

CASINO CUSTOMERS

CUSTOMER	AVG BET PER VISIT	VISIT PER MONTH
A	10	1
B	20	2
C	55	6
D	70	8
E	60	10
F	35	4

Table 1.2 $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

	A	B	C	D	E	F
A	0	10.05	45.28	60.41	50.80	25.18
B	10.05	0	35.23	50.36	40.79	15.13
C	45.28	35.23	0	15.13	6.40	20.10
D	60.41	50.36	15.13	0	10.20	35.23
E	50.80	40.79	6.40	10.20	0	25.71
F	25.18	15.13	20.10	35.23	25.71	0

A-B

$$d = \sqrt{(20-10)^2 + (2-1)^2} = \sqrt{(10)^2 + (1)^2} = \sqrt{100 + 1} = \sqrt{101} = 10.05$$

A-C

$$d = \sqrt{(55-10)^2 + (6-1)^2} = \sqrt{(45)^2 + (5)^2} = \sqrt{2025 + 25} = \sqrt{2050} = 45.28$$

A-D

$$d = \sqrt{(70-10)^2 + (8-1)^2} = \sqrt{(60)^2 + (7)^2} = \sqrt{3600 + 49} = \sqrt{3649} = 60.41$$

A-E

$$d = \sqrt{(60-10)^2 + (10-1)^2} = \sqrt{(50)^2 + (9)^2} = \sqrt{2500 + 81} = \sqrt{2581} = 50.80$$

A-F

$$d = \sqrt{(35-10)^2 + (4-1)^2} = \sqrt{(25)^2 + (3)^2} = \sqrt{625 + 9} = \sqrt{634} = 25.18$$

B-C

$$d = \sqrt{(55-20)^2 + (6-2)^2} = \sqrt{(35)^2 + (4)^2} = \sqrt{1225 + 16} = \sqrt{1241} = 35.23$$

B-D

$$d = \sqrt{(70-20)^2 + (8-2)^2} = \sqrt{(50)^2 + (6)^2} = \sqrt{2500 + 36} = \sqrt{2536} = 50.36$$

B-E

$$d = \sqrt{(60-20)^2 + (10-2)^2} = \sqrt{(40)^2 + (8)^2} = \sqrt{1600 + 64} = \sqrt{1664} = 40.79$$

B-F

$$d = \sqrt{(35-20)^2 + (4-2)^2} = \sqrt{(15)^2 + (2)^2} = \sqrt{225+4} = \sqrt{229} = 15.13$$

C-D

$$d = \sqrt{(70-55)^2 + (8-6)^2} = \sqrt{(15)^2 + (2)^2} = \sqrt{225+4} = \sqrt{229} = 15.13$$

C-E

$$d = \sqrt{(60-55)^2 + (10-6)^2} = \sqrt{(5)^2 + (4)^2} = \sqrt{25+16} = \sqrt{41} = 6.40$$

D-F

$$d = \sqrt{(50-55)^2 + (4-6)^2} = \sqrt{(-5)^2 + (-2)^2} = \sqrt{25+4} = \sqrt{29} = 5.39$$

D-E

$$d = \sqrt{(60-70)^2 + (10-8)^2} = \sqrt{(-10)^2 + (2)^2} = \sqrt{100+4} = \sqrt{104} = 10.20$$

D-F

$$d = \sqrt{(35-70)^2 + (4-8)^2} = \sqrt{(-35)^2 + (-4)^2} = \sqrt{1225+16} = \sqrt{1241} = 35.23$$

E-F

$$d = \sqrt{(35-60)^2 + (4-10)^2} = \sqrt{(-25)^2 + (-6)^2} = \sqrt{625+36} = \sqrt{661} = 25.71$$

Task 4:

1) (C, E) = 6.40

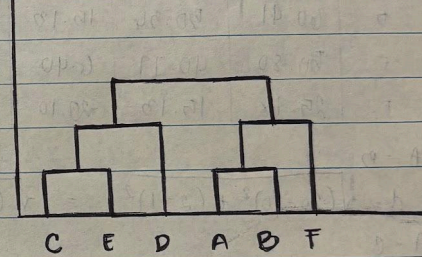
2) (A, D) = 10.00

3) D + (C, E) = 10.20

4) F + (A, D) = 15.13

5) (F, A, D) + (D, C, E) = 20.10

TASK 5: DENDROGRAM



TASK 6:

Cluster 1: (C, E, D)

- High avg Bet per visit
- Many visit per month
- High-value players

Customer in this cluster gamble more frequently and spend more. Good candidates for VIP rewards or loyalty programs.

Cluster 2: (A, D, F)

- Low to moderate avg bet per visit
- few visits
- More casual players

- Customer in this cluster do not gamble often and spend less. Easy games that have small wins can be offered. Can also give small bonuses or free spins to encourage bets.