2662. Minimum Cost of a Path With Special Roads

Solved ●

Medium Topics Companies Hint

You are given an array `start` where `start = [startX, startY]` represents your initial position `(startX, startY)` in a 2D space. You are also given the array `target` where `target = [targetX, targetY]` represents your target position `(targetX, targetY)`.

The cost of going from a position `(x1, y1)` to any other position in the space `(x2, y2)` is `|x2 - x1| + |y2 - y1|`.

There are also some special roads. You are given a 2D array `specialRoads` where `specialRoads[i] = [x1ᵢ, y1ᵢ, x2ᵢ, y2ᵢ, costᵢ]` indicates that the i^{th} special road can take you from `(x1ᵢ, y1ᵢ)` to `(x2ᵢ, y2ᵢ)` with a cost equal to `costᵢ`. You can use each special road any number of times.

Return *the minimum cost required to go from* `(startX, startY)` to `(targetX, targetY)`.

Example 1:

> **Input:** start = [1,1], target = [4,5], specialRoads = [[1,2,3,3,2],[3,4,4,5,1]]
> **Output:** 5
> **Explanation:** The optimal path from (1,1) to (4,5) is the following:
> - (1,1) -> (1,2). This move has a cost of |1 - 1| + |2 - 1| = 1.
> - (1,2) -> (3,3). This move uses the first special edge, the cost is 2.
> - (3,3) -> (3,4). This move has a cost of |3 - 3| + |4 - 3| = 1.
> - (3,4) -> (4,5). This move uses the second special edge, the cost is 1.
> So the total cost is 1 + 2 + 1 + 1 = 5.
> It can be shown that we cannot achieve a smaller total cost than 5.

Example 2:

> **Input:** start = [3,2], target = [5,7], specialRoads = [[3,2,3,4,4],[3,3,5,5,5],[3,4,5,6,6]]
> **Output:** 7
> **Explanation:** It is optimal to not use any special edges and go directly from the starting to the ending position with a cost |5 - 3| + |7 - 2| = 7.

Constraints:

- `start.length == target.length == 2`
- `1 <= startX <= targetX <= 10^5`
- `1 <= startY <= targetY <= 10^5`
- `1 <= specialRoads.length <= 200`
- `specialRoads[i].length == 5`
- `startX <= x1ᵢ, x2ᵢ <= targetX`
- `startY <= y1ᵢ, y2ᵢ <= targetY`
- `1 <= costᵢ <= 10^5`

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Yes No

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Hint 1

Hint 2

Hint 3

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