
Yet Another Game of Stones

Input file: standard input
Output file: standard output
Time limit: 1 second
Memory limit: 64 megabytes

Alice and Bob are playing yet another game of stones. The rules of this game are as follow:

- The game starts with n piles of stones indexed from 1 to n . The i -th pile contains a_i stones and a special constraint indicated as b_i .
- The players make their moves alternatively. **The allowable moves for the two players are different.**
- An allowable move of Bob is considered as removal of some positive number of stones from a pile.
- An allowable move of Alice is also considered as removal of some positive number of stones from a pile, but is limited by the constraint b_i of that pile.
 - If $b_i = 0$, there are no constraints.
 - If $b_i = 1$, Alice can only remove some odd number of stones from that pile.
 - If $b_i = 2$, Alice can only remove some even number of stones from that pile.

Please note that there are no constraints on Bob.

- The player who is unable to make an allowable move loses.

Alice is always the first to make a move. Do you know who will win the game if they both play optimally?

Input

There are multiple test cases. The first line of input contains an integer T , indicating the number of test cases. For each test case:

The first line contains an integer n ($1 \leq n \leq 10^5$), indicating the number of piles.

The second line contains n integers a_1, a_2, \dots, a_n ($1 \leq a_i \leq 10^9$), indicating the number of stones in each pile.

The third line of each test case contains n integers b_1, b_2, \dots, b_n ($0 \leq b_i \leq 2$), indicating the special constraint of each pile.

It is guaranteed that the sum of n over all test cases does not exceed 10^6 .

We kindly remind you that this problem contains large I/O file, so it's recommended to use a faster I/O method. For example, you can use `scanf/printf` instead of `cin/cout` in C++.

Output

For each test case, output "Alice" (without the quotes) if Alice will win the game. Otherwise, output "Bob" (without the quotes).

Example

standard input	standard output
3	Alice
2	Bob
4 1	Bob
1 0	
1	
3	
2	
1	
1	
2	

Note

For the first test case, Alice can remove 3 stones from the first pile, and then she will win the game.

For the second test case, as Alice can only remove some even number of stones, she is unable to remove all the stones in the first move. So Bob can remove all the remaining stones in his move and win the game.

For the third test case, Alice is unable to remove any number of stones at the beginning of the game, so Bob wins.