

Problem B. Word Squared

Input file: *standard input*
Output file: *standard output*
Time limit: 1 second
Memory limit: 256 mebibytes

Given a permutation of numbers from 1 to n , find a square matrix conforming to the following rules:

1. The matrix should include only numbers from the permutation;
2. The given permutation should occur in every row of the matrix as a contiguous subsequence, read from left to right;
3. The given permutation should occur in every column of the matrix as a contiguous subsequence, read from top to bottom;
4. The matrix size is the smallest possible.

Input

The first line of input is a positive integer $n \leq 500$.

The second line of input consists of n space-separated integers: the permutation itself.

Output

The first line of output should be an integer m : the size of the matrix. The next m lines should list m consecutive rows of the matrix. Each of these lines should contain m integers separated by spaces: the values in the corresponding row.

The size m should be minimum possible. If there are several possible answers, print any one of them.

Example

standard input	standard output
2	3
1 2	1 2 1
	2 1 2
	1 2 1

Note

Here is where the permutation occurs in the matrix from the example:

1	2	1	1	2	1
2	1	2	2	1	2
1	2	1	1	2	1