

2562. Count Ways To Build Good Strings

Difficulty : Medium

<https://leetcode.com/problems/count-ways-to-build-good-strings>

Given the integers zero, one, low, and high, we can construct a string by starting with an empty string, and then at each step perform either of the following:

- Append the character '0' zero times.
- Append the character '1' one times.

This can be performed any number of times.

A **good** string is a string constructed by the above process having a **length** between low and high (**inclusive**).

Return *the number of **different** good strings that can be constructed satisfying these properties*. Since the answer can be large, return it **modulo** $10^9 + 7$.

Example 1:

Input: low = 3, high = 3, zero = 1, one = 1

Output: 8

Explanation:

One possible valid good string is "011".

It can be constructed as follows: "" -> "0" -> "01" -> "011".

All binary strings from "000" to "111" are good strings in this example.

Example 2:

Input: low = 2, high = 3, zero = 1, one = 2

Output: 5

Explanation: The good strings are "00", "11", "000", "110", and "011".

Constraints:

- $1 \leq \text{low} \leq \text{high} \leq 10^5$
- $1 \leq \text{zero}, \text{one} \leq \text{low}$