Rain

We measured the amount of rain each day for the last N weeks. The dat($0 \leq C_{i,j} \leq 1000$)a is given in millimeter. Write a program that gives the following information:

a) The amount of rain for each week.

b) The week on which the most rain fell.

c) The list of those weeks when the amount of rain was increasing day by day.

d) That N/2 long period when rain fell the least count of days.

e) The longest period of weeks when the amount of rain during a week was at most 10 mm.

Input

The first line of the *standard input* contains the count of weeks ($2 \leq N \leq 1000$). The next N lines contain the amount of rain for each day of a week ($0 \leq R_{i,j} \leq 1000$).

Output

The *standard output* should contain 5 lines.

1. line: N numbers – the amount of rain for each week

2. line: The index of the week with the most amount of rain

3. line: The count of the M weeks, and the indexed of those M weeks on which the amount of rain was increasing day by day.

4. line: The index of the week which was the start of that N/2 period in which the count of days with rain was the least (if there is more than one solution, the smallest index).

5. line: The index of the first and last week of the longest period of weeks when there was at most 10 mm of rain. If there is no such week, the output should be 0.

Example

Input

```
6
5 10 15 20 25 30 35
0 2 0 0 0 0 0
0 0 0 1 0 3 0
0 1 2 3 4 5 6
5 1 0 0 2 1 0
0 0 0 0 0 0 0
```

Output

```
140 2 4 21 9 0
1
2 1 4
2
2 3
```

Limits

Time limit: 0.1 second

Memory limit: 32 MiB

Evaluation: In 40% of tests, the count of data is ≤ 20