CSE341 PROJECT REPORT

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1. METHODS (10 POINTS)

Please explain how are you going to implement those functions in assembly language. You may list some key instructions you plan to use, or use pseudocode to illustrate your ideas. This question doesn't require any specific format. Just choose the most comfortable way to demonstrate your ideas to implement the desired functions.

readUserInput

store Centroid in register

store x of ten points in ArrayLeft

store y of ten points in ArrayRight

begin:

for(0 < ArrayLeft.length){

Take out data from ArrayLeft

Take out data from ArrayRight

Calculate Distance with centroid

left = left distance

right = right distance

if(left == right) continue;

if(left > right) {

    Store the point to Array cluster2

    RightIndex++;

}

    Else if(right > left){

Store the point to Cluster 1

LeftIndex++;

}

}

for(0 < LeftIndex){

Take out leftCluster[0]

Take out leftCluster[2] //these are X

Take out leftCluster[4]

……

Take out LeftCluster[1]

Take out LeftCluster[3] //these are Y

Take out LeftCluster[5]

……

X1Total = addTogetherX
Y1Total = addTogetherY
}

updatedCentroidX1 = X1Total / leftIndex
updatedCentroidY1 = Y1Total / RightIndex

for(0 < Right){

Take out RightCluster[0]

Take out RightCluster[2] //these are X

Take out RightCluster[4]

……

Take out RightCluster[1]

Take out RightCluster[3] //these are Y

Take out RightCluster[5]

……

X2Total = addTogetherX
Y2Total = addTogetherY
}

updatedCentroidX2 = X1Total / leftIndex
updatedCentroidY2 = Y1Total / RightIndex

clear leftIndex and RightIndex

if(firstTimeGoThrough) goto begin

else if(! firstTimeGoThrough) {

if(any one of the Centroid point is different from previous Centroid Points){

updated all the Centroid
goto begin

}
else
goto end

}

end:

…..

2. SYSTEM ROBUSTNESS (10 POINTS)

Please try to change the two data points to be chosen as the initial cluster centroids and test if your codes will still give the same clustering results or not. Please list the clustering results for three different combinations of two initial data points. (Each time you can randomly select two data points as the initial centroids.)

10 static non change Data Points Are:

A(2, 2) B(5, 3) C(1, 5) D(3, 3) E(2, 4) F(2, 1) G(4, 2) H(5, 1) I(6, 2) J(5, 2)

1) Centroids 1 A(2 , 2) Centroids 2 H(5 , 1)

The Final Cluster1 is: A(2 , 2) C(1 , 5) D(3 , 3) E(2 , 4) F (2 , 1)

The Final Cluster2 is: B(5 , 3) G(4 , 2) H(5 , 1) I(6 , 2) J(5 , 2)

The Final Centroids is: (2 , 3) (5 , 2)

2) Centroids 1 J(5 , 2) Centroids 2 C(1 , 5)

The Final Cluster1 is: A(2 , 2) B(5 , 3) D(3 , 3) F(2 , 1) G (4 , 2) H (5 , 1) I (6 , 2) J (5 , 2)

The Final Cluster2 is: C(1 , 5) E(2 , 4)

The Final Centroids is: (4 , 2) (1 , 4)

3) Centroids 1 E(2 , 4) Centroids 2 G(4 , 2)

The Final Cluster1 is: C (1 , 5) E (2 , 4)

The Final Cluster2 is: B(5 , 3) F(2 , 1) G(4 , 2) H(5 , 1) I(6 , 2) J(5 , 2)

The Final Centroids is: (1 , 4) (4 , 1)

No, different centroids will results different values in Cluster1 and Cluster2