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D. Binary String Battle

time limit per test: 2 seconds memory limit per test: 256 megabytes

Alice and Bob are given a binary string s of length n, and an integer k ($1 \le k < n$).

Alice wins if she is able to transform all characters of s into zeroes. If Alice is unable to win in a finite number of moves, then Bob wins.

Alice and Bob take turns, with Alice going first.

- On Alice's turn, she may choose any **subsequence*** of length k in s, then set all characters in that subsequence to zero.
- On Bob's turn, he may choose any $\mathbf{substring}^\dagger$ of length k in s, then set all characters in that substring to one.

Note that Alice wins if the string consists of all zeros at any point during the game, including in between Alice's and Bob's turns.

Determine who wins with optimal play.

The first line contains an integer t ($1 \le t \le 10^4$) — the number of test cases.

The first line of each test case contains two integers n and k ($2 \le n \le 2 \cdot 10^5$, $1 \le k < n$).

The second line of each test case contains a binary string s of length n.

It is guaranteed that the sum of n over all test cases does not exceed $2 \cdot 10^5$.

Output

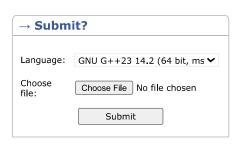
For each test case, output on a single line "Alice" if Alice wins with optimal play, and "Bob" if Bob wins with optimal play.

You can output the answer in any case (upper or lower). For example, the strings "aLiCe", "alice", "ALICE", and "alICE" will be recognized as "Alice".

Example

-	input	Сору
11011 7 4 1011011 6 1 010000 4 1 1111 8 3 10110110 6 4 1111111 output	6	
7 4 1011011 6 1 010000 4 1 11111 8 3 10110110 6 4 111111 output		
1011011 6 1 010000 4 1 1111 8 3 10110110 6 4 1111111 output Co		
6 1 010000 4 1 1111 8 3 10110110 6 4 1111111 output		
010000 4 1 1111 8 3 10110110 6 4 1111111 output		
1111 8 3 10110110 6 4 1111111 output		
8 3 10110110 6 4 111111 output Co	4 1	
10110110 6 4 1111111 output	1111	
6 4 1111111 output	8 3	
output Co		
output		
•	111111	
- •	output	Сору
Bob	Bob	
Alice		
Alice	Alice	

Codeforces Round 1034 (Div. 3) **Contest is running** 00:29:31 Out of competition



→ Last submissions		
Submission	Time	Verdict
326952346	Jul/01/2025 19:19	Accepted
326875295	Jul/01/2025 18:10	Wrong answer on test 2

^{*}A subsequence of a string s is a set of characters in s. Note that these characters do not have to be adjacent.

 $[\]dagger$ A **substring** of a string s is a contiguous group of characters in s. Note that these characters must be adjacent.



Note

In the third sample, Alice can choose the subsequence consisting of s_2 , turning s into 000000. Then she wins immediately.

In the fourth sample, it can be shown that there is no way for Alice to guarantee that she can turn s into 0000 within a finite number of moves.

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