C. Gargari and Bishops

time limit per test: 3 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Gargari is jealous that his friend Caisa won the game from the previous problem. He wants to prove that he is a genius.

He has a $n \times n$ chessboard. Each cell of the chessboard has a number written on it. Gargari wants to place two bishops on the chessboard in such a way that there is no cell that is attacked by both of them. Consider a cell with number x written on it, if this cell is attacked by one of the bishops Gargari will get x dollars for it. Tell Gargari, how to place bishops on the chessboard to get maximum amount of money.

We assume a cell is attacked by a bishop, if the cell is located on the same diagonal with the bishop (the cell, where the bishop is, also considered attacked by it).

Input

The first line contains a single integer n $(2 \le n \le 2000)$. Each of the next n lines contains n integers a_{ij} $(0 \le a_{ij} \le 10^9)$ — description of the chessboard.

Output

On the first line print the maximal number of dollars Gargari will get. On the next line print four integers: x_1, y_1, x_2, y_2 $(1 \le x_1, y_1, x_2, y_2 \le n)$, where x_i is the number of the row where the i-th bishop should be placed, y_i is the number of the column where the i-th bishop should be placed. Consider rows are numbered from 1 to n from top to bottom, and columns are numbered from 1 to n from left to right.

If there are several optimal solutions, you can print any of them.

Examples

input
4 1 1 1 1 2 1 1 0 1 1 1 0 1 0 0 1

output
12 2 2 3 2