

B. Young Table

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

You've got table a , consisting of n rows, numbered from 1 to n . The i -th line of table a contains c_i cells, at that for all i ($1 < i \leq n$) holds $c_i \leq c_{i-1}$.

Let's denote s as the total number of cells of table a , that is, $s = \sum_{i=1}^n c_i$. We know that each cell of the table contains a single integer from 1 to s , at that all written integers are distinct.

Let's assume that the cells of the i -th row of table a are numbered from 1 to c_i , then let's denote the number written in the j -th cell of the i -th row as $a_{i,j}$. Your task is to perform several swap operations to rearrange the numbers in the table so as to fulfill the following conditions:

- for all i, j ($1 < i \leq n$; $1 \leq j \leq c_i$) holds $a_{i,j} > a_{i-1,j}$;
- for all i, j ($1 \leq i \leq n$; $1 < j \leq c_i$) holds $a_{i,j} > a_{i,j-1}$.

In one swap operation you are allowed to choose two different cells of the table and swap the recorded there numbers, that is the number that was recorded in the first of the selected cells before the swap, is written in the second cell after it. Similarly, the number that was recorded in the second of the selected cells, is written in the first cell after the swap.

Rearrange the numbers in the required manner. Note that you are allowed to perform any number of operations, but not more than s . You do not have to minimize the number of operations.

Input

The first line contains a single integer n ($1 \leq n \leq 50$) that shows the number of rows in the table. The second line contains n space-separated integers c_i ($1 \leq c_i \leq 50$; $c_i \leq c_{i-1}$) — the numbers of cells on the corresponding rows.

Next n lines contain table a . The i -th of them contains c_i space-separated integers: the j -th integer in this line represents $a_{i,j}$.

It is guaranteed that all the given numbers $a_{i,j}$ are positive and do not exceed s . It is guaranteed that all $a_{i,j}$ are distinct.

Output

In the first line print a single integer m ($0 \leq m \leq s$), representing the number of performed swaps.

In the next m lines print the description of these swap operations. In the i -th line print four space-separated integers x_i, y_i, p_i, q_i ($1 \leq x_i, p_i \leq n$; $1 \leq y_i \leq c_{x_i}$; $1 \leq q_i \leq c_{p_i}$). The printed numbers denote swapping the contents of cells a_{x_i, y_i} and a_{p_i, q_i} . Note that a swap operation can change the contents of **distinct** table cells. Print the swaps in the order, in which they should be executed.

Examples

input
3 3 2 1 4 3 5 6 1 2
output
2 1 1 2 2 2 1 3 1

input

1 4 4 3 2 1
output
2 1 1 1 4 1 2 1 3