

Names: Peyton Breech

## Centroid Method

Proximity between two clusters is the distance between their centroids

Point	<i>x</i> Coordinate	<i>y</i> Coordinate
p1	0.40	0.53
p2	0.22	0.38
p3	0.35	0.32
p4	0.26	0.19
p5	0.08	0.41
p6	0.45	0.30

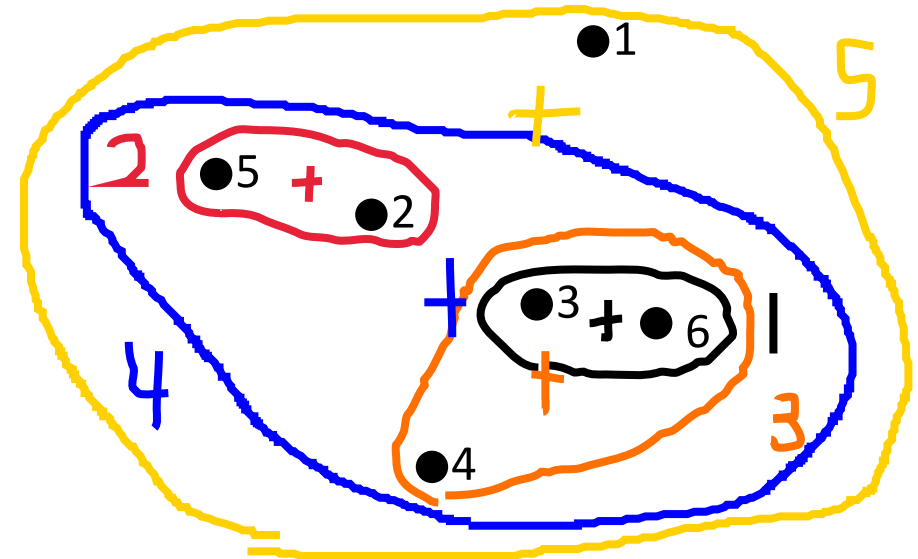
Table 8.3. *xy* coordinates of 6 points.

Step 0

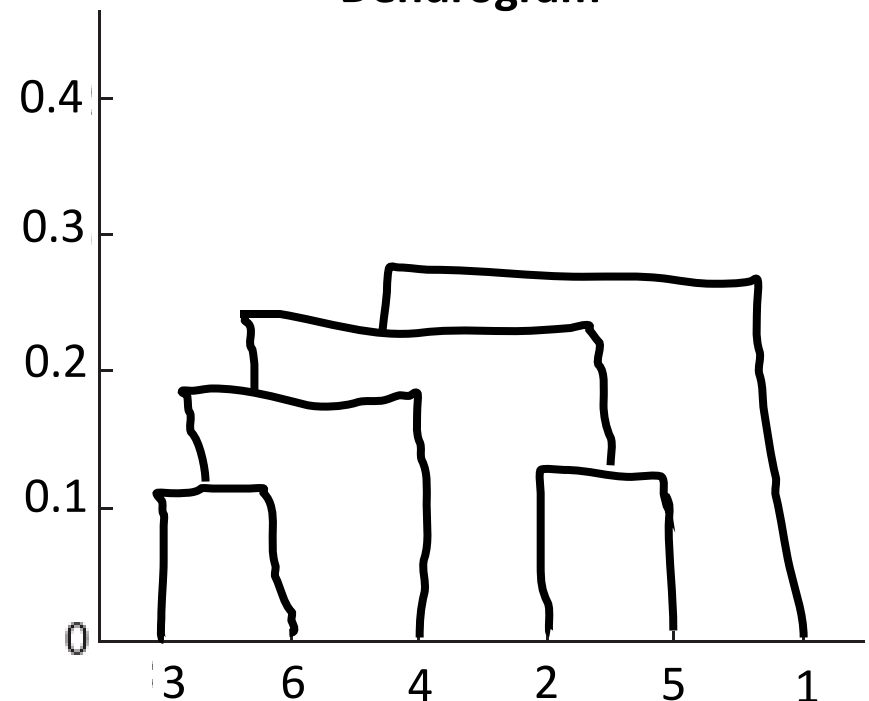
	p1	p2	p3	p4	p5	p6
p1	0.00	0.24	0.22	0.37	0.34	0.23
p2	0.24	0.00	0.15	0.20	0.14	0.25
p3	0.22	0.15	0.00	0.15	0.28	0.11
p4	0.37	0.20	0.15	0.00	0.29	0.22
p5	0.34	0.14	0.28	0.29	0.00	0.39
p6	0.23	0.25	0.11	0.22	0.39	0.00

Table 8.4. Euclidean distance matrix for 6 points.

## Nested cluster diagram



Dendrogram





Peyton Breech

Step 1

	P1	P2	P3, P6	P4	P5
P1	0	0.24	0.22	0.37	0.34
P2	0.24	0	0.19	0.20	0.14
P3, P6	0.22	0.19	0	0.18	0.34
P4	0.37	0.20	0.18	0	0.24
P5	0.34	0.14	0.34	0.24	0

Final Cluster

Centroid = (0.32, 0.43)

Cluster (P3, P6) Centroid = (0.40, 0.31)

Step 2

	P1, P5	P2, P6	P3, P4	P4
P1, P5	0	0.28	0.22	0.37
P2, P6	0.28	0	0.27	0.24
P3, P4	0.22	0.27	0	0.18
P4	0.37	0.24	0.18	0

Cluster (P2, P6) Centroid = (0.15, 0.40)

Step 3

	P1	P2, P5	P3, P4, P6
P1	0	0.28	0.24
P2, P5	0.28	0	0.23
P3, P4, P6	0.24	0.23	0

Cluster (P3, P4, P6) Centroid = (0.33, 0.25)

Step 4

	P1	P2, P3, P4, P5, P6
P1	0	0.26
P2, P3, P4, P5, P6	0.26	0

Cluster (P2, P3, P4, P5, P6) Centroid = (0.24, 0.33)