

# 3091. Count of Sub-Multisets With Bounded Sum

## Difficulty : Hard

<https://leetcode.com/problems/count-of-sub-multisets-with-bounded-sum>

You are given a **0-indexed** array `nums` of non-negative integers, and two integers `l` and `r`.

Return the **count of sub-multisets** within `nums` where the sum of elements in each subset falls within the inclusive range of `[l, r]`.

Since the answer may be large, return it modulo  $10^9 + 7$ .

A **sub-multiset** is an **unordered** collection of elements of the array in which a given value `x` can occur  $0, 1, \dots, \text{occ}[x]$  times, where `occ[x]` is the number of occurrences of `x` in the array.

**Note** that:

- Two **sub-multisets** are the same if sorting both sub-multisets results in identical multisets.
- The sum of an **empty** multiset is  $0$ .

### Example 1:

**Input:** `nums = [1,2,2,3]`, `l = 6`, `r = 6`

**Output:** `1`

**Explanation:** The only subset of `nums` that has a sum of `6` is `{1, 2, 3}`.

### Example 2:

**Input:** `nums = [2,1,4,2,7]`, `l = 1`, `r = 5`

**Output:** `7`

**Explanation:** The subsets of `nums` that have a sum within the range `[1, 5]` are `{1}`, `{2}`, `{4}`, `{2, 2}`, `{1, 2}`, `{1, 4}`, and `{1, 2, 2}`.

### Example 3:

**Input:** `nums = [1,2,1,3,5,2]`, `l = 3`, `r = 5`

**Output:** `9`

**Explanation:** The subsets of `nums` that have a sum within the range `[3, 5]` are `{3}`, `{5}`, `{1, 2}`, `{1, 3}`, `{2, 2}`, `{2, 3}`, `{1, 1, 2}`, `{1, 1, 3}`, and `{1, 2, 2}`.

### Constraints:

- $1 \leq \text{nums.length} \leq 2 * 10^4$
- $0 \leq \text{nums}[i] \leq 2 * 10^4$
- Sum of `nums` does not exceed  $2 * 10^4$ .
- $0 \leq l \leq r \leq 2 * 10^4$