\partial m} = -(4931.26380 - 1(5551.82208) + 1)$

$* 5551.82208$

$$\frac{\partial E}{\partial m} = 34396771.338750$$

$$\frac{\partial E}{\partial c} = -(4931.26380 - 1(5551.82208) + 1)$$

$$\frac{\partial E}{\partial c} = 619.55828$$

Step 6: $v_m = 0.9(0) - (0.1)(3439677.338750)$

$v_m = -343967.733875$

$v_c = 0.9(0) - (0.1)(619.55828)$

$v_c = -61.95583$

Step 7: $m = 1 + (-34967.733875)$

$= -343966.733875$

$c = -1 + (-61.95583)$

$= -62.95583$

Step 8: Sample $i = 1+1 = 2$

Step 9: $y = (-343966.734)(4983.17184) + (62.95538)$

$y = -1714045405.72$

Step 10: $\frac{\partial E}{\partial m} = -(4775.53968 - (343966.734)(4983.17184) - (-62.95583))(4983.17184)$

$\frac{\partial E}{\partial m} = 8541406595607.112$

$\frac{\partial E}{\partial c} = -17140501181.261$

Step 11: $v_m = 0.9(-343967.734) - (0.1)(-8541406595607.112)$

$v_m = -8541409691131.67$

$v_c = 0.9(61.95583) - (0.1)(-17140501181.261)$

$v_c = -1714050173.88634$

Step 12: $m = -343966.734 - 8541409691131.67$

$m = -8541413130984$

$c = -62.95583$

Step-13: Iteration+1 = 2, Sample = 1

Step14: $y = (-8541413130 98.4)(5551.82208) + (-62.95583)$

$y = -4.74204060 14E15$

Step15: $\frac{\partial E}{\partial m} = -(4931.26380 + 4.74204060 14E15)(5551.82208)$

$= -2.63026965 7156E19$

$\frac{\partial E}{\partial c} = -4.74204060 150E15$

Step-16: $V_m = (0.9)(-8541409691 31.67) - (0.1)$

$(-2.63269657 156E19)$

$= 2.6326958e18$

$V_c = (0.9)(-1714050 73.88634) - (0.1)(4.74204060 150E$

$= 4.74203906E14$

Step17: $m = -8541413130 98.4 + 2.6326958E18$

$= 2.63269495E18$

$c = -62.95583 + 4.74203906E14$

$= 4.74203906E14$

Step-18: Sample = i+1 = 2

Step-19: $y = 1.31191718E22$

Step-20: $\frac{\partial E}{\partial m} = -((4775.53968 - (2.63269495E18)(4983.17184)$

$-(4983.17184)(4.74203906E14)$

$= -6.53750875E25$

$\frac{\partial E}{\partial c} = -(4775.53968 - 1.31191718E22)$

$= -1.31191718E22$

Step 21: $v_m = (0.9)(2.63269458E18) - (0.1)(-6.535708752E25)$

$= 6.537511112E24$

$v_c = (0.9)(4.742039006E14) - (0.1)(-1.311917818E22)$

$= 1.311917761e21$

Step 22: $m = 2.632694958E18 + 6.537511112E24$

$m = 6.537513775E24$

$C = 4.742039006E14 + 1.311917761E21$

$\boxed{C = 1.311918008E21}$