

Our Solution(s)

Run Code

Your Solutions

Run Code

Solution 1

```
1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 using System;
4
5 public class Program {
6     // O(n + m) time | O(m) space
7     public static bool KnuthMorrisPrattAlgorithm(string str, string substring) {
8         int[] pattern = buildPattern(substring);
9         return doesMatch(str, substring, pattern);
10    }
11
12    public static int[] buildPattern(string substring) {
13        int[] pattern = new int[substring.Length];
14        Array.Fill(pattern, -1);
15        int j = 0;
16        int i = 1;
17        while (i < substring.Length) {
18            if (substring[i] == substring[j]) {
19                pattern[i] = j;
20                i++;
21                j++;
22            } else if (j > 0) {
23                j = pattern[j - 1] + 1;
24            } else {
25                i++;
26            }
27        }
28        return pattern;
29    }
30
31    public static bool doesMatch(string str, string substring, int[] pattern) {
32        int i = 0;
33        int j = 0;
```

Solution 1

Solution 2

Solution 3

```
1 public class Program {
2     public static bool KnuthMorrisPrattAlgorithm(string str, string substring) {
3         // Write your code here.
4         return false;
5     }
6 }
7
```

