



## 5204. Count Ways to Build Rooms in an Ant Colony

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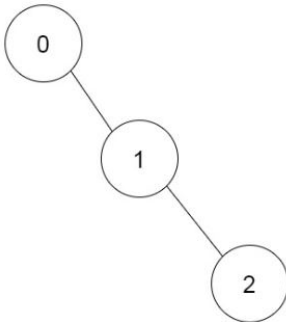
You are an ant tasked with adding  $n$  new rooms numbered  $0$  to  $n-1$  to your colony. You are given the expansion plan as a **0-indexed** integer array of length  $n$ , `prevRoom`, where `prevRoom[i]` indicates that you must build room `prevRoom[i]` before building room `i`, and these two rooms must be connected **directly**. Room  $0$  is already built, so `prevRoom[0] = -1`. The expansion plan is given such that once all the rooms are built, every room will be reachable from room  $0$ .

You can only build **one room** at a time, and you can travel freely between rooms you have **already built** only if they are **connected**. You can choose to build **any room** as long as its **previous room** is already built.

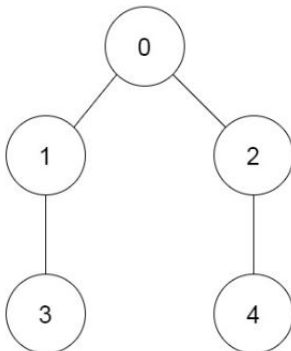
Return the **number of different orders** you can build all the rooms in. Since the answer may be large, return it **modulo**  $10^9 + 7$ .

User Accepted:	0
User Tried:	0
Total Accepted:	0
Total Submissions:	0
Difficulty:	Hard

## Example 1:

**Input:** `prevRoom = [-1,0,1]`**Output:** 1**Explanation:** There is only one way to build the additional rooms:  $0 \rightarrow 1 \rightarrow 2$ 

## Example 2:



**Input:** prevRoom = [-1,0,0,1,2]**Output:** 6**Explanation:**

The 6 ways are:

0 → 1 → 3 → 2 → 4

0 → 2 → 4 → 1 → 3

0 → 1 → 2 → 3 → 4

0 → 1 → 2 → 4 → 3

0 → 2 → 1 → 3 → 4

0 → 2 → 1 → 4 → 3

**Constraints:**

- $n == \text{prevRoom.length}$
- $2 \leq n \leq 10^5$
- $\text{prevRoom}[0] == -1$
- $0 \leq \text{prevRoom}[i] < n$  for all  $1 \leq i < n$
- Every room is reachable from room 0 once all the rooms are built.

JavaScript



```
1 /**
2  * @param {number[]} prevRoom
3  * @return {number}
4  */
5 var waysToBuildRooms = function(prevRoom) {
6
7  };
```

☐ Custom Testcase

Use Example Testcases

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