3016. Minimum Number of Pushes to Type Word II   Solved ●

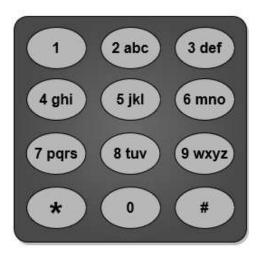Medium   🏷 Topics   📖 Companies   💡 Hint

You are given a string word containing lowercase English letters.

Telephone keypads have keys mapped with **distinct** collections of lowercase English letters, which can be used to form words by pushing them. For example, the key 2 is mapped with ["a","b","c"], we need to push the key one time to type "a", two times to type "b", and three times to type "c" .

It is allowed to remap the keys numbered 2 to 9 to **distinct** collections of letters. The keys can be remapped to **any** amount of letters, but each letter **must** be mapped to **exactly** one key. You need to find the **minimum** number of times the keys will be pushed to type the string word.

Return *the **minimum** number of pushes needed to type* word *after remapping the keys.*

An example mapping of letters to keys on a telephone keypad is given below. Note that 1, *, #, and 0 do **not** map to any letters.

Example 1:

> **Input:** word = "abcde"
> **Output:** 5
> **Explanation:** The remapped keypad given in the image provides the minimum cost.
> "a" -> one push on key 2
> "b" -> one push on key 3

"c" -> one push on key 4
"d" -> one push on key 5
"e" -> one push on key 6
Total cost is 1 + 1 + 1 + 1 + 1 = 5.
It can be shown that no other mapping can provide a lower cost.

Example 2:

Input: word = "xyzxyzxyzxyz"
Output: 12
Explanation: The remapped keypad given in the image provides the minimum cost.
"x" -> one push on key 2
"y" -> one push on key 3
"z" -> one push on key 4
Total cost is 1 * 4 + 1 * 4 + 1 * 4 = 12
It can be shown that no other mapping can provide a lower cost.
Note that the key 9 is not mapped to any letter: it is not necessary to map letters to every key, but to map all the letters.

Example 3:

Input: word = "aabbccddeeffgghhiiiiii"
Output: 24
Explanation: The remapped keypad given in the image provides the minimum cost.
"a" -> one push on key 2
"b" -> one push on key 3
"c" -> one push on key 4

"d" -> one push on key 5
"e" -> one push on key 6
"f" -> one push on key 7
"g" -> one push on key 8
"h" -> two pushes on key 9
"i" -> one push on key 9
Total cost is 1 * 2 + 1 * 2 + 1 * 2 + 1 * 2 + 1 * 2 + 1 * 2 + 1 * 2 + 2 * 2 + 6 * 1 = 24.
It can be shown that no other mapping can provide a lower cost.

Constraints:

- $1 <= word.length <= 10^5$

- word consists of lowercase English letters.

Seen this question in a real interview before?   1/5

Yes   No

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