

Fiche TD3

Exercise 1: HAC

- 1- Use single-link, complete-link, average-link agglomerative clustering and centroid to cluster the following 5 examples: $A = (2,5)$, $B = (3,4)$, $C = (5,8)$, $D = (6,2)$, $E = (7,3)$.
- 2- Draw a dendrogram for each method.
- 3- Plot these points and draw the different clusters for each technique.

Exercise 2: K-means

- 1- Use the k-means algorithm and Euclidean distance to cluster the following 8 samples into 3 clusters: $A_1(2,10)$, $A_2(2,5)$, $A_3(8,4)$, $A_4(5,8)$, $A_5(7,5)$, $A_6(6,4)$, $A_7(1,2)$, $A_8(4,9)$. Use the data points A_1 , A_4 , and A_7 as initial centroids for each cluster.
- 2- How many iterations are necessary to converge? Draw the results of each iteration.

Exercise 3 : DBSCAN

Apply the DBSCAN algorithm using the following parameters: radius = 1.9 and MinPts=4.

Specify the nature of each point and the obtained clusters.

