PATTERN RECOGNITION LAB
CSE 4214

LAB EXPERIMENT 5

IMPLEMENTING SINGLE AND COMPLETE LINK AGGLOMERATIVE CLUSTERING FOR GIVEN DISTANCE MATRIX.

SUBMITTED BY

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SECTION: B1

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Implementing single and complete link agglomerative clustering for given distance matrix.

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I. Objective

Objective of this experiment is to understand and implement single and complete link agglomerative clustering for given any distance matrix

II. Problem Description

Given distance matrix -

	A	B	C	D
A	0	1	4	5
B	1	0	2	6
C	4	2	0	3
D	5	6	3	0

Using single and complete link agglomerative clustering we need to group the data in the given distance matrix.
We also need to show the dendogram for the given data.

III. Step by Step Output

Iteration 1:

	AB	C	D
AB	0	2	5
C	2	0	3
D	5	3	0

Iteration 2:

	ABC	D
ABC	0	3
D	3	0

Iteration 3:

	ABCD
ABCD	3

These are the step by step output we have got from implemented agglomerative clustering matlab code - 'agglomerative_task_076'.
There are 4 single cluster - A,B,C and D in the given data. This matlab implementation of agglomerative clustering merges the 4 single clusters into a single cluster 'ABCD'.

IV. Dendogram

Dendogram of the given data

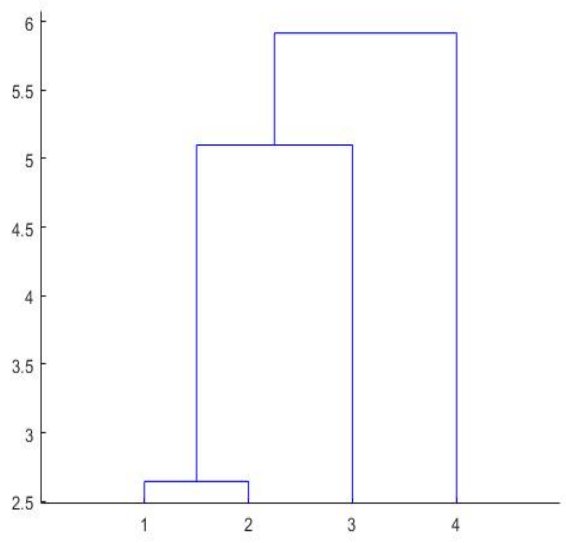

Fig. 1. Dendogram

Here, the numbers- 1,2,3,4 along x-axis defines the 4 cluster A,B,C,D respectively.

V. Conclusion

This matlab implementation of agglomerative clustering algorithm satisfies the result of agglomerative clustering of the given data. So, the agglomerative clustering algorithm is successfully implemented.