2361. Minimum Costs Using the Train Line `Premium`

A train line going through a city has two routes, the regular route and the express route. Both routes go through the **same** `n + 1` stops labeled from `0` to `n`. Initially, you start on the regular route at stop `0`.

You are given two **1-indexed** integer arrays `regular` and `express`, both of length `n`. `regular[i]` describes the cost it takes to go from stop `i - 1` to stop `i` using the regular route, and `express[i]` describes the cost it takes to go from stop `i - 1` to stop `i` using the express route.

You are also given an integer `expressCost` which represents the cost to transfer from the regular route to the express route.

Note that:

- There is no cost to transfer from the express route back to the regular route.
- You pay `expressCost` **every** time you transfer from the regular route to the express route.
- There is no extra cost to stay on the express route.

Return *a* **1-indexed** *array* `costs` *of length* `n`, *where* `costs[i]` *is the* **minimum** cost to reach stop `i` from stop `0`.

Note that a stop can be counted as **reached** from either route.

Example 1:
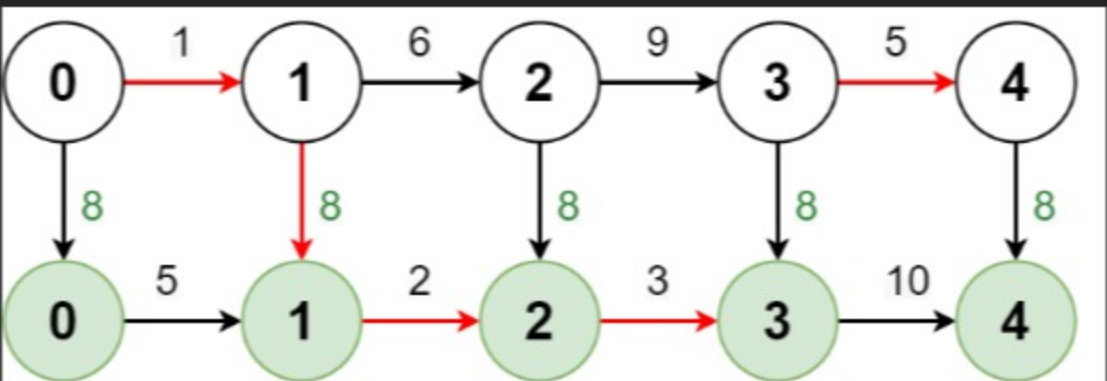

```
Input: regular = [1,6,9,5], express = [5,2,3,10], expressCost = 8
Output: [1,7,14,19]
Explanation: The diagram above shows how to reach stop 4 from stop 0 with minimum cost.
- Take the regular route from stop 0 to stop 1, costing 1.
- Take the express route from stop 1 to stop 2, costing 8 + 2 = 10.
- Take the express route from stop 2 to stop 3, costing 3.
- Take the regular route from stop 3 to stop 4, costing 5.
The total cost is 1 + 10 + 3 + 5 = 19.
Note that a different route could be taken to reach the other stops with minimum cost.
```

Example 2:
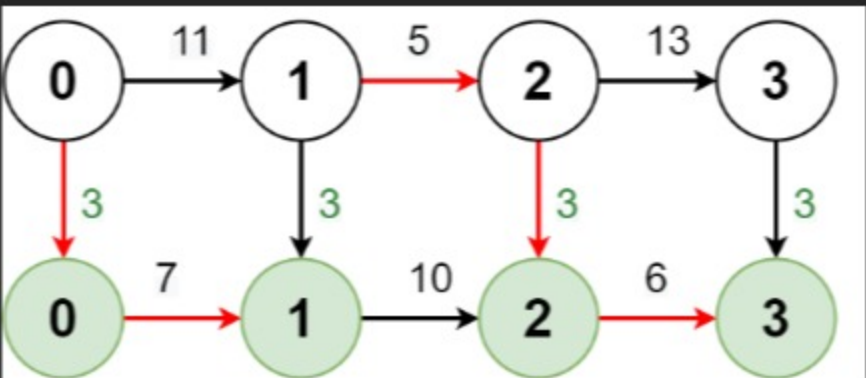

```
Input: regular = [11,5,13], express = [7,10,6], expressCost = 3
Output: [10,15,24]
Explanation: The diagram above shows how to reach stop 3 from stop 0 with minimum cost.
- Take the express route from stop 0 to stop 1, costing 3 + 7 = 10.
- Take the regular route from stop 1 to stop 2, costing 5.
- Take the express route from stop 2 to stop 3, costing 3 + 6 = 9.
The total cost is 10 + 5 + 9 = 24.
Note that the expressCost is paid again to transfer back to the express route.
```

Constraints:

- `n == regular.length == express.length`
- $1 <= n <= 10^5$
- $1 <= regular[i], express[i], expressCost <= 10^5$

⊘ Topics ▲

  Array   Dynamic Programming

🏢 Companies ▲

  0 - 6 months

  Citadel 3

  6 months ago

  Google 2

💡 Hint 1 ▲

  Notice and evaluate the different ways there are to move from one stop to the next.

💡 Hint 2 ▲

  From the express route at a previous stop, we can use either the express route or the regular route to the next stop without paying expressCost.

💡 Hint 3 ▲

  From the regular route at a previous stop, we can either use the express route after paying expressCost or use the regular route without paying expressCost.

💡 Hint 4 ▲

  Iterate through the stops and compare the above cases to obtain the minimum costs for each stop.

⊨≡ Similar Questions ▲

  Bus Routes   Hard

  Distance Between Bus Stops   Easy

💬 Discussion (20)   ▼