NNDL ASSIGNMENT 18K41A04F3

$F(x) = x^4 + 3x^2 + 10$

$x = 2$, epochs $= 2$, $\eta = 0.1$, itr $= 1$

$$\frac{\partial F(x)}{\partial x} = 4x^3 + 6x$$

$x = 2$, $4(2)^3 + 6(2) = 44$

$$\Delta x = -\eta \frac{\partial F}{\partial x} = -0.1(44)$$

$$= -4.4$$

$$x = x + \Delta x = 2 - 4.4$$

$$= -2.4$$

$$itr = itr + 1 = 1 + 1 = 2$$

if $(2 > 2) \Rightarrow$ false

$$\frac{\partial f}{\partial x} = 4x^3 + 6x \Rightarrow 4(-2.4)^3 + 6(-2.4) = -69.$$

$$\Delta x = -0.1 \times -69.69 = 6.9$$

$$x = -2.4 + 6.9 = 4.5$$

$itr = itr + 1 \Rightarrow 2 + 1 = 3$

if $(3 > 2)$

true $x = 4.5$