214   (next permutation) You are given a list of the numbers $0,..n$ in some order. Write a program to find the lexicographically next list of the numbers $0,..n$.

After trying the question, scroll down to the solution.

§   As an example, after [4;1;2;5;3;0] the next permutation is [4;1;3;0;2;5] . Method:

0. Find the longest decreasing suffix. In the example, that's 5;3;0 .
1. If the longest decreasing suffix is the entire list, then it is the last permutation, and there is no next permutation. If not, the item before the longest decreasing suffix is called *left* . In the example, that's 2 .
2. The smallest item in the suffix that is greater than *left* is called *right* . In the example, that's 3 .
3. Swap *left* and *right* . In the example, we get [4;1;3;5;2;0] .
4. The suffix is still decreasing. Reverse it to make it increasing. In the example, we get [4;1;3;0;2;5] .