

Problem E. Easy Win

Input file: *standard input*
Output file: *standard output*
Time limit: 2 seconds
Memory limit: 512 mebibytes

Alice and Bob are playing a game.

They have n piles of stones, such that there are a_i ($1 \leq a_i \leq n$) stones in the i -th pile.

During his/her turn, each player, starting from Alice, will pick any pile and take at least one and at most x stones from it.

The player that can't make a move on his/her turn (all piles are empty) loses.

Alice and Bob still have not decided the final value of x , so they have asked you to find out who will win if both players play optimally for all values of x , such that $1 \leq x \leq n$.

Input

The first line of input contains one integer n ($1 \leq n \leq 500\,000$): the number of piles and the upper bound on the number of stones in piles.

The next line contains n integers, a_1, a_2, \dots, a_n ($1 \leq a_i \leq n$): the number of stones in piles.

Output

Print n words, where the i -th of them is "Alice" if Alice will win under optimal play for $i = x$, and "Bob" otherwise.

Examples

standard input	standard output
6 6 6 6 6 6 6	Bob Bob Bob Bob Bob Bob
4 1 2 3 4	Bob Alice Bob Alice
5 1 2 3 2 2	Bob Alice Bob Bob Bob

Note

In the first example, independently on x , Bob may do symmetrical moves (the same move on the pile with the same number of stones), so on each turn, he definitely will have at least one available move.