

A. 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 $n-1$ 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 ($1 \leq n \leq 5000$) — the number of balls.

The second line contains n integers t_1, t_2, \dots, t_n ($1 \leq t_i \leq n$) 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.