

2067. Maximum Number of Points with Cost

Difficulty : Medium

<https://leetcode.com/problems/maximum-number-of-points-with-cost>

You are given an $m \times n$ integer matrix `points` (**0-indexed**). Starting with 0 points, you want to **maximize** the number of points you can get from the matrix.

To gain points, you must pick one cell in **each row**. Picking the cell at coordinates (r, c) will **add** `points[r][c]` to your score.

However, you will lose points if you pick a cell too far from the cell that you picked in the previous row. For every two adjacent rows r and $r + 1$ (where $0 \leq r < m - 1$), picking cells at coordinates (r, c_1) and $(r + 1, c_2)$ will **subtract** $\text{abs}(c_1 - c_2)$ from your score.

Return the **maximum** number of points you can achieve.

`abs(x)` is defined as:

- x for $x \geq 0$.
- $-x$ for $x < 0$.

Example 1:

1	2	3
1	5	1
3	1	1

Input: `points = [[1,2,3],[1,5,1],[3,1,1]]`

Output: 9

Explanation:

The blue cells denote the optimal cells to pick, which have coordinates $(0, 2)$, $(1, 1)$, and $(2, 0)$.

You add $3 + 5 + 3 = 11$ to your score.

However, you must subtract $\text{abs}(2 - 1) + \text{abs}(1 - 0) = 2$ from your score.

Your final score is $11 - 2 = 9$.

Example 2:

1	5
2	3
4	2

Input: `points = [[1,5],[2,3],[4,2]]`

Output: 11

Explanation:

The blue cells denote the optimal cells to pick, which have coordinates (0, 1), (1, 1), and (2, 0).

You add $5 + 3 + 4 = 12$ to your score.

However, you must subtract $\text{abs}(1 - 1) + \text{abs}(1 - 0) = 1$ from your score.

Your final score is $12 - 1 = 11$.

Constraints:

- $m == \text{points.length}$
- $n == \text{points}[r].\text{length}$
- $1 \leq m, n \leq 10^5$
- $1 \leq m * n \leq 10^5$
- $0 \leq \text{points}[r][c] \leq 10^5$