Assignment :- 5 Caculations

① Read data Given [x_1 x_2 x_3 y]

L[T-2]	L[T-2]	L[T-1]	L[T]
5551.82	4983.17	4883.39	5072.95
4983.171	4888.39	5672.9	5196.25

② Data preprocessing. using norm -alisation.

L[T-3]	L[T-2]	L[T-1]	L[T]
0.391	0.293	0.276	0.310
0.293	0.276	0.310	0.332

③ Initialisation $m_1 = 1$; $m_2 = 1$ $m_3 = 1$

max iteration = 1000 eta = 0.1

epcons = 1

④ Set iter = 1

⑤ Set iter = sample = 1

⑥ x_1 = data[L'[T-3]] x_2 = data i'(T-2]

x_3 = data (L(T-1]] y = data (L[T]]

$$\frac{dE}{dm_1} = -(y_1 - m_1x_1 - m_2x_2 - m_3x_3 - c)x_1$$

$$= -0.1365.68$$

$$\frac{dE}{dm_2} = -(y - m_1x_1^i + m_2x_2^i - c)x_2^i$$

$$= -(0.310 - 1(0.391 - 1(0.293).$$

$$-(0.276) + 1)0.293$$

$$\frac{dE}{dm_3} = 0.0949$$

$$\frac{dE}{dc} = -(y - m_1 x_1^i - m_2 x_2^i - m_3 x_3^i - c)$$

$$= -(0.310 - 1(0.397) - 1(0.293) - 1(0.276) + 1$$

$$= -0.344$$

④ $\Delta m_1 = -\eta \frac{dE}{dm_1} = -0.1(-0.136) = 0.0136$

$\Delta m_2 = 0.01 \quad ; \Delta m_3 = 9.4 \times 10^{-3}$

$\Delta c = -\eta \frac{dE}{dc} = 0.0344$

⑧ $m_1 = m_1 + \Delta m_1 = 1 + 0.0136 = 1.0136$

$m_2 = 1.01 \; ; \; m_3 = 1.0094$

$c = c + \Delta c = -1 + 0.0344 = 0.9656$

⑨ Sample (i) = Sample(i) + 1

$i = 1 + 1 = 2$

⑩ if (sample $\leq$ n8)

if ($2 \leq 2$) T -> step ⑥

Stop sample = 3

Repeat all steps

$\frac{dE}{dm_1} =$ ~~0.0205~~

⑪ stop. . . .