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COM252

EXERCISE: 2

1,2)

	A	B	C	D	E	F
A	0	10.05	45.28	60.41	50.8	25.18
B	10.05	0	35.23	50.36	40.79	15.13
C	45.28	35.23	0	15.13	6.4	20.1
D	60.41	50.36	15.13	0	10.2	35.23
E	50.8	40.79	6.4	10.2	0	25.71
F	25.18	15.13	20.1	35.23	25.71	0

$$d(A, B) = \sqrt{(A_x - B_x)^2 + (A_y - B_y)^2} = \sqrt{(10 - 20)^2 + (1 - 2)^2} = 10.05$$

$$d(A, C) = \sqrt{(10 - 55)^2 + (1 - 6)^2} = 45.28$$

$$d(A, D) = \sqrt{(10 - 70)^2 + (1 - 8)^2} = 60.41$$

$$d(A, E) = \sqrt{(10 - 60)^2 + (1 - 10)^2} = 50.8$$

$$d(A, F) = \sqrt{(10 - 35)^2 + (1 - 4)^2} = 25.18$$

$$d(B, C) = \sqrt{(20 - 55)^2 + (2 - 6)^2} = 35.23$$

$$d(B, D) = \sqrt{(20 - 70)^2 + (2 - 8)^2} = 50.36$$

$$d(B, E) = \sqrt{(20 - 60)^2 + (2 - 10)^2} = 40.79$$

$$d(B, F) = \sqrt{(20 - 35)^2 + (2 - 4)^2} = 15.13$$

$$d(C, D) = \sqrt{(55 - 70)^2 + (6 - 8)^2} = 15.13$$

$$d(C, E) = \sqrt{(55 - 60)^2 + (6 - 10)^2} = 6.4$$

$$d(C, F) = \sqrt{(55 - 35)^2 + (6 - 4)^2} = 20.1$$

$$d(D, E) = \sqrt{(70 - 60)^2 + (8 - 10)^2} = 10.2$$

$$d(D, F) = \sqrt{(70 - 35)^2 + (8 - 4)^2} = 35.23$$

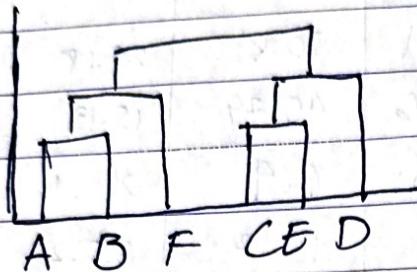
$$d(E, F) = \sqrt{(60 - 35)^2 + (10 - 4)^2} = 25.71$$

3,4,c)

CLUSTER  $\{C, E\}$ : 6.9  
 $\{A, B\}$ : 10.05

$\{C, E\}, D$ : 10.2  
 $\{A, B\}, F$ : 15.3

$\{A, B, F\} - \{C, D\}$ :  
20.1



### c) CLUSTER 1 $\{ABF\}$ :

- LOW VALUE PLAYER, THEY BET SMALL AMOUNT AND VISIT A FEW TIMES.  
THESE PEOPLE ARE MOST LIKELY TO GO TO ~~CASINO~~ CASINO FOR ENTERTAINMENT ONLY.  
YOU CAN BUDGET THEM BY OFFERING LOYALTY PROGRAMS FOR MORE ENGAGEMENT.

### CLUSTER 2 $\{CEFD\}$

- HIGH VALUE PLAYER, THEY ARE THE MOST VALUABLE CUSTOMER IN THE CASINO AS THEY VISIT FREQUENTLY AND BET MORE. YOU CAN BUDGET THEM MORE BY OFFERING EXCLUSIVE DEALS OR PROMOS.