Problem J. Just another Sorting Problem

Time limit: 1 second
Memory limit: 1024 megabytes

According to the problem statement, Bob is the one who lives longer.

—Hotpot-chicken

Jessica is a master of sorting algorithms, proficient in selection sort, insertion sort, bubble sort, and many others. Therefore, she decided to host a sorting competition.

The competition takes place on a permutation† p of length n, with two participants: Alice and Bob. The two players take turns performing operations, with the first player being decided by a coin toss. If the sequence is in ascending order after **any** player's turn, Alice wins immediately. If Alice cannot win within a finite number of turns, Bob is considered the winner.

On Alice's turn, she can choose any two positions i, j ($i \neq j, 1 \leq i, j \leq n$) in the permutation and swap p_i and p_j. On Bob's turn, he can select two adjacent positions $i, i+1$ ($1 \leq i < n$) and swap p_i and p_{i+1}. Neither player is allowed to skip their turn.

Given the permutation p and the name of the player who operates first, determine who will win the game if both players play optimally.

† A permutation of length n is an array consisting of n distinct integers from 1 to n in arbitrary order. For example, $[2, 3, 1, 5, 4]$ is a permutation, but $[1, 2, 2]$ is not a permutation (2 appears twice in the array), and $[1, 3, 4]$ is also not a permutation ($n = 3$ but there is a 4 in the array).

Input

Each test file contains multiple test cases. The first line contains the number of test cases T ($1 \leq T \leq 10^4$). The description of the test cases follows.

The first line of each test case contains an integer n ($2 \leq n \leq 10^5$) and a string s ($s \in \{\texttt{Alice}, \texttt{Bob}\}$), representing the length of the permutation and the name of the player who operates first.

The second line contains n integers $p_1, p_2, \cdots, p_n$ ($1 \leq p_i \leq n$), representing the permutation p. It is guaranteed that there is at least one position i such that $p_i \neq i$.

For each test file, it is guaranteed that the sum of all n over all test cases does not exceed 10^5.

Output

For each test case, output one line containing the winner's name. If Alice wins, print "`Alice`"; otherwise, print "`Bob`".

Example

standard input	standard output
3 2 Alice 2 1 3 Bob 1 3 2 10 Bob 1 2 3 4 5 6 7 8 10 9	Alice Bob Bob