Online-4 (B1 & B2)

January 2024, CSE 106

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Problem Statement

You are given a queue containing a sequence of characters. Your task is to determine whether the character sequence is a palindrome, meaning the sequence reads the same from front to back as from back to front.

Input: A queue of characters.
Output: Return True if the queue is a palindrome; otherwise, return False.

Example:
Input: queue = ['a', 'b', 'c', 'b', 'a']
Output: True
Input: queue = ['a', 'b', 'b', 'c']
Output: False

Hint:
You may need to use a stack to check the palindrome property. In that case, you should use the stack you implemented for Offline-3 using queues.

Restrictions:

- **You can only use one additional queue or stack (besides the original queue). You are not allowed to use any other data structures, such as arrays or lists, etc.**
- Only queue and stack operations are allowed.

Input Format

The input will be provided in a file. The first line of the file contains one integer, which represents the number of test cases. For each test case, the next line contains an integer that specifies how many elements will be added to the queue. The following line contains the characters to be inserted into the queue.

Sample Input

```
2
6
a b c b a
3
a b b
```

Example Output

```
True
False
```