



5815. Maximum Number of Points with Cost

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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:

User Accepted:	0
User Tried:	0
Total Accepted:	0
Total Submissions:	0
Difficulty:	Medium

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:

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

JavaScript



```

1 const abs = Math.abs;
2 const maxPoints = (g) => {
3   let n = g.length;
4   let m = g[0].length;
5   let dp = initialize2DArrayNew(n, m);
6   for (let i = 0; i < n; i++) {
7     for (let j = 0; j < m; j++) {
8       if (i == 0) {
9         dp[i][j] = g[i][j];
10      } else {
11        let max = 0;
12        for (let col = 0; col < m; col++) {
13          // pr()
14          // pr("row", i);
15          let rowDiff = abs(j - col);
16          let plus = g[i][j] + dp[i - 1][col] - rowDiff;
17          // pr(g[i][j], dp[i - 1][col], rowDiff);
18          max = Math.max(max, plus)
19        }
16

```

```
20         // pr("max", max);
21         dp[i][j] += max;
22     }
23 }
24 }
25 // pr(dp);
26 return Math.max.apply(Math, dp[n - 1]);
27 };
28
29 const initialize2DArrayNew = (n, m) => { let data = []; for (let i = 0; i < n; i++) { let
tmp = Array(m).fill(0); data.push(tmp); } return data; };
```

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