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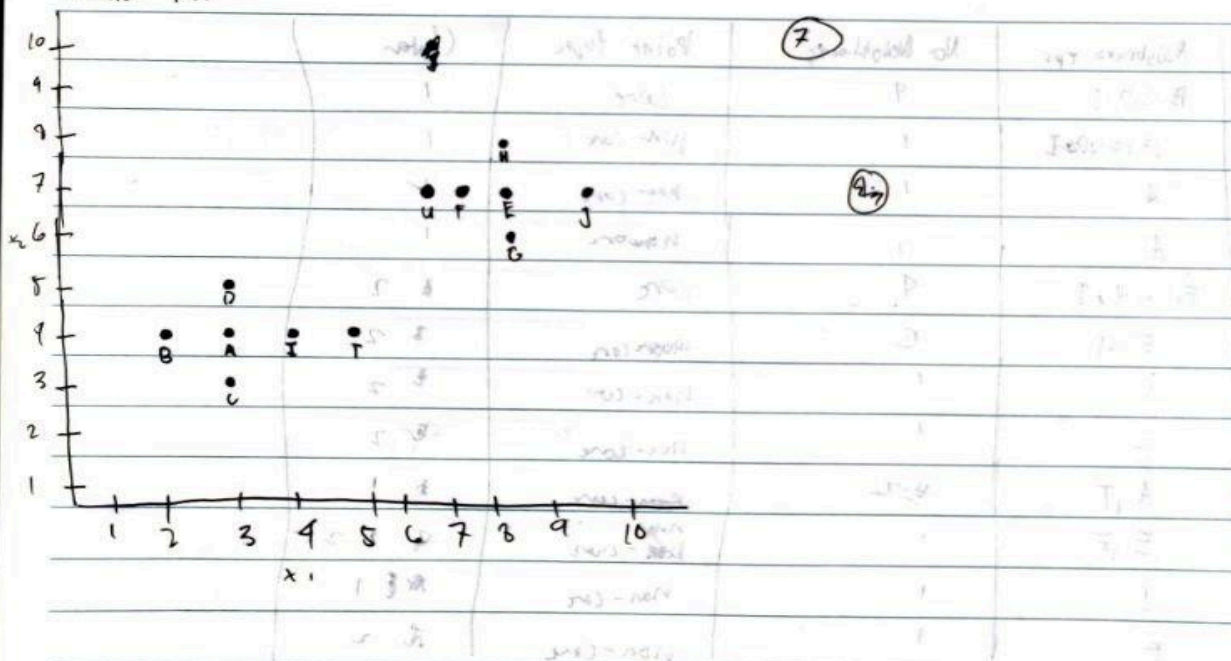
NO.:
DATE:

Customer	x_1 Avg cost per visit	x_2 Visits Per Month
A	3	9
B	2	9
C	3	3
D	4	5
E	4	7
F	4	7
G	4	6
H	4	8
I	4	9
J	5	7
T	5	9
U	7	7

$\epsilon = 1$

min - samples = 2

Scatter Plot



①

	A	B	C	D	E	F	G	H	I	J	T	U
A (3,7)	0	1	1	1	6.3	6.7	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	8.5	3	5.8
C (3,3)	1	1.9	0	2	7.2	6.9	6.7	7.8	1.9	9	2.2	5.6
D (3,5)	1	1.9	2	0	6.3	5.3	6	6.7	1.9	7.2	2.2	9.5
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	4.2
J (10,7)	7.6	8.5	8	7.2	1	2	1.9	1.9	6.7	0	5.6	3
T (5,4)	2	3	2.2	2.2	4.2	4.2	4.2	4.2	1	5.8	0	3.6
U (7,7)	5	5.8	5.6	9.5	2	1	2.2	2.2	9.2	3	3.6	0

T-8

Customer	Neighbours rps	No Neighbours	Point type	Cluster
A	B, C, D, I	4	Core	1
B	A, E, F, I	4	Non-core	1
C	A	1	Non-core	1
D	A	1	Non-core	1
E	F, G, H, J	4	Core	2
F	E, U	2	Non-core	2
G	E	1	Non-core	2
H	E	1	Non-core	2
I	A, T	2	Non-core	1
J	E, F	1	Non-core	2
T	I	1	Non-core	1
U	F	1	Non-core	2

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

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

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

$$16 + 4$$

$$\sqrt{20}$$

$$5 \text{ (approx) (4.47)}$$

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

$$(2-7)^2 + (3-7)^2$$

$$(8^2 + 4^2)$$

$$64 + 16$$

$$\sqrt{80}$$

$$8.94$$

$$U-D \quad (7,7) \quad (4,1)$$

$$2^2$$

$$(1-7)^2 + (4-7)^2$$

$$5^2 + 3^2$$

$$25 + 9$$

$$\sqrt{34}$$

$$5.83$$

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

$$(8-7)^2 + (5-7)^2$$

$$1^2 + 2^2$$

$$1 + 4$$

$$\sqrt{5}$$

$$2.24$$

$$U-F \quad (7,7) \quad (9,7)$$

$$2^2$$

$$(9-7)^2$$

$$4$$

$$2^2$$

$$4$$

$$U-G \quad (7,7) \quad (8,7)$$

$$(8-7)^2 + (7-7)^2$$

$$1^2 + 0$$

$$1$$

$$1$$

$$U-H$$

$$(7,7) \quad (4,6)$$

$$(7-7)^2 + (6-7)^2$$

$$2^2 + 1^2$$

$$5$$

$$2.24$$

$$U-I \quad (7,7) \quad (4,8)$$

$$(4-7)^2 + (8-7)^2$$

$$9 + 1$$

$$10$$

$$3.16$$

$$U-J \quad (7,7) \quad (4,4)$$

$$(4-7)^2$$

$$9$$

$$3$$

$$1.73$$

$$U-K \quad (7,7) \quad (10,7)$$

$$(10-7)^2 + (7-7)^2$$

$$9 + 0$$

$$9$$

$$3$$

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

x_1, y_1 (3, 9)	x_2, y_2 (2, 9)	(3, 9) (5, 9)
$(x_2 - x_1)^2$	$(y_2 - y_1)^2$	$(5-3)^2 (9-9)^2$
$(2-3)^2$	$(9-9)^2$	$2^2 + 0$
		$\sqrt{4}$

Steps are as follows

T-A	T-C	T-D (5, 9) (3, 7)
(5, 9) (3, 9)	(5, 9) (3, 3)	(5-5)^2 (7-9)^2 (3-5)^2 (5-9)^2
$\sqrt{(5-3)^2 + (9-9)^2}$	$\sqrt{(5-3)^2 + (9-3)^2}$	$0^2 + 2^2 + 2^2 + 4^2$
$2^2 + 0$	$2^2 + 6^2$	$4 + 16$
$\sqrt{4}$	$\sqrt{40}$	$\sqrt{20}$
$= 2$	$\sqrt{4 \times 10}$	$\sqrt{4 \times 5}$
T-B	T-E	
(5, 9) (2, 9)	(5, 9) (2, 7)	
$\sqrt{(5-2)^2 + (9-9)^2}$	$\sqrt{(5-2)^2 + (9-7)^2}$	
$3^2 + 0$	$3^2 + 2^2$	
$\sqrt{9}$	$\sqrt{13}$	
$= 3$	$\sqrt{13}$	

T-F (5, 9) (8, 8)	T-H (8, 9) (9, 0)	(5, 9) (10, 7)
$\sqrt{(8-5)^2 + (8-9)^2}$	$\sqrt{(9-8)^2 + (0-9)^2}$	$\sqrt{(10-5)^2 + (7-9)^2}$
$3^2 + 1^2$	$1^2 + 9^2$	$5^2 + 2^2$
$\sqrt{10}$	$\sqrt{82}$	$\sqrt{29}$
	$\sqrt{2 \times 41}$	$\sqrt{29}$
T-G (5, 9) (9, 6)	T-I (8, 9) (9, 9)	
$\sqrt{(9-5)^2 + (6-9)^2}$	$\sqrt{(9-8)^2 + (9-9)^2}$	
$4^2 + 3^2$	$1^2 + 0$	
$16 + 9$	1	
$\sqrt{25}$	$\sqrt{1}$	
$= 5$	$= 1$	