Assignment – 7A

Data	Time	load (kW)
01.09.2018	0.00	5551.822
01.09.2018	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)
5551.82208	4931.26380
4983.17184	4775.53968

step1: Read dataset, $\eta = 0.1$, epochs = 2, $m = 1, c = -1, V = 0.9$

$$V_m = 0 \ \& \ V_c = 0$$

step2: set iteration = 1

step3: set sample i = 1

step4: $Y = (1)(5551.82208) - 1 = 5550.82208$

step5: $\dfrac{\partial E}{\partial m} = -(4931.26380 - 1(5551.82208) + 1) \ 5551.82208$

$$\dfrac{\partial E}{\partial m} = 3439677.33875 0$$

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

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

step6:- $V_m = 0.9(0) - (0.1)(34\,39677.338756)$

$V_m = -343967.733875$

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

$V_c = -61.95583$

step7:- $m = 1 + (-343967.733875) = -343966.733875$

$c = -1 + (-61.95583) = -62.95583$

step8:- sample $i = i+1 = 2$

step9:- $Y = (-343966.734)(4983.17184) + (-62.95583)$

$Y = -1714045405.72$

step10:- $\dfrac{rE}{rm} = -(4775.53968 - (-343966.734)(4983.17184) - (-62.95583))(4983.17184)$

$\dfrac{\delta E}{\delta m} = -(4775.53968 + 1714045405.79)(4983.17184)$

$\dfrac{\delta E}{\delta m} = -8541406595607.112$

$\dfrac{rE}{\delta c} = -1714050181.8961$

step11:- $V_m = 0.9(-343967.734) - (0.1)(-8541406595607.112)$

$V_m = -854140969131.67$

$V_c = 0.9(-61.95583) - (0.1)(-1714050181.961)$

$V_c = -171405073.88634$

step12:- $m = -343966.734 - 854140969131.67$

$m = -854141313098.4$

$c = -62.95583$

step13: Iteration $+1 = 2$, sample $= 1$

step14: $Y = (-854141313098.4)(5551.82208) + (-62.95583)$

$$Y = -4.742040606014E15$$

step15: $\dfrac{\delta E}{\delta m} = -(4931.96380 + 4.742040606014E15)$

$$(5551.82208)$$

$$= -2.63269657156E19$$

$$\dfrac{\delta E}{\delta c} = -4.742040606150E15$$

step16: $V_m = (0.9)(-854146969131.67) - (0.1)$

$$(-2.63269657156E19)$$

$$= 2.6326958e18$$

$V_c = (0.9)(-171465073.88634) - (0.1)(-4.742040606150E15)$

$$= 4.742039066E14$$

step17: $m = -854141313098.4 + 2.6326958E18$

$$= 2.63269495E18$$

$C = -62.95583 + 4.742039066E14$

$$= 4.742039066e14$$

step18: sample $= i+1 = 2$

step19: $Y = (2.63269495E18)/(4983.17184) + 4.742039066E14$

$$Y = 1.31191718E22$$

step20: $\dfrac{\delta E}{\delta m} = -((4775.53968 - (2.63269495E18)(4983.17184)$

$$-4.74203906E14))$$

$$(4983.17184)$$

$$= -(4775.53968 - 1.31191718E22)(4983.17184)$$

$$= -6537508 75E25$$

$\dfrac{\delta E}{\delta c} = -(4775.53968 - 1.31191718E22)$

$$= -1.31191718E22$$

step21: $V_m = (0.9)(2.63269 58E18) - (0.1)(-6.53750875E25)$

$$= 6.53751112E24$$

$V_c = (0.9)(4.74203906E14) - (0.1)(-1.31191718E22)$

$$= 1.31191761E21$$

step 22: $m = 2.63269495E18 + 6.53751112E24$

$$\boxed{m = 6.53751375E24}$$

$c = 4.74203906E14 + 1.31191761E21$

$$\boxed{c = 1.31191808E21}$$