K-mediod Clustering

$\boxed{K = 2}$ **K - Medoid**

$\rightarrow \{ (8,7), (3,7), (4,9) \ (9,6), (8,5), (5,8), (7,3), (8,4), (7,5), (4,5) \}$ $\boxed{d = |x - x_1| + |y - y_1| + (z - z}$

$c_1 = (8, 5)$ $c_2 = (4, 5)$

x	y	$d = |x-8| + |y-5|$	$d_2 = |x-4| + |y-5|$	C
8	7	$0 + 2 = ②$	$4 + 2 = 6$	c_1
3	7	$5 + 2 = 7$	$1 + 2 = ③$	c_2
4	9	$4 + 4 = 8$	$0 + 4 = ④$	c_2
9	6	$1 + 1 = ②$	$5 + 1 = 6$	c_1
8	5	$0 + 0 = ⓪$	$4 + 0 = 4$	c_1
5	8	$3 + 3 = 6$	$1 + 3 = ④$	c_2
7	3	$1 + 2 = ③$	$3 + 2 = 5$	c_1
8	4	$0 + 1 = ①$	$4 + 1 = 5$	c_1
7	5	$1 + 0 = ①$	$3 + 0 = 3$	c_1
4	5	$4 + 0 = 4$	$0 + 0 = ⓪$	c_2

$K_1 = \{ (8,7), (9,6)$
$, (8,5), (7,3)$
$(8,4) \ (7,5) \}$

$K_2 = \{ (3,7), (4,9)$
$(5,8), (4,5) \}$

$\boxed{K = 2}$ **K -Medoid**

$\rightarrow \{(8,7), (3,7), (4,9)\ (9,6), (8,5), (5,8), (7,3), (8,4), (7,5), (4,5)\}$ $\boxed{d = |x - x_1| + |y - y_1| + (z - z}$

$c_1 = (8, 5)$ $c_2 = (4, 5)$

x	y	$d = |x - 8| + |y - 5|$	$d_2 = |x - 4| + |y - 5|$	c
8	7	$0 + 2 = ②$	$4 + 2 = 6$	c_1
3	7	$5 + 2 = 7$	$1 + 2 = ③$	c_2
4	9	$4 + 4 = 8$	$0 + 4 = ④$	c_2
9	6	$1 + 1 = ②$	$5 + 1 = 6$	c_1
8	5-	$0 + 0 = ⓪$	$4 + 0 = 4$	c_1
5	8	$3 + 3 = 6$	$1 + 3 = ④$	c_2
7	3	$1 + 2 = ③$	$3 + 2 = 5$	c_1
8	4	$0 + 1 = ①$	$4 + 1 = 5$	c_1
7	5	$1 + 0 = ①$	$3 + 0 = 3$	c_1
4	5	$4 + 0 = 4$	$0 + 0 = ⓪$	c_2

$cost = 2 + 2 + 0 + 3 + 1 + 1$
$\qquad + 3 + 4 + 7 + 0 = ⓴$

$K_1 = \{(8,7), (9,6)$
$\quad , (8,5), (7,3)$
$\quad (8,4)\ (7,5)\}$

$K_2 = \{(3,7)(4,9)$
$\quad (5,8), (4,5)\}$

$$K = 2$$

K - Medoid

$\rightarrow \{(8,7), (3,7), (4,9) \ (9,6), (8,5), (5,8), (7,3), (8,4), (7,5), (4,5)\}$ $\quad d = |x - x_1| + |y - y_1| + (z - z$

$c_1 = (8, 4)$ $\qquad\qquad c_2 = (4, 5)$

x	y	$d = |x - 8| + |y - 4|$	$d_2 = |x - 4| + |y - 5|$	c
8	7	0 + 3 = ③	4 + 2 = 6	c_1
3	7	5 + 3 = 8	1 + 2 = ③	c_2
4	9	4 + 5 = 9	0 + 4 = ④	c_2
9	6	1 + 2 = ③	5 + 1 = 6	c_1
8	5	0 + 1 = ①	4 + 0 = 4	c_1
5	8	3 + 4 = 7	1 + 3 = ④	c_2
7	3	1 + 1 = ②	3 + 2 = 5	c_1
8	4	0 + 0 = ⓪	4 + 1 = 5	c_1
7	5	1 + 1 = ②	3 + 0 = 3	c_1
4	5	4 + 1 = 5	0 + 0 = ⓪	c_2

$K_1 = \{(8,7), (9,6)$
$, (8,5), (7,3)$
$(8,4) \ (7,5)\}$

$K_2 = \{(3,7) (4,9)$
$(5,8), (4,5)\}$

$Cost_2 - Cost_1 > 0$
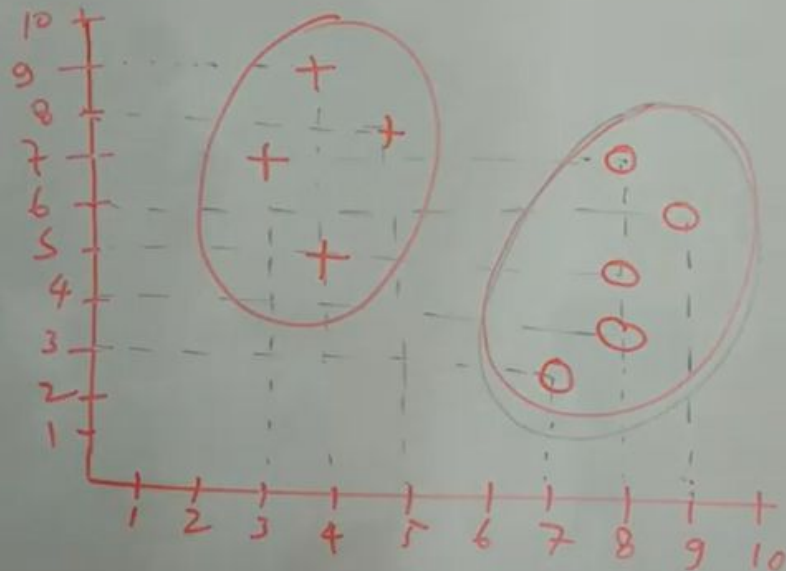
$cost = 2 + 2 + 0 + 3 + 1 + 1$
$\quad + 3 + 9 + 9 + 0 = ⑳$

$Cost = 3 + 3 + 1 + 2 + 0 + 2 = ㉒$
$\quad + 3 + 4 + 2 + 0$

⑱

$\rightarrow \{ (8,7), (3,7), (4,9)\ (9,6), (8,5), (5,8), (7,3), (8,4), (7,5), (4,5) \}$ $d = |x - x_1| + (y - y_1| + (2$

$K_1 = \{ (8,7), (9,6)$
$, (8,5), (7,3)$
$(8,4)\ (7,5) \}$

$K_2 = \{ (3,7), (4,9)$
$(5,8), (4,5) \}$

$Cost_2 - Cost_1 > 0$

$Cost = 2 + 2 + 6 + 3 + 1 + 1$
$+ 3 + 9 + 9 + 0$ $= \boxed{20}$

$Cost = 3 + 3 + 1 + 2 + 0 + 2 = \boxed{22}$
$+ 3 + 4 + 2 + 0$

⑱