

1792. Maximum Average Pass Ratio

Solved ●

Medium  Topics  Companies  Hint

There is a school that has classes of students and each class will be having a final exam. You are given a 2D integer array `classes`, where `classes[i] = [passi, totali]`. You know beforehand that in the `ith` class, there are `totali` total students, but only `passi` number of students will pass the exam.

You are also given an integer `extraStudents`. There are another `extraStudents` brilliant students that are **guaranteed** to pass the exam of any class they are assigned to. You want to assign each of the `extraStudents` students to a class in a way that **maximizes** the **average** pass ratio across **all** the classes.

The **pass ratio** of a class is equal to the number of students of the class that will pass the exam divided by the total number of students of the class. The **average pass ratio** is the sum of pass ratios of all the classes divided by the number of the classes.

Return *the maximum possible average pass ratio after assigning the `extraStudents` students*. Answers within 10^{-5} of the actual answer will be accepted.

Example 1:

Input: `classes = [[1,2],[3,5],[2,2]]`, `extraStudents = 2`**Output:** 0.78333**Explanation:** You can assign the two extra students to the first class. The average pass ratio will be equal to $(3/4 + 3/5 + 2/2) / 3 = 0.78333$.

Example 2:

Input: `classes = [[2,4],[3,9],[4,5],[2,10]]`, `extraStudents = 4`**Output:** 0.53485

Constraints:

- $1 \leq \text{classes.length} \leq 10^5$
- $\text{classes}[i].\text{length} == 2$
- $1 \leq \text{pass}_i \leq \text{total}_i \leq 10^5$
- $1 \leq \text{extraStudents} \leq 10^5$

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

Yes No

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