634. Find the Derangement of An Array

Description

In combinatorial mathematics, a **derangement** is a permutation of the elements of a set, such that no element appears in its original position.

You are given an integer `n`. There is originally an array consisting of `n` integers from `1` to `n` in ascending order, return *the number of **derangements** it can generate*. Since the answer may be huge, return it **modulo** `10^9 + 7`.

Example 1:

```
Input: n = 3
Output: 2
Explanation: The original array is [1,2,3]. The two derangements are [2,3,1] and [3,1,2].
```

Example 2:

```
Input: n = 2
Output: 1
```

Constraints:

- `1 <= n <= 10^6`