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Latihan Soal (Kuis)

• Tentukan anggota klasternya, jika dikelompokan menjadi 2 klaster?

M1 = (1, 4.5),

M2 = (3, 6.5),

M3 = (4, 4.5),

M4 = (7.5, 3.2),

M5 = (6, 2.3),

M6 = (2.5, 3.8),

M7 = (5, 5.5)

• Titik Pusat Cluster => **C1(3,4), C2(6,4)**

Penghitungan Pertama

Euclidean Distance titik pusat pertama

$$D_{11} = \sqrt{(M_{1x} - C_{1x})^2 + (M_{1y} - C_{1y})^2} = \sqrt{(1-3)^2 + (4.5-4)^2} = \sqrt{4.25} = 2.061$$

$$D_{12} = \sqrt{(M_{2x} - C_{1x})^2 + (M_{2y} - C_{1y})^2} = \sqrt{(3-3)^2 + (6.5-4)^2} = \sqrt{6.25} = 2.5$$

$$D_{13} = \sqrt{(M_{3x} - C_{1x})^2 + (M_{3y} - C_{1y})^2} = \sqrt{(4-3)^2 + (4.5-4)^2} = \sqrt{1.25} = 1.118$$

$$D_{14} = \sqrt{(M_{4x} - C_{1x})^2 + (M_{4y} - C_{1y})^2} = \sqrt{(7.5-3)^2 + (3.2-4)^2} = \sqrt{20.89} = 4.570$$

$$D_{15} = \sqrt{(M_{5x} - C_{1x})^2 + (M_{5y} - C_{1y})^2} = \sqrt{(6-3)^2 + (2.3-4)^2} = \sqrt{11.89} = 3.448$$

$$D_{16} = \sqrt{(M_{6x} - C_{1x})^2 + (M_{6y} - C_{1y})^2} = \sqrt{(2.5-3)^2 + (3.8-4)^2} = \sqrt{0.29} = 0.538$$

$$D_{17} = \sqrt{(M_{7x} - C_{1x})^2 + (M_{7y} - C_{1y})^2} = \sqrt{(5-3)^2 + (5.5-4)^2} = \sqrt{6.25} = 2.5$$

Perhitungan Kedua

Euclidian Distance titip pusat kedua

D21 = 5.024

D22 = 3.905

D23 = 2.061

D24 = 1.7

D25 = 1.7

D26 = 3.505

D27 = 1.802

Perhitungan Ketiga

	M1	M2	M3	M4	M5	M6	M7
Jarak ke C1	**2.061**	**2.5**	**1.118**	4.57	3.448	**0.538**	2.5
Jarak ke C2	5.024	3.905	2.061	**1.7**	**1.7**	3.505	**1.802**

{M1, M2, M3 ,M6} anggota C1 dan {M4, M5, M7} anggota C2

Perhitungan Keempat

$$C1 = (\frac{1+3+4+2.5}{4}, \frac{4.5+6.5+4.5+3.8}{4}) = (2.625, 4.825)$$

$$C2 = (\frac{7.5+6+5}{3}, \frac{3.2+2.3+5.5}{3}) = (6.16, 3.6)$$

Perhitungan Kelima

	M1	M2	M3	M4	M5	M6	M7
Jarak ke C1	**1.657**	**1.716**	**1.412**	5.138	4.215	**1.032**	2.469
Jarak ke C2	5.237	4.289	2.34	**1.398**	**1.309**	3.665	**2.226**

Perhitungan Keenam

{M1, M2, M3 ,M6} anggota C1 dan {M4, M5, M7} anggota C2

Karena anggota kelompok tidak ada yang berubah maka titik pusat pun tidak akan berubah.

Kesimpulan

{M1, M2, M3 ,M6} anggota C1 dan {M4, M5, M7} anggota C2