We want to devise a function NEXTPER(n,) that given an integer n and a permutation of {1, 2, . . . , n} outputs the next permutation of {1, 2, . . . , n} after in the lexicographical order. For example, on an input (3,h1, 3, 2i), NEXTPER should output h2, 1, 3i and on an input (5,h2, 3, 5, 4, 1i), NEXTPER should output h2, 4, 1, 3, 5i.
(a) Give pseudocode for the function NEXTPER.
(b) Determine the worst case running time of NEXTPER.
(c) Implement your pseudocode for NEXTPER using C/C++/Java.

a)

Algorithm 1 Counting mismatches between two packed strings

Precondition: x and y are packed strings of equal length n

```
function DISTANCE(x, y)
    z ← x ⊕ y          ▷ ⊕: bitwise exclusive-or
    δ ← 0
    for i ← 1 to n do
        if z_i ≠ 0 then
            δ ← δ + 1
    return δ
```