**Tugas Minggu Ke – 10 Data Mining**

1. **Tentukan anggota klasternya jika dikelompokan menjadi 2 klaster ?**
2. M1 = (1, 4.5),
3. M2 = (3, 6.5),
4. M3 = (4, 4.5),
5. M4 = (7.5, 3.2),
6. M5 = (6, 2.3),
7. M6 = (2.5, 3.8),
8. M7 = (5, 5.5)
9. **Titik Pusat Cluster**
10. C1(3,4)
11. C2(6,4)

**Jawab :**

1. **Iterasi 1**
2. **Menghitung Euclidean Distance dari semua data ke tiap titik pusat**

* D11 =

= = = 2.061

* D12 =

= = = 2.500

* D13 =

= = = 1,118

* D14 =

= = = 4.570

* D15 =

= = = 3.448

* D16 =

= = = 0.538

* D17 =

= = = 2.500

* D21 =

= = = 5.024

* D22 =

= = = 3.905

* D23 =

= = = 2.061

* D24 =

= = = 1.700

* D25 =

= = = 1.700

* D26 =

= = = 3.505

* D27 =

= = = 1.802

1. **Dari perhitungan Euclidean Distance, kita bisa membandingkan:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Jarak** | **M1** | **M2** | **M3** | **M4** | **M5** | **M6** | **M7** |
| **Ke C1** | **2.061** | **2.500** | **1,118** | 4.570 | 3.448 | **0.538** | 2.500 |
| **Ke C2** | 5.024 | 3.905 | 2.061 | **1.700** | **1.700** | 3.505 | **1.802** |

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

1. **Menghitung titik pusat baru**

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)

C1 = = (2.625, 4.825)

C2 = = (6.167, 3.667)

1. **Iterasi 2**
2. **Menghitung Euclidean Distance dari semua data ke tiap titik pusat**

* D11 =

= = = 1.657

* D12 =

= = = 1.716

* D13 =

= = = 1.412

* D14 =

= = = 5.138

* D15 =

= = = 5.269

* D16 =

= = = 1.032

* D17 =

= = = 2.469

* D21 =

= = = 5.233

* D22 =

= = = 4.249

* D23 =

= = = 2.321

* D24 =

= = = 1.412

* D25 =

= = = 1.377

* D26 =

= = = 3.669

* D27 =

= = = 2.172

1. **Dari perhitungan Euclidean Distance, kita bisa membandingkan:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Jarak** | **M1** | **M2** | **M3** | **M4** | **M5** | **M6** | **M7** |
| **Ke C1** | **1.657** | **1.716** | **1.412** | 5.138 | 5.269 | **1.032** | 2.469 |
| **Ke C2** | 5.233 | 4.249 | 2.321 | **1.412** | **1.337** | 3.669 | **2.172** |

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

1. Karena anggota kelompok tidak ada yang berubah maka titik pusat pun tidak akan berubah.
2. **Kesimpulan : {M1, M2, M3, M6} anggota C1 dan {M4, M5, M7} anggota C2.**