**Quiz 3 Solution**

**Q1:**
Level 0
   Count of 0 = 4
   Count of 1 = 4
   Current Entropy is = 1.0
   Splitting on feature a3  with gain ratio 0.3836885465963443
Level 1
   Count of 0 = 0
   Count of 1 = 2
   Current Entropy is =  0.0
   Reached leaf Node
Level 1
   Count of 0 = 4
   Count of 1 = 2
   Current Entropy is = 0.9182958340544896
   Splitting on feature  a1 with gain ratio 0.274017542121281
Level 2
   Count of 0 = 2
   Count of 1 = 0
   Current Entropy is =  0.0
   Reached leaf Node
Level 2
   Count of 0 = 2
   Count of 1 = 2
   Current Entropy is = 1.0
   Splitting on feature  a2 with gain ratio 0.0
Level 3
   Count of 0 = 1
   Count of 1 = 1
   Current Entropy is = 1.0
   Splitting on feature  a4 with gain ratio 1.0
Level 4
   Count of 0 = 1
   Count of 1 = 0
   Current Entropy is =  0.0
   Reached leaf Node
Level 4
   Count of 0 = 0
   Count of 1 = 1
   Current Entropy is =  0.0
   Reached leaf Node
Level 3
   Count of 0 = 1

Count of 1 = 1
Current Entropy is = 1.0
Splitting on feature  a4 with gain ratio 1.0
Level 4
Count of 0 = 0
Count of 1 = 1
Current Entropy is =  0.0


**Q2**
w11=0.99
w12=0.99
w13=0.99
w21=0.99
w22=0.99
w23=0.99
v1=0.49
v2=0.49
v3=0.49