

PromptScratchpadOur Solution(s)Video Explanation

Run Code

Solution 1Solution 2

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1 # Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 # O(n^3 + m) time | O(n + m) space - where n is the number of digits in Pi and m is the number of favorite numbers
4 def numbersInPi(pi, numbers):
5     numbersTable = {number: True for number in numbers}
6     cache = {}
7     for i in reversed(range(len(pi))):
8         getMinSpaces(pi, numbersTable, cache, i)
9     return -1 if cache[0] == float("inf") else cache[0]
10
11
12 def getMinSpaces(pi, numbersTable, cache, idx):
13     if idx == len(pi):
14         return -1
15     if idx in cache:
16         return cache[idx]
17     minSpaces = float("inf")
18     for i in range(idx, len(pi)):
19         prefix = pi[idx : i + 1]
20         if prefix in numbersTable:
21             minSpacesInSuffix = getMinSpaces(pi, numbersTable, cache, i + 1)
22             minSpaces = min(minSpaces, minSpacesInSuffix + 1)
23     cache[idx] = minSpaces
24     return cache[idx]
25
```