

Stephan Ace F.3y

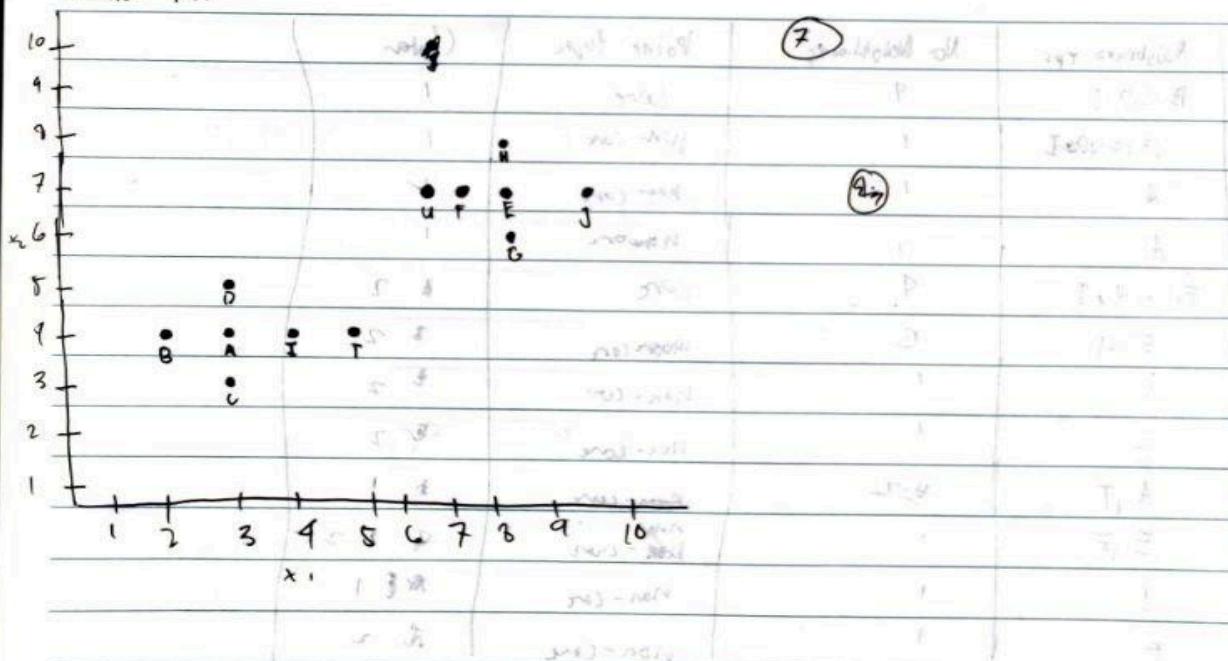
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Customer	Avg Cost per visit	Vists Per Month
A	3	9
B	2	9
C	3	3
D	3	5
E	9	7
F	9	7
G	9	6
H	9	8
I	10	9
J	10	7
T	15	9
U	7	7

eps = 1

min samples = 2

Scatter Plot



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①

	A	B	C	D	E	F	G	H	I	J	K	L
A (3,7)	0	1	1	1	6.7	4.8	6.3	7.2	1	7.6	2	5
B (2,9)	1	0	1.9	1.9	7.6	6.7	7.2	8	2	3.5	3	5.8
C (3,3)	1	1.9	0	2	7.2	6.9	6.7	7.8	1.9	8	2.2	5.6
D (3,5)	1	1.4	2	0	6.3	5.3	6	6.7	1.9	7.2	2.2	4.5
E (9,7)	6.7	7.6	7.2	6.3	0	1	1	1	5.8	1	5	2
F (8,7)	5.8	6.7	6.9	5.3	1	0	1.9	1.9	5	2	4.2	1
G (4,6)	6.3	7.2	6.7	6	1	1.9	0	2	5.3	1.5	9.7	2.2
H (9,8)	7.2	8	7.8	6.7	1	1.9	2	0	6.9	1.9	5.7	2.2
I (4,9)	1	2	1.9	1.9	5.8	5	5.3	6.9	0	6.7	1	3.9.2
J (0,7)	7.6	4.5	8	7.2	1	2	1.9	1.9	6.7	0	5.0	3
K (5,9)	2	3	2.2	1.5	4.8	4.2	4.7	5.7	1	5.8	0	3.6
L (7,7)	5	5.8	5.6	4.5	2	1	2.2	2.2	9.2	3	3.8	0

T-8

Customer	Neighbors types	No Neighbors	Point type	Cluster
A	B,C,D,I	9	core	1
B	A,E,F,G	1	non-core	1
C	A	1	non-core	0.5
D	A	1	noncore	1
E	F,G,H,J	9	core	2
F	E,U	2	non core	2
G	F	1	non-core	2
H	E	1	non-core	2
I	A,T	2	non-core	1
J	E,F	1	non core	2
K	I	1	non-core	1
L	F	1	non-core	2

$$U-A (7,7) (3,1)$$

$$\sqrt{(3-7)^2 + (9-7)^2}$$

$$(9^2 + 7^2)$$

$$16 + 4$$

$$\sqrt{25}$$

$$5 \quad 0.8 \quad (0.2) \quad 0.7$$

$$U-B (7,7) (9,2)$$

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

$$(2^2 + 2^2)$$

$$4 + 4$$

$$\sqrt{8}$$

$$2 \quad 0.8 \quad (0.2) \quad 0.7$$

$$U-C (7,7) (9,3)$$

$$\sqrt{(3-7)^2 + (3-7)^2}$$

$$(3^2 + 3^2)$$

$$9 + 9$$

$$\sqrt{18}$$

$$3 \quad 0.8 \quad (0.2) \quad 0.7$$

$$U-D (7,7) (9,4)$$

$$\sqrt{(4-7)^2 + (4-7)^2}$$

$$(4^2 + 4^2)$$

$$16 + 16$$

$$\sqrt{32}$$

$$4 \quad 0.8 \quad (0.2) \quad 0.7$$

$$U-E (7,7) (9,5)$$

$$\sqrt{(5-7)^2 + (5-7)^2}$$

$$(5^2 + 5^2)$$

$$25 + 25$$

$$\sqrt{50}$$

$$5 \quad 0.8 \quad (0.2) \quad 0.7$$

$$U-C (7,7) (3,3)$$

$$\sqrt{(3-7)^2 + (3-7)^2}$$

$$(3^2 + 3^2)$$

$$9 + 9$$

$$\sqrt{18}$$

$$3 \quad 0.8 \quad (0.2) \quad 0.7$$

$$U-D (7,7) (3,4)$$

$$\sqrt{(4-7)^2 + (5-7)^2}$$

$$(4^2 + 5^2)$$

$$16 + 25$$

$$\sqrt{41}$$

$$5 \quad 0.8 \quad (0.2) \quad 0.7$$

$$U-E (7,7) (3,5)$$

$$\sqrt{(5-7)^2 + (6-7)^2}$$

$$(5^2 + 6^2)$$

$$25 + 36$$

$$\sqrt{61}$$

$$5 \quad 0.8 \quad (0.2) \quad 0.7$$

$$U-F (7,7) (4,3)$$

$$\sqrt{(3-7)^2 + (8-7)^2}$$

$$(3^2 + 8^2)$$

$$9 + 64$$

$$\sqrt{73}$$

$$5 \quad 0.8 \quad (0.2) \quad 0.7$$

$$U-G (7,7) (4,4)$$

$$\sqrt{(4-7)^2 + (9-7)^2}$$

$$(4^2 + 9^2)$$

$$16 + 81$$

$$\sqrt{97}$$

$$5 \quad 0.8 \quad (0.2) \quad 0.7$$

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$$\begin{array}{l} A-B \quad \sqrt{(3+2)^2 + (7+4)^2} \quad \begin{matrix} x_1, y_1 \\ (3, 4) \end{matrix} \quad \begin{matrix} x_2, y_2 \\ (4, 1) \end{matrix} \quad (3, 4)(5, 1) \\ \hline \sqrt{(2^2 + 3^2 + 4^2 + 1^2)} \quad (2-3)^2 + (4-1)^2 \quad (5-3)^2 + (4-1)^2 \end{array}$$

Slope Ans by addition

$$\begin{array}{lll} T-A & T-C & T-D (5, 1)(3, 0) \\ \hline (5, 4) + (3, 1)^2 & (5, 4)(3, 3) & (5-5)^2 + (3-0)^2 + (3-0)(5-1) \\ (3-5)^2 + (3-0)^2 & 0 + 1 & 9 + 1^2 \\ \hline \sqrt{(8-5)^2 + (9-4)^2} & 9 + 1^2 & 1 \\ (2)^2 + 0 & 9 + 1^2 & \sqrt{5} \\ \hline \sqrt{9} & T-E (3, 1)(3, 5) & (5, 4)(3, 5) \\ = 3 & (3-0)^2 + (3-0)^2 & (5-0)^2 + (3-0)^2 \\ \hline T-B & 6^2 + 6^2 & 0 + 25 \\ (6, 1)(2, 0) & 36 + 36 & 0 + 25 \\ (6-0)^2 + (4-0)^2 & 72 & 0 \\ \hline \sqrt{72} & T-V & 25 \\ \hline \end{array}$$

$$\begin{array}{lll} T-F (5, 1)(8, 0) & T-H (5, 1)(9, 0) & (5, 1)(10, 0) \\ \hline \sqrt{(8-5)^2 + (7-0)^2} & (5-0)^2 + (8-0)^2 & (10-5)^2 + (7-0)^2 \\ 3^2 + 7^2 & 25 + 64 & 25 + 3^2 \\ \hline \sqrt{125} & \sqrt{32} & 25 + 9 \\ \hline \end{array}$$

(5, 7)

$$\begin{array}{lll} T-G (5, 4)(9, 0) & T-I (5, 4)(9, 4) & \sqrt{39} \\ \hline \sqrt{(9-5)^2 + (6-0)^2} & (9-5)^2 + (6-4)^2 & (5-2)^2 + (8-0)^2 \\ 4^2 + 2^2 & 16 + 4 & 9 + 64 \\ \hline \sqrt{20} & \sqrt{12} & 25 + 3^2 \\ \hline \end{array}$$

(4, 7)

$$\begin{array}{lll} & 0 + 1^2 & (3, 4)(7, 1) \\ & 1 & 2^2 + 3^2 \\ & & 9 + 9 \\ \hline & & \sqrt{13} \end{array}$$