

Worksheet 6: Hierarchical clustering

Hierarchical Clustering

- Using the following dataset:

Point	x	y
A	0	0
B	1	1
C	3	0
D	0	1
E	2	2

with d = Euclidean, D = Single-Link, produce the distance matrix at every step of the hierarchical clustering algorithm.

- $() = \text{sqr root}$
- Step 1:

	A	B	C	D	E
A	0	(2)	3	1	(8)
B	(2)	0	(5)	1	(2)
C	3	(5)	0	(10)	(5)
D	1	1	(10)	0	(5)
E	(8)	(2)	(5)	(5)	0

Step 2

	{A, D}	B	C	E
{A, D}	0	1	3	(5)
B	1	0	(5)	(2)
C	3	(5)	0	(5)
E	(5)	(2)	(5)	0

Step 3

	{A, B, D}	C	E
{A, B, D}	0	(5)	(2)
C	(5)	0	(5)
E	(2)	(5)	0

Step 4

	{A, B, D, E}	C
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{A, B, D, E}	0	(5)
C	(5)	0