

# CharacterReplacement.java

```
1 package SlidingWindow;
2
3 public class CharacterReplacement {
4     //BruteForce
5     public static int crBrute(String s, int k) {
6
7         int[] arr = new int[26];
8         int largestCount = 0, beg = 0, maxlen = 0;
9         for(int end = 0; end < s.length(); end++){
10             arr[s.charAt(end) - 'A']++;
11             largestCount = Math.max(largestCount, arr[s.charAt(end) - 'A']);
12
13             if(end - beg + 1 - largestCount > k){
14                 arr[s.charAt(beg) - 'A']--;
15                 beg++;
16             }
17             maxlen = Math.max(maxlen, end - beg + 1);
18         }
19         return maxlen;
20     }
21     //Better-Approach
22     public static int crBetter(String s, int k) {
23         int len = s.length();
24         int[] count = new int[26];
25         int start = 0, maxCount = 0, maxLength = 0;
26         for (int end = 0; end < len; end++) {
27             maxCount = Math.max(maxCount, ++count[s.charAt(end) - 'A']);
28             while (end - start + 1 - maxCount > k) {
29                 count[s.charAt(start) - 'A']--;
30                 start++;
31             }
32             maxLength = Math.max(maxLength, end - start + 1);
33         }
34         return maxLength;
35     }
36     //Optimal-Approach
37     public static int crOptimal(String s, int k) {
38         if (s.length() == k) return k;
39         int[] frequency = new int[91];
40         byte[] bytes = s.getBytes();
41         int maxFrequency = 0;
42         int start = 0;
43
44         for (int end = 0; end < bytes.length; end++) {
45             maxFrequency = Math.max(maxFrequency, ++frequency[bytes[end]]);
46             while (end - start - maxFrequency >= k)
47                 frequency[bytes[start++]]--;
48         }
49         return bytes.length - start;
50     }
51 }
```

## Mutations

<a href="#">9</a>	1. changed conditional boundary → KILLED 2. negated conditional → KILLED
<a href="#">10</a>	1. Replaced integer subtraction with addition → KILLED 2. Replaced integer addition with subtraction → KILLED
<a href="#">11</a>	1. Replaced integer subtraction with addition → KILLED 1. Replaced integer addition with subtraction → KILLED 2. Replaced integer subtraction with addition → SURVIVED
<a href="#">13</a>	3. changed conditional boundary → KILLED 4. negated conditional → KILLED 5. Replaced integer subtraction with addition → KILLED
<a href="#">14</a>	1. Replaced integer subtraction with addition → KILLED 2. Replaced integer subtraction with addition → KILLED
<a href="#">15</a>	1. Changed increment from 1 to -1 → KILLED
<a href="#">17</a>	1. Replaced integer addition with subtraction → KILLED 2. Replaced integer subtraction with addition → KILLED
<a href="#">19</a>	1. replaced int return with 0 for SlidingWindow/CharacterReplacement::crBrute → KILLED
<a href="#">26</a>	1. negated conditional → KILLED 2. changed conditional boundary → KILLED
<a href="#">27</a>	1. Replaced integer subtraction with addition → KILLED 2. Replaced integer addition with subtraction → KILLED
<a href="#">28</a>	1. negated conditional → KILLED 2. changed conditional boundary → KILLED 3. Replaced integer addition with subtraction → KILLED 4. Replaced integer subtraction with addition → KILLED 5. Replaced integer subtraction with addition → KILLED
<a href="#">29</a>	1. Replaced integer subtraction with addition → KILLED 2. Replaced integer subtraction with addition → KILLED
<a href="#">30</a>	1. Changed increment from 1 to -1 → KILLED
<a href="#">32</a>	1. Replaced integer addition with subtraction → KILLED 2. Replaced integer subtraction with addition → KILLED
<a href="#">34</a>	1. replaced int return with 0 for SlidingWindow/CharacterReplacement::crBetter → KILLED
<a href="#">38</a>	1. negated conditional → KILLED 2. replaced int return with 0 for SlidingWindow/CharacterReplacement::crOptimal → NO_COVERAGE
<a href="#">44</a>	1. negated conditional → KILLED 2. changed conditional boundary → KILLED
<a href="#">45</a>	1. Replaced integer addition with subtraction → KILLED
<a href="#">46</a>	1. changed conditional boundary → KILLED 2. Replaced integer subtraction with addition → KILLED 3. Replaced integer subtraction with addition → KILLED 4. negated conditional → KILLED
<a href="#">47</a>	1. Replaced integer subtraction with addition → KILLED 2. Changed increment from 1 to -1 → KILLED
<a href="#">49</a>	1. replaced int return with 0 for SlidingWindow/CharacterReplacement::crOptimal → KILLED 2. Replaced integer subtraction with addition → KILLED

## Active mutators

- CONDITIONALS\_BOUNDARY
- EMPTY\_RETURNS
- FALSE\_RETURNS
- INCREMENTS
- INVERT\_NEGS
- MATH
- NEGATE\_CONDITIONALS
- NULL\_RETURNS
- PRIMITIVE\_RETURNS
- TRUE\_RETURNS
- VOID\_METHOD\_CALLS

## Tests examined

- SlidingWindow.CharacterReplacementTest.testBetterApproach(SlidingWindow.CharacterReplacementTest) (0 ms)
- SlidingWindow.CharacterReplacementTest.testBruteForce(SlidingWindow.CharacterReplacementTest) (0 ms)
- SlidingWindow.CharacterReplacementTest.testOptimalApproach(SlidingWindow.CharacterReplacementTest) (0 ms)

Report generated by [PIT](#) 1.15.0