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Day 18: Queues and Stacks 🔖

🎮 by blondiebytes

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Welcome to Day 18! Today we're learning about Stacks and Queues. Check out the Tutorial tab for learning materials and an instructional video!

A *palindrome* is a word, phrase, number, or other sequence of characters which reads the same backwards and forwards. Can you determine if a given string, s, is a palindrome?

To solve this challenge, we must first take each character in s, *enqueue* it in a *queue*, and also *push* that same character onto a *stack*. Once that's done, we must *dequeue* the first character from the *queue* and *pop* the top character off the *stack*, then compare the two characters to see if they are the same; as long as the characters match, we continue dequeueing, popping, and comparing each character until our containers are empty (a non-match means s isn't a palindrome).

Write the following declarations and implementations:

1. Two instance variables: one for your *stack*, and one for your *queue*.

2. A *void pushCharacter(char ch)* method that pushes a character onto a stack.

3. A *void enqueueCharacter(char ch)* method that enqueues a character in the *queue* instance variable.

4. A *char popCharacter()* method that pops and returns the character at the top of the *stack* instance variable.

5. A *char dequeueCharacter()* method that dequeues and returns the first character in the *queue* instance variable.

Input Format

You *do not* need to read anything from stdin. The locked stub code in your editor reads a single line containing string s. It then calls the methods specified above to pass each character to your instance variables.

Constraints

- s is composed of lowercase English letters.

Output Format

You are *not* responsible for printing any output to stdout.
If your code is correctly written and s is a palindrome, the locked stub code will print `The word, s, is a palindrome.`; otherwise, it will print `The word, s, is not a palindrome.`
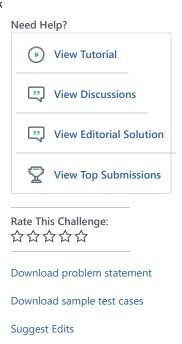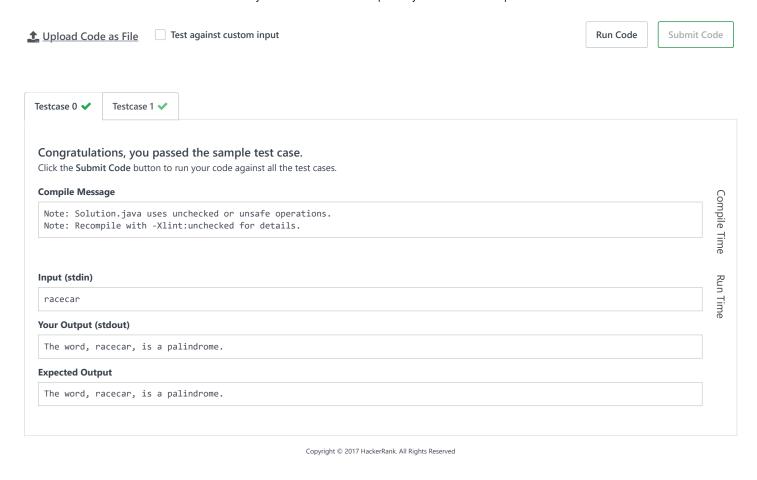
Sample Input

```
racecar
```

Sample Output

```
The word, racecar, is a palindrome.
```

Easy   Submitted 34747 times
        Max Score **30**

Rate This Challenge:
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Download problem statement

Download sample test cases

Suggest Edits

f y in

Current Buffer (saved locally, editable) ⑂ ↺   Java 8 ⌄   ⤢ ⚙

```java
 1 ▶ import ↔;
 3
 4
 5   public class Solution {
 6       // write your code here.
 7       LinkedList queue;
 8       Stack<Character> stack;
 9
10       // making a queue instance
11 ▾    public Solution(){
12           queue = new LinkedList();
13           stack = new Stack<>();
14       }
15
16       // method that pushes a character onto a stack.
17 ▾    private void enqueueCharacter(char c) {
18           queue.addLast(c);
19       }
20
21       // method that enqueues a character in the queue instance
22 ▾    private void pushCharacter(char c) {
23           stack.push(c);
24       }
25
26       // method that pops and returns the character at the top of
27       // the stack instance variable.
28 ▾    private char popCharacter() {
29           return stack.pop();
30       }
31
32       // method that dequeues and returns the first character in
33       // the queue instance variable.
34 ▾    private char dequeueCharacter() {
35           return (char) queue.remove(0);
36       }
37
38 ▶    public static void main(String[] args) {↔}
68   }
```

Line: 7 Col: 5

⬆ **Upload Code as File**   ☐ Test against custom input

Run Code   **Submit Code**

Testcase 0 ✔   Testcase 1 ✔

Congratulations, you passed the sample test case.
Click the **Submit Code** button to run your code against all the test cases.

Compile Message

```
Note: Solution.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.
```

Compile Time

Input (stdin)

```
racecar
```

Run Time

Your Output (stdout)

```
The word, racecar, is a palindrome.
```

Expected Output

```
The word, racecar, is a palindrome.
```

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