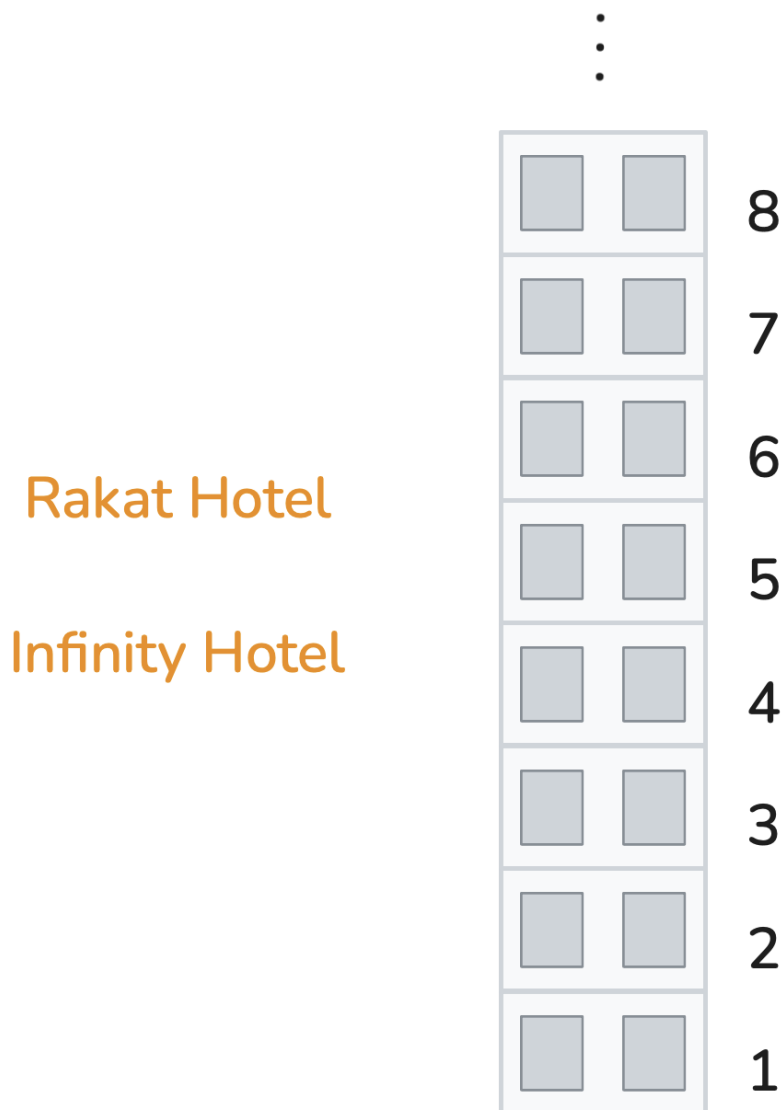


Rakathotel

Temur lives in an ancient city, and his dream was always to build an infinite hotel. But he was only able to build a hotel of 10^9 floors and named it “Rakat Hotel”.



A city is going to be visited by N tourists. Each tourist is assigned one integer a_i .

Tourists found out about “Rakat Hotel” and, having heard that all floors were empty, immediately decided to check in. Thus, some of the tourists are going to check in in a certain order. Let b_1, b_2, \dots, b_k be the integer numbers of tourists who are going to check into the hotel in this order.

That is, b_1 is the integer number of the person who will check in first, then b_2 , etc. Note that check-in is not mandatory for everyone.

Then the i -person tries to get to the b_i -floor by moving up the floors one by one. If at some point the next floor is occupied, the tourist will not be able to move higher. For example, if array b has size $[4, 10, 1]$, then:

- The first person occupies floor 4
- The second person occupies floor 3, since he cannot move to the upper floor (floor 4 is already occupied, despite the fact that floor 10 is empty)
- The third person occupies floor 1

But unfortunately, this hotel had one strict rule:

- No empty floor between two occupied floors

The above example $b = [4, 10, 1]$ violates this rule, while $b = [4, 10, 2]$ does not.

Now help the tourists figure out what is the maximum number of tourists that can check into the hotel without breaking any rules, in a certain order.

In addition, you are given constant $T \in \{0, 1\}$:

- For $T = 0$ you only need to find the maximum number of tourists
- For $T = 1$ you need to find the order that gives the maximum number of tourists. By searching all possible orders, you need to find the lexicographical maximum array b

Input

The first line contains two integers N and T — the number of tourists and the constant T .

Second line contains N integers, the array a .

Output

Depending on the value of T :

- $T = 0$: Print one line, containing one integer k — the maximum number of tourists
- $T = 1$: Print one line, containing one integer k — the maximum number of tourists. In the second line print array b

Constraints

- $1 \leq N \leq 10^6$
- $1 \leq a_i \leq 10^9$

Subtasks

1. (7 points) $a_1 = a_2 = \dots = a_N$
2. (10 points) $N \leq 8$
3. (22 points) $N \leq 10^4$
4. (21 points) $T = 0$
5. (15 points) $N \leq 10^5$
6. (25 points) No additional constraints

Examples

Example 1

Input

```
4 1
1 7 5 2
```

Output

```
2
5 7
```

Example 2

Input

```
3 0
3 5 2
```

Output

```
3
```

Explanation of the first test case:

A person with integer 5 checks in on floor 5. A second person with integer 7 checks in on floor 4, since he cannot get to the upper floor.

There is also another array $b = [2, 1]$ that gives the maximum number of tourists, but it is not a lexicographic maximum array.

Rakat Hotel

Infinity Hotel

