C. Bear and Colors

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

Bear Limak has n colored balls, arranged in one long row. Balls are numbered 1 through n, from left to right. There are n possible colors, also numbered 1 through n. The i-th ball has color t_i.

For a fixed interval (set of consecutive elements) of balls we can define a *dominant* color. It's a color occurring the biggest number of times in the interval. In case of a tie between some colors, the one with the smallest number (index) is chosen as dominant.

There are non-empty intervals in total. For each color, your task is to count the number of intervals in which this color is dominant.

Input

The first line of the input contains a single integer n $(1 \le n \le 5000)$ — the number of balls.

The second line contains n integers $t_1, t_2, ..., t_n$ $(1 \le t_i \le n)$ where t_i is the color of the i-th ball.

Output

Print n integers. The i-th of them should be equal to the number of intervals where i is a dominant color.

Examples

input
4 1 2 1 2
output
7 3 0 0

input
3 1 1 1
output
6 0 0

Note

In the first sample, color 2 is dominant in three intervals:

- An interval $[2, 2]$ contains one ball. This ball's color is 2 so it's clearly a dominant color.
- An interval $[4, 4]$ contains one ball, with color 2 again.
- An interval $[2, 4]$ contains two balls of color 2 and one ball of color 1.

There are 7 more intervals and color 1 is dominant in all of them.