

Our Solution(s)

Run Code

Your Solutions

Run Code

Solution 1

```
1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 // O(n + m) time | O(m) space
4 function knuthMorrisPrattAlgorithm(string, substring) {
5   let pattern = buildPattern(substring);
6   return doesMatch(string, substring, pattern);
7 }
8
9 function buildPattern(substring) {
10   let pattern = new Array(substring.length).fill(-1);
11   let j = 0;
12   let i = 1;
13   while (i < substring.length) {
14     if (substring[i] === substring[j]) {
15       pattern[i] = j;
16       i++;
17       j++;
18     } else if (j > 0) {
19       j = pattern[j - 1] + 1;
20     } else {
21       i++;
22     }
23   }
24   return pattern;
25 }
26
27 function doesMatch(string, substring, pattern) {
28   let i = 0;
29   let j = 0;
30   while (i + substring.length - j <= string.length) {
31     if (string[i] === substring[j]) {
32       if (j === substring.length - 1) return true;
33       i++;
34       j++;
35     } else {
36       j = pattern[j - 1] + 1;
37     }
38   }
39   return false;
40 }
```

Solution 1 Solution 2 Solution 3

```
1 function knuthMorrisPrattAlgorithm(string, substring) {
2   // Write your code here.
3 }
4
5 // Do not edit the line below.
6 exports.knuthMorrisPrattAlgorithm = knuthMorrisPrattAlgorithm;
7
```

Our Tests

Custom Output

Submit Code

```
1 // Test Case 1: Expected: true
2 // Input: string = "ababab", substring = "abab"
3
4 // Test Case 2: Expected: false
5 // Input: string = "ababab", substring = "ababab"
6
7 // Test Case 3: Expected: true
8 // Input: string = "ababab", substring = "ababab"
9
10 // Test Case 4: Expected: false
11 // Input: string = "ababab", substring = "ababab"
```

```
1 // Test Case 1: Expected: true
2 // Input: string = "ababab", substring = "abab"
3
4 // Test Case 2: Expected: false
5 // Input: string = "ababab", substring = "ababab"
6
7 // Test Case 3: Expected: true
8 // Input: string = "ababab", substring = "ababab"
9
10 // Test Case 4: Expected: false
11 // Input: string = "ababab", substring = "ababab"
```

```
10 //
11
12 int Test Case 01 : Success (1/1)
13 //
14 // Expected program output: Enter the number of elements:
15 // Enter the array:
16 //
17
18 int Test Case 02 : Success (1/1)
19 // Expected program output: Enter the number of elements:
20 //
21
22 int Test Case 03 : Success (1/1)
23 // Expected program output: Enter the array: ,
24 //
```

Run or submit code when you're ready.