CCOD
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Cluster Japanese 13 characters

Split into clusters 13 Japanese characters:
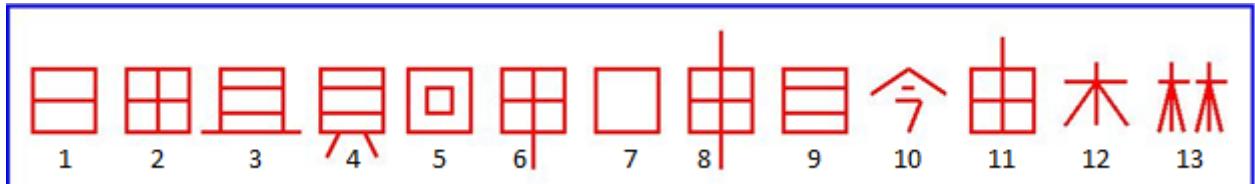
The initial matrix of probability:

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1	0.9	0.7	0.8	0.6	0.8	0.9	0.7	0.9	0	0.6	0	0
2	0.9	1	0.7	0.6	0.4	0.9	0.5	0.8	0.6	0	0.9	0	0
3	0.7	0.7	1	0.8	0.3	0.4	0.2	0.3	0.9	0	0.4	0	0
4	0.8	0.6	0.8	1	0.3	0.3	0.2	0.4	0.9	0	0.3	0	0
5	0.6	0.4	0.3	0.3	1	0.3	0.4	0.2	0.4	0	0.2	0	0
6	0.8	0.9	0.4	0.3	0.3	1	0.4	0.9	0.3	0	0.8	0	0
7	0.9	0.5	0.2	0.2	0.4	0.4	1	0.2	0.3	0	0.2	0	0
8	0.7	0.8	0.3	0.4	0.2	0.9	0.2	1	0.4	0	0.8	0	0
9	0.9	0.6	0.9	0.9	0.4	0.3	0.3	0.4	1	0	0.5	0	0
10	0	0	0	0	0	0	0	0	0	1	0	0.1	0.1
11	0.6	0.9	0.4	0.3	0.2	0.8	0.2	0.8	0.5	0	1	0	0
12	0	0	0	0	0	0	0	0	0	0.1	0	1	0.4
13	0	0	0	0	0	0	0	0	0	0.1	0	0.4	1

The final matrix of probability:

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	0	0.9	0.9	0.9	0.6	0.9	0.9	0.9	0.9	0	0.9	0	0
2	0.9	0	0.9	0.9	0.6	0.9	0.9	0.9	0.9	0	0.9	0	0
3	0.9	0.9	0	0.9	0.6	0.9	0.9	0.9	0.9	0	0.9	0	0
4	0.9	0.9	0.9	0	0.6	0.9	0.9	0.9	0.9	0	0.9	0	0
5	0.6	0.6	0.6	0.6	0	0.6	0.6	0.6	0.6	0	0.6	0	0
6	0.9	0.9	0.9	0.9	0.6	0	0.9	0.9	0.9	0	0.9	0	0
7	0.9	0.9	0.9	0.9	0.6	0.9	0	0.9	0.9	0	0.9	0	0
8	0.9	0.9	0.9	0.9	0.6	0.9	0.9	0	0.9	0	0.9	0	0
9	0.9	0.9	0.9	0.9	0.6	0.9	0.9	0.9	0	0	0.9	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0.9	0.9	0.9	0.9	0.6	0.9	0.9	0.9	0.9	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0

Find the maximum probability in the matrix. Probability is 0.9. Randomly select an element with this probability. Take the element with index K_{12}. Entered into a cluster of its indexes.

1) The probability of $K_{12} = 0.9$

Cluster 1 = {1 2}

2) The max sum K_{13} and $K_{23} = 1.8$

Add the **Cluster 1 = {1 2 3}**

3) The max sum K_{14}, K_{24}, $K_{34} = 2.7$

Add the **Cluster 1 = {1 2 3 4}**

4) The max sum K_{16}, K_{26}, K_{36} and $K_{46} = 3.6$

Add the **Cluster 1 = {1 2 3 4 6}**

5) $K_{17} + K_{27} + K_{37} + K_{47} + K_{67} = 4.5$

Add to **Cluster 1 = {1 2 3 4 6 7}**

6) $K_{18} + K_{28} + K_{38} + K_{48} + K_{68} + K_{78} = 5.4$

Add to **Cluster 1 = {1 2 3 4 6 7 8}**

7) $K_{19} + K_{29} + K_{39} + K_{49} + K_{69} + K_{79} + K_{89} = 6.3$

Add to **Cluster 1 = {1 2 3 4 6 7 8 9}**

8) $K_{111} + K_{211} + K_{311} + K_{411} + K_{611} + K_{711} + K_{811} + K_{911} = 7.2$

Add to **Cluster 1= {1 2 3 4 6 7 8 9 11}**

Total Cluster 1 includes Cluster 1 = {1 2 3 4 6 7 8 9 11}

OR:

Cluster 1:

The matrix of probability after receiving the cluster 1:

	5	10	12	13
5	0	0	0	0
10	0	0	0	0
12	0	0	0	0
13	0	0	0	0

Iteration 2:

Since $K_{5\,10} = K_{5\,12} = K_{15\,13} = K_{10\,12} = K_{10\,13} = K_{12\,13} = 0$. Then divide them into separate clusters.

If $\alpha = 0.55$, then we get 5 clusters.

Cluster 1 = {1 2 3 4 6 7 8 9 11}

Cluster 2 = {5}

**Cluster 3 = {10}**

Cluster 4 = {12}

Cluster 5 = {13}

OR:

Cluster 1:
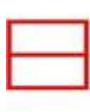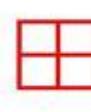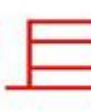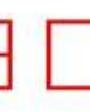
Cluster 2:

Cluster 3:

Cluster 4:

Cluster 5: