

Problem 2195: Append K Integers With Minimal Sum

Problem Information

Difficulty: Medium

Acceptance Rate: 26.54%

Paid Only: No

Tags: Array, Math, Greedy, Sorting

Problem Description

You are given an integer array `nums` and an integer `k`. Append `k` **unique positive** integers that do **not** appear in `nums` to `nums` such that the resulting total sum is **minimum**.

Return `the sum of the k integers appended to nums`.

Example 1:

Input: `nums = [1,4,25,10,25]`, `k = 2` **Output:** `5` **Explanation:** The two unique positive integers that do not appear in `nums` which we append are 2 and 3. The resulting sum of `nums` is $1 + 4 + 25 + 10 + 25 + 2 + 3 = 70$, which is the minimum. The sum of the two integers appended is $2 + 3 = 5$, so we return 5.

Example 2:

Input: `nums = [5,6]`, `k = 6` **Output:** `25` **Explanation:** The six unique positive integers that do not appear in `nums` which we append are 1, 2, 3, 4, 7, and 8. The resulting sum of `nums` is $5 + 6 + 1 + 2 + 3 + 4 + 7 + 8 = 36$, which is the minimum. The sum of the six integers appended is $1 + 2 + 3 + 4 + 7 + 8 = 25$, so we return 25.

Constraints:

`1 <= nums.length <= 105` `1 <= nums[i] <= 109` `1 <= k <= 108`

Code Snippets

C++:

```
class Solution {  
public:  
    long long minimalKSum(vector<int>& nums, int k) {  
  
    }  
};
```

Java:

```
class Solution {  
    public long minimalKSum(int[] nums, int k) {  
  
    }  
}
```

Python3:

```
class Solution:  
    def minimalKSum(self, nums: List[int], k: int) -> int:
```