Tugas 1 - Distance Metric

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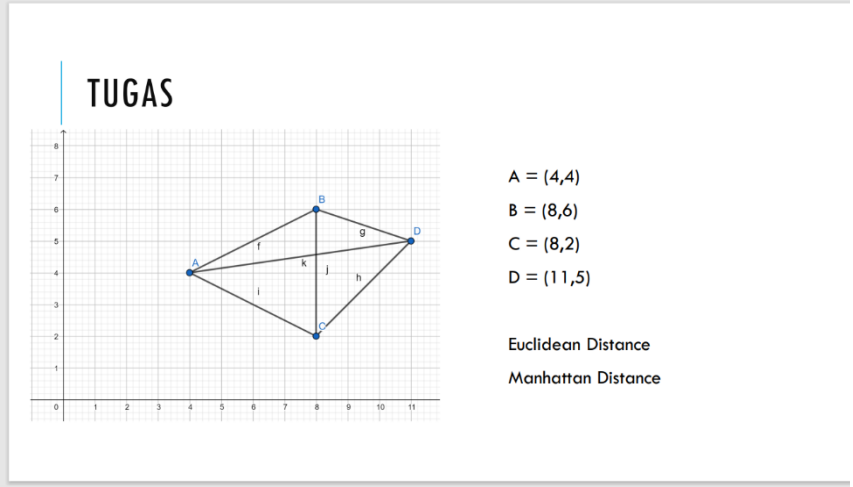

A. Euclidien Distance

Koordinat titik :

- A = (4, 4)
- B = (8, 6)
- C = (8, 2)
- D = (11, 5)

Distance :

1. f (A, B)
2. g (B, D)
3. h (D, C)
4. i (A, C)
5. j (B, C)
6. k(A, D)

Rumus :

$$d(x, y) = \sqrt{\sum_{i=1}^{n} (x_i - y_i)^2}$$

Jawaban

1. f (A, B)
   A = (4, 4)
   B = (8, 6)

   d = $\sqrt{(4-8)^2+(4-6)^2}$

   d = $\sqrt{(-4)^2+(-2)^2}$

   d = $\sqrt{16+4}$

   d = $\sqrt{20}$

   d = $2\sqrt{5}$

2. g (B, D)
   B = (8, 6)
   D = (11, 5)

   d = $\sqrt{(8-11)^2+(6-5)^2}$

   d = $\sqrt{(-3)^2+(1)^2}$

   d = $\sqrt{9+1}$

   d = $\sqrt{10}$

3. h (D, C)
   C = (8, 2)
   D = (11, 5)

   d = $\sqrt{(8-11)^2+(2-5)^2}$

   d = $\sqrt{(-3)^2+(-3)^2}$

   d = $\sqrt{9+9}$

   d = $\sqrt{18}$

   d = $3\sqrt{2}$

4. i (A, C)
   A = (4, 4)
   C = (8, 2)

   d = $\sqrt{(4-8)^2+(4-2)^2}$

   d = $\sqrt{(-4)^2+(2)^2}$

   d = $\sqrt{16+4}$

   d = $\sqrt{20}$

   d = $2\sqrt{5}$

5. j (B, C)
   B = (8, 6)
   C = (8, 2)

   d = $\sqrt{(8-8)^2+(6-2)^2}$

   d = $\sqrt{(0)^2+(4)^2}$

   d = $\sqrt{16}$

   d = 4

6. k (A, D)
   A = (4, 4)
   D = (11, 5)

   d = $\sqrt{(4-11)^2+(4-5)^2}$

   d = $\sqrt{(-7)^2+(-1)^2}$

   d = $\sqrt{49+1}$

   d = $\sqrt{50}$

   d = $5\sqrt{2}$

B. Manhattan Distance

Koordinat titik :

- A = (4, 4)
- B = (8, 6)
- C = (8, 2)
- D = (11, 5)

Distance :

1. f (A, B)
2. g (B, D)
3. h (D, C)
4. i (A, C)
5. j (B, C)
6. k(A, D)

Rumus :

$$d\ (x, y) = \sum_{i=1}^{n} |x_{i-}\ y_i\ |$$

1. f (A, B)
   A = (4, 4)
   B = (8, 6)

   d = |4 – 8| + |4 – 6|
   d = |-4| + |-2|
   d = 4 + 2
   d = 6

2. g (B, D)
   B = (8, 6)
   D = (11, 5)

   d = |8 – 11| + |6 – 5|
   d = |-3| + |-1|
   d = 3 + 1
   d = 4

3. h (C, D)
   C = (8, 2)
   D = (11, 5)

d = |8 – 11| + |2 – 5|
d = |-3| + |-3|
d = 3 + 3
d = 6

4. i (A, C)
   A = (4, 4)
   C = (8, 2)

   d = |4 – 8| + |4 – 2|
   d = |-4| + |2|
   d = 4 + 2
   d = 6

5. j (B, C)
   B = (8, 6)
   C = (8, 2)

   d = |8 – 8| + |6 – 2|
   d = |4|
   d = 4

6. k(A, D)
   A = (4, 4)
   D = (11, 5)

   d = |4 – 11| + |4 – 5|
   d = |-7| + |-1|
   d = 7 + 1
   d = 8