

# 2633. Minimum Cost to Split an Array

## Difficulty : Hard

<https://leetcode.com/problems/minimum-cost-to-split-an-array>

You are given an integer array `nums` and an integer `k`.

Split the array into some number of non-empty subarrays. The **cost** of a split is the sum of the **importance value** of each subarray in the split.

Let `trimmed(subarray)` be the version of the subarray where all numbers which appear only once are removed.

- For example, `trimmed([3,1,2,4,3,4]) = [3,4,3,4]`.

The **importance value** of a subarray is `k + trimmed(subarray).length`.

- For example, if a subarray is `[1,2,3,3,3,4,4]`, then `trimmed([1,2,3,3,3,4,4]) = [3,3,3,4,4]`. The importance value of this subarray will be `k + 5`.

Return *the minimum possible cost of a split of* `nums`.

A **subarray** is a contiguous **non-empty** sequence of elements within an array.

### Example 1:

**Input:** `nums = [1,2,1,2,1,3,3]`, `k = 2`

**Output:** 8

**Explanation:** We split `nums` to have two subarrays: `[1,2]`, `[1,2,1,3,3]`.

The importance value of `[1,2]` is `2 + (0) = 2`.

The importance value of `[1,2,1,3,3]` is `2 + (2 + 2) = 6`.

The cost of the split is `2 + 6 = 8`. It can be shown that this is the minimum possible cost among all the possible splits.

### Example 2:

**Input:** `nums = [1,2,1,2,1]`, `k = 2`

**Output:** 6

**Explanation:** We split `nums` to have two subarrays: `[1,2]`, `[1,2,1]`.

The importance value of `[1,2]` is `2 + (0) = 2`.

The importance value of `[1,2,1]` is `2 + (2) = 4`.

The cost of the split is `2 + 4 = 6`. It can be shown that this is the minimum possible cost among all the possible splits.

### Example 3:

**Input:** `nums = [1,2,1,2,1]`, `k = 5`

**Output:** 10

**Explanation:** We split `nums` to have one subarray: `[1,2,1,2,1]`.

The importance value of `[1,2,1,2,1]` is `5 + (3 + 2) = 10`.

The cost of the split is 10. It can be shown that this is the minimum possible cost among all the possible splits.

### Constraints:

- `1 <= nums.length <= 1000`
- `0 <= nums[i] < nums.length`
- `1 <= k <= 109`