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Solution

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296. Best Meeting Point

Hard

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Given an $m \times n$ binary grid `grid` where each `1` marks the home of one friend, return the minimal **total travel distance**.

The **total travel distance** is the sum of the distances between the houses of the friends and the meeting point.

The distance is calculated using Manhattan Distance, where $\text{distance}(p1, p2) = |p2.x - p1.x| + |p2.y - p1.y|$.

Example 1:

| | | | | |
|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 |

Input: `grid = [[1,0,0,0,1],[0,0,0,0,0],[0,0,1,0,0]]`
Output: 6
Explanation: Given three friends living at (0,0), (0,4), and (2,2). The point (0,2) is an ideal meeting point, as the total travel distance of $2 + 2 + 2 = 6$ is minimal. So return 6.

Example 2:

Input: `grid = [[1,1]]`
Output: 1

Constraints:

- $m == \text{grid.length}$
- $n == \text{grid}[i].\text{length}$
- $1 \leq m, n \leq 200$
- `grid[i][j]` is either 0 or 1.
- There will be **at least two** friends in the `grid`.

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```
class Solution {  
    public int minTotalDistance(int[][] grid) {  
  
    }  
}
```

Problems

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Console

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