(0.4.) (100 - 18K41A0502)

(eself Complexus)

det us constder a sample dataset have one input (x1) and one output (Y1) and number of samples 4. Develop a she model using nestror accelerated gradient (NAG) optimizer

Sampleti	x; a	yoa
1	0.2	3.4
Q	0.4	3.8
3	0.6	402
1	0.8	4.6

• Do manual calculations for a Herations with 1 st a sample $S-1: \{x,y\}, m=1, c=-1, \eta=0.1, epochs=2, \vartheta=0.9, \forall m=1,c=0, \ ns=2$

S-2: 1tr=1

S-3". sample=1

 $S-4.9 \text{ gm} = \frac{\partial E}{\partial M} = -(4.9 - (me8m)4e - (c+8vc)) de^{-(c+8vc)} de^{-(c+8vc)}$

$$gc = \frac{\partial E}{\partial c} = -(y_1 - (m + 8v_m) \cdot 4i - (c + 8c))$$

$$= -(3 \cdot 4 - (i + 0.9) \times 0) \cdot 0.00$$

$$= -(-1 + (0.9) \cdot 0)$$

$$= -4.2$$

5-5: Um = 8 Um - 29m) = (0.9) 0-(-0.1) x (-0.84) = -0.084

```
Dc = 80c - Ng c
                                                                                                                                                                                                   11-F1/3/MM2123A
                                   (0.9)(0) - (-0.1)(-4.2)
              Sander of Sample dataset base come septemble of a sumble dataset base come supplied to the same 
         S-6: m + = Vm

C+ = Ve = -t - 0.42

C+ = Ve = -t - 0.42

Solution below to be a solution by the solutio
                                                                                                              =-1.42 Doy (1)0/gmp8)
            S-t: sample += 1
                                                                   1+1=2
           CERP (cample>ns)
else monuel columbiant or of modelules burnon as.
0= S=m/ gotos-4
               S-4: gm = DE = - (3.8-(0.916+(0.9x-0.089)) -0.4-(-1.48+(0.98
                                                                                                            =-1.983
                                                                 9c = \frac{\partial E}{\partial c} = -4.959
            5-5: Vm=8Vm-ngm
                                                    = (019x-0084)-(-0.1x-1.983)
                                                               =-0.2739 ) - 1 (mot m) - 10 - 30 - 30
                                                           NC = (0+9x-0.42)- (0.1x-4.959)
                                                                                =0.8739
                5-6:m+=vm
                                                                           = 0.916-0.2739
                                                                                   =0.6421
                                                  Ctalc = -1.42-0.8739
                                                                                                -- - 202939
```

```
9-7: sample +=1
S-8: Ef (sample >ns)
        goto 3-11
- U. 08 50+ 638 0 - x P. 0) + PF & 0) - 8.8) - = 36 3 mp = 18-8
        go 6012+30122-5-1
5-3: Sample = 1
C-4: 2E = -(3.4-(0.642 + (0.9x0.2+3)) x 0.2-(-2.293+
               [78800-100-1-100-9x-0.273)x0.2)
          gm = -1.171
                            PP6200
          gc=dt=-5.859
fof8.1-xp.0)=54
5-5: Vm = gVm - ngm
                                   .008001 __
         =[10.9]x(-0.2+3)]-[-0.1x-1.81)
         =-0.3624 (PP62.0-)+PFP6.0=
      Vc = 208 -790
                                   3+8500-
        =(009)(-00843)-(-001)(-50859)
        = -103707
                                 J 1949. 1 =
 5-61, m += 2m
                                     6-4; sample += )
8+1=8
        = 0.6421+ (-003627)
         =6.2794
                                 (2000 of (sample 2013)
       Ct= Vc
                                 one date 2-d
          = -2.2939-1.3767
          = -3.6646
 S-7: sample f= 1
           1+1=2
```

S-8: Pt (cample >ns) goto s-9 che goto s-4 $S-429m = 2E = -(3.8 - (0.9 \times -0.3627)) \times 0.4$ (-3.6646+60.9) = -2.985 + EPG. 6.) - 9C= 2FC= - 7. 46450) + 643 + 0) - 4.8) - 35.0 St5: Vm = [0.9x0,3627]-[-0.1x-2.988] $V_{C} = \left[0.9 \times -1.3707\right] - \left[-0.1 \times 7.4645\right]$ < - 1.9800. 5-6: m+=Vm (18.1-x1.0-j-[(8+6.0-)x(p.0)]= =0.2974+(-0.6249) +93810-Je = 268 - 196 =-0.32+5 C+=VC=-3 06646-1.9860 =-4.6446. S-t's samplet =) (+680-)+1640-D= S-C-Pf (cample ons) elie goto 5-4

S-9: Ptr+=1

201=3

S-10: Pt (Atr>epochs)

goto s-4

else

goto s-3

S-11: print m, c

m=0.3245

Ez-4.6446,