DWITE '11 R4 #4 - Lego Ladder

Time limit: 1.0s **Memory limit:** 64M

DWITE, January 2012, Problem 4

Little Alice and Little Bob are playing with their favourite toys, Lego blocks. They have N blocks of various heights, arranged in a row. They decide to play a game with their blocks.

Alice and Bob take turns removing one Lego block from the row, with Alice going first. At the beginning of a player's turn, if the blocks form a ladder – a sequence of either non-increasing or non-decreasing heights – that player loses. Given the heights of the initial row of blocks, determine who has the winning strategy, if they play optimally.

The input will contain 5 test cases, and each test case describes 3 games. The first line of each game contains a number N ($1 \leq N \leq 15$), the number of blocks in that game. The next line contains N space-separated integers, representing the heights of the blocks, which will be integers from 0 to 100 inclusive.

The output will contain 5 lines, with strings of 3 characters each. The i^{th} character of the j^{th} line should represent the result of the i^{th} game of the j^{th} test case: `A` if Little Alice wins, and `B` if Little Bob wins.

Sample Input

```
2
2 3
3
0 2 2
4
1 2 4 3
```

Sample Output

```
BBA
```

Problem Resource: DWITE