

3551. Minimum Swaps to Sort by Digit Sum

Solved ●

Medium

Topics



Hint

You are given an array `nums` of **distinct** positive integers. You need to sort the array in **increasing** order based on the sum of the digits of each number. If two numbers have the same digit sum, the **smaller** number appears first in the sorted order.

Return the **minimum** number of swaps required to rearrange `nums` into this sorted order.

A **swap** is defined as exchanging the values at two distinct positions in the array.

Example 1:

Input: `nums = [37,100]`

Output: 1

Explanation:

- Compute the digit sum for each integer: $[3 + 7 = 10, 1 + 0 + 0 = 1] \rightarrow [10, 1]$
- Sort the integers based on digit sum: `[100, 37]`. Swap `37` with `100` to obtain the sorted order.
- Thus, the minimum number of swaps required to rearrange `nums` is 1.

Example 2:

Input: `nums = [22,14,33,7]`

Output: 0

Explanation:

- Compute the digit sum for each integer: $[2 + 2 = 4, 1 + 4 = 5, 3 + 3 = 6, 7 = 7] \rightarrow [4, 5, 6, 7]$
- Sort the integers based on digit sum: `[22, 14, 33, 7]`. The array is already sorted.
- Thus, the minimum number of swaps required to rearrange `nums` is 0.

Example 3:

Input: `nums = [18,43,34,16]`

Output: 2

Explanation:

- Compute the digit sum for each integer: $[1 + 8 = 9, 4 + 3 = 7, 3 + 4 = 7, 1 + 6 = 7] \rightarrow [9, 7, 7, 7]$
- Sort the integers based on digit sum: `[16, 34, 43, 18]`. Swap `18` with `16`, and swap `43` with `34` to obtain the sorted order.
- Thus, the minimum number of swaps required to rearrange `nums` is 2.


Constraints:

- $1 \leq \text{nums.length} \leq 10^5$
- $1 \leq \text{nums}[i] \leq 10^9$
- `nums` consists of **distinct** positive integers.

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

Yes No

Accepted 22.947/45.4K | Acceptance Rate 50.6%

Topics	▼
	▼
Hint 1	▼
Hint 2	▼
Discussion (22)	▼

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