

# 2297. Jump Game VIII Premium

Medium Topics Companies Hint

You are given a **0-indexed** integer array `nums` of length `n`. You are initially standing at index `0`. You can jump from index `i` to index `j` where `i < j` if:

- `nums[i] <= nums[j]` and `nums[k] < nums[i]` for all indexes `k` in the range `i < k < j`, or
- `nums[i] > nums[j]` and `nums[k] >= nums[i]` for all indexes `k` in the range `i < k < j`.

You are also given an integer array `costs` of length `n` where `costs[i]` denotes the cost of jumping **to** index `i`.

Return *the **minimum** cost to jump to the index `n - 1`*.

### Example 1:

```
Input: nums = [3,2,4,4,1], costs = [3,7,6,4,2]
Output: 8
Explanation: You start at index 0.
- Jump to index 2 with a cost of costs[2] = 6.
- Jump to index 4 with a cost of costs[4] = 2.
The total cost is 8. It can be proven that 8 is the minimum cost needed.
Two other possible paths are from index 0 -> 1 -> 4 and index 0 -> 2 -> 3 -> 4.
These have a total cost of 9 and 12, respectively.
```

### Example 2:

```
Input: nums = [0,1,2], costs = [1,1,1]
Output: 2
Explanation: Start at index 0.
- Jump to index 1 with a cost of costs[1] = 1.
- Jump to index 2 with a cost of costs[2] = 1.
The total cost is 2. Note that you cannot jump directly from index 0 to index 2 because nums[0] <= nums[1].
```

### Constraints:

- `n == nums.length == costs.length`
- `1 <= n <= 105`
- `0 <= nums[i], costs[i] <= 105`

Seen this question in a real interview before? 1/5

Yes No

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Hint 1

For each index, find the indexes that you can jump to.

Hint 2

We can do this by using a monotonic stack and iterating through the array backwards.

Hint 3

Create another integer array of length n called dp where dp[i] is the minimum cost of getting to index i.

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