Assignment:-4 manual calculations.

Data	X	Y
	7.6	157
	7.1	174

Equ $y = mx+c$

step① :- intialize $m=1$, $c=1$, epochs=0

$\eta = 0.1$; $ns=2$

step② :- inter = 1

step③ :- sample = 1

step④ :- $\frac{dE}{dm} = -(y-mx-c)\,x_i$

$= -(157) - (1)(7.6) - (-1)\,7.6$

$= -(150.4)\,7.6 = 1143.04$

$\frac{dE}{dc} = -(y-mx-c)$

$= -(150.4)$

step⑤ :- $\Delta m = -\eta\left(\frac{dE}{dm}\right) = -(0.1)(-1143.04)$

$= 114.3$

$\Delta c = -\eta\left(\frac{dE}{dc}\right) = -(0.1)\,(-150.4)$

$= 15.04$

step⑥ :- $m = m + \Delta m = 1 + 114.3$

$= 115.3$

$c = c + \Delta c = -1 + 15.04 = 14.04$

Step⑦. sample = 1

step⑧ : If (i<=ns) → true go to step④

step⑨ $\frac{dE}{dm} = -(y - mx - c)x$

$= -(174 - (115.3)(7.1) - 14.04)7.1$

$= 4676.5$

$\frac{dE}{dc} = -(y - mx - c)$

$= -(174 - (115.3)(7.1) - 14.04)$

$= 658.67$

step⑤ : $\Delta m = -\eta\left(\frac{dE}{dm}\right) = -(0.1)(4675.8)$

$= 467.65$

$\Delta c = -\eta\left(\frac{dE}{dm}\right) = -(0.1)(658.67)$

$= -65.8$

step⑥ $m = m + \Delta m = 115.3 - 467.65$

$= -352.35$

$c = c + \Delta c = 14.04 - 65.8$

$= -51.76$

step⑦ Sample = 1 (Sample = 3)

i<=2

step⑧ if (i<=ns) → False go to step9

step⑨ iter = 1 (iter=2)

step⑩ if (iter<=epochs)

→ go to true step?

Repeat all steps.....

step⑫ Deployment