Strings Rotations of Each Other

Difficulty: **Easy** Accuracy: **43.83%** Submissions: **235K+** Points: **2**

You are given two strings of equal lengths, **s1** and **s2**. The task is to check if **s2** is a rotated version of the string **s1**.

Note: The characters in the strings are in lowercase.

Examples :

Input: s1 = "abcd", s2 = "cdab"
Output: true
Explanation: After 2 right rotations, s1 will become equal to s2.

Input: s1 = "aab", s2 = "aba"
Output: true
Explanation: *After 1 left rotation, s1 will become equal to s2.*

Input: s1 = "abcd", s2 = "acbd"
Output: false
Explanation: Strings are not rotations of each other.

Java (1.8) Average Time: 15m Start Timer

```
1  // } Driver Code Ends
36
37 class Solution {
38     static int[] computeLPSArray(String pat) {
39         int n = pat.length();
40         int[] lps = new int[n];
41         int len = 0;
42         lps[0] = 0;
43         int i = 1;
44         while (i < n) {
45             if (pat.charAt(i) == pat.charAt(len)) {
46                 len++;
47                 lps[i] = len;
48                 i++;
49             }
50             else {
51                 if (len != 0) {
52                     len = lps[len - 1];
53                 }
54                 else {
55                     lps[i] = 0;
56                     i++;
57                 }
58             }
59         }
60         return lps;
61     }
```

```java
    static boolean areRotations(String s1, String s2) {
        String txt = s1 + s1;
        String pat = s2;
        int n = txt.length();
        int m = pat.length();
        int[] lps = computeLPSArray(pat);
        int i = 0;
        int j = 0;
        while (i < n) {
            if (pat.charAt(j) == txt.charAt(i)) {
                j++;
                i++;
            }
            if (j == m) {
                return true;
            }
            else if (i < n && pat.charAt(j) != txt.charAt(i)) {
                if (j != 0)
                    j = lps[j - 1];
                else
                    i = i + 1;
            }
        }
        return false;
    }
}
```