

The initial table  $R^{(0)}$  is shown below.

		田	匁	匚	匒	匓	匔	匕	化	北	匘	匙	匚	匛
		田	匁	匚	匒	匓	匔	匕	化	北	匘	匙	匚	匛
田	1	0.4	0.7	0.6	0.3	0.3	0.3	0.3	0.8	0.1	0.3	0.1	0.1	0.1
匁	0.4	1	0.3	0.3	0.3	0.9	0.3	0.8	0.3	0.1	0.9	0.1	0.1	0.1
匚	0.7	0.3	1	0.8	0.3	0.3	0.3	0.3	0.9	0.1	0.3	0.1	0.1	0.1
匒	0.6	0.3	0.8	1	0.3	0.3	0.3	0.3	0.8	0.1	0.3	0.1	0.1	0.1
匓	0.3	0.3	0.3	0.3	1	0.3	0.8	0.3	0.3	0.1	0.3	0.1	0.1	0.1
匔	0.3	0.9	0.3	0.3	0.3	1	0.3	0.9	0.3	0.1	0.8	0.1	0.1	0.1
匕	0.3	0.3	0.3	0.3	0.8	0.3	1	0.3	0.3	0.1	0.3	0.1	0.1	0.1
化	0.3	0.8	0.3	0.3	0.3	0.9	0.3	1	0.3	0.1	0.9	0.1	0.1	0.1
北	0.8	0.3	0.9	0.8	0.3	0.3	0.3	0.3	1	0.1	0.3	0.1	0.1	0.1
匘	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	0.1	0.3	0.3	0.3
匙	0.3	0.9	0.3	0.3	0.3	0.8	0.3	0.9	0.3	0.1	1	0.1	0.1	0.1
匚	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	1	0.9	0.9
匛	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.9	1

The final  $R^{(3)}$  table is shown below.

		1	2	3	4	5	6	7	8	9	10	11	12	13
1		0	0	0.8	0.8	0	0	0	0	0.8	0	0	0	0
2		0	0	0	0	0	0.9	0	0.9	0	0	0.9	0	0
3		0.8	0	0	0.8	0	0	0	0	0.9	0	0	0	0
4		0.8	0	0.8	0	0	0	0	0	0.8	0	0	0	0
5		0	0	0	0	0	0	0.8	0	0	0	0	0	0
6		0	0.9	0	0	0	0	0	0.9	0	0	0.9	0	0
7		0	0	0	0	0.8	0	0	0	0	0	0	0	0
8		0	0.9	0	0	0	0.9	0	0	0	0	0.9	0	0
9		0.8	0	0.9	0.8	0	0	0	0	0	0	0	0	0
10		0	0	0	0	0	0	0	0	0	0	0	0	0
11		0	0.9	0	0	0	0.9	0	0.9	0	0	0	0	0
12		0	0	0	0	0	0	0	0	0	0	0	0	0.9
13		0	0	0	0	0	0	0	0	0	0	0.9	0	0

## The 1<sup>st</sup> iteration

$$I = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13\}$$

$$C = \{ \}$$

$a_{26} = a_{28} = a_{2\ 11} = a_{39} = a_{68} = a_{6\ 11} = a_{8\ 11} = a_{12\ 13} = 0.9$  are maximum and  $a_{26}$  is selected at random, then  $C = \{2, 6\}$

$a_{28} + a_{68} = a_{2\ 11} + a_{6\ 11} = 0.9 + 0.9 = 1.8$  are maximum and  $j = 8$  is selected at random, then  $C = \{2, 6, 8\}$

$a_{2\ 11} + a_{6\ 11} + a_{8\ 11} = 0.9 + 0.9 + 0.9 = 2.7$  is maximum, then  $C = \{2, 6, 8, 11\}$

## The 2<sup>nd</sup> iteration

$$I = \{1, 3, 4, 5, 7, 9, 10, 12, 13\}$$

$$C = \{ \}$$

		1	3	4	5	7	9	10	12	13
1		0	0.8	0.8	0	0	0.8	0	0	0
3		0.8	0	0.8	0	0	0.9	0	0	0
4		0.8	0.8	0	0	0	0.8	0	0	0
5		0	0	0	0	0.8	0	0	0	0
7		0	0	0	0.8	0	0	0	0	0
9		0.8	0.9	0.8	0	0	0	0	0	0
10		0	0	0	0	0	0	0	0	0
12		0	0	0	0	0	0	0	0	0.9
13		0	0	0	0	0	0	0.9	0	0

$a_{39} = a_{12,13} = 0.9$  are maximum and  $a_{39}$  is selected at random, then  $C = \{3, 9\}$

$a_{31} + a_{91} = a_{34} + a_{94} = 0.8 + 0.8 = 1.6$  are maximum and  $j = 1$  is selected at random, then  $C = \{1, 3, 9\}$

$a_{14} + a_{34} + a_{94} = 0.8 + 0.8 + 0.8 = 2.4$  is maximum, then  $C = \{1, 3, 4, 9\}$

There are no such  $j$ , that  $a_{1j} + a_{3j} + a_{4j} + a_{9j}$  is maximum.

Then  $C = \{1, 3, 4, 9\}$

### The 3<sup>rd</sup> iteration

$I = \{5, 7, 10, 12, 13\}$

$C = \{ \}$

		5	7	10	12	13
5		0	0.8	0	0	0
7		0.8	0	0	0	0
10		0	0	0	0	0
12		0	0	0	0	0.9
13		0	0	0	0.9	0

$a_{12,13} = 0.9$  is maximum, then  $C = \{12, 13\}$

There are no such  $j$ , that  $a_{12j} + a_{13j}$  is maximum.

Then  $C = \{12, 13\}$

### The 4<sup>th</sup> iteration

$$I = \{5, 7, 10\}$$

$$C = \{ \}$$

		5	7	10
				
5		0	0.8	0
7		0.8	0	0
10		0	0	0

$a_{57} = 0.8$  is maximum, then  $C = \{5, 7\}$

There are no such  $j$ , that  $a_{5j} + a_{7j}$  is maximum.

Then Then  $C = \{5, 7\}$

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### The 5<sup>th</sup> iteration

$$I = \{10\}$$

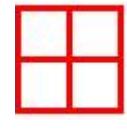
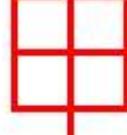
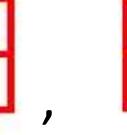
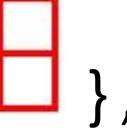
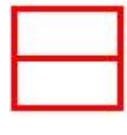
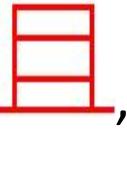
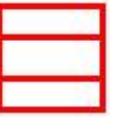
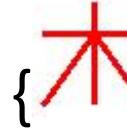
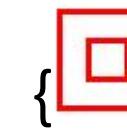
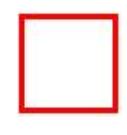
$$C = \{ \}$$

10		
10		0

There are no such  $a_{st} \neq 0$ , then  $C = \{10\}$

The result, when  $\alpha = 0.55$ , is 5 clusters  $\{2, 6, 8, 11\}$ ,  $\{1, 3, 4, 9\}$ ,  $\{12, 13\}$ ,  $\{5, 7\}$ ,  $\{10\}$

OR

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