

C. Card Game

time limit per test: 2 seconds

memory limit per test: 512 megabytes

Alice and Bob are playing a game. They have n cards numbered from 1 to n . At the beginning of the game, some of these cards are given to Alice, and the rest are given to Bob.

Card with number i beats card with number j if and only if $i > j$, **with one exception**: card 1 beats card n .

The game continues as long as each player has at least one card. During each turn, the following occurs:

1. Alice chooses one of her cards and places it face up on the table;
2. Bob, seeing Alice's card, chooses one of his cards and places it face up on the table;
3. if Alice's card beats Bob's card, both cards are taken by Alice. Otherwise, both cards are taken by Bob.

A player can use a card that they have taken during one of the previous turns.

The player who has no cards at the beginning of a turn loses. Determine who will win if both players play optimally.

Input

The first line contains a single integer t ($1 \leq t \leq 5000$) — the number of test cases.

Each test case consists of two lines:

- the first line contains a single integer n ($2 \leq n \leq 50$) — the number of cards;
- the second line contains n characters, each either A or B. If the i -th character is A, then card number i is initially given to Alice; otherwise, it is given to Bob.

Additional constraint on the input: in each test case, at least one card is initially given to Alice, and at least one card is initially given to Bob.

Output

For each test case, output `Alice` if Alice wins with optimal play, or `Bob` if Bob wins. It can be shown that if both players play optimally, the game will definitely end in a finite number of turns with one of the players winning.

Example

| input |
|--------|
| 8 |
| 2 |
| AB |
| 2 |
| BA |
| 4 |
| ABAB |
| 4 |
| BABA |
| 3 |
| BAA |
| 5 |
| AAAAB |
| 5 |
| BAAAB |
| 6 |
| BBBAAA |
| output |
| Alice |
| Bob |
| Bob |
| Bob |
| Alice |
| Alice |

Note

In the first test case, Alice has only one card, and Bob has only one card. Since Alice's card beats Bob's card, she wins after the first turn.

In the second test case, Alice has only one card, and Bob has only one card. Since Bob's card beats Alice's card, he wins after the first turn.

In the third test case, there are two possible game scenarios:

- if Alice plays the card 1 on the first turn, Bob can respond with the card 2 and take both cards. Then, Alice has to play the card 3 on the second turn, and Bob will respond by playing the card 4. Then, he wins;
- if Alice plays the card 3 on the first turn, Bob can respond with the card 4 and take both cards. Then, Alice has to play the card 1, and Bob can respond either with the card 2 or the card 3. Then, he wins.

In the fourth test case, there are two possible game scenarios:

- if Alice plays the card 2 on the first turn, Bob can respond with the card 3 and take both cards. Then, Alice has to play the card 4 on the second turn, and Bob will respond by playing the card 1. Then, he wins;
- if Alice plays the card 4 on the first turn, Bob can respond with the card 1 and take both cards. Then, Alice has to play the card 2, and Bob can respond either with the card 3 or the card 4. Then, he wins.

Educational Codeforces Round
178 (Rated for Div. 2)

Finished

Practice



→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++23 14.2 (64 bit, ms)

Choose file: Choose File No file chosen

Submit

→ Last submissions

| Submission | Time | Verdict |
|---------------------------|-------------------|------------------------|
| 321814718 | May/28/2025 19:18 | Accepted |
| 317631435 | Apr/28/2025 18:46 | Wrong answer on test 2 |
| 317628145 | Apr/28/2025 18:39 | Wrong answer on test 2 |
| 317627243 | Apr/28/2025 18:37 | Wrong answer on test 2 |
| 317626137 | Apr/28/2025 18:35 | Wrong answer on test 2 |

→ Problem tags

brute force constructive algorithms
games greedy math *1100

No tag edit access

→ Contest materials

- Announcement
- Tutorial

Supported by



ITMO