

# 60. Permutation Sequence

## Description

The set `[1, 2, 3, ..., n]` contains a total of `n!` unique permutations.

By listing and labeling all of the permutations in order, we get the following sequence for `n = 3` :

- 1. `"123"`
- 2. `"132"`
- 3. `"213"`
- 4. `"231"`
- 5. `"312"`
- 6. `"321"`

Given `n` and `k` , return the `kth` permutation sequence.

### Example 1:

Input: `n = 3, k = 3`  
Output: `"213"`

### Example 2:

Input: `n = 4, k = 9`  
Output: `"2314"`

### Example 3:

Input: `n = 3, k = 1`  
Output: `"123"`

### Constraints:

- `1 <= n <= 9`
- `1 <= k <= n!`

