Assignment 2

1BM19AI093

step 1: $x = [0.2, 0.4, 0.6, 0.8, 1.0, 1.2]$

$y = [3.4, 3.8, 4.2, 4.6, 5.0, 5.4]$

$m = 1, \quad c = 1$

learning rate $= 0.01$ (η)

step 2 epoch ①

gradient $m = -[(y_1 - m_1 x_1 - c) x_1 + (y_2 - m x_2 - c) x_2$

$(y_6 - m x_6 - c) x_6]$

$= -3.4066$

gradient $c = -4.6919$

step 3: $\Delta m = 0.034066 = -1 * \text{learning rate} * \text{gradient } m$

$\Delta c = 0.04699$

step 4: $m = m + \Delta m = 1.03066$

$c = c + \Delta c = 0.953$

step 5: epoch ++ (epoch 2)

step 6: $grad_m = -3.3530$

$grad_c = -4.6295$

step 7: $\Delta m = 0.03353$

$\Delta c = 0.046299$

step 8: $m = 1.066759$

$c = -0.9067084$