Problem 2512: Reward Top K Students

Problem Information

Difficulty: Medium
Acceptance Rate: 46.53%
Paid Only: No
Tags: Array, Hash Table, String, Sorting, Heap (Priority Queue)

Problem Description

You are given two string arrays `positive_feedback` and `negative_feedback`, containing the words denoting positive and negative feedback, respectively. Note that **no** word is both positive and negative.

Initially every student has `0` points. Each positive word in a feedback report **increases** the points of a student by `3`, whereas each negative word **decreases** the points by `1`.

You are given `n` feedback reports, represented by a **0-indexed** string array `report` and a **0-indexed** integer array `student_id`, where `student_id[i]` represents the ID of the student who has received the feedback report `report[i]`. The ID of each student is **unique**.

Given an integer `k`, return _the top_`k` _students after ranking them in **non-increasing** order by their points_. In case more than one student has the same points, the one with the lower ID ranks higher.

Example 1:

Input: positive_feedback = ["smart","brilliant","studious"], negative_feedback = ["not"], report = ["this student is studious","the student is smart"], student_id = [1,2], k = 2 **Output:** [1,2] **Explanation:** Both the students have 1 positive feedback and 3 points but since student 1 has a lower ID he ranks higher.

Example 2:

Input: positive_feedback = ["smart","brilliant","studious"], negative_feedback = ["not"], report = ["this student is not studious","the student is smart"], student_id = [1,2], k = 2

Output: [2,1] **Explanation:** - The student with ID 1 has 1 positive feedback and 1 negative feedback, so he has 3-1=2 points. - The student with ID 2 has 1 positive feedback, so he has 3 points. Since student 2 has more points, [2,1] is returned.

Constraints:

* `1 <= positive_feedback.length, negative_feedback.length <= 104` * `1 <= positive_feedback[i].length, negative_feedback[j].length <= 100` * Both `positive_feedback[i]` and `negative_feedback[j]` consists of lowercase English letters. * No word is present in both `positive_feedback` and `negative_feedback`. * `n == report.length == student_id.length` * `1 <= n <= 104` * `report[i]` consists of lowercase English letters and spaces `' '`. * There is a single space between consecutive words of `report[i]`. * `1 <= report[i].length <= 100` * `1 <= student_id[i] <= 109` * All the values of `student_id[i]` are **unique**. * `1 <= k <= n`

Code Snippets

C++:

```
class Solution {
public:
vector<int> topStudents(vector<string>& positive_feedback, vector<string>&
negative_feedback, vector<string>& report, vector<int>& student_id, int k) {


}
};
```

Java:

```
class Solution {
public List<Integer> topStudents(String[] positive_feedback, String[]
negative_feedback, String[] report, int[] student_id, int k) {


}
}
```

Python3:

```
class Solution:
def topStudents(self, positive_feedback: List[str], negative_feedback:
List[str], report: List[str], student_id: List[int], k: int) -> List[int]:
```