DBSCAN: calculation example

id	x_1	x_2
d1	2	1
d2	-3	8
d3	0	10
d4	3	2
d5	-2	8
d6	3	0
d7	4	0
d8	-2	6
d9	-3	9
d10	6	1

Step1: Choose a value for eps and MinPts.

eps = ...**3**........

MinPts = ...**3**........

Step2: For a particular datapoint (x) calculate its distance from every other datapoints

	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10
d1		8.60	9.21	1.41	8.06	1.41	2.23	6.40	9.43	4
d2	8.60		3.60	8.48	1	10	10.63	2.23	1	11.40
d3	9.21	3.60		8.54	7.82	10.44	10.77	4.47	3.16	10.81
d4	1.41	8.48	8.54		7.81	2	2.23	6.64	9.21	3.16
d5	8.06	1	2.82	7.81		9.43	10	2	1.41	10.6
d6	1.41	10	10.44	2	9.43		1	7.81	10.81	3.16
d7	2.23	10.63	10.77	2.23	10	1		8.48	11.40	2.23
d8	6.40	2.23	4.47	6.64	2	7.81	8.48		3.16	9.43
d9	9.43	1	3.16	9.21	1.41	10.81	11.40	3.16		12.04
d10	4	11.40	10.81	3.16	10.6	3.16	2.23	9.43	12.04	

Step8: Repeat the above steps for every unvisited point.

Step3: Find all the neighborhood points of x (fall inside eps radius)

d1's neighborhood points = {..... d_4, d_6, d_7 ....}

Step4-6:

{core point, border point, outlier}

Step7: include all the density connected points as a single cluster.

$$\} d_1, d_4, d_6, d_7 \}$$

Step3: Find all the neighborhood points of x (fall inside eps radius)

d2's neighborhood points = {.......... d_5, d_8, d_9 ....}

Step4-6:

{core point, border point, outlier}

Step7: include all the density connected points as a single cluster.

$$\} d_2, d_5, d_8, d_9 \}$$

Step3: Find all the neighborhood points of x (fall inside eps radius)

d3's neighborhood points = {.......... d_5 ....}

Step4-6:

{core point, border point, outlier}

Step7: include all the density connected points as a single cluster.

$$\} d_2, d_3, d_5, d_8, d_9 \}$$

Step3: Find all the neighborhood points of x (fall inside eps radius)

d4's neighborhood points = {.....d_1., d_6.., d_7...............}

Step4-6:

{core point, border point, outlier}

Step7: include all the density connected points as a single cluster.

$$\{d_1, d_4, d_6, d_7\}$$

Step3: Find all the neighborhood points of x (fall inside eps radius)

d5's neighborhood points = {.......d_2.,....d_3.,..d_8..,...d_9......}

Step4-6:

{core point, border point, outlier}

Step7: include all the density connected points as a single cluster.

$$\{d_2, d_3, d_5, d_8, d_9\}$$

Step3: Find all the neighborhood points of x (fall inside eps radius)

d6's neighborhood points = {......d_1..,...d_4.,...d_7............}

Step4-6:

{core point, border point, outlier}

Step7: include all the density connected points as a single cluster.

$$\{d_1, d_4, d_6, d_7\}$$

Step3: Find all the neighborhood points of x (fall inside eps radius)

d7's neighborhood points = {......d_1,....d_4.,....d_6.,....d_{10}....}

Step4-6:

{core point, border point, outlier}

Step7: include all the density connected points as a single cluster.

$$\{ d_1, d_4, d_6, d_7, d_{10} \}$$

Step3: Find all the neighborhood points of x (fall inside eps radius)

d8's neighborhood points = {.........d_2.,.....d_5.....................}

Step4-6:

{core point, border point, outlier}

Step7: include all the density connected points as a single cluster.

$$\{ d_2, d_3, d_5, d_8, d_9 \}$$

Step3: Find all the neighborhood points of x (fall inside eps radius)

d9's neighborhood points = {.........d_2.,.....d_5.....................}

Step4-6:

{core point, border point, outlier}

Step7: include all the density connected points as a single cluster.

$$\{ d_2, d_3, d_5, d_8, d_9 \}$$

Step3: Find all the neighborhood points of x (fall inside eps radius)

d10's neighborhood points = {............d_7...........................}

Step4-6:

{core point, border point, outlier}

Step7: include all the density connected points as a single cluster.

$$\{ d_1, d_4, d_6, d_7, d_{10} \}$$