

Solution 1Solution 2

```
1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 package main
4
5 import "math"
6
7 // O(n^3 + m) time | O(n + m) space - where n is the number of digits
8 // in Pi and m is the number of favorite numbers.
9 func NumbersInPi(pi string, numbers []string) int {
10     numbersTable := map[string]bool{}
11     for _, number := range numbers {
12         numbersTable[number] = true
13     }
14
15     cache := map[int]int{}
16     for i := len(pi) - 1; i >= 0; i-- {
17         getMinSpaces(pi, numbersTable, cache, i)
18     }
19
20     if cache[0] == math.MaxInt32 {
21         return -1
22     }
23     return cache[0]
24 }
25
26 func getMinSpaces(pi string, numbersTable map[string]bool,
27     cache map[int]int, idx int) int {
28     if idx == len(pi) {
29         return -1
30     } else if val, found := cache[idx]; found {
31         return val
32     }
33     minSpaces := math.MaxInt32
34     for i := idx; i < len(pi); i++ {
35         prefix := pi[idx : i+1]
36         if _, found := numbersTable[prefix]; found {
37             minSpacesInSuffix := getMinSpaces(pi, numbersTable, cache, i+1)
38             minSpaces = min(minSpaces, minSpacesInSuffix+1)
39         }
40     }
41     cache[idx] = minSpaces
42     return cache[idx]
43 }
44
45 func min(a, b int) int {
46     if a < b {
47         return a
48     }
49     return b
50 }
51
```