

Solution 1

```
1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 // O(n*m) | O(n) space
4 function underscorifySubstring(string, substring) {
5   const locations = collapse(getLocations(string, substring));
6   return underscorify(string, locations);
7 }
8
9 function getLocations(string, substring) {
10  const locations = [];
11  let startIdx = 0;
12  while (startIdx < string.length) {
13    const nextIdx = string.indexOf(substring, startIdx);
14    if (nextIdx !== -1) {
15      locations.push([nextIdx, nextIdx + substring.length]);
16      startIdx = nextIdx + 1;
17    } else {
18      break;
19    }
20  }
21  return locations;
22 }
23
24 function collapse(locations) {
25   if (!locations.length) return locations;
26   const newLocations = [locations[0]];
27   let previous = newLocations[0];
28   for (let i = 1; i < locations.length; i++) {
29     const current = locations[i];
30     if (current[0] <= previous[1]) {
31       previous[1] = current[1];
32     } else {
33       newLocations.push(current);
34       previous = current;
35     }
36   }
37   return newLocations;
38 }
39
40 function underscorify(string, locations) {
41   let locationsIdx = 0;
42   let stringIdx = 0;
43   let inBetweenUnderscores = false;
44   const finalChars = [];
45   let i = 0;
46   while (stringIdx < string.length && locationsIdx < locations.length) {
47     if (stringIdx === locations[locationsIdx][0]) {
48       finalChars.push('_');
49       inBetweenUnderscores = !inBetweenUnderscores;
50       if (!inBetweenUnderscores) locationsIdx++;
51       i = i === 1 ? 0 : 1;
52     }
53     finalChars.push(string[stringIdx]);
54     stringIdx++;
55   }
56   if (locationsIdx < locations.length) {
57     finalChars.push('_');
58   } else if (stringIdx < string.length) {
59     finalChars.push(string.slice(stringIdx));
60   }
61   return finalChars.join('');
62 }
63
64 exports.underscorifySubstring = underscorifySubstring;
65
```