# Assignment - CA

| price | Sqft_Living |
|---|---|
| 221900 | 1180 |
| 538000 | 2570 |
| 180000 | 770 |
| 604000 | 1960 |

1) $\eta = 0.01$, epochs = 1, m = 1 and c = 1, n = 4

2) Iteration = 1, batch i = 1

3) $\frac{\partial \epsilon}{\partial m} = -(0.5)[(221900 - 1*1180+1)*1180 + (538000 - 1*2570+1)*2570] = -318254225.$

$\frac{\partial \epsilon}{\partial c} = -0.5(756154) = -378076$

4) $\Delta m = -(0.1)(-318254225) = 31825422.5$

$\Delta c = 37807.6$

5) $m = 1 + 31825422.5 = 31825423.5$ & $c = 37806.6$

6) batch i = 1+1 = 2

Repeat 3: $\frac{\partial \epsilon}{\partial m} = -(0.5)[(180000 - 31825423.5*770 - 37806.6)*770 + (604000 - 31825423.5*1960 - 37806.6)*1960] = 1.5526607e^{14}.$

$\frac{\partial \epsilon}{\partial c} = -0.5(-1.6667993e^{11}) = 8.333997e^{10}$

Repeat 4: $\Delta m = -0.1(1.5526607e^{14}) = -1.5526607e^{13}$

$\Delta c = -8.333997e^{9}$.

Repeat 5: $m = -1.5526522e^{13}$.

$c = -8.332957e^{9}$.