

911. Profitable Schemes

Difficulty : Hard

<https://leetcode.com/problems/profitable-schemes>

There is a group of n members, and a list of various crimes they could commit. The i^{th} crime generates a `profit[i]` and requires `group[i]` members to participate in it. If a member participates in one crime, that member can't participate in another crime.

Let's call a **profitable scheme** any subset of these crimes that generates at least `minProfit` profit, and the total number of members participating in that subset of crimes is at most n .

Return the number of schemes that can be chosen. Since the answer may be very large, **return it modulo** $10^9 + 7$.

Example 1:

Input: `n = 5, minProfit = 3, group = [2,2], profit = [2,3]`

Output: 2

Explanation: To make a profit of at least 3, the group could either commit crimes 0 and 1, or just crime 1. In total, there are 2 schemes.

Example 2:

Input: `n = 10, minProfit = 5, group = [2,3,5], profit = [6,7,8]`

Output: 7

Explanation: To make a profit of at least 5, the group could commit any crimes, as long as they commit one. There are 7 possible schemes: (0), (1), (2), (0,1), (0,2), (1,2), and (0,1,2).

Constraints:

- $1 \leq n \leq 100$
- $0 \leq \text{minProfit} \leq 100$
- $1 \leq \text{group.length} \leq 100$
- $1 \leq \text{group}[i] \leq 100$
- $\text{profit.length} == \text{group.length}$
- $0 \leq \text{profit}[i] \leq 100$