

3937 Painting the sticks

Captain Ray likes sticks and spares no effort to find sticks of various colors. It is really a tedious work which Ray has been tired of. As the ICPC Regional contest is coming, he has no time to do it. Consequently he orders his teammate Neal to do this work.

Neal does not like this work either, so he decides just to paint some of the sticks and provide them for Ray (Of course, he will not let Ray know this, otherwise ...).

Neal tells Ray that he has found many sticks, all of which contain no more than three colors (denoted as 1, 2, 3). Ray divides each stick into n parts (n is no more than 30), and let Neal know exactly the wanted color of each part. Neal will paint each stick in several steps with the following rules in each step:

1. He can only paint at most three consecutive blocks at a time. (Each block contains one part or several consecutive parts)
2. The color in the same block must be the same.
3. After Neal finish painting the sticks, the color of the stick must be same as Ray wanted.

Now it is Neal's time to paint the sticks. To finish this job as soon as possible, he wants to minimize the number of step.

You may assume that all sticks are of no color at the beginning.

Input

The input file contains multiple test cases. For each test case, there is a positive integer n , described above, on the first line. Then n numbers (each number is 1, 2, or 3) come in the second line indicating the colors of n parts. Proceed to the end of the file.

Output

For each test case, output the least number of steps that Neal needs to paint a stick. Please output the results as in the Sample Output.

Sample Input

```
2
1 2

3
1 2 3
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Sample Output

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Case 1: 1
Case 2: 1
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