

Diketahui

No	$X_1$	$Y_2$
1	2	2
2	3	2
3	1	1
4	3	1
5	1.5	0.5

Metode k-means Cluster.

$k = 2$ .

Initial Centroid.

$k_1 \Rightarrow 2 \quad 2$   
 $k_2 \Rightarrow 3 \quad 2$

Calculate distance.

$$\Rightarrow d(k_1, k_1) = \sqrt{(2-2)^2 + (2-2)^2} = 0$$

$$d(k_2, k_2) = \sqrt{(2-3)^2 + (2-2)^2} = 1$$

Cluster	Centroid		
	$X_1$	$Y_2$	Ass
$k_1$	0	1	1
$k_2$	1	0	2

$$* d(k_1, n_3) \Rightarrow \sqrt{(2-1)^2 + (2-1)^2} = 1,414$$

$$d(k_2, n_3) \Rightarrow \sqrt{(3-1)^2 + (2-1)^2} = 2,236$$

Update cluster 2 ( $k_2$ )

Dataset	Cluster 1	Cluster 2	Assignment
3	1,414	2,236	<del>3</del>
4	1,414	1,118	<del>4</del>

$$k_2(Y_1) = \frac{3+1}{2} = 2$$

$$k_2(Y_2) = \frac{2+1}{2} = 1,5$$

$$* d(k_1, n_4) = \sqrt{(2-3)^2 + (2-1)^2} = 1,414$$

$$d(k_2, n_4) = \sqrt{(2-1)^2 + (1,5-1)^2} = 1,118$$

$$* d(x_i, n_j) = \sqrt{x_i^2 + y_j^2}$$

Update cluster

$$k_2(y_1) = 2 + 3/2 = 2.5$$

$$k_1(y_2) = 2 + 1/2 = 1.5$$

$$* d(k_1, n_5) = \sqrt{(2.5 - 1.5)^2 + (1.5 - 0.5)^2} = 1.414$$

$$d(k_1, n_5) = \sqrt{(2 - 1.5)^2 + (1.5 - 0.5)^2} = 1.118$$

Final

$N_0$	$y_1$	$y_2$
1	2	2
2	3	2
3	1	1
4	3	1
5	1.5	0.5