

# 2162. Partition Array Into Two Arrays to Minimize Sum Difference

## Difficulty : Hard

<https://leetcode.com/problems/partition-array-into-two-arrays-to-minimize-sum-difference>

You are given an integer array `nums` of  $2 * n$  integers. You need to partition `nums` into **two** arrays of length `n` to **minimize the absolute difference** of the **sums** of the arrays. To partition `nums`, put each element of `nums` into **one** of the two arrays.

Return *the minimum possible absolute difference*.

### Example 1:

array 1: 

3	9
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nums: 

3	9	7	3
---	---	---	---

array 2: 

7	3
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**Input:** `nums = [3,9,7,3]`

**Output:** 2

**Explanation:** One optimal partition is: [3,9] and [7,3].

The absolute difference between the sums of the arrays is  $\text{abs}((3 + 9) - (7 + 3)) = 2$ .

### Example 2:

**Input:** `nums = [-36,36]`

**Output:** 72

**Explanation:** One optimal partition is: [-36] and [36].

The absolute difference between the sums of the arrays is  $\text{abs}((-36) - (36)) = 72$ .

### Example 3:

array 1: 

2		4		-9
---	--	---	--	----

nums: 

2	-1	0	4	-2	-9
---	----	---	---	----	----

array 2: 

-1	0		-2
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**Input:** `nums = [2,-1,0,4,-2,-9]`

**Output:** 0

**Explanation:** One optimal partition is: [2,4,-9] and [-1,0,-2].

The absolute difference between the sums of the arrays is  $\text{abs}((2 + 4 + -9) - (-1 + 0 + -2)) = 0$ .

### Constraints:

- $1 \leq n \leq 15$
- `nums.length == 2 * n`
- $-10^7 \leq \text{nums}[i] \leq 10^7$