

Problem 1090: Largest Values From Labels

Problem Information

Difficulty: Medium

Acceptance Rate: 63.78%

Paid Only: No

Tags: Array, Hash Table, Greedy, Sorting, Counting

Problem Description

You are given n item's value and label as two integer arrays `values` and `labels`. You are also given two integers `numWanted` and `useLimit`.

Your task is to find a subset of items with the **maximum sum** of their values such that:

- * The number of items is **at most** `numWanted`.
- * The number of items with the same label is **at most** `useLimit`.

Return the maximum sum.

Example 1:

Input: `values = [5,4,3,2,1]`, `labels = [1,1,2,2,3]`, `numWanted = 3`, `useLimit = 1`

Output: 9

Explanation:

The subset chosen is the first, third, and fifth items with the sum of values $5 + 3 + 1$.

Example 2:

Input: `values = [5,4,3,2,1]`, `labels = [1,3,3,3,2]`, `numWanted = 3`, `useLimit = 2`

Output: 12

****Explanation:****

The subset chosen is the first, second, and third items with the sum of values $5 + 4 + 3$.

****Example 3:****

****Input:**** values = [9,8,8,7,6], labels = [0,0,0,1,1], numWanted = 3, useLimit = 1

****Output:**** 16

****Explanation:****

The subset chosen is the first and fourth items with the sum of values $9 + 7$.

****Constraints:****

$n == \text{values.length} == \text{labels.length}$
 $1 \leq n \leq 2 * 10^4$
 $0 \leq \text{values}[i], \text{labels}[i] \leq 2 * 10^4$
 $1 \leq \text{numWanted}, \text{useLimit} \leq n$

Code Snippets

C++:

```
class Solution {
public:
    int largestValsFromLabels(vector<int>& values, vector<int>& labels, int
numWanted, int useLimit) {

    }

};
```

Java:

```
class Solution {
    public int largestValsFromLabels(int[] values, int[] labels, int numWanted,
int useLimit) {

    }

}
```

Python3:

```
class Solution:
    def largestValsFromLabels(self, values: List[int], labels: List[int],
                              numWanted: int, useLimit: int) -> int:
```