1514. Path with Maximum Probability

Hint

Medium 2.9K 65

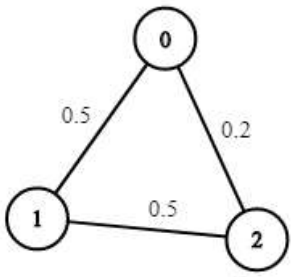
Companies

You are given an undirected weighted graph of `n` nodes (0-indexed), represented by an edge list where `edges[i] = [a, b]` is an undirected edge connecting the nodes `a` and `b` with a probability of success of traversing that edge `succProb[i]`.

Given two nodes `start` and `end`, find the path with the maximum probability of success to go from `start` to `end` and return its success probability.

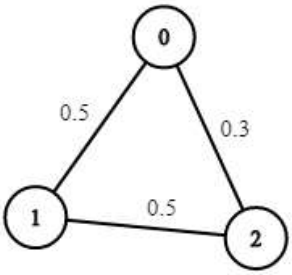
If there is no path from `start` to `end`, **return 0**. Your answer will be accepted if it differs from the correct answer by at most **1e-5**.

Example 1:



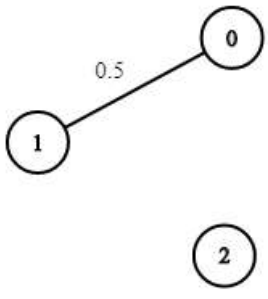
> **Input:** n = 3, edges = [[0,1],[1,2],[0,2]], succProb = [0.5,0.5,0.2], start = 0, end = 2
> **Output:** 0.25000
> **Explanation:** There are two paths from start to end, one having a probability of success = 0.2 and the other has 0.5 * 0.5 = 0.25.

Example 2:



> **Input:** n = 3, edges = [[0,1],[1,2],[0,2]], succProb = [0.5,0.5,0.3], start = 0, end = 2
> **Output:** 0.30000

Example 3:



> **Input:** n = 3, edges = [[0,1]], succProb = [0.5], start = 0, end = 2
> **Output:** 0.00000
> **Explanation:** There is no path between 0 and 2.

Constraints:

- `2 <= n <= 10^4`
- `0 <= start, end < n`
- `start != end`
- `0 <= a, b < n`
- `a != b`
- `0 <= succProb.length == edges.length <= 2*10^4`
- `0 <= succProb[i] <= 1`
- There is at most one edge between every two nodes.

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Yes No

Discussion (33)

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