IOI Training Camp 2013 – Online Test 1, 13–14 April, 2013

Unequal

We are given an array A of length N, and an integer K. The i^{th} element of A, denoted $A[i]$, is an integer between 0 and $K-1$, inclusive. Our goal is to transform A into another array, such that no two adjacent values of the final array are equal. In one move, we are allowed to change the value of any element in A, to an integer between 0 and $K-1$. Find the minimum number of moves to transform array A to a valid final array. Also, print the final array that results from an optimal sequence of moves. If there are multiple possibilities, output the lexicographically smallest.

Input format

- Line 1 contains two space-separated integers, N and K.
- The next line contains N space-separated integers, each between 0 and $K-1$, inclusive. The i^{th} integer in this list is $A[i]$.

Output format

The first line should contain the minimum number of moves required. The second line should contain N space-separated integers, the lexicographically smallest resulting array.

Test data

In all the subtasks N, K are positive integers.

- Subtask 1 (50 marks) : $N \leq 100,000$, $K \leq 20$,
- Subtask 2 (50 marks) : $N \leq 1,000,000$, $K \leq 1,000,000$.

Sample input 1

```
6 3
0 1 1 0 2 2
```

Sample output 1

```
2
0 1 2 0 1 2
```

Sample input 2

```
8 3
0 0 0 0 1 1 1 1
```

Sample output 2

```
4
0 1 0 1 0 1 0 1
```

Limits

- *Memory limit* : 128 MB
- *Time limit* : 4s