~~ACCESS~~

18K41A04F6

NNDL - Assignment :-

$f(x) = x^4 + 3x^3 + 10$

at $x = 0$

$f(x) = 10$

Let, $x = 3$, $\eta = 0.001$, epoch = 2.

$$\left.\frac{\partial f(x)}{\partial x}\right|_{x=3} = 4x^3 + 6x = 4(3)^3 + 6(3)$$

$$= 126.$$

$$\Delta x = -\eta \times \left.\frac{\partial f(x)}{\partial x}\right|_{x=3}$$

$$= -(0.001) \times 126 = -0.126.$$

$$x = x + \Delta x = 3 - 0.126 = 2.874$$

$i = i + 1 = 1 + 1 = 2$

$2 > 2$ (x)

$$\left.\frac{\partial f(x)}{\partial x}\right|_{x=2.874} = 4x^3 + 6x = 4(2.874)^3 + 6(2.874)$$

$$= 112.199$$

$$\Delta x = -\eta \times \left.\frac{\partial f(x)}{\partial x}\right|_{x=2.874}$$

$$= -(0.001) \times 112.199 = -0.112$$

$$x = x + \Delta x = 2.874 - 0.112$$

$x = 2.762$

$i = i + 1 = 2 + 1 = 3$

$3 > 2$ (✓)

Continues - - - - - - -